Digital Ship

May 2013

Satcom product to allow iPhone use at sea

Satellite operator Thuraya has launched a new product which will allow any personal iPhone to be used to make and receive calls from anywhere within its satellite footprint

Thuraya has launched a new satellite voice calling product, the Thuraya SatSleeve, a device which can be used to bring satellite connectivity to a regular Apple iPhone.

The SatSleeve hardware fits around the user's own iPhone 4 or 4S, somewhat similar to a protective case, and is fitted with a Thuraya SIM card. An app to connect the phone to the unit is available for free download from the Apple App Store.

Once the unit and app are installed, this allows the user to make and receive calls on their iPhone from anywhere within the coverage area of Thuraya's satellite network.

Such a capability could potentially be an attractive crew calling option for seafarers on ships operating within reach of Thuraya satellites, currently covering Europe, the Middle East and large parts of Asia and Africa, who own their own iPhones.

Thuraya, as a wholesaler, has been unable to offer pricing details for use of the product, but Dominique Audion, managing director at Thuraya service provider SAFA Telecom, was able to confirm to *Digital Ship* that prepaid calls over the unit to a PSTN or GSM network would cost around $1.49 per minute. Post-paid minutes would be charged at $1.34.

Thuraya's SatSleeve will allow a seafarer to use their own iPhone to make and receive calls at sea

Calls from the unit to another Thuraya SIM card would cost $0.99 or $0.89 per minute, pre- or post-paid.

SMS capabilities are also available, though the SatSleeve product does not currently support data traffic from the iPhone over the satellite network. Thuraya has however told *Digital Ship* that this capability is planned to be added to the product during the third quarter of this year.

The SatSleeve hardware unit will also retail in and around the $600 mark, though this will vary between regions based on different taxes, charges and local conditions.

"The launch of Thuraya SatSleeve represents a major milestone and a game-changing innovation in the satellite industry," said Samer Halawi, chief executive officer of Thuraya.

"This is the first consumer-friendly mobile satellite phone ever launched, which dramatically increases the reach to satellite telephony for enterprise, government, and everyday consumers alike."

"It provides iPhone users with a versatile and highly affordable means of conducting phone calls and sending SMS via satellite from the world's most remote locations." **DS**

Nordic Tankers migrates to XpressLink
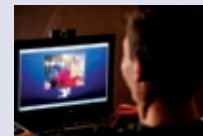
www.nordictankers.com
www.inmarsat.com
www.imtech.com

Nordic Tankers, which operates close to 130 chemical tankers, is set to migrate the first of its vessels to Inmarsat's XpressLink service.

XpressLink is an integrated Ku-band and L-band solution with VSAT and FleetBroadband terminals.

Headquartered in Copenhagen, Nordic Tankers conducted sea trials of XpressLink on the Nordic Nelly, a 5,800dwt chemical tanker, before deciding to adopt the service.

"The ability of XpressLink to deliver guaranteed connectivity, combined with having everything integrated into a single service at a fixed monthly cost, were fundamental drivers in our decision to migrate," said Jørgen Liberg, general manager, IT, Nordic Tankers A/S.

"As on-board technology advances, the demand for even greater bandwidth will increase due to the ever growing amount of communication between shore and ship, and with a free migration path to Global Xpress, when this becomes available in 2014, XpressLink also future-proofs our investment."

Frank Coles, president, Inmarsat Maritime, commented that he sees this decision by Nordic Tankers to convert to XpressLink as "a clear endorsement of the benefits of our unique, fully integrated solution."

"With the pressures on today's maritime business, fleet owners and operators should not have to pay twice to ensure reliability."

In related news, Inmarsat has also announced that Imtech Marine has been appointed as the latest value-added reseller (VAR) for Global Xpress (GX), Inmarsat's Ka-band network.

Other currently contracted GX VARs include Navarino, SingTel, Telemar and GMPCS.

Rotterdam-based service provider Imtech Marine had signed a Memorandum of Understanding with Inmarsat in 2012. Inmarsat is to launch the first three of its GX satellites by the close of 2013, and expects to complete the full constellation by the end of 2014.

The Ka-band network will offer global coverage, providing mobile broadband with download speeds of up to 50 Mbps through antennas from 60cm to 1m in size. GX packages will be sold inclusive of FleetBroadband as a back-up, which operates on L-Band.

Eric van den Adel, managing director of Imtech Marine, said: "We are delighted that Imtech Marine is one of the first companies to be playing a role in this pioneering maritime communications development and bringing this unique solution to customers."

"As the ship becomes more like a fully integrated office, Global Xpress – with its superfast broadband capabilities – will be a vital tool. We will add our unique services to this new connectivity network and provide customers with value added services like remote monitoring and maintenance."

Sea trials of the system were conducted on the Nordic Nelly. Photo: Nordic Tankers

Harris and O3b partner on cruise ships

www.harriscaprock.com
www.o3bnetworks.com

Harris CapRock announced that it will team up with O3b Networks to provide broadband services to two more Royal Caribbean cruise ships.

In May 2012, Harris CapRock was awarded a five-year contract to provide communications services on board Royal Caribbean's fleet of 35 ships. The company reports that, to date, it has de-installed and installed more than 120 large antenna systems on board the fleet.

Now Harris CapRock says that it has partnered with O3b Networks to provide broadband services to Royal Caribbean's Allure of the Seas and Oasis of the Seas.

The collaborative solution will leverage O3b's low-latency Medium Earth Orbit (MEP) satellite fleet while Harris CapRock will install antenna systems and provide managed services.

"As the systems integrator and managed service provider for these sister ships, Harris CapRock is focused on ensuring a smooth installation and commissioning of what will be an unrivalled broadband service at sea," said Rick Simonian, president, maritime solutions, Harris CapRock.

"O3b looks forward to working with Harris CapRock to provide Oasis of the Seas and Allure of the Seas' guests and crew the same high-speed broadband connectivity they are familiar with on land," added Steve Collar, CEO of O3b Networks.

"Our innovation, combined with Harris CapRock's capability as a world-class satellite systems integrator, has created a world-class partnership, for which we are extremely proud."

Harris CapRock, whose maritime headquarters are in Florida, owns and operates a global infrastructure that includes teleports on six continents.

Based in Jersey, O3b is building a satellite network with an initial launch of eight satellites in 2013 and an additional four in 2014. It decided to position its fleet about 8,000km from the Earth, much closer than the geostationary orbit (about 36,000km).

Pivotel is to provide Thuraya's products and services across Australia and Southern Asia under a service partner agreement.

Intelsat's board of directors has elected David McGlade to the position of chairman and CEO. Stephen Spengler has been named president and chief commercial officer.

Applied Satellite Technology Ltd (AST) has become an Inmarsat distribution partner for FleetBroadband services.

The **Korean Register of Shipping (KR)** has elected Dr Chon Young-Kee as its new chairman and CEO. Dr Chon previously served as executive vice president of KR's technical division.

David McGlade, new Intelsat CEO

www.thuraya.com
www.pivotel.com.au
www.intelsat.com

www.satcomms.com
www.krs.co.kr

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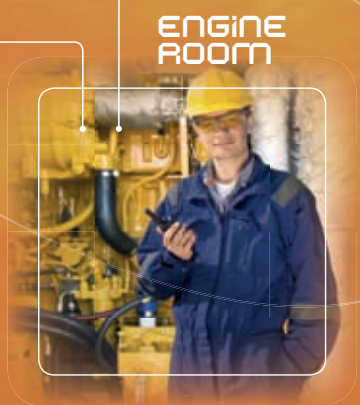
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DVB network upgrades to improve VSAT services

www.nsslglobal.com
www.telemar.se

NSSLGlobal and Telemar Scandinavia say they have become the first satellite providers to announce the introduction of ACM (Adaptive Coding and Modulation) combined with the new DVB-RCS2 standard across their VSAT network.

Switchover to the new standard for all of the companies' hubs and customers, which will be done in conjunction with technology partner STM, was scheduled to take place by the end of March.

The companies say that the ACM in DVB-S2 carriers alongside the new ACM capabilities in the DVB-RCS2 standard (RCS2) for TDMA carriers should improve two-way satellite link efficiencies and increase throughput potential by up to 250 per cent.

The move should also provide up to 2dB more gain on the service, allowing extended coverage and link availability in what were previously 'edge of beam' areas.

NSSLGlobal explains that ACM is used to counter the problem of Rain Fade, the degradation of signal integrity in poor weather conditions, by allowing for dedicated management of each individual VSAT unit within a spot-beam.

The technology allows the signal sent to each unit to be optimised specifically for the location and interference levels of that individual unit, in comparison to the previous configuration where the signal sent through from the network hub was either fixed, or compensating for the worst conditions any of the individual units suffered.

NSSLGlobal says that, with dedicated signal management provided by ACM, the network hub can regulate each VSAT individually, ensuring that every unit receives the optimum signal quality for its specific location and conditions.

The company claims that this modification will yield improvements of 40 per cent to 100 per cent in bandwidth efficiency to units affected by Rain Fade, as well as providing an increased coverage area and "graceful service degradation" during poor conditions.

"At NSSLGlobal we take pride in being world leaders in DVB technology," said Sally-Anne Ray, COO at NSSLGlobal.

"The introduction of RCS2 alongside the recent implementation of Adaptive Coding Modulation is a significant step forward for our network and a quantum leap ahead of our competitors."

"It will provide our customers with a noticeable improvement in the quality of service they receive and will ensure that we at NSSLGlobal continue to maximise the potential of our growing cutting edge network. It will also provide our customers with the future choice of airtime packages of up to 40 Mbps without any changes to their existing equipment."

CCTV from SingTel

www.singtel.com

SingTel reports that it has introduced a CCTV system which it says requires lower data transmission than most standard technology on the market.

The company says that its Mobile Video Surveillance system provides video images requiring data transmission as low as 5 kbps, when most other systems operate at a rate of 100 kbps to 2 Mbps. According to SingTel, the most common bandwidth subscribed to by ships for this kind of service is 64 kbps.

SingTel says that its Mobile Video Surveillance supports multicast and live video viewing on mobile devices on iOS and Android. It features AES256 encryption and has been tested over FleetBroadband and VSAT communication systems.

The company says that the product could prove particularly useful for those covered by the recent regulation by India's Ministry of Shipping requiring vessels to be equipped with CCTV cameras as part of their anti-piracy measures for all Indian Flagged Ships.

Internet gateway unit launched

www.consilium.se

Consilium Marine AB has launched the M220 internet gateway, following on from its previous Icomera X6 offering.

Consilium describes the M220 as the "little brother" of the Icomera X6 product, already in use on cargo vessels, ferries and cruisers to manage internet connections for marine applications.

The M220 handles two cellular connections at the same time or in failover mode, with embedded LAN and Wi-Fi connectivity, GPS position monitoring and a range of configuration settings.

The M220 also offers remote control capabilities to vessel operators on land.

Ka-band VSAT from Orbit

www.orbit-cs.com

ORBIT Communication Systems has launched two maritime stabilised VSAT platforms which it says will support future Ka-band services.

OceanTRx 4 and OceanTRx7 both offer configurations in multiband frequencies, such as Ku- and Ka-band, using a BUC (Block upconverter).

The 1.15m antenna, OceanTRx 4, also supports X-band, while the 2.2m antenna, OceanTRx 7, also supports C-band.

The company notes that the larger antenna, with its 2.7m radome, is still small enough to be shipped as a fully assembled unit in a standard 20-foot container.

Both products share common electronic field-replaceable units (FRUs).

"OceanTRx series brings the maritime world into the future," said Ofer Greenberger, ORBIT's CEO.

"Featuring a variety of configurations, frequencies and power capabilities, the platforms address a wide range of maritime markets, from oil & gas to cruise, commercial shipping, and naval."

"As we enter the Ka-band age, OceanTRx is the ultimate solution for maritime satellite communications enabling smooth migration to future high-speed Ka- services for the entire Ka- range."

The OceanTRx7 will support various bands, including Ka-band and C-band

Globecomm launches 'maritime Skype' service

www.globecommsystems.com/maritime

Globecomm Maritime has introduced Access Chat Plus, an optimised chat and video conferencing application designed for maritime satellite communications, offering 'marinised' version of services similar to those available via Skype.

The company says that Access Chat Plus will provide maritime users with a means to make video calls and chat live over satellite using "a fraction of the data and at a fraction of the cost" of shore side applications like Skype.

The application comes in two versions - Access Chat provides instant messaging and voice calling, while Access Chat Plus provides the same with the addition of video conferencing.

Both applications are no more than 1Mb in size and can be installed on any Windows or Android device, with an Apple OS version due in Q2 2013.

Either application may be loaded to a USB stick, enabling them to be used across multiple devices, and can be installed without the need for proprietary ship management software.

Both Access Chat and Access Chat Plus are available in a range of pricing options for corporate and crew use, with customised pricing available when the service is bundled with Globecomm Maritime airtime service contracts.

"There is a monthly subscription fee, and then usage will be charged at the ship's normal airtime billing rate. So if they are using VSAT, then there is zero billing for usage," Martin Killian, Globecomm Maritime, told *Digital Ship.*

Mr Killian says that the video conferencing service requires a minimum bandwidth of 40 kbps, but that the company recommends 80 kbps to provide an experience comparable to other video chat software.

This would mean that a minute of video chat would create data traffic of between 0.25MB and 0.5MB per minute, for which the user would be charged at the ship's contracted data rate.

This would represent a major improvement on something like Skype, which will consume all of the bandwidth available to it, though use of the Globecomm video conferencing service would also still need to be controlled - for example, a single video call on a FleetBroadband 500 would use 10 to 20 per cent of the advertised 432 kbps link (which in practice will often be considerably lower).

As such, Mr Killian suggests that video calls be scheduled to avoid connectivity conflicts.

"We offer an application that does not consume all the available bandwidth on a broadband device, so there is room to still run other applications in the background," he told us.

"Other video chat applications would consume 100 per cent of the available FB (FleetBroadband) bandwidth, so this is a huge advantage for Access Chat Plus."

"We do expect that Captains and ship managers will set up certain times when crew can make calls - Sunday afternoons, for example - and schedule their business application usage at other times so as not to be competing for bandwidth."

Trevor Whitworth, senior vice president sales & marketing, Globecomm Maritime, notes that cost has been the major issue preventing services like these becoming widespread in the maritime industry, and that he expects these services to soon be as popular as their equivalents on shore.

"Demand for video conferencing and instant messaging has experienced rapid growth, but while land-based users have become accustomed to its convenience, shipboard staff need tools that are designed for the constraints of satellite communications," he said.

"Voice and video conferencing applications use a great deal of bandwidth and that makes it very expensive for seafarers. We identified the need for a tool that gives ships the same functionality but keeps cost under control."

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Standardisation – making IT support a thing of the past

Standardisation of the satellite communications, connectivity management software and vessel network hardware across its fleet has allowed German shipping company Deutsche Afrika-Linien / John T. Essberger (DAL/JTE) to reduce its IT support burden to near zero. Erich-Andre Beckmann and Lars Krugmann, DAL/JTE, described the evolution of this strategy to *Digital Ship*

Tinkering with the latest gadgets and imagining exciting new ways to integrate varied systems to create explosive synergies might be the Hollywood description of the work of an IT professional, and the ultimate goal of many working in the technology sector – but the frustrating reality is that the majority of a technician's working life can often be spent troubleshooting and supporting basic system problems experienced by less savvy computer users.

In the maritime industry these problems are exacerbated by the fact that users are generally not located in the same office building but can be thousands of miles away, separated by a lack of accessible communications as well as by distance.

There is not a huge amount of glamour involved in asking a seafarer if he's tried 'turning it off and turning it on again', or travelling to a vessel to find that the technological malfunction is the result of an unplugged cable, but unfortunately issues like these are all too common.

So, how does a shipping company go about removing these inconveniences and returning the IT focus to creating value and driving efficiency?

One potentially beneficial approach is the use of strict standardisation and virtualised computing, a strategy which has been followed at Deutsche Afrika-Linien / John T. Essberger (DAL/JTE) shipping group in Germany since 2005.

The company currently operates 32 ships, which all now feature an identical standardised onboard network – using the same hardware across the fleet, with the same software installed and built around the same virtualised infrastructure.

The results have been impressive – in the last eight years, since it standardised its approach, the company has not had a single lost day for any of its ships due to network downtime, according to Lars Krugmann, administrator ship networks and IT systems operations for the DAL/JTE fleet.

"We haven't lost any days. Maybe one or two hours. Before (this project) we had had down time of up to two weeks on a ship when the server broke down and they were unable to fix it on board. We had to take off the server, create a new one and put it back on board," he told us.

"At the moment we have 32 ships, but it works ok now because we have standardised everything – we have all the same images on all the computers on board, and it's very restricted."

"Normally now it's only once every one or two months that I go to a ship, just to say 'hello' and do some minor things.

Those are scheduled visits for customer care, it's not because of technical issues. I don't want to have to travel to the ship just for administrative purposes, I wanted to make my life as easy as possible."

Prior to the beginning of this project the IT planning for the company was conducted by the shipmanagement department, which generally involved just purchasing and adding computers as required by the vessels.

However, the lack of a coherent strategy in doing this meant that systems varied from ship to ship, which meant that the support workload was high, as Erich-Andre Beckmann, senior manager IT at the DAL/JTE Group, explains.

"It was a very different situation in 2004 (pre-standardisation), it was run by the ship management and they didn't really have an IT view of things, they had an operational view of things. Things would be bought as demanded, there was no concept behind it," he said.
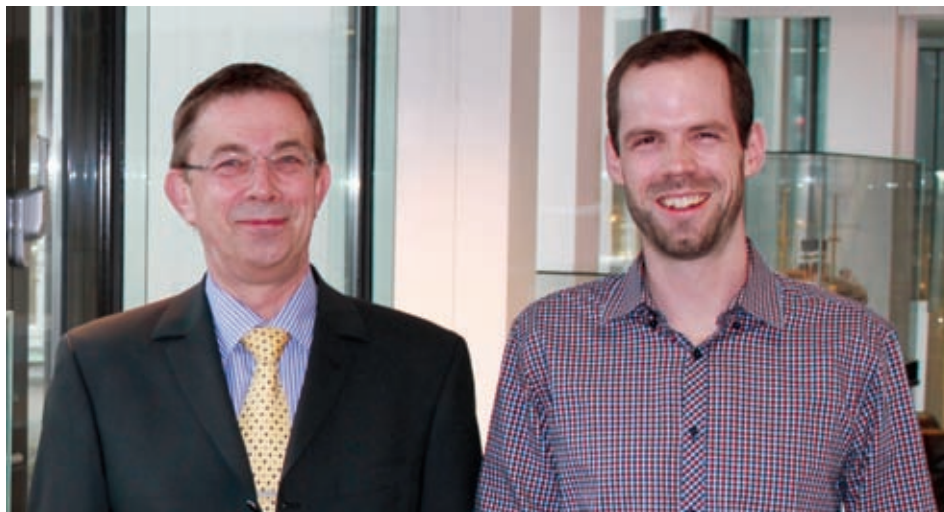
Erich-Andre Beckmann (left) and Lars Krugmann, the architects of the standardised IT infrastructure on board the DAL/JTE fleet

"We brought Lars into the IT department and decided to talk about it and make a strategy – that's when we started to have this standardisation. It, of course, took an initial investment to equip all of the ships with a complete standardised network, but the advantages have come in creating a standard image and being able to just place it on the workstations."

"We do a package of five or six, depending on the ship, and send them to the ship where they installed the complete network by themselves. It was a plug and play package."

Set-up

The standardised set-up implemented on the vessels includes a number of workstations, usually five or six per ship, as well as a server used to run the network.

All of the hardware, both the servers and workstations alike, are standardised PCs, which are interchangeable – any one of the machines could be used to replace any of the other workstations or the server.

The standardised software platform on each machine is built from an 'image' which is continuously backed-up. This allows the ships to replace a broken or malfunctioning machine with a new standard PC, install the image, and the network will be back and running as normal once again.

"The most important thing is the back up of the whole system, and to make it as easy as possible to bring a server back to life in case of a breakdown," notes Mr Krugmann.

"We went for a strategy of having all of the same hardware for the server and the workstations, which means that if the server breaks down we can take one of the workstations that's least used and convert it to a server using a backup image."

"In less than one hour the whole system is up and running again. It's the same for the workstations – if a workstation hard disk breaks down we can recover it from an image and just exchange the hard disk."

The most recent change in this standardised system came in the last year, when DAL/JTE decided to extend the standardisation concept to include its satellite communications systems.

Having previously used a mixture of Inmarsat-B, Fleet 55 and Fleet 77 terminals, in 2012 the company chose to move its entire fleet to FleetBroadband.

"Previously the Fleet 55 and 77 systems had a much higher per megabyte price," notes Mr Krugmann.

"Now we have, for the same amount of money for the airtime, we have about four times as much traffic. It's not about the speed or performance, it's commercial, as we intend to send more data."

"We are using a 200 MB package, but we are not completely using all of it. We're just checking what limits we should apply with this now, for example we recently raised the limit for e-mail attachments from 300 kB to 600 kB per message, though it's quite restricted. We're more flexible, we're only using 70 MB now but we can go up to 200 MB so we can change things and see what happens."

Mr Beckmann also notes that other departments in the company were pushing their own requests for greater data to be exchanged between ship and shore, making the move to a broadband system inevitable.

"The ship management have said that for the planned maintenance and the document management system on board they expect to have much higher traffic in future, as things get more and more integrated," he said.

"When we asked what kind of data they would need in the future it was much higher than the existing one. When we compared the communications links to see what was most suitable for that, we chose this one."

In conjunction with this satcom upgrade DAL/JTE also decided to implement a communications management 'middleware' system from Dualog, which would be used to maintain control of the satellite connection.

"The most important thing that pushed this (Dualog implementation) was the decision to go to the FleetBroadband service," said Mr Krugmann.

"When you do that you have to decide how you will secure the network and how you can split things to allow certain services to certain users on board via the FleetBroadband without harming the whole infrastructure onboard."

"Our first goal was not to give internet access to the local workstations, for example, so they wouldn't be able to download viruses or whatever."

The concern was that, with the advent of IP on the ships representing an 'open door' to the internet to some extent, the possibility of viruses being introduced on board meant that the benefits of the standard infrastructure could be compromised.

According to Mr Krugmann, the system that Dualog was offering provided a simple way to avoid this issue without too much additional work on his behalf.

"We can do it with normal hardware and put a router in and continue with the existing systems, but then you can't manage configuration of IP traffic," he told us.

"The whole configuration can be done remotely now, it was something that was always problematic before. To change even one setting involved a lot of work –

now we do it with one click. Having an overview of the traffic used each month is also easy."

"Before we also used to update all of the anti-virus via CD, every month for example. Now, due to the integrated anti-virus it is being updated weekly in the background. That's also a big advantage."

This focus on security is not limited to external connections to the ship but is also a feature of the onboard network, which is heavily restricted to prevent those onboard disrupting the standardised set-up

"From many of the shipping companies I've talked to it also seems that there isn't much standardisation on security, computers are running with administrative rights all the time and people on board can install what they want. In the end you'll have a bunch of viruses on board all the machines," said Mr Krugmann.

its seafarers, up to a certain point, using e-mail addresses that can be accessed anywhere, on one of the company's ships or on shore.

"The important thing, for the crew, is the travelling e-mail accounts, to allow them to have private e-mail addresses and to be able to read the messages even if they're on vacation," said Mr Krugmann.

"We don't offer internet on board, just the private e-mail limited to 5 kB per message. That's for free, they don't have to pay for it. It's quite a good thing for them. When we equip a ship with this, within one day we have 10 to 15 users immediately connected."

"We also wanted the e-mail client for the captain to be in a web-based environment rather than being a 'fat' client, and that had already been implemented by Dualog. So we did some tests, and were

process, as the company managed to implement the system on 32 ships in approximately four months, as Mr Krugmann recalls.

"Normally there would be a CD which you would send on board and you would install the Dualog software on a computer," he explained.

"But as our strategy is to have everything standardised and to have all the same settings on every ship we decided not to do a 'software-only' installation but to send a whole set of the computer and the wireless LAN hardware on board, which can be installed by the crew following our instructions."

"We made a standard image for this Dualog PC, and created an installation procedure which includes this computer automatically into the network, including the necessary software installation."

switch to a new hardware standard and also have to buy new Dualog PCs," he said.

"To be on the safe, safe, safe side I took the Dualog PC image and restored it on every hardware revision we ever bought on other PCs, so they would all be capable of running this, having the right drivers and so on, in case we need a back up. Even in the future, the plan is to have all the same hardware standard on board, so we can take any workstation and convert it to a Dualog PC – you don't have to have spares onboard."

"We are currently in the second generation of hardware, and in 2014 we will move on to the third generation. We're even looking at having some virtualisation in the next generation, but there's still a lot of testing to do to see if that makes sense. We just have to keep it as simple as possible for the end user on board."

Preparation positives

The strategy for the Dualog roll-out involved the on-shore preparation of a number of comprehensive 'packages' for the ships, including the equipment and a small number of A4 pages of installation instructions, which were then sent to the vessels.

"The guys on board did the rest of the work. They acknowledge the package was received, and then they prepare the first step of the instructions," said Mr Krugmann.

"This involves mounting the gateway computer with a standardised holder to a certain location, routing the cables to the FleetBroadband device, routing the cable to the switch and the wireless device, and then informing us. We prepare all the e-mail routing on our end and reconfigure the FleetBroadband to a different IP address – we do that remotely."

"Then they start up the system and put in a CD, which installs a separate browser – we took the portable version of Google Chrome to be on the safe side, if the configuration gets messed up you can override it from a back-up location and it will always have the same look and feel for every user. Then it installs anti-virus from the workstations automatically. Basically it's one click for the captain and the whole system is installed."

Once this process has been followed and a successful connection established the shore based IT office is able to access the onboard network and finish the job itself.

"We send over a script, with administrative rights, to the Dualog PC and it starts a conversion process from the existing Rydex e-mails and migrating them into the Dualog system," said Mr Krugmann.

"I automatically receive a log file back when it's finished and can check it. We managed to do two or three ships per day doing this, depending on when they received the packages. As soon as they were ready we just did it."

"We also have a number of ships which I have never seen physically that are out in places like the Far East, cargo ships for example, but we just send out the packages to the ships with instructions and it's all installed."

The process of sending scripts to the ship is also used to perform other specific functions as part of DAL/JTE's remote access set up, which allows the shore

The company managed to roll out the new Dualog system on 32 vessels in approximately four months

"So we have locked down everything, so you don't even have access to the desktop itself. This means that you have a well maintained filing structure. We locked own all the context menus, the ability to install things – everything."

"On the other hand, I have the ability to give them administrative access, but this is locked in the sense that, if it's used, it transmits to the shore and I can see it."

Updating the standard

The addition of the Dualog system meant adding another computer to the network to act as a 'gateway' system, the firewall linking the satcom connection and the networks on the ship. This machine differs from the other PCs in the network as it has three network cards built in, as Mr Krugmann explains.

"We have separated the network into three parts – the corporate network, for all the company computers, from which we are running the web client, then the server, and then we have a private network which is a wireless LAN," he said.

"We have installed two wireless access points on board, one on the bridge spreading the signal down about two decks, then we have a repeater so everyone can use his private notebook etc."

The Dualog system is also used to manage vessel e-mail traffic and accounts, with DAL/JTE providing free e-mail access to

finally able to convince the money people that this was the way to go."

The testing process was a relatively speedy one – due to the fact that the networks on the ships are standardised it was possible to run an accurate simulation of an identical network on shore, to see how the Dualog system would perform.

"We tested it and had some more requirements or changes that we needed, and Dualog worked with us in implementing them. This took about four or five weeks," said Mr Beckmann.

"There were many different things that we had to take into consideration, (such as our new) satellite communications, (and) we had requests from the crew management and ship management that the crew members should have roaming personal e-mail addresses, so if they are on board or at home they can have their own e-mail. There was quite a long requirement list."

After the office test the company proceeded to testing the system on a ship for a couple of months. The complete process of testing took from mid-January 2012 until mid-April, about 10 to 12 weeks.

Roll out

Having completed its tests of this new addition to the onboard network, DAL / JTE proceed to roll out the Dualog system to all of the vessels in its fleet.

Having a standardised infrastructure again proved its usefulness during this

Using this imaging process also makes it a much more straightforward process to fix any problems with the gateway computer, or replace it if necessary.

"We do a weekly image back up of this Dualog PC, the whole hard disk is imaged and ported to the hard disk location on the server," said Mr Krugmann.

"We also have a second Dualog gateway PC on board, a spare, configured the same way. If the original one breaks down the captain just takes the other one out of the box and connects the cables the same way as before."

"We have included a recovery CD, they just open up the CD drive and put it in. It loads automatically and pulls the latest back up and restores it. When it is finished it ejects the CD and shuts down. The captain can take out the CD and switch it on again, and the system will be running."

Mr Krugmann notes that, to date, this has had to be done only twice, though the company has extended its recovery capabilities even further through the use of unwanted older machines that were already in use on the ships.

"We recycled some old PCs, which we had quite a lot of from the same vendor, we put in a new hard disk and cleaned them. The hardware (lifecycle) exchange of all of the networks on board is outstanding until next year, and we didn't want to buy new PCs for the Dualog system now and then two years later to

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office to take control of onboard machines.

"If we need to remote control things I can do it via scripts in the background," said Mr Krugmann.

"I create the script in a shore folder and it will be transmitted to the server's folder on board. Each workstation for the server has a script running with administrative rights in the background that will pick up that specific script for that specific machine, and executes it. It then sends back a log file to us. So we can completely control every machine remotely via these scripts."

"At the moment (the data traffic for this) is quite low, with everything we are at about 50 to 70 MB per ship, for everything. Though we are intending to start using much more due to our planned maintenance system, we want to send updates over the air instead of sending out CDs like we do now."

Future plans

The roll out of the Dualog system to the DAL/JTE fleet is now complete, and the company believes that its efforts have been worthwhile, both from a financial point of view and through improving the reliability of its IT infrastructure.

"With all these things, of course there are cost savings. We don't have a calculation in numbers of what that is, it's very difficult, but you can feel it," said Mr Beckmann.

"What's very important for us, seeing internal departments as a customer, the customer satisfaction is an issue in that. It's important for us seeing the crew satisfied and having very low complaint rates and very low technical problems."

"They feel good and we feel good, and the savings are there even if we can't put

an exact number on them. Though at least, due to the fact that the technical issues are low, we don't need as much manpower. Since about 2005 we are running the whole thing with one guy."

When asked about what kind of technologies they might like to introduce to the ships in the future, if they were given carte blanche by the company, both Mr Krugmann and Mr Beckmann seemed to struggle to think of any particular technology that would be on their wish list – they are simply happy to have a dependable and effective infrastructure in place that provides what they need.

"From a technical view, right now we are well equipped and it works. So it doesn't really matter if the computers are getting smaller or whatever. Based on the standardisation we have it's not an issue, it's just a case of moving that to the new technologies," said Mr Beckmann.

"The most important thing for the future, if we are making wishes, is on the applications side – to have more and better services for the crew and for the ship operations and so on."

"Now, with our planned maintenance system we have integration of documents for spare parts, purchasing etc – this is one area where the integration has started. But if you turn around you see spreadsheets for bunker consumption, spreadsheets for this and for that – we have hundreds or thousands of mini-tools to manage the daily business."

Mr Beckmann ponders the possibility of a high-speed satellite communications environment that would allow the company to get rid of applications on board and run things from shore, similar to how a

company might use Citrix, for example – but even then the advantages are not so great as to be hugely enticing.

"Really, we are satisfied with our infrastructure and over the next five to ten years we will follow that concept," he said.

"We will amend it to new things of course, but it's on the application side instead that I see many things are missing. There's a lot of room for improvement. If we had some sort of framework or integrated toolbox for these things it would be nice, integrated into the ships' systems."

"It's about proof of concept – if it's positive then we'll do it. If we're sure that the technical parts work and we've tested it, and it works from a business point of view – we can say it's positive, it fits, then it will be approved. You then have the opportunity to put additional services on that infrastructure, but we only want to do that with a proven infrastructure."

The one area that DAL/JTE is most keen on is extending its ability to offer services to the crew, which is currently the subject of a few testing programmes for the company.

"We are already looking at shipznet, we have installed it as a trial, it's a 3G provider that offers 5GB per month near shore for €400, I think. We're going to test that as an addition to the FleetBroadband package, so near shore we can have big files transmitted," said Mr Krugmann.

"That will be the next step, and we'll test it for using the internet also. I already spoke to Dualog and we will talk more about integrating this on our ships."

Dualog offers a least cost routing system to switch between different satcom systems, such as FleetBroadband and

shipznet, for example.

In the DAL/JTE case this would mean that vessels travelling near shore would use the shipznet system, to allow big files to be transmitted, before automatically switching back to the FleetBroadband when out of range.

Mr Beckmann notes that a similar arrangement could be used to allow limited internet access while within GSM coverage areas, once this could be intelligently controlled and compressed by the Dualog software and made accessible only while connected to shipznet.

"Our first goal is to test the technical possibility of all these things, see how they work. Then we can think about extending the attachments the crew can send via private e-mail, and we can do tests of how the internet might work," he said.

The company has also done trials of VSAT services, though so far Mr Krugmann notes that these have been less than impressive.

"It was quite a cheap VSAT system, and provided internet onboard via an isolated environment so it wouldn't affect the normal ship's network," he explained.

"They could access it through a virtualised browser running on a Linux system – even on that they managed to download up to 2 GB per day. It was completely blocked up, it was like a race with us implementing new rules on the firewall and locking down some protocols. We did it for two weeks and we gave up."

"If someone knows 'I have 500 MB to use' they will be quite keen to use it intelligently. If they know it is open access they will use all they can get – that's human nature." **DS**

New SatLink unit

STM Group has presented its newest VSAT indoor unit, SatLink 2910, which it says builds on the technology in its 2900 model while tripling its throughput.

Multicast or streaming IP data is supported at rates up to 150 Mbps, says the Californian engineering company.

The SatLink 2910 can be used with all satellite bands but is especially suited for Ku- and Ka-band, according to STM. Adaptive Coding and Modulation (ACM) is performed on DVB-S2 forward links and RCS2 return links (per burst).

As in all SatLink networks, its features include integration of traffic shaping with ACM controls, integrated link encryption using AES-256, VLAN tagging with private networking extensions, and mesh networking among VSATs.

Additionally, the SatLink 2910 includes a built-in 8-carrier mesh TDMA burst receiver.

The new product is a 1U rack-mountable unit. It uses the VSAT Antenna

Control Protocol (VACP), an open protocol developed by STM which enables beam and satellite handovers for mobile VSATs when roaming or experiencing blockages.

Like other SatLink VSATs, it is configured and automatically controlled from the Hub. The SatLink 2910 will be commercially available in Q3, 2013.

"STM expects the launch of the SatLink 2910 to help continue the strong triple-digit percentage growth in market share for SatLink and DVB technology in maritime, oil & gas, and other professional markets where the best quality, throughput, and the best overall link performance is required," said Bjorn Platou, executive VP and general manager for Europe.

STM also announced a development project it is working on regarding a very high throughput, integrated TDM/TDMA Hub modem, supported by the Norwegian Space Centre and the European Space Agency.

The aim is to produce a compact 1U rack-mountable unit with 350 Mbps of IP throughput over DVB-S2 forward carriers with symbol rates up to 200 Msps.

The SatLink 2910 is especially suited to Ku- and Ka-band systems

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Globe iFusion for 85 NSB vessels

Globe Wireless has announced that NSB (Niederelbe Schiffahrtsgesellschaft) will standardise 85 vessels in its fleet with the Globe iFusion system.
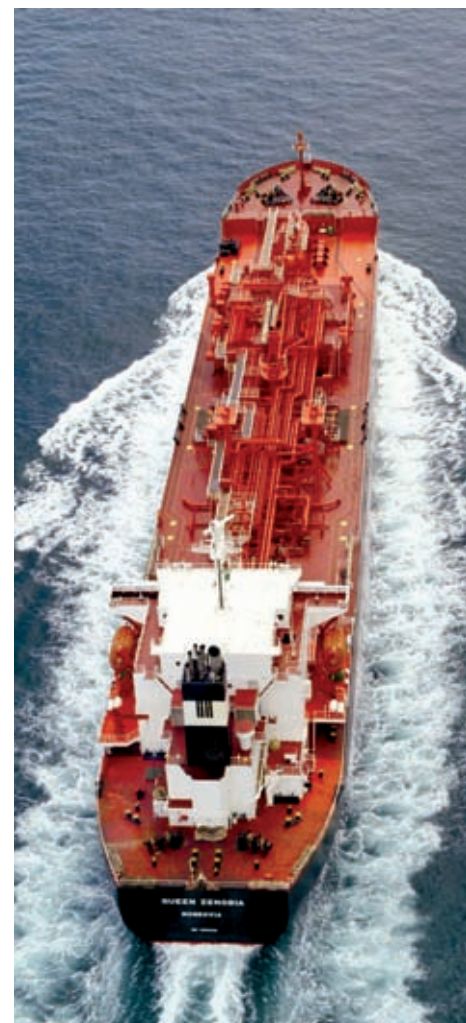
Each vessel will be equipped with a Globe i250, a backup FB150, Globe Wireless' Fixed Multiple Lines, GlobeMobile and GlobeSSAS, says the Florida-based communications provider.

The Globe iFusion system enables multiple calls using Digital Quality Voice (DQV) technology on both GSM and VoIP (Voice over IP) phones, allowing up to five inbound and outbound calls over DQV.
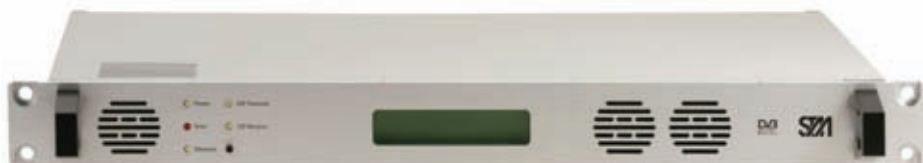
Cornelis Alberts, head of strategic purchasing for NSB noted: "By installing the Globe iFusion system with Fixed Multiple Lines, GlobeMobile and GlobeSSAS, we will be standardising satellite communications across our entire fleet, providing a total solution for our business and crew services."

"The level of integration and functionality of the Globe iFusion system is far superior to what other terminals can offer," added Dave Kagan, president and CEO of Globe Wireless.

"We have been supplying NSB with communication solutions since 1999 and are excited to extend our strong partnership."

NSB's new system will allow up to five inbound and outbound calls

Live video chat onboard ship – a reality check

The promise of ever greater quantities of bandwidth and airtime is re-shaping maritime communications, but the constraints of satellite delivery mean that applications such as video and VoIP must still be optimised for end users, *writes Martin Killian, Globecomm Maritime*

Maritime communications have come a long way in a short space of time and the near future will see them go further at an even faster pace.

A new generation of High Throughput Satellites, supporting much higher bandwidth, present new opportunities to maritime, energy and offshore users used to the reliable if unspectacular performance of L-band.

HTS services, designed for mobility customers and theoretically offering connectivity at speeds close to land-based

Terrestrial video chat applications, like Skype, can average around 7.5 MB per minute for a video call – a bandwidth level unacceptable in the maritime environment

broadband, could finally usher in the connected ship; fully wired for data gathering, energy efficiency and crew welfare and enjoying always-on communication with the shore.

Even before the first HTS satellites are in service, the changes are already apparent. Just like their shore-based counterparts, officers and crews are being promised ever-increasing bandwidth and apparently unlimited data plans.

A recent maritime industry communications conference heard an airtime distribution partner describe a crew e-mail and internet service which had to be controlled not for web access but by time, in order that crew got their mandated hours of rest.

So the stage seems set for, if not a revolution, then at least continued evolution. A step change from sub-broadband communications speed to consistently available 512 kbps – 1 MB services and above promises to open the door to a range of applications, moving the crew from phones and e-mail to always on internet; replacing scarce shipboard data with structured information drawn from real-time monitoring and optimisation systems too.

There are also regulatory drivers; tracking, monitoring and electronic chart updates and many potential value-adds; remote management and IT support,

scheduling, weather services, VoIP and videoconferencing.

But in step with this evolution comes a short term risk; that airtime vendors and service providers are raising expectations beyond what can be delivered onboard ship in a cost-effective and practical manner.

The torrent of data that we experience ashore, to a growing variety of devices, has also forced the pace of application adoption onboard ship, principally because seafarers, not unreasonably, would like to do the things afloat that they do ashore.

These include enjoying not just unfettered access to the internet but using applications for chat, voice and video calls.

As a result, this area of data traffic is booming, even as voice calling continues to decline. But the reality is that, outside VSAT installations, it will be a long time before the vast majority of ships experience anything like HTS throughput. Many may never do so.

This may be good news for legacy L-band providers, but for shipowners and their crews there will be a long tail of demand not just for L-band but for applications which are specifically tailored for use over maritime satellite connections.

Demand for VoIP and video chat onboard ship is growing strongly. Ship visits by our staff often start with the crew asking if they will be getting video chat or instant messaging 'this time'.

On one occasion, an engineer dispatched to work on the communications system was button-holed at the top of the gangway and the scuttlebutt made its way around the ship so fast that the rest of the crew had asked him the same question by the time he left.

But even though demand is increasing, no-one should imagine that such applications are designed for, or suited to, use onboard ship. Because they usually are

free to download, the perception in the user's mind is that they are somehow free to use too.

In fact, the opposite is true. Using current voice and video chat programmes on board ship over a data circuit will chew through bandwidth faster than you can reload a scratch card.

In doing so it distorts airtime traffic figures, bolstering the impression that demand for crew data usage is virtually unquenchable.

The law of unintended consequences has contrived to create a situation where, on a ship with more restricted bandwidth availability, the majority of traffic will be business communications.

Install a VSAT or a larger Inmarsat access plan and the business portion diminishes as the crew make more and more use of the internet, chat and the like. But they will end up with much higher bills if they are paying for the access themselves.

Optimising for maritime

So what's the way forward? It would be easy here to say that the maritime industry is old fashioned and a lagging adopter of new technologies and leave it at that. But the fact is that mariners and managers alike want to be able to use these technologies.

Videoconferencing in particular has been touted for a decade or more as the solution for fixing technical problems without the need to dispatch an engineer to attend the ship. As a driver of crew welfare, the value of VoIP and video can hardly be denied.

But despite the changes taking place, shipping will to some extent continue to be subject to severe limits on bandwidth compared to shoreside users. Therefore, to deliver anything like a shoreside experience, ships will need to work smarter with their bandwidth, using optimised hardware and software products that keep bills at reasonable levels while giving access to the services that users need.

The applications need to be 'light', both in terms of set up and data usage, be as operating system-neutral as possible and be capable of being held on a USB stick for use across multiple devices.

Crucially for crew access, they must be able to be used without the need for proprietary shipmanagement software.

They may not be free, but they must be

able to demonstrate significant improvements in bandwidth optimisation. Ideally, that usage should be configurable and able to be adjusted on the fly.

They should work not just with broadband and VSAT but also work effectively on narrow bandwidth.

Data usage

There are a number of means of calculating data usage over VoIP, but for the most common landside application the results average around 1.38 MB per minute for voice, 7.5 MB per minute for a video call and 30 MB a minute for video conferencing for three people.

Tests conducted by Globecomm comparing data usage of a typical VoIP/video chat application and a product designed specifically for use over satellite produced some interesting results.

In our tests, a two-person, voice-only, three minute conversation over a typical VoIP application used 4.14 MB of data. Over an optimised programme, just 575 KB was used.
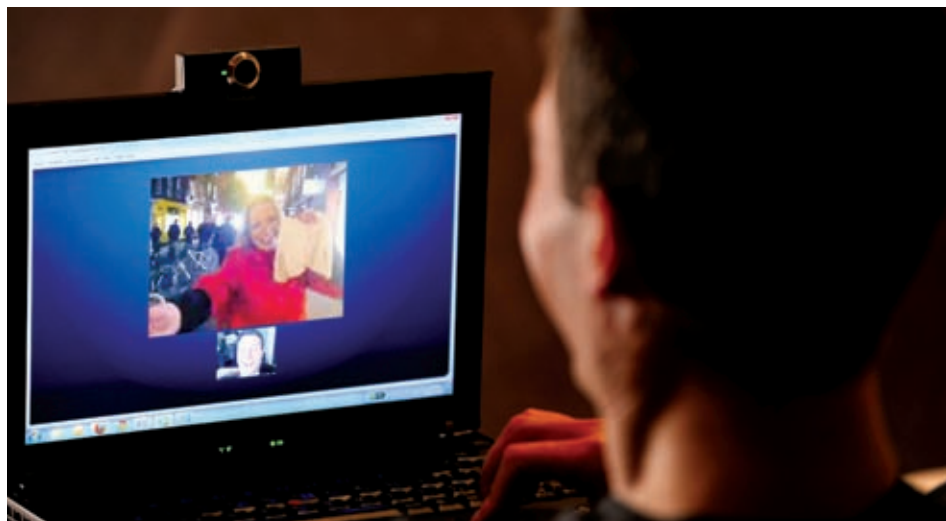
A six-minute video and voice chat between two people over the same optimised application generated data traffic of just 2.9 MB. Over standard VoIP, the same call would use 8.2 MB.

Finally, a 30 minute video chat session between four people, three of them using video, one using voice only, would run to about 900 MB using a commercially available landside video conferencing product. An optimised specialised product reduced the data load to 11.7 MB.

We have been hearing for at least a decade about the revolution in maritime communications. And it could be that for some users the HTS era will deliver them a much better internet experience at sea.

But that revolution is not going to reach everyone. Many shipowners and managers will continue to keep bandwidth tied down and seek out highly specialised and optimised products to meet the demands of a new generation of crew.

We can be certain that the demand for better communications for bridge and crew will remain and grow. Once solutions that fit the need are available, affordable and practical, shipowners and managers need not deny their crew access, but instead put the right tools in their hands. **DS**

About the Author
Martin Killian *joined the Telaurus subsidiary of Globecomm in 2010 and has been the VSAT product manager of Globecomm Maritime since the brand was launched in 2011. Prior to that he was worked at France Telecom Mobile Satellite Communications and subsequently Vizada as an Account Manager and Director of Commercial Sales, Americas. Martin holds a Master of Science in International Business from Florida Atlantic University, as well as a BS in Marketing from FAU.*

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SeaZip to install StarIPS

www.mirtac.nl

SeaZip Offshore Service is to install the StarIPS software system from Star Information Systems (SIS) to support fleet management for its newbuild offshore service vessels.

The contract was agreed with SIS partner MirTac, and includes the software and related implementation services such as database set-up, procedures implementation and training and consultancy.

Software modules for maintenance, purchasing, vessel administration, QHSE management and document control have been included in the deal.

"MirTac has proved to be a knowledgeable partner at our ship manager, JR Shipping. Without question, with the swift implementation of StarIPS, we will manage our maintenance operations efficiently whilst complying with highest customer requirements and all relevant safety, health and environmental regulations such as ISPS/ISM," said Jan Reier Arends, managing co-owner, SeaZip Offshore Service.

"The continuity in operations and maintenance of our customers, offshore wind farms, will only benefit from the enhanced availability and service provided by our vessels."

Fleet management of SeaZip vessels will be performed using the SIS software

Liberia endorses seven more Videotel courses

www.liscr.com
www.videotel.com

The Liberian Registry has endorsed seven more Videotel courses, bringing their total to 17, according to the London-based training provider.

17 Videotel courses are now approved by Liberia

The seven newly approved courses are Advanced Oil Tanker Safety; Enclosed Space Entry and Emergency Awareness; ECDIS Training; GMDSS Training; IMDG Code Training; Marine Environmental Awareness; and Maritime Security Awareness.

Videotel says that these courses are delivered in a range of multimedia formats to suit the requirements of the individual customer, and that plans are in place for more courses to be approved in the future.

"One of the key roles of the Liberian Registry is to advise its clients on the most appropriate qualifications and endorsements necessary to ensure STCW compliance," says Nigel Cleave, CEO of Videotel Marine International.

"Videotel takes great care to produce accurate, up-to-date, quality training solutions targeted to meet real training needs, and we are delighted to support the Liberian Registry in that endeavour."

Liner software links sales with accounting

www.softship.com
www.comarch.com

Softship, a German provider of liner applications, has partnered with Polish IT company Comarch to create an integrated operations and financial software package.

The solution will combine customer facing services with back-office accounting, allowing liner operators to manage sales, quotations, contracts, bookings and documentation right through to the invoicing, credit control and payment processes.

"There is no other similar product available to owners," says Softship executive director, Thomas Wolff.

The Comarch financial system (Comarch Financials Enterprise) will be integrated with Softship's two primary software suites (LIMA for carriers and ALFA for agents) and sit on a common Microsoft MSSQL database. This will facilitate exchange of data from front to back office over an integrated interface.

The Comarch accounting system will be adapted to suit the shipping sector and will include country specifications. The new facility will be customisable to suit individual company preferences and processes.

"This is a major step forward in helping liner operators achieve efficiencies and reduce overhead in an extremely tough market," says Mr Wolff.

LNG module for IMOS

www.veson.com

Veson Nautical has unveiled an LNG module for IMOS (Integrated Maritime Operations System), its flagship software product.

"The LNG market is very specialised, with its own unique challenges, not the least of which is that an LNG tanker's cargo becomes its fuel. The LNG module lets IMOS calculate the cost for that," said Jamie Sheldon, product director.

The module helps operators to manage the chartering, operations, financials, and freight risk specific to the LNG sector.

Its features include: the ability to capture Fuel Oil Equivalent (FOE) LNG consumption in contracts, operations, and voyage financials; consumption calculations based on configurable FOE speed/consumption tables; automated transfer of LNG data to shore-based IMOS system; vessel performance benchmarking.

According to Veson Nautical, a Boston-based provider of maritime management software, 369 LNG vessels are in service worldwide, about 20 per cent of which are managed with IMOS.

"We created the LNG module in collaboration with clients in the market—as we have done with all our modules," said Mr Sheldon.

"The collective knowledge we gathered reflects the specific needs of the industry, not an individual company, which enabled us to develop IMOS as an out-of-the-box solution."

ShipTECH in the cloud

www.inatech.com

Inatech has launched the cloud version of its fuel procurement software ShipTECH.

The platform, which has existed as on-premise software for a year, is designed to help shipping lines cut their fuel costs by bunkering in ports where prices are lower and by streamlining the buying process.

ShipTECH integrates the fuel prices published daily by Platts and Bunkerworld, which together cover 400 ports where 90 per cent of shipping takes place, explains Alok RC Sharma, head of sales, marine, at Inatech.

Besides bunker procurement, ShipTECH's analytic and reporting tools also cover such functions as claims management, trading and risk management.

"The global economic crisis has caused the shipping sector to undergo 'change' unlike any other it has experienced in recent years," notes Jean-Herve Jenn, CEO of Inatech.

"Last year the sector reported flat revenues and this year it is going to get even worse because the market is going to remain flat at best and the pressure to reduce costs is going to increase. As a consequence of this, the industry has been forced to consider how it can increase profits through monitoring its costs."

He adds that "more efficient procurement methods will become absolutely vital for shipping companies if they want to maintain profitability."

According to Mr Sharma, the cloud version of ShipTECH presents at least three advantages: companies don't need to invest in software; employees can access it on mobile devices; and IT departments don't need to worry about upgrades.

Inatech estimates that fuel costs can represent up to 60 per cent of the total cost of shipping companies' operations. Mr Sharma adds that 60 to 70 per cent of the fuel is purchased via contracts with brokers, while the remaining 30 to 40 per cent is bought on the spot in ports.

'More efficient procurement methods will become absolutely vital for shipping companies' – Jean-Herve Jenn, Inatech

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Korean Register goes mobile

www.krs.co.kr

The Korean Register of Shipping (KR) has launched a mobile application called 'SMART Fleet' that delivers information on vessels, fleets, surveys, audits and port state control.

Available on Android and iOS, the app includes a 'push notification system' so that its users can receive urgent messages concerning PSC detentions and technical updates. There is also a 'surveyor locator' function to help them find the nearest KR survey office.

SMART Fleet comes with two levels of information, the Korean Register of Shipping explains – ordinary users can view basic information, while companies which own or operate KR-classed ships are given access to the full range of data.

Information delivered directly to the phone comprises: fleet lists, survey status, reports and schedules, classification rules, PSC detentions, checklists and reports, technical information and publications.

In addition to SMART Fleet, the Korean Register of Shipping has also developed a mobile web version of KR-CON, its database programme of IMO (International Maritime Organisation) instruments.

"In today's fully wired world, the busy shipping executive expects global, any-time access to vital vessel information," said KR chairman and CEO, Oh Kong-gyun on launching the two products.

"We are proud to be one of the first classification societies to offer such a comprehensive mobile service and we fully expect others to follow suit. The days of instantly available information are here to stay."

The KR app puts useful information at the user's fingertips

'Digital wallet' for eLearners

www.coracleonline.com

Coracle, an eLearning specialist with a background in the shipping sector, has launched a new platform called 'Learning Line', designed to help students to personalise their learning and share their progress.

This platform offers a tagging function which can be used to capture any online content the student has read or viewed, courses they have progressed in and tests they have taken, with the relevant results.

There is also a Groups function: learners can share work with their tutors or other content with their peers, and tutors can share content and communicate with students using a comments box. Filtering tools are also available to help users search, organise and present their learning data.

"Today's learners draw on a huge range of resources, beyond their immediate teaching environment, to create context," notes James Tweed, managing director of Coracle.

"More and more content is now optimised for mobile and tablet devices and they can capture all of it easily and securely within our Learning Line. It's a bit like a 'digital wallet' – helping them make their learning experience as social and open as they want it to be."

Rescompany and Adonis forge partnership

www.rescompany.com
www.adonis.no

Rescompany Systems and Adonis have announced that they have forged a strategic partnership and are implementing an integration programme to connect their software solutions.

Based respectively in England and Norway, both companies provide technology solutions to the cruise, shipping and travel industries.

Rescompany's products include Resco SMS (Ship Management System) and Resco CRS (Central Reservations), among others. Adonis provides solutions for human resource management and payroll processes.

"This partnership between Rescompany and Adonis is an important step in developing greater integration of our system with a leading provider of cruise property management systems in Resco SMS," said Per Ove Kviteberg, managing director at Adonis AS.

"Each company sees great opportunities in this close and well planned partnership."

Peter Winqvist, MD of Rescompany Systems Ltd, added: "Aside from interfacing and linking up our products with the advanced capabilities of the Adonis crew management systems, we will work on further business strategies together with the Adonis team."

BP Shipping Marine Distance Tables upgraded

www.atobviaconline.com

AtoBviaC has upgraded its BP Shipping Marine Distance Tables to allow users to edit routes and obtain distances even when they deviate mid-voyage.

"Accurate distances provide the starting point for accurate voyage calculations and decision making," explains Captain Trevor Hall, director of AtoBviaC.

"Managing a routeing change mid-voyage can be a complex business, and it is important that the user is aware of the implications involved in calculating the costs for the revised voyage."

"Changing market conditions have motivated our customers to request this editing tool and we are delighted to have been able to respond to their demands."

The new interface exists in an online version compatible with PC and Mac: 'Port to Port – Online'. Yearly subscriptions vary from £125 (for 2,500 distance calculations) to £1,500 (for 50,000 distance calculations).

The PC version of the software (Port to Port v4) can also be supplied on CD, or downloaded from AtoBviaC's website. Individual computer licences cost £295.

Changes to the system will support route deviations

KPI Project has data from more than 1,600 ships

www.intermanager.org

InterManager, the international trade association for the shipmanagement industry, says that 120 companies have now registered with its KPI Project, providing data from more than 1,600 vessels.

120 companies have registered for the project

"We are on target to reach 2,000 (vessels) by the end of this year," said Captain Kuba Szymanski, InterManager secretary general.

"It is interesting to note that around 72 per cent of those submitting data are owner related – that is in-house managers, owners or owners who also offer third party management – with only 28 per cent currently 'pure' third-party ship managers."

Tankers form the largest group of vessels submitting data (41 per cent), before container carriers (28 per cent), bulk carriers (14 per cent), gas carriers (5 per cent) and passenger ships (5 per cent).

"It is no surprise to see tankers leading this table as Tanker Management Self-Assessment (TMSA) and Intertanko benchmarking have been operating in the shipping industry for several years now," said Capt. Szymanski.

To date more than 5,000 sets of data have been submitted for each KPI category — enabling analysis to provide industry rankings for each measurement.

"We are starting to see some very interesting trends – trends which, in some cases, bust old myths and some which put a completely different angle on the shipping industry we thought we knew," said the InterManager secretary general.

"We can see which sector of the industry has safer records, which are exercising better retention rates and which are embracing KPI concepts faster than the others. The interesting trends are only suggestive at the start, based on the available data and are not necessarily conclusive."

Capt. Graham Westgarth, Intertanko chairman and former Teekay president of Marine Services, has joined the board of **Seagull** AS as non-executive director.

Capt Graham Westgarth, new Seagull director

www.seagull.no

Maiden cruise contract for BASS

www.bassnet.no
www.ponant.com

Fleet management software provider BASS has entered the cruise market by winning a contract with French luxury liner Compagnie du Ponant.

The Oslo-based company announced that its BASSnet system had been chosen to equip the cruise line's four ships.

Compagnie du Ponant, the only French cruise line, operates the three-mast sail ship Le Ponant (32 cabins), and two mega-yachts, L'Austral and Le Boreal (132 cabins), whose sister ship Le Soleal is due to be delivered in June.

Those three mega-yachts will be fitted with the BASSnet Procurement,

Maintenance, Operations (Certificates modules) and Document Management modules. A Dry-Docking module will be added in a second phase.

Le Ponant will receive the same modules this summer during global deployment on the fleet of Safety and Improvement Reporting Systems (SAFIR) and a KPI Dashboard.

"The BASSnet strategy of building one, integrated solution for all maritime operations makes outstanding business sense," said Jean-Louis Cambert, Compagnie du Ponant's CIO.

"With the structured implementation process adopted by BASS, we are confident that rapid conversion to the new software will be achieved in minimal time."

The vessel L'Austral will implement the software. Photo: Orlovic

CrewInspector partners with Latvian Maritime Academy

www.crewinspector.com

CrewInspector, a Latvian provider of crew management software, has signed a partnership agreement with the Latvian Maritime Academy to provide theoretical lectures and practical training in crewing and crew management.

Students taking the ports and shipping management bachelor programme were given practical tasks to perform on crew management software, in areas like recruitment, planning and manning.

The students had to devise employment contracts using different wage scales and making sure the crewing costs fit within a predefined budget.

Other tasks also featured in the programme included wage calculation and customer invoicing.

Fuel saving analytics added to OstiaEdge

www.esrgtech.com

American firm ESRG has announced that its OstiaEdge monitoring suite will integrate a new range of data which can help ship owners and managers measure the fuel efficiency of a ship or of an entire fleet.

Originally, OstiaEdge was designed to enable Condition Based Maintenance (CBM), analysing the data from hundreds of sensors on board a ship to predict potential failures or performance degradations. With that information, managers can decide which maintenance operations are most urgent.

ESRG says that OstiaEdge now integrates shaft torque, weather and environmental data, fuel consumption, and draft and displacement. This set of analytics helps to show, among other things, how resistance due to hull and propeller condition

impacts the speed and efficiency of a ship.

According to the Virginia-based company, ship managers can thus prioritise between hull and propeller maintenance and engine optimisation.

Alternatively, instead of having each ship's hull cleaned at a set time period, the operator can schedule individual ships for hull cleanings based on their specific operating conditions and the impact the hull condition is having on its performance and fuel efficiency.
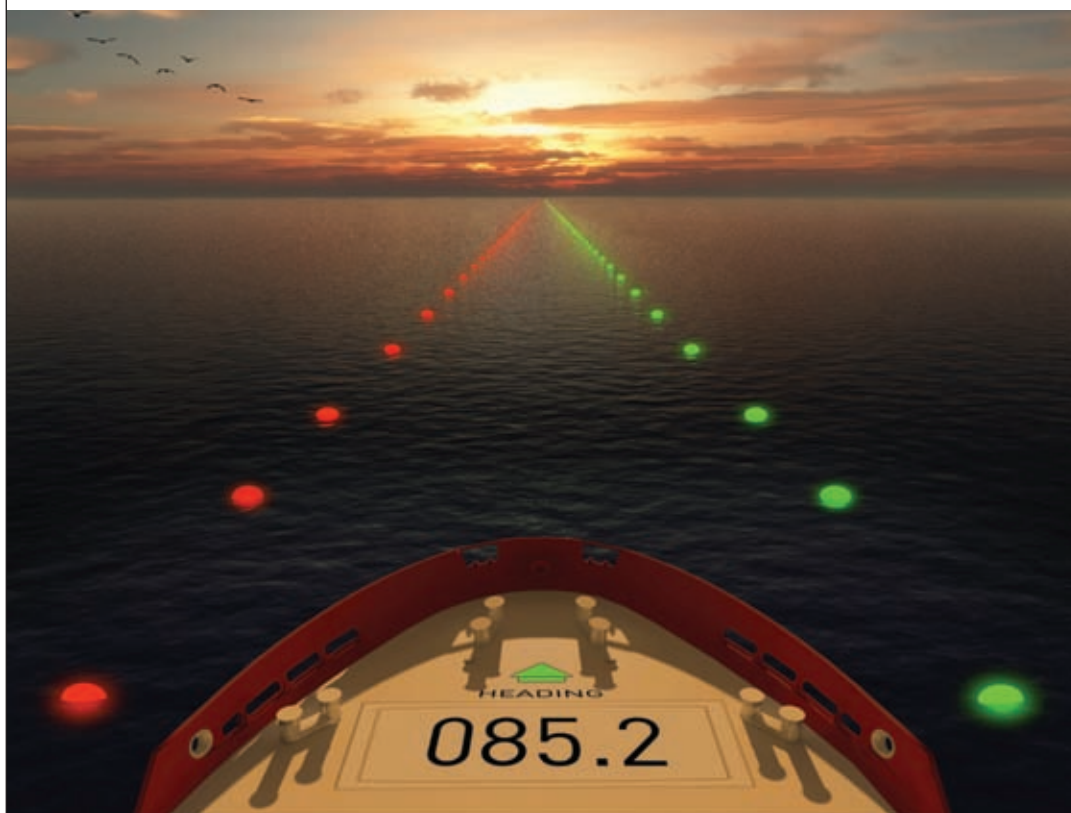
The analytics and actionable output are provided to both onboard users, such as the Master and Chief Engineer, as well as shore-based technical superintendents and fleet managers.

OstiaEdge combines a Software-as-a-Service (Saas) delivery model with an ISO 13374-1:2003, Mimosa-compliant open architecture.

MPM upgrade for Tallink-Silja

www.marinesoftware.co.uk

UK-based Marine Software Ltd has delivered an MPM (Marine Planned Maintenance) upgrade to cruise and ferry company Tallink-Silja, for installation on board its Swedish flagged vessels Silja Symphony and Galaxy.

For the annual flag survey, the Swedish Transport Agency requires ship operators to produce reports on various inspections carried out by crew members. It has produced a guidebook which lists all 480 survey items concerned.

Most of those were already covered by Tallink-Silja's MPM, so the Finnish company asked Marine Software to integrate the STA requirements within its planned maintenance database. Marine Software says that it subsequently produced a module which allowed for planned maintenance jobs to be attached to individual official survey items.

This allowed planned maintenance activities (including STA-linked items) to proceed as normal throughout the year, and the operator to produce a status report for the STA inspectors' review two weeks before the annual flag survey.

Anders Öst, project manager, Tallink-Silja, notes that he appreciated not having to worry about how to produce the reports.

"A combination of my original specification as well as Marine Software's experience in programming and how to make user-friendly interfaces resulted in a well working module," he said.

"The project is now finished and two of three Swedish flagged vessels in the Tallink-Silja fleet have passed the approval survey with flying records."

"Last month, the Swedish Transport Agency informed me that our STA module is the only MPM system capable of producing the flagged reports demanded to receive full approval."

The MPM software aboard the Silja Symphony has been upgraded

Marlow expands crew software training

www.gl-maritime-software.com
www.marlownavigation.com.cy

GL Maritime Software (GL) has announced that its ShipManager software suite has been installed in two of Marlow Navigation's training centres, in the Philippines and in Ukraine.

GL's ShipManager product is used to support such processes as planned maintenance, purchasing, stock control, voyage management, port clearance, incident management, and quality and safety management.

The software synchronises data so that the same information is available on board and onshore.

Marlow, a third party ship management company headquartered in Limassol and specialising in crew management, has now installed training versions of ShipManager in its computer labs and had its instructors prepared by GL to teach familiarisation courses.

Now Marlow's customers who have employees set to join a vessel running GL software can send them for training in Marlow's computer labs before they set

foot on board a vessel. The majority of seafarers placed on board Marlow's crew management vessels are Filipino and Ukrainian nationals.

"Providing training on standard ship management applications, like the one from GL, is a significant effort for a shipping company, especially if the crew keeps changing," said Capt Walter Wekenborg, director training & human resources at Marlow Navigation.

"We can help our joint clients to reduce this effort and their costs through this cooperation."

Torsten Büssow, GL's head of Maritime Software, also commented that "putting the most advanced systems on the latest ships will not result in the expected efficiencies if the crew is unprepared for the task of operating them."

"This cooperation will help shipping companies to ensure that when a crew member steps onto a vessel equipped with our software, they are familiar with the system and able to work at peak effectiveness from day one. We hope that many of our joint customers will take the opportunity to use this training service."

Cargill becomes first user of CargoDocs for Bulkers

www.essdocs.com
www.cargill.com

Electronic Shipping Solutions (ESS) announced that its CargoDocs solution, which offers electronic bills of lading (eB/Ls), has now entered the dry bulk market, with Cargill using the system for a grain shipment between the United States and Mexico.

Until that point, CargoDocs was only available in the energy and liner segments, and for barges in the ARA region (Amsterdam, Rotterdam, Antwerp).

The CargoDocs system aims to streamline the documentation process

After completing trials in 2012, food marketer Cargill became the first company to adopt CargoDocs for Bulkers operationally, Malta-based ESS said.

The M/V UBC Bremen shipped grain from Houston (USA) to Veracruz (Mexico) using the electronic bills of lading.

Cargill's Reserve Terminal drafted the eB/Ls which were then reviewed on ESS's eDocs Exchange by the carrier, UBC, in New York, by Cargill Inc., the shipper in Minneapolis, and by Cargill de Mexico, the receiver in Santa Fe Mexico City, before being signed electronically and issued to Cargill Inc.

All eB/Ls were produced back to the carrier within 19 minutes of issuance, reports ESS.

ESS explains that it collaborated with Cargill on developing agreed eDocs processes and worked with Mexican Customs to ensure the output was acceptable to them.

According to ESS, Cargill tested CargoDocs for Bulkers over two months before signing an operational pan-Group agreement.

The Minneapolis-based company has already commenced work to rollout CargoDocs across various tanker trades in Europe, agricultural cargo trade routes from North and South America to the Caribbean and Europe and petroleum barge trades in the Amsterdam-Rotterdam-Antwerp area.

Cargill is also preparing for a trial of CargoDocs for Liner later this year, adds ESS.

"The rapidly increasing adoption of CargoDocs for Tankers by major oil companies and large petroleum trading houses gave us the confidence that CargoDocs is the appropriate solution for Cargill to change from paper to electronic documents," said Ernst Herger, global eB/Ls project manager of Cargill.

"After nearly 150 years of paper bills of ladings, this first electronic BL represents a historical milestone for us."

Alexander Goulandris, chief executive officer of ESS, says he was pleased with his company's transition into the bulker market.

"We are delighted to have been able to work with Cargill on successfully extending CargoDocs to cover dry bulk shipments, and look forward to working with them on their aggressive rollout plan," he said.

Svitzer opts for Helm

www.edocgroup.com
www.svitzer.com

Canadian group Edoc has announced that towage provider Svitzer had chosen two of its Helm modules to manage its dispatch and billing functions on shore and on board its vessels.

A member of the Maersk group, Svitzer has started implementing Helm Dispatch Manager and Helm Onboard in its Scandinavian operations, says Edoc.

The on-vessel software allows ships to report job information to shore-side operations in real time, and in some situations it can allow the tugs to dispatch jobs themselves, explain the system developers.

"We chose Helm because of its ability to centralise our dispatch and billing functions globally," said Joyce Roovers, group commercial manager at Svitzer.

"Helm is currently being implemented in our Scandinavian region and we are seeing very positive results."

Svitzer, whose fleet exceeds 500 vessels, is then to roll out Helm to its operations in Europe, Australasia, Middle East and the Americas.

"Winning the business of such a respected global leader like Svitzer is an excellent introduction for our software into the international marketplace," said Ron deBruyne, CEO and founder of Edoc Systems Group

Successful trial of automatic GPS backup

ACCSEAS, a project funded in part by the European Union, has carried out a successful trial of a prototype resilient PNT system at sea, using eLoran to automatically step in when GPS service fails.

ACCSEAS (Accessibility for Shipping, Efficiency Advantages and Sustainability) focuses on developing e-navigation tools to help mariners navigate safely in the North Sea region.

GPS plays a fundamental role in delivering the PNT (positioning, navigation and timing) data that ships rely on to ensure safe navigation. However, GPS signals are vulnerable to interference from weather and accidental or deliberate jamming.

GPS jammers, available online for as little as £30, can cause complete outages across all receivers currently on the market.

ACCSEAS has recently tested technology to automatically counter the threat of GPS jamming at sea, on several excursions aboard the THV Galatea out of Harwich (UK).

The prototype system was integrated into the bridge of the vessel and monitored the performance of independent PNT sources in order to provide the 'best' available, ACCSEAS explains.

When GPS was deliberately jammed, the system switched automatically to eLoran and provided eLoran derived PNT information to the connected bridge systems, allowing them to maintain operation and enabling the mariner to continue to navigate safely and efficiently.

This demonstration is the first time that an automatic and seamless solution has been demonstrated in a real-world scenario, according to ACCSEAS.

"The more dependent we become on electronic systems, the more resilient they must be. Otherwise, we face a scenario where technology is actually reducing safety rather than enhancing it," commented Martin Bransby, research & radionavigation manager at GLA (General Lighthouse Authorities of the UK & Ireland), which carried out the trial on behalf of ACCSEAS.

"Demands on marine navigation are only getting tighter, yet electronic systems at sea are primitive compared to those used in air travel. This needs to change."

Mr Bransby called the successful trial "a significant step towards mitigating a very real threat in GPS vulnerability."

ELoran technology is based on long-wave radio signals and is independent and complementary to GPS. ACCSEAS says that it is taking advantage of the availability of the prototype eLoran transmitter at Anthorn (Cumbria) and eight other Loran stations around the North Sea Region, but it notes that few vessels currently have receivers.

ACCSEAS notes however that eLoran initial operational capability is expected in seven major ports along the East Coast of the UK by 2014, with full operational capability covering all major ports expected by 2019.

The ACCSEAS partnership consists of eleven organisations in seven countries: General Lighthouse Authorities (UK), Chalmers University of Technology (Sweden), Danish Maritime Authority, Federal Waterways & Shipping Administration (Germany), Rijkwaterstaat, Ministerie Infrastructuur en Milieu (Netherlands), Swedish Maritime Administration, Norwegian Coastal Administration, SSPA Sweden AB, Flensburg University of Applied Science (Germany), NHL Hogeschool, Leeuwarden, Maritiem Instituut Willem Barentsz (Netherlands), World Maritime University (Sweden).

ISF electronic training record books revised

Seagull has released revised versions of the four International Shipping Federation (ISF) Training Record Books.

They take into account the STCW 2010 Manila amendments, which require shipping operators to maintain documentary evidence of structured onboard training for crew members seeking certification as Able Seafarer Deck (formerly Able Seaman) and Able Seafarer Engine (formerly Motorman), in addition to trainees seeking to qualify as ship's officers (Cadets).

Seagull and the ISF signed an agreement last November allowing the Norwegian company to utilise electronic versions of the training record books in conjunction with its Competence Manager software.

Individual training record books are held in electronic format on each customer's own central database and are accessed via the Seagull Competence Manager software. On completion of training tasks, the master can verify the competences achieved.

These records follow officers from ship to ship within the company, and hard copy versions can be made available if the seafarer changes company.

Completion of the ISF Training Record Books provides sufficient documentary evidence that a trainee has completed a structured onboard training programme and demonstrated competence in the skills required by the amended convention, which came into force on January 1st 2012.

However, it should be noted that administrations may have certification requirements in addition to the tasks and competences contained in the ISF Training Record Books.

Filipino and Indian contracts for Kongsberg

www.km.kongsberg.com

Kongsberg Maritime reports that it has won a contract to provide simulators to a training facility in the Philippines, as well as an order from Bibby Training Institute Mumbai for an offshore vessel simulator.

The Headway Seacrest Maritime Foundation Inc, in Cebu City, has ordered a 'Full Picture' package including ship's bridge, engine room and cargo handling simulators, and instructor training. All the equipment is to be installed by late September.

For navigation and ship handling training, a Full Mission 270 degrees Horizontal Field Of View Ship's Bridge Simulator (SBS) will be set up alongside a desktop version with integrated ECDIS and GMDSS simulators. Both Full Mission and desktop simulators are based on the Polaris technology platform.

The Engine Room Simulator (ERS) will also be accompanied by a desktop version. Both will be based on the Neptune simulator platform, as the Cargo Handling Simulator (CHS) will.

The contract includes training for Headway Seacrest instructors at the Institute of Willem Barentz, in the Netherlands.

The Cebu facility has also signed for Kongsberg's Long Term Simulator Support Program (LTSSP), which provides support and access to simulator upgrades within a fixed period.

"Headway Seacrest was already aware that our simulator offering could support its training programme for cadets and officers and its plans to establish an Offshore Academy," explains Tor Hellman Kristoffersen, area sales manager, Kongsberg Maritime.

"After being part of our user conference in Singapore in October 2012 and mixing with other leading maritime trainers, Headway Seacrest was convinced that we were well positioned to provide not only the equipment, but the long term support and expertise they required."

Kongsberg Maritime says that it now supplies simulators and support to seven customers in the Cebu region and that Headway Seacrest is its second customer in the Philippines to choose an LTSSP.

In India meanwhile, the Bibby Training Institute facility, currently equipped with a Kongsberg Dynamic Positioning (DP) simulator, will be upgraded to a DP 2 simulator under the new contract.

The Kongsberg Offshore Vessel Simulator (KOVS) with visual scene will feature Anchor Handling vessel, Shuttle Tanker and Drilling Rig models, explains the Norway-based provider.

Courses and exercises will cover Manual Handling OSV, Anchor Handling, Offshore Loading, Position Reference, Drilling Rig Operation, Power Management, Ship Manoeuvring, Advanced ECDIS, Bridge Team Management, Bridge Resource Management and Pilotage.

The DP 2 simulator will be integrated with the Kongsberg Vessel Simulator (KOVS), which will make it possible to run DP2 courses in addition to offshore vessel training.

India has over 1,000 certified DP operators but there is a growing demand for trained crew, especially for anchor handling and other specialist operations.

"Our new simulator will add a lot of value to what we have been doing so far and will help to meet the need for Indian crew certified in specialist operations," said Prakash Agarwal, managing director, Bibby Ship Management India.

"This contract is vindication of our commitment to the Indian market and reflects the relationship of trust and reliability that we have with our customers," added Capt Sanjiv Wagh, general manager sales, Kongsberg Maritime India.

"We have recently moved into our own building and I believe that this gives customers more confidence that Kongsberg Maritime is a long-term partner in India."

MONALISA 2.0

www.sjofartsverket.se
www.monalisaproject.eu

The Swedish Maritime Administration has initiated an extension of the on-going MONALISA project, called MONALISA 2.0, which aims at developing efficient, safe and environmentally friendly maritime transport in the European Union.

With a budget of 24 million Euros for the 2012-2015 period, MONALISA 2.0 will build on the Motorways of the Sea concept and look at sea traffic management tools and operations, among other areas.

The project will build on the experience gained during the MONALISA 1 project, co-financed by TEN-T (Trans-European Transport Network), as well as the results from the SESAR (Air Traffic Management) programme.

Actions taken will include: testing of concrete applications and services which would allow rapid commercial deployment; integration of route planning; elaboration of better standards for route information exchange; and demonstration of hands-on services using new technology to enhance maritime safety.

The MONALISA 2.0 consortium consists of public, private and academic partners. Its geographical scope covers the Baltic Sea, North Sea and the Mediterranean Sea.

Another Flag State approval for Admiralty Digital Publications

www.admiralty.co.uk
www.ukho.gov.uk

Japan has approved the United Kingdom Hydrographic Office's (UKHO) range of Admiralty Digital Publications, meaning that the 5,418 vessels under the Japanese flag can now use the official electronic alternatives to Admiralty publications.

With the addition of Japan, Admiralty Digital Publications have been approved by 16 of the 20 largest Flag States, including Panama, Liberia and the Marshall Islands.

As signatories to the SOLAS (Safety of Life at Sea) Convention, Flag State authorities are responsible for ensuring that the requirements of the Convention are met for those vessels under their jurisdiction. Flag State approval for Admiralty Digital Publications permits their vessels to use these digital versions for navigational purposes.

Admiralty Digital Publications include digital versions of UKHO's List of Lights (providing light and fog signal information), Radio Signals Volume 6 (offering maritime radio communications and pilot services information), and TotalTide (a tidal prediction programme). They are electronically updated on a weekly basis.

Since the beginning of this year, Portugal, Mongolia, Honduras, Nicaragua, the UAE, the Seychelles – and Japan – have issued a formal approval. In total, 60 Flag States have now approved Admiralty Digital Publications, covering a large majority of the world's vessels.

"Whether it is light and fog signal information, radio communications, pilot serv-

'More flag states are recognising the benefit of digital products'
– Ian Moncrieff, UKHO

ices or tidal predictions, Admiralty Digital Publications not only offer exactly the same data content as their paper versions, they also provide more flexible ways of viewing and searching for information," said Jo Washington, product manager for Admiralty Digital Publications at UKHO.

"Updates are provided electronically every week and take just seconds to apply, greatly reducing the time involved in manual corrections and the risk of human error. Shipping companies can find out more about a free trial of Admiralty Digital Publications by contacting their local distributor of Admiralty products."

Ian Moncrieff, chief executive of the UK Hydrographic Office, added: "Admiralty Digital Publications are designed to meet SOLAS carriage requirements and are relied upon by mariners around the world for their voyage planning needs as the shipping industry continues its transition to digital navigation. It is welcome news that more Flag States are recognising the additional benefit to the mariner of digital products and are approving their use."

ABB acquires APS

www.abb.com
www.aps-technology.com

Automation group ABB has completed its acquisition of APS Technology Group, which will see ABB add Optical Character Recognition (OCR) to its crane portfolio.

Established in 2002 in California, APS supplies vision-based automation solutions that identify containers, trucks, rail equipment, and other assets for ports and container facilities.

The acquisition was announced on February 11th and was completed on March 1st, according to ABB. The Zurich-based group hasn't disclosed the terms of the deal.

APS will join ABB's crane and harbour automation business, it says, adding that it plans no major changes to staffing or product offerings.

This move marks a further advance by ABB into the maritime software sector. In August 2012, ABB acquired Amarcon BV, a Dutch company providing software systems for the shipping industry, including Octopus.

Now a fully owned subsidiary of ABB, Amarcon provides monitoring and forecasting solutions for performance and availability optimisation of sea-going vessels.

In June 2012, ABB also announced it had won an order from Rickmers Group in Germany to supply advisory systems for dynamic trim optimisation and fleet management solutions for five multi-purpose vessels.

This technology aims at helping the ship management teams to operate the vessels in the most efficient way possible, to save on fuel consumption.

Onboard ECDIS training

www.pcmaritime.co.uk

PC Maritime says that it has reached the milestone of having 400 officers earning formal certification in Navmaster ECDIS after taking its training course on board their ship.

Based in Plymouth (England), PC Maritime develops and supplies ECDIS and navigation systems, as well as training products. About a year ago, it launched this Navmaster ECDIS (Electronic Chart Display and Information System) course, which aims to allow users to meet the STCW (Standards of Training, Certification and Watchkeeping) requirements.

Available on DVD, the training package uses text, voiceover and video. Users are required to carry out actions just as they would on Navmaster ECDIS and, at the end of each section, they have to answer questions.

The time involved should be around eight hours, and is concluded with an assessment test taken under controlled conditions.

PC Maritime marketing director, Anne Edmonds, notes that "there is no doubt that training people on board without the costs and downtime inevitable with onshore training has a growing attraction for a range of maritime training in the future."

Canadian icebreaker equipped with G&D's KVM

www.gdsys.de

German firm Guntermann & Drunck (G&D) has announced that its KVM (keyboard, video and mouse) matrix switch had been chosen by the Canadian Coast Guard to equip the icebreaker Griffon.

The hardware, called DVICenter, is used on board to distribute navigation information to various positions on the bridge.

The 71m-long Griffon, who carries a crew of 25 including nine officers, has two rack mounted servers, one for the radar system and another for the GPS system. G&D explains that once its KVM matrix switch is installed, the high endurance icebreaker can access the radar and GPS systems on any of the bridge's five stations.

In Canada, G&D is represented by its partner Gray Matter Systems. "The G&D matrix switch sets itself apart from the rest because it is the only switch on the market that is fully configurable," says Gray Matter Systems' automation and control consultant Denis Fauvel.

"The DVICenter also permits the use of programmable keypads, the I-Keys, to select the appropriate server. The user no longer wastes valuable seconds hunting and pecking at a keyboard to switch servers."

"The system allows both coarse and fine-grained control of functionality," Mr Fauvel also notes.

"In fact, large sections of potentially unused functionality can be bypassed if need be. Conversely, functionality can be implemented to various degrees to take advantage of built-in security protocols and user permissions."

The equipment will allow the Griffon to access navigational data on different bridge systems

MARIS to deliver 30 ECDIS units to Turkey

www.stt-int.com
www.maris.no

Norwegian provider of navigation systems MARIS has signed a deal to deliver 30 units of its ECDIS900 system to Turkish customers through distributor STT International.

The company says that the first systems are committed to general cargo vessel newbuildings which the Marmara Shipyard is due to deliver to Yildirim Group before the end of 2013.

"Securing this contract … is a timely reward for the work MARIS and our distribution partner STT International have been putting into building business in Turkey," says Ralf Pluch, MARIS director sales Europe.

"As mandatory ECDIS is phased in, we are especially delighted to have secured an order with our partner that signals our strength in both newbuilding and retrofit in this key regional market for owners and yards."

Headquartered in the UK, STT International says that the MARIS systems will be installed by affiliated company STT Deniz Ticaret ve Servis, based in Tuzla.

"Our factory trained technicians (can) provide full service and support as part of the MARIS worldwide service network," says John Angehrn, general manager

'(This) is a timely reward for the work (we) have been putting into building business in Turkey' – Ralf Pluch, MARIS

(London), STT International.

"The MARIS900 has proved itself to be a reliable choice for ECDIS users and STT has installed 50 plus systems to date."

"Istanbul's role as a crossroads in world shipping makes it an ideal destination to retrofit a proven system, a factor that has been central to placing this order."

MARIS says that it has signed other contracts earlier this year, including with Høegh Fleet Services and the Norwegian Coastal Administration. The company has also appointed Rubens Patene & Schellmann as its new distributor in Brazil.

Daniamant buys Uni-Safe Electronics

www.daniamant.com
www.unielec.dk

Daniamant, which produces and sells survivor location lights for life jackets, life rafts and lifebuoys, has acquired Uni-Safe Electronics.

Danish company Uni-Safe is the developer of the BW-800 BNWAS (Bridge Navigational Watch Alarm System).

A core product for the new company, to be called Daniamant Electronics, the BNWAS BW-800 system, which detects operator disability that could lead to accidents, has received the Wheel Mark showing that it complies with the European directive on marine equipment (MED).

"At this stage, we have successfully

The BW-800 BNWAS will be a major component in the combined company portfolio

delivered more than 3,400 BNWAS systems to all types of vessels" says marketing manager Heidi Ø. Larsen.

Martek to launch ECDIS

www.martek-marine.com

Martek plans on launching mid-2013 its own ECDIS (Electronic Chart Display and Information System) which will feature an inbuilt GSM modem.

The product, called iECDIS, is currently being submitted for type approval.

Powered by Jeppesen charts, the system will have an inbuilt GSM modem that will allow Notices to Mariners to be downloaded at sea.

UK-based manufacturer Martek says that this GSM modem can take weather and piracy updates on the move and give "automatic instant seasonal route planning".

Instead of a traditional hard drive, this

ECDIS will also be equipped with a solid state drive (SSD).

Martek's iECDIS has been submitted for type approval

SAM Electronics equips new Celebrity Cruises liner

www.sam-electronics.de

SAM Electronics has announced it has equipped Celebrity Cruises' new liner with a range of navigation, automation and entertainment systems.

Celebrity Reflection was built by Meyer Werft in Germany at a reported cost of $750M. Its bridge equipment includes a SAM NACOS 65-5 integrated navigation command assembly comprising five S- and X-band radars serially linked to a similar number of Multipilot 1100 worksta-

tions for combined display of ARPA radar, ECDIS and conning functions, as well as integrated operation of automatic steering control.

According to the Hamburg-based supplier, which is part of L-3, additional workstations are also installed on both starboard and port wing areas together with Chartpilot 1100 ECDIS and voyage planning units and secondary display facilities.

Supported by an integral 4350 VDR, all other subsidiary navaids such as DGPS, doppler log, echosounders and wind sen-

sors are directly connected to the Multipilot stations for operational purposes.

Control of Celebrity Reflection's machinery, air-conditioning and emergency shutdown requirements is provided by an L-3 Valmarine Integrated Automation System (IAS). The operator interface consists of five multifunction workstations variously sited in the engine control room, on the bridge and in a designated safety centre.

There are also connection points for laptop PCs in machinery spaces and air-

handling unit rooms, while the emergency shutdown facility operates independently via an interface to the IAS communications network.

The vessel is also equipped with audio and video entertainment facilities from L-3 FUNA International.

Reflection is the last of a series of five Solstice-class vessels built by Meyer Werft for Celebrity Cruises, all of which have been fitted with comparable navigation, automation and associated systems, says SAM Electronics.

2,500th trainee for Interschalt's MET

www.interschalt.de

Interschalt reports that it has reached the milestone of training 2,500 seafarers at the Maritime Education and Training Centre (MET) which it opened five years ago in Schenefeld, near Hamburg (Germany).

Its 2,500th student was Piers Boileau-Goad, a 27-year-old British Second Officer in the service of Oceania Cruises, who took an ECDIS training course.

The MET facility is equipped with four bridge simulators - one with a 270 degree panorama and three with a 120 degree view - and the systems of four different

manufacturers are available on demand.

Each year, about 500 captains, ship officers and pilots from all over the world join courses in Schenefeld, from an introduction to basic maritime knowledge to engine control room and bridge simulations.

In addition to the generic and type-specific ECDIS training, the MET provides courses for the Interschalt MACS3 loading computer, fleet management software Bluefleet and the Bluetracker ship monitoring software. Seminars are also offered to cover all aspects of hazardous goods transportation.

EMSA data made more customisable

www.emsa.europa.eu

The European Maritime Safety Agency (EMSA) has launched a new platform which can combine and process data from its own applications and external sources.

The Integrated Maritime Data Environment (IMDatE) went live on 1 March 2013 to provide more configurable services to users, customised to their specific needs.

Among the new functionalities are: more options for data visualisation, a single sign-on process, new machine-to-machine interfaces and automated vessel behaviour monitoring.

EMSA notes that verification of data

will also help to improve the quality of data across the systems, for example through the confirmation of vessel details across different vessel registries.

Users who combine functions, such as vessel traffic monitoring and marine pollution control, if they have the necessary access rights, will be able to obtain an overview of maritime activity in their area of interest, integrating data which would otherwise only be available through a range of different individual applications.

EMSA says it is currently exploring the possibility of adding further additional streams of data, such as Vessel Monitoring Systems (VMS) data and satellite AIS data.

Caribbean Maritime Institute orders VSTEP simulators

www.vstep.nl
www.nautissim.com
www.cmi.edu.jm

VSTEP has announced that it has secured a contract with the Caribbean Maritime Institute to equip its new simulation centre in Kingston (Jamaica). The Rotterdam-based company says that it will deliver all simulator solutions for the facility, including a NAUTIS Full Mission Bridge Simulator and a Class C Engine Room Simulator.

The Caribbean Maritime Institute (CMI) also ordered classroom setups for both NAUTIS desktop trainers and

NAUTIS engine room desktop trainers, says VSTEP.

The new high tech simulation centre will provide training of maritime students and professionals alike in ship-handling, collision avoidance, engine room procedures and operations, as well as ECDIS, Radar /ARPA, AIS and other navigational aids.

The facility will also be quipped with VSTEP RescueSim virtual incident management simulators for realistic training of maritime incidents.

"The purchase of these simulators will solidify our position as the simulator centre of the Caribbean," said Fritz Pinnock, director of the CMI.

On-board familiarisation for Kelvin Hughes ECDIS

www.ecdis.org

UK-based training company ECDIS Ltd has announced that it has launched an on-board familiarisation course for Kelvin Hughes' MantaDigital Widescreen software.

Kelvin Hughes' latest ECDIS software has been on the market since 2012 and ECDIS Ltd says that it has now produced its own training solution for the software which meets the requirement of the ISM

code and Safety Management System training requirements.

"It has been a real pleasure getting to know another ECDIS system, allowing us to provide a realistic and balanced training course for the mariner," said Natalie Robson, marketing manager at ECDIS Ltd.

"The MantaDigital Widescreen has taken a fresh approach to ECDIS bearing little resemblance to the previous versions, highlighting the need for mariners to be trained in each system."

On board testing to clean up shipping

Equipment and systems testing will form a critical part of the onboard infrastructure for ships in the future – and the ability of these new technologies to report and relay data to stakeholders will be critical to their success, *writes Mark Adair, GreenLink Systems*

As increasingly strict government and international maritime regulations are phased in to reduce harmful emissions produced by large tonnage ships, the need for on board, in-use testing services capable of delivering the accurate, continuous emissions data needed has also arisen.

Slowly, but surely, the shipping industry is being forced to clean up emissions such as NOx, SO2 and particulate matter that is largely responsible for significant onshore pollution.

Although much work has been done to clean up ports and marine terminals themselves, the next big target is large tonnage ocean going vessels, dockside vessels, harbour-craft and offshore drilling rigs.

The primary regulatory agencies driving this change include the US Environmental Protection Agency (EPA), the International Maritime Organization (IMO) with its MARPOL guidelines, and the California Air Resources Board (CARB).

CARB, in particular, has taken a leadership role with some of the most stringent emission reduction measures and deadlines.

This is not surprising, given that Southern California ports handle 40 per cent of all US national consumer imports. As a result, the Port of Long Beach and Port of Los Angeles are among the nation's highest polluters.

According to the South Coast Air Quality Management District (SCAQMD), oceangoing vessels are among the largest sources of nitrogen oxides (NOx), emitting more than all power plants and refineries in the area combined.

Ships also contribute approximately 70 per cent of emissions of sulphur dioxide (SO2) as well as particulates that create significant health risks for area residents.

Another point of concern is that foreign trade has grown dramatically which means more containers, more generators and larger engines. As a result, pollution from shipping and port operations is growing as a percentage of total emissions.

Fortunately, the clean-up is already well under way at the ports. Over the past decade, marine terminal owners have worked to retrofit and clean up port ground and cargo moving equipment and turned to alternative fuel, electric and hybrid trucks, trains and tugboats.

Now, the focus is turning to cleaning up large ocean going vessels, their main C3 diesel engines and many auxiliary engines, such as diesel generators.

Cruise ships, in particular, can have 20-30 such engines to satisfy their extensive power requirements. Diesel emissions from cruise ships while at port are a significant source of air pollution, with one-third of the total occurring while idling at berth.

These efforts will require retrofitting existing engines with aftermarket emissions control products or replacement with newer, low emission 'green' engines.

Although this sounds simple enough, and is similar to the paths taken by other industries targeted by the EPA to clean up diesel engines, the absence of testing services and products specific to the shipping industry has been a roadblock to progress.

Testing to meet regulations

Until recently, comprehensive testing services that meet the requirements of every existing regulation have not been available to shipping companies. Neither have the commercial devices required to conduct the testing.

There are several handheld diesel engine testing devices approved by the EPA on the market, but most do not meet all the regulations of ISO 8178 testing required by CARB, EPA and IMO.

Many are electrochemical-based analysers, as opposed to the chemiluminescent detectors outlined in the test protocol. Many cannot be calibrated either, another ISO 8178 requirement.

To meet all the regulations laid out by CARB, IMO and the EPA, an on board testing service would not just be a snapshot of engine performance, but would have to include ongoing 'in-use' performance testing over time to meet the ISO 8178 testing protocols.

Such monitoring is required by both the EPA and CARB to demonstrate performance over an established period of time – and this is where difficulty comes in.

The type of technologies used to clean up those industries will essentially be the same we use to clean up ships, but the difference is that all those emission control technologies were developed in laboratory test cells under controlled conditions with engines removed from equipment and sent to the lab. You can't pull an engine off the ship.

This essentially means the testing service has to include devices that remain on a ship over time, constantly monitoring emissions, ideally with minimal disruption to ship's crew and limited access to the ship itself.

So new services to meet these requirements need acceptable emissions data that also meets the ISO 8178 standards for in-use emission testing. Ideally they should also be able to perform the International Air Pollution Prevention (IAPP) engine re-certification required by the IMO and the EPA.

This could include an emission monitoring unit that remains on the vessel over time, with information from these units relayed wirelessly to a secure, online database accessible over the internet.

This transmission of information would also help a company to adhere to CARB's Title 13 Div. 3 'Verification Procedure, Warranty and In-use Compliance Requirements for In-Use Strategies to Control emissions from Diesel Engines.'

The Verification Procedure calls for measurements of exhaust before and after treatment by a NOx emission reduction device while establishing in-use performance and durability over an established time period.

According to the procedure, "…the mass emissions of NOx both upstream and downstream of the aftertreatment device must be measured and recorded over the entire demonstration period."

The document goes on to outline that data must be recorded at intervals no greater than 10 seconds, must include accurate date and time stamps that correspond with engine operation, and must be submitted electronically – all factors that need to be addressed by any technology used for this kind of emissions monitoring.

The goal is to eliminate the need to go back on board the ship repeatedly after the equipment is installed, so wireless transmission of data and remote access would be essential in this regard.

The user on shore could conduct tests, calibrate equipment, change settings and even troubleshoot using a laptop or smartphone while drinking coffee at Starbucks.

The ability to monitor results is particularly important during the durability step of CARB's verification process.

Emissions control products for diesel generators are required, for example, to be tested over a period of 500 operating hours, a task that could take 6 months on board a vessel. A failure, due to human error or the engine itself, would require re-starting the durability test from scratch.

Instead of discovering this after the 500 hours had elapsed, sporadic tests run while the equipment is on board would indicate the need to re-start the test from shore, saving valuable time.

Industry benefits

The availability of such on board, in-use testing services that meet the requirements of all the existing regulations will benefit the shipping industry on many significant levels.

To start, shipping companies can conduct independent, private testing to establish a baseline of existing engine performance – both for the main engines and the many auxiliary engines used throughout the ship that factor into the ship's total emissions.

This baseline could be used to simply determine how much clean up improvement will be required in the coming years or to identify which engines are contributing the most pollution and need repair.

Testing services will also play a key role in identifying emerging emission control technologies that can be retrofitted on ships.

Ship owners are constantly plied with new products that claim to significantly reduce emissions. A testing service that can measure emissions before and after the device will allow ship owners to separate emission control products that work as advertised from those that don't.

Testing is also critical to the manufacturers of the emission control products themselves.

To obtain verification as a CARB-approved product, for example, an emission control product manufacturer must present preliminary test data to demonstrate the viability of the product.

Then, they must secure the cooperation of a willing ship to test the product in-use where multiple baseline and post treatment tests must be conducted. Establishing product durability is another key step in the process, requiring in-use testing over an established period of time.

Finally, the engine manufacturers themselves looking to sell new, 'greener' engines to the shipping industry will need testing that meets all the regulations as part of its R & D.

Although regulatory compliance is a primary driver, many shipping companies also see significant competitive and even PR advantages to being at the forefront of the 'green fleet' movement.

Proactive fleets can also take advantage of potential grant funds from local, state and federal agencies such as the EPA for air emission reductions that go beyond current regulatory requirements. **DS**

About the author

Mark Adair is the inventor of the GreenLink Systems family of products, and has been an emissions control product expert for the past 28 years. GreenLink Systems offers a range of onboard emissions measurement and monitoring equipment which can be used to fulfil the requirements of maritime in-use emissions testing legislation. The company's On-Board Emissions Testing service provides CARB, IMO and EPA 'acceptable emissions data' that also meets the ISO 8178 standards for in-use emission testing.

Track keeping – the end of navigation?

The expansion of onboard navigation technologies has changed the way that route planning and tracking is performed on ship – but, as these systems become ubiquitous, the simultaneous general use of the same systems could create its own alternative issues, *writes Dr Andy Norris*

An important step in the on-going revolution of marine navigation was the decision by President Clinton in 2000 to remove the artificial limitation on the accuracy of standard C/A code GPS signals. Overnight, typically its accuracy improved from about 100 metres to almost single figures.

This decision greatly influenced the way that ships are now navigated.

Differential GPS, initially implemented in the 1990s to overcome the artificial inaccuracies of the C/A Code, was already showing the advantages of good positional data – and beginning to influence navigational practices.

Of particular significance today is that perhaps the majority of vessels tend to keep very precisely to the planned track. This minimises the possibility of vessels encountering charted hazards and has the major advantage of being a very simple strategy.

Of course, the track planning process has to be meticulous and the navigator must continue to check the veracity of GNSS-based position.

When planning a route it is essential to put appropriate limits on the acceptable cross track error so that navigational equipment will trigger an alarm if this is exceeded. However, vessels commonly remain precisely on the centre line of the route, which is treated as the desired track.

Any move off track, such as for collision avoidance, is only considered temporary until the vessel can be brought precisely back on track, often as rapidly as possible.

Except for the very busiest approaches, the technique is effectively identical for all phases of the voyage – coastal and ocean. A well planned track obviously benefits safety, environmental protection and fuel economy and so is naturally considered to be good practice.

In addition, it allows quick and easy switchover between manual control and the use of a track-keeping autopilot, without breaking the continuity in the OOW's situational awareness.

It is all very different to navigational practices of 20 or so years ago.

Electronic charts

Intimately connected with precision electronic position fixing is the use of electronic charts.

The indication of track error coming from a GPS fed with waypoints was helpful to navigators but it was obvious that a chart-like representation would give easier and more effective assimilation of both the current and the evolving situation.

This realisation undoubtedly contributed to the huge growth in the fitting of 'non-approved' Electronic Chart Systems during the first decade of the 21st century. The lack of ENCs made it difficult to justify expenditure on a full ECDIS but a more affordable ECS at least offered improvements in situation awareness.

Seeing the planned track on an ECS and any deviations from it, in conjunction with a visual indication of charted features, is extremely useful, even if a paper chart has to be used as the formal tool for planning the route, recording the actual track and maintaining checks for charted hazards.

An ECS also provides a quick and easy additional check on the track-keeping of the vessel when on autopilot.

However, when a currently fitted ECS becomes unusable on a ship not yet covered by the ECDIS regulations it almost certainly makes sense to re-fit with an ECDIS.

ECDIS, of course, provides huge advantages over an ECS in that it is officially sanctioned and allows easy and high accuracy checking of the planned route with official data. This is especially important when basing a route on an imported list of waypoints.

The main check on the route should be performed on ECDIS manually but the automatic route checking facility is highly useful in helping to confirm its safety, provided it has been suitably set-up.

An appropriately integrated ECDIS – or a good ECS – also allows quick and easy verification of satellite based position using a variety of methods, including optical, radar and automated dead reckoning.

Good practice?

The ease of incorporating routes via data files into a modern ECDIS continues to change the planning process. Not least, shipping companies are increasingly providing recommended routes for their vessels.

They are generally very careful in insisting that the given route is checked onboard before use. However, it is evident that some companies do actually provide very detailed plans, carefully checked and updated.

Maybe there is a good business case for the main elements of route planning on an ECDIS-fitted ship to be performed onshore by experienced and qualified mariners.

Of course, it also naturally leads to onshore monitoring by such companies, not least looking for any unexpected deviations of the vessel exceeding the cross track error limits. Modern AIS tracking services can quickly help detect this, potentially demanding an explanation from the master.

Unsurprisingly, accident investigators are also becoming more anxious about deviations from the planned route and so, for example, are the industry bodies concerned with the transport of potentially polluting cargoes.

However, with the ever increasing use of track following navigation, concern is growing that many ships are probably using identical or near identical route segments.

This is either because the same basic waypoints, such as prominent navigational marks, have been used to compile the route or that they may have been compiled with the use of publicly available waypoint data lists.

The Potomac Terminal Radar Approach Control (TRACON) controls approaches and departures in the airspace surrounding six airports - similar facilities may be required in shipping in the future

There is a worry that this will increase the risk of collision, simply because traffic is concentrated into very narrow corridors, potentially less than the beam of a moderately sized vessel.

It does appear to be a valid concern and perhaps even more publicity should be given to the issues.

In the planning phase of a voyage should a safe, random but significant offset from a published route segment be chosen by a vessel to ensure better separation? Of course, the offset route must be the one that is checked at the planning phase on the ECDIS.

It somewhat complicates planning, simply because one offset is unlikely to be suitable for all route segments.

Into the future

It can be envisaged that precise track keeping will become even more the norm into the future, not least because of the move from paper chart based navigation to ECDIS.

It not only enhances safety – the stored details of the route when compared to the actual track is also a useful demonstrator of correct or incorrect actions in our increasingly finger-pointing world, certainly benefitting the individual navigator.

It fits particularly well with an e-navigation based future. Such technology could potentially allow processes that ensured the consistency of the proposed tracks of all vessels passing through an area, reducing the need for conventional collision avoidance actions.

In especially busy areas this could be simply based on manned 'sea traffic control' stations intelligently defining and sending the required tracks and ground speeds to all passing vessels.

From the point of view of the OOW it continues to be just a matter of maintaining the given track and speed, except that the risk of collision with other vessels would have dramatically decreased.

Technologically speaking, this is straightforward to implement, given a basic e-navigation structure.

Of course, it does bring up major issues of a legal nature, such as the responsibilities of individuals, companies and authorities if an accident occurs in the controlled area, even though the concept is very similar to the long established principles of air traffic control.

For less busy areas and further into the future of e-navigation, semi-automatic systems on vessels would perhaps interact such that the individual tracks and ground speeds of all vessels in an area are consistently agreed.

The proposed routes would have been subjected to an automatic check for charted hazards and appropriately highlighted on each vessel for final confirmation by all involved.

The routes would be agreed at a significant distance, well before there was a necessity to take any action needed to comply with the COLREGs.

It would leave the present collision rules intact, which would continue to be applied in circumstances where there was no possibility of interactive route adjustment and in any emergency situation where the interactive system had possibly failed.

Into the future, it does seem inevitable that the navigational task will become much more of a monitoring function and that the role of the OOW will perhaps become more similar to that of a present airline pilot. **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