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www.thedigitalship.com

Maersk saves $90 million through application of KPIs

Through the application and analysis of Key Performance Indicators (KPIs) on just a portion of its fleet, Maersk Line has managed to save tens of millions of dollars in energy costs – with even greater savings potentially to follow

Maersk Line has reported that it has saved almost US$90 million through the use of its Maersk KPIs (Key Performance Indicators) system.

The company says that, in just three years, it has saved this enormous amount in energy costs by measuring the performance of individual vessels and raising awareness on fuel consumption.

Maersk KPIs have been used for a number of years to measure the performance of the company, however it is only since 2009 that the KPIs have also made their way on to the vessels in a bid to boost performance.

The vessel KPIs have evolved through close cooperation between the vessels, Maersk Line Vessel Management and Maersk Maritime Technology, which is in charge of the Maersk Ship Performance System (MSPS).

Today the overall scorecard consists of four parameters - energy, safety, daily running costs and cooperation (best practice sharing). At this stage a monetary value for savings has been applied to the energy KPI only.

After implementation of the programme by the crew and fleet groups, the company has been able to pinpoint some of the savings made over the last three years.

For example, Maersk Line notes that 160,000 tons of fuel have been saved as a result of higher propulsion efficiency, contributing to the US$90 million figure, a total which does not even include savings from other energy initiatives such as trim optimisation or basic load reduction.

Maersk Line vessels implemented the KPIs in 2009

"If you can't measure something, you can't control it. If you can't control it, you can't improve it. It is essential to realise that the scorecards are only a valuable tool if they help facilitate decision making amongst stakeholders," said Anup Rajan, performance manager at Maersk Line Vessel Management.

Roll-out

After seeing positive initial results from the KPI process for Maersk Line's own fleet, more than 150 vessels were subsequently upgraded with MSPS in the second half of 2011.

"We're confident that, although we are introducing rather new standards in the industry, we will be able to drive similar performance improvements in the chartered fleet," says Flemming Bo Larsen, the man responsible for the 'Energy Efficiency Optimisation Drive' at Maersk Line.

The company says that its largest owners of chartered vessels have now all received scorecards and benchmarks on energy, starting from 1 January this year.

Each of the KPIs will be rated on a monthly basis and merged into an overall KPI score for each charter owner. More owners will be added on an ongoing basis.

Other Maersk business units are now following suit in measuring

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vessel performance, following on from these successes.

Vessel KPIs will be introduced by Maersk Supply Service, with the company noting that the motivation in this part of the business is of a more environmental nature.

Though the fuel bill for operations is usually not incurred by Maersk Supply Service itself, the company says that there are still enough reasons to save fuel - firstly, to meet its environmental targets, and secondly to reduce maintenance cost on the engines.

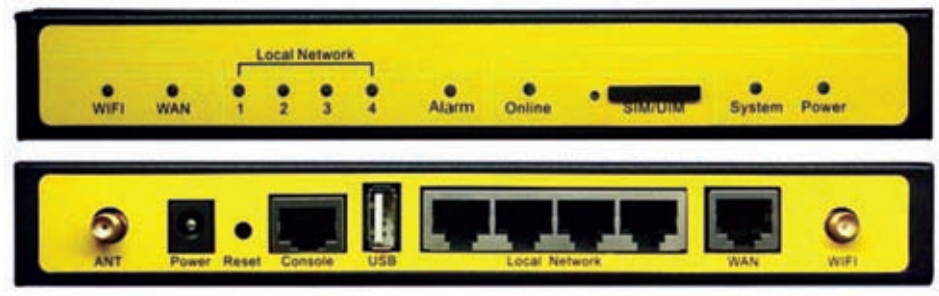
Currently, approximately 70 Maersk Supply Service vessels are reporting data through MSPS.

Maersk Tankers meanwhile also has KPIs up and running on its entire owned fleet, and is planning an additional roll-out to chartered vessels as well.

The company notes that energy saving, improved safety and financial management are the key issues for the project within the tanker unit. DS

Port-IT launches new ship GSM products

www.port-it.com



Port-IT's router is used to integrate 3G connectivity with existing ship communications

Port-IT has announced the launch of two new products, with the aim of enhancing onboard satellite communications through the addition of 3G services from shore.

The first of these products is Cios Pebble, a 3G data router with a build in SIM card slot for a mobile shore side network operator. The router features a built-in firewall function, Wi-Fi capability, and LAN ports.

The router is delivered with an outdoor marine grade antenna for optimal signal use, and cabling and mounting brackets. The company says that the router can also replace the ship's current installed firewalls between the ship's network and FleetBroadband systems used onboard.

Automatic switching to shore side networks is available, meaning that the captain or crew does not have to interact with the router, so they should notice no difference in operation of the communication systems before and after the installation.

The Pebble router will detect the 3G signal, test the data quality and link, and will switch the outgoing traffic from the FleetBroadband to a shore side operator network, and vice versa when leaving the 3G coverage area.

Management of shoreside GSM subscriptions will be facilitated by Port-IT's second new release, the NSDG (Near Shore Data Grid) service.

NSDG is a GSM 3G subscription service with a "wild" roaming SIM card, with limitations built in to prevent a user from roaming on networks that charge US$5 or $10 per MB.

Prices for the SIM are fixed in two categories: one for Europe, the US and Canada, and the other for the rest of the world.

Port-IT says that prices are not yet finalised, but it currently expects customers will pay €0.42 per MB in region 1 (Europe, US and Canada) and pay €0.92 in all other covered countries - a list which the company says will include 55 countries during the pilot phase, and which it hopes to increase to approximately 130 countries in the future.

Major ports such as Houston, Rotterdam, Hong Kong and others are covered already.

"Before building a service like this we did a thorough review with a lot of vessels on how many days they spend near shore or in port, and it ended up that vessels are approximately 12 days a month in port or near shore. During this time a vessel does not have to use satellite traffic to make communications but can use terrestrial networks," said Youri Hart, managing director, Port-IT.

"It is no replacement for satellite communications but it is certainly a product that can help the shipowner to lower costs or to provide some form of internet onboard and keep a track of the costs. We also understand that getting a SIM card with a local provider is cheaper, however often that includes one year contracts and you don't have the fixed pricing that we offer with our service."

"With our service it is clarity and no surprises. It is a solution that can be implemented one time, and after that you pay no attention to it and still the shipowner will save costs."

HME has reported that Ron Vollenga of **Outsource-IT Management** is to take over as executive of the Platform Broadband@Sea project. HME remains the owner of the Platform, with Mr Vollenga coordinating activities and events on behalf of HME.

Thuraya has appointed T. Sanford Jewett as vice president, marketing. Before joining Thuraya, Mr Jewett oversaw strategy and business development for the mobile services group at **Time Warner Cable.**

T Sanford Jewett, new vice president of marketing at Thuraya

Intelsat reports that its board of directors has elected Edward Kangas to serve on its audit and compensation committees. Mr Kangas served as chairman and CEO of **Deloitte, Touche, Tohmatsu** from 1989 to 2000, and currently serves as non-executive chairman of **Tenet Healthcare Corporation,** and on the boards of **United Technologies Corporation, Intuit** and **Hovnanian Enterprises Inc.**

e3 Systems reports that it has sold 60 per cent of the company's equity to new investment partner **grupoarbulu**, headquartered in Madrid.

Station711 is to provide its FleetBroadband customised and branded web management platform to **Telecom Italia,** which Telecom Italia will offer to its customers. The web platform includes tools for provisioning, spending control, hierarchy access levels, billing and account management, and traffic monitoring on FleetBroadband.

Ships Electronic Services (SES) has announced the acquisition of **TSA Communications** in the UK, providing the company with a West Coast base adjacent to the Liverpool docks. The office will be called SES Liverpool and joins the seven other SES facilities around the country.

Intellian reports that it is now offering a three-year limited warranty across its entire antenna range, for both new and existing systems. Following the increase of the Intellian i-Series 2-Axis antenna warranties to three years last year, the Intellian VSAT and 3-Axis TVRO warranties for parts are now also increased to three years.

KVH has named **Andesat** as a reseller for its mini-VSAT Broadband service and TracPhone V-series systems. In addition to managing a mini-VSAT hub at its teleport in Santiago, Chile, Andesat will now provide KVH products and service to its distribution partners in Chile, Argentina, Uruguay, Paraguay, Bolivia, Peru, and Ecuador.

www.broadbandatsea.eu
www.outsource-it.nl
www.intelsat.com
www.e3s.com
www.grupoarbulu.com
www.station711.com
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Voyager

Voyager Digital Update Service

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Carnival Breeze implements VSAT and phone services

www.wmsatsea.com
www.mtnsat.com

MTN Satellite Communications and Wireless Maritime Services (WMS) have implemented communications services aboard Carnival Cruise Lines' newest ship, Carnival Breeze.

Carnival Breeze began a summer schedule of European cruises on June 3 and will launch a year-round Caribbean service from Miami starting November 24, 2012.

MTN is providing VSAT connectivity, for crew, passenger and corporate communications, and also implemented its Internet Café solution delivering access to passengers and crew on mobile devices such as tablets, smartphones and laptops, as well as fixed PCs.

This has been integrated with Carnival's own FunHub portal to provide passengers with digital access to the Breeze's ship services, facilities, daily activities and social media.

Wireless Maritime Services (WMS), a joint venture of AT&T and MTN, implemented its cellular calling, texting and data services for guests and crew onboard the Carnival Breeze.

WMS is the exclusive cellular service provider for the entire Carnival Cruise Lines fleet of 24 vessels, and the company notes that, during Carnival Breeze's first month in service, it carried tens of thousands of voice calls to and from the ship.

"New services introduced to the Carnival Breeze created unique challenges to provide ship-wide coverage for telecommunication services, and we knew there would be a heavy demand for onboard cellular and internet, especially in our inaugural month," said Eric Merz, Carnival's director of guest technology.

"During all phases, from the yard, to testing, to having onboard support, both MTN and WMS have proven to be critical partners. The integration of our FunHub to the internet, the call management and calling solutions has truly brought a full telecommunications solution to Carnival, our guests and crew."

Harris CapRock to collaborate on O3b project

www.harriscaprock.com
www.o3bnetworks.com

Harris CapRock Communications is to work with O3b Networks on its recently agreed contract to supply Royal Caribbean Cruises' Oasis of the Seas, the largest cruise ship in the world, with its O3b Maritime VSAT service.

Harris CapRock will implement and maintain the O3b Maritime service for the cruise ship, deploying the stabilised VSAT antenna systems and providing a fully managed service.

Starting in summer 2013, O3b's service will offer 350 Mbps download speeds to ships at sea via a network of eight Medium-Earth-Orbit (MEO) satellites.

"This exciting partnership between Harris CapRock and O3b Networks offers a unique combination for maritime innovator Royal Caribbean who is committed to providing the very best cruise experience to its guests," said Rick Simonian, president of maritime solutions for Harris CapRock.

"We look forward to working closely with O3b Networks and to bringing a truly ground-breaking service offering to the maritime industry."

The Oasis of the Seas will be the first ship to implement the O3b service

Chinese order for Beam satphones

www.beamcommunications.com

Beam Communications reports that it has received an initial order worth US$170,000 from a China-based satellite communications company for its Oceana range of Inmarsat-powered vessel phones.

This initial order follows a commitment by the Chinese company to undertake a short trial deploying 200 Beam Oceana 400 and Oceana 800 marine communications terminals on fishing vessels in China, using the Inmarsat FleetPhone Service.

The trial will deploy 100 of the Beam Oceana 400 terminals and 100 of the Beam Oceana 800 terminals.

These terminals were specifically designed to support the voice, data and tracking communications available over the Inmarsat satellite network via its FleetPhone maritime service.

A relatively short trial period is expected and Beam says that its Chinese partner plans to commit to a minimum further order of 1,000 units for expansion of the trial to the broader maritime market in China.

"This is a major breakthrough for Beam into the Chinese maritime market," said Michael Capocchi, managing director, Beam Communications.

"We are delighted to be working with a key strategic partner in China, which further reinforces Beam's position as a leading global provider of satellite communication solutions for both the Inmarsat and Iridium satellite networks."

200 Beam systems will be trialled on Chinese vessels

Radiomar passes 100 VSATs

www.radiomar.com.br

Brazilian company Radiomar reports that it has passed the milestone of selling 100 units of its VSAT / Annex V systems, following a recent order from Maersk.

Annex V is a communication and security package specified by Brazilian oil company Petrobras to be used on vessels that support its oil production operations in Brazil.

The system core is based on a VSAT antenna, connected to a router and a set of other equipment, including several cameras connected to a DVR.

The system also provides VoIP telephony and a data connection to the Petrobras network, for videoconferencing, vessel tracking, digital trunking radio and radiotelex for command dispatch.

This equipment allows the Petrobras central station to remotely monitor and record all offshore operations, including procedures on board, with the aim of producing better incident analysis. The satellite traffic and network is operated by Petrobras itself.

H2OLiteSpeed hits 200

www.h2osatellite.com

H2OSatellite reports that its H2OLiteSpeed VSAT system has reached the milestone of having completed its 200th installation.

H2OLiteSpeed, which offers download speeds of up to 4 Mbps, was developed specifically for the maritime market by a consortium consisting of H2OSatellite, satellite provider SES Broadband Services and antenna manufacturer KNS.

H2OSatellite says that this push to 200 installations has been helped by the fact that, following the launch of the compact Supertrack A6 version of the product earlier this year, there is a terminal to suit all vessel types and usage needs.

"I have said from the beginning that this is a great maritime package, and reaching this milestone of 200 vessels proves this," said Robert Kenworthy, managing director of H2OSatellite.

"The Litespeed package will continue to go from strength to strength and I look forward to seeing the results of the next year with further developments to the product range within the package."

"H2OLiteSpeed turns the ship into a remote office complete with VPN links, file transfer/sharing, video conferencing as well as e-mail, data transfer and remote support. All of the partners believe that H2OLiteSpeed has huge potential."

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MISC Berhad commits to XpressLink

www.inmarsat.com

Malaysian shipping conglomerate MISC Berhad (MISC) has signed up 46 of its vessels, comprised of chemical and LNG tankers, for Inmarsat's XpressLink service, which includes a free upgrade to the Ka-band Global Xpress service after launch.

The XpressLink solution from Inmarsat is a combination of VSAT and FleetBroadband, both provided for a fixed monthly fee. It includes an option for MISC Berhad to double its available bandwidth at a pre-determined monthly rate when the Global Xpress constellation becomes commercially available from 2014.

'It is important for us to have ample bandwidth' – Capt S Rajalingam, MISC Berhad

"It is important for us to have ample bandwidth to manage our ship and shore operational systems and meet the communication needs of our seafarers at sea," said Captain S Rajalingam, vice president fleet management systems at MISC Berhad.

"During our sea trials, we compared XpressLink with a number of competitive offerings and XpressLink impressed us with its performance. Inmarsat XpressLink offered the best value proposition delivering reliable, unlimited data usage on both the VSAT and FleetBroadband services."

The scope of the agreement between MISC and Inmarsat also includes the potential for further future deployments beyond the agreed 46 vessels. MISC Group currently operates a fleet of approximately 100 ships.

"We launched Inmarsat XpressLink in response to the growing need for unlimited high speed communications in the worldwide shipping market," said Frank Coles, president of Inmarsat Maritime.

46 vessels will be installed with XpressLink

"Crew welfare and the need for increased operational efficiency are key drivers in the market, and with XpressLink, we can provide a future-proof communications platform."

"Inmarsat already has a strong relationship with MISC Berhad, and this latest endorsement in the form of a new commitment for XpressLink is very gratifying."

Inmarsat participating in Iran terrorist activities, claims Israeli group

www.inmarsat.com

Shurat HaDin, the Israel Law Center, has launched an extraordinary attack on Inmarsat, claiming that, by providing satellite services to Iranian vessels, the satellite operator is "a direct participator in Iran's terrorist activities and nuclear weapons program."

Shurat HaDin made these claims in a letter to Inmarsat PLC, warning that providing prohibited guidance services to Iranian oil tankers and Iranian military vessels could expose the telecommunications giant to criminal prosecution and civil liability from Americans and others who suffer as a result of Iran's international sponsorship of terrorism.

This move is a result of a July 12 update to the lists of designated companies, individuals and property that American and non-American citizens are prohibited from engaging with by the United States Treasury.

The Israeli group says that many of the vessels listed by the Treasury are being provided with satellite services by Inmarsat.

"We will not tolerate Inmarsat's - or any corporation's - profiting from the blood of innocent people," said Shurat HaDin's director, Nitsana Darshan-Leitner.

"Anything short of immediate and decisive action on our part would be akin to acceptance. It is a simple issue of justice: Inmarsat must uphold its legal obligations in compliance with US Treasury regulations and immediately cease its support for Iran."

This is not the first time this group has threatened Inmarsat with legal action, having filed a case against Inmarsat in Federal Court in Miami in June 2011 for "continuing to support ships seeking to breach Israel's naval blockade of Gaza."

In that case Shurat HaDin said that Inmarsat's services provided communications to the Mavi Marmara and other ships that participated in the Gaza flotilla of May 2010.

Inmarsat has released a statement to respond to these accusations, refuting the Israeli group's claims.

The statement reads:

"(Inmarsat) seek to comply with all applicable sanctions laws and regulations. Inmarsat does not sell telecommunications services to any Iranian entity, or to any entity on the US Office of Foreign Assets Control list of Specially Designated Nationals."

"This is the second time that Inmarsat has been accused of wrong-doing by Shurat HaDin. Last year, the lobby group contended in a US law suit that Inmarsat was violating US law by allegedly supplying telecommunications services to ships that allegedly were connected with Hamas."

"Inmarsat pointed out the legal and factual difficulties in their case, and Shurat HaDin dismissed their case, before Inmarsat even had to respond formally on the merits."

"Inmarsat was founded in 1979 as the International Maritime Satellite Organization, a non-profit, intergovernmental organization established by United Nations Convention to provide maritime communications for distress and safety of life at sea communications. The Convention required Inmarsat to make its services available for the 'benefit of ships of all nations'."

"In 1999, the intergovernmental organization was privatized, creating Inmarsat plc. As a condition to its privatization, Inmarsat was required to continue its 'public service obligations' to 'ensure the continuity of maritime satellite distress and safety communications services' for the Global Maritime Distress and Safety System (GMDSS) established by the UN."

"...Inmarsat was again required to provide safety communications services for all ships 'without discrimination on the basis of nationality'....In turn, all cargo and passenger ships above a certain tonnage must carry a terminal for GMDSS. Inmarsat is the sole satellite provider of GMDSS."

A link to the full text of the Shurat HaDin letter to Inmarsat is available at tinyurl.com/bogxxb3.

IsatPhone Pro reaches Japan

www.inmarsat.com

Inmarsat has announced the launch of its global satellite handheld IsatPhone Pro in Japan, beginning August 2012.

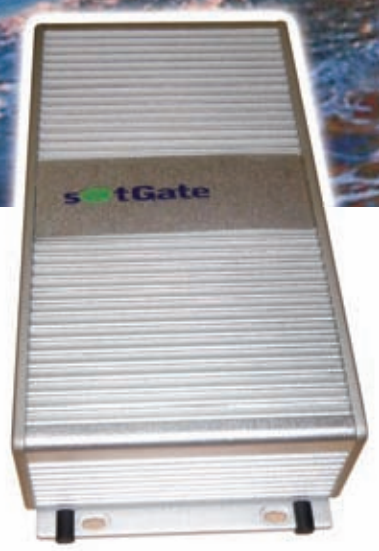
Japan's largest mobile carrier NTT DOCOMO will deliver IsatPhone Pro to the Japanese market in partnership with JSAT MOBILE Communications, a joint venture between Inmarsat and SKY Perfect JSAT Corporation, Asia-Pacific's largest satellite operator.

The introduction of IsatPhone Pro complements NTT DOCOMO's existing mobile satellite services portfolio, centred on Widestar and Widestar II.

"We are excited to partner with such a world-leader as NTT DOCOMO to launch IsatPhone Pro in Japan. This is a key market for Inmarsat and launching IsatPhone Pro here is an important milestone for us," said Lizzie Greenwood, Asia-Pacific director, global government, Inmarsat.

NTT DOCOMO will offer the Inmarsat handheld

Onboard Online



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Mixed news for Globalstar

www.globalstar.com

After a number of recent difficulties, Globalstar has had mixed news to report, with the positive announcement that its satellite operations control centre has initiated the steps needed to place four previously launched satellites into service dampened slightly by subsequent revelations that the launch provider for its next series of launches was claiming it had defaulted on payments.

At the time of going to press the previously launched satellites were scheduled to come on line by mid-August. Globalstar was expecting to add additional satellites into service in the Autumn, which would further increase performance on its network.

The company had been working with Thales and launch services provider Arianespace in this regard, preparing to conduct its fourth and final launch of six new second-generation satellites prior to the end of the year.

However, in an August 9 SEC filing Globalstar admitted that it had received notification of payment default from Arianespace, and that, based on the terms and conditions of its contract, Arianespace would be entitled to suspend its activities in preparation for the fourth launch if Globalstar does not make payment in full within 15 days.

At the time of going to press this deadline had not passed, so the outcome of this claim is unknown.

According to Globalstar, if payment is not made within 60 days of its filing, Arianespace is entitled to terminate the contract, which would be an "event of default" under the Facility Agreement through which it has arranged its financing for the satellite constellation – which could put future funding in jeopardy.

Globalstar says it is working with Arianespace to reach a mutually beneficial resolution.

This development comes after Globalstar had reached a settlement of its prior disputes with satellite manufacturer Thales Alenia Space France, and agreed to the terms of a commercial proposal for the purchase of six additional spacecraft from Thales.

That mutual settlement of the prior claims that Globalstar and Thales had against one another meant that Thales would complete its current work under Phase 2 of the companies' contract and deliver the current group of six satellites under construction so that the scheduled fourth launch of six satellites could be conducted this year – a launch which the issues with Arianespace have thrown into doubt.

In addition, Globalstar and Thales have agreed to the principal terms relating to Globalstar's purchase from Thales of six additional second-generation satellites at a fixed price of approximately €25 million per satellite, payable over an approximately 3-year period after commencement of manufacturing.

The companies say that they expect to enter into a commercial contract based upon these terms in the near future.

Should this contract go ahead Globalstar will pay one-third of the arbitration award (€53 million) to Thales. Thales has agreed to waive the remaining two-thirds of the award in these circumstances.

Thales or Globalstar may terminate the settlement if the new commercial contract is not signed by February 28, 2013. Settlement is also subject to Globalstar's receipt of consent from companies involved in its financing arrangements.

Jotron integrates STM technology with VSAT

www.jotron.com
www.stmi.com

VSAT antenna manufacturer Jotron has announced that it has implemented the open VSAT Antenna Control Protocol (VACP) developed by STM Group Inc, and has concluded interoperability testing with STM's broadband satellite routers for mobile VSAT networks.

STM and Jotron have developed VACP to minimise interruptions of service during handover between satellite footprints, and to minimise the effect of blockages.

VACP is a TCP/IP based protocol that facilitates the exchange of information between an Antenna Controller Unit and a satellite router.

It allows the satellite router to command the antenna and enables the use of Automatic Beam Switching, which transfers connectivity from one satellite beam to the next as a vessel passes through multiple footprints.

In addition, VACP enables users to meet government regulations by commanding the antenna to mute the signal in no-transmit zones.

The companies say that VACP is also compatible with future beam handover requirements for Ka-band.

Aalesund Data to supply data optimisation to Farstad

www.aledata.no

Farstad Shipping ASA has agreed a deal with Norwegian company Aalesund Data for the delivery of the Itrust Bandwidth Optimizer (IBO) system to its fleet of over 50 ships.

The IBO was first developed by Aalesund Data in 2008, and has been released as a number of different versions since that time. The technology is used to optimise data communication to vessels through satellite or mobile systems.

Aalesund Data says that it worked with Farstad to test and customise the IBO solution that will be delivered, with IBOv4 to be supplied.

Version 4 is offered as a virtual system, meaning that deployment and configuration can be completed in a very short period of time.

The IBO is used to manage ship communications

Delivery of the units is scheduled to take place over the next twelve months, ending in June 2013.

More than 50 ships will be installed

SatPoint and MCP to supply Scandlines ferries

www.scandlines.com
www.mcp.com

SatPoint and Maritime Communication Partner (MCP) are to work together to provide VSAT satellite communication and mobile phone services to ferry company Scandlines.

The new contract is for five years, and builds on an existing contract held by SatPoint for the provision of VSAT services to Scandlines since 2006.

SatPoint and MCP will work together under the new deal to install new infrastructure and hardware on seven ferries out of the 14 ferries equipped with VSAT. Passengers and crew will be able to use their mobile phones for voice, SMS and data on board the same way as they do on land.

"Telephony is not Scandlines' core business and our focus has been to ensure an economically sensible solution to our customers, while it is very important for our reputation and our customer service to ensure a high quality mobile phone service on board all our vessels," said Søren Rose, category manager at Scandlines.

MCP says that demand for mobile phone service on ferry and cruise ships has been on the increase, with the company achieving growth of 180 per cent in data traffic among passengers and crew.

Voice and data growth for Horizon

www.onehorizongroup.com

One Horizon Group reports that its SatCom Global subsidiary has achieved significant growth for its Horizon product in the first half of the year, in both voice and data.

The company says that it has seen month over month voice growth of 68-92 per cent in Q2 2012, processing over 67,000 pre-paid voice minutes and transferring 4GB of data (saving 14GB through optimisation) in June.

The company estimates that it saved its maritime users more than 75 per cent on the standard cost of this traffic over Inmarsat terminals.

"Horizon's substantial growth validates it has gained visibility with crew in the maritime industry and that they recognise the value that Horizon offers," said Sandy Johnson, COO, SatCom Global.

"Through the affordability that Horizon's optimisation provides crew members have also been able to increase their time spent online by 59 per cent."

Horizon offers a VoIP platform using the company's SmartPacket technology, which allows for voice communications at speeds of 2 kbps.

In addition to VoIP, Horizon also includes a range of optimised data applications including compressed e-mail, accelerated web browsing and instant messaging.

As such, the company says that the system can reduce crew communications costs by consuming as much as 80 per cent less data than other VoIP services and saving upwards of 20kB per website viewed.

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Telemar agrees German deals

www.telemargroup.com

The Telemar Group, via its German subsidiary Telemar GmbH, reports that it has agreed new satcom deals with German shipping companies John T. Essberger and Rickmers.

The contract with John T. Essberger covers the provision of broadband satellite communications to the entire John T. Essberger fleet of 35 vessels.

John T. Essberger is a diversified group with activities in ship owning and ship management, liner shipping and maritime related services.

The contract encompasses satellite airtime, to be delivered via Telemar's partner Vizada, until 2015, as well as the delivery and installation of a customised hardware solution including FleetBroadband250 terminals, as per Essberger specifications, for 21 vessels.

Telemar says it will be providing a dedicated project engineer, and will manage maintenance of the equipment as well as offering 24/7 customer support.

Rickmers, meanwhile, has extended an existing contract with Telemar for FleetBroadband services until 2014, with airtime again provided by Vizada.

Rickmers will move its Entry Allowance SCAP package up to a level exceeding 3GB, with the data to contribute to the company's recently announced project to introduce dynamic trim optimisation and fleet management solutions, in partnership with ABB.

New shipmanagement software, with document management capabilities, and extended crew mailing/web-surfing facilities will also be introduced.

The first batch of about 20 Rickmers vessels to be equipped with the 3GB package consists of a group of new ships joining the fleet.

Telemar says it will deliver an integrated project architecture to the ships, that will include trials of new operational and crew welfare solutions, such as the SeaMore system for connection of smartphones and tablets developed by Telemar and Vizada.

OmniAccess expands VSAT service

www.omniaccess.com
www.idirect.net

VSAT provider OmniAccess reports that it has deployed a new iDirect Series 15100 Universal Satellite Hub to expand its maritime satellite network.

The company says that the addition of its third iDirect hub will allow it to expand its coverage area, and offer a multi-hub satellite network that will allow users to move between different regions without having to change satellite service providers or plans.

The iDirect system allows for functionalities such as Automatic Beam Selection (ABS) and Adaptive Coding and Modulation (ACM), which OmniAccess will use in the provision of its BroadBEAM ULTRA service, with speeds of up to 30 Mbps.

"Thanks to the scalability of the iDirect platform and the dedicated efforts of iDirect's technical services and support staff, we were able to establish a global satellite network in only 18 months," said Bertrand Hartman, CEO, OmniAccess.

"For a growing company like ours, this quick growth has been instrumental to our success. Moreover, because two of the three hubs we have deployed were completely installed by iDirect remotely, there has been minimal impact to our operations."

In related news, OmniAccess is to use Intellian VSAT communications antennas as part of a project to implement broadband satellite communications for a river cruise operator.

The Intellian 60cm 3-axis Ku-band VSAT antennas have been installed onboard nineteen vessels for the unnamed river cruise company, which is now able to transfer on average over 300 Gb of data per vessel per month.

"By using the right technology and partners we have proved that small compact antennas are capable of achieving unparalleled download speeds of up to 30 Mbps with exceptional uptime and availability," notes Carlos Carbajal, managing director of yacht services at OmniAccess.

NYK Line agrees 100-ship mini-VSAT deal

www.kvh.com
www.sptvjsat.com/en

Tokyo-based Nippon Yusen Kaisha, more commonly known as NYK Line, has agreed a deal to install TracPhone V7 mini-VSAT systems from KVH aboard its containerships.

The service, which operates over 60cm antennas, will be provided by KVH's partner in Japan, SKY Perfect JSAT, under the OceanBB brand name.

This is a second recent contract win for KVH with a major Japanese carrier, with MOL LNG Transport Co, a subsidiary of Mitsui O.S.K. Lines, confirming a deal to implement mini-VSAT on three of its LNG tankers in late 2011, following the completion of a trial.

NYK's fleet includes containerships, Pure Car Truck Carriers (PCTCs), dry bulk carriers, crude oil tankers and LNG tankers, more than 100 of which will be equipped with the broadband service to support NYK's IBIS (Innovative Bunker and Idle-time Saving) project with real-time communications between ships and staff on shore.

"NYK is an industry leader that is constantly innovating and improving its shipping and logistics operations with the aim of optimising safety, economy, and protection of the environment," said Brent Bruun, KVH's senior vice president of global sales and business development.

"Their industry-leading IBIS project, which helps improve the operation of their ships and reduce CO2 emissions, requires delivering real-time weather and sea current forecasts to the ship and automatically sending ship operation data back to shore for ongoing analysis."

"The improved connectivity provided by our mini-VSAT Broadband service will allow for greater information sharing and collaboration between NYK employees on vessels and shore, increasing both safety and efficiency. It also provides affordable communications for crew members to communicate with their families or use the internet."

NYK Line will implement KVH systems on over 100 ships

Orolia acquires Boatracs

www.orolia.com
www.boatracs.com

Orolia, a group specialising in positioning, navigation and GPS timing equipment and systems, has announced the acquisition of maritime communications provider Boatracs.

Orolia says that the Boatracs acquisition is part of its strategy to move up the value chain by offering more complete business solutions to its customers.

These solutions consist of a hardware platform, a communications system for wireless data transmission and reception, and software which provides a web-based user interface to facilitate effective data communications between ship and shore.

The company intends to operate using a business model that will see initial hardware sales followed by recurring airtime revenue and SaaS (Software as a Service).

"This acquisition not only expands our product offering, but also strengthens our presence in the North American fishing and workboat market segments," said Jean-Yves Courtois, president and CEO of Orolia.

"It has the added benefit of bringing us critical size in the application software domain, human-machine interfaces and client-server architectures that are crucial for the development of M2M solutions and services for our customers operating in challenging environments."

"Strategically, we now have in Orolia a strong software centre of excellence and solutions competency on which to build more valuable business contributions for all our customers."

MTN and Harris CapRock agree Epic deals

www.intelsatepic.com

Harris CapRock Communications and MTN have both announced deals to utilise Intelsat's newly announced EpicNG network to provide VSAT services after the new satellites are launched.

The Intelsat EpicNG platform, initially comprised of Intelsat 29e and Intelsat 33e, will utilise multiple frequency bands, wide beams, spot beams and frequency reuse technology, and will add to Intelsat's existing satellite fleet and IntelsatONE terrestrial network.

The two EpicNG satellites are scheduled for launch in 2015 and 2016 respectively.

Harris CapRock has signed a multi-year agreement for VSAT capacity on the new network to expand its service offerings and offer new applications to its global customers across the energy, maritime and government markets.

The company already utilises Ku-band capacity on multiple satellites on the Intelsat fleet, which will expand to Intelsat 29e when it is launched. The EpicNG satellite platform will provide Harris CapRock with more than one gigabit of throughput.

MTN has also signed a long-term agreement with Intelsat for capacity on Intelsat 29e, to provide more than 2 gigabits of capacity to its cruise and yacht customers in the Caribbean.

MTN will initially use capacity on Intelsat's Ku-band infrastructure before partially transitioning to the Intelsat EpicNG platform once Intelsat 29e is launched in 2015.

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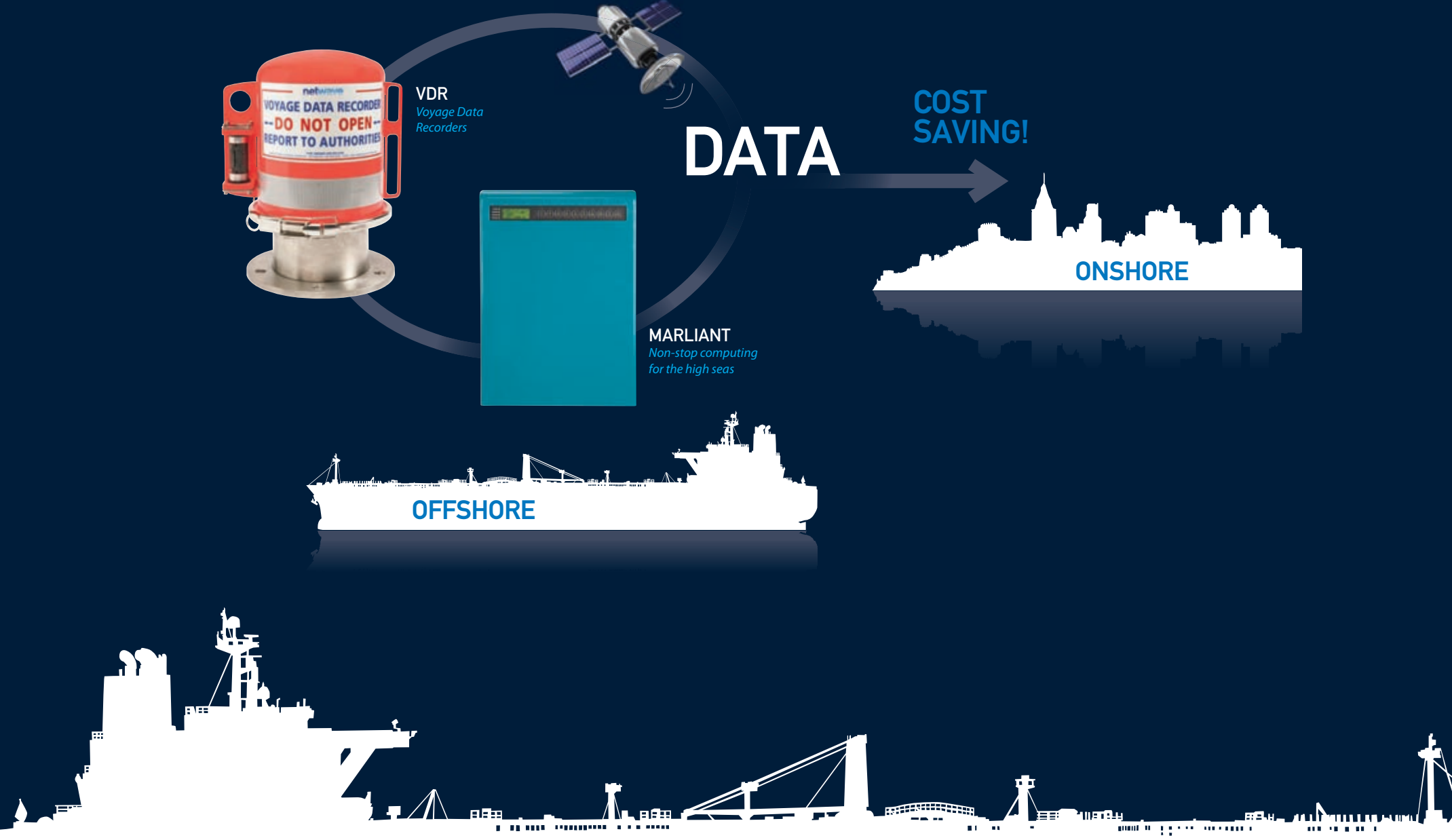

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Broadband – a vehicle for IT improvement

Peter Döhle Schiffahrts-KG has is currently in the process of performing a radical overhaul of its communications infrastructure, implementing a variety of different satellite communication solutions with the aim of enhancing vessel operations and competitiveness. Marcel Favretto, Peter Döhle, spoke to *Digital Ship* about the advantages of broadband at sea

In today's strained economic climate and an increasingly challenging maritime market, shipping companies need to be ready to adapt in order to remain competitive. Direct, speedy communication is one of the areas that is rapidly changing, as companies try to satisfy charterers', ports' and shipping company agencies' requests for a growing amount of information.

Operating in such an environment, Hamburg-based shipping group Peter Döhle Schiffahrts-KG, which, with 450 vessels under operation, is one of the largest ship owners in Germany, decided that it needed to embark on a modernisation of its satellite communication solution.

Over the course of the project, the shipping company has expanded the use of broadband connectivity across its fleet, equipping a large number of vessels with Inmarsat FleetBroadband, Ku-band VSAT and C-band VSAT respectively.

Now, Peter Döhle is drawing its conclusions on the challenges, as well as the benefits, of broadband implementation.

Increased need for broadband

The major driver for Peter Döhle in its decision to embark on a broadband implementation project has been to open up additional opportunities on the operational side, while also offering improved services to its crew.

In order to illustrate all facets of the decision-making process, Marcel Favretto, IT and communication coordinator fleet, Peter Döhle, describes the situation prior to the implementation of broadband, a condition which still persists on a number of ships since Peter Döhle has not implemented the broadband solution on all its vessels so far.

Before the shipping company embarked on the rollout of FleetBroadband, Ku- and C-band on large parts of its fleet, Inmarsat F77 or older systems, such as Fleet 33, were used on Peter Döhle vessels. Typically, describes Mr Favretto, this setup provided internet access only to a single computer on board, the 'communication PC' located on the bridge.

"This outdated communication solution used to, and still does, pose a number of challenges, not only for the master and the crew on board, but also for the IT support in the office," he explains.

Since older satellite communication systems generally connect to the internet via dial-up as opposed to using an IP connection, Mr Favretto notes that remote support from shore is impossible and the maintenance of Windows and other software, such as antivirus updates, is time-consuming and difficult.

For maintenance and updating purposes, CDs, and sometimes even IT support staff, need to be sent out to the vessels.

"This maintenance process takes a very long time," says Mr Favretto, "and makes it extremely difficult to constantly keep all the systems up-to-date."

"Sometimes, it can take up to a month until the update CD reaches its destination vessel. Once it has reached the ship safely, the master still needs to insert the CD into the computer. Often, it is this last step that turns out to be problematic, because instructions are missing or incomplete."

"In addition, there is always the risk that the captain makes a mistake due to inexperience or because he is preoccupied with his actual, ship management, workload."

With its new systems, Peter Döhle is able to communicate instantly with its vessels at sea

Mr Favretto explains that Peter Döhle used to deploy stand-alone PCs, not connected through any network infrastructure, on its vessels – however, this created certain disadvantages.

USB sticks were used in order to exchange data between computers on board and this method of data transfer, while already time-consuming and cumbersome, induces further problems and exposed the shipping company to the risk of distributing viruses between its various users.

"Often, there is only one USB stick that is used on board. If this is contaminated with a virus, it will eventually spread and infect all other computers," says Mr Favretto.

"This is a dangerous threat for a shipping company, especially because the solution of such a problem is so difficult and often requires IT staff to fly out to the respective vessels, which is both time and cost intensive."

A further disadvantage of the older systems was that every internet connection had to be established on request.

A Peter Döhle vessel would, according to its standard setting, connect to the internet up to three or four times a day to allow for e-mail communication. Instant exchange of information was impossible under such a setup and the shipping company found the communication experience to be inefficient.

"We often had to wait very long until we got an answer from the vessel," Mr Favretto recalls.

"Since instant communication is often required in order to solve a problem, we often had to request a higher frequency of internet connections, which in turn led to increased communication costs."

The demand for satellite communication in the shipping industry, both with regards to speed and volume, has significantly increased in recent years. This has, as Mr Favretto points out, greatly affected Peter Döhle's operations.

Through the evolution in technology, stakeholders in the shipping industry are getting used to more and more information being readily available. This, in turn, leads to an ever increasing demand for more data.

"Charterers, ports and agencies," says Mr Favretto, "want more and more information from us. In order to stay attractive and competitive, we need to make sure that we are in the position to satisfy these demands."

Mr Favretto expects that increasing amounts of data will also need to be transferred from ship to shore in order to satisfy internal requests for information, such as engine reports, information from the voyage data recorder, or other updates. In addition, he envisages the number of systems requiring online access and the number of available applications to rise substantially.

"We expect the e-mail communication and data transfer to increase exponentially due to the growing demands of all shipping industry stakeholders," says Mr Favretto.

"With our new broadband communication solutions in place, we will be ready to meet this challenge."

A further incentive for Peter Döhle to overhaul its communication solution was to stay attractive as an employer in an increasingly difficult staffing environment.

The shipping company recognised that a complete modernisation of its crew communication system was necessary in order to provide its seagoing staff with more attractive options in terms of staying in touch with life on shore.

"The way our system was working," Mr Favretto says "there was simply no privacy for the crew."

"If a seafarer wanted to check his e-mail, he needed to go onto the bridge where the communication PC is located. Obviously, there is zero privacy. Under the new broadband solution, the situation has changed for our crew and we feel this is much appreciated."

The communication options available to the crew on Peter Döhle vessels vary from ship to ship according to the deployed satellite communication solution.

On the vessels that utilise FleetBroadband, the German shipping company offers advanced e-mail communication to its crew. However, seagoing staff on the vessels that use Ku- and C-band can avail themselves of a much wider range of communication possibilities via the internet, which allows not only for surfing but also the use of Skype.

Crews pay €0.10 per megabyte of traffic on the internet. In order to ensure that the new communication possibilities do not interfere with the ship network, and to provide for optimal connectivity for its operations, Peter Döhle has implemented a system which prioritises ship communication before crew communication.

Centralised network management

Peter Döhle sees the future of its communication structure in the implementation of LAN systems. Already, the shipping company has introduced FleetBroadband on the majority of its vessels. In addition, a small number of vessels have been equipped with Ku- or C-band.

The implementation of FleetBroadband, Ku- and C-band has enabled Peter Döhle to deploy centralised network management, which further simplifies administration, maintenance and support of the IT.

"The centralisation of the administration and maintenance," says Mr Favretto, "greatly reduces the IT related workload of our captains. The captain and crew can do their job and manage the vessel instead of trying to be IT experts."

Mr Favretto notes that broadband enabled centralised network management is extremely helpful in mitigating security concerns with regards to viruses, and improves the safety of vessel networks.

"The virus," he says, "is the fastest

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The IT department on shore can directly access computers on the ship, and offer remote support

updated system in the world. Every time a new virus comes out, we have to find a solution and make sure we protect our computers."

"This process is greatly sped up through the introduction of broadband on our vessels and the creation of a centralised network management. Through the implementation of this new communication solution, the security of our computers has been tremendously improved."

"Today, all our devices, both in the office and on board our vessels are up-to-date at any given point."

An additional advantage of the broadband connectivity, says Mr Favretto, is the always on connection.

"Our vessels and now permanently connected to the internet," he says.

"This way, we do not have to schedule specific connection times for the vessels. Also, there is no need to ration and monitor the data volumes as we did under the old solution and our communication costs have been decreased."

Remote access

One of the key drivers for Peter Döhle in its decision to implement a broadband solution has been to supply its vessels with remote support through the IT department.

"Without the availability of remote support," says Mr Favretto, "the communication between the captain and the IT support in the office has typically been very time-consuming and prone to misunderstandings and difficulties."

The shipping company uses Microsoft RDP (Remote Desktop Protocol) to connect to the vessel servers.

"This solution," explains Mr Favretto, "has turned out to be advantageous for us as we can log on to the computers on board without anybody needed on the other side."

A challenge for the shipping company was keeping the virus and malware control up to scratch, for which the shipping company has implemented firewalls on both sides.

Peter Döhle's broadband-enabled vessels are connected to the shore office via a VPN tunnel, which has helped the company to add additional remote access capabilities to its IT infrastructure and, in addition, bolstered its security.

"This secure end-to-end, always-on internet connection setup guarantees us that no one from outside can access our computers," says Mr Favretto.

The availability of remote connection to the vessels has resulted in a variety of benefits. As an example, Mr Favretto describes a recent troubleshooting scenario, where he delivered IT support to the captain of a Peter Döhle vessel over the phone, whose Excel software had stopped functioning. This scenario, he says, is typical for IT support without a remote connection.

The captain had called the IT support in the office. The IT specialist asked what the last running processes had been, and found out that Sophos, Peter Döhle's antivirus program, had been updated prior to the error.

Since this antivirus program also controls applications and prevents the installation of new software, its update was likely to be the cause, and unblocking Excel in the antivirus program was most likely the appropriate solution.

"Instructing the captain over the phone," explains Mr Favretto, "is typically a very difficult process and causes the IT department a lot of problems."

"In the majority of cases, the screen that the captain sees is not 100 per cent identical with what I see in the office. Therefore, the captain has to be 'my eyes'; however, since he is no IT expert, it is mostly difficult to exactly describe what he sees on the screen."

In this case, telephone communication did not lead to a satisfactory solution to the problem and Mr Favretto asked the captain to send him a screenshot via e-mail. Once he had assessed the problem he sent an e-mail to the vessel with short instructions on how to solve it – in this case, how to install the antivirus program properly.

"Implementing my written or oral instructions," Mr Favretto points out, "often imposes a near insurmountable challenge to the crew, who is preoccupied with sailing the vessel, in which case even more costly telephone and e-mail communication between the vessel and the office is required."

Mr Favretto describes the entire communication process, including numerous phone calls, four to five e-mail exchanges, a new installation of the antivirus program and a reboot, which was necessary to solve the error, as having taken an entire day.

The same troubleshooting scenario handled with remote support, he explains, would have been quicker, cheaper and less frustrating for all participants in comparison.

"With remote support I log onto the computer on board once the captain has notified me of an error message," he says.

"I can easily detect the cause, without intervention from the captain being necessary, and solve the problem remotely. At the end, I notify the captain via e-mail that the problem has been solved."

In essence, troubleshooting, without remote support is time-consuming, both for the captain and the IT department; costly, as sending back and forth screenshots, instructions and manuals requires a high amount of data to be transferred; and ultimately often frustrating for all parties, because the support is not as efficient as it could be.

Through its broadband implementation and the use of remote support, Peter Döhle was able to reduce troubleshooting that had taken up to one day to a mere half an hour, depending on the quality of the internet connection to the vessel.

Centralised updates

A further advantage of remote connection to the vessels is a centralisation of software management, maintenance and updates through the IT support in the office.

In order to illustrate the simplification of software maintenance gained through the use of remote support, Mr Favretto compares the installation of software with and without broadband.

The installation of software on vessels that have no broadband connectivity can take up to four weeks.

To begin with, a CD has to be sent out to the vessel. The captain is typically busy running the ship, or he might lack the experience and knowledge necessary to install the software and thus cause a further delay.

In other cases, explains Mr Favretto, the captain may be reluctant to install a new version of the system that was running well, and only install the new software on some, but not all, of the computers.

"Software maintenance in the old-fashioned style," he says, "can be extremely time-consuming."

"In addition, we expose our equipment to often inexperienced handling, thus increasing the risk of badly carried out installations, faulty software and security gaps."

Conversely, if the IT department can avail itself of remote support, installation of new software can be carried out instantly, without delay and without the risk of disturbing the system.

When new software is installed or existing software is updated, the IT support in the office notifies the captain via e-mail of the impending process, and sends another e-mail once the update has been completed.

"We know what to install, where and how to install it, and we install it without problems," says Mr Favretto.

In order to do this, shore based support has to log on to the computer on the vessel and remove the admin rights from the normal user (under certain circumstances only the captain receives the admin password from the IT department).

The advantages of centralised remote connection supported software management are significant.

Besides the substantial saving of time, the company does not have to provide IT-inexperienced crews with administrator rights in order to make changes to the software. This way, the margin for human error and the likelihood of faulty installations or the introduction of a virus is substantially reduced.

Furthermore, Peter Döhle does not run the risk that illegal software is installed on company equipment.

With approximately 10 MB per connection from the office to the vessel, depending on the amount of time spent solving the task at hand, Mr Favretto judges the operating expense of remote support to be reasonable. With regards to overall support costs, the remote support solution with broadband connectivity compares favourably.

Problems solved?

Peter Döhle is satisfied with the implementation of FleetBroadband, Ku- and C-Band on wide parts of its fleet, though the modernisation of its communication technology has not eliminated all of the shipping company's IT-related problems.

Mr Favretto notes that the complexity of the IT infrastructure has not decreased through the implementation of broadband, but the shipping company has experienced that the improved connectivity has caused a shift of problems away from the vessel into the office.

Whereas, under the prior solution, crew had to manage all on-board equipment, for good or for evil, this task now falls to the IT department.

"It is impossible for us to have an IT expert on board every vessel," explains Mr Favretto.

"Thus, we can choose between two ways of supporting our seagoing staff: either we send an IT specialist out to the ships, which is an effective but comparatively costly solution, or we employ broadband, which enables us to use remote support to assist our crew with all IT-related problems."

Peter Döhle is positive that the current upward trend in data traffic is likely to continue in the future.

The shipping company has found that the flat monthly rates available with Ku- and C-band VSAT provide a feasible solution that offers the flexibility to increase the data transfer amount. This might become necessary in the near future, for example, in order to allow for additional remote management and to provide access to an ever-growing number of applications on board.

If, and how quickly, the German shipping company and its competitors will be able to react to technological innovations and market requirements remains to be seen. It can, however, be anticipated that increasing data transfer rates will be required in the near or midterm future, and that companies wanting to stay competitive will have to find a way to satisfy these demands. DS

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Managing a major maritime IT infrastructure project

Managing changes in any organisation's IT environment is often a difficult process, which can be made even more challenging when multiple changes are made simultaneously. Shipping company Vroon recently took on an ambitious project of this type, with some notable success – Rob Frenks, Vroon, gave *Digital Ship* some advice on managing a major IT upgrade project

Any maritime IT manager will tell you that one of the most awkward aspects of the job is introducing new systems into an existing infrastructure. No matter how well you are prepared, there will almost inevitably be teething problems as people get used to the changes in their way of working, and different integrated technologies begin to operate in sync.

Dutch shipping company Vroon decided, in late 2009, to face these challenges and introduce some major changes in its IT infrastructure. However, the project that the company embarked on did not just involve a change in software or replacement of the satcom equipment – Vroon decided to introduce a completely new standardised shipboard infrastructure, incorporating new networks, new software, and new satellite communications.

To make this even more difficult the company would roll this project out across a diversified fleet of approximately 150 vessels, in sectors including livestock, dry cargo, tankers, containers, car carriers and offshore (platform supply, AHTS, ERRV, DSV and Windmill installation), served by 3,800 seafarers and 300 office staff on shore – changing the satcom, software and networks all at the same time.

So what drives a company to take on an IT project of this magnitude and complexity? As Rob Frenks, Group ICT manager at Vroon, explains, the basic goals were simple – to remove the IT burden from the crew and increase operational efficiency.

As Mr Frenks describes it, the company had become frustrated by the lack of reliability it had experienced with its IT set-up, and had to find a solution that would keep its onboard technology operational for sustained periods.

"Previously we used to get lots and lots of virus infections, primarily through USB sticks," he told us.

"It wasn't just virus infections, when we would go onboard we also noticed the operating systems would be in Russian, or in any other language you can imagine. It was just something we couldn't manage, it wasn't sustainable."

"At the time I joined Vroon in 2009, there were three people in my team supporting the ICT infrastructure on about 40 vessels. They did nothing else but just flying around the world going to the vessels and removing all the viruses from the computers. By the time they were back on the plane the computers were full of viruses again and would have stopped working. I needed to recruit quite a large team if we were to continue like this for 150 vessels, which is something I didn't want to do. "

Mr Frenks was looking to support the ships remotely, but notes that since they weren't installed with VSAT, instead using a mixture of L-band systems, he didn't see remote support as a possibility.

"The only way you could do it was by physically going to a vessel," he said.

"Obviously the crew was very unhappy. But they were also very creative, they would try to fix things themselves – take a screwdriver and open two or three servers that were partly working and combine them together."

"Sometimes it would work, but most of the time they made it even worse than it was before. So we needed a solution."

The support issue was exacerbated by the fact that Vroon had grown substantially through the completion of a number of acquisitions, adding ships but also inheriting the IT networks already in place.

"When you do an acquisition you basically get all of the legacy systems on the vessels, so we had a lot of different standards across the fleet. It was very difficult to manage," said Mr Frenks.

"Our company also had new requirements, they wanted to implement maintenance and procurement systems, watchkeeper systems, crewing systems, and so forth on the vessels. In order to do that you need to have a stable IT network onboard."

As mentioned, Vroon was using a mixture of satellite communications systems before it began this IT project, which again were added to through acquisitions until the company was using a range of services from Inmarsat Mini-M, through Fleet 77, FleetBroadband, and a couple of VSAT installations.

"We had them all. We had more than 10 solution providers, so we had no consistency and we had to talk to many different people to get problems solved," said Mr Frenks.

"The cost was extremely high, and was very unpredictable. And basically all we were getting was some e-mail, and some AMOS replication. We were paying, on average, around $30 to $40 per MB, it was just outrageous and we weren't even getting a good service."

"We had a couple of VSATs, but they weren't managed, so basically we had Masters walking around the vessels unplugging the wireless in order to get his e-mail through. Again, not a very good professional solution."

Aside from these problems on the vessels, on shore demands from the business management were increasing, in a number of different areas – something that would inevitably require an increase in satcom traffic.

"The company wanted to further integrate the networks on the vessels and in the office as there's a lot of communication going on between the superintendents, operations and the quality department and the people onboard," said Mr Frenks.

Vroon was faced with the task of rolling out a new infrastructure to 150 vessels

"Condition based monitoring was also a topic discussed, so we could start monitoring the performance of the vessel ashore. And a big topic for Vroon, and for everybody I guess, is crew welfare, providing them with e-mail, telephony and also internet, in order to recruit and retain the people we want."

"Those were basically the reasons why we had to improve."

Planning and preparation

Running an IT project of this magnitude takes careful planning and preparation, and Vroon spent a significant amount of time building a strategy that would help the process to move as smoothly as possible towards its goals.

One of the first major decisions was to focus on the IT network design, as the foundation of the whole infrastructure to which the other parts of the project would then be added.

"The approach we took was that, first of all, we made the big decision that we would stop doing this ourselves," said Mr Frenks.

"There must be companies out there that have done this and have a proven and tested solution out there. We can try it ourselves, but we have done it in the past and haven't been successful. With 150 vessels and a company that keeps on growing it's just not sustainable."

This led Vroon to begin a search of the maritime IT supplier market, starting at the beginning of 2010, to find a partner that could assist in implementing its new infrastructure.

"The first step was to define what we need – before you choose the market you need to define what you really need," said Mr Frenks.

"Obviously this is not an IT initiative, it's a business initiative that IT has facilitated – it pulls the entire business together, the operations, the technical management, the crewing department."

"We created a high level solution architecture, which we felt was appropriate to be implemented."

These early stages of the process took longer than might have been expected, and Mr Frenks warns that it is easy to underestimate the amount of time you need to be able to start work on a project like this.

"In total it took us more than a year just to define what we want, to get the design, to get the requirements and to move into a pilot phase where we could actually start the roll-out. This is not a one or two months' job. Just to get all of the requirements defined and agreed took us about two months," he said.

"Then we moved into a very comprehensive tendering process. We invited 25 companies who could participate in this process. We sent out a questionnaire and they provided us answers, and then we did some weighted scoring. We moved from a long list to a short list, and we invited those companies to our offices where they did some vendor presentations. We looked at

their solutions, we went to their companies to see the solutions and we visited some of their customers as reference checks."

"Finally, after we arrived at the decision we went through a fairly lengthy contract negotiation, because this is really a big deal for us. That took us about four to six months, the entire process of tendering, from a long list to a short list, to the decisions."

The list of criteria that Vroon included in its tender process was based on a number of key core deliverables.

"Obviously it needs to be cost effective," explained Mr Frenks.

"We wanted to have one single standard for the entire fleet, irrespective of the market they operate in. We wanted to have a short implementation timeframe, you can't really claim the vessel for a week to implement an IT network so we needed to do it during a crew change or during drydock or during standard maintenance."

"The big thing for us was to reduce the travel cost for IT – we didn't want to go to the vessels anymore to just fix things, we want to do it remotely. And we wanted to move to a single service provider, as opposed to managing many different providers."

One of the ways that Vroon aimed to reduce IT travel expenses was by creating a closed system, secure from outside access.

"In the old days we had system administrator passwords floating around, but if people are a bit too creative they can do more harm than good," said Mr Frenks.

"We decided to remove all that access, and really tried to separate all the data networks – for the business, for the crew, for the customers, and so on. And it was very important that it was easy to use. We don't have a lot of IT skills onboard, and the crew needs to be able to reinstall the system if needs be without any IT intervention."

"To us, this all sounded like a very simple list of objectives, but it was actually hard to find a company that could fulfil them."

Out of the 25 companies examined during the tender process the one that did fulfil them to Vroon's satisfaction was Norwegian provider Palantir, with its KeepUp@Sea system.

"At that time their system was running on about 300 vessels, and we visited some customers and the feedback was really good. So we decided to pilot it," said Mr Frenks.

"One of the key differentiators is that the entire build process, for the server and the installation on board, is fully automated. That means there isn't a lot of room for errors, which meant a trouble free roll-out."

"It was also very important that we could apply software patches, and there are quite a few software patches, or antivirus remotely. In the old days we had DVDs and CDs flying around the world, hoping that sometime they would be applied but most of the time they would just be in a drawer somewhere. Then you would end up with software that was out of date or antivirus that wasn't up to date."

Another key selling point for Vroon was that the Palantir system would also help the company to provide remote support to the vessels, with or without VSAT.

"It's done through scripting, sent through whatever communications you have, and installations are done automatically onboard and monitored from shore," said Mr Frenks.

"They have a solution that requires limited IT skills for the crew. In the event that they do mess up something, a single press of F12 and you can have the PC rebuilt automatically with the latest software downloaded from the server. It doesn't need any IT intervention whatsoever."

Satcom choice

Vroon's approach to choosing its new satcom system followed a similar process to that used for the IT network partner selection, as Mr Frenks explains.

"Here we also had 20 to 25 companies by the time we concluded the tender, and KVH was the only company that we came across that designs, manufactures, owns and operates the end solution," he told us.

"A lot of the other solution providers have only part of the chain, and that had been a problem with our previous systems, there would be a lot of finger pointing between the service provider and someone else in the chain to get problems fixed."

"The KVH V7, which is the smaller dome, is used for regional business, and we knew that the V11 was coming, though we were under a non-disclosure agreement at the time back in 2010, which was recently announced and combines Ku- and C-band. We're going to implement that for our deep sea fleet."

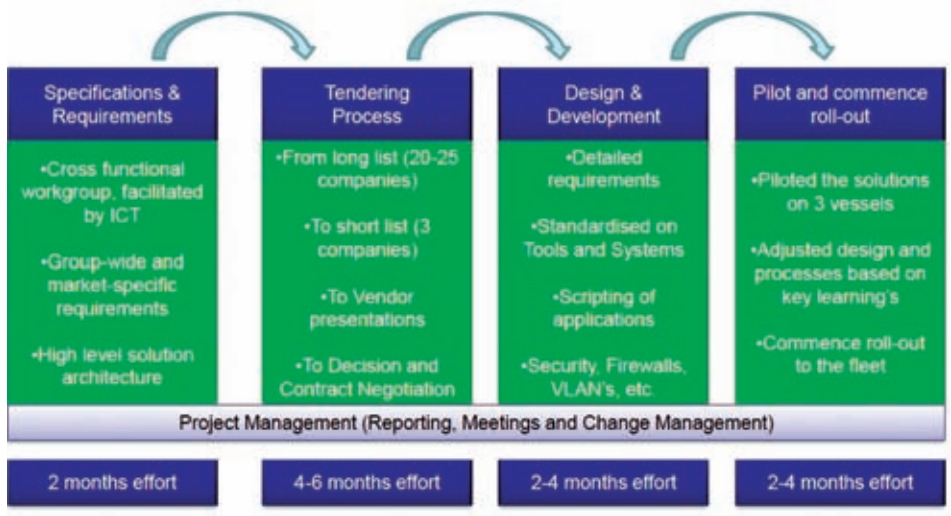
"Recently we also decided on Iridium Pilot as a backup in the unlikely event that the VSAT doesn't work. We also decided to use the CommBox for all vessels."

Implementing new services

Having decided on its new partners for the IT infrastructure project, the company moved on to a design and development phase, where all of the Vroon-specific requirements were incorporated into the solutions and the standard infrastructure was created.

"It was also very important at that time that we took the opportunity to standardise the tools being used onboard – with 150 vessels we had many different tools, most of them more or less doing the same thing," said Mr Frenks.

"So we picked the best ones and decided to have one tool for the entire fleet, for each type of vessel, depending on its purpose. That was a big thing to do, it took a lot of dialogue and convincing people, because everybody thinks they have the best tool."



Thorough planning and preparation was required to take on a project of this magnitude

"We also found that they have a very strong focus on quality assurance, but also keep flexibility, they maintain a good balance. The installation of the dome is done in one day, traditionally with VSAT it has been a couple of days. The KVH system is a very small one so you don't need a crane for installation. The below deck equipment is pre-configured and shipped to the vessel, and it's just plugged in."

Mr Frenks was also impressed with the CommBox communications management system offered with the service since KVH's acquisition of Norwegian company Virtek in 2010, a deal agreed during the time that Vroon was conducting its project.

"This is basically the heart of the system, where the management of all the data is being done. That was another selling point for us," he said.

Vroon's agreement with KVH will see the shipping company install different systems depending on the type of business its vessels are engaged in.

"Since we have a very diversified business, we have offshore which is regional but also the deep sea where we are trading globally, we decided on using a company that could provide both solutions," said Mr Frenks.

"We put a lot of thought into security – firewalls, VLANs to separate traffic on the network, and so on – before we could actually start on the pilot, which we did on three vessels. We did that for a couple of months, made some adjustments, and then we basically decided to go ahead with the roll out."

From start to finish, this part of the process involved more than a year's effort, Mr Frenks notes, and required a significant focus on project management, as well as very close cooperation with the supplier.

Vroon also decided to go for a fully managed service, from both Palantir and KVH, to manage installation of the systems and reduce the burden on its own staff as far as possible.

"Obviously Vroon remains accountable but the main work is being done by KVH and Palantir," said Mr Frenks.

"They manage the logistics for us, order the hardware on our behalf, configure the hardware, ship it and forward it directly to the vessel. They make sure it's implemented onboard and also make sure all the maintenance and on-going support is being done."

Hardware and software requirements for every ship were standardised, with a single architecture to be implemented on every vessel.

"We decided on a Windows-based client-server architecture, and locked-down USB use, except for the Master's account. He's accountable, and he signs a fair use policy signifying that he is accountable to make sure the system continues to operate as it should," said Mr Frenks.

"The standard software included, amongst others, AMOS Maintenance and Procurement, Watchkeeper for the rest and working hours, SPOS (for weather), and so on. We decided on this, then it's scripted by Palantir and then just rolled out to the system, and we can remotely monitor which vessel it has been implemented on."

"We also have MS Office, we will move to 2010 at the end of the year, image viewers, and so on. We really standardised on all the tools and systems."

On the communications side the company also instigated standard practices and procedures, to more closely manage how communications on the ship would be permitted.

"We established a voice over IP system between the vessel and the office, so we have basically free phone calls, and it's integrated to include access to the Corporate Directory. This is quite handy, that you have all your vessels and telephone numbers in one place," said Mr Frenks.

"We restricted internet access on the business network with white lists. They're not able to Google or Facebook, or whatever, on the business network. They have the crew network for that, where they have free individual e-mail, with web-based access both onboard and ashore. We are using VLANs, it's a seamless integrated system for us."

Progress

Since embarking on this massive project at the end of 2009 Vroon has continued to make steady progress in its mission to standardise IT on all of its ships, and by the end of 2012 plans to have the Palantir system implemented on 84 vessels (as Palantir was the first to begin to be rolled out), with KVH on 67 and AMOS software on 70.

"In five years' time we expect, not to be starting all over again, but to be recycling the hardware onboard the vessel," said Mr Frenks.

"That's what we believe the lifecycle will be for the equipment."

Experiences with both the Palantir and KVH systems have proven to be positive, with the benefits of the new systems outweighing the inevitable teething problems caused during the changeover.

"The Palantir system has proven to be very cost effective, we are using it all the time to send patches for software and new software to the vessels, without any need to travel, we can do it in a very short time," said Mr Frenks.

"The antivirus works as well, we've been running for two years and only had one virus, and that was automatically

cleaned. We've also only had one occasion where we had to physically travel to a vessel, and it wasn't even a Palantir issue, it was a database issue."

"(With KVH) we had some teething issues, but there has been continuous improvement, and we keep a dialogue open with them. But just in terms of the satellite communications, we were spending in the area of $2.5 million per year just on e-mail and some AMOS replication. I'm not going to tell you what we're spending today, but I think we made a pretty good deal and, on a like for like basis, we're saving in that area, big time."

Vroon crews in particular have been happy with the new capabilities of the system, something which was an important factor for the company in pursuing this project.

"The feedback we get from the crew is that it's very secure, it's very reliable, there's good performance on the network and good uptime," said Mr Frenks.

"We did a crew survey on it, it's better to ask the crew about it than a superintendent who's not working with the system day in day out."

In the time since Vroon conducted its crew survey those serving onboard its ships have had additional reason to be pleased with the new infrastructure, as the company has changed its crew welfare policy based on the feedback from the initial roll-outs and requests from its seafarers to introduce what Mr Frenks describes as "free, but managed" internet access, to add to the existing free e-mail service.

"The market for the use of the internet onboard by seafarers is changing quickly and the provision of free or low cost internet access is becoming a necessary requirement to meet the welfare needs of seafarers in many market segments, and hence also a necessary tool for recruitment and retention," he said.

"This will be 'Managed Free Internet', as unlimited free internet is not believed to be sensible as it causes welfare issues and introduces network performance issues."

Testing and roll-out of the new crew internet policy is expected to commence in September 2012, a move which will also see Vroon move from its existing metered plan on the KVH services to a fixed data plan, to reflect the increase in data traffic.

Lessons learned

Having come so far in such a complex process, Mr Frenks notes that the company has learned a number of lessons on how to manage an IT infrastructure project of this magnitude that he believes are essential in ensuring things run as smoothly as possible.

"It's a business initiative, not an IT initiative, so engage the business and operational levels of the respective organisations early on in the process. Ensure that the people who have to actually 'do the jobs' are fully on-board. And manage expectations – maritime broadband is not the same as at home," he said.

"Assign qualified, dedicated resources, specifically during the RFP, Design and Pilot phase. Our project manager basically worked on this full time, for one and a half years."

'With a good process and with discipline you can really reduce the cost'
– Rob Frenks, Vroon

"It is a long-term cooperation with the partners you choose, therefore get to know the people and each other's businesses, organisations and people. Be open and clear about challenges and difficulties – it is better to be aware and understand them."

One area of the project that Mr Frenks might change if it was to be repeated would be create even more detailed specifications for the processes that will be followed for the roll out, to make sure they are repeatable.

"We made a mistake that we kind of developed the processes as we went along, we should have done that prior to the pilot phase. That's why the initial roll outs took longer than we expected. That's a clear recommendation for anyone starting this type of initiative, make sure the process is defined – who's responsible, who's accountable," he said.

"Apply proper project management and discipline during the implementation process. For example, for the pilot vessel the installation process of the IT network on board was two weeks. That would be very costly to do 150 times. Now we can do it in one long day. With a good process and with discipline you can really reduce the cost."

"On the technology side, we took the decision to consolidate on the tools and systems, as opposed to keeping everything the way it was. Preparation is more than half the work, it's maybe 70 or 80 per cent – for example, make sure all of your cabling connections are well tested, so when Palantir or KVH comes onboard it's just a matter of plugging it in and implementing it. And the locked down systems – there was a lot of resistance, I can tell you, but it does work. From time to time the discussion pops up again, but now we don't have to say 'no', the fleet managers say 'absolutely not'."

Following these recommendations could help any shipping company IT manager thinking of embarking on a similar project of their own to realise similar successes to those already experienced by Vroon – successes which, by most people's estimation, bear the hallmarks of a successful IT project. DS

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Boosting bandwidth with 3G and 4G

Cruise and ferry operator Color Line is currently testing a new communications system on the vessel Color Magic, which aims to integrate terrestrial 3G and 4G coverage with its satcoms and produce vastly improved speeds without inflating costs. *Digital Ship* spoke to Color Line's Jo Eirik Østmo about the project

In the maritime industry, the demand for extra bandwidth is growing at an ever increasing rate. The communications systems available to ships at sea have evolved rapidly since the turn of the century – compare Inmarsat's launch of Fleet 77 in 2002, with speeds of 128 kbps, with the announcement of its Global Xpress Ka-band service a decade later, and its potential 50 Mbps offering – but providers can still struggle to meet the demand of those serving on modern vessels.

For cruise ships, the demand is even more acute. In addition to the comparable requirements to the merchant fleet when it comes to ship operation, a passenger vessel has the added difficulty of running a floating hotel, and meeting the needs of shoppers and conference delegates who care little for the limitations of satcom – they expect systems to work, regardless of their location.

Norwegian cruise and ferry operator Color Line is well aware of this demand from its customers, and is continuously looking at ways of improving and increasing its communications capabilities to improve its services and keep up with the competition it feels from businesses ashore.

As part of this process the company is currently testing a new system from Marlink called CoastalRoam, which aims to blend the current VSAT communications available on Color Line ferries with 3G and 4G systems available on shore and increase the data capabilities of the ships.

This multi-carrier system uses 3G services based onshore in Norway, Denmark and Germany, the ICE wireless service available off the coast of Norway, Wi-Fi in Oslo and Kiel, as well as 4G services from Netcom in the Oslo area. 4G services are also expected to be added in Kiel in Germany in the future.

Color Line is currently testing CoastalRoam on the Color Magic, the largest ship in its fleet along with sister ship the Color Fantasy, with the aim of boosting bandwidth speeds and providing an onboard connectivity experience that can help it to keep up with the onshore competition.

For Color Line, staying competitive means being more efficient and more effective in its use of technology than comparable businesses on shore, as Jo Eirik Østmo, CIO at Color Line, explains.

"Color Magic and Color Fantasy, the two biggest vessels, are actually some of the biggest hotels in the country (in Norway)," he told us.

"They have a big retail department onboard, they have the cruise concept with fine dining and so on, and also transport of cargo and cars. It's a rather complex operation, it's not that big in each segment but together it's rather complex."

"We aren't the biggest retailer, and in retail it's important to be big, so we have to be more efficient and better in distributing our products than many others."

Mr Østmo has been with Color Line for approximately two and a half years, having previously worked with a group called C G Holding in Norway, a company mostly involved with retail but also including some shipping business such as the Seabourn Cruise Line (which has since been sold to Carnival) and Seadream Yacht Club (today owned by the entrepreneur Atle Brynestad).

As such, he is well placed to recognise the differences between onshore technology networks in these sectors, and how maritime equivalents compare, particularly when it comes to communications systems.

"Because of the limited capacity we have on satellite it is more difficult, we have to design our application platforms to take into consideration that we have this limited capacity," said Mr Østmo.

"For example, we have to have Exchange servers on each vessel, and we have to have back-up systems on each vessel. We have to continuously transport information backwards and forwards over the satellite, but we are trying to minimise that. When we go into the harbour we link it up to our wireless network."

"We are always online, but *if* communication is lost we can still send e-mail between users on the actual vessel."

On the ships, Color Line organises its infrastructure into two separate networks, one for the passengers onboard and one for ship operations and corporate use.

"On the customer side we have mobile phones, for example, and we have an internet@sea solution that guests can surf," Mr Østmo explained.

"On the corporate side it's mostly used to transport retail data to the point of sale systems and the hotel systems. We have to sync that information all the time. E-mail, of course, is used widely between the ships and the office."

"We have a new booking system, where, if we have to change a cabin or something during the journey, you have to log into the system and connect to the office in Oslo. We have to have some online connections for the booking system."

The passenger side of things is obviously the most data hungry, and the area which Color Line is looking to improve on with its trial of the CoastalRoam system.

"Our major challenge is not the corporate side, it's more that we can give our customers the internet experience they would get in hotels," said Mr Østmo.

"At the moment the speed is not enough for our professional guests, that have conferences and so on, so we are looking at new concepts like multi-channel and better products to actually satisfy our customers."

"Marlink gives us 3.8 Mbps (on Ku-band VSAT) for our whole group of ships, we dedicate some more of the traffic to the big ships but we are in a pool of 3.8 Mbps. With the new solution Marlink's testing out they say that we can get 11 Mbps in total for the ships."

With testing of the CoastalRoam system currently being conducted on the Color Magic, *Digital Ship* paid a visit to the vessel during a voyage from Oslo to Kiel to see what kind of potential benefits it could offer to the ferry operator in expanding its communications capabilities.

Speed tests during the trip confirmed that the integration of 3G and 4G capabilities with the existing VSAT system onboard could make that 11 Mbps promise a reality – in fact, during our visit we witnessed speeds up to a peak of 40 Mbps on the network.

So, should testing prove to be successful, and Color Line decides to proceed with the introduction of an 11 Mbps-plus communications system, what kind of changes would the company introduce to its ships?

"New services will be added on the corporate side, for example video conferencing and so on. But the main focus is the customers, of course. We have good control on the corporate side, but for the guests we have to look at the competition from hotels," said Mr Østmo.

"We can't provide the same as the hotels can with cable etc, but we can provide a good experience. We have conferences for 500 or 600 persons. We have companies like Oracle doing conferences onboard, and they are pretty tough user groups. They expect to be online. "

"If we had a high capacity line we would redesign lots of what we have onboard, with more online systems and taking away the local Exchange servers and so on. We'd need some major capacity for that, much more than we have today."

The Color Magic is trialling a new communications system that will integrate terrestrial services with its existing VSAT network

CoastalRoam

The service that Marlink has introduced on the Color Magic is a recent addition to the company's communications portfolio. Proof of concept was achieved with an installation onboard the Stena Danica, a ferry travelling between Sweden and Denmark, where Marlink did beta testing.

As on the Color Magic, VSAT is the backbone of the service, given its availability in all areas during the voyage, but

the system on the Stena Danica also integrates ICE, from Norway, and 3G, from both Swedish and Danish carriers.

As Tommy Konkol Dybvad, director of cruise and ferry at Marlink, explains, even with this kind of multi-carrier set-up, corporate communications will continue to be transmitted over the VSAT, given its critical nature and the fact that Marlink can maintain control over the network in a way that is impossible with the terrestrial services.

"We run pure internet services through the carrier services (like 3G and 4G), since these are best effort services so you don't really know what's happening and the throughput you will get. It can be affected by a number of different things," he told us.

"We will maintain the systems on the ship as they are, or improve them, in combination with this. All of the ship's business critical services will go through the VSAT, because we have full control of that. On-demand and non-business critical services will be put through the best effort services."

"On the terrestrial side we considered VLAN, Wi-Fi technology, GSM, 3G, 4G, LTE and ICE here in Scandinavia, those are the main carriers we are looking into. We want to have a combination of these. You have to consider different channels and find the optimum way, and cost efficient way, of providing communication."

Mr Dybvad believes that the addition of new options beyond what satellite can offer is inevitable, particularly with demand at a level like it is on a cruise ship.

"There is L-band, like Iridium or Inmarsat FleetBroadband, but it's not really capable of running true broadband. Ku-band is what we are using onboard the Color Magic, it's our first choice, though of course you can have C-band when you're talking about global operations, especially for cruise," he said.

"In the near future that might also include Ka-band, depending on the success factor there. It has to be tested and the antennas have to be in place and the service has to be proven. THOR 7, for instance, will cover this area (where the Color Magic travels)."

"All of the new Sea Tel kits we are installing are Ka- ready. The Intellian one also, though that is not out yet, will be similar. Most of the antenna manufacturers will have their antenna ready for Ka-band. But it's still too early to talk about Ka-band, Color Line wouldn't go for Ka-band yet."

Selection of the various available services added to the VSAT connectivity onboard will automatically be managed by the CoastalRoam system, which will choose the least cost option for data traffic.

"We can have up to nine modems onboard here connected with the different carriers, with several subscriptions at the same time," Mr Dybvad explained.

"For instance, in Norway we pick up signals on both sides, port and starboard, and will use two different antennas. That will mean that we can connect to one base station on one side and another base station on the other."

"The potential for this is quite high, especially as you might be able to get 7 Mbps on a 3G GSM cell these days, so you could get 14 Mbps with the two antennas. The 4G services are quite new, but they can even go much higher. That's on a best effort basis and you're subject to a fair usage policy, and some of the GSM providers cap the usage when you reach a certain amount. But still, compared to satellite, it's a totally different ball game."

From Marlink's point of view, one of the difficulties in this is not technological but administrative, as it needs to manage subscriptions with this variety of terrestrial providers in different countries.

"Managing the subscriptions will be something that will improve, now we have to rely on subscriptions with different third parties (for terrestrial services), with the GSM carriers especially," said Mr Dybvad.

"There is also the issue of Wi-Fi interference in the harbours, when we get to Kiel, for example, we can pick up between 50 and 60 different Wi-Fi networks. The 4G in Kiel doesn't have great coverage in the areas we are travelling through at the moment, but that will develop."

Operational communications form only a small part of the vessel's traffic

Color Line aims to offer passengers an online experience that will compare with hotels on shore

"But that's what you have to do. With the competition today you have to be more clever and more focused on the needs of the shipping company to be successful. The shipowner is not asking for a satellite pipe, they want efficient communications. That's where things like content filtering, GSM integration, dynamic bandwidth and roaming between different carriers become important."

In the future Marlink is hoping to be able to smooth this process by moving to global GSM roaming, that would allow it to negotiate a deal with a single provider that would offer access at local rates across various territories.

"For the pilot projects we've done the subscriptions (to the 3G and 4G services), but for the future the shipping company would take the subscriptions. The subscriptions need to be made locally, as it would be extremely expense if you were roaming on those networks," said Mr Dybvad.

"In order to have competitive rates for GSM data transmissions, you today have to enter into a local agreement per country. For the Color Magic pilot, Marlink have the Norwegian test subscriptions. At the moment, the customer and Marlink will cooperate closely for establishing the GSM subscriptions."

"If you have a large enough number of users you can get decent agreements with GSM providers. I think this is coming, what you see here is the start of what will be a standard. Every time a vessel goes into port they will have GSM 4G coverage, for instance."

Future development

With the testing of the CoastalRoam system onboard coming to a close, and having so far demonstrated the potential to add a significant increase to available bandwidth, Mr Østmo is looking forward to how the service would be rolled out to the Color Line fleet should an agreement for its introduction be reached.

"We have a time in mind, actually we are hoping that we will get the system set up soon to prepare for the conference season that starts after the summer, so we will see if we reach that," he told us.

"Our next goal is to have it set up in January/February to have everything ready before we start on the summer season again."

"The aim is to just put in some boxes and increase the capacity. What we know is that they have to replace some equipment, some switches and routers and so on. We won't change anything on the networks on the ship."

However, Mr Østmo says he is not content to settle with the improvement that will be offered by the CoastalRoam service, and says he will continue to look for new technologies that can improve the communications capabilities of the Color Line fleet even further.

"We are always looking at the communications, as we see that there are new technologies coming," he said.

"For example, there is a new technology in testing in Dubai or Qatar, I think, where they have technology in the harbour that can be used over long distances for communications. That can offer between 50 and 100 Mbps."

"It's a Norwegian company that is testing it out. They are doing tests for another company, but using our facilities. They installed an antenna on the roof of our facility and are testing it communicating with a small ship going in and out of the harbour. We are waiting for a conclusion on that, we haven't got it yet. It's very different from any other type of communications I have heard of."

Projects like these are perhaps indicative of the next major stage in the evolution of maritime communications – as satcom technology struggles to keep pace with the demand for data inherent in modern business life shipping companies will increasingly look to new technologies to supplement their traditional services.

Satellite connectivity may continue to be the mainstay of this infrastructure for some time to come, particularly far from shore. But further developments in terrestrial systems may, to some extent at least, help to make the gap between ship and shore even smaller. DS

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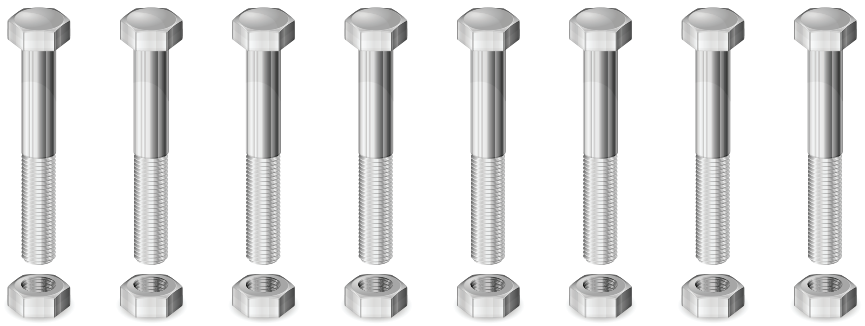

It's as easy as that. Unfasten eight bolts. Remove and replace the front feed, and rear assembly. Within minutes, your Sea Tel 4012 makes the optional upgrade from the current Ku Band, to GX or other Ka Band networks. The new Sea Tel 4012's completely redesigned monolithic software architecture offers IP-based, secured communication and extensive diagnostic capability.

The interface allows the antenna system to be controlled from a computer browser or even a tablet or mobile device. The new frequency-tuned radome is engineered to operate in Ku and Ka Band networks. And because the Sea Tel 4012 can be controlled over the internet, you can connect to it from anywhere in the world including your corporate offices. Finally, the sturdy pedestal design is based on the industry's best 1-meter maritime antenna system, the Sea Tel 4009. The best just got better.

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Smart ships – vessels for the IP era

Daewoo Shipbuilding & Marine Engineering is set to deliver the first in a line of new 'smart ships' constructed with integrated IP networks that aim to revolutionise the way that IT is implemented on modern vessels. DSME's Kim Won-Seok told *Digital Ship* about the technology behind this new breed of ship

Korean shipyard Daewoo Shipbuilding & Marine Engineering (DSME) is set to deliver the first in a new generation of ships designed specifically for the information age, incorporating a range of IP-based technologies designed to maximise the vessel operator's ability to deploy new innovations onboard.

An LNG carrier under construction for Norwegian owner Awilco AS is scheduled for delivery in 2013 as the first ship installed with DIPS (DSME IP-based System) technology, an integrated network implemented on the newbuild during May 2012 which manages, through a wireless LAN, a range of information collected from various types of equipment implemented on the vessel.

There are four main structural components of the DIPS infrastructure – signal converting systems, sensor technology, wireless switching systems and a web-based display interface that allows access via an internet browser.

The signal converting technology collects ship wide information from a range of sensors, themselves collecting real-time local data, and transmits it to central servers, via the wireless switching system.

The web-based display system is used for monitoring of the information collected on the server, and can be installed on bridge consoles, in cabins, and in the control room. Offices on shore can also monitor this vessel information through the web interface.

Development of the DIPS system goes back to the first quarter of 2009, when DSME began to investigate how it might go about upgrading the IT infrastructure design on the vessels it was constructing.

Outline specifications and a schematic diagram design were finalised between July and December 2009, with the integration specifications following, completed in May 2010.

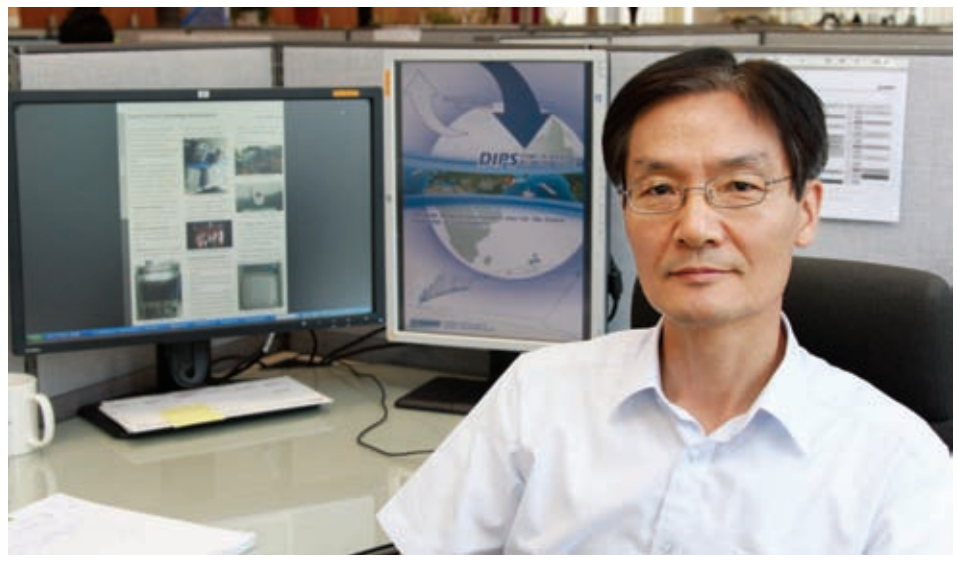
The completed specifications were confirmed in October 2010, and factory acceptance tests were performed. This led to the new system design being accepted as a DSME standard specification, scheduled to be installed on approximately 40 vessels commencing this year.

In addition to Awilco, companies like Neptune Orient Lines, Hyundai Merchant Marine and Cardiff Marine will have the system installed, either in part or in full, on commercial newbuilds under construction from 2012, while Petrobras will have the technology integrated into other special vessels in 2013.

As Kim Won-Seok, principal engineer/ leader of marketing engineering group 2 at DSME, explains, the shipyard believes that information technologies will become absolutely integral to the operation of ships over the next few years, influencing every aspect of operation, from navigation to maintenance, and on to the social lives of those serving onboard.

"We anticipated, when starting this, that IT technology development would accelerate in the future, in areas such as maritime satellite communication technology, and we wanted to change the trend for IT networks, moving from ship owners' requests to projects based on shipyards' proposals," he told us.

"Despite some internal opposition in the beginning, with people worrying about why additional money for this kind of built-in IP based network should be spent without generating a direct proportional financial benefit, this project was possible thanks to DSME's passion for innovation and sympathy with seafarers living in this high-tech era (at least when they are on shore)."



'We wanted to change the trend for IT networks, moving from ship owners' requests to projects based on shipyards' proposals' – Kim Won-Seok, DSME

"We also are driven to be a trend-leader rather than a follower, and are using technology to also differentiate Korean high-tech shipyards from our rising competitor, China, building up a reputation as advanced shipbuilders and contributing to this kind of branding in the future."

As Mr Kim notes, DSME was motivated by the fact that the owners of most of the vessels it was building were not specifying integrated IT networks in their designs.

Providing this kind of technology as an option for newbuilds allows the yard to offer something that owners may not have thought they needed, but soon come to see as a significant benefit.

"To be honest, ship owners hardly request anything on IT when ordering a ship as they are not very keen to adopt new technologies, given that safety issues are their priority," said Mr Kim.

"Their reaction to this system has certainly changed, though. In the beginning, after developing this system, the shipyards had to explain to them how it can benefit them. In the three years since the project began they have begun to understand the point, and hardly ever say 'no' to this built-in system. Still, some show their concerns about stability issues on the IP based network however."

Components

DSME installs the DIPS system during vessel construction, with implementation taking approximately one month.

An integrated network system, composed of cat. 7 Ethernet cables, fibre optic cables and more than 1 Gb of 802.11n wireless network equipment, is installed. The network uses a single cable infrastructure, which reduces the amount of cabling typically required during construction of a vessel and, as such, can help to reduce cost and complexity.

"It will reduce the duration of the shipbuilding process and allow various applied functions to be added in the future, increasing flexibility by enabling the vessels to adapt to new technologies using the latest satellite communication systems," said Mr Kim.

"It also saves on cost – for example, DSME creates a built-in VoIP network that allows smartphones to be used for communication."

"Getting rid of cables can also save them nearly $100 per line, which can total $25,000 in one offshore vessel. In addition, the systems can be managed both on the vessel and by on shore control very easily."

A number of signal converting units are installed in the network, the wireless device which provides the interface to the navigation, machinery, and ship management equipment from which data is obtained. The device converts the RS422 and RS485 serial signals to Ethernet signals, and transmits the information to the server wirelessly.

This basic structure allows for the receipt and processing of up to nine sources of independent NMEA data, using the RS422 signal to output NMEA0183 data, and allow outputs via 10/100BaseT Ethernet as well as RS232.

Wi-Fi capable sensor devices are also installed to monitor vessel safety parameters like fire, smoke and gas, as well as cabin conditions like temperature and humidity. DSME says that this set-up differs from other currently available AMS (Alarm Monitoring Systems), in the sense that it can be expanded to include additional components.

The various sensors communicate with the DIPS platform via a wireless switching repeater, creating a wireless network that can be used to connect any kind of IP device, which DSME expects to include everything from VoIP phones or IPTV, to iPhones and iPads owned by crew and operated from their cabins. The network is controlled by an integrated centralised server, installed in a centralised server room.

The wireless switching system's substructure nodes, to which the IP devices are connected, can be used to assess the traffic performance of each connection.

For a number of cabins located together, DSME says that testing of the system involving packet speeds exchanged from one room to another room has shown that there was a connection speed of between 35 and 55 Mbps on the network.

Each room is furnished with one wireless switching device, with a number of wireless access points (APs) installed on each deck. A single Cisco1140 AP is installed at the centre of the hallway corridor. Through the use of PoE (Power over Ethernet) technology, it is possible to expand the system to support all manner of devices without the need for any auxiliary power.

In a typical configuration, DSME provides an overall network covering the whole accommodation and machinery area with FTP (foiled twisted pair) cable and various types of network equipment.

DSME also provides the central server, which comprises a normal computer server, an IP PBX (for VoIP telephony), an NVR (Network Video Recorder, for IP CCTV) and an IP TV streaming server.

Mr Kim notes that this set-up will add some basic costs in terms of the hardware, but less than the cost of the shipping company actually purchasing the equipment itself.

"There would be a small effect on cost, which comes only from the configuration of a network capable of connecting all the IP devices and additional hardware components," he said.

"However, the total cost of this configuration would be cheaper than the normal computer server with an additional server for the dedicated system that provides similar value to the owner, in terms of being a comprehensive onboard network."

DSME notes that there may be slight dif-

The DSME shipyard in Korea will deliver the first of these 'smart ships' in 2013

ferences between different types of ships, but for optimal wireless environments to be enabled within a vessel AP network optimisation technology needs to be implemented to eliminate hidden areas and minimise the number of AP devices required.

The web-based display is the user interface to the network, bringing together the data from the vessel's various information systems for monitoring purposes.

The system is designed to be web-based, meaning that all of the information from the sailing vessel can be accessed from any browser, whether on the bridge console, in the control room, or even on a computer on shore.

Equipment connected to the network, such as the ECDIS, onboard machinery, alarms, sensors, tanks, CCTV pictures or any other input, is arranged to the left and right of the screen in thumbnail format, with an interface to display the selected system in the centre.

These displays can be accessed from anywhere on the vessel via the network, using a browser screen. This would mean, for example, that a captain could check on real-time navigation information from the ECDIS in their cabin, or an engineer could keep an eye on the status of the ship's machinery and request remote support from shore.

Benefits

DSME believes that these high-tech vessels will provide a range of benefits to shipping companies, particularly in terms of improving efficiency and safety in operations.

Real-time monitoring of the operational situation onboard, from the condition of machinery to the navigation data displayed on the ECDIS, will allow shore offices to offer a range of remote support capabilities that should help to keep the ship running at an optimal level.

The shipyard notes that this can be expanded by other initiatives it has introduced to its ships, including the DSME-NAPA Power voyage optimisation system, incorporating real-time weather routing information, and a maintenance management system called DSME-CMMS (Computerised Maintenance Management System).

"We think these systems are supposed to be valuable to the owner, in terms of offering a 'Smart ship', and DSME has recently co-developed these systems with the manufacturers," notes Mr Kim.

The other major range of benefits of this technology will be in widening access to communications systems onboard, particularly for crew welfare purposes.

Widespread wireless networks connected to the central system will allow crews to choose from a range of options to stay in touch with friends and family on shore, from the privacy of their own cabins.

"Not only will this enhance seafarers' access to communication for information and entertainment, as well as leading to increased productivity in their performance, but this IP-based infrastructure provided by shipyards also allows the vessels the flexibility to adapt to the rapidly changing IT tech environment much more easily than they would without a built-in IP based system," said Mr Kim.

"Given seafarers' preference for a user-friendly communication environment when choosing vessels to work on board, ship owners can take advantage of a nearly-cost-free-communication set-up based on the built-in system provided by the shipyards."

In the future the company believes that this kind of infrastructure will allow companies to expand their use of technology even further, to incorporate the next generation of ICT innovations into their operations.

This will be based on a greater integration between ship and shore, closing the gap between vessel and office and allowing experts in every field to remotely support colleagues at sea. In this way, DSME hopes that the 'Smart ship' will act as the starting point for the next generation of technology development in shipping. DS

*DSME will deliver a presentation covering its DIPS project in more detail during this year's **Digital Ship Korea** conference and exhibition, being held in BEXCO, Busan, on October 30-31 2012.*

Attendance is free for shipping company and shipyard employees. For more information, visit www.thedigitalship.com.

ShipServ launches Connect3

www.shipserv.com

ShipServ has launched its new e-commerce service Connect3, which will allow shipowners and shipmanagers to use its TradeNet platform to connect to three major suppliers of their choice without any charge.

The company believes that this will provide users with a real indication of the benefits of e-commerce, which can help purchasing managers to control and cut purchasing costs and speed up order cycle times.

The Connect3 service will offer full access to reporting data and provides owners and managers with the ability to benchmark supplier KPI data, allowing them to work more closely with suppliers.

"It's a no-cost way for buyers of trying out e-commerce with three of their major suppliers. It takes next to no time to set-up and provides instant reporting data so that they can benchmark their purchasing activities and collaborate with suppliers on response times," said Kim Skaarup, chief operating officer, ShipServ.

The service will initially be rolled out for free to all users of purchasing modules from the following maritime software providers: ABS NS, BASS, Consultas, Danaos, GL Maritime Software, ShipNet, SpecTec, Teomaki, and Tero Marine.

"We are kicking off this project by targeting existing users of our current maritime software partners, but our aim is to roll this project to as many companies as possible regardless of their current purchasing solution," said Mr Skaarup.

The addition of Connect3 to the ShipServ platform follows the recent introduction of another new reporting tool for use with TradeNet as well as the company's ShipServ Pages search engine, which will enable maritime suppliers to track their marketing spend.

The Supplier Insight Report is available to all 40,000 suppliers registered on ShipServ Pages for free, and includes a dashboard displaying the results of the user's marketing activity broken down into banner advertising impressions, searches, profile views, contact views, request for quotes (RFQs) and purchase orders.

"The key to marketing and lead generation spend is measurement," said David Hardy, chief marketing officer for ShipServ.

"Gone are the days when most of your marketing spend is not trackable. With this new reporting tool, available to all of our suppliers, we are enabling 100 per cent visibility of marketing spend across all ShipServ products."

The report can drill down into details and set customisable time periods and keywords so users can benchmark and compare their performance against the total market for their specific products or services.

"With the transparency these metrics bring, suppliers are very keen to find out how they can improve their performance and as a result of this we have moved to a greater focus on account management and are continuously working with suppliers to help them get the most out of their premium listing on ShipServ Pages," said Mr Hardy.

In addition to the Insight Report, ShipServ has also launched three other free tools - Profile Complete Score, which suggests improvements to a supplier's profile; RFQ Inbox, where suppliers can see, manage and respond to all their Pages RFQs; and Block Buyer, which allows a supplier to block specific buyers from sending RFQs to them in the future.

The ShipServ TradeNet e-commerce platform is currently used by over 175 shipowners, managers and shipyards, managing over 7,000 vessels, including A.P. Moller-Maersk, Teekay Shipping, MOL Shipmanagement, MISC, E.R Schiffahrt, Holland America Line and Keppel Shipyard.

Latest FuelTrax version launched

www.fueltrax.com

Nautical Control Solutions has launched the latest version of its FuelTrax Marine Fuel Management system, which now includes the ability to measure and monitor fuel density as it is pumped on a vessel.

FuelTrax gathers and displays the mass, volume, temperature, and density of a fuel as it is being taken aboard. The fluid's density is measured, recorded, and presented live in a moving graph on the FuelTrax main console.

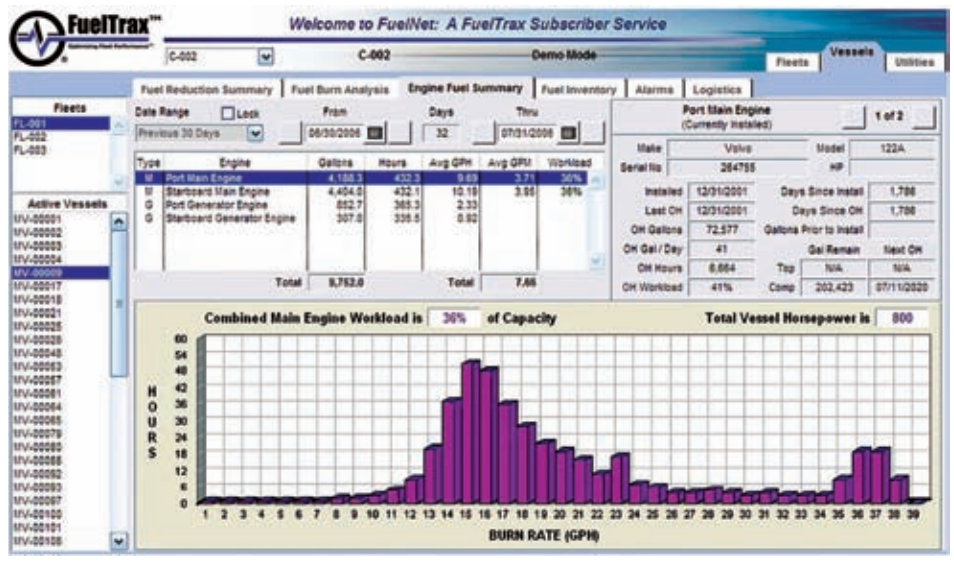
If a predefined amount of out of density range fuel is measured, a visual alarm is presented to the captain or chief engineer. An optional siren and strobe light is available for placement in the engine room to further alert the crew.

The company says that the system works with any type of marine fuel and can be applied to liquids such as drilling mud and other products transported by the vessel.

"Our customers tell us that fuel can be contaminated with seawater or worse. Having the ability to identify potentially bad fuel and stop a bunker before too much has been pumped aboard can help save the costs of filter changes and tank cleaning at a minimum and help prevent damage to engines in the worst case," said Anthony George, CEO of Nautical Control Solutions.

"One of our customers had just taken delivery of a brand new vessel and on the very first bunker had received an order of diesel that far exceeded the average density for that fuel type. Having this new feature would have helped stop the contamination and provide the customer with documented evidence to show the fuel provider."

"This new feature is available when using Coriolis mass flow metering. We have been expanding the application of Coriolis meters throughout our installations because of their accuracy and the chiefs like them for their fit-and-forget nature. Since they are also excellent densitometers, it made sense to expand FuelTrax to capture and report this information along with other parameters to produce a complete fuel signature for a vessel."

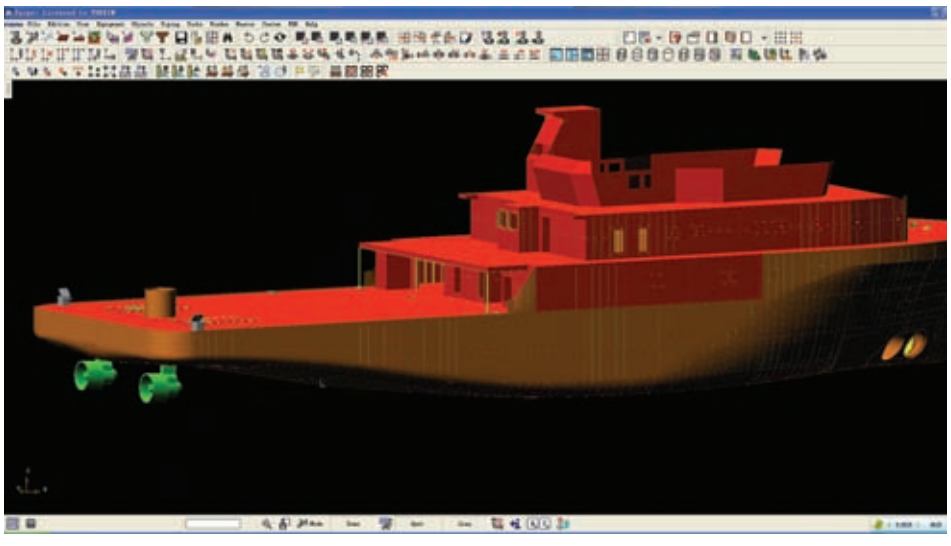


New capabilities have been added to the FuelTrax system

Chinese and Thai shipyards implement FORAN

www.senermar.es

SENER and Guangdong Yuexin Ocean Engineering (formerly Yuexin Shipbuilding) have signed an agreement for the implementation of SENER's FORAN CAD/CAM System at the Chinese shipyard, while Oakwell Shipyard, part of the Oakwell Group company, has added the FORAN system to operations at its shipyard facilities at Sattahip, Thailand.



A 3D model of a ship's lower hull section

Located in southern China, in the Guangzhou area, Guangdong Yuexin Ocean Engineering (GYOE) has agreed to implement the FORAN system after a three month pilot test.

A complete FORAN package has been installed, including Initial Design, Hull Structure, Machinery & Outfitting, and Drafting & Mechanical CAD. Engineering personnel were provided with training on the different modules by United Force Corporation (UFC), a local support partner.

The computer design system is now being used for ongoing design projects, such as a Tidewater supply vessel with azimuth Diesel-electric propulsion.

"This is the first supply vessel of Yuexin that uses electrical propulsion and it is the first vessel of Yuexin to be designed with FORAN system," commented GYOE technical director, Changgeng Li.

"FORAN system is being used in all disciplines. The vessel has a high loading efficiency and very good comfort with capacity of carrying 60 crews. The vessel is planned to be delivered in July 2013."

At Oakwell Shipyard meanwhile, the introduction of FORAN will include use of a Computer Aided Design (CAD) Toolset, which allows multiple-access and management of a variety of data from all ship disciplines.

The scope of supply under the contract and the number of licences is expected to increase according to the activity at the shipyard.

"With FORAN we cover all the design and production needs, so we simply concentrate in the ship itself," said Ghani Japlus, engineering manager at Oakwell Shipyard.

"That's a big step forward when it comes to compete with other shipyards, leaving more resources to gain in design quality. Yet FORAN has proven to be flexible and close to the customer, so we feel there's support whenever we need it."

GL software deals in China and Germany

www.gl-group.com

GL Maritime Software reports that it has agreed two new deals in China and Germany, for its GL HullManager and GL MachineryManager software respectively.

The company's first order from a client in China for its hull integrity management software, GL HullManager, is from Shanghai Ocean Shipping Co., Ltd (Shanghai COSCO), which will install the system on seven vessels in its containership fleet.

"Leveraging GL HullManager, we expect our ship maintenance can be conducted in a more cost-effective and transparent fashion," said Mao Jianliang, general manager of Shanghai COSCO.

GL HullManager is a software and service package used to support the hull integrity process, from inspections to reporting and condition assessments of tanks, cargo holds and coatings, throughout its entire lifecycle by means of crew inspections and thickness measurements.

It includes a vessel-specific 3D model for visualisation and assessment of the hull's structural condition. The crew can mark any coating or structural failures on the 3D model, such as marking an individual finding or adding a photo and description, which can then be assessed by superintendents onshore.

Since its introduction in 2011, GL HullManager has been installed onboard approximately 150 vessels of all kinds across the world, and in their owners' onshore offices.

GL Maritime Software's contract in Germany meanwhile, performed in cooperation with SKF, has led to the installation of the first prototype of its GL MachineryManager software onboard the CSAV Rio Blanco, a car carrier owned and managed by German shipping company F. Laeisz.

GL MachineryManager is a monitoring platform for onboard equipment, which combines visual inspection results with online and offline condition measurements, to alert crew and superintendents when the condition of equipment has deteriorated, on individual vessels and across an entire fleet.

The installation on the CSAV Rio Blanco took place during a voyage from Vladivostok, Russia, to Pyongtaek, South Korea.

During the voyage vibration monitoring measurement locations were prepared onboard for 40 fans. The data from these locations was collected by handheld vibration monitoring equipment, which was then downloaded into the onboard GL MachineryManager system for further analysis.

GL and SKF began cooperating on the development and implementation of this joint solution for condition monitoring of rotating auxiliary machinery onboard ships in May 2011.

The companies also trained the crew in the use of the maintenance management software and the handheld unit, which was provided by SKF.

"We believe in the advantages of meaningful data acquisition and its analyses to support maintenance strategies," said Harald Schlotfeldt, managing technical director of F. Laeisz.

"We see the GL HullManager, which already runs on a number of our vessels, and now the GL MachineryManager as logical add-ons to the GL ShipManager software package, which we have had in fleet wide use for many years already."

"This was the motivation for us to work with GL on the prototype installation onboard CSAV Rio Blanco, one of our new 5000 unit Pure Car Truck Carriers (PCTCs)."

The prototype test will soon be expanded to include online data from sensors monitoring the bearing condition of the CSAV Rio Blanco's main engine.

GL offers a survey arrangement for 'Condition Monitoring' which uses the condition information in the survey process, and F. Laeisz already qualifies for this arrangement. F Laeisz can also use the system to generate annual reports for both internal, class and regulatory purposes.

F. Laeisz was one of the first users of GL ShipManager and is now also utilising GL HullManager onboard several vessels in its fleet.

In related news, GL Maritime Software has also added to its software portfolio with the introduction of a new GL Crew Manager system, used to assist in crewing, recruitment and various other aspects of human resource management.

GL says that the system could be particularly useful in ensuring that shipping companies comply with the regulations contained within the Maritime Labour Convention (MLC 2006), which requires the documentation of many crewing processes.

These include checking that all required positions on board are filled, that the seafarers are medically fit, well trained and qualified for the duties they are assigned to, and that records are maintained of the seafarers' daily hours of work and rest.

GL Crew Manager allows for the standardisation and optimisation of many tasks involved with these processes, such as management of personal data, hiring, vacation and leave management.

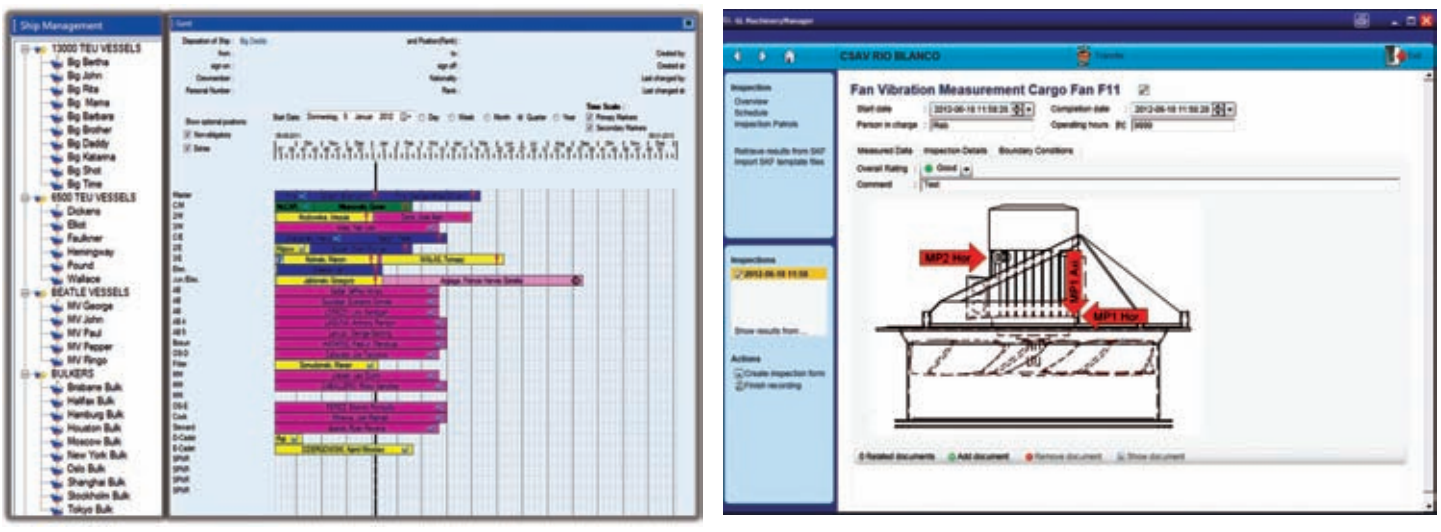
The software provides a graphical view of the current and planned assignments for each individual vessel, and automatically matches crew availability and suitability with vessel manning requirements.

An optional on-board system also supports on-board management of crew data, certificates and licences, registration of resting hours and wage calculations, which can help in proving compliance during on-board audits.

The system generates a pre-audit checklist for MLC audits, with the required documentary evidence, while also highlighting items of non-compliance which need to be addressed.

The data generated can be accessed anywhere, through a remotely managed server, with role based users' access levels determined by the user's login.

An intelligent data transfer routine allows synchronisation of the data between office and any vessels using the optional onboard system.



GL CrewManager (left) has recently been released, adding to existing applications like GL MachineryManager (right)

Ingalls Shipbuilding extends AVEVA deal

www.aveva.com

AVEVA has signed a contract extension with Huntington Ingalls Industries for AVEVA MARS, an Enterprise Resource Management (ERM) software solution, implemented at Ingalls Shipbuilding, a division of HII.

This new contract will incorporate additional maintenance, services, consultancy, and development to further customise the AVEVA MARS system to Ingalls' business processes.

Supplying US Naval and Coast Guard vessels, Ingalls has been an AVEVA MARS customer since 2006.

AVEVA MARS includes modules for Material, Planning and Production designed specifically for the shipbuilding industry.

"We have developed a good working relationship that is enabling us to develop enhancement solutions that benefit both HII and AVEVA," said Mike Deutsch, Ingalls Shipbuilding eSHIPS director.

"One example is we were maintaining storeroom inventories in offline databases in order to manage operations. AVEVA helped us by developing a storeroom module for MARS that eliminated the offline databases and achieved greater visibility of material availability, and improved communication between departments."

"I am confident the new enhancements AVEVA is delivering this year will help to make our operation even more successful."

Softship, a provider of liner and agent software applications, has opened new offices and added new staff in New York City, headed up by managing director David Willner. The new location will allow the company to support clients across the United States and Canada.

Witherby Publishing Group reports that it is to begin providing **Fathom** publications as eBooks, available to download and view on the Witherby Seamanship eBook reader.

Marine Software in the UK reports that its Marine Planned Maintenance system has had its Type Approval renewed by **DNV**, confirming compliance with DNV requirements for Type Approval of Planned Maintenance Systems as described in Type Approval Programme 10-706.70-1, April 2009.

AVEVA has opened a new office in Helsinki, Finland, to offer sales and support for its products in both the plant and marine sectors.

Intergraph reports that it has opened a newly-expanded office in Kuala Lumpur, Malaysia, to support customers in the country.

www.softship.com
www.witherby-ebooks.com
www.aveva.com
www.intergraph.com
www.marinesoftware.co.uk
www.dnv.com

OceanSat serviced over a 1.000 ships with high quality Connectivity, TVRO, and AIS solutions

OceanSat BV is an established strong partner in the maritime communications industry for Connectivity, AIS and TVRO and has with satisfactory of our customers serviced over a 1.000 ships to discover the advantages of Intellian TVRO or VSAT products. Supplying Connectivity Solutions at a competitive edge we collaborate with a number of reputable providers to be able to offer favorable communication possibilities for both regional and worldwide reception zones.

Being a privately owned company based in Nieuwendijk, The Netherlands, OceanSat started in 2005 as a distributor for Intellian satellite dishes and after significant growth in 2010 the name OceanSat came into existence. In this period OceanSat started the exploitation of Automatic Identification Systems (AIS) after regulations in different areas and is distributing worldwide. In 2011 OceanSat became an ISP for maritime data services as well.

With our in depth based technical knowledge of designing and implementation of maritime communication solutions OceanSat helps to increase your operational efficiency and improve your business processes. This is done by delivering high quality Connectivity, TVRO, and AIS solutions to maritime companies, with a focus on maintaining long-term fruitful relationships with our customers, partners and employees.

OceanSat, a leader in airtime, below-deck equipment and installation.
Armand Lont (OceanSat's Commercial Manager) firmly believes in every company's own specific requirements. This could be full implementation of an ERP system on the total, video conferencing, weather routing and regular ECDIS updates or remote IT solutions. Integrating the right set of Connectivity Solutions requires clear insight in cost, coverage which matches your sailing pattern, and a partner who understands the technical specifications.

At OceanSat we investigate what the benefit will be for implementing a VSAT Connectivity Solution beyond the aspects of communication only. Coverage is an important part in this. Therefore OceanSat is constantly looking into the most efficient way to seamlessly cover the major sailing routes around the globe. When looking for reliability with that coverage there is a high level of service that is expected to deliver. The questions asked are to ensure the correct solution and technical specifications of the highest standard. Automated Remote Management increases high level support. These appliances automate network management tasks 24/7 and enables to remotely access, monitor and control both satellite and traditional networking equipment. In the end OceanSat's Connectivity is keeping you in touch.

How has this rapid growth been achieved?
Fred Maartens (OceanSat's CEO) thinks that the rapid growth of his company OceanSat is anything but an accident of chance. He looks back on the company's relatively brief, but exceptionally successful history. We started distributing the satellite communication antennas from Intellian Technologies in Europe back in 2005. Maartens' initial contact with this Korean manufacturer dates back to 2004. The results since then have proved how right his choice was. Intellian Technologies' vision and mission fitted in perfectly with Fred Maartens' ambitious growth plan for OceanSat and this outstanding collaboration has resulted in an ever increasing number of satisfied customers. The products are absolutely top class, require very little maintenance and are exceptionally easy to use.

A look into the future
Fred Maartens feels that OceanSat BV has tremendous potential for growth in the near future. We will continue to service existing markets with the greatest possible care and quality, as we have achieved excellent results here to date. But we are capable of and want to achieve more. We expect new markets, in the shipping sector in particular, to offer our healthy company excellent opportunities for further growth. With high end solutions like ours, success is guaranteed!

Visit us at Hall B6 stand 611

Videotel and BIMCO extend partnership

www.videotel.com
www.bimco.org

Videotel Marine International and BIMCO have extended their cooperation agreement to offer the BIMCO eLearning Diploma Programme (BeDP) to all Videotel on Demand (VOD) users.

This new facility will allow ship officers on board to study the same BeDP modules as their shore based colleagues.

The BIMCO eLearning Diploma Programme, delivered as a stand-alone course on board, is an e-learning package looking at the more commercial aspects of the shipping industry.

"The creation of a unified training system for both seagoing and shore based personnel is immensely important in creating a common understanding of the commercial and practical issues facing the maritime industry and for preparing and planning the training of ships' officers, eventually continuing their careers in shore-based functions," said Torben Skaanild, BIMCO secretary general.

Videotel will now offer BIMCO's eLearning Diploma Programme

The first two modules of the course are already available, with more modules to be added later in the year.

Module 1 is called Introduction to Shipping, and offers an entry level introduction to the shipping industry, explaining how it works and showing how it is interdependent with international trade.

Module 2, named Bills of Lading, deals with the commercial legal issues surrounding Bills of Lading and teaches students how to make sound commercial decisions without being exposed to liability or litigation.

"Since linking up with BIMCO the BeDP has proven extremely popular," said Nigel Cleave, CEO of Videotel.

"The programme enables students to build on their knowledge, acquire professional competencies and contribute to their continuous professional development. Now, with VOD on over 10,000 vessels worldwide, we can extend this opportunity to maritime students wanting to study in a flexible and user friendly way whilst serving on board a vessel."

Account management with Vendor Direct

www.da-desk.com

DA-Desk has announced the launch of Vendor Direct, a new service designed to manage all non-Disbursement Account-related invoices.

Vendor Direct automates transactions across the the purchase-to-pay process, typically single-cost items with single, balance-only payments, involving an array of counterparty types, including surveyors, vessel suppliers, mooring companies, transiting passage pilots, and offshore security services.

"Our customers have been talking with us about the pressures regarding current business demands," stated Ian Baker, business development manager, DA-Desk.

"For example, operators have told us that the process of initiating, monitoring, settling, accounting and reconciling thousands of individual voyage-related transactions is a constant and time-consuming challenge. So in response to their need, we have utilised our experience with DA's to create this new service."

VendorDirect users will also have access to another DA-Desk service, DA-Compliance, which aims to minimise exposure to legal, financial, transactional, regulatory and operational risks.

Through DA-Compliance, operators get an automated sanctions-compliance screening of vendors, agents, and transactions, powered by Dow Jones Sanction Alert. This managed data service is designed for transaction filtering and is based on a list of 16 key sanctions covering all major regulatory regimes.

Tankers to implement ABS-NS software

www.eagle.org

ABS Nautical Systems reports that it has agreed three new contracts to install its NS5 software package on a range of tankers, as part of the ABS Newbuild Program.

This initiative offers free software for up to 12 months on ABS-classed vessels built after 1 January 2009.

Tuofo Shipping Management Limited in China is to implement Hull Inspection, Maintenance & Repair and Energy & Environmental modules on two of its newly built tankers.

This will be a significant upgrade for the Fujian-based company, as it does not currently have a software system in place to manage these operations.

Sloman Neptun, a tanker company based in Bremen, Germany, will utilise the Hull Inspection and Maintenance & Repair modules on three of its newly built chemical tankers and will also install the Drawings Management module in its central office.

The system will be used to track and monitor the condition of the vessels.

In Greece, Stealth Maritime Corporation SA has also agreed to implement ABS Nautical Systems software, and will implement the Hull Inspection module on two of its liquefied petroleum gas vessels early next year.

ABB to acquire Amarcon

www.abb.com
www.amarcon.com

ABB has agreed to acquire Amarcon BV, a Dutch company providing software systems for the shipping industry.

The acquisition will expand ABB's advisory systems offering for customers in the maritime sector, and is expected to be closed in the third quarter of 2012 when Amarcon will join ABB's Process Automation Division.

Based in Dalfsen, The Netherlands, Amarcon employs 15 people, and has a product portfolio including software solutions for ships that focus on safety and improved operational ability.

ABB says that this addition to its portfolio will add to its recently released offering of Marine Advisory Systems.

"Amarcon's Octopus product, its know-how of ship hydrodynamics and ship modelling capabilities are a complementary and strategic fit for our existing software portfolio," said Veli-Matti Reinikkala, head of ABB's process automation division.

"With a strong software background, this acquisition will provide ABB with additional access to fast growing energy optimisation markets."

PortVision goes mobile

www.portvision.com

PortVision has announced that its desktop Automatic Identification System (AIS) vessel-tracking service is now available in a mobile platform that has been optimised for smartphones including BlackBerry, iPhone and Android devices.

The mobile platform is available at no cost to PortVision customers who subscribe to its PortVision Plus, PortVision Advantage, TerminalSmart and Fleet Management System offerings.

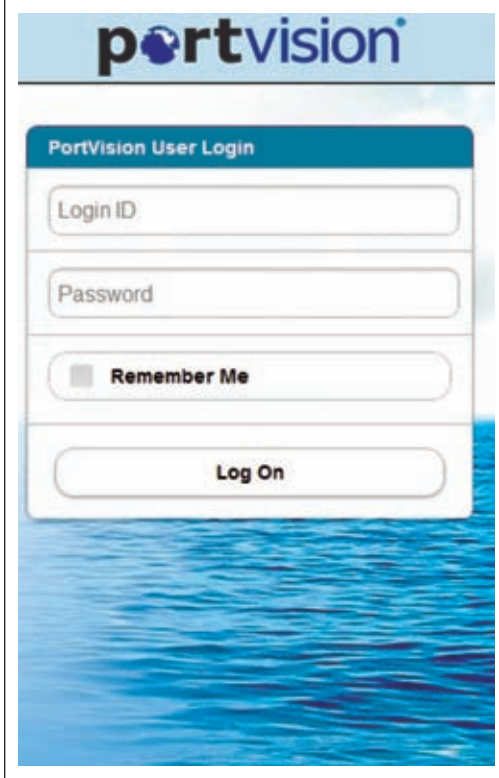
The PortVision Mobile 2.0 platform adds a number of capabilities, based on feedback from the company's active mobile users.

These features include integrated terminal and fleet dashboards with information including arrival/departure data, real-time vessel locations and terminal dock availability, and an optimised interface for arrival/departure alerts.

Integrated fleet traffic reporting is also included, allowing mobile users and their customers to share traffic updates and other fleet management data. Flexible search capabilities will enable users to search by vessel, terminal and point of interest.

"Our latest mobile platform delivers on our vision of giving PortVision users all the information they need to manage their maritime domain, no matter where they are," said Dean Rosenberg, PortVision chief executive officer.

"This new platform takes advantage of the latest smartphone capabilities to deliver key real-time features of our widely adopted web-based solutions, and is designed to provide remote access for any maritime professional who spends the majority of their work day away from their desk."



The PortVision mobile site is optimised for smartphones

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To learn more about ShipServ TradeNet visit our website **www.shipserv.com**

SHIPSERV TradeNet

Fuel optimisation and ECA Zones from AWT

www.awtworldwide.com

Applied Weather Technology (AWT) has announced the launch of its new Fuel Optimisation Service, and added an ECA Zones functionality to its BVS application.

The Fuel Optimisation Service is initiated by a client request, specifying the vessel's full Charter Party (C/P) speed and consumption as well as any alternative eco-speeds being considered. AWT then determines the most efficient safe route, and recommended speed if a required ETA is provided, balancing voyage time and fuel consumption.

A voyage time and consumption estimate is provided, as well as total cost when requested, at both the recommended speed to make the required ETA and any alternative eco-speeds.

As part of the process, a pre-voyage report is also provided showing the calculated results in terms of time, consumption, and cost if requested, of all considered routes.

En route, AWT monitors both the route and vessel performance in relation to speed and consumption, providing a daily status report via e-mail and voyage information via PORTAL, AWT's secure client site.

Upon completion of each voyage, an end of voyage report is generated comparing the time en route and consumption, and costs if requested, along the actual route sailed against both the instructed speed and the full C/P speed (or recommended speed to make a required ETA) allowing ship operators to quantify and report on savings achieved.

"As fuel prices remain volatile, AWT has worked closely with its extensive client base to find economical solutions for all involved in the ship owning/chartering chain," said Skip Vaccarello, president and CEO of AWT.

"Upcoming IMO regulations such as SEEMP and others are putting even greater pressure on ship owners to find solutions to increase efficiency and show quantifiable results — which is why we developed this timely service."

The company's other new development, the addition of Emission Control Areas (ECAs) functionality to its BVS onboard software platform, offers calculation tools to evaluate the most cost effective voyage track within these zones.

Using the latest version of BVS, vessels can manage their voyage track by displaying ECA zones and making them 'no-go' areas. By doing this, they can see their voyage track outside and inside the ECA zones.

Moving waypoints within the software allows captains to visualise the impact of time in the ECA zone and compare it to the overall effect of time en route, helping them to judge the optimal route for their purposes.

"With BVS's ECA zone calculation tools, captains can make informed decisions about how much time to sail inside or outside these zones," said Rich Brown, vice president of product management, AWT.

"Our goal is to give captains and ship operators the data they need to manage voyage costs while complying with IMO regulations."

North America Emissions Control Area (ECA) zones came into force on August 1, 2012. The regulation is part of Annex VI to the MARPOL Convention titled 'Regulations for the Prevention of Air Pollution from Ships'.

The regulation dictates that the ECA Zones extend up to 200 nautical miles (NM) from the coasts of the United States and Canada, including a portion of the Hawaiian Islands (exceptions to this area include the Aleutian Islands and Arctic waters of North America).

In the ECA zones, ships are required to burn fuel with sulphur content not exceeding 1 per cent.

Fuel monitoring system launched

www.ascenz.com
www.emersonprocess.com

Emerson Process Management, in collaboration with Ascenz Pte Ltd, has introduced a remote fuel consumption and bunkering monitoring system.

The system aims to deliver accurate fuel usage and bunkering data from moving ships to land-based shipping company offices, to offer a real-time insight into the ship's operations.

Ascenz, based in Singapore, is a supplier of remote monitoring systems for shipping companies to track fuel consumption and bunkering monitoring.

Data capture of fuel consumption and bunkering data is achieved using Emerson's Micro Motion Coriolis flow measurement technology.

Using Ascenz's software monitoring system, this data is then delivered to the shipping company on shore. The remote monitoring system transmits and translates data into information for customers to monitor fuel usage and ensure accurate fuel bunkering.

"The collaboration with Emerson is an ideal way to provide customers with the data they need to improve their operations," said Chia Yoong Hui, co-founder and CEO of Ascenz.

"I know I can count on the Emerson team for their technical know-how and international support network."

ClassNK software for Harmonized Common Structural Rules

www.classnk.or.jp

ClassNK claims that it has released the world's first software package for use with the new IACS Harmonized Common Structural Rules (CSR) for bulk carriers and oil tankers, which were released at the beginning of July 2012.

IACS' new Harmonized CSR combine existing CSR for bulk carriers and tankers, introduced in 2006, with IMO's Goal Based Standards (GBS) for shipbuilding regulations.

IACS released the first draft of the rules for public comment on 1 July 2012, to allow time to incorporate input from industry groups and end-users.

"As a new set of global requirements for the industry, new software will be essential for yards and designers to efficiently test and implement the new rules," commented ClassNK executive vice president Takuya Yoneya, who oversaw the class society's development of the new software.

"By releasing this new software for use with the first draft of the new Harmonized CSR, we hope to make it easier for yards and designers around the world to familiarise themselves with the new requirements, as well as make use of the rules for new ship designs."

The new software is a complete reworking of ClassNK's existing CSR software, already in use at shipyards around the world.

"Our goal with this new software," said Dr Yoneya, "was to incorporate not only our extensive experiences with the CSR, but also the insights and opinions of leading shipyards and designers in the development process."

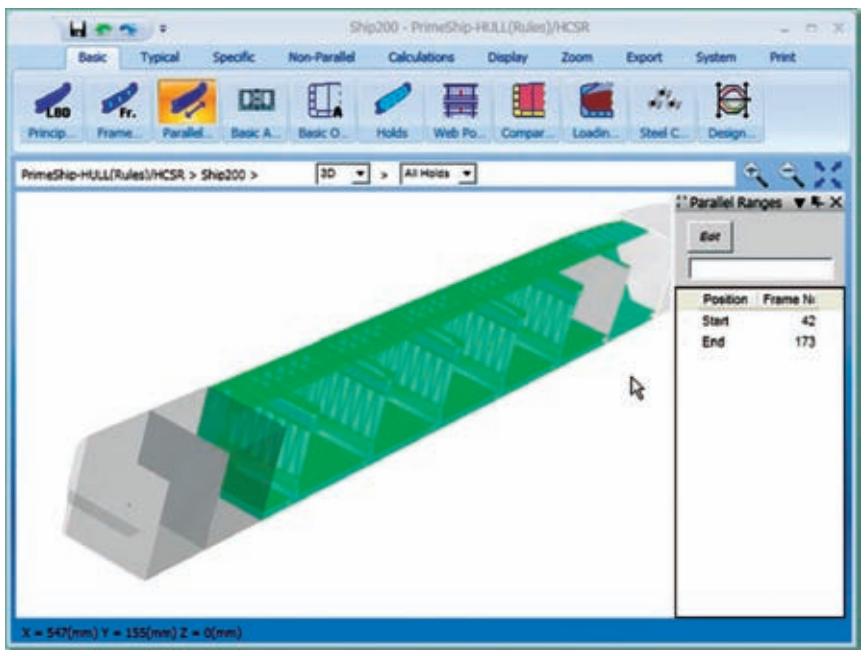
The new Harmonized CSR software provides new functions like a 'Case Study' tool, which allows users to assess the effects of changes to the parameters of initial ship designs, as well as a new function to automatically generate 3D models for hull structural analysis directly from rule calculation data.

ClassNK says that the new software can apply data produced by existing CSR software, and is able to integrate with all major 3D CAD/CAE software systems and ship performance calculation software.

"This new software is not just a calculation tool, but a total design support system," says Dr Yoneya.

"Thanks to the new features and tools included, we are confident that this software will not only support the development of safer ships, but also improve design quality, and increase the speed of the ship design process."

ClassNK says that it will provide its new software at no charge to shipyards and designers around the world.



ClassNK claims that its software is the first package available to work with IACS Harmonized CSR

SkyFile upgraded to Premium

www.vizada.com

Vizada has announced the launch of a new premium edition of its e-messaging tool, SkyFile Mail, an enhanced version of the SkyFile software.

SkyFile Mail Premium offers compatibility with Microsoft Outlook, Thunderbird or other POP3/SMTP clients, allowing for integration with existing e-mail tools onboard ship.

Customers can continue using their common e-mail interface, environment and settings through the SkyFile engine.

A new automatic notification push feature has been included, which will allow Captains and officers to choose if they wish to receive important e-mails immediately, without any manual action, or if they want suspicious e-mails to be stored in the quarantine file prior to delivery onboard.

The Premium service also offers extra-long text messaging (up to 1,500 characters) and access from shore through non-satellite connectivity (e.g. via 3G, WiFi or WiMax).

Vizada says that 150 merchant vessels have already signed up for SkyFile Mail Premium in the pre-launch phase.

Apart from launching SkyFile Premium, Vizada has also upgraded its basic SkyFile Mail software with new features, including flexible connectivity for third party apps, better management of vessel sub-accounts, improved filtering for private and corporate accounts, direct access to SkyFile eNOAD with a single click and a split billing feature over Iridium Pilot.

These new features are also available for the Premium version.

"We are really excited to be able to officially launch our business-centred SkyFile Mail Premium," said Vizada product manager, Jean Marc Duc.

"We're certain that the compatibility with other e-mailing software, as well as all the cost-effective features, will continue driving SkyFile Mail's success as the leading messaging tool in the satcom industry."

PTTEP completes SRO implementation

www.srosolutions.net

SRO Solutions reports that it has recently completed the implementation of its data replicator system for oil and gas exploration company PTTEP in Western Australia.

The SRO Data Replicator (SDR), based on IBM Maximo asset management software, will be used to manage operations by sharing data across the company's offices in Perth and Darwin in Australia, and also in Singapore.

"SDR is designed to solve the exact problem we were facing," explained Greg Archer, PTTEP IT support engineer.

"SRO staff were excellent, they worked closely with our team to gain an understanding of what we wanted. This enabled them to carry out a lot of the configuration work in the UK. When they were ready, they flew over to Perth and installed the solution."

"Everything went smoothly and they did a great job on knowledge transfer. We now expect to see significant improvements in productivity and reductions in maintenance and procurement costs."

SDR will particularly be used to maintain equipment onboard a newly built PTTEP floating production, storage and offloading (FPSO) vessel that will be used for a project to develop oilfields in the southern Timor Sea, to maintain optimal levels of uptime.

"This requires robust preventive and corrective maintenance processes that needed Maximo to work effectively," SRO managing director, Steve Driver, explained.

"The most important challenge was to keep the maintenance and procurement processes in sync between Perth, Darwin and the offshore FPSO."

"It could only communicate via a low-bandwidth satellite link and so they needed separate instances of the data to be kept in three locations so that everyone could carry on with their work even if the connection temporarily went down."

Emissions control function added to distance tables

www.atobviac.com

AtoBviaC has launched a new Port to Port - Online version of the BP Shipping Marine Distance Tables, offering the user the ability to calculate both SECA (Sulphur Emission Control Area) distances and distances in the North America ECA (Emission Control Area).

From 1 August 2012, for vessels operating within the North American ECA, the sulphur content of fuel oil used on board must not exceed 1.00 per cent.

"Our research has shown that it is rarely cost effective or practical to avoid these routes entirely," said Captain Trevor Hall, director of AtoBviaC.

"It is, however, essential to accurately calculate in advance the impact on vessel operating costs and to identify where a slight adjustment of route will avoid unnecessary incursion into an ECA."

"We have implemented SECA distance calculations into our distance table matrix from the time the various control areas came into effect, but (with the) implementation of the North American ECA, ship operators need to be aware they are on a countdown to unexpected costs if they do not make the correct provision for the additional fuel costs they will incur."

The introduction of this new product also sees the launch of a new interface which uses Microsoft's Silverlight technology. Working on a Windows PC or an Apple Mac, it now incorporates a purchasing structure which enables the user to purchase a block of distances.

Also available is a route scanning function, which provides the user with distances within the various SECAs and ECAs and distances within Load Line Zones via marine information map overlays.

All voyage reports and maps can be saved and exported in PDF and spreadsheet formats.

The software can calculate the cost implications of voyages in emissions control zones

Teekay implements MSC Reporting

www.mgmtsysconsult.com

Teekay has implemented MSC Reporting from Management Systems Consulting, a reporting system used with the ABS Nautical Systems NS5 fleet management software.

Teekay is currently running the Oracle version of the NS5 software, and MSC says that the company required a reporting solution that could operate on this database platform, which MSC was able to achieve by extending its standard reporting product to provide support for Oracle.

In addition to the reporting warehouse, Teekay has also selected approximately two dozen standard reports for NS5, as well as a number of custom designed reports.

The reporting system also includes a 'team concept' which allows the reports to be run on groups of vessels (i.e. teams), allowing report generation across many different groups of vessels at once.

Teekay joins Helix Energy Solutions Group and Seaspan Ship Management in adopting MSC software products for use with NS5.

As well as using MSC Reporting, Helix has taken delivery of a system which allows it to use its own incident reporting forms and combine them with the standard NS5 incident forms. These additional forms allow Helix to collect incident data which is specific to its operation and perform trending analysis.

Seaspan Ship Management will also use the MSC Reporting system for internally generated reporting, as part of a customised package of reports provided by MSC covering areas like Maintenance, Purchasing, Inventory, Quality and Crewing.

Solstad implements SIS

www.sismarine.com

Solstad Offshore's fleet of 50 vessels has completed the installation of the Star Information & Planning System (Star IPS) software package from Star Information Systems (SIS).

Solstad operates platform supply vessels (PSV), anchor handling vessels (AHTS) and construction service vessels (CSV), and will use the software as an integrated, centralised fleet management system.

This will include Star IPS functionality covering planned maintenance, guarantee claims, asset management, projects and document management.

SIS signed the initial business contract with Solstad in July 2008, since which time Solstad's fleet has grown from 25 to 50 vessels, resulting in an extension of the original agreement.

Full system training for the ship crews has been undertaken at the Star Academy training facilities in Trondheim, Norway.

"We required a centralised system that could provide us with a full technical overview of our fleet," said Hans Ole Bergtun, Solstad's technical superintendent.

"SIS has been in the market for a long time; they've taken part in 'computerising' the industry and have long traditions for system development and innovation."

"We were looking for a dynamic supplier and found that SIS actually offers more functionality than we require at the time being, so it's good to know that we have the option to expand and that there's always new and improved solutions being developed."

SIS completed the system implementation in two phases. Phase one saw servers pre-installed with the software shipped out to each vessel by Solstad's own IT support team, while phase two focused on system setup and configuration, handled remotely by SIS.

"We could not have done this without the support provided by SIS," noted senior consultant and advisor on the project, Ronny Hammern.

"Our experience is that SIS' personnel are both professional and credible; every step of the project has been well organised and we've received very good feedback from the involved parties, both at Solstad and at our IT partner."

With the software now in place, Solstad has cleaned and restructured the data from its old management systems and imported it onto Star IPS.

"Our previous system was not centralised, hence technical data and work instructions varied from ship to ship," said Mr Bergtun.

"However, with the clean data and the new system we have a uniform and highly efficient system across the fleet. This will help us as we continue to strive for operational excellence."

P&O Maritime Services installs project management software

www.marinesoftware.co.uk

UK based Marine Software reports that it has completed delivery of its MPJ – Marine Project Manager software to P&O Maritime Services.

The software will be installed onboard the 9,075 grt P&O Maritime Services cable installation vessel European Supporter.

P&O Maritime Services has also taken delivery of the MPJ Superintendent version, which will receive the vessel's planning jobs and facilitate the production of drydock specifications and tenders.

The MPJ Vessel version will be used to compile refit planning specifications onboard, which are then uploaded to the controlling Superintendent version for inclusion in the main refit specification.

The application will also be used to assist with final contractor selection, control repair works whilst in dock and produce docking reports.

The European Supporter has installed the new system

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Mobile for the Maritime Industry

As the shipping industry faces unprecedented pressures, many companies are turning to the latest technology tools to achieve a competitive advantage. The next battle for market share will be fought in the mobile arena,
writes Lauren LaFronz, Triple Point Technology

Maritime transport dominates international trade. It carries more than 80 per cent of world trade by volume and almost 60 percent by value[1], which means it is also highly exposed to macro-economic conditions.

Sovereign debt problems and fiscal austerity in many developed countries have contributed to very difficult trading conditions for shipping operators. Over the past two years, these conditions have been compounded by a series of natural disasters, political unrest in areas surrounding important shipping routes, and ongoing energy and commodity price volatility.

Regulations within the shipping industry itself, notably regarding fuel emissions, and legal issues surrounding transport and trade facilitation in general are also creating a tougher operating framework.

The price of bunker fuel – already accounting for 25 per cent of operating costs – is expected to increase by an additional 50 per cent following the implementation of International Maritime Organization (IMO) rules (MARPOL Annex VI) which, in 2015, will reduce the allowable sulphur content of fuel to just 0.1 per cent in prescribed Emission Control Areas (ECAs) and to 0.5 per cent[2] elsewhere.

In addition, chokepoints in popular routes and ports, greater trade volumes among BRICS and other developing nations, the rise of piracy in key areas, and the need to navigate low-sulphur zones require new trading routes to be developed and tested.

These tough trading conditions have created a significant downward pressure on operating margins. Reduced freight rates are also having a negative impact: between May 2010 and July 2010, the Baltic Exchange Dry Index (BDI) lost more than half its value.

A partial rally in August 2010 did little to halt the downward trajectory, and as of May 2011 the BDI had declined by about two thirds[3].

Technology tools

In this environment, companies in the shipping industry need every possible advantage at their disposal.

To this end, the past several years have seen a growing number of shipping companies investing in technology solutions specifically designed to help them efficiently and effectively manage freight rate volatility, bunker fuel costs, and journey, vessel and cargo planning to minimise risks associated with vessel operations.

These traditional desktop solutions have enabled shipping companies to successfully:

- Improve the voyage estimating process by more accurately calculating business P/L before fixing, analysing cargoes, vessels, load and discharge ports, and optimising dry cargo, gas, tanker, and parcel operations
- Manage cargo tonnage more efficiently by maintaining cargo commitments and open tonnage, monitoring cargo types, and effectively matching cargo to potential vessels
- Enhance voyage management by controlling all post-fixture activities, tracking daily operations, and comparing actual versus estimated P/L
- Optimise vessel management by maintaining technical and commercial vessel descriptions, cataloguing physical details including speed and bunker consumption, and tracking commercial details, dates of purchase, and sales
- Mitigate real risks of vessel operations by generating true net freight positions covering outward versus inward positions, managing forward freight agreements (FFAs) and options to hedge, and analysing exposure normalised to Baltic prices

However, the current overwhelming trend in enterprise technology is the move to mobile. The wholesale use of Blackberries in the early years of the 21st century, and more recently the advent of iPhones, iPads and other tablet computing devices has taken enterprise computing to a new level, and created new ways of increasing productivity.

As a result, the workforce as a whole is becoming increasingly mobile. In a survey conducted for IBM, 75 per cent of executives stated that the deployment of mobile devices is critical to the long-term successes of their companies.

The Fortune 500 has already embraced modern mobility: iPhones are already being deployed or tested by 80 per cent of the world's biggest companies, and iPads are being deployed or tested by 65 per cent. And furthermore, research from Forrester shows that 75 per cent of companies report increased worker productivity from deploying mobile applications.

The power and prevalence of today's mobile devices is transforming the shape of the modern enterprise. Mobile applications empower executives to make informed, rapid decisions by giving them the data and analysis they need, when and where they need it.

Industry experts believe that in four years approximately 50 per cent of the devices connected to corporate networks will be mobile.

Mobile business applications were originally limited to delivering news and information, or generic productivity tools. Recently, however, there have been big advances in the development of applications for specific business environments.

These applications have the power to revolutionise the way shipping companies do business.

Maritime transport is self-evidently a global, mobile industry. It operates across multiple time zones, frequently involves co-ordination of efforts, resources, and information within very short timeframes, and requires informed decision-making on an almost continual basis.

Additionally, effective and efficient movement of goods requires decision makers to move between various sites without productivity loss.

Therefore, shipping is a prime example of an industry that benefits from mobile technology. The following areas are particularly well-suited for mobile applications:

- **Quoting**: The speed with which charterers can respond to quote requests often determines whether or not they win new business. Mobile applications that empower charterers to confidently price business from anywhere using real-time data and any combination of cargoes, vessels, routes, load, and discharge ports can provide the competitive edge necessary to stay afloat in the cutthroat shipping industry.
- **Fixing contracts:** Mobile applications can enable shipping companies to more efficiently respond to changing circumstances, optimise profits, and mitigate risk by running unlimited scenarios for dry cargo, gas, tanker, and parcel operations. Instant, location-independent access to current freight rates, bunker fuel costs, and other data can enable management to accurately estimate business P/L so that contracts can be fixed.
- **Operations management:** Mobile applications enabling operations to be adjusted on the fly in response to changing business conditions can prove invaluable by mitigating risk and saving time and money. For example, if the newswires report activity in a JWC Pirate Zone, a charterer with on-the-move access to appropriate systems and information can instantaneously perform the complex estimations needed to efficiently re-route vessels – taking into account suitable port availability, fuel costs for lower sulphur zones, and any demurrage incurred.

Evaluating apps

When looking for suitable mobile applications, there are a number of points to consider. The most valuable tools are not simply lighter versions of full desktop applications - they are developed precisely for the device concerned.

Entire desktop solutions that have been ported on to a mobile platform are also sub-optimal: the ideal solution will include only those tasks that are suitable to the mobile environment, and will have been developed to offer seamless performance of the key functions that are most appropriate and/or necessary for the designated users.

Mobile technology is allowing people on the move to increase the speed at which they do business

The most important point to consider is that mobile applications are a complement to desktop solutions, not a replacement for them.

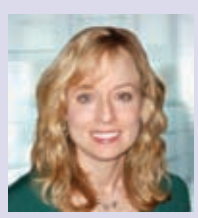
By enabling executives and itinerant employees to respond to customer and business needs from anywhere, some technology companies in the space have added an extra dimension to solutions that enable shipping businesses to address the challenges and pressures of the current business climate.

The new reality of global shipping means that industry participants must adopt the latest sophisticated technology-based tools, and do so now. The complexities of routing, high input prices, and freight rate volatility are here to stay.

Early adopters of desktop and now mobile solutions are already gaining competitive advantage; their competitors risk being permanently left behind. DS

References

1. *Review of Maritime transport, 2011: United Nations Conference on Trade and Development (UNCTAD)*
2. *www.dieselnet.com/standards/inter / imo.php; www.imo.org/newsroom / mainframe.asp?topic_id=1709&doc_id=9123; www.shippingandco2.org /CO2%20Flyer.pdf*
3. *Review of Maritime transport, 2011: United Nations Conference on Trade and Development (UNCTAD)*



About the author

Lauren LaFronz *is director of marketing and communications with Triple Point Technology, a provider of cloud and on-premise Commodity Management software that delivers analytics to optimise end-to-end commodity and energy value chains. To find out more visit www.tpt.com*

What do these market leaders have in common?

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OLYMPIC SHIPPING AS

EMAS

SeaBird Exploration

ISLAND OFFSHORE

DCF

NORTH SEA SHIPPING

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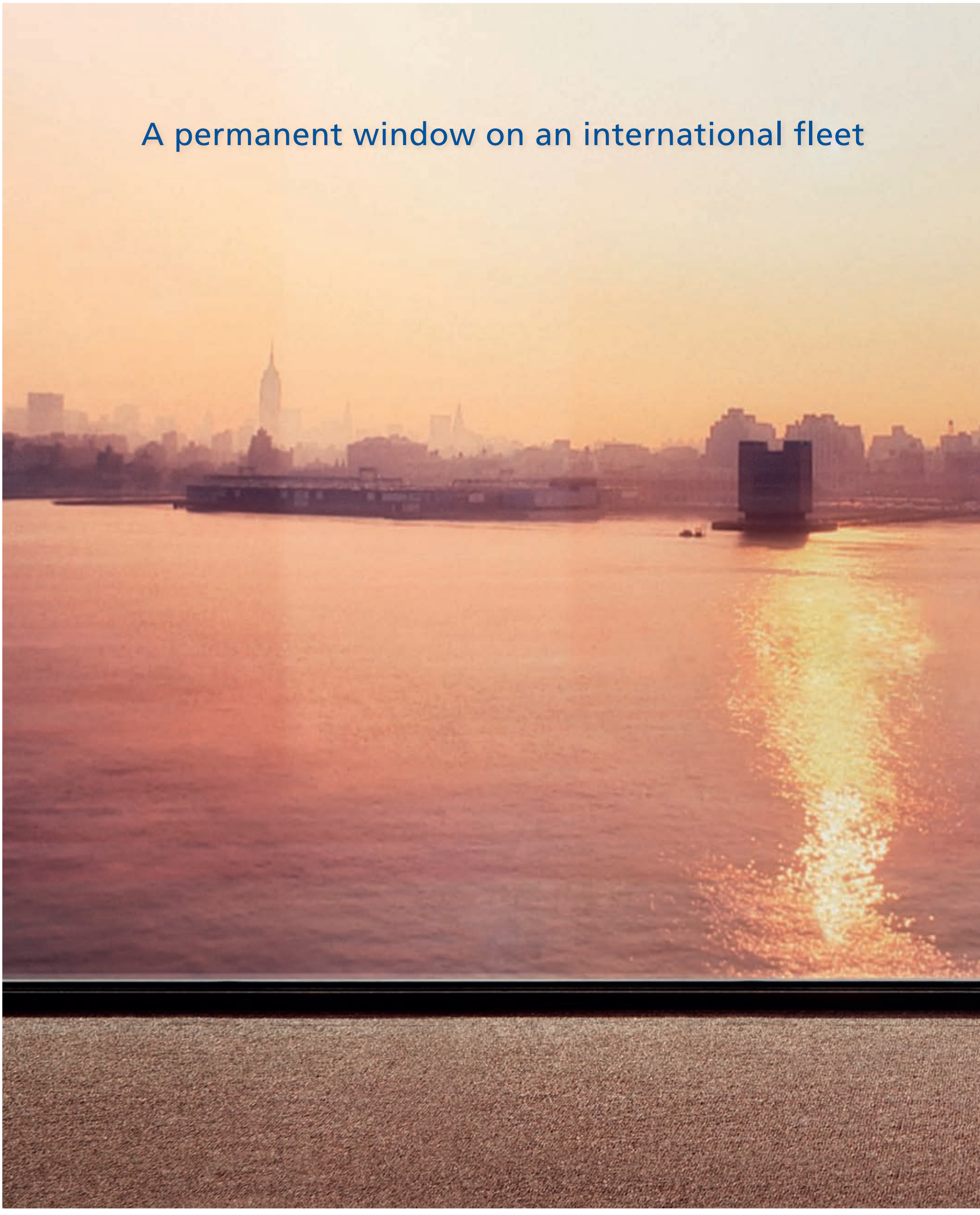

Radio Holland

See you at SMM
B6.200/B5.220

Randall Miller received the message just after the board meeting. MV Hemingway was forced to change course, due to an emergency in the next port of call. Recently Randall had selected Imtech Marine as their connectivity supplier. The promise of hassle-free solutions was delivered right away. Thanks to the global VSAT connection he could set up a crystal clear video conference with the captain, the cargo owner and port authorities. An alternative route was quickly agreed, the delay limited to mere hours.

Imtech Marine's connectivity solutions excel by their global coverage and value added services. Find out more at www.imtechmarine.com/connectivity.

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Business intelligence applications for benchmarking

Since the InterManager KPI Environment (IMKE) database was launched in June 2011, shipping companies have faced the challenge of effectively entering data into the system. COLUMBIA Shipmanagement is using business intelligence to provide a practical and efficient solution, as Timothy Scheller, COLUMBIA Shipmanagement, explained to *Digital Ship*

Key Performance Indicators (KPI) are a well-known system of measuring and benchmarking a company's performance, and shipping companies have long utilised this process in order to assess and evaluate their efficiency.

However, until InterManager, an international trade association for the shipping industry, launched its ambitious KPI project, there was a lack of KPI standardisation in the shipping industry, which made direct comparison and assessment of performance between companies difficult.

In late 2004, InterManager began driving this joint ship management initiative with the aim of developing an industry wide standard of KPIs. Over the course of the next seven years, the association created a comprehensive scheme of key performance indicators, which concluded with their launch in June 2011.

Since then, the corresponding online database for reporting and benchmarking, InterManager KPI environment (IMKE), has been publicly available and shipping companies have started to upload their KPI data to be individually assessed and anonymously compared online against an industry benchmark.

However, in order for the tool to provide effective benchmarking against an industry standard, the participation of a large number of shipping companies is required. Although the utilisation of the benchmarking database is so far free of charge, there are certain entry hurdles for new shipping companies wanting to gain access to industry benchmarking.

To begin with, shipping companies need to be able to provide comprehensive data on a wide variety of operational areas, covering inspection, HR, technical, environmental data and more, and although most shipping companies gather this data somehow, not every organisation has a structured system of collecting and storing it.

Therefore, assembling, centralising, preparing and processing this vast amount of information can pose a substantial barrier to entry for some shipping companies.

The data challenge

Once the relevant data has been assembled, shipping companies have a number of different options of how to upload their data into the InterManager KPI database.

The simplest, but most labour-intensive method is to collect the relevant information from whatever storage formats are used, which can be anything from simple paper copies to Excel or advanced databases, and feed the data manually into the IMKE database.

Traditionally, data from various international offices and vessels is submitted to the headquarters of a shipping company on a regular basis. A large number of reports are processed by these in-house departments and made available to the senior management.

Periodic assessments of the reports occasionally warrant further information, upon which the IT department is typically requested to compile data in static reports.

As there are vast amounts of data from the daily business forming part of the performance indicators, they often need to be consolidated. In order to maximise the use and informative value of the database, data is recommended to be fed into the system on a daily basis. Waiting for weekly or even monthly input decreases the accuracy of the system.

The conventional way of collecting and manually processing this information, says Timothy Scheller, business development manager, COLUMBIA Shipmanagement, is a very time intensive process in most shipping companies. High human resource costs and low levels of transparency are the result of this approach.

Some modern shipping companies nowadays use enterprise resource planning systems (ERP), software applications that automate the integration of internal and external management information across the organisation and facilitate the flow of information between all business functions.

Having an ERP in place substantially reduces the effort required to input data, which is required to provide the information needed for the benchmarking tool.

However, notes Mr Scheller, fully utilising the KPI standard as an analytical tool requires the complex process of displaying and linking multidimensional data. ERP systems are generally not capable of multidimensional data processing and forming relationships between different sets of data.

"The data that ERP systems can provide is usually more simple and standardised," says Mr Scheller.

"ERP systems are not capable of putting large amounts of information into relation quickly. Since the true value of information is to be able to reflect it from different angles and under different assumptions, ERP systems do not provide the answer to the dynamic, multidimensional reporting needs of a shipping company. Even if technically possible, pulling these reports would be a time-consuming undertaking."

Consequently, shipping companies striving to effectively feed their information into the IMKE database face the challenge of preparing the data provided by the ERP system and bridging the gap between the company's internal information source system, such as the enterprise resource planning solution, and the KPI standard.

COLUMBIA is able to upload detailed performance data about its fleet into the KPI system, to measure performance

COLUMBIA's solution

Over the last 14 months, an increasing number of shipping companies have begun to enter their fleets' data into the online IMKE database tool of InterManager's KPI project. Among the first ship management companies to feed information from their existing reporting structure into IMKE was COLUMBIA Shipmanagement.

During the process, the ship management company encountered a number of challenges.

In order to obtain correct benchmarking results, organisations that have been using KPIs need to ensure that their understanding of each individual parameter is the same as InterManager's. This part of the system integration, says Mr Scheller, is instrumental for the success of the tool.

In order to enable centralised reporting, analyses and benchmarking processes, COLUMBIA Shipmanagement embarked on an extensive IT project four years ago. During the course of this project, maritime IT company Blue Dynamics Ltd. was commissioned to revamp the company's entire IT infrastructure, which

comprises four head offices and eight crewing agencies.

In line with this ambitious undertaking, an enterprise resource planning system (ERP) was implemented, a system which is still in expansion mode. The ERP, which functions as the company's central business application, now contains all business process related data and hosts all processes throughout the whole COLUMBIA group.

Despite being an important contributor to the project, and consequently having accumulated an early and comprehensive understanding of InterManager's KPI concept and sound knowledge of the individual parameters, COLUMBIA needed to adapt its generic reporting structure and align the company's proprietary KPI system with the InterManager KPIs to integrate into the standard.

Once the informative value of the respective KPIs had been adjusted, the ship management company spent considerable time solving the challenge of effectively feeding data into the system.

COLUMBIA decided to interface the ERP system with the online benchmarking database. It became clear that an ERP alone did not provide the required structure and ability to process complex data and that a specific data warehouse architecture was needed to secure the transfer.

The company needed to bridge the gap between the raw daily transactional data sourced from the ERP, CRM, DMS and external systems, and the necessary reports for the InterManager KPIs and the data transfer into the IMKE system.

Business intelligence solution

Besides searching for an effective way of transferring its information into the IMKE database, COLUMBIA Shipmanagement wanted to have the ability to further analyse the trends derived from IMKE benchmarking. The company therefore decided to implement a business intelligence (BI) solution.

Business intelligence systems provide a means of systematically aggregating, consolidating, analysing and storing vast amounts of data, and provide organisations with historical, current and predictive views of business operations.

A widely used function of business intelligence technologies is reporting, where companies benefit from all documents being brought into context with related processes. Reports can subsequently be used to improve and optimise decisions and performance.

COLUMBIA teamed up with three specialist companies to develop a business intelligence application that would allow for simplified upload to the database and for subsequent internal analysis.

"In order to be successful in this project," Mr Scheller points out, "we agreed that we needed specialist partners."

InterManager provided an industry standard, the KPI, which COLUMBIA Shipmanagement reviewed from a practicality standpoint.

For the business intelligence platform, COLUMBIA turned to Regensburg-based evidanza GmbH, which had recently developed its new evidanza3 platform, as well as an app-based approach to BI entry solutions for specific industries.

Final integration of the disparate elements was facilitated by Blue Dynamics Ltd, which functioned as a bridge between shipping knowledge and IT knowledge.

"The goal was to create an add-on to the IMKE platform that would enable COLUMBIA to ease reporting and increase in-house ability of trend analysis," says Mr Scheller.

"Following the approach of InterManager, we wanted to leave the path of proprietary, individualistic solutions and attempt to create something like an entry-level BI standard for shipping."

In order to create a solution that could be made available to the entire shipping industry and provide a cost competitive and quick to implement tool, the participating entities decided to develop an externally hosted software as a service (SaaS) solution.

SaaS, in the form of hosted applications, are rented services that are run on external servers and warrant no hard- or software installation. The user only needs to ensure that the program is fed with the relevant data from the daily transactions.

app3shipManagement, as the tool is now called, can be accessed from PC clients, tablet PCs or smartphones around the globe in order to display business intelligence reports.

"Business intelligence is one of the most underrated and undervalued informational capabilities in the shipping industry," says Mr Scheller.

"app3shipManagement is a shipping company specific standard business intelligence solution, which allows connection from the ERP system and the incorporation of the relevant data material into the InterManager KPI project."

app3shipManagement

Many modern shipping companies use modular and partly or fully integrated ERP systems, CRM (customer relationship management) and further subsystems, such as a DMS (document management system).

The app3shipManagement application draws on information provided by these source systems as well as other external sources (see 'staging area' and 'transformation and enhancement stage' in illustration on next page), the data is consolidated and certain calculations are carried out.

The compiled data feeds into the central data warehouse (DWH), or so-called "single spot of truth". This is where the vast amounts of data are compiled in a pre-aggregated structure. This data aggregation is the heart of the business intelligence solution.

From the central data warehouse the aggregated data is transferred into OLAP (online analytical processing) cubes,

which enable the user to interactively analyse multidimensional data from multiple perspectives.

The multidimensional data mart structure of the app3shipManagement application comprises four individual structures for specific analyses; planning, safety, purchasing and operations.

Out of this central BI module, shipping companies utilising the app3shipManagement application can extract information for analyses, reporting, dashboards, and planning or workflow purposes.

"For example," explains Mr Scheller, "if a user wants to assess its crew disciplinary frequency, KPI 3.8 under the InterManager KPI system, all he needs to do is to access the application, which displays the key performance indicator, as well as the breakdown into performance indicators and their KPI calculation/formula."

The detailed display of information enables the user to access lower information levels immediately, such as individual offices or countries. Each of the subcategories can be clicked on in order to further drill down within a data warehouse to lower levels that are related to crew disciplinary frequency cases.

Once the data warehouse information is exhausted the ERP needs to be accessed for further information. Within app3shipManagement, says Mr Scheller, these functions can be customised according to the individual shipping company's dimensions.

Benefits

The app3shipManagement tool has been developed to serve companies that so far have no fully-fledged business intelligence solution in place. This particularly comprises third-party ship managers and small to medium sized shipping companies who manage their own vessels.

Liner companies, says Mr Scheller, have traditionally developed their own tools and are generally more advanced when it comes to IT, partly due to their financial strength and the need to run a complex global logistics network as their core business.

Liner companies subsequently also tend to have a more sophisticated IT infrastructure within their vessel/office environment and are therefore not amongst the prime target group.

Although every company can use the application, there are two basic main requirements for the effective implementation of app3shipManagement. Shipping companies wanting to utilise the application firstly need to align their ERP system to the KPI standard in order to ensure that all data is fed in correctly and the results yielded are accurate.

"When interfacing the generic ERP system of a ship management company with the app3shipManagement application, it is tremendously important that there is 100 per cent correlation between what the shipping company understands and the KPI standard's meaning," says Mr Scheller.

"An initial customisation is necessary, in the course of which the information that is currently gathered is identified and assessed. For example, all cases of a deficiency must be captured in order for the results to be accurate and effectively usable."

The alignment or mapping can be carried out in collaboration with the technical, operational or marine directors or managers of the shipping company and Blue Dynamics. During this process the IT company gauges what the ship management company understands about the respective terms and assists in adjusting these definitions to the InterManager standard.

In addition to the content-based requirements, a moderately sophisticated transactional business system that digitally gathers most processes within a ship management company is needed to provide the application with data. This means that companies who still use print cards will not profit from the implementation of a BI system directly, but will need to install an ERP system first.

"I strongly advise companies not to delay the digitalisation," says Mr Scheller.

"There are some ship management companies that hope to save money but waste time and run danger to miss out on technological progress. A lot of shipping companies still think very traditionally and stick to what they have always done."

If the basic requirements are met, the next necessary steps are straightforward. The app3shipManagement application is a software as a service (SaaS) product, and as it is run on an external server via cloud computing an initial setup project can be booked online.

"Booking app3shipManagement is really easy," explains Mr Scheller. "You go to the web store of the evidanza3 website, where app3shipManagement can be booked directly."

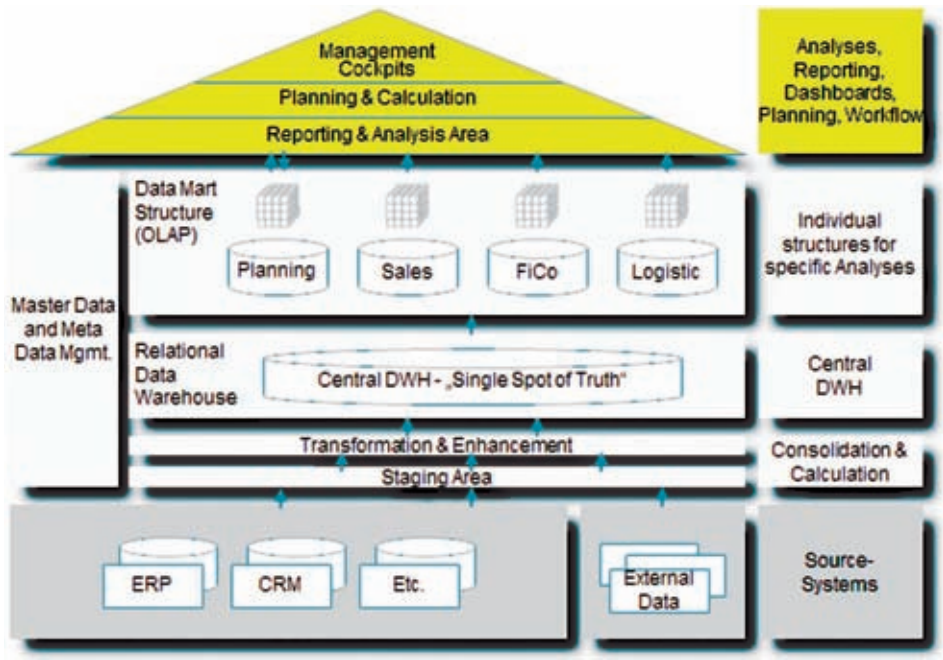
The ship management company is then contacted by Blue Dynamics for the initial set up. The IT provider schedules an appointment to evaluate the legacy systems and conduct a gap analysis of the need for action.

In addition, it assesses what needs to be done in order to connect the ERP system to the hosted environment. In the course of this initial setup project the company's data is fed via the web into app3shipManagement and onto the IMKE database.

The customisation of the ERP system is carried out by either the shipping company's own in-house IT department or a hired maritime IT software provider.

Once this step has been accomplished, Blue Dynamics builds the application program interface (API) and performs an analysis to assess the data structure of the IT software.

In order to connect the app3ShipManagement cloud with the shipping company's IT system, a data transfer agent is installed that transfers the data to the cloud. This tool ensures secure and confidential transfer of the company data.



Data must be drawn from an array of different sources and entered into the standard infrastructure to be of maximum benefit

For shipping companies that already have a sophisticated ERP system in place and a knowledgeable in-house IT department, the implementation of the app3shipManagement application and consequently the optimisation of uploading data to the IMKE database, as well as downloading benchmark data from the database, should not exceed 4 to 12 weeks, says Mr Scheller.

However, he also points out that this scenario is likely to an untypical case. On the contrary, he says, most shipping companies nowadays, especially the smaller and medium ones, are not likely to have a sophisticated ERP system at their disposal; in this case, the procedure is more complex.

Shipping companies that have not yet implemented an ERP system firstly need to assess the possibilities of pre-aggregating and/ or staging the data for a transfer to the app3ShipManagement cloud.

The duration of the implementation, explains Mr Scheller, depends on various factors like the amount of data and data sources, as well as the complexity of the infrastructure. In addition, aspects such as the data structure and the possible staging levels the data has to be subjected to need to be taken into account.

Benchmarking advantages

COLUMBIA Shipmanagement has been uploading data on the company's 190 vessels to IMKE since early 2011. Over the course of one and a half years, the ship management company has been able to gather extensive experience, both with IMKE as a benchmarking tool and the app3ShipManagement application.

Although IMKE has not yet become an industry standard and app3ShipManagement is not yet commercially available, COLUMBIA, as one of the main contributors to both, has had a chance to judge the technologies' performance.

The benchmarking function of the InterManager KPI standard will, once sufficient KPI data has been accumulated, enable a user to compare the performance of his fleet, or certain parts thereof, to the average of other IMKE participants.

Assessing a company's performance compared to industry leaders provides the management with valuable information about where they have room for improvement.

Many shipping companies using the KPI tool, especially the ship owners, mainly strive to identify areas where they so far do not excel. Others, predominantly ship management companies, primarily use the benchmarking database to demonstrate their success to potential customers.

Using a business intelligence solution in order to connect data provided by the ship management company's source systems with the KPI database offers major advantages.

Firstly, explains Mr Scheller, there are purely technical benefits, as the collection and aggregation of data required for the IMKE database is significantly eased. Utilising an off-the-shelf product also provides companies with a reporting and business intelligence solution without having to invest heavily into their own IT-infrastructure and business intelligence knowledge.

With app3shipManagement, shipping companies and ship management companies have access to an out-of-the-box business intelligence system, which has been predesigned to enable the connection of information source systems and the InterManager KPI standard. It is recommended that app3shipManagement should not be customised initially, in order to keep the investment costs down.

Shipping companies utilising app3shipManagement are also not required to invest in new hardware or the development of company specific software. Since app3shipManagement is a hosted service that utilises cloud computing the solution can be tried and tested without high initial investment.

"app3shipManagement can be tried to see if it fits the shipping company's needs without committing to a substantial investment sum," says Mr Scheller.

"No expensive software licences need to be bought, you just rent the service."

Solutions in the hosted environment offer business intelligence tools with a potentially short return on investment (ROI) period. However, measuring the increase in value that the purchase of the system provides is a very difficult process and most shipping companies do not have the resources to assess the ROI accurately.

In addition to monetary considerations, the application offers a solution that can be quickly implemented. As app3shipManagement comes as a hosted out-of-the-box service, there are no lengthy lead times for the development of a customised solution. evidanza3 is targeted towards the cloud environment and thus provides an easily deployable busi-

ness intelligence platform for non-onsite solutions, minimising implementation time and cost.

"Information is power, and time is money," says Mr Scheller. "In order to obtain the necessary information quickly, business intelligence systems are needed."

Business intelligence projects are traditionally time-consuming and resource intensive. For shipping companies that have previously not used business intelligence systems extensively, the implementation of app3shipManagement can provide an entry into BI without the usually steep entry hurdles.

"Utilising app3shipManagement enables the IT department to show its senior management the beauty of business intelligence without major prior investments," says Mr Scheller.

"If the senior management realises that vast amounts of data can be uploaded quickly, be effectively compared to the industry benchmark, negative gaps can be identified instantly and located within the company's own transaction system, a more extensive and customised business intelligence solution can follow."

Apart from the purely technical and monetary considerations, COLUMBIA has found the use of app3shipManagement to offer specific operational benefits.

One of the ship management company's key reasons for implementing a business intelligence solution was to achieve better transparency with regards to ill-functioning processes.

Once the management realises that the company's KPIs deviate negatively from the benchmark, explains Mr Scheller, it can use the extensive data provided by the ERP and made accessible through the business intelligence solution in order to spot areas for improvement.

"Drilling down to the root cause is the magic word," says Mr Scheller. "It is ultra-important for a shipping company to be able to spot the reason for disadvantageous KPIs accurately, immediately and with ease."

For example, suppose a shipping company using the IMKE database for benchmarking spots a retention problem in its tanker fleet. The realisation that there is a retention problem is valuable knowledge to begin with. However, this piece of information does not identify the exact cause nor does it present a solution.

Shipping companies may not always approach problem-solving in a structured manner. Instead, decisions are often made depending on the individual case; and solutions may be determined without taking into account the whole picture or adhering to a standard procedure.

"The implementation of a tailor-made business intelligence solution as an enabler vastly increases the shipping company's ability to do root cause digging," says Mr Scheller.

"Once the benchmarking process has revealed downward gaps in IMKE, one of the most important advantages of using the KPI standard comes into play: assessing the deviation in pinpointing what needs to change."

The availability of comprehensive information, comprising transactional data for the entire company, significantly enhances the chance of determining solutions that solve the problem in the long-term. Business intelligence solutions visualise different dimensions and allow parameters to be assessed and put into context; root causes and problem patterns can be spotted more easily.

"For the retention problem this means that the shipping company can pull information for tankers that have been on inter-continental trade, were crewed by Filipino ratings under Russian command, if this is where the problem lies," Mr Scheller says.

"These reports could not be obtained quickly with just an ERP system. In order to pull this information quickly, a data warehouse and a business intelligence solution are required."

The ability to quickly and easily upload company transactional data into the IMKE database and use the benchmarking results to spot room for improvement that can be assessed within the framework of the BI fulfils the vision COLUMBIA had at the onset of this ambitious project.

Plans and outlook

The app3shipManagement system is now fully functional, and a live testing version has been out since June 2012.

Currently, the application is being extensively live tested and proofed by Blue Dynamics Ltd and evidanza. Once the testing phase has been completed, COLUMBIA Shipmanagement will complete a final industry live testing before the solution is presented to the market. app3shipManagement is expected to be in production and available towards the end of Q3 2012.

Industry-wide benchmarking, as well as business intelligence applications, are relatively new concepts in the shipping industry.

The partners believe that evidanza3 is the first app oriented business intelligence concept, while COLUMBIA Shipmanagement and its partners have been among the first to develop a BI solution that enables shipping companies to easily transfer their data into the IMKE database.

However, other providers of maritime software are likely to follow soon with solutions for InterManager KPIs and some are already testing the waters for an entry into the business intelligence app market.

The international trade association for the shipping industry has so far not been marketing app3shipManagement, and if InterManager is set to remaining impartial, healthy competition in the maritime IT market will need to be promoted. This would drive the development of better solutions for the industry.

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Applying IT for environmental responsibility

Carbon emission reduction is an on-going challenge for the global shipping industry, and the use of modern IT can play a major role in managing the operational data that is key to this process. German shipping company Hamburg Süd is developing new software to tackle this problem – Frank Dubielzig, Hamburg Süd, spoke to *Digital Ship* about the company's environmental responsibility project

Increasing public ecological awareness and recently introduced legislation have put the shipping industry under continuously increasing pressure to improve environmental performance. This trend is enhanced by substantial global concerns about climate change and global warming.

Although oceangoing vessels are scientifically proven to be the most efficient mode of transport (on the basis of fuel consumption/transported unit, for example, compared to the aviation industry that produces up to 40 times more emissions per transported unit), the shipping industry faces numerous challenges with regard to a notable reduction of its emissions, especially CO2 (carbon dioxide), SO2 (sulphur dioxide) and NOX (nitrogen oxides).

Besides the resource-consumption of fuel and the consequent emissions into the air, there are other environmental issues that have to be monitored and managed by shipping companies.

Amongst the hotly debated issues are also the production of sludge, garbage and sewage, the usage of certain chemicals, e.g. for cleaning, and the exchange of ballast water with the risk of introduction of invasive species in foreign waters.

Hamburg Süd has joined forces with the classification society, Germanischer Lloyd (GL), in order to improve its monitoring of vessel operations, consumption and, consequently, emissions, in order to reduce the latter and guarantee compliance with regulations.

Hamburg Süd, founded in 1871, operates a total of 160 vessels worldwide, most of which are container vessels. With more than 3,100,000 TEU cargo transported in 2011, the shipping company not only consumes a lot of fuel, but also has to deal with a substantial amount of emissions.

"If you ask a shipping company nowadays how much CO2 and other emissions were emitted in order to transport a certain item, you will receive an answer that is at least partially based on theoretical assumptions," says Frank Dubielzig, specialist environmental control, Hamburg Süd.

"We have started a new project together with GL, which aims at resting the answer to this question on more tangible data and real values as opposed to better guesses."

Drivers

A number of different key drivers enticed Hamburg Süd to try and improve its environmental performance.

One important factor, says Mr Dubielzig, is that a growing number of customers, as well as a variety of other different stakeholders, are becoming increasingly interested in ecological concerns and the preservation of the environment.

Nowadays, he notes, the interest in emission reduction concerns the entire product supply chain, and the shipping industry is a vital part of this. With the debate on global warming CO2 emissions have become a 'hot topic', not only with regards to environmental regulations, but also as an obligation and responsibility towards future generations.

"With the vast majority of goods worldwide being transported across the sea to their final destinations, some have come a long way and spent considerable time being shipped across the oceans," says Mr Dubielzig.

"How much CO2 was emitted in order to transport a certain item is often difficult to track. Hamburg Süd ranks among the world's 15 largest container companies and we want and need to provide this information to our customers, the authorities, and last but not least our own management which continuously aims at reducing the company's environmental footprint."

The most important stakeholders for a shipping company are its customers, who often strive to assess the CO2 emitted per transported good (absolute or g/TEUkm) in order to reach certain CO2 reduction targets.

"Our customers regularly approach us for environmental information," explains Mr Dubielzig.

"In addition, they are increasingly interested to learn if Hamburg Süd itself has set certain emission reduction targets."

Shipping companies are further incentivised to implement environmental compliance measures by a growing number of regulations.

National and international authorities, such as the International Maritime Organization (IMO) and the United Nations Framework Convention on Climate Change (UNFCCC) have increasingly focused on topics of environmental concern in recent years. An array of legislation and regulations covering this issue have been passed or are currently in the process of being decided.

International legislation concerning the reduction of emissions from shipping is being enforced, for example, through the International Convention for the Prevention of Pollution from Ships (MARPOL), which was adapted as early as 1973, but has undergone crucial changes with regards to air pollution in 2005 (Annex VI Prevention of Air Pollution from Ships).

Further amendments have followed, introduced new limits for fuel sulphur content and NOx, such as the revision of MARPOL Annex VI in October 2008.

In 2011, the IMO adopted mandatory measures to reduce the emission of greenhouse gases (GHGs) from international shipping.

The new Annex VI chapter 4 on energy efficiency for ships makes the Energy Efficiency Design Index (EEDI) mandatory for new ships, and the Ship Energy Efficiency Management Plan (SEEMP) for all ships. These regulations are expected to come into force in January 2013.

'Our customers regularly approach us for environmental information' – Frank Dubielzig, Hamburg Süd

New regulations such as the Ballast Water Management Convention are progressing, but have not yet achieved the necessary ratification requirements.

The Energy Efficiency Design Index concerns the construction of the ship itself, and measures how efficient the ship design is in relation to its size, whereas the Ship Energy Efficiency Management Plan assesses how effectively a vessel is operated.

The Energy Efficiency Operational Indicator (EEOI) provides a monitoring tool, designed to measure the fuel efficiency of vessel operation and to allow assessment of how effective changes in operation are.

On top of this expansive framework of environmental legislation, non-governmental organisations (NGOs) are also scrutinising resource consumption and emissions, and even rank vessels based on their efficiency. This, explains Mr Dubielzig, puts pressure on shipping companies to carefully calculate their vessel efficiency and recheck the data presented by an NGO.

Last but not least, the media is increasingly interested in researching and publishing the environmental performance of large companies. Negative publicity with regard to environmental compliance and emission management can have disastrous consequences for shipping companies, which is why the growing media attention provides a strong incentive for larger companies to responsibly deal with these topics, as Mr Dubielzig points out.

In addition to external stakeholders, the internal management at Hamburg Süd is keenly pursuing improvement in its environmental performance. The shipping company is currently in the process of setting itself ambitious targets with regards to different environmentally relevant issues, as Mr Dubielzig reveals.

Hamburg Süd has had an environmental policy and a certified environmental management system since 2000, based on which the shipping company conducted a comprehensive environmental analysis, the eco-balance, for the year 2010.

For this study, environmentally relevant quantitative data was gathered, covering environmental aspects of vessels, intermodal transport, containers and offices. This eco-balance will now be conducted on a yearly basis.

"Not very surprisingly for us, the central result of this analysis was that our main CO2 emissions are generated by our container vessels, which are obviously also the main source of energy consumption," says Mr Dubielzig.

"Although the eco-balance presented for the first time a quantitative picture of environmentally relevant inputs and outputs, we also learned that more encompassing and detailed quantitative information with regard to the different topics is needed for our environmental control system."

Improving environmental performance

Shipping companies utilise a wide variety of measures to improve the efficiency of their vessels, including optimised hull designs, special paint, propulsion support technologies, software for optimum trim/draft and routing, and many more.

Hamburg Süd has identified three broad complementary areas in which the shipping company employs numerous measures to increase the environmental performance of its vessels – improved efficiency, vessel operation and information technology.

In line with this, Hamburg Süd has implemented operation optimising measures such as slow steaming, which can be

both ecologically and economically efficient due to reduced fuel resource consumption, emissions and bunker costs.

Slow steaming, explains Mr Dubielzig, was originally introduced in order to save on bunker costs, however the positive impact on emission reduction has turned out to be substantial, and has led to significant reductions in CO2 emissions in particular.

Further measures focus on open sea ballast water exchange and bilge water de-oilers with very low limits. Open sea ballast water exchange reduces the risk of introducing invasive species in foreign coastal areas while highly efficient de-oilers refine the bilge water by separating oily parts.

With regard to ballast water, says Mr Dubielzig, new legislation will come into force soon, namely the Ballast Water Management Convention. This provision requires shipping companies to install ballast water management systems, which reduce the number of marine species in the ballast water below certain limits.

In the wake of this legislative procedure, several technologies, such as filtration and ultra-violet light, are being developed and have to be approved by IMO before they can be implemented by shipping companies.

New legislation, explains Mr Dubielzig, is an effective way of forcing shipping companies to reconsider their vessel operation.

The Ship Energy Efficiency Management Plan (SEEMP), part of the IMO regulation coming into force in 2013, has considerable potential for environmental performance improvements.

This scheme, he says, incorporates best practices for fuel efficient operation of ships, such as better speed management throughout a ship's voyage, which are hoped to significantly reduce fuel consumption and, consequently, CO2 emissions.

Although, as Mr Dubielzig reports, classification society Germanischer Lloyd has attested to the fact that Hamburg Süd's existing owned vessels already operate below the emission standards set down in the Energy Efficiency Design Index (EEDI) coming into force in 2013, the shipping company continues to improve the efficiency and ecological friendliness of its operations.

In addition to the above mentioned measures, the shipping company is currently focusing on information technology as a means to support emission reduction and lessen the environmental impact of sea trade.

Comprehensive environmental information systems, in particular, can help improve the collection, exchange and use of environmental data and information across the fleet, notes Mr Dubielzig.

So far, an all-encompassing structure that would systematically concentrate, filter and analyse environmentally relevant information has been lacking.

"Some problems are related to this missing system," says Mr Dubielzig.

"In order to further reduce our emissions and other environmental impacts and satisfy diverse reporting requirements, we need very detailed and consistent information from the vessels. We noticed that the current reporting from the vessels has to be improved in order to fulfil our information demands."

Software systems

Hamburg Süd decided to remedy this situation and find a sustainable solution for the problem of environmental data management by teaming up with Germanischer Lloyd to create a wide ranging environmental information system.

In 2011, the two companies signed a cooperation agreement and are currently in the process of testing a first prototype, which was released in April 2012.

The GL EmissionManager ship management software is designed to systemise and structure reports that are traditionally recorded in less coordinated ways. Operational and voyage related data, such as noon, departure, arrival, and stoppage reports are recorded and analysed, and environmental information, on factors such as fuel, emissions to air, garbage, sludge, ballast water and chemicals are extracted.

The system consists of two parts, a software component that collects information (EM Recorder) and a 'Green Server' at Germanischer Lloyd, where the data is analysed and certified and where different reports are produced. In addition, the Green Server forwards the data to in-house databases at Hamburg Süd.

The first step in implementation of the system sees the Emission Management Recorder (EM Recorder) installed on a computer on each participating vessel. The software collects environmentally important data in the form of voyage and operation reports. Each report, explains Mr Dubielzig, has a standard form containing relevant fields.

For example, the port departure report contains fields regarding cargo load, fuel, position and more, whereas in the garbage report the crew can enter information about the amount and type of garbage and kind of disposal.

While in the early stages of the project the relevant data still has to be entered by the crew manually, it is planned that in later versions of the tool at least parts of the data would be entered automatically through the connection of the EM Recorder to other systems on the ship, Mr Dubielzig says.

Once all data for a report is collected, the master can immediately submit the report to the 'Green Server' at Germanischer Lloyd via the EM Recorder in the form of an e-mail with an attachment. If desired, he can also collect several reports and send them all together.

"In order to allow for all-encompassing environmental controlling and reporting, a lot of traditionally relevant information like position, distance sailed or fuel consumed is needed," says Mr Dubielzig.

The company expects the new software to show focused environmental details, down to the emissions per cargo on a specific transport

"Consequently, the GL EmissionManager allows reporting of this traditional information in a much more systematic and structured way. As a result, other departments like Marine Operations benefit from the development of the software."

Hamburg Süd and Germanischer Lloyd have tried to make the GL EmissionManager easy to operate so that it creates no extra work for the crew.

"Through the single click of a button the numerous standard forms are transferred from the EM Recorder to the Green Server, which tracks all reports," says Mr Dubielzig.

"The system checks that no reports are missing. If the Green Server, for example, receives an end of sea passage report, it automatically checks that all prior reports have been sent. If a report is missing, the vessel and the office are notified and further enquiries can be made."

In addition, standard event e-mails are automatically sent from the vessel to the Green Server in order to signify standard events, such as port departure. These standard event e-mails are transferred onwards from the Green Server to a variety of recipients at Hamburg Süd or to the corresponding agents. The master can define additional recipients through the EM Recorder.

Data fed into the Green Server is aggregated and analysed. In addition, explains Mr Dubielzig, some data, such as fuel consumption and distance sailed, is combined for standard environmental reports, for example the report to the Clean Cargo Working Group (CCWG), an organisation of shippers and carriers aiming for environmentally friendly transportation.

"Once a year, we have to send a report including the fuel consumption of our entire fleet to the Clean Cargo Working Group," says Mr Dubielzig.

"At the moment, putting together this report is a substantial amount of work for the staff. However, we are looking forward to the point where the report is compiled automatically through the Green Server."

The Green Server at Germanischer Lloyd is controlled through a web interface, where Hamburg Süd staff onshore can log in. This way, information can be added or corrected and additional reports can be generated, for example, about the ship efficiency of a particular vessel, a specific service or of the whole fleet.

From the Green Server the information is transferred to Hamburg Süd's own system, where it can be combined with data from internal sources, such as customer data. This way, explains Mr Dubielzig, client specific carbon footprints can be assembled.

In addition, the shipping company can choose to have its data certified by GL through the Green Server.

A safeguard for data quality and integrity

Hamburg Süd is expecting the implementation of the new software system to yield considerable benefits, particularly the ability to assess CO2 emissions and break down the overall output into individual values, such as the emissions per cargo on a specific transport.

The company is also keen to use this tool in order to calculate data, such as the real capacity utilisation, and to use it to replace the traditional ship to shore reporting and to further standardise and structure the reporting process.

"This new reporting process is a safeguard for highest data quality and integrity," says Mr Dubielzig.

"Through event triggered reporting, plausibility and completeness checks, we will ensure that all data is correct and complete."

The system is furthermore designed to store and automatically reuse information that has been entered once, avoiding duplicated work for the crew.

A further simplification is achieved through smart default values. For example, the 'remaining distance' field in a voyage report is set with a default value, which is obtained through the automatic calculation of the 'remaining distance' (last report minus the entered value of 'distance sailed' since this last report). If needed, the master can overwrite the smart default values manually.

The new system simplifies the workload for both crew on board and staff in the office. Crew on board will benefit from a central unit data input, which unifies all formats and data collection transfer methods used prior to the implementation of the GL EmissionManager. Staff in the office also benefit from a significant reduction of manual data handling and analysis.

Hamburg Süd is further hoping to benefit from another innovation, the guided workflow for reporting.

In addition to the emissions software, the GL FleetAnalyzer, Germanischer Lloyd's business intelligence system for shipping companies, can be used to apply structured information in an aggregated manner, for management reporting and statistic forms.

This, says Mr Dubielzig, allows a fleet wide view as well as flexible drill down 'slicing and dicing' functionality for analysis and reporting.

"These innovative features make the system very attractive for us at Hamburg Süd," says Mr Dubielzig.

"Our environmental control department at Hamburg Süd can avail itself of a larger amount of data and information on environmentally relevant processes. There are however also other departments that are interested in this data, such as marine operations and line management, which can then access more detailed and comprehensive databases."

In addition, the GL EmissionManager provides the shipping company with a variety of key performance indicators like g CO2/TEUkm.

"These key performance indicators help to assess the environmental performance of just one vessel, a group of vessels or the entire fleet. We can further choose different parameters such as SO2 emission per TEUkm or fuel oil consumption per TEU. This is a great tool for us, and allows us to drill down to the areas where we want to improve," says Mr Dubielzig.

The collection of environmentally relevant data is simplified and aggregated, which eases the workload and provides a broad base for additional analysis.

"I am very happy with the amount of data that will be provided. This will enable us to conduct a greater variety of analyses," he says, and continues "we are also well set up to deal with future environmental regulations and stakeholder demands."

A fleet wide rollout in planning

After the first prototypes of Green Server and EM Recorder were tested in May 2012, Hamburg Süd began planning the roll out of the GL EmissionManager system on its entire container fleet, as well as on the shipping company's chartered vessels, at the beginning of 2013.

"We have already spoken to the first charter shipping company about the implementation of the GL EmissionManager and the feedback was very positive," says Mr Dubielzig.

Germanischer Lloyd and Hamburg Süd are already planning future enhancements to the solution, including automatic data tapping, such as machinery data, from other ship systems.

"At the moment this is still a big problem, which will hopefully be solved through the GL EmissionManager in the near future," explains Mr Dubielzig.

In addition, Hamburg Süd is planning to integrate data from other sources, such as tonnage centres, weather data service providers and fleet tracking providers, which will allow several additional forms of analysis. Furthermore, the amount and range of plausibility checks is going to be enhanced.

"IT can help us to identify environmental improvement areas and it helps us to collect all the relevant information in order to set environmental targets," Mr Dubielzig concludes.

"It further helps us to analyse our target achievement. Extremely importantly, it helps to sensitise staff on board and onshore and building up awareness for environmental topics."

"You cannot manage what you cannot measure, and this holds true for our environmental topics. It is impossible to reduce emissions without knowing how much is actually emitted. In order to gauge the potential for emission reduction and reach these aims, comprehensive data is needed – this is what the GL EmissionManager aims for." DS

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Cost-cutting with control, transparency and predictability

In the current economic climate, shipping companies need to focus on saving costs wherever possible, but besides obvious cost savers, such as fuel consumption, it can be difficult to identify other areas to economise. In April 2003, Lauritzen Bulker implemented a new disbursement account solution that has proven to be a valuable investment – Mikael Schultz, Lauritzen Bulker, spoke to *Digital Ship* about the project

Surviving the recession is high on the priority list for many shipping companies nowadays. Amongst the numerous methods of cost saving is, first and foremost, fuel oil reduction, which is being accomplished through costly projects, such as remodelling hull forms and applying new coats of antifouling paint.

Other bunker saving schemes involve slow steaming, precisely scheduled arrival times and the utilisation of advanced weather routing techniques.

Shipping companies looking at streamlining their other business operations however can also make use of a wide portfolio of cost saving options, particularly by applying advances in technology.

Danish shipping company Lauritzen Bulkers, a subsidiary of J. Lauritzen, is one of those companies that has successfully applied IT to improve cost efficiency, having used a PortSpend Management system from port cost management provider DA-Desk for nearly ten years.

PortSpend Management is a disbursement account (DA) solution designed to simplify disbursement account processes for shipping companies. The entirely web based solution automates and digitises the DA process from order to settlement of maritime port costs.

In a four step procedure, comprising the nomination of an agent, obtaining an estimate, finalising transactions and subsequent cost settlement and accounting processes, the solution takes into account all aspects of disbursement accounts.

In the first phase, PortSpend Management offers automated creation of agent appointments, thus simplifying the search for an appropriate agent, checking of credentials, confirmation of appointment and notification of all parties.

Step two delivers a screened and approved estimate (pro-forma) within 24 hours, an automatic update of all information online, advance payment advice, as well as netting/balancing confirmations.

During step three, DA-Desk receives the physical DA from the agent, enters the final disbursement account into the system and establishes an audit trail to all respective invoices. In addition, all final approvals are provided online and the balance or settlement recovery is determined.

The final phase of the DA process comprises rebilling of owners and charterers, the provision of balance payment advice and finally the archiving of the complete voyage documentation after the successful completion of a port call.

Previous processes

Before the implementation of a concerted and standardised disbursement account procedure, processes at Lauritzen were managed individually and manually. Obtaining port cost estimates from agents, internal decision-making and approval, transferring upfront funds and balancing these with the actually incurred costs used to be a multi layered and lengthy practice.

The first problems regularly occurred when trying to contact the right agent, as Mikael Schultz, vice president, manager accounting/control, Lauritzen Bulkers, recalls. Once an agent had been selected, contact information often needed to be manually located in order to appoint him and send over the voyage instructions.

This process was often hampered by the fact that the available data was outdated and inaccurate. As a consequence, the operator had to spend time searching the internet for the correct contact details. To further complicate matters, the voyage instructions were not always standardised.

With the communication tools available at the time operators would find themselves reusing their own previous instructions, which made it difficult to centrally control changes in specifications or policies across the company, says Mr Schultz.

Once the operator had acquired the correct contact information, he would send a semi-standardised voyage instruction to the agent.

Since there used to be no automatic confirmation of receipt, the Lauritzen operators frequently had to follow up with the agents to verify that the instructions had been received and that the estimate for the port costs (pro-forma) would be submitted well before arrival of the ship, only after which agreements as to the exchange rates or agency fees had to be made.

Often time did not permit such agreements to be properly in place prior to the arrival of the vessel. Cost estimates, sent by the agents, would come in on faxes, with information (such as account numbers) often hardly legible and composed in foreign languages.

"Quite often," Mr Schultz explains, "we would visit foreign ports, where we had no update on what the actual port costs would be and we would find ourselves very much at the mercy of the local agents."

"Although there were a couple of websites at the time, such as by BIMCO, that offered a cost estimator, they were nowhere near as good as they were supposed to be."

The operators and controllers at Lauritzen would assess the cost estimates, approve or renegotiate with the agents and eventually advance payment would be sent out to foreign accounts.

Then the process of chasing the agent for the final disbursement account would begin. This, as Mr Schultz recalls, often used to be tedious work involving multiple e-mail or telephone conversations with the agent.

"Every time an agent needed to be contacted, the operator had to look up the correct contact details on the respective agent file," he recalls.

"According to conservative estimates, we had to chase the agents to submit the final disbursement to us in around 20 per cent of all port calls."

The final disbursement account, including envelopes full of receipts, would be sent by courier, leaving the shipping company no influence on the choice of the courier solution and the costs associated with it.

"Hundreds of kilos of papers would be coming through our doors and clog up our mail office," says Mr Schultz.

"Distributing them to the appropriate operator could take a lot of time. In addition, we had no feel for where the DA could be found if needed, and would often be chasing DAs that were already received in the mailing room elsewhere."

Once the DAs had reached the respective operator or controller, they were piled up in a stack waiting for the operator to cross check the final disbursement account

Before applying IT to the problem, Lauritzen Bulker had difficulty defining actual costs in foreign ports

against tariffs and contracts, verifying all charges in order to establish the audit trail and ultimately to institute a balance payment or recover a balance.

"During busy times, disbursement accounts are not priority work for our operators," Mr Schultz says, "and there would often be mounds of documents that could not be processed promptly."

"We had no consistent general overview about the accuracy of the disbursement account estimates. Whether there was a substantial balance in our favour, or to our disadvantage, we could simply not gauge."

"Getting an overview over our accounts payable or accounts receivable was a complex task. If an agent called and asked for a balance which was yet to be approved, we would have to manually go into all our disbursement accounts, which would have often not yet been processed, and gather the relevant data to calculate the result."

Lauritzen frequently had to hire freelance staff to help out with processing the overdue disbursement accounts at busy times.

"The problem with hiring freelance staff occasionally is that they rarely bring the right skills necessary to conduct the required processes quickly and accurately," says Mr Schultz.

In retrospect, the Danish shipping company recognises a number of issues with how disbursement accounts used to be processed.

'We decided, in this case, that an out-of-the-box solution would make a good fit for our company'
– Mikael Schultz, Lauritzen Bulker

A substantial amount of time was dedicated to locating and updating information as well as chasing after communications and documents. In addition, Lauritzen had little control over when estimates would be coming in, which involved a certain amount of uncertainty.

With regard to certain types of expenditure, such as the choice of courier services, the shipping company would be dependent on the local agents.

"We were wasting a lot of time chasing documents, because we had no control about when they would be coming in and where they were," says Mr Schultz.

"In addition to being lengthy and quite costly, the multi layered process took away valuable time for optimising the voyage itself."

Decision and implementation

With the realisation that its way of handling the disbursement account processes added a lot of extra work for its operators and dedicated controllers, who needed more time to optimise voyage results, Lauritzen decided to examine the possibility of buying an external solution to revise and improve its disbursement account processes for the first time in 2002.

"We knew our solution was not optimal, but at the same time we did not have the resources to completely revamp it ourselves," says Mr Schultz.

"However, I am generally very critical and hesitant towards outside software providers and their products, since especially shipping companies need very individual and customised software."

In the early days, Lauritzen researched software packages from Eastern European companies, which, Mr Schultz says, had a solid level of knowledge about port disbursement. However, the shipping company decided not to pursue this idea because it feared that security arrangements were unsuitable.

"We did look at other alternatives," says Mr Schultz, "but ten years ago, around the time we decided to utilise an external disbursement account solution, there were no other providers that satisfied our requirements."

"However, when DA-Desk presented its PortSpend Management, the package sounded very plausible and convincing. I thoroughly scrutinised the solution."

"DA-Desk has extremely carefully analysed specifications applying to all dry bulk operators worldwide. This is why we decided in this case that an out-of-the-box solution would make a good fit for our company."

The most important question the company needed to answer before buying an external solution was whether there was sufficient room for enhancement in order for the expense to be valid.

Lauritzen spent three to four days carefully mapping and pricing each step of the existing processes and requirements against the concept offered by PortSpend Management before realising that the scope for improvement was substantial.

"Because the industry had been doing it the same way for the last hundred years, we had lost sight for efficiency improvements," says Mr Schultz.

"However, the self-assessment is a critical step when it comes to spending money on external solutions. We realised how many documents were coming into our in-house post office, how many hands touched them and how much space was used to store them. This was a very interesting and illuminating exercise."

PortSpend Management is an entirely

web-based solution. Consequently, shipping companies wanting to utilise the service do not need to invest in hard- or software. In addition, no system needs to be implemented on the company's computers, which saves on integration time and costs.

"I was actually quite nervous about the implementation," says Mr Schultz.

"When it comes to disbursement accounts, some agents are extremely meticulous about receiving funds on time and will arrest the ship and make it impossible for it to leave the port if funds are not there. (However,) in the 10 years we have never had an hour's delay on the account of DA-Desk."

The Danish shipping company found the solution well-structured and easy to work with. The user interface, despite the many changes over the past ten years, has stayed largely the same, and this has helped boost the acceptance of the newly utilised DA process.

Although Lauritzen's operators, who use the solution on a daily basis, resisted the change of disbursement account processes at first, Mr Schultz notes that it only took a week for the staff to realise the huge timesaving potential and to become completely comfortable with the system.

"There will always be resistance amongst shipping company staff when the solution is first implemented," says Mr Schultz.

"Although we implemented PortSpend Management in its early days, there was a very dedicated helpline, ready to respond to the operators every time they had a problem. In the initial stage DA-Desk staff would call our operators every day to ensure the solution was running smoothly and the operators were happy."

"There was more resistance with the agents than with our staff. Some agents did not take so well to being monitored and checked. Over the years, this has changed and there is no resistance from agents today. On the contrary, agents have realised the benefits they can derive from the wide use of PortSpend Management."

Agents utilising the system can use it to make sure the shipping companies receive all relevant information, such as the estimates or banking details, on legible documents and on time. As an additional benefit, the system automatically provides a notification upon the receipt of an estimate and agents can track the status of the DA in the system.

With PortSpend Management, Lauritzen was able to implement an out-of-the-box solution, however the shipping company asked DA-Desk to make one customisation to the product as the original solution put operators in full control of the estimates approvals received by DA-Desk.

"The agent would submit the estimate to DA-Desk, who would review the estimate and send it to the operator with payment recommendations," says Mr Schultz.

"This version did not work for us. In many shipping companies, the controlling department is separate from the rest of operations. At J. Lauritzen and its subsidiaries, we have dedicated shipping controllers sitting right next to the operators."

"These controllers have better knowledge of which agents are likely to have liquidity issues and difficulties refunding balances in our favour if we overpay them. This is why we needed a second tier approval."

DA-Desk customised PortSpend Management and included another level of approval, so that the operator, having approved the disbursement account in principle, would forward it to the controller.

The second tier would then be able to adjust the final payments amount and issue a final authorisation. This customisation was very easily done by DA-Desk, says Mr Schultz, and now, although the solution was purpose-built for Lauritzen, there are a number of shipping companies who have since utilised the two tier approval function.

It took approximately one week for Lauritzen operators to become comfortable with the new system

Another important, although often underrated, feature of external solutions is competent and readily available support.

"I'm usually very critical of outside software vendors," notes Mr Schultz. "We need to rely not only on the solution itself but also on the service of a provider."

However, despite initial concerns, the Danish shipping company says it is pleased with the service provided.

"DA-Desk delivers exactly what they promise," Mr Schultz says. "The downtime on the system has been nominal over the last ten years. It is usually a matter of minutes to get the system up and running again."

"You can always call the helpline and you will get help right away. If an operator has any difficulties he can reach DA-Desk with the click a button and will be contacted by somebody who can help them."

In order to improve the quality of its offering and to ensure the system is running smoothly, DA-Desk has extended the service line to the agents through an agent's relations department helpdesk.

Software benefits

Over a period of 10 years, Lauritzen has gathered extensive experience with the DA-Desk solution and explored its costs as well as its benefits.

As an entirely web-based service, PortSpend Management does not require any investment besides the negotiated fee. There are no additional hardware or software requirements and the system can be accessed from existing computers.

Despite the fact that no time needs to be spent on a software installation, shipping companies wanting to utilise the disbursement account solution need to be aware that some initial expenditure of time is required, not only to assess if the potential benefits outweigh the fee but also to map its processes and documents.

"Reviewing every single step of every single task being made in the office to support the processes surrounding the funding, approval and posting of one single port call is time consuming and frankly quite eye opening," says Mr Schultz.

"We initially felt we had solid internal workflow which we had spent considerable efforts on reviewing and optimising again and again over the years. Yet detailed analysis clearly showed us that we could not match the combination of digitalising the workflow and documents in combination with a large team of dedicated specialists offered by PortSpend Management."

The savings realised through the use of the DA system quickly compensates for the financial input, says Mr Schultz. Lauritzen reckons that implementing DA-Desk's solution paid off after the 10th disbursement account.

"Today we save on every single disbursement account," Mr Schultz notes.

These cost savings have allowed the company to economise on freelance staff and significantly free-up capacity among its in-house operators and controllers. However, instead of laying off staff the shipping company could use the human resources to attend to what they did best – ordinary shipping accounting and operating for the newly acquired vessels.

"We never downsized. We decided that we could put our very skilled and dedicated staff to much better use," explains Mr Schultz.

"Around the same time of the implementation of PortSpend Management, we decided to upscale our fleet and we needed the resources to operate these new vessels."

In addition to saving on human resource expenditure, the shipping company has been able to economise on a number of seemingly minor expenses.

Items on the cost sheet that are small but add up across the fleet, such as courier costs for estimates and final DAs, were standardised and reduced by DA-Desk as it has a global agreement with major vendors and can thus negotiate a fixed tariff.

"We appreciate that we are not exposed to the significantly different local agreements which an agent may have with the local vendor," says Mr Schultz.

"On the DAs themselves, we can probably save around US$20 on courier costs per port call. This doesn't sound much at first, but if you add it up then multiply it by the many thousands of port calls we have had in the past ten years, it builds up to a very significant return on investment."

"The mere fact that we were actually assessing the costs closely, calling the agents and requesting information, adding up the numbers, verifying the estimates, saved us costs, because the agents realised that we were making the whole process more transparent. Although it is difficult to quantify the savings, I'm positive that there is a significant saving on at least every 10th disbursement."

Besides the cost reduction, using PortSpend Management has created other benefits for Lauritzen.

Conducting the entire communication in a language of choice, ensuring the availability of correct contact details, and having preapproved exchange rates has substantially increased both transparency and control of the disbursement account process. In addition, the system standardises and digitises processes and therefore saves operators a significant amount of time.

Delays in the disbursement account process can be very expensive to shipping companies. Mr Schultz explains that a single day's delay for a vessel could, depending on the market, put paid to the savings generated by PortSpend Management over an entire year – however, as noted Lauritzen has not experienced even an hour's delay since it began using the system.

The standardisation of disbursement account processes across various companies also helps in creating a level of knowledge of this way of working that Lauritzen has been able to benefit from, as it can hire new operators from competitors that already have a working knowledge of PortSpend Management.

"We have grown significantly over the last 10 years," says Mr Schultz.

"In the process we have added staff in all our offices. Some of our new operators are coming from our competitors and they already know DA-Desk. It has almost become a kind of standard in the shipping industry."

Another advantage of using PortSpend Management is that when vessels are chartered out to competitors or chartered from competitors, the costs incurred can be handled with more certainty and a lot more quickly.

In essence, Mr Schultz believes that ship owners spend hundreds of millions of dollars on port calls every year without really realising the substantial expenditure. Using technology can help to open their eyes to identify how they are really doing business, and offer steps to improve those processes.

"Today we are paying incredible attention to the right price of bunkers, or on getting the right financing," he says.

"Until DA-Desk standardised disbursement account processes, we didn't pay much attention to the US$25 million spent on disbursement accounts in the lifespan of a vessel."

"Standardising a solution in the shipping industry is not an easy task and many software shipping ventures have tried and gone down in flames. DA-Desk has managed - there's a reason for it." DS

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US and India develop national AIS systems

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The US and India have both recently announced developments in projects to introduce nationwide Automatic Identification System (AIS) networks that would improve country-wide vessel tracking in their respective countries.

The successful implementation of the National Automatic Identification System (NAIS) on the Indian coastline for India's Directorate General of Lighthouses and Lightships (DGLL), which will also be used by the Indian Navy, Coast Guard and DG Shipping, has been completed by Swedish company Saab.

The National Automatic Identification System was inaugurated by India's Union Minister for Shipping, Thiru G K Vasan, at a formal ceremony in Chennai. NAIS provides coverage to the entire Indian Coast, with 74 lighthouses now fitted with the Saab systems.

Automatic Identification System signals are used to provide real time merchant traffic information, with a web server allowing access to live data over the internet.

The project comprised installation of sensors and equipment along the Indian coast for regional and national control centres, with Saab managing installation, commissioning, training and support for the project, along with its Indian partner, Elcome Marine Services.

"We have been using the system as part of acceptance trials for the past six months and are very pleased with the performance," said P P Sinha, deputy director general and nodal officer (NAIS) at DGLL.

"The team of SAAB and Elcome have worked hard to complete the project well within the time period, which is an achievement by itself considering the large scale geographical and technical complexities. Our comments and suggestions during the implementation phase have been well received and have been implemented as the project went along. Overall it was a nice experience to work with the team."

"The NAIS network has suitable interfaces that have already been incorporated for adding radar, cameras and other sensors. The system has already been integrated with existing radar and AIS in the country to provide a holistic overview of the coastal maritime domain. The NAIS network would thus play a vital role in meeting the long term coastal surveillance needs of India."

In the US meanwhile, Northrop Grumman Corporation has completed core capability development of the country's own Nationwide Automatic Identification System, and delivered it to the US Coast Guard to begin formal government testing prior to deployment.

The Nationwide AIS system aims to provide a comprehensive view of vessels bound for and navigating within US ports and waterways. Northrop Grumman developed the shore-side communications, network and processing capability to facilitate the exchange of the AIS information.

The system will include a network infrastructure that collects, stores, processes and disseminates AIS data, via a two-way maritime digital communication system that queries incoming vessels to check vessel identity, position, speed, course, destination, and manifest and cargo data.

The information will be combined with other government intelligence and surveillance data and shared with authorised government operators to enhance maritime situational awareness.

Prior to the delivery to the Coast Guard, the Nationwide AIS developmental test and evaluation process incorporated test environments and scenarios to examine reliability, maintainability and availability requirements at physical and logical shore installations.

Additional tests were performed with a test environment onboard a test vessel travelling various courses and speeds within inland waterways and offshore out to 50 nautical miles.

"The Coast Guard's goals for enhancing maritime domain awareness include the ability to detect and classify potential threats as early and distant from US interests as possible," said Pat Camacho, vice president of integrated command, control, communications and intelligence systems for Northrop Grumman Information Systems.

"By monitoring the virtual network created by AIS-equipped vessels, Nationwide AIS will help decision-makers to better respond to safety and security risks."

Northrop Grumman was awarded the $12 million Nationwide AIS contract in December 2008.

Maritime Information Systems (MARIS) has appointed Ove Bråthen as director of sales for Scandinavia, taking over from Line T. Øverland. During his 25 year career Mr Bråthen has previously worked with companies like **Schlumberger Oilfield Services, Kongsberg** and **Evry**.

Nico International has been certified by **Germanischer Lloyd (GL)** to offer vibration monitoring and diagnostics services for machinery onboard GL-classed vessels. Using a certified vibration monitoring service supplier allows shipping firms to streamline the documentation required to qualify for GL's 'Condition Monitoring' survey arrangement.

SevenCs has appointed Bjoern Roehlich as sales director. Mr Roehlich previously worked with **Transas**, and was most recently managing director of ECDIS training provider **Safebridge.**

SevenCs new sales director, Bjoern Roehlich

Imtech reports that it has acquired the Belgian maritime technical services provider **Van Stappen & Cada NV,** a company based in Antwerp and specialising in marine electronics and electrical solutions.

Raytheon Anschütz has established a new subsidiary in Brazil, Raytheon Anschuetz do Brasil Sistemas Marítimos Ltda, with the aim of expanding sales and service activities in South America.

Tideland Signal has appointed **Scoflex Marine** as agent for its range of aids to marine navigation in France. Located in Sucy-en-Brie, Scoflex Marine will supply and support the entire Tideland range.

Tideland Signal has also appointed James West as sales manager for Europe, North Africa and East Asia. Mr West joins Tideland from **Corilla Marine**, and was previously with **Sealine** and the marine division of **Webasto**.

James West, new at Tideland Signal

Paul Smulders (right) will replace Rob Post (left) as Netwave CEO

Ocean Signal has appointed **Martek Ltd** as its distributor for Ireland. Martek will handle the SafeSea product range in the merchant shipping, commercial fishing and leisure boating markets in the region.

Ocean Signal has also announced the appointment of **Lusty & Blundell** as its dedicated country distributor for New Zealand. Lusty & Blundell will have responsibility for sales of Ocean Signal's SafeSea product range, which includes the V100 GMDSS hand-held radio, as well as the E100 and E100G EPIRBS and S100 SART.

Paul Smulders has been appointed as CEO of **Netwave Systems**. Having served as a nautical officer until 1989, Mr Smulders previously worked as managing director of **Radio Holland Netherlands.** Outgoing CEO and company founder Rob Post will continue to be responsible for product strategy, business development and mergers and acquisitions.

Satellite AIS provider **exactEarth** has been accepted as a member of the **OGC (Open Geospatial Consortium).** The OGC is an international industry consortium of 454 companies, government agencies and universities participating in a consensus process to develop publicly available interface standards for spatial information and services.

www.maris.no
www.sevencs.com
www.tidelandsignal.com
www.gl-group.com
www.imtechmarine.com
www.oceansignal.com
www.exactearth.com
www.opengeospatial.org
www.raytheon-anschuetz.com.br
www.netwavesystems.com

NMEA 2000 standard infrastructure launched

www.nmea.org

The National Marine Electronics Association in the US has announced the planned introduction of the new OneNet common infrastructure by late 2014, designed to transport NMEA 2000 messages over Ethernet.

The new standard has been developed by a group of marine electronics manufacturers who asked the NMEA to standardise a method of transmitting and receiving NMEA 2000 messages on Ethernet.

NMEA notes that, while some manufacturers already currently use higher bandwidth Ethernet for video as well as for proprietary messaging on Ethernet to add NMEA 2000 messages, this approach crates problems due to the abundance of different individual solutions.

OneNet aims to transport NMEA 2000 network messages on Ethernet in a standardised manner, establishing standardised gateway rules and supporting high-bandwidth applications such as video data transport, which is not possible using the NMEA 2000 network.

OneNet should provide greater bandwidth, with up to 1 gigabit or faster transfer speed directly to the OneNet devices (400 times the speed of the NMEA 2000 CAN bus) and greater scalability, as OneNet backbones may exceed 100 Mbps using other standard Ethernet physical layers such as Gigabit Ethernet and fibre optics.

OneNet can support up to 65,024 physical devices, versus CAN bus's 50 devices, allowing the creation of larger and more complex networks, with Power Over Ethernet (PoE) allowing each physical device to be separately powered by up to 15.4 watts directly from the Ethernet switch.

A standard device web page will be produced to provide basic fundamental product information, and a Simple Service Discovery Protocol (SSDP) will be integrated to allow OneNet devices to advertise their presence to other SSDP-compatible devices on the network – in the same way that a printer can tell a PC or Mac that it's there.

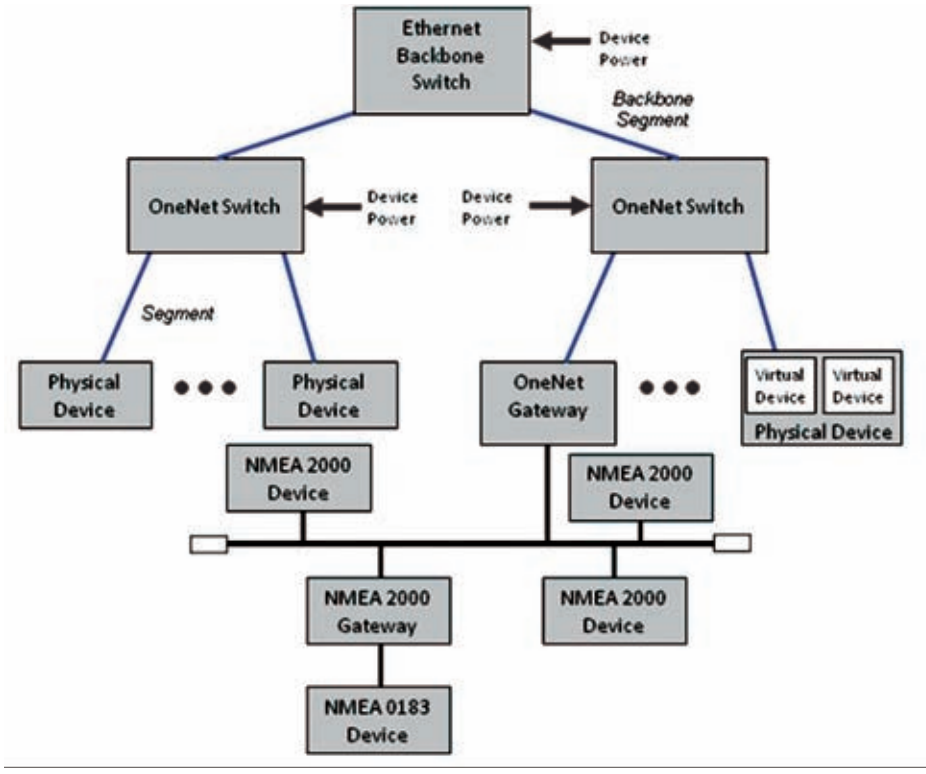
"NMEA OneNet does not replace NMEA 2000," said NMEA technical director, Steve Spitzer.

"NMEA OneNet uses the physical and network layer standard based on the IEEE 802.3 Ethernet Standard. OneNet complements the NMEA 2000 standard and preserves existing and future NMEA 2000 messages (PGNs)."

"OneNet is not recommended for real-time critical data, because the NMEA 2000 Controller Area Network (CAN) enables prioritisation and guarantees that the message transmitted will always get through to certified devices. IEEE 802.3 cannot provide the same guarantee of message delivery."

Participating on NMEA's OneNet Committee are Actisense, Airmar, Digital Yacht, the Electronics and Telecommunications Research Institute of South Korea, FLIR, Fugawi, Furuno, Garmin, Johnson Outdoors, Korean Maritime University, Krill Systems, Maretron, Molex, Mystic Valley Communications, Navico, Raymarine, the US Coast Guard, and Victron Energy.

Additionally, the US Coast Guard R&D Centre has contributed to ensure that OneNet meets the needs of commercial vessels in addition to those of national and international standards authorities.



The OneNet standard aims to allow for higher speed networking of devices onboard ship

Latest generation of AIS products released

www.saabgroup.com
www.thrane.com

Saab and Thrane & Thrane have both introduced new AIS products, building on their existing technologies with the addition of improved functionality.

Saab has announced the commercial availability of its fifth-generation R5 family of AIS products, which are the first to incorporate software-defined radio (SDR) transceivers together with newly developed high-speed analogue-to-digital converters in a type approved Class A system.

Saab says that this should improve receiver sensitivity, stability and signal processing compared to the company's previous R4 platform.

The R5 products also feature improved capabilities for expansion and integration with other navigation technologies, with support for redundant/multiple Control and Display Units (CDUs), USB keyboards and flash drives.

Sensor information available to R5 transponders can be relayed on the Ethernet interface, and additional CDUs can be used to display and monitor any sensor data available on the network.

"The SDR technology in the R5 products provides unlimited flexibility in adding new radio channels with software upgrades in the future," said Stefan Karlsson, vice president sales and marketing, Saab TransponderTech.

"In addition to VHF ship-to-ship and shore-to-ship AIS messages, the R5 could also process other signals and future additional AIS messages and e-navigation radio channels."

Two different products will be available under the R5 banner, with a single-box R5 SOLID AIS aimed primarily for the coastal fishing market and inland waterways, and an R5 SUPREME AIS for the top end of the market, a two-unit system with a separate CDU and transponder.

The shipborne AIS transponder is flexible in how it can be connected to a ship's integrated bridge system, with the new R5 GPS and DGPS navigation systems type approved for carriage by SOLAS-class ships.

"The new navigation systems feature additional R5 CDUs for redundant or slave navigation display configuration using Ethernet," added Mr Karlsson.

"One common control and display unit for all AIS and navigation systems simplifies operations, and the redundancy provides a larger measure of safety."

Thrane & Thrane meanwhile has expanded its VHF radio portfolio with the launch of the new SAILOR 6217 VHF DSC Class D AIS Receiver, offering parallel dual channel VHF receive functionality.

Building on the SAILOR 6215 VHF DSC Class D, the SAILOR 6217 VHF DSC Class D AIS Receiver integrates a two channel parallel AIS Receiver, which enables it to perform a constant watch of both AIS channels, rather than switching between them.

Thrane says that this provides greater safety as users get a seamlessly updated view of AIS equipped vessels in the surrounding area at all times.

The SAILOR 6217 VHF DSC Class D AIS Receiver can be connected to any NMEA 0183 chart plotter, so all signals can be viewed and plotted on a vessel's existing equipment.

The system is waterproof to IPx8, offers a SAILOR Replay functionality whereby the user can listen to the previous 90 seconds of messages, and allows for up to two additional handsets/control speaker microphones to be connected.

"We're delighted to offer dual channel AIS receive with integration to NMEA chart plotters in our portfolio of professional VHF radios," said Casper Jensen, VP maritime business unit, Thrane & Thrane.

"Our dedicated customer base see SAILOR radios as more than up to the job, with excellent reliability and an incredibly long life."

Saab's R5 SUPREME AIS and the Thrane & Thrane SAILOR 6217 VHF DSC Class D AIS Receiver have both recently been released

Jo Tankers to fit ECDIS across fleet

www.transas.com

Norwegian vessel operator Jo Tankers has agreed a deal with Transas Marine for the supply of ECDIS to its fleet.

The agreement includes upgrades for three vessels, retrofit on-board 11 vessels and installation on six planned newbuilds.

All vessels will be equipped with dual 26-inch Navi-Sailor 4000 ECDIS Premium Multifunction Displays, with radar overlay and firewall.

Some of the vessels will also utilise Transas' recently launched Pay As You Sail chart solution for ENCs with the ECDIS. In addition, almost 100 seafarers will receive type-specific training from the ECDIS manufacturer in Manila, Philippines.

In other news, Transas also reports that it has added Ukrainian chart folios to its TX-97 non-official chart collection.

The agreement was signed between Transas Marine Ltd and the State Hydrographic Service of Ukraine in May 2012, which allows Transas to use official ENCs and inland ENCs to create the TX-97 folios.

New charts will be available for the users of both the company's ECDIS and ECS equipment.

Transas says that this project was unique, in that this is the first time that inland ENCs have been used to produce TX-97 folios.

The State Hydrographic Service of Ukraine provided 158 inland ENCs and 114 ENCs covering territorial waters of Ukraine in the Black Sea and Sea of Azov. The TX-97 folios cover the Black Sea, the Danube River (Ukrainian territorial area), and the Dnipro River.

Ukrainian chart folios are also available through an iSailor application, for iPhone and iPad users.

Companies renew Veripos contracts

www.veripos.com

Veripos has announced two new contracts for its positioning services, with Island Offshore and E R Offshore respectively.

Island Offshore has agreed a further three-year contract with Veripos for continuing provision of GNSS positioning services for 16 DP vessels, in addition to another six due to begin service in the near future.

The new agreement extends a working arrangement between the two companies which first began in 2007.

All the vessels are being supplied with Veripos's Apex2 precise point positioning service using both GPS and Glonass networks, as well a combination of its Apex, Ultra and Standard services providing continuous GPS-derived augmentation accuracies of the order of 10cm.

With bases in Stavanger, Ulsteinvik and Aberdeen, Island Offshore presently maintains a fleet of approximately 20 specialist support vessels.

E R Offshore GmbH, a subsidiary of the Hamburg-based shipping organisation E R Schiffahrt, has also awarded Veripos an extension on its existing GNSS positioning contract deal with the company, this time for another twoyears.

The extended deal covers the supply of positioning services to ER Offshore's fleet of eleven platform supply vessels (PSVs) and two anchor handling tug supply vessels (AHTS).

Under the new arrangement, Veripos will continue to supply nine of E R Offshore's PSVs with its Standard high-precision augmentation service, while a further two vessels will utilise its latest Standard² service offering an additional Glonass capability.

E R Offshore's two 86-metre AHTS craft, ER Luisa and ER Vittoria, will also utilise the Standard² service. All 13 E R Offshore vessels are already equipped with configurable Veripos LD2 integrated mobile units.

Costa Concordia VDR 'malfunctioned'

Findings from the investigation into the tragic grounding of the Costa Concordia have indicated that the ship's Voyage Data Recorder (VDR) was not operational before the accident, according to reports in the Italian press.

Corriere della Sera reports that the VDR had been out of action since January 9, four days before the accident that led to the deaths of 32 people, and that no data at all was recorded after 11.36pm on 13 January.

As such, investigators have only been able to examine data from the ship's computer in their efforts to ascertain exactly what happened onboard, rather than having access to the full range of information that would usually be provided by the VDR.

According to the report, e-mails were sent from the Costa technical department to the company responsible for the maintenance of the VDR indicating that a decision had been taken to defer repairs on the system until the ship was scheduled to arrive at the port of Savona on January 14.

Further e-mail correspondence obtained by the investigators, sent from Pierfrancesco Ferro, head of Costa's technical department, to the maintenance company, suggested that the problems with the VDR were ongoing, and that the system had malfunctioned previously.

Costa Crociere has denied that the VDR was malfunctioning, and Corriere della Sera has quoted the company as saying that "The black box was giving an error code that absolutely does not imply that the Voyage Data Recorder (VDR) was not working."

"This is proved by the fact that the contents of the black box comply perfectly with engineers' expectations."

"There is no international regulation or convention that decrees that a ship cannot sail in these conditions."

Draft Information System approved for St Lawrence Seaway

www.transas.com

Transas reports that a Draft Information System (DIS) it has developed, based on its NS4000 ECDIS, has been approved for use in the Saint Lawrence Seaway in the US.

The DIS displays a vessel's position, real time water levels and data from detailed bathymetric charts.

In 2001, the St. Lawrence Seaway authorities started a study which would determine the maximum load ships can carry while maintaining a safe Under-Keel Clearance (UKC), which has led to the maximum draft of vessels transiting the Seaway in the MLO Montreal to Lake Ontario and the Welland Canal gradually increasing.

At the opening of the Seaway in 1959, the maximum draft for ships was set at 6.85 metres (22 feet 6 inches). This maximum draft is now set at 8.08 metres (26 feet 6 inches). However, changes in water levels and a phenomenon called ship sinkage or 'squat' made adjusting the maximum draft again more complicated.

Draft is measured prior to departure but a moving ship actually sits much lower in the water, particularly in shallow or constrained channels. How much a ship 'squats' depends on factors such as the size and speed of the ship, shape of the channel, depth of the water, currents, wind, and even the presence of other ships.

Undertaken at the request of the St. Lawrence Seaway Management Corporation and industry partners that included the Canadian Ship Owners Association and the Shipping Federation of Canada, the aforementioned study resulted in standard squat models for the various types of vessels transiting the Seaway.

Over the past year and a half, the St. Lawrence Seaway authorities have developed a functionality description of a Draft Information System that incorporates the Seaway squat models, which was finally approved by all stake holders in March of this year and was then issued to the public.

In accordance with this specification, Transas developed its own DIS. An independent functionality verification and assessment was performed by Lloyds Register in June of this year, after which the system was installed on board Algoma Central Corporation's M/V Algoma Spirit for final approval by the St. Lawrence Seaway authorities.

The DIS can run as a stand-alone system or in a network with the Transas NS4000 ECDIS, and is designed to calculate and display the under-keel clearance (UKC) based on a range of data.

This includes high resolution Bathymetry data provided by the Canadian Hydrographic Service (CHS) and water levels received automatically via Seaway AIS stations and a network of water level gauge stations, or set manually by the user.

Ship forward and after draft data is also used, set manually by the user, while ship squat data is based on Seaway Squat Models for the vessel and channel type.

In dangerous navigational situations or under system fault conditions, relevant notifications will be provided for the operator.

When the DIS is connected to the ECDIS network, an ECDIS can be set up as the DIS for back-up purposes in the same way as the DIS can be used as the ECDIS back-up.

A Draught Information System button in the 'UKC Data' display is intended for switching between the DIS mode and standard ECDIS mode. When the DIS mode is turned off, the MFD can operate as an additional work station.

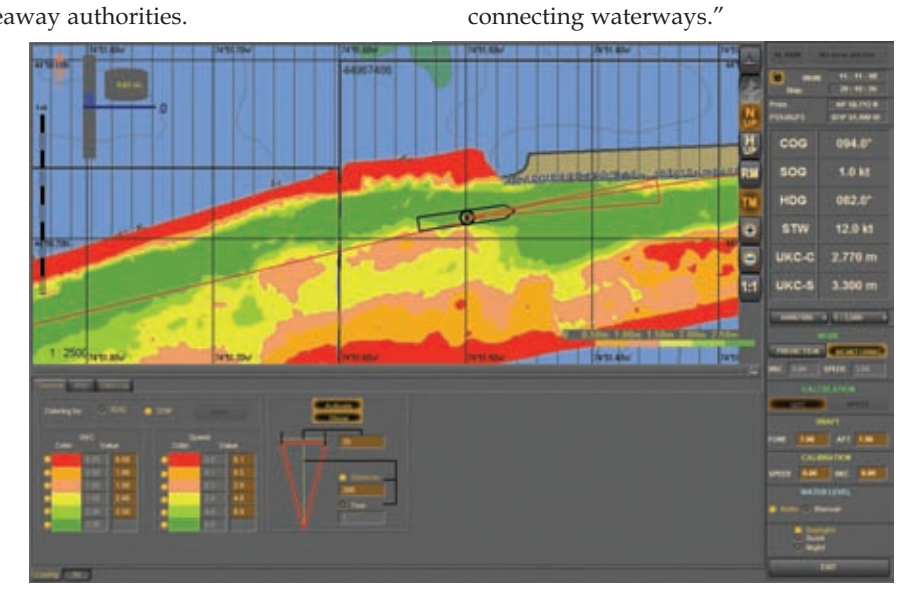
The DIS will indicate whether certain areas are safe to pass or require speed adjustments to decrease the squat of the vessel. A required safety margin of 30cm of UKC has to be maintained. The HD chart contours are then filled in with colours indicating safe passage areas.

Transas says that the availability of this data on the bridge should enable most vessels to maximise their draft up to 26 feet 9 inches, compared with the current Seaway permissible draft of 26 feet 6 inches.

This increase of 3 inches would mean that the average Great Lakes vessel can carry an additional 250 to 400 tons of cargo.

"The use of the Transas DIS will allow for the safe and effective deep loading of our vessels to optimise the full available water column in the Seaway," commented Tom Anderson, director, ports & harbours, navigation, Algoma Central Corporation.

"The use by our vessel personnel of the Transas DIS integrated with shipboard ECDIS/ECS and the supporting Seaway AIS network is an example of an e-Navigation initiative that was developed for a specific area user that has further potential for use in other ports and their connecting waterways."



The increase in allowable draft on the Seaway should allow a vessel to carry hundreds of tons of extra cargo

Marine electronic highway IT systems handed to Indonesia

www.mehsoms.com

The Marine Electronic Highway (MEH) Information Technology System for the Straits of Malacca and Singapore, which had been managed by the International Maritime Organization (IMO), has been handed over to the Government of Indonesia.

A formal ceremony was held in Batam, Indonesia, to mark the final stages of a demonstration project and the potential move towards a full-scale MEH project in the Straits, under the ownership of the littoral States.

The Batam MEH IT System is one of the major deliverables of the MEH Demonstration Project which was implemented in 2006, funded by the Global Environment Facility (GEF) / International Bank for Reconstruction and Development (IBRD) (World Bank), with IMO as the executing agency.

The Republic of Korea, through the Ministry of Land, Transport and Maritime Affairs (MLTM), also provided a grant amounting to US$850,000, which was used to develop and establish the system.

The overall objective of the demonstration project has been to determine whether a full-scale MEH in the Straits of Malacca and Singapore can be economically justified and made financially feasible.

The project is a co-operative arrangement with the three littoral States of Indonesia, Malaysia and Singapore, in partnership with the Republic of Korea, the International Hydrographic Organization (IHO), the International Association of Independent Tanker Owners (INTERTANKO) and the International Chamber of Shipping (ICS).

The geographic boundary of the MEH Demonstration Project extends from One Fathom Bank in the Malacca Strait to Horsburgh Lighthouse in the Singapore Strait, including adjacent coastal parts of Indonesia, peninsular Malaysia and Singapore. This covers the whole traffic separation scheme for the Straits of Malacca and Singapore.

The MEH Demonstration Project has been extended until the end of 2012, so that all its tasks can be completed and technical and financial evaluations of the Batam facility can be carried out.

Indonesia now takes on the responsibility for the operation, maintenance and management of the MEH IT system in Batam, while also working closely with Malaysia and Singapore on the regional MEH system beyond the demonstration phase.

Funding from the World Bank has been allocated to Indonesia in order to assist in putting the relevant maritime safety infrastructure in place, not only to provide data to the MEH IT System but also to enhance the monitoring and management of the Indonesian coasts of the Straits of Malacca and Singapore.

IMO secretary-general Koji Sekimizu formally handed over the Batam MEH IT System to Leon Muhamad, director general of the directorate general of sea transportation (DGST), Indonesia, during the ceremony.

"This handover of the MEH IT System to the DGST is a great opportunity for Indonesia to step up as one of the key partners in the establishment of a regional MEH System, together with Malaysia and Singapore," Mr Sekimizu said.

"For me, the development of the maritime infrastructure and the move towards new and improved ways of achieving enhanced navigation and traffic control are among the pillars of sustainable maritime development."

"I firmly believe that the Marine Electronic Highway can be a great success – indeed, that it can provide a blueprint for similar schemes in other parts of the world; and that, collectively, they can have a massive beneficial effect on our global society which depends so much on the safe, secure, efficient and green carriage of trade, by sea."

It is anticipated that the next steps in the creation of the MEH will involve Malaysia and Singapore establishing MEH Data Centres to house and operate MEH IT Systems similar to the Batam MEH IT System, in order to establish a regional network, to be called the MEH System.

The MEH System has both maritime safety and environmental modules. Its environmental modules can be used in marine pollution response and control, for example, to predict the direction and speed of oil spills, and thereby assist in response and clean-up operations. It is also possible to use it to identify and track ships that illegally discharge their bilges or dump other oily wastes.

The MEH portal is at www.mehsoms.com, and registered users can access data on maritime traffic in the Straits, and on wind, tides and currents, as well as electronic navigational chart (ENC)-based marine information overlays (MIOs), such as those indicating mangroves, coral reefs, special areas, etc.

MIOs are spatial layers that, when overlaid on to an ENC at specific coordinates, provide additional information on that particular area in the ENC.

For example, a tropical island generally has advancing foreshore mangrove forests and, in ENC, the areal extent of each mangrove forest is not delineated. However, it is delineated in an MIO and, when overlaid on the ENC, it provides added spatial information. This is useful in protected waters or areas designated as special areas.

Databases using Oracle store data received by the MEH IT System, including information on casualty incidents, maritime traffic conditions and weather. These can be accessed at any time, but not as real-time data sets.

Data feeds and exchange are carried out between the MEH Data Centre in Batam, Malaysia (Marine Department) and Singapore (Maritime and Port Authority).

Jumbo newbuilds to install Raytheon INS

www.raytheon-anschuetz.com

Raytheon Anschütz has been awarded a contract for the supply of Integrated Navigation Systems from its Synapsis Bridge Control series to a group of new heavy lift carriers being built at Brodosplit shipyard in Split, Croatia for Dutch company Jumbo Shipping.

Jumbo has ordered two such ships, with delivery dates in 2013, and holds an option for a third newbuild.

The Integrated Navigation System (INS) includes S-band and X-band radar sensors, which are configured as widescreen multifunctional workstations for chart radar, radar, ECDIS and conning.

Two additional multifunctional workstations with the same configuration will serve as the main and backup ECDIS, with another multifunctional workstation with ECDIS and conning functions supplied for route planning purposes. Additionally, the bridge is equipped with two fixed-role conning displays.

All workstations are connected through a redundant Ethernet-based local area network (LAN), with relevant navigation data such as charts, routes and sensor information shared within the network and stored independently on each system.

An integrated consistent common reference system (CCRS) monitors all navigation sensors and automatically selects the best available data.

On all conning displays within the INS, the operator can access the interface for the CCRS to observe sensor quality or switch over to manual sensor selection mode. The conning also includes a new page for central alert monitoring.

Two Jumbo newbuilds will be installed with the systems, with an option for a third

CAMO joins USCG in pilot project

www.camogroup.org

The Coastal and Marine Operators (CAMO) group in the US reports that it is working on a joint pilot project with the United States Coast Guard (USCG) to utilise automatic identification system (AIS) technology to monitor vessel activity in close proximity to submerged pipelines.

The joint pilot project, with PortVision and the USCG, aims to develop an application that will warn AIS-equipped vessels stopping or anchoring near gas and liquids pipelines that their activity represents a potential safety risk, and is part of a CAMO initiative focused on marine pipeline damage prevention and awareness.

CAMO was developed several years ago with the aim of closing the gap between onshore and offshore pipeline damage prevention efforts. A major component of the group's goal is to educate marine stakeholders and the public about the risks that damage to offshore utilities and pipelines can pose to personal safety and the environment.

Although pipeline operators generally have vigorous inspection and maintenance programmes to insure the integrity of their assets, the risk of third-party damage to a pipeline remains a threat.

The project is backed by a grant partnership with the Port of Fourchon and the Pipeline and Hazardous Materials Safety Administration (PHMSA).

Model: katsiaryna zubava, www.katsiarynazubava.com

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www.spectec.net

Second-generation AIS satellite launched

www.exactearth.com

Satellite AIS company exactEarth has announced the successful launch of its new exactView 1 (EV-1) satellite, carrying its second generation AIS detection payload.

The EV-1 technology is expected to enhance vessel detection and tracking performance, especially in areas of denser shipping traffic.

The satellite and payload will be commissioned over the next three months, after which the satellite will be put into operational service.

EV-1 will utilise S-band and C-band communications to downlink information to ground stations in Svalbard, Norway, Guildford, UK, and several other locations around the world.

The polar-orbiting spacecraft was built under contract for exactEarth and is the fifth deployed satellite in the exactView vessel monitoring satellite constellation.

COM DEV Canada acted as prime contractor and COM DEV Europe (UK) supplied the AIS transceiver payload system for this mission. SSTL (UK) manufactured the satellite bus and brokered the launch arrangements.

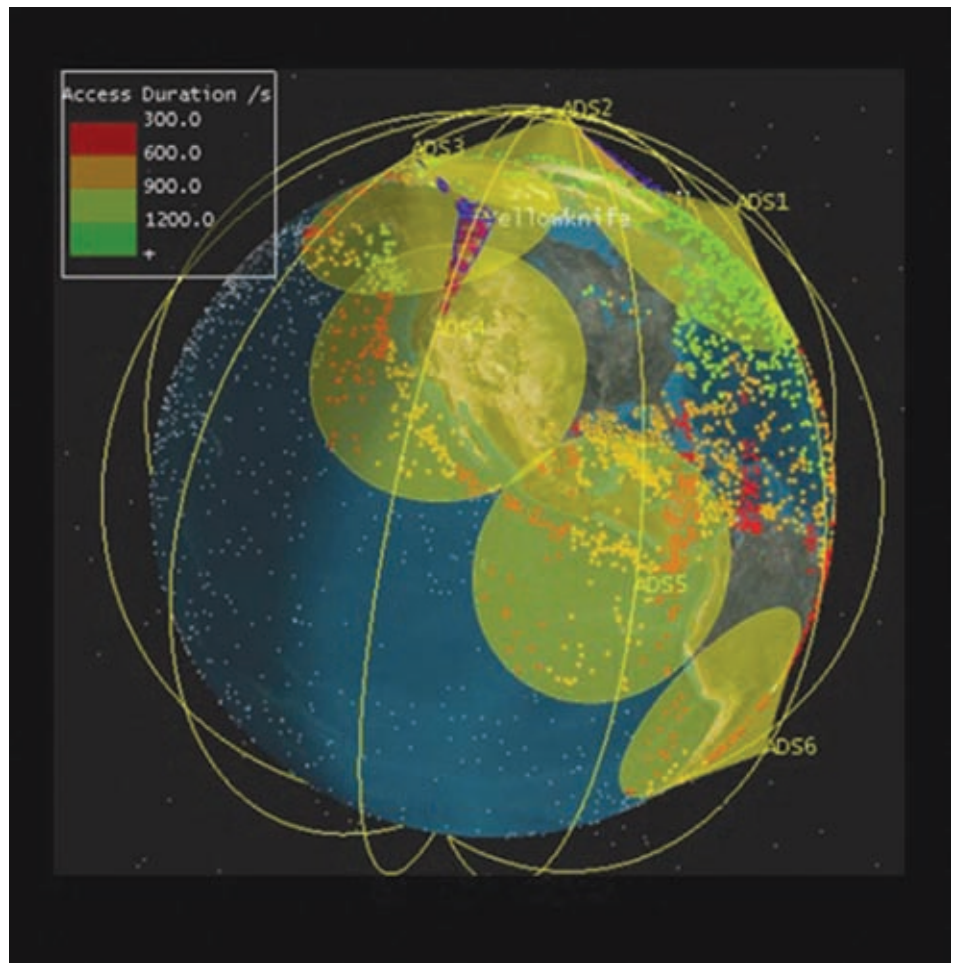
The planned exactEarth satellite constellation will consist of six polar orbiting satellites designed to provide an hourly update of global vessel positions.

"[This] launch marks another important step in the ongoing expansion of our global vessel monitoring service," said Peter Mabson, president of exactEarth.

"This launch helps ensure that exactEarth will continue to provide the world's most comprehensive and high performance satellite-based AIS service for years to come."

In other news, exactEarth has also recently been awarded a contract by NATO (North Atlantic Treaty Organisation) for the provision of satellite AIS data to NATO HQ MC Northwood and JFC Naples, which provide maritime services to Alliance Member States.

The NATO Maritime Operation Centres (MOC Northwood and MOC Naples) and NATO Shipping Centre (NSC) will be acquiring exactAIS data to be used within Operation Ocean Shield, a counter-piracy operation in the Arabian Sea, Gulf of Aden and Somali Basin, consisting of naval vessels from NATO nations as well as other elements ashore.



exactEarth will expand its satellite AIS network with the launch of its new satellite

exactAIS data will also be used in support of Operation Active Endeavour, NATO's maritime counter-terrorism operation in the Mediterranean.

The NATO Shipping Centre (NSC) at Northwood is NATO's gateway to the merchant shipping community, acting as the primary point of contact for the exchange of information between NATO and the international shipping community.

NSC provides information on piracy incidents in High Risk Areas, where AIS data can be used to help identify merchant vessels in the vicinity of Pirate Attack Group (PAG) Activity in order to issue warnings and alerts.

NATO will use the satellite AIS data to create a picture of 'white' shipping and to aid in identifying suspicious behaviour, contributing to the overall Recognized Maritime Picture (RMP).

In related news, exactEarth has also recently announced the release of a new pre-packaged data product, exactAIS Arctic Archive, containing coverage of all maritime traffic activity in the Arctic for the summer months of 2010 and 2011.

The data has been processed and summarised from exactEarth's archive and is now available in annual sets covering July-October of 2010 and 2011.

The company says that the data should provide authorities with greater insight into the shipping activities of the Arctic during the summer months when ice levels lower to allow for increased vessel traffic.

"We are very proud and excited to announce this addition to our product offering," commented Dave Martin, VP, product management at exactEarth.

"exactAIS Arctic Archive builds upon our existing and proven exactAIS service and provides the most complete record of Arctic vessel movements, now delivered as a pre-packaged data set for easy use."

In other news, exactEarth has also announced that it has renewed its service level agreement for satellite AIS data with the European Maritime Safety Agency (EMSA).

EMSA has used satellite AIS data over the last year for a number of projects, including its Maritime Surveillance Picture (MARSURV) service, Project INDALO and EUNAVFOR counter-piracy, as well as within the European Fishery Control Agency (EFCA).

The exactAIS data was used by Project INDALO with Frontex (European Border Management Agency) in establishing measures relating to illegal immigration in the Mediterranean Sea, and more generally for controlling the maritime external borders of European Member States.

The EUNAVFOR Naval counter-piracy operations used the data to help improve maritime security off the coast of Somalia and in the Indian Ocean by providing better overall maritime domain awareness in these areas.

The European Fishery Control Agency (EFCA) employed satellite AIS data to improve monitoring of fishery activities during its Bluefin Tuna campaign, which encompassed a joint deployment plan to monitor all aspects of the Bluefin tuna fishery and ensure the implementation of Common EU Fisheries Policy rules.

JRC ECDIS to include Information Overlay

www.ukho.gov.uk
www.jrc.co.jp

Japan Radio Company (JRC) reports that it has issued a software update (V56) which makes the Admiralty Information Overlay available on all of its current ECDIS models.

The Admiralty Information Overlay, a free service to Admiralty Vector Chart Service customers, is used to view chart information when navigating with electronic navigational charts (ENCs).

The Overlay is the only available service to include worldwide Admiralty Temporary and Preliminary Notices to Mariners and new ENC Preliminary Notices to Mariners, which identify navigationally significant differences between ENCs and Admiralty paper charts.

The system automatically manages Admiralty updates to ENCs using information in the weekly 'Notices to Mariners' used to manually update paper charts.

The Overlay is also the only service to include the results of the Admiralty Assurance Programme, a review of the world's ENCs undertaken by Admiralty in order to identify and resolve navigationally significant differences with existing paper charts.

The Information Overlay is available free to Admiralty Vector Chart Service customers and can be accessed on a PC using Admiralty e-Navigator, as well as via a number of ECDIS systems.

JRC's V56 software update is applicable for B-type ECDIS models JAN-901B/701B/2000/1186 and NDC-1186-4xx.

JRC has also made available a software upgrade (V55) for ECDIS models affected by the anomalies identified in the IHO Check Dataset earlier this year. Any ECDIS models affected by the anomalies will need to run software upgrade V55 before attempting to install the Admiralty Information Overlay software update (V56).

Further details and download instructions for all of these updates are available on the JRC website.

"Admiralty sets the benchmark for accurate ENCs with the Admiralty Vector Chart Service. Most of our ECDIS customers rely on Admiralty data for their primary navigation, so it's important for them to have access to this additional information in a simple, integrated way," said Tamiho Shinya, JRC.

"By delivering compatibility with the Overlay on our newest ECDIS models, our customers can plan and execute voyages with improved safety and ease, and more easily demonstrate compliance during Port State Control inspections."

Fibre Optic Gyros for Dutch pilot tenders

www.alphatronmarine.com

Alphatron Marine reports that its Alphatron Fiber Optic Gyro is to be installed on a number of newbuild Dutch pilot tenders.

The ships will be equipped with the new Gyro, the latest available from Alphatron, to function as critical heading sensor.

The Alphafibercourse will provide heading info for the three steel hull camarc design vessels, to support pilot operations along the northern coast of the Netherlands.

The pilot tenders are currently under construction at Barkmeijer Yard Stroobos, in the Netherlands.

Chinese newbuilds to be installed with Transas bridges

www.transas.com

Transas' office in China has agreed a contract to supply four complete bridges to newbuild vessels being constructed for PaxOcean Engineering Pte Ltd.

Each bridge consists of seven Multifunctional Display (MFD) workstations, with DNV NAUT – OSV (A) Class Notation.

The bridge equipment includes dual ECDIS, a 12KW X-Band Navi-Chart Radar, a 30KW S-Band Navi-Chart Radar and a Navi-Conning system that has been specially customised to include an Aft & Bow Docking Mode.

Slave MFDs will also be installed on the four UT755 PSVs.

All vessels will be built at PaxOcean Engineering (Zhuhai) Co. Ltd, Guangdong Province, China. Delivery is scheduled this year for the first two vessels, and in 2013 for the next two vessels.

The vessels were designed by Rolls Royce Norway.

In other news, Transas Electrotech Australia has completed installation of a Transas GMDSS Simulator at Hunter TAFE, a training academy in Newcastle, New South Wales.

The system will allow for classes of up to 12 students to train together, with one instructor station interfaced to the 12 student stations.

The simulator can be remotely supported through VPN access, to simplify maintenance and upgrade requirements, and is capable of simulating a range of GMDSS equipment.

The Radio Communications Simulator provides training and examination for General Operator Certificate (GOC) and Restricted Operator Certificate (ROC). Search and Rescue (SAR) operations and VTS operator training are also supported.

New conning systems will be installed on the PaxOcean newbuilds

OSG implements energy saving autopilot

www.raytheon-anschuetz.com

Overseas Shipholding Group (OSG) has contracted Raytheon Anschütz to retrofit the newly developed Anschütz NautoPilot 5300 autopilot system onboard its fleet of oil tankers, replacing the existing systems, with the aim of improving energy efficiency.

The new autopilot features an integrated ECO-Mode, which helps to optimise rudder movements by automatically adapting to the current sea-state and weather.

Instead of keeping a heading with frequent rudder actions with high amplitudes, the rudder's sensitivity to periodical yawing movements caused by roll and pitch is reduced and less rudder action is required, which leads to lower levels of speed reduction and thus less fuel consumption.

The first of the new autopilot systems was installed onboard Overseas Fran in October 2011, and was used for a voyage from Skagen to New York.

To investigate the actual effect, the heading and rudder plot of this voyage was compared with the results of the last voyage on the same route with the old autopilot system, under similar weather conditions during both voyages.

"We can see on our print-out that rudder movement is more economic and gentle with the new autopilot system," said Capt Dmitry Shatrov, Master of the Overseas Fran.

"The newly installed autopilot system has a user-friendly interface in which you can easily adjust autopilot functionality in the prevailing circumstances, weather condition and required steering accuracy, so that we can navigate the vessel more gently and economically, taking into consideration fuel savings and safety."

The ECO-Mode is supported by a new integrated heading and rudder plotter, which provides a graphical indication of heading changes and the resulting rudder angles.

This graphical display indicates the steering performance of the vessel due to the effects of changes to parameter settings such as rudder, counter rudder and yawing. This can help the operator to optimise steering performance, to further minimise rudder action and increase fuel efficiency.

"OSG are undertaking great efforts to increase energy efficiency onboard of their ships. The choice of our new adaptive autopilot system was influenced by considerations of saving fuel and thus reducing emissions," says Olav Denker, product manager at Raytheon Anschütz.

"With OSG, we have now had the chance to prove positive effects of NP 5000 on steering performance and fuel consumption in practice for the first time."

The autopilot aims to optimise rudder movements

Korean navy implements condition monitoring system

www.esrgtech.com

Maintenance technology company ESRG reports that its OstiaEdge SmartShip Remote Monitoring and Condition Based Maintenance (CBM) package has been delivered to the Republic of Korea Navy for installation on a number of new vessels.

The new FFX-class multi-purpose frigates and KMLS-II mine layer ship will use the CBM, incorporating real-time equipment health monitoring and predictive diagnostics, to manage maintenance and operation of shipboard equipment.

ESRG says that it is partnering exclusively with L-3 MAPPS to supply the OstiaEdge SmartShip product to the Korean Naval market.

The product has already been deployed on one ship, and there are five further installations currently in progress. A contract is in place for this to be extended to another 21 ships over the next 10 years.

OstiaEdge SmartShip combines Software-as-a-Service (SaaS) delivery models with a Mimosa-compliant open architecture, which has an onboard footprint of less than one square foot and a shipboard software installation time of less than one hour.

No shipboard IT staff are needed to install or maintain the system, and ESRG says that onboard and shore-based users can get up to speed with less than 30 minutes of training.

UKHO launches guide to use of ENCs

www.ukho.gov.uk

The UKHO, via its Admiralty brand, has launched a series of new publications and training products aimed at assisting seafarers in the move to digital navigation, called 'The Admiralty Guide to the Practical use of ENCs'.

"To deliver the benefits of ECDIS navigation, it is essential that bridge watchkeepers feel confident in the use of the technology and data at their disposal," said Admiralty's CEO, Ian Moncrieff.

"While there are many courses that offer training in the use of generic and type-specific ECDIS to comply with STCW regulations, there is little available that focuses specifically on the practical guidance to using ENCs or cover the interaction between ENCs and the various ECDIS systems."

"The Admiralty Practical Use of ENCs series of tools has been designed to fill this gap. It has been written especially for the seagoer and contains a wealth of clear practical explanation and guidance crafted by experienced users and validated by key maritime college staff."

The new series of products includes two new Nautical Publications. The first, NP231, the Admiralty Guide to the Practical Use of ENCs, is an illustrated hardback publication with screenshots, tips and hints on getting the most from ENCs.

Admiralty is also publishing a new supporting reference guide: NP5012 the Admiralty Guide to ENC Symbols used in ECDIS. Both publications are available through the Admiralty Distributor Network.

A new one day training course, called 'The Admiralty Guide to the Practical Use of ENCs' has also been created and is delivered by the in-house Admiralty team. This instructor-led course is designed specifically for nationally accredited maritime lecturers or industry training professionals.

A supporting computer-based training (CBT) course of the same name is available on CD with a run time of around 4 hours, designed to complement the instructor-led training and new nautical publications.

PC Maritime reaches 100th ECDIS type training certificate

www.pcmaritime.co.uk

PC Maritime reports that 100 navigating officers have now successfully completed its ECDIS Type Training course and passed the Assessment test required for formal certification since the course was issued in March.

Over 70 vessels have been equipped with the two Navmaster type training DVDs, one containing interactive instruction, the other the assessment test. The DVDs are individually branded with the ship operator's logo and include any specific company Safety Management System requirements.

Wallem Germany manager Mangala Herath says that he has received positive feedback from the nine Wallem-managed vessels equipped with Navmaster, particularly with reference to the Ship Inspection Report Programme (SIRE).

"More often than not, SIRE inspectors are enquiring about type specific training and they are satisfied seeing our staff onboard undergoing the Navmaster training course," said Mr Herath.

"Our crews have become more confident when using the ECDIS and are now aware of most of the features, thereby utilising the ECDIS more. The Navmaster course also helps second officers to upload chart corrections."

OSG also has Navmaster ECDIS installed onboard 45 vessels, with OSG's Captain Vasilikis noting that his crews are steadily completing Assessment tests.

IMO action on ECDIS anomalies welcomed

The International Maritime Organization (IMO) Sub-Committee on Safety of Navigation's decision to take action to address operating anomalies with ECDIS has been welcomed by The International Chamber of Shipping (ICS), which it hopes will help to get to grips with this "serious problem."

On 1 July 2012, the phasing in period for new mandatory IMO requirements for ECDIS began, something which ICS says it has long supported provided that sufficient Electronic Navigation Chart availability could be met before the phased-in carriage requirements first become effective.

However, the Chamber notes that "disturbingly, it has become apparent that not all ECDIS systems may be fully effective", pointing to the International Hydrographic Organization's recent study which found that only one-third of ECDIS were functioning as expected (see *Digital Ship* May 2012, page 1).

IHB has advised ship operators that some systems have reportedly failed to display significant underwater features in the 'Standard' display mode, necessitating the continued use of paper charts.

This issue formed part of the agenda at the recent 58th session of IMO's Sub-Committee on Navigation (NAV), and it has been agreed that the secretary-general of IMO will meet with ECDIS manufacturers to discuss the ECDIS anomalies, with the aim of providing guidance to shipping companies and seafarers.

Workshops will also be held by IHO at IMO, including stakeholders such as IMO and IHO member states, data service providers, ECDIS manufacturers, type-testing authorities and seafarers' organisations, to discuss appropriate action for the future.

It was also noted at this meeting that the IMO ECDIS Model Course had been updated and validated by STW 43, and will be published soon, as will an SN Circular entitled 'Operating Anomalies identified within ECDIS'.

"ICS welcomes IMO's recognition of the problem and its development of a circular providing advice on the issue to mariners, with a meeting with ECDIS manufacturers planned for September that will hopefully get to the root of this serious problem," commented ICS director marine, John Murray.

"But in view of the potential danger presented by ECDIS operating anomalies, ICS will continue to monitor the situation very closely."

MARIS updates ECDIS

www.maris.no

MARIS reports that it is set to launch the latest update to the software for its ECDIS900 system, version 4.5.4.76.

The company says that its distributors will be notified when the software is released and will be able to download the software from MARIS' ftp-servers.

With the release of this new update MARIS also wishes to note that the software has been acknowledged as meeting the standards being set for ECDIS by the IHO, with particular reference to the recent IHO circular 'Update Report on IHO Action concerning ECDIS Software Issues'.

This circular stated that only about one-third of ECDIS manufacturers' systems reported to IHO appear to function as expected in performance checks (see *Digital Ship* May 2012 issue, page 1).

"As part of the consultation process between IHO and ECDIS manufacturers, we have put our systems through the stringent tests set by the IHO and submitted our report to them, along with the test support documentation and screen dumps required in the latest circular," said MARIS technical director, Philippe Kah.

"The previous generation ECDIS900 did not match the exhaustive criteria set out in the IHO report in four minor areas, none of them critical, but we have been able to advise our distributors that the new ECDIS900 V4.5.4.76 is fully compliant with IHO tests."

In other news, MARIS has also agreed a deal with Wärtsilä, whereby MARIS hardware and software will become part of Wärtsilä's product specific training.

The MARIS ECDIS900 system will be installed at the Wärtsilä Land & Sea Training Academy Subic, the engine company's instruction centre in the Philippines.

The agreement is part of a standard cooperation offer from MARIS covering certification, 'train the trainer' training, and yearly maintenance of software, software upgrades, documentation, charts and other digital services.

This new cooperation agreement is indicative of the company's prioritisation of training agreements in Asia, according to MARIS director Asia Pacific, Bhupesh Gandhi, with expected regional shipowner uptake of ECDIS to expand by around 20-30 per cent in 2012.

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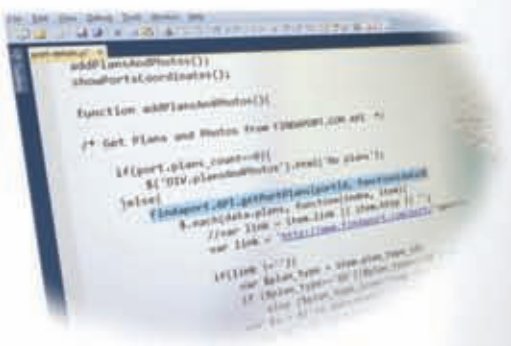

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Pay As You Sail on ENCs – the new standard

With IMO's carriage requirement for ECDIS now in effect, vessel operators implementing the system will need to make sure they keep the equipment fuelled with ENCs. Innovations in Pay As You Sail licensing have promised to make this process easier and cheaper – *Digital Ship* spoke to Capt Artis Ozols at Tärntank Ship Management, an early adopter of the technology, about his experiences

The IMO's mandatory carriage requirement for ECDIS has now come into force, with new passenger ships and tankers the first in the phased implementation schedule to require the systems to be fitted. Eventually, by 2018, this will have extended to all vessels over 10,000gt.

As of July 1, new passenger ships greater than 500gt and new tankers over 3,000gt are required to have ECDIS onboard. These classes will be followed by new cargo ships in the next two years, with new cargo ships greater than 10,000gt to be equipped from July 2013 and new cargo ships greater than 3,000gt a year later.

Mandation on existing vessels will also begin to be phased in from July 2014, on passenger ships over 500gt, and then 3,000gt tankers a year after that. New classes of existing cargo ships will be included each July from 2016, for vessel sizes over 50,000gt the first year, 20,000gt in 2017, and finally 10,000gt ships completing the schedule in 2018.

For existing vessels, the ECDIS equipment is required to be installed by the time of the first survey after the above implementation dates. Exemptions are in place for ships that will be taken permanently out of service within two years of their respective mandatory deadlines.

While the schedule for ECDIS mandation may be a little complicated, the requirements for compliance are not – ECDIS must be installed on the ship, and official Electronic Navigational Charts (ENC) must be used for the system to be legal for navigation.

Compared with traditional paper charts, electronic charts can be somewhat expensive, an issue unlikely to please vessel operators being asked to invest tens of thousands of dollars in the hardware alone.

However, the digital nature of these charts offer new opportunities in licence management that can help to keep these costs under control – and in some cases significantly reduce the cost of charting relative to what operators had previously been spending on their paper portfolios.

The latest innovations in electronic chart technology have seen 'Pay As You Sail' (PAYS) systems hit the market, utilising various types of tracking and communications technology to minimise the chart licensing requirements of ships at sea by only licensing charts as they are used – and thus minimising the associated costs.

With PAYS services, entire world folios of ENCs can be installed on the ship and are available for viewing, but licences only begin to be charged when the vessel travels in the area covered by the chart and begins to use it for navigation.

Dutch company Datema was the first to introduce such a system with its ENCTrack service. ENCTrack provides all available ENCs to mariners onboard for viewing before licensing is required, with a proprietary tracking system installed onboard to manage 'post payment' to charge for licences once the vessel has travelled into the charted area.

This system was finally approved by IC-ENC, the UKHO-led RENC (regional ENC Co-ordination Centre), in 2011, following two years of discussion (the other major RENC, Primar, had approved the service at its original launch in 2009).

In the first quarter of this year Norwegian company NAVTOR introduced its own PAYS-style service, using vessel tracking data, collected every 90 minutes via AIS (both satellite-based and coastal) or directly by Inmarsat-C polling, to determine when the vessel has entered the area and when the licence period should begin.

Shortly after NAVTOR announced the launch of its service, ECDIS manufacturer Transas became the latest to add its own version of the technology, launching its PAYS system in March of this year.

With the Transas PAYS solution the vessel will have a licence and access to install, view and pre-plan using official ENCs provided in (S)ENC format, in areas where the necessary PAYS permissions have been obtained, without any additional cost.

Recording and reporting of charts used is done by extraction of data from the Transas Navi-Sailor 4000 ECDIS logbook, and vessels only pay for charts actually used for navigation monitoring.

Using this method, only charts that have been displayed on the screen together with ship's position or generated navigational alarms will be subject to licensing.

In principle, this should see a vessel licensing the 'best scale charts only', and not all charts and scale bands under the keel.

So the options for shipping companies looking to fuel their ECDIS systems with ENCs are increasing – but how do the benefits of these advancements in technology translate to the real world?

All of Tärntank's vessels are equipped with fully redundant ECDIS, and can sail paperless

Electronic navigation in practice

Tärntank Ship Management, based in Sweden, is one of the first companies to begin using Transas PAYS, having already been an existing user of Transas ECDIS systems.

The company operates nine modern bulk chemical tankers, trading mostly in Europe, in the Baltics, the North Sea and occasionally in the Mediterranean, though it has also had two vessels trading in Africa over the last two years and has done sporadic trade in the US.

All of these tankers operate with fully redundant ECDIS, allowing them to sail 'paperless' – a fact that demonstrates the company's dedication to installing the latest technologies when it comes to onboard navigation, according to Capt Artis Ozols, safety manager / superintendent at Tärntank Ship Management.

"We have been trying all the time to be innovative, with all of the technologies that have been coming out, to improve safety and take the workload away from the officers so they can concentrate on the safety of the vessel and its performance," he told us.

"We've put a lot of money and focus into those aspects. In fact we have triple (ECDIS) systems, because on most of the vessels we also have a conning display with an additional processor unit."

"As far back as I can remember, in 1999, we had the first Transas electronic chart system, not a true ECDIS system but just used as an additional aid, the main navigation was still done by paper. Even that was very good then. From 2007 we started going over to full ECDIS on all of the vessels."

With more than 10 years of electronic navigation experience within the company, Tärntank has been through the process of moving from paper to digital that many more will experience over the next few years following the ECDIS carriage requirement.

'One of the obvious benefits is that we can avoid paying for something we don't use' – Capt Artis Ozols, Tärntank Ship Management

"It's like any new technology, until you really know it you cannot fully trust the system," said Capt Ozols.

"In the beginning it can be an unfamiliar feeling when you only have electronic charts and don't have any paper charts to check. On a paper chart you can just open it, and here is Europe and here is America, a general chart and a big chart – unlike on an electronic chart where you have to scroll everything."

"With the Transas system you can do it quickly, which is good, but some of the systems I have seen you had to first load some kind of planning mode before you could review the passage plan even. That took quite a long time, and for paperless navigation wasn't really usable."

Training is a major issue for companies looking to introduce ECDIS, though for Tärntank Capt Ozols notes that this has been relatively straightforward, due to the crews' extensive existing experience with the technology.

"We are following the regulations, we have been having generic and type specific training for all officers," he said.

"Since we have Transas on all the ships and the crew has been working with the system for many years, for the type specific training they know it all already. But they need the certificate."

"I have done a Transas trainer course myself, so I can do training for crew onboard. When I do the training I focus more on the safety parameters, and some tips that can be useful for passage planning and safe navigation, because the general things they are using on a daily basis."

While Tärntank crews have many years of experience using ECDIS and managing ENCs, it should be noted that the manufacturers do still recommend that thorough training is undertaken by seafarers that are going to use the new licensing and chart handling arrangements, to make sure they can access the available benefits

– and having ECDIS onboard the ships has created a number of benefits, according to Capt Ozols.

"Firstly, of course, is the fact that you don't have to move away from the navigation panel. You can still be there and you can still see outside," he said.

"It also allows you to see things like weather and other information. And it has big advantages during ice navigation. Since it's also connected to the Automatic Identification System (AIS) you can see where other vessels are going, and if they are all doing 15 knots, for example, it will tell you that it's easy ice."

"With a few clicks you can see the passage plan of the other vessel and see where she's going, so you can follow the same way through the ice."

PAYS

As a long time user of ECDIS and electronic navigation, Tärntank is in an ideal position to judge the benefits of advances in ENC delivery and licensing technology.

The company started using the Transas PAYS system last year, on a single vessel, prior to its official launch, before extending this to the rest of the fleet.

"We decided we wanted to continue with this for all of the ships, because it was not only the Pay As You Sail function but also the fact that we could automatically get updates," said Capt Ozols.

"In order to have this system fully operational we needed to have a class approved firewall, which we bought from Transas, which was needed for automatic updating. That also allows us to get remote support and service if it's needed, Transas can connect to the ECDIS remotely."

"That's very useful, though we have stopped that for the moment as in order to have the remote service you need unique IP addresses and the IT guys are saying they are not able to give so many right now. In the autumn they (Transas) say they are going to launch a new firewall that will not need a specific IP address for each vessel computer."

Installation of the PAYS service involves a software upgrade, and the firewall, and then the Transas Navi-Planner application, replacing the Chart Assistant that the company previously used. According to Capt Ozols, full implementation can typically be achieved in a single day.

"From ship to ship it will be a bit different, but it usually takes a full day to have it fully running. If everything goes smoothly," he said.

"They do checks of the system and everything, upgrading the software and so on. We've been trying to do all of this during the vessels' stays in the shipyard. It's a good idea to do it in the shipyard, at one stage we had problems installing the firewall and had to change to a new firewall, which was good to do in the shipyard (rather than at sea)."

This system is connected directly to the onboard satellite communications set-up, via the firewall to ensure security, which can be used to deliver PAYS chart licences to the ECDIS. This eliminates the need for the trips over and back between the chart display and the PC that were previously required.

"It's only possible with the firewall, because it's a DNV class-approved system which allows it to be connected. Even though our computer guys are saying that the internet environment is safe, it needs this special firewall to allow it to be connected to the ECDIS," said Capt Ozols.

"Previously we would put the request from the ECDIS onto the memory stick, and then from the memory stick we would send the request to Transas from the computer. You could automatically or manually choose what chart you need and they would send the licence, and then you install the licence on the ECDIS from the memory stick."

"It doesn't take much from the communications really, it just takes quite a bit if we connect to the remote system (for maintenance and support). For something like this we have to increase the broadband. We haven't really been doing it yet, but we can increase the broadband for one or two hours if it is needed for maintenance. Up to now we've managed without this."

Benefits

According to Capt Ozols, the potential benefits of this kind of system will vary depending on the type of ship using the technology and the crew's existing skills in managing electronic chart folios.

"One of the obvious benefits is that we can avoid paying for something we don't use," said Capt Ozols.

"Another thing is that we can view all of the world (folio of ENCs). You can see it, so you know that if there are some changes in voyage orders and instructions you will have that possibility."

"As our crew is quite skilled in the system I don't know if we gained that much (from licensing being done automatically), when I do training I can see that the crew has control of the system and avoids ordering too many charts. There have been some cases where too many charts were ordered, and that brings extra costs, but we have put in place limits on ordering. If, for example, there is more than $500 ordered we will question why they need those charts and if they really need them or not."

On the negative side, the only issue that Capt Ozols has had with the PAYS system to date has been with the hardware coping with the large amounts of data required to keep a full world folio of electronic charts onboard and updated, and available for licensing.

Using PAYS services, it is now easier to automatically manage ENCs for use with an ECDIS onboard

"What we experience now, and it's one of the things to improve, is that the system is getting overloaded. There are thousands of approved system charts, and they are all there. It takes time to update," he said.

"I was thinking it should maybe be divided into areas, like we have the navigation warning areas and safety areas, where you have Area 1, Area 2, up to Area 16. Then you could pick that you want Area 1 and 2 activated, or if your circumstances change you can add more."

This suggestion from Capt Ozols has already been acted upon, with Transas confirming that the next version release of the system in September will include an 'Areas' capability.

Aside from these technical challenges, one key issue that will affect the effectiveness of a PAYS system from an operational point of view will be the type of trade that the ship is involved in.

As Capt Ozols notes, ships on a predictable and repeating route stand to see a minimal benefit, as they have predictable charting needs. More significant advantages could be achieved on vessels whose voyage patterns are less certain.

"One vessel was on time charter during the winter season, going from Russia to Tallinn and occasionally going to Copenhagen and Hamburg. I think it was going breakeven with ordering (the ENCs via PAYS)," he said.

"There was no saving really on this one because it was always the same charts they had already been choosing before. But if you're going to places where you don't know where you're going, and you're only going there one time, that gives you savings."

"It's not just about cost savings though, it's about time saving for the crew, and it's about avoiding mistakes. If someone is not fully familiar with the licensing he could do the wrong order, and that creates extra problems. You could say it reduces training a bit, but they also need to know those things if anything goes wrong, so they can do it the old way."

However, even in cases where shipping companies are operating on predictable routes and may not see major savings through the use of PAYS, Capt Ozols still believes that this type of technology will become the standard for ENC licensing in the maritime industry.

"There aren't so many companies today like Tärntank that have been using ECDIS for so many years and have such good knowledge of the system. With the coming regulations that ECDIS should be installed on all vessels I think this Pay As You Sail concept is great for companies not so experienced," he said.

"Of course, you still need to learn all of the licensing and the rest of the system, but generally I think this concept will be chosen by most shipping companies. If you're on tramp or going on passages where you don't know where you're going, then it's saving you money. I think this will be the future." DS

‘Moving fast to meet requirements’ - ECDIS updates from Japan

At Sea Japan 2012 Admiralty held a free ‘Are you ready for the ECDIS regulations?’ workshop, to help shipping companies plan for the requirements of the mandatory carriage of ECDIS. Two of Japan’s biggest shipping companies, NYK and MOL, attended the workshop; here they explain how their ECDIS implementation plans are progressing, *writes Guy Edwards, Admiralty*

The first of July 2012 marked the beginning of a new era in shipping, as the first deadline for the compulsory carriage of ECDIS passed. ECDIS is now mandatory on new passenger ships over 500 gt and new tankers over 3,000 gt. The legislation will be phased in by ship type and size to apply eventually to most large merchant and passenger ships by 2018.

To deliver the safety benefits of the new technology, every ship navigating with ECDIS requires a crew which is confident in its use. Bridge officers are required by STCW (Standards of Training, Certification & Watchkeeping) to be competent to carry out their duties, so the ECDIS Mandate effectively makes ECDIS training compulsory too.

This represents a significant challenge for the industry; between 140,000 and 200,000 deck officers are estimated to require training in the next six years.

To help shipping managers understand the scale of the challenge, Admiralty has been running a series of Digital Integration Workshops at industry events around the world to offer insight into the process of achieving ECDIS compliance.

The Workshop has been developed by the Admiralty team in conjunction with Captain Paul Hailwood, an expert in ECDIS compliance.

At a recent Workshop held at Sea Japan, Capt Hailwood came across many familiar issues, but one which perhaps he hears more than most: “I spend a lot of time taking owners through the things that they need to consider and every single company has sat up and thought ‘oh, we really are short on time!”

Capt Hailwood stresses the importance of starting preparations as early as possible, and recommends that once a company has established flag state requirements, its first internal process should be to conduct an initial risk assessment.

The assessment should look at the impact that ECDIS will have throughout the company based on fleet profile, routes, owned or operated tonnage, compatibility, chart supply and the potential timescale for installation and testing.

To help shipping managers effectively plan for this process, Capt Hailwood, in partnership with the Admiralty team, has developed a series of 9 stages for ECDIS compliance as part of the Workshop, and each is based on the experience of companies that have been through the process.

At Sea Japan, NYK and MOL were kind enough to talk to Admiralty in detail about their work towards compliance, and the case studies below should give you some guidance on what to consider during your own planning.

NYK Line

NYK Line has accumulated a decade of experience in digital navigation, having installed its first shipboard systems in 2002.

The NYK Line owned fleet currently numbers 300 vessels with another 800 operated on charter. By the end of May 2011 more than 200 of its owned vessels were fitted with ECDIS, however almost all of these are still using paper charts for primary navigation, with ECDIS providing situational awareness.

NYK already has more than 200 ships fitted with ECDIS

The manager of NYK Line’s marine technical team, Noboru Shiomoto, explains: “Within our owned fleet, 10 vessels are fitted with dual ECDIS and these already use ENCs for primary navigation.”

“We have plans to install dual ECDIS on another 100 vessels over the next two to three years. So we are moving very fast to meet the requirements of the ECDIS mandate.”

Capt Shiomoto explains that the transition has presented some challenges.

“We are fully engaged in this process but because we are in transition phase from paper to digital charts, we are facing an increase in cost and workload while we transfer fully to ECDIS,” he said.

NYK Line uses the Admiralty Vector Chart Service to manage its ENCs. Feedback from ships using ENCs has been that electronic chart correction is much faster than paper chart correction and the company plans to enhance this process by using the Admiralty Information Overlay.

The Overlay includes worldwide Temporary and Preliminary Notices to Mariners as a layer directly over the ENC.

Capt Shiomoto notes that NYK’s crews have reported a very positive experience using ECDIS so far.

“There are so many advantages, for example chart corrections, which are far simplified, but the real differences come from knowing your location as you navigate, so you can make sure you are always operating safely,” he said.

“Previously we navigated using GPS and onshore targets, but where ECDIS is installed we can use real-time GPS to look ahead so we have a better understanding of our surroundings and can maintain a safe voyage.”

He also cites the ECDIS anti-grounding functionality, which he says means the company can expect a reduction in accident risk in the future.

“The main purpose of our introducing ECDIS is not just to meet regulatory requirements. These are important, but we

MOL training superintendents travel to the ships to give ECDIS instruction onboard

strongly believe that ECDIS is an effective tool to prevent collisions and improve safety of navigation," said Capt Shiomoto.

Given the high volume of NYK Line officers to be trained, the company is fortunate to be able to take advantage of its own in-house training facilities.

NYK's ship management subsidiary in Singapore launched its own generic and type specific ECDIS training in July 2011 at a facility with five ECDIS simulators. The centre has so far trained 350 officers, and Capt Shiomoto says it will continue to train a further 400 to 450 officers per annum.

Mitsui O.S.K. Lines (MOL)

MOL has used a combination of ECDIS and Electronic Chart Systems (ECS) on its owned fleet since 2006. The process which it will adopt going forward will be a complete move from unofficial ECS to ECDIS.

This process is made somewhat complicated by the fact that MOL is both ship owner and operator. Currently MOL owns 310 ships and has an operated fleet of a further 950, which means it must monitor the progress of its owners in complying with the IMO mandate.

Takaaki Inoue, executive officer responsible for safety operations for MOL, explains: "For the chartered ships we will see how their owners respond. We will observe what the shipowners do and how they are intending to introduce ECDIS."

"We make regular inspections of chartered tonnage, we visit and confirm that the vessel is compliant. We don't make direct enquiry but we check the status on an individual ship basis."

Of MOL's owned fleet, Mr Inoue notes that almost all have ECDIS installed, and he says there is no distinction by ship type in terms of priority for moving to digital navigation. At present, the skillset remains with the paper charts that seafarers have used for many years.

"Changing the mind set of elder seafarers will be a key challenge but this is also true for the younger ones," he said.

"We need to convey the spirit of the change; simply sending a document out to the fleet to be shared is not an effective method of communication for the younger generation. It must be conveyed onsite through the experience of a respected and trusted captain."

To address this need, MOL uses training superintendents, who provide on-the-job training and are regularly dispatched to the ship to give ECDIS instruction to junior officers.

In terms of classroom training, his department's focus is on ensuring adequate capacity. He says some 2,700 MOL masters and officers need to be trained, of which 800 have already completed generic training.

Mr Inoue explains that the requirement to satisfy type-specific training is a big challenge.

"It's a problem mostly because there are so many different designs of ECDIS available," he said.

"We have to involve the manufacturers in the process but the functionality is so different between them. We need to have a basic design or agreed standard. As a user I feel if we could do that it would accelerate our maturity with existing devices and make the process easier."

Mr Inoue says he doesn't expect to see a big change in terms of operating procedures when MOL replaces paper with ENCs. But he does expect the availability of the latest updates and overlays to improve safety of navigation.

"Reducing the workload means officers can concentrate on the lookout. Maintaining a good lookout by every possible means is the most important contribution to safety of operations," he said

Conclusion

With one ECDIS deadline already passed, companies will be starting to feel the pressure, but the worst thing that owners could do is rush ECIDS implementation.

Moving from paper charts to digital navigation is not just a process of swapping one source of content for another; navigating with ECDIS is fundamentally different to navigating with a paper chart.

If the display and the ECDIS settings are not fully understood, then the chart display can be misinterpreted and in the worst case the safety of the vessel compromised.

The advice is to start ECDIS implementation as soon as possible, be methodical and thorough in your preparations and learn from those that have already been through the process. DS

About the Author

Guy Edwards *is head of Admiralty Asia Pacific, based in Singapore.*

The Admiralty 'Are you ready for the new ECDIS regulations?' workshop has been designed to demystify many of the challenges of ECDIS implementation. It offers a simple checklist to kickstart planning and is also accompanied by a guide available on the Admiralty website.

Attendance is free, but spaces are limited and anyone wishing to attend should register online. Following SMM Hamburg 2012, the Workshops will also be held in London on 24th September and in Dubai, UAE on 27th-29th November 2012.

Advancing e-Navigation

IMO's vision of e-Navigation is advancing towards real action, but without coordinated effort involving the range of stakeholders that will be affected by its impact, the project will struggle to reach its potential, *writes Capt R. G. Moore*

Folk sayings have a way of encapsulating basic truths. This is why for many among us the old saw "Can't see the forest because of the trees" applies to e-navigation.

People get wrapped up in the minutia of its shipboard building blocks - AIS, ECDIS, etc. - and lose sight of what's being created, and with the SOLAS carriage requirements for those basic tools now in place there are some who consider implementation of e-navigation essentially complete.

While we may all be aware that e-navigation is *"...the harmonized collection, integration, exchange, presentation and analysis of maritime information onboard and ashore by electronic means to enhance berth to berth navigation and related services, for safety and security at sea and protection of the marine environment"*, what's buried in that statement is not necessarily apparent.

To that end, examination of the Preliminary Gap Analysis submitted to NAV 57 by the E-Navigation Correspondence Group is particularly instructive[1].

That 47 page summary highlights the barriers - or Gaps - which must be addressed during e-navigation's implementation and in the process conveys a real sense of the intended scope of e-navigation. Unfortunately, the intended scope remains a mystery to a substantial portion of the World's maritime community.

This is why, among the documents emerging from NAV 57, two sentences spoke directly to that issue: *"At the outset the knowledge of e-navigation as an international effort is low or absent among the practical users. Throughout the development the promotion of e-navigation has been difficult, as it was hard to demonstrate the practical consequences to users and stakeholders".*

When that lack of knowledge is combined with the goal that e-navigation is to be "User Driven" the resulting problem becomes self-evident. If the impetus for development is to be "pull" from the users, how will that happen if those users don't know what it's all about?

This returns us to the issue of how to advance e-navigation. Unless e-navigation is explained, and explained in terms that persuade the users of its benefits, progress is going to be difficult and - beyond a certain point - impossible.

The task appears daunting, particularly considering the various constituencies which must be convinced not just of what e-navigation will become but of its benefits.

It is also well to remember that e-navigation will be a public-private partnership, requiring real commitment from governments, quasi-governmental bodies such as leading NGO's and the private sector. And e-navigation will be made up of many different "bits and pieces", each of which must be employed correctly if the final system is to be greater than the sum of its parts.

Mr John Murray of the International Chamber of Shipping touched on this aspect when he discussed "competencies" at the January 2012 conference *E-Navigation Underway 2012*[2].

Marketing plan

A prerequisite for e-navigation's success, or at least implementation at a reasonable rate, is an educational campaign that, in reality, amounts to a marketing plan.

Development of that plan falls to the IMO. This is recognised by that organisation and is embodied, for example, in an output from NAV 54 in June 2008.

Among the enumerated *"General Principles for the Development of E-navigation"*[3] is one entitled ***"Clear Ownership and Control".***

The descriptive paragraph for that principle led off with the words *"Realization of the e-navigation vision requires a clear, global commitment, articulated through a viable and coherent framework which sets out a migration plan to guide Governments and industry. E-navigation is a global concept that will be implemented and operated at global, regional and local levels across all user groups."*

It went on to say that, at the global level *"….*[the] *IMO is the only organization that is capable of meeting the overall governance requirement."*

Having thus acknowledged its ownership and control the MSC made clear that the IMO is responsible for *"leading and coordinating the external communications effort necessary to support the case for e-navigation"*[4].

The first step may well be to recognise that the term "e-navigation" and the single phrase that currently defines it do not speak clearly to the intent, scope and importance of the undertaking.

This suggests that a more complete definition must be advanced, and since the current name "e-navigation" may of itself suggest a narrow interpretation perhaps it's time to migrate to a more descriptive one.

With an expanded definition as a base it should be possible to develop a "Marketing Plan" that includes identification of the various constituencies, their concerns, how e-navigation will impact them and the priority with which specific concerns should to be addressed.

The Draft *Strategy for the Development and Implementation of E-Navigation* set forth in Annex 12 of NAV 54's Report to the Maritime Safety Committee could serve as the basis for development of the plan, and for general instruction outside the framework of the IMO and its participants the Plan should connect the dots in a way making clear the long term implications.

In this case the "dots" are such things as the ISM code, Maritime Domain Awareness (MDA) and the various industry-government information exchanges so essential to the movement of marine transportation.

"Success" for the plan will be achieved when e-navigation reaches that tipping point where - as was the case with the internet - user demands promote wider and wider applications.

It is expected that the IMO will execute such a plan through the Member States and its consultative organisations. Necessarily complex, there are several points which should be considered in its development.

Since e-navigation will only develop as a public-private partnership, governmental agencies must be convinced about the value of their participation.

In fact, it is government that may pose a greater challenge than the private sector. There is already a governmental school of thought that considers that e-navigation will be "revenue-neutral', developed and implemented with expenditures offset by savings to be achieved.

Lack of understanding thus raises enormous problems on several levels. A real danger is that some governments will view e-navigation as a substitute for their existing maritime safety infrastructure, using it as a reason to reduce, for example, its system of aids to navigation.

While such choices may ultimately become available, any changes must be made carefully and in keeping with the pace of e-navigation's implementation.

It must be recognised that upfront costs will accrue to National authorities incidental to implementing e-navigation, with savings coming some time in the future, and then perhaps only as "avoided costs". Unfortunately, avoided costs weigh little in the minds of those charged with the allocation of governmental funds.

Public awareness

The role of Member States in informing and educating their nationals about e-navigation is less clear, but certainly must be part of the overall effort.

Perhaps the most effective means of doing so would be to ensure information about e-navigation, whether IMO documents or reports of test bed results, is readily available.

One potential model is the actions taken by Norway, as illustrated by visiting one of that country's e-navigation web sites[5].

The Marketing Plan must recognise that public tolerance of maritime incidents

has diminished, as reflected by the trend to criminalise actions previously considered errors in judgment or functions of circumstance.

The litany of incidents giving rise to this - *TORREY CANYON, AMOCO CADIZ, EXXON VALDEZ, BRAER, ERIKA, PRESTIGE, etc.* - goes on and on.

The plan should reinforce the words that the IMO's Secretary-General used in his 2007 World Maritime Day speech:

"I do not wish to see the maritime community stand accused of failing in its duty towards the protection and preservation of this beautiful planet, which, it seems to me, we have neglected for too long."

Promoting e-navigation as a significant step toward protecting the environment and encouraging nations to move away from punitive measures to the preventative ones inherent in e-navigation should be primary goals.

This is made easier by the success of several e-navigation "Test Beds" that, among other things, address environmental concerns and marine resource management.

Two of the most successful, HELCOM and *EfficienSea*, focus on the Baltic and its approaches, and provide many examples of what can be done.

As a more general comment, the marketing plan should provide the means to report upon and publicise the results of the various e-navigation test beds. These provide examples of actual applications and demonstrate measurable benefits, and are thus critical tools for the advancement of e-navigation.

Demonstrating benefits

Considering the private sector, owners and operators of ships must find answers to the question of "What's in it for my company?"

If the private maritime sector is to accept e-navigation as an important and necessary tool it must see the benefits couched not in terms of rhetoric but of demonstrable additions to their bottom line or as the solution to real problems. Several things make this a challenging sale.

First, companies have only limited ability to affect operating costs but will find many e-navigation expenses come up front, before significant benefits can be realised. These start before many of the future benefits from e-navigation kick in, and are thus a negative element.

Secondly, e-navigation may ultimately impact manning requirements in as yet unspecified ways.

Take as an example the Maritime Services Portfolio (MSP) concept. Defined as something which *"...defines and describes the set of operational and technical services and their level of service provided by a stakeholder in a given sea area, waterway, or port, as appropriate"*[6] the other side of the coin requires a rigorous examination of the tasks which must be accomplished by Bridge Management Teams when operating within the various areas.

That exercise concludes with a determination of the personnel, equipment and procedures needed when operating in those areas.

An example of such practice was provided by Princess Cruise Lines in a presentation by Captain David Christie, Senior Vice President, Professional Marine Standards at *eNavigation 2010,* a conference held in Seattle on 17 November, 2010.

Such realistic assessments could well lead to requirements for additional people, with offsetting benefits difficult to quantify in fiscal terms. The practice would however be an important step in risk reduction and have a positive effect upon personnel satisfaction, recruitment and retention.

On the equipment front, those determining standards and designing equipment must be included among the marketing targets.

When e-navigation is fully implemented it will represent a data-intensive system which unless appropriately designed will overwhelm those it is designed to serve, particularly those on the bridges of ships.

Unless development takes into consideration the users, their capabilities, needs and limitations - in short, the human element - the results may incorporate every feature of which the technology is capable rather than what is actually needed.

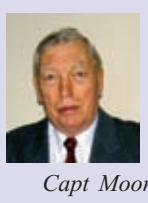
Examples of such overextension are legion; compare what's built into the word processing program Word to what the average user actually needs in his or her daily endeavours.

This problem has generated discussion of a so-called "S-Mode", providing a means to configure bridge displays to a common standard.

The marketing of e-navigation will not be simple but it is one of the keys to successful implementation and we need to get on with the job. DS

References

[1] http://e-nav.no/media.php?file=96
[2] http://delivery.kundelink.dk/kunder/efficiensea/index.php
[3] http://bit.ly/MRXOUg
[4] MSC 85/26 Add.1 Annex 20, Pg.13
[5] http://www.kystverket.no/Documents/Konferanser/Nordisk%20ekspertm%C3%B8te%2010%202011/IMO%20relations%20regarding%20e-navigation_Vallersnes.pdf
[6] http://e-nav.no/media.php?file=96



About the Author

Robert G. Moore *retired in 2002 as president of Coastwatch, Inc., a maritime consulting firm. He has more than 40 years of experience in maritime and international affairs, as a master mariner and a retired US Coast Guard officer with special interest in ship operations and marine navigation.*

Capt Moore also served as a member of the Marine Board Committee on Maritime Advanced Information Systems and the Transportation Research Board's Committee for Evaluating Display of Automatic Identification Systems. He is a Fellow of the Nautical Institute and an Associate Fellow of the Royal Institute of Navigation (UK).

Retrofitting BNWAS – the true cost?

Bridge Navigation Watch Alarm Systems (BNWAS) have become a mandatory carriage requirement for certain classes of vessels, and the roll-out will continue to encompass a significant portion of the world fleet. However, fitting the technology can be more challenging than might be expected, *writes Tom Henson-Webb, ANT*

In June 2009, the IMO adopted resolution MSC.282 (86) making the carriage of ECDIS and Bridge Navigation Watch Alarm Systems (BNWAS) mandatory. Now, while the former has generated a lot of discussion, conferences and media interest, the latter has been very much overlooked.

BNWAS has been around for several years, but was only mandatory for vessels classed for one man bridge operation. However, last year saw the regulation for mandatory installation come into force on all new cargo vessels above 150gt and all passenger ships, regardless of size.

This year all passenger ships and all cargo vessels of 3,000gt and above built before 1 July 2011 are required to have a BNWAS fitted prior to their next survey after 1 July 2012. The roll out then continues with cargo vessels between 500gt and 2,999gt in 2013, and vessels of 150–499gt in 2014.

Therefore, whereas ECDIS is a more technically complex equipment, BNWAS has an impact on a far greater number of vessels, especially for retrofit.

At its most basic a BNWAS system is simple, requiring the bridge operator to reset a timer every twelve minutes by pressing a button, although most systems can also include motion sensors to reset the timer automatically.

The indication to the operator that the time has elapsed is initially visual, then after fifteen seconds audible (referred to as the first stage alarm). If the operator has still not reset the timer after another fifteen seconds, a second stage alarm is transferred to the cabin of the selected back-up navigator to call him to the bridge.

If, after a further ninety seconds (although it can be up to three minutes on larger vessels), the system has still not been reset a third stage alarm is generated in the cabins of the captain and all navigating officers, as well as crew communal areas.

In addition, the system should include an 'Emergency Call' facility that allows the bridge operator to manually activate the alarm as a means of manually summoning assistance (either achieved by holding down the reset button for an extended period or by a separate emergency button, depending on the manufacturer).

Confusion

Despite this apparent 'simplicity' however, it hasn't stopped confusion reigning over parts of the BNWAS performance specification (IEC62616), which seem to be contradictory.

The specification allows for an 'Automatic' mode, where the system is activated when the vessel is under autopilot control and deactivated when in hand steering. This was a requirement in the original IMO performance standard MSC128 (72) adopted in 2002. However this was superseded by SOLAS Chapter V Regulation 19, which requires the BNWAS to be active whenever the vessel is underway.

This has created the odd situation were IEC62616 allows for a BNWAS to have an automatic mode, but then states that it can't be used on vessels where BNWAS is mandatory!

I have contacted both Lloyd's Register (LR) and DNV regarding this and both confirm that, as automatic mode is not acceptable, so connection to the autopilot is unnecessary. However, some flag states (Isle of Man being one) want to use the autopilot as a means of automatically activating the BNWAS whenever the vessel is underway, which is an understandable reinterpretation of the regulation – but doing so is not so easy.

Autopilots normally rely on external activation from a steering mode selector switch, so there is a simple on/off contact that can be connected to (although on retrofits this may involve modifying switches or adding relays if no spare contacts are available).

However, there is no standard 'vessel underway' signal. The IOM circular 17 states "other methods", such as connecting to the ship's telegraph, "can be explored". In one case a BNWAS manufacturer has added a GPS interface which allows the system to be activated once the vessel exceeds a speed threshold (the standard being 4 knots).

Both LR and DNV reject this, as "underway" means "not stationary" rather than "faster than X Knots", as a vessel moving at 3 knots will still make a mess if it hits something. Therefore, using an input from either the GPS or speed log is unacceptable, as accurately indicating the vessel is stationary is not possible.

A GPS, even with differential corrections, rarely shows a speed over ground of zero. It usually varies at speeds of less than one knot, but this still not stationary. Also, in most cases vessels have logs that only measure speed through water, which would incorrectly show a moored vessel in moving water as under way and a drifting vessel as stationary.

There may be "other methods" which can be employed, but given the multitude of propulsion methods (i.e. fixed & variable propellers, podded drives etc.) and control (direct engine control, or via telegraph), there is no one size fits all solution.

Therefore, while providing such a signal is possible and fairly straightforward for a new build, where it can be allowed for in the design, doing so for retrofit, where it is an afterthought, is an entirely different matter.

A similar situation existed during the VDR retrofit boom, where some propulsion and steering manufacturers cashed in by developing very expensive VDR interfaces for fitting to their systems which did not already have one, as this was mandatory.

This had a significant impact on VDR installation costs, but considering that a VDR was probably between five to ten times the cost of a BNWAS a repeat attempt to cash in on the BNWAS retrofit boom by propulsion manufacturers would have a far more significant impact.

As for less controversial interfacing, it is mandatory to connect the BNWAS to the VDR on vessels which carry one. Vessels with integrated navigation and/or track control systems fitted also face a requirement that alarms generated by these systems will activate the BNWAS second and third stage alarms if they remain unacknowledged on the bridge for thirty seconds.

In addition, it is acceptable to connect other equipment which includes a watch reset capability function (commonly Radar & ECDIS), so that when this equipment is operated a signal is transmitted to the BNWAS to automatically reset the timer.

As BNWAS is now mandatory, the number of systems with this capability is bound to increase, so it will be the case, especially on new builds, that the operator will rarely if ever have to manually reset the timer.

Changing market

As previously mentioned, BNWAS has existed for many years, but as its usage was very limited there were originally no more than half a dozen manufacturers. This was changed dramatically by the new legislation, with the number of companies offering systems expanding greatly to around thirty.

Most of the original manufacturers were small outfits due to the limited demand, and while some of the major navigation equipment manufacturers now supply systems, a greater number of small outfits have also appeared.

As the market has become increasingly crowded the price trend is most definitely downwards, with a hardware price of €2,000 for a system suitable for a mid-size commercial vessel being possible.

Furthermore, various manufacturers are adding their own extras in an attempt to differentiate their systems. One example, using the piracy angle, is a 'fourth stage' alarm which activates the vessel's SSAS system once an additional period after the third stage alarm activation has occurred. Whether this is of any real value to the vessel operators and/or crew is debatable, but is in no way a legal requirement.

Another more recent 'extra' is to use the system's motion sensors to turn it into a bridge intruder alarm when the vessel is moored and the bridge unattended. It should be noted however that some classification societies (i.e. Lloyds Register) do not accept the use of motion sensors, whereas others (i.e. DNV) mandate then.

Furthermore, the use of the sensors for this purpose raises questions over their suitability for the purpose for which they are intended, as the range and field of

BNWAS requires operators to acknowledge an alarm at regular intervals, for safety purposes

view of the sensors should be such that they can only trigger a timer reset if motion is detected in the immediate vicinity of the conning position.

If the detection area is large enough to encompass the whole bridge, the ability to activate a reset by detecting the operator making a cup of tea at the back of the bridge adds weight to the LR stance.

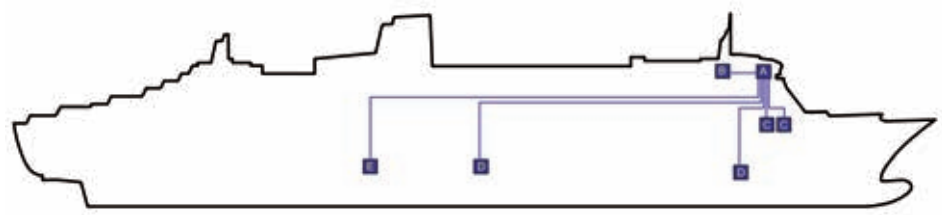
Retrofit

With regard to new builds, the impact of installing BNWAS, requiring the fitting of a handful of additional units, running perhaps a dozen extra cables and the necessary interfacing, is negligible. But for existing vessels it is a different story.

While the interfacing issue may not be applicable in many cases, the actual installation will normally still necessitate the running of new cabling, not only to other systems within the bridge but, more crucially, to remote alarm units in the captain and navigation officers' cabins and communal crew areas.

In many cases, running these cables will require a large amount of time and effort as deckhead and bulkhead panelling will need to be removed, transits opened etc.

This will particularly be the case on cruise liners, passenger vessels and large luxury yachts, but essentially, on any vessel where there is not easy access to cable runs or the cable runs are over a significant distance, the cost of installing the equipment is likely to be well in excess of the cost of the hardware.



Installing BNWAS can mean running cables to various parts of the ship

A number of manufacturers have tried to play down the installation issue, claiming that theirs is the easiest to install (normally by minimising the number of separate units and cables), but the issue remains that running new cables from the bridge to accommodation areas will usually be necessary.

It is also suggested that the cables can be run by the crew and, while this is true, in practice this often fails to happen. The service manager at a large well know navigation equipment supplier has confirmed that, while they have seen an increase in the number or requests for BNWAS, they are actively avoiding supplying it because of the installation issue.

His statement was "The customer says the crew will run the cables but when the engineer turns up they haven't. This means the job takes three days instead of one and an ensuing argument with the customer over payment for the additional time."

To date, the only exceptions to this have been two manufacturers in the Far East and one in the UK who have produced systems that do not require these new cable runs.

The Far Eastern solution has been to use power line communication, which piggybacks a standard computer network protocol onto the ship's mains. This technology is normally used in large buildings to provide computer connections without running network cables.

However, the suitability of this technology on vessels where different areas may not be powered from the same supply (different phases or different generators) is questionable, and the MCA have indicated that they currently have a moratorium on the use of this technology.

Both of these systems also only have approval within their own countries, so only time will tell if they will become wheelmarked.

The UK alternative uses a wireless technology normally employed in monitoring systems to link all units, with the only cabling being a local source of AC power. With this there is obviously the issue of radio transmission within a metal structure, but it employs an RF mess so the units need only to be able to receive a signal from another unit in the system, not directly from the bridge.

Furthermore this system was originally approved by the MCA and now has an MED certificate, so the technology has been proven to meet the IEC performance standard.

Finally, in addition to all the technical implications, there are some regulatory issues, with some flag states requiring an approval document to be supplied detailing equipment type, number of units, location, power sources, system drawing etc.

Some flag states instead, or in some cases in addition, require the system be presented to a local surveyor. In both instances, again it is a case that the impact on a new build is negligible, but for a retrofit is an additional unexpected expense.

Therefore, in summary, for new builds BNWAS is just another (low cost) system to be added to the build specification – but for retrofits it is a different matter. Very much like the budget airline tickets that are advertised at one Euro and end up costing one hundred, the cost of meeting the BNWAS regulations is likely to be considerably more than the price of the hardware. DS

About the Author

Tom Henson-Webb *is integrated bridge systems manager at Advanced New Technologies (ANT), a company specialising in the integration of various types of technology systems on ships, including satellite communications, CCTV, networked communications and navigation systems.*

Maritime IT at SMM

The SMM exhibition in Hamburg, Germany, is one of the most eagerly awaited events in the calendar for technology companies in the maritime industry, with new innovations in IT regularly introduced to the market at this biennial event. *Digital Ship* asked some of the technology-based exhibitors at this year's show what they have to offer to visitors to SMM

ABS Nautical Systems

At SMM 2012 ABS Nautical Systems will showcase the newly developed Energy & Environmental module from its NS5 Enterprise software package.

The software is used for voyage management, aiming to improve efficiency and enhance operational processes to reduce costs. An automated feature has been added for data collection necessary for regulatory reporting, powered by ESRG's OstiaEdge software, to minimise the burden on the crew.

Customisable dashboards are included, allowing all personnel access to the same information for trending and management of overall fleet performance. Additional features include the ability to track and record other voyage related events including ballast water management, fuel and lube oil consumption, fuel oil switching and cargo information.

Visit ABS Nautical Systems at stand EG 311, in hall B3.

Admiralty

At SMM, Admiralty is delivering its free 'Are you ready for the new ECDIS regulations?' workshops, which aim to help shipping managers plan for the integration of digital technology into bridge operations to meet the IMO mandatory carriage requirement for ECDIS.

The workshops are based on the experiences of shipping companies who have successfully made the transition to digital, providing a checklist of activity for each stage of transition, from the initial risk assessment to training and the introduction and implementation of new procedures.

The workshops will take place on the first floor of hall B6, in room B6.1, at 11am on 4th - 7th September. Spaces are limited and those wishing to attend should register online on Admiralty's website.

Visit Admiralty at stand 419, in hall B6.

Alphatron Marine

Alphatron Marine will present a selection of products from its Alphaline at SMM.

Amongst the products on show will be the company's radar, gyrocompass, fibre optic gyro, autopilot range and BNWAS (Bridge Watch Alarm System).

Also on display will be Alphatron's Alphatainment system, which offers a range of features including Video on demand and VoIP.

Besides its in-house products, Alphatron will also present products from its partners like Yokogawa and Thrane & Thrane.

Visit Alphatron Marine at stand 400, in hall B6.

Panel PCs at stand B6/207

Autronica Fire and Security

Autronica Fire and Security will showcase its portfolio of products for the merchant, tanker, offshore and passenger ship markets at SMM. New systems include a flame detector and gas panel, both of which, the company says, offer improvements over existing solutions.

Upgrades to Autronica's ISEMS for the Autromaster safety management system, used to integrate incident management processes, will also be showcased. The system is used by a number of large passenger vessels and is being expanded with new features and functionality.

Fire suppression technology will also be highlighted, illustrating the trend for vessels to move away from CO2 to water mist suppression, such as Autronica's FlexiFOG.

Visit Autronica Fire and Security at stand 116, in hall B7.

BASS

Norwegian fleet management software provider BASS will showcase its BASSnet system at SMM 2012.

BASSnet is a modular software developed on the Microsoft .NET platform which the company says offers an integrated solution covering the main areas of maritime operations.

The system includes tools for streamlining and automating ship technical operations, with the aim of cutting costs and increasing efficiency.

Visit BASS at stand 518, in hall B6.

Conrac

Conrac will exhibit the latest addition to its Marine Panel Computer Series at this year's SMM.

These PanelPCs feature touchscreen widescreen format displays, with 13.3" and 7" sizes available, specially designed for marine applications.

The company will also showcase the latest versions of its wideECDIS Marine Panel Computers, its SysMon system monitoring application with ECDIS calibration functionality, and its wideECDIS monitor developed for river radar applications.

Visit Conrac at stand 207, in hall B6.

Danfoss

Danfoss will be exhibiting its marine portfolio at SMM, including its frequency converter family and variety of sensors.

The VLT Frequency converter is now available in the 90 to 250 KW output range, in protection classes up to IP 66. Depending on the output range, the company says that the new compact frame size can be up to 68 per cent smaller than former frames.

Frequency convertors will be on show in the Danish Pavilion, hall B1

The Danfoss MBS 1800 Cylinder Pressure Sensor aims to reduce fuel consumption by allowing the user to register what happens in the combustion chamber while the engine is running. The company says that this permits 2-stroke and 4-stroke engines to operate with a higher output than was previously the case.

Visit Danfoss in the Danish Pavilion, in hall B1.

Elcome International

Elcome International, a marine solutions provider and system integrator based in the Middle East, will present its full range of products and services for the commercial maritime industry at SMM.

The company will feature its new family of ELSYS marine electric switchboards, ECDIS solutions, nautical chart and folio management services and training facilities.

Based in Dubai, Elcome has over 250 employees, across its offices in the United Arab Emirates, Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and Yemen and a subsidiary company in India, including nearly 100 trained engineers and technicians.

Visit Elcome at stand 119, in hall B6.

Elektrikom

Elektrikom, a provider of maritime satellite communications globally, will be an exhibitor at SMM 2012.

The company will focus on its solutions for least cost routing, and speed and availability optimisation for VSAT.

Elektrikom began operations in 2003 as a VSAT provider, before going on to operate its own teleport in 2006. Today the company controls six teleports and supplies communications to more than 400 vessels and ground stations in sectors like oil and gas and cruise.

Elektrikom also supplies Inmarsat and Iridium services.

Visit Elektrikom at stand 404, in hall B6.

Eutelsat

Eutelsat will showcase its maritime telecommunications systems at this year's SMM.

The company says it is continuing to invest in new technologies and in-orbit resources for its VSAT solutions, which it uses to provide corporate networking services, and interconnectivity for a range of applications.

Eutelsat notes that, as a satellite operator itself, it is in a position to offer flexibility on bandwidth requirements for individual vessels and fleets on a global or a regional basis, where required.

Visit Eutelsat at stand 102.3, in hall B2 OG.

See Kernel based Virtual Machines at stand B8/200

Guntermann & Drunck

At SMM 2012, Guntermann & Drunck, a provider of KVM (Kernel-based Virtual Machine) technology, will present its portfolio of maritime IT applications.

The company says that KVM technology can be used to facilitate the work of ships' crews by allowing IT applications to be monitored from a central control room or the nautical bridge.

This could include use from ship to shore in control centres like Vessel Traffic Services (VTS), and in bridging the distance between the server room and nautical bridge. The technology could also be applied at antipiracy facilities.

Visit Guntermann & Drunck at stand 200, in hall B8.

Globe Wireless

Globe Wireless will showcase its Globe iFusion VSAT system, along with the release of R6 for Globe iFusion, at SMM 2012.

R6 for Globe iFusion enables up to five inbound and outbound simultaneous calls using Globe's Digital Quality Voice (DQV) technology over the Globe iFusion FleetBroadband terminal. Local inbound country numbers can be assigned to the vessel, to reduce costs in calls from shore.

R6 also includes additional features developed to keep VSAT terminals online, with automated scripts to monitor the VSAT system and attempt an auto-recover, with no intervention needed by technicians or crew.

Globe will also announce a new crew welfare solution at the event. The announcement takes place Wednesday, September 5th at 15:00 during SMM.

Visit Globe Wireless at stand 107, in hall 6.

HanseNautic

German chart agent HanseNautic, established in 2003 through a merger between Bade&Hornig and Eckardt&Messtorff, will exhibit at this year's SMM.

HanseNautic is a 'Tier-One' distributor of Admiralty products, offering both paper and digital products, including electronic charts as well as navigation software and services.

To help companies comply with the ECDIS mandate that came into effect from July 2012, HanseNautic says it has developed various solutions for ships offering combined paper and digital navigation packages, based on the ships' individual needs or the ship owners' requirements.

Visit HanseNautic at stand 103, in hall B6.

IMO Publishing

The publications arm of the International Maritime Organization, IMO Publishing will showcase its range of materials in English, French, Spanish, Arabic, Chinese and Russian at SMM 2012.

The company produces digital products such as e-books, e-reader files, electronic downloads, CDs and online material, in order to promote shipping as a safe, secure, environmentally sound, efficient and sustainable activity.

Launched in 2011, 'The IMO Bookshelf' is IMO Publishing's new Windows-based e-reader software.

Suitable for use on board ship, The IMO Bookshelf is a digital platform which contains over 60 titles including SOLAS, MARPOL and the IMDG Code.

Visit IMO Publishing stand 103, in hall B6.

Imtech Marine

Imtech will be highlighting several of its latest initiatives at SMM this year, including sustainable solutions and remote maintenance services.

The company has been involved in the launch of the world's first diesel electric hybrid seagoing ferries for Caledonian Maritime Assets, providing a hybrid propulsion system consisting of diesel electric in combination with battery technology. A smart Energy Management System was also supplied.

Imtech will also showcase its 24/7 Remote Monitoring & Maintenance service that can now be included in its Advanced Support Agreements. The company's Global Technical Assistance Centres (GTAC) monitor the ships' systems for problems - with the internet for example - and can restore connections before the crew even notices.

Imtech says it will be setting up a 'remote centre' at its stand where visitors can see the system for themselves.

Visit Imtech Marine at stand 200, hall B6.

in-innovative navigation

German company in-innovative navigation, a provider of software and hardware solutions for navigation, telematics and traffic surveillance, will be exhibiting at SMM 2012.

The company says that its core competence is processing and integrated display of radar, GPS, AIS and ECDIS data. For navigation it will feature the RADARpilot720° and RADARpilot720° Open Sea products, as well as its inDTS, inVTSbox ng systems for land based VTS, used for lock monitoring and coastal surveillance.

The company's inVNE simulator devices, used to test VTS/CSS systems and for training operators, will also be on display.

Visit in-innovative navigation at stand 605, in hall B6.

Intellian

Korean manufacturer of maritime satellite communication antenna systems Intellian is showcasing its new VSAT systems at SMM, the v110GX 3-Axis Ku-Band antenna with a Ku-/Ka- band antenna reflector and radome.

The 1m v110GX has been designed from the ground up to operate with both current Ku-band services as well as Inmarsat's upcoming Global Xpress (GX) service in the Ka-band.

The v110GX offers what the company calls a 'plug and play' conversion kit to upgrade from Ku-band to Global Xpress in as little as 10 minutes, without requiring a factory trained technician.

Intellian says that the new antenna also features improved Ku-band RF performance compared to its v110 version, while also optimising Ka-band RF performance for GX.

Visit Intellian at stand 611, in hall B6.

Jeppesen

Jeppesen will exhibit its C-MAP Professional+ and C-MAP ENC services at SMM, which the company says, when combined, provide a dual fuel solution of worldwide vector chart coverage.

Jeppesen will also showcase its flexible ENC licensing solutions, including its upcoming Pay As You Sail (PAYS) solution Open ENC, along with its established Dynamic Licensing and Direct Licensing options.

In addition to chart services, the company will display its Voyage and Vessel Optimisation Solution, used to reduce fuel consumption, improve ETA predictability, manage passage seakeeping within safe limits and minimise a ship's carbon footprint.

The C-MAP Weather Service meanwhile offers international weather forecasting that includes real-time weather as well as tropical hurricanes, ice fronts and sea conditions, which assist mariners in making voyage decisions based upon detailed weather information.

Visit Jeppesen at stand 105, in hall B8.

Jotron

At SMM 2012 Jotron AS will display the communication systems it develops and manufactures for all types of vessels.

The company's core product range includes GMDSS emergency radio equipment, internal telecommunication equipment and VSAT antenna systems.

Jotron has recently introduced a new stabilised Ku-band VSAT antenna which it says offers a high level of performance from compact and robust RF and electrical components.

The VSAT uses a broadband link via WLAN over coax up to the pedestal of the antenna, for remote or local upload of all software as well as real time web based diagnostics, with a webcam for inspection inside the radome.

Visit Jotron at stand 218, in hall B6.

JRC

JRC will be introducing several new products at this year's SMM.

This will include the first public viewing of the company's new 26-inch radar and ECDIS, featuring a new man-machine-interface with enhanced ergonomics.

Also on show will be the company's new generation of 4.5-inch common displays, available as Multi Information Display (MID), speed log and (D)GPS, and a new Class A AIS, featuring a dual colour LED backlight.

Completing the new line-up will be the second generation FleetBroadband250, with its industry standard interface and an integrated network.

Visit JRC at stand 300, in hall B6.

Kongsberg Maritime

In addition to new functions in its automation and navigation systems, Kongsberg Maritime will highlight its

Marine automation systems at stand B6/102

solutions for enhancing vessel efficiency at SMM.

The company says it is engaged in projects that support the maritime industry's drive to reduce fuel consumption and emissions, and will focus on several development partnerships producing systems and features for its products to support these goals. Other areas of interest include work on bridge system ergonomics and alarm handling.

Training will be another focus, as Kongsberg Maritime continues to develop new simulator designs and technology, and global training courses, which include system specific and generic ECDIS training.

Earlier this year Kongsberg Maritime also acquired Consultas, so the company will be using SMM as a platform to show its newly acquired software suite for Fleet maintenance & Loading Computer.

Visit Kongsberg Maritime at stand 102, in hall B6.

KVH

KVH is introducing its IP-enabled TracPhone V7IP and V11 at SMM 2012.

TracPhone V7IP and V11 both work with KVH's mini-VSAT Broadband service and offer a new IP-enabled antenna control unit (ACU) with a built-in network manager.

This includes the company's range of antennas, from the 37 cm TracPhone V3 to the 60 cm TracPhone V7 and the 1 m TracPhone V11.

The new IP-ACU for the TracPhone V7IP and V11 features a web-based system interface which is browser-based and allows over-the-air software updates, configuration, and troubleshooting (supported by a dome-mounted GPRS modem).

The unit has integrated Ethernet ports and MTA to simplify installation and support, a Wi-Fi interface for communication with external devices, and embedded network management functionality.

The network management capabilities are based on the KVH CommBox Ship/Shore Network Manager, and include features like least-cost routing, firewalls, VLAN configuration, web/DNS caching, VPN and crew e-mail.

Visit KVH at stand 405, hall B6 (or at its outdoor demo booth at B5.FG.017).

Marlink

At SMM 2012 Marlink will showcase its current promotions and maritime connectivity services portfolio.

Marlink has recently enhanced its standardised VSAT product, WaveCall, which now has two service levels. The company says that it aims to make the step from MSS to VSAT smaller, whilst establishing a better upgrade path for customers using VSAT for business critical operations.

Discuss VSAT packages at stand B6/201

Marlink will also use the event to communicate its new organisation, as a fully-fledged Astrium company following that company's takeover of Vizada, which it says will improve its value proposition to the maritime market with backing from one of the major global satellite companies.

Visit Marlink at stand 201, in hall B6.

MasterShip Software / SARC

MasterShip Software and SARC have joined forces to exhibit together at SMM 2012.

MasterShip will introduce its latest ship modelling and design software product, the Workshop Assistant. The MasterShip Workshop Assistant is used to view 3D models on a touch-screen table, and has been designed as a completely new software and hardware solution after a two year development programme.

MasterShip will also introduce its Template Oriented Modeling (TOM) system, used to create parts using predefined ship construction templates.

Design and stability software company SARC will be presenting the commercial release of a new interface for its Fairway hull design software, which it says allows different types of software to make use of the same basic geometry model of the vessel.

As well as the new Fairway interface, SARC will also present a new method to define the subdivision of a vessel, named Newlay.

Visit MasterShip Software and SARC at stand 623, in hall B6.

Navis

Navis Engineering Oy is showcasing STCS 4000, its new multipurpose integrated steering and thruster control system, at SMM.

The system is designed to control engine start and stop functions, to indicate the status of drive and power supplies and provide visual and audio alarms on supply failures, oil levels, drive overloads and other emergency situations.

All the system devices are interconnected by CAN. Based on the priority display of alarms and information, the system can fit more than 20 messages within the boundaries of the main panel screen.

STCS4000 features a colour display with a 130° viewing angle and anti-glare surface, and uses a new type of combined indicator for the required/true rudder position display.

Visit Navis at stand 301, in hall B6.

OceanSat

Maritime communications provider OceanSat will be present at SMM 2012, exhibiting its services for the design and implementation of onboard connectivity solutions.

The company provides VSAT, TVRO and AIS systems to shipping companies, and is a distributor for Korean antenna manufacturer Intellian in a number of different markets.

Visit OceanSat at stand 611, in hall B6.

Raytheon Anschütz

At SMM 2012 Raytheon Anschütz will exhibit its own navigation systems, with particular focus on the Synapsis Integrated Bridge and Navigation System.

Raytheon says that Synapsis is the world's first INS (integrated navigation system) which has been type approved according to IMO's new INS Performance Standard.

Hands-on demonstrations will also be offered for the company's new steering gear control system NautoSteer AS.

The adaptive autopilot NP 5000 can be operated in ECO-Mode to reduce sensitivity to periodical yawing movements. Subsequently less rudder action is required, which leads to less fuel consumption. For high precision requirements, the autopilot also offers a new course control mode and a high-precision controller.

Visit Raytheon Anschütz at stand 304, in hall B6.

Saab TransponderTech

Saab TransponderTech, a provider of marine AIS technology, will showcase its new fifth-generation R5 AIS product line at SMM.

The company says that the R5 AIS transponders are the first to incorporate software-defined radio (SDR) transceivers together with newly developed high-speed analogue-to-digital converters in a type-approved Class A system, improving receiver sensitivity, stability and signal processing.

The range of R5 products includes the single-box SOLAS-compliant R5 SOLID for fisheries and inland waters and the R5 SUPREME, which provides networking capabilities for integration with the ship's navigation systems.

In addition to the R5 products, Saab – together with the Swedish Maritime Administration - will provide demonstrations of the Dynamic & Proactive Route Planning (Green Routes) testbed project under the Motorways & Electronic Navigation by Intelligence at Sea (MonaLisa) initiative.

Visit Saab at stand 406, in hall B6.

Safebridge

At SMM 2012, Safebridge, a Hamburg-based e-learning company, will provide live demonstrations of a full working version of its ECDIS courseware linked via the web to the Safebridge online server and the original ECDIS manufacturer's own software.

Safebridge developed the online courses to meet the requirement for officers to be trained and certified to operate the specific ECDIS models installed in the ships on which they sail.

The Safebridge courses are simulations run on the actual ECDIS manufacturer's software. The courses are conducted online and not using CDs or DVDs, allowing the student to take the courses anywhere with a good internet connection. At the successful completion of the course, the student takes an online test prior to receiving a certificate for that specific model of ECDIS.

Having released the first course covering the Northrop Grumman Sperry Marine VisionMaster FT ECDIS in May, Safebridge is now finalising courseware for its other ECDIS manufacturing partners: Raytheon Anschuetz, Transas Marine, JRC, Imtech, ChartWorld, SAM Electronics and 7Cs.

Visit Safebridge at stand 521, in hall B6.

SAJ Instrument

At SMM 2012, SAJ Instrument Ab Ltd will be exhibiting its dynamic monitor-

Integrated bridges on show at stand B6/304

ing system SAJ-DMS.

SAJ-DMS is used to create a standard to maintain accurate information about ships' real dynamic condition, such as trim, heel, hull bending and floating condition, all within a single system and in a way that is not practical with conventional gauges or devices.

This allows theoretical trim optimisation data to be directly compared against real measured data, allowing for any necessary adjustments to be made.

Visit SAJ at stand 110, in hall B1 (Upper floor).

SAM Electronics

SAM Electronics, and its associate L-3 companies, will feature new-generation automation, communications, navigation, positioning, propulsion, energy generation and distribution equipment at SMM.

This will include live demonstrations of SAM's latest Nacos Platinum scalable navigation, automation and control systems, which use common components and operating networks.

Also featured as part of the demonstrations is an L-3 Valmarine multi-function Valmatic automation assembly, as well as a new DP control system from L-3 Dynamic Positioning & Control Systems.

Other new exhibits include fleet maintenance and servicing software, a retrofit ECDIS, a Bridge Navigational Watch Alarm System (BNWAS) and a Techcross ballast water treatment assembly.

Entertainment, lighting and sensor measurement equipment are also being shown, while a nearby outside display features demonstrations of SAMcon, an alternative shore-based power connection system for container vessels.

Visit SAM Electronics at stand 310, in hall B6.

ShipConstructor Software

ShipConstructor Software will be displaying its Autodesk shipbuilding application at SMM Hamburg 2012.

The company's staff will be available to explain how to use as-built CAD models generated during the design and construction process, which it says are increasingly being demanded by governments and ship owners on delivery of a completed vessel.

ShipConstructor CAD models contain information on how ships are constructed, including attribute information for each part which can be used during lifecycle maintenance and repairs.

The company says that the AutoCAD DWG's native format for its information makes it widely interoperable with other applications, which can be useful when dealing with various third party suppliers.

Visit ShipConstructor Software at stand 426, in hall B5.

ShipServ

ShipServ will showcase its newly released tool for maritime suppliers and brand manufacturers at SMM 2012.

The Supplier Insight Report is used to track a user's entire marketing spend across both ShipServ Pages, the company's maritime search engine, and its e-commerce platform, ShipServ TradeNet.

The tool is now available to all 40,000 suppliers registered on ShipServ Pages for free, and shows all the results of a user's marketing activity in one dashboard, broken down into banner advertising impressions, searches, profile views, contact views, request for quotes (RFQs) and purchase orders.

Visit ShipServ at stand 112, in hall B6.

Star Information Systems

At SMM 2012 Star Information Systems (SIS) will be showcasing its software solutions for technical ship management, including systems for preventative maintenance, HSEQ, dry-docking, and logistics.

SIS recently launched a new system for fleet supply and purchasing, used to reduce time spent on procurement, which it says should help in allowing for more strategic purchasing.

The company also notes that its purchasing and logistics solutions are in the process of being further enhanced with additional functionality such as contract management, warehouse management, and shipments.

Visit SIS at stand 625, in hall B6.

Telecom Italia

Telecom Italia will showcase its range of fixed, mobile and satellite communication services during this year's SMM.

Telecom Italia says it has made a significant investment in financial, technical and professional resources in enhancing its product portfolio with business value added services and in reinforcing its international presence to meet the demands of the growing market for satellite services for the maritime industry.

Through its satellite facility located in Fucino, Italy, Telecom Italia offers satellite services across the four Inmarsat satellite regions.

The company is currently providing satellite services to customers (satellite operators and Inmarsat service providers) in Italy, UK, Germany, France, Sweden, Finland, USA, China, South Korea, Hong-Kong, Singapore, Israel, Bahrain, Russia, Algeria, Cyprus.

Visit Telecom Italia at stand 120, in hall B3.OG.

Scalable bridges at stand B6/310

Antenna technology at stand B6/407

Telemar

Telemar is exhibiting its products and integrated projects in the field of marine electronics, both communications and navigation, at its stand at SMM.

The company will showcase its services to design, install, commission and support navigation/communication 'all-in-one' projects, which it says offer predictable costs. These services provide managed systems, packaging together the relevant technological options and applications suitable for the customer.

Telemar operates in the main global shipping ports and is directly present through 12 subsidiaries in 10 markets worldwide.

Visit Telemar at stand 128, in hall B6.

Thrane & Thrane

The Thrane & Thrane stand at SMM 2012 will feature the company's SAILOR portfolio, including SAILOR 900 VSAT, SAILOR FleetBroadband, various fixed and portable radio communication systems and a new GMDSS safety beacon.

The satellite and radio communication systems manufacturer will also showcase developments in its satellite TV offering, and will highlight a wider range of SAILOR communication products that utilise its ThraneLINK network protocol.

On the satellite communications application front, Thrane & Thrane will focus on the growth of remote monitoring and maintenance as primary drivers for installing its antennas on board.

Visit Thrane & Thrane at stand 407, in hall B6.

Transas Marine

Transas Marine will showcase its ECDIS solutions at this year's SMM exhibition.

The company says that its packages contain more than just the ECDIS equipment, with additional extra features available to help make ECDIS operations more efficient.

These services include chart handling to applications for fuel saving, and a number of others.

Transas is also inviting visitors to the exhibition to come to the stand to play the 'Transas one-armed bandit' game it will feature during the event.

Visit Transas at stand 208, in hall B6.

Vizada

Vizada will showcase its latest version of Vizada XChange at SMM, introducing a new mobile edition for smartphone and tablet users.

Providing expanded use of satellite services on board, the mobile version offers more privacy in accessing social media, chat or news while remaining in cabins or crew rooms.

The new SkyFile Mail Premium application will also be demonstrated in Hamburg. A central feature of the new SkyFile Mail is compatibility with Microsoft Outlook, Thunderbird or other POP3/SMTP clients, allowing for integration with existing e-mail tools onboard ship. Also new is an automatic notification push feature, which allows captains and officers to choose to receive important e-mails immediately, without any manual action.

Vizada will also highlight the latest developments in its Pharostar VSAT service, providing always-on speeds up to 3 Mbps in Ku-band via a choice of stabilised antennas.

Visit Vizada at stand 206, in hall B6. DS

Unravelling ECDIS?

With the introduction of the mandatory carriage requirement for ECDIS, the equipment is set to become the focal point of modern navigation. However, its ubiquity will make the effect of potential errors or anomalies in the system even more widespread, so care must be taken, *writes Dr Andy Norris*

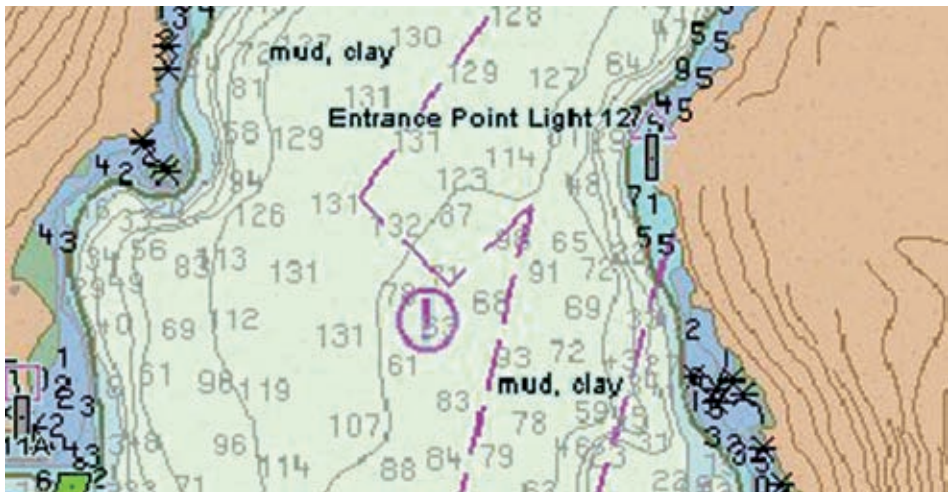
In 1995 the first performance standards for ECDIS were agreed by IMO, followed in 1998 by standards issued by the International Electrotechnical Commission (IEC) for use by manufacturers and for official type approval, known as IEC 61174.

The data standards for ECDIS were developed by the International Hydrographic Organization. They are highly complex, covering all aspects – from the production of the data by hydrographic offices to how the data is displayed to the end user.

The first type approved ECDIS equipment became available in 1999. Unfortunately, there was very little official digital chart data (ENCs) available at that time and so early systems mainly relied upon alternative sources – official raster and privately produced vector data.

In fact, ENCs took rather longer to become a useable world series than anybody had predicted back in the 1990s.

The delay in their availability was mainly because their advent coincided with a major change in the way that countries were having to consider their charting responsibilities.



Procedures are in place, but errors in chart data display will inevitably occur

For historical reasons, the production of globally available paper charts was dominated by a few national hydrographic offices, not least the UKHO.

But in 1994 the Third UN Convention on the Law of the Sea came into force. The introduction of Exclusive Economic Zones resulted in a greater political need for coastal states to take explicit charting responsibility for their own waters.

The introduction of ENCs formed a natural transition to the new responsibilities.

However, it took some time for many coastal states to acquire the technology and skills to be able to produce ENCs – or even to make the decision to subcontract the work.

The long delay in their global availability effectively meant that in the first decade of the 21st century paper charts had to continue being the primary source of charted data on just about all vessels, even if a true ECDIS was fitted.

This resulted in many ships installing non-ECDIS electronic chart systems (ECS). These have minimal statutory standards to meet, making them rather less expensive than a type approved ECDIS, while superficially giving the same benefits as a true ECDIS when used in areas with limited ENC data.

Properly used, with paper charts as the primary source, ECS has provided benefits for the safer navigation of ships, not least because an electronic chart forms the ideal display for GNSS derived positional information.

However, the ever-wider coverage of ENCs and the increasing embracement of the ECDIS carriage requirements means that ECS use on ships will inevitably wane.

ECDIS anomalies

With the major improvements in ENC data availability and the linked commencement of the IMO compulsory carriage programme, real use and interest in ECDIS has greatly magnified in the past couple of years.

This upsurge in knowledge and use has perhaps inevitably uncovered some detailed issues with some systems. During 2012 these have hit the headlines, not least because of the results highlighted by the recent IHO-initiated survey on ENC/ECDIS data presentation and performance.

This survey, based on operators seeing how their ECDIS displays data from an IHO issued test data set, has shown that a surprisingly large number of systems do not display all data exactly according to how IMO/IHO intended.

Some of these discrepancies could compromise safe navigation in particular circumstances.

In addition, certain equipment has been found to exhibit certain inconsistencies in giving particular indications and alarms, such as the route checking function when voyage planning.

The survey has stimulated a rapid reaction. In general, software updates have now been made available that fix the known issues on deficient equipment. Unfortunately, it appears that some specific older models are not correctable.

For all known issues IMO has issued SN.1/Circ.312, which describes them and gives workaround advice if these are still in evidence on fitted equipment. It emphasises the need to maintain ECDIS software, following SN.1/Circ.266/Rev1.

The formal type approval process for all navigational equipment is aimed at ensuring that essential performance and safety criteria are met, using an assessment process that is essentially independent of the equipment supplier.

Following normal practice, the growth in knowledge of the type of errors being found in the field is being used to improve the test scenarios used for ECDIS type approval and by manufacturers in their design process.

This will undoubtedly reduce the likelihood of future errors of any significance getting through the design and approval process.

However, the complexity of the ECDIS data standards means that it is probably not feasible to have independent checks made to ensure that a system correctly deals with every listed item in the required manner in all possible situations.

This is leading to a growing belief that equipment needing to handle very complex safety-related data, such as ECDIS and future e-navigation systems, needs additional procedures to improve conformity from the day it is introduced.

This, for example, could include requirements that the software is developed according to specific internationally agreed standards and that as part of the development process the resultant code has been proven by the developer to have passed highly detailed tests.

The development process itself would be subject to conformity checks. The test results would be made available to the approval authorities and would supplement independent type approval checks.

Is ECDIS unsafe?

In the worst case a particular fitted ECDIS could indeed exhibit an anomaly that causes or contributes to an accident.

This could be the case even if safety critical design procedures, such as used in the passenger aircraft industry were in place, although the probability of a mishap due to an ECDIS anomaly would be much reduced.

In fact, charting is already an error-prone area. In many instances the charted data is itself inaccurate, not least because of the great age of many of the surveys.

Human and equipment errors can and do occur when creating the surveyed data and also when such data is being compiled into a chart, whether paper or electronic.

Not surprisingly, some anomalies encountered on ECDIS have been the result of erroneously compiled data. Of course, steps are always being taken to improve the situation but errors inevitably occur.

ECDIS design faults clearly add to the error possibilities and need to be appropriately minimised. In addition, ECDIS equipment can suffer hardware failure at sea. Clearly, if using ECDIS increases the overall risk of a shipping accident then we have got things drastically wrong.

But in very many ways ECDIS significantly decreases the possibility of a human instigated accident, not only because of its normally dependable automatic indication of ship's position with respect to charted dangers but also in its automatic ability to warn mariners of potential hazards.

This is all part of addressing the issue that '80 per cent of accidents are caused by human failure'. Better technology can reduce the overall accident rate but the ratio caused by equipment issues will inevitably rise from the approximately 20 per cent that it is now.

Paper charts have all sorts of weaknesses compared to ECDIS but a particular strength is that that they are not an electronic system and are therefore just about immune to catastrophic failure.

With ECDIS, a failure can even lead to a display blackout, whether instigated by a component failure, a software error or corrupt data. It is even possible that the backup system could simultaneously fail for the same reason.

At least such failures are highly noticeable and laid down emergency procedures can provide mitigation of the obvious dangers. Unfortunately, software and data errors are generally much more subtle and are more akin to chart compilation errors.

We must therefore continually strive to reduce their possibility.

With the improvements already in place or underway ECDIS anomalies on newly fitted equipment can be expected to significantly reduce. Of course, this needs continued close monitoring.

However, for future newly introduced equipment, such as that envisaged for e-navigation, we must not get into the same situation as has occurred with the introduction of ECDIS.

For equipment that handles, displays and automatically reacts to complex data, we do need better procedures to make anomalies a very rare occurrence – even when the equipment is first introduced.

Parallel to achieving this is the need for the requirements to be made entirely unambiguous. DS

Dr Andy Norris has been well-known in the maritime navigation industry for a number of years. He has spent much of his time managing high-tech navigation companies but now he is working on broader issues within the navigational world, providing both technical and business consultancy to the industry, governmental bodies and maritime organizations. Email: apnorris@globalnet.co.uk

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