Digital Ship
August 2012
www.thedigitalship.com

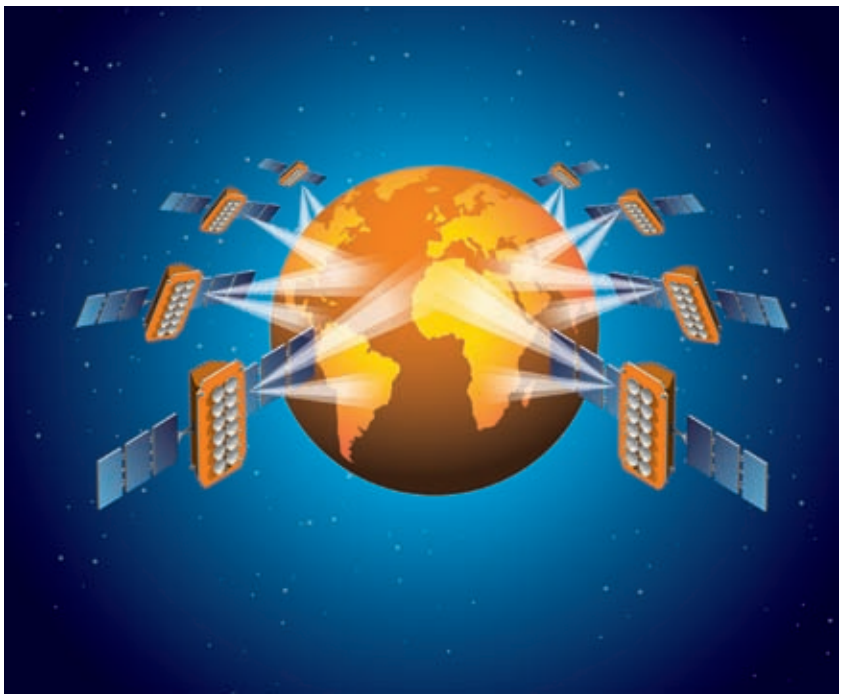
VSAT service promises 350 Mbps downloads at sea

O3b Networks is to begin the launch of a Ka-band satellite network in 2013, and has released details of a maritime VSAT service that will offer 350 Mbps download speeds to a single ship

O3b Networks has launched its new O3bMaritime product, a Ka-band VSAT service capable of providing 350 Mbps download and 150 Mbps upload speeds for ships at sea, and has already signed its first customer with the world's largest cruise ship set to implement the system.

The venture is being backed by a range of corporate heavyweights, including technology behemoth Google, global banking group HSBC and satellite operator SES.

The new service is aimed at cruise ships and super yachts specifically, with O3b Networks aiming to launch its initial constellation of eight satellites in early 2013, in two launches of four satellites each, using the Arianespace facility in French Guiana. The satellites will be designed, integrated and tested by Thales Alenia Space.



The O3b network will feature 8 medium Earth orbit satellites

The company's Maritime service is scheduled to be operational in mid-2013, when Royal Caribbean International's flagship Oasis of the Seas will become the first ship to use the VSAT network.

"Royal Caribbean is committed to delivering the most contemporary vacation to our guests, and that includes pushing ahead for onboard technological advances that offer the modern conveniences that guests enjoy on land," said Adam Goldstein, president and CEO, Royal Caribbean International.

"This milestone agreement with O3b Networks enables us to provide our guests with unprecedented internet service at sea aboard Oasis of the Seas and potentially in the future aboard other ships in our fleet."

The O3b network will use Medium Earth Orbit (MEO) satellites that will be situated approximately 8,000 km away from Earth, as opposed to standard Geosynchronous (GEO) satellites which operate approximately 36,000 km away from Earth.

As a result, O3b says that round-trip data transmission times are reduced to approximately 100 milliseconds and that latency is greatly reduced.

continued on page 2

IN THIS ISSUE

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continued from page 1

Coverage from the satellites will be available between +/- 45 degrees of latitude.

One unusual aspect of the system in comparison with traditional VSAT services is that O3b Networks' satellites are equipped with steerable spot beams that are adjustable in space to track a ship.

This means that all of the power available in a beam can be directed to a specific target, in this case the vessel, to deliver extremely high data rates. Real-time tracking of the ship continues throughout its voyage to maintain the link.

O3b says that the system supports the handover of a ship from one beam to another, but in general this is not needed as it is envisioned as a regional service. For example, a cruise ship in the Caribbean can transit the whole region and never have to change beams.

The Oasis of the Seas will be the first vessel to use the service

Technology

The satellite network will offer 10 beams per region, across 7 regions, totalling 70 remote beams per 8 satellite constellation. Up to 1.2 Gbps will be available per beam (600 Mbps x 2), meaning 84 Gbps will be available per 8 satellite constellation.

Beam coverage areas will be 700km in diameter, with transponder bandwidth of 216 MHz; 2 x 216 MHz per beam.

Vessels using the service will be installed with two 1.2m or 2.2m stabilised antennas, with the dual antennas used to ensure a seamless handover at end of pass and in case of blockage.

A third hot-standby spare antenna and spare modem will also be available for redundancy.

With regard to the manufacturers of this hardware, O3b says it is "working with partners both on the integration and technology side (and) will be making further announcements in these important areas in due course."

Coverage is available between +/– 45 degrees

Markets

Obviously, having a dedicated beam for a single ship will mean that the costs associated with this type of technology will exceed that of most current VSAT services.

Although O3b has not indicated a price range, it says it will target the cruise or super yacht market for the time being, where the "4,000-8,000 passengers and crew can easily support the somewhat increased cost of the service", though in future the company may look broaden this to cover other sectors.

Currently the service is expected to be available under 5 to 10 year contracts.

"For cruise ship guests and crew, heading for the high seas has meant leaving high-speed broadband services behind," said John Finney, chief commercial officer for O3b.

"It's an ocean travel tradition that O3bMaritime will turn into a thing of the past, with fast, fibre-like connections that deliver the same high-quality internet access and broadband experience at sea as guests are used to at home." **DS**

Imtech Marine has added two area sales managers to the Radio Holland USA team, with Mike Pizer and John Schwiering coming onboard. Mr Pizer returns to Radio Holland after a brief term with **Telemar**, while Mr Schwiering was most recently with **L3/GA International.**

Imtech has also appointed Gennaro Pipoli to the position of managing director of Imtech Marine Singapore. Mr Pipoli previously worked with **General Electric (GE)**, as well as other organisations in Italy, Russia and Singapore.

Otesat-Maritel has been appointed as an **Intellian** distributor, and will include Intellian's range of VSAT and TVRO antennas in its equipment portfolio. In addition, Otesat-Maritel will also be commissioned as an Intellian Service Centre for South-eastern Europe, the Middle East and Africa.

Imtech Marine and **ITC Global** have entered into a long-term strategic alliance for the provision of VSAT services. Under the alliance, Imtech Marine will supply, install and service shipboard systems, while ITC Global will design, supply and provide engineering support for the global satellite communications network.

KVH has named **Boatracs** as the first Value Added Service Provider (VASP) for its mini-VSAT Broadband service. This collaboration aims to serve the commercial workboat and fishing markets, packaging Boatracs' software applications with KVH VSAT under the name 'Boatracs Broadband Fleet Management Solution'.

KVH has also added a number of new partners in different markets, with **Tesacom** to offer its mini-VSAT Broadband service in South America, **KB Impuls Hellas S.A**. to act as its commercial marine distributor in Greece, and **MVS Group** to add KVH products to its portfolio for customers on a global basis.

Global Satellite USA has announced the appointment of Nini Montanez as business development manager. Prior to joining Global Satellite, Ms Montanez had the role of key account manager at **Vizada** and before that was manager, connectivity solutions, at **Radio Holland USA.**

OOO Iridium Communications, also known as **Iridium Russia,** has received authorisation from Russian authorities for commercial operations in the country. Iridium Russia expects to launch service in the second quarter of 2012, once all technical licensing requirements are complete.

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INFINITY

Anti-piracy systems launched

www.ase-corp.com
www.beamcommunications.com

A range of new anti-piracy systems from providers Applied Satellite Engineering (ASE) and Beam Communications, utilising the Iridium and Inmarsat satellite networks, have been launched.

ASE has introduced an enhanced version of its Iridium-enabled safe room 'citadel' solution for ships, with remote polling technology.

Using the Iridium network, remote polling enables ship owners on shore to remotely obtain ships' positions. In the event of pirate attacks or other emergencies where communications may be interrupted, this will allow shipping offices to take control of location reporting to direct naval rescue forces.

The remote polling feature can be configured to automatically capture location information at set time intervals, which ASE says can prove useful when ships are sailing outside of other satellite providers' coverage zones, or when the crew makes the decision to turn off the ship's Automatic Identification System (AIS) in pirate-infested waters.

In addition, the position of the ship can become 'lost' if the standard reporting systems are inoperable for periods of time as it switches regions, communications services or experiences a malfunction.

The remote polling features have been added to ASE's current safe room communications system, which uses the Iridium network to provide telephony communications and GPS position reporting.

The safe-room system combines the transceiver and antenna into one small enclosure, removing cable distance problems and allowing the enclosure to be mounted hidden from sight.

A corded phone, mounted in a lockable wall mounted cabinet, can be installed in the citadel with only one cable running to the outdoor unit. An additional phone can be installed on the bridge from the same system.

"International waters are becoming increasingly threatened by piracy, and we've seen an increase in demand for secure on-board communications solutions, such as ASE's Iridium-powered citadel solution," said Ken Coffey, managing director for ASE's EMEA operations.

"We enhanced our safe room solution with remote location polling to take the reporting burden off crews during stressful situations, such as emergencies or simply when activity is at its peak."

"Crews today are bogged down with so many reporting responsibilities. Enabling a shipping office to pull coordinates whenever they need it helps make operations more efficient, cuts costs, and most importantly, improves crew safety."

Beam Communications, meanwhile, has introduced two new anti-piracy products, utilising the Iridium and Inmarsat networks respectively.

Beam's new PotsDOCK Extreme Covert Piracy Solution utilises the Iridium Extreme satellite handset and a Beam Covert Antenna system to provide a dedicated unit for a safe room or citadel on board a vessel.

The system provides access to voice communications, tracking and an alert functionality. In the event of an attack, an alert can be raised and the vessel can be tracked.

Essential communications on board the vessel, such as the ability to alert authorities in the event of a piracy attack, can be maintained even if all power or communication equipment has been cut off or destroyed by pirates.

The Inmarsat-based system operates with the Inmarsat FleetPhone service, integrated into Beam's new Oceana 800 Covert Piracy Solution. Again, the phone is aimed to be placed within a citadel, and connected to a Beam-designed antenna intended for covert placement.

Communications, tracking and alert functionalities are also available from this system.

"Over the past 18 months we have seen an increasing demand for Beam's piracy solutions with the total number of previous similar systems deployed getting close to 500 units," said Michael Capocchi, managing director, Beam Communications.

"Safe and secure communication is extremely important for addressing the growing concerns of piracy attacks on both commercial and leisure vessels and Beam specialised anti-piracy communication solutions for the marine market are certainly meeting these needs."

The Oceana 800 system from Beam is one of a number of new anti-piracy products

Marlink moves C-band network to iDirect

www.marlink.com

Marlink reports that it is to introduce new C-band services on the iDirect platform, utilising DVB-S2 with Adaptive Coding and Modulation (ACM) technology on regional, multi-regional and global maritime C-band beams.

The company says that the new technology should help to improve network efficiency and open up new options for customers using its Sealink global C-band service.

The implementation of the new platform follows the recent upgrade of Marlink's VSAT network with the integration of iDirect's Evolution X5 Satellite Router and latest operating software release, facilitating new capabilities like Automatic Beam Switching.

"Bringing the iDirect platform to our C-band services is part of our overall strategy to offer increased choice in customised Sealink services, which are available alongside our standardised WaveCall portfolio," said Tore Morten Olsen, CEO, Marlink.

"The use of DVB-S2 with ACM is new to maritime VSAT on C-band and we believe that the seamless communication that this technology enables is very attractive for vessels with high requirements for bandwidth and quality of service on a global basis."

Marlink's C-band service will see improved network efficiency with the new technology

Thuraya introduces new voice satellite terminal

www.thuraya.com

Thuraya has unveiled its SF2500 maritime satellite voice terminal, developed jointly with partner Addvalue Communications.

SF2500 is the latest product under the recently created Thuraya MarineComms brand, and the company has confirmed the Indonesian Fisherman Association as an early adopter of the system.

"Our first customer for the SF2500, the Indonesian Fisherman Association, is exactly the kind of organisation we expect the product to appeal to, and we are very pleased to see them sign up even before the product's official launch," said Samer Halawi, Thuraya CEO.

"Fishing is one of the three most dangerous occupations in the world, but lack of affordability has placed reliable satellite communications outside the reach of many fishermen until now."

"Smaller form factors and more affordable technology mean it's easier to keep satellite equipment onboard even in very small vessels, making it safer for fishermen to do their jobs and stay in touch with shore."

The system will be offered with tailored pricing packages, as well as a Shareplan package whereby end-users can share individual airtime allocations across their terminal base and mix and match different Thuraya solutions, both voice and data.

FB hits 30,000 activations

www.inmarsat.com

Inmarsat has announced that its flagship FleetBroadband service has now reached 30,000 active terminals in service.

This milestone occurred with the installation of a FleetBroadband 500 on Olympic Future, a Greek-flagged crude oil tanker, by Inmarsat's distribution partner Otesat-Maritel.

Springfield Shipping, the vessel's management company, selected the satcom system as part of an integrated communications package developed by Otesat-Maritel.

"This is a significant achievement that yet again demonstrates the high regard and continued demand for FleetBroadband in the maritime industry," commented Frank Coles, president of Inmarsat Maritime.

"We have now seen more than 4,000 terminals added to our FleetBroadband installed base since the beginning of the year. Ship owners and managers are attracted to the global reach and reliability of FleetBroadband, and they value the high quality service that they receive from Inmarsat and our partners."

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communications via satellite

Reederei Werner Bockstiegel to install Iridium Pilot fleetwide

www.iridium.com
www.globecommsystems.com/maritime

German shipping company Reederei Werner Bockstiegel is to install the Iridium Pilot system across its shipping fleet, as part of an agreement with Globecomm Maritime.

The Iridium Pilot terminals will form part of an upgraded 'Telaurus se@COMM' communications package, the installation of which will be managed by Globecomm for the entire Reederei Werner Bockstiegel fleet of 65 ships.

The vessels will receive one dedicated voice line for the captain and two independent crew phone lines. Globecomm's Telaurus se@COMM Wi-Fi service will also provide access points to enable crew to use their own laptops and smartphones to stay connected onboard.

"It was vital for us to combine affordable equipment with competitive airtime to give flexibility to our vessels," said Albert Bokelmann, fleet manager at Reederei Werner Bockstiegel.

"The comprehensive voice and e-mail service enables us to significantly reduce our overall communications costs and provide crew calling services that positively impact welfare and morale while at sea."

"BBC Chartering in Leer, our charterer company, has reported that having se@COMM installed will improve their daily operations significantly by enabling their e-mails to be delivered to the vessel in real time."

Also part of the package will be the Se@COMM managed communication software application, which provides advance price notifications and push delivery of e-mail, as well as management of prepaid crew e-mail and SMS over the Wi-Fi access points via a crew member's own notebook or PDA device.

Globecomm Maritime, through its local sales agent Nordic-IT Marine Communications, will provide the Iridium Pilot terminals and service plans for the Bockstiegel ships.

Werner Bockstiegel's charterer company BBC Chartering has reported an improvement in operations since the system was installed

Intelsat to improve VSAT capacity with new satellite network

ww.intelsatepic.com

Intelsat has introduced its EpicNG satellite platform, a new series of satellites which will combine Intelsat's spectral rights in the C-, Ku- and Ka-bands.

The satellite network will be built upon an open architecture design and will utilise multiple frequency bands, wide beams, spot beams and frequency reuse technology.

The new technology will also be integrated with Intelsat's existing satellite fleet and global IntelsatONE terrestrial network, for backward compatibility.

"The Intelsat EpicNG platform represents the next generation of satellites, a progressive evolution of the Intelsat fleet," said Intelsat CEO Dave McGlade.

"As the global demand for bandwidth surges and penetration of communications reaches ever further into developing regions and mobile applications, we are strategically investing in this platform to support our customers with a highly reliable and efficient broadband infrastructure as they launch new services and enter new geographies."

With the launch of its new satellites Intelsat is promising higher performance, and therefore a lower cost per-bit.

For each satellite, four to five times more capacity than Intelsat's traditional satellites will be available, with an anticipated throughput of a massive 25-60 Gbps per satellite.

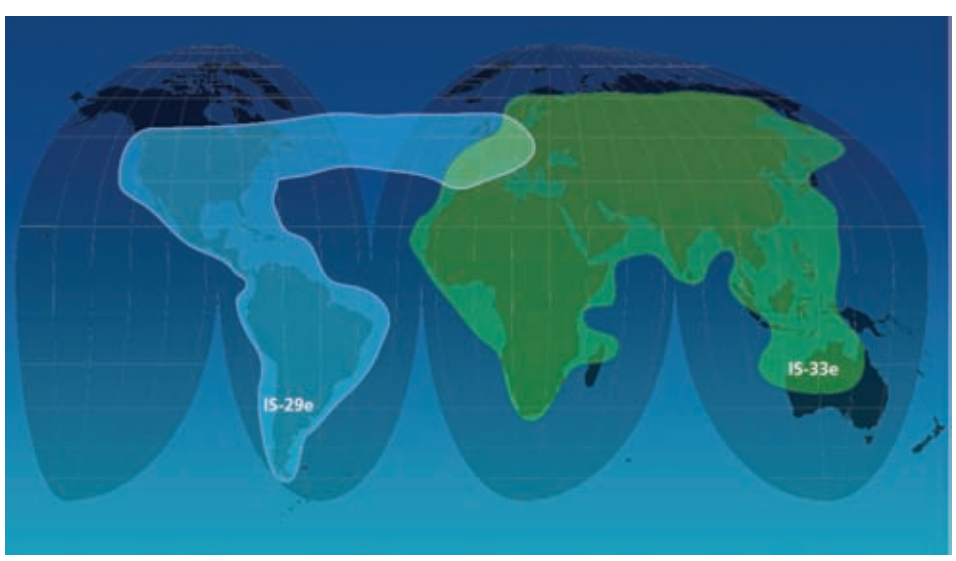
Intelsat says it will deploy EpicNG payloads in all frequency bands (C-, Ku- and Ka-), which will be optimised in the design of individual satellites, depending upon the application and region being supported.

The company also notes, in what could be interpreted as a slight on Inmarsat's upcoming Global Xpress services, that "unlike many new satellite operators, Intelsat is not constrained to Ka-band."

The company says that the wide beams and spot beams which will be employed will help to provide the high levels of throughput, while the multi-band frequencies can be aligned to region- and application-specific requirements.

These features should also enable smaller terminals to be used, and Intelsat says it will be better able to support growing applications in mobility, such as in maritime, and benefit increasingly data-centric services like cellular backhaul.

"The driving force behind the creation of our Intelsat EpicNG next generation platform comes from listening to our customers, and building a technical and strategic understanding of their business requirements and long-term objectives," said Intelsat EVP of sales, marketing & strategy Steve Spengler.



The EpicNG constellation will begin with the launch of Intelsat 29e and 33e

'EpicNG represents a progressive evolution of the Intelsat fleet' – Dave McGlade, Intelsat

"The open architecture design of Intelsat EpicNG will allow our telecommunications customers to customise and control their own service offerings, determining critical elements such as speed, hardware and network topology."

"This freedom of choice is not currently available in other high throughput satellite solutions, but it was essential to our design considerations because our customers will be able to differentiate their service offerings to better serve their respective market segments."

Initially, the Intelsat EpicNG platform will feature two next generation satellites, with Intelsat noting that it is currently evaluating proposals by several manufacturers.

These first two satellites, Intelsat 29e and Intelsat 33e, have projected in-services dates in 2015 and 2016.

Arbitration setback for Globalstar

www.globalstar.com

Globalstar's tribulations in its plans to launch its second generation satellite constellation continue, after commercial arbitration of a dispute with Thales Alenia Space France was decided in favour of the French satellite manufacturer. The companies have since reached a settlement in discussions after the decision.

The arbitrators in the dispute concerning Globalstar's 2009 satellite manufacturing contract with Thales ruled that Thales has no further obligation to manufacture or deliver satellites under Phase 3 of the contract.

Phase 3 provided for Globalstar's option to purchase up to 23 second-generation satellites in addition to the 25 satellites purchased in the first two phases under the contract.

The arbitrator's ruling also required Globalstar to pay Thales approximately EUR€53 million in termination charges by June 9, 2012.

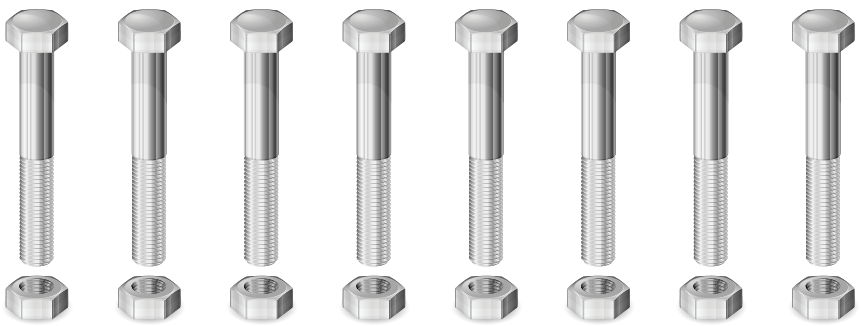
This payment was not made, which caused Thales to notify French group Coface, the backer to Globalstar's financing on the project, and start a process which would see construction cease on six satellites that are almost completed and set to be launched in October if an agreement could not be reached.

This eventuality was averted however, with the June 25 announcement that Globalstar had reached a settlement with Thales and had agreed to the terms of a commercial proposal for the purchase of the six additional spacecraft.

The mutual settlement ensures that Thales will complete its current work so that Globalstar's fourth launch of six satellites can be conducted this year. In addition, Globalstar and Thales have agreed to the terms of a purchase of six additional second-generation satellites, with construction expected to begin this year.

Globalstar and Thales say they expect to enter into a commercial contract based upon these terms in the near future.

Introducing the Sea Tel 4012. It lets you go from Ku to Ka in eight easy turns.



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

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

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Seaway Heavy Lifting agrees IT support deal

www.imtechmarine.com

Imtech Marine has signed an Advanced Support Agreement for a second crane vessel with Seaway Heavy Lifting (SHL), covering all of the systems onboard, including VSAT, computers, navigation and communication equipment.

The maritime transport and offshore construction services company has been a customer of Imtech Marine and Radio Holland for many years, and in December 2011 decided to place its crane vessel Oleg Strashnov under an Advanced Support Agreement.

The company has now decided to do the same for a second crane vessel, the Stanislav Yudin.

"After experiencing the benefits of Imtech Marine's Advanced Support Agreements for several months on the Oleg Strashnov, we didn't hesitate to place the Stanislav Yudin under the same arrangement," said Peter Dekkers, technical superintendent at SHL.

Remote maintenance of the onboard systems is a crucial aspect of this service, according to Mr Dekkers. He gives the example that Oleg Strashnov has recently been working in the Indian Ocean and it can take six weeks to get a permit for a service engineer to get onboard if there is a problem.

"When the vessel went offshore, the crew discovered there were certain issues with the telephone system but Imtech Marine was able to carry out a remote repair, ensuring that we had the telephone lines in all of the right positions on the ship and that all the connections were there for ingoing and outgoing calls," he said.

"But imagine if this had happened and we had to wait for an engineer to get a permit."

This remote maintenance is managed by Imtech at three dedicated Global Technical Assistance Centres in Rotterdam, Houston and Singapore.

"By monitoring the systems 24 hours a day we can see if there is trouble with the internet, for instance, and restore connections before the crew even notices," said Frank Berends, Radio Holland manager technical helpdesk.

"We are able to tackle the issues in real time, while the vessel is sailing."

One way that this kind of support can prevent problems is through temperature monitoring.

"When a working temperature is between 40-50 degrees Celsius, we can take action if we see it getting higher, thus preventing any problems before the equipment starts to fail," said Mr Berends.

"By monitoring, we can carry out preventive maintenance and avert mass failure of equipment or we can advise the crew to take action if we cannot repair it remotely. Then Imtech Marine can get the right spare parts and an engineer ready for the next port of call."

The main mast of the Oleg Strashnov, as seen from the helideck

Multi-country SIM from Gentay

www.gentay.co.uk

Gentay has launched its Low Cost Global Roaming SIM Card, targeted at roaming office based ship managers and vessel based users of cell phones facing high roaming charges.

The new product utilises multi-IMSI (International Mobile Subscriber Identity) technology, to offer connectivity worldwide but charged at local rates for both voice and data.

The SIM card also has the facility to incorporate multiple numbers, with the aim of also reducing the cost of incoming calls.

Gentay claims that the SIM card can offer reductions in roaming cell phone bills of between 60 and 80 per cent in comparison with roaming contracts offered by local cell phone service providers.

The company notes that, for example, typical roaming costs of data for non-domestic cell phone providers in the UK is £10 per MB but is £0.10 per MB with the new product. Equally, a voice call from the US to Australia can cost £2.40 per minute with a roaming cell phone in the US but £0.10 with the Low Cost Roaming SIM Card.

The SIM card uses the same regular cellular networks as all roaming mobile phones, and so offers the same quality of service. It does not require any unique local codes or PINs, or the manual selection of designated preferred service carriers in destination countries.

Upon activation of the cell phone in the destination country, the SIM card will search for the strongest signal carrier and automatically connect.

"The maritime industry is reliant on communications to manage the day to day operations of the company and, with the escalating cost combined with the need for increasing global coordination, communication budgets are stretched to breaking point," said Martin Nygate, director at Gentay.

"The Low Cost Global Roaming SIM Card is a 'no risk' way to reduce your communications budget without any changes to your day to day work pattern."

"With a 90 day cancellation policy without penalty, the Low Cost Global Roaming SIM Card allows you to experience the service and cost reduction without 12 or 24 month financial penalties."

Orbit introduces Ka-ready antenna

www.orbit-cs.com

ORBIT Communication Systems has introduced its new OrSat300 VSAT antenna, which it describes as "Ka ready."

The 1.15m maritime stabilised VSAT antenna is built to support a range of configurations with different RF packages (Ku-band or Ka-band or X-band) and BUC power levels.

"OrSat300 leverages breakthrough technology to meet both current and future needs," commented Ofer Greenberger, CEO of ORBIT Communication Systems.

"As a Ka ready system, OrSat300 allows our customers to significantly improve their return on investment and reduce overall cost of ownership for equipment spanning multiple technology generations."

This new antenna will join ORBIT's range of products which the company says are installed on over 3,500 marine platforms, including naval vessels, cargo ships and ocean liners.

NSSLGlobal extends VSAT network

www.nsslglobal.com

Satcom provider NSSLGlobal is continuing the development of its DVB2-RCS VSAT network with the addition of new coverage areas, increasing the footprint of the network in East Africa and South America.

The new coverage areas are provided by the SES-4 satellite.

Two new beams will be operated out of NSSLGlobal's Jacksonville Hub; the first providing coverage around South America, the second covering the territories of North Africa, including The Gulf of Aden, Somalia, Ethiopia, Uganda, Kenya and the south of Sudan.

"At NSSLGlobal we are committed to the ongoing development of our network," said Sally-Anne Ray, chief operating officer at NSSLGlobal.

"These new spot beams provide coverage in two of the world's fastest growing territories; the improved coverage in South America and East Africa will ensure that NSSLGlobal is fully equipped to meet the increasing coverage needs of our customers."

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FleetBroadband boosted by extra phone lines

Ships using broadband technology are set to have their voice calling capabilities enhanced at no extra charge, with Inmarsat and Globe Wireless announcing the addition of extra phone lines on the FleetBroadband service

Inmarsat and Globe Wireless will both offer users the ability to make multiple simultaneous phone calls from a single FleetBroadband antenna following the launch of new upgraded services using the satcom technology.

Inmarsat has announced that its FleetBroadband Multi-voice service, a new capability that will allow up to nine simultaneous telephone calls to be made through a single FleetBroadband terminal, is now available.

There are two levels of FleetBroadband Multi-voice available: Standard, which supports up to four simultaneous calls from a FleetBroadband 150, 250 or 500; and Enhanced, which supports up to nine simultaneous calls on an FB250 or FB500.

"FleetBroadband Multi-voice is a unique integrated solution that maintains Inmarsat's well-earned reputation for high-quality voice," said Frank Coles, president, Inmarsat Maritime.

"It offers a far superior service to internet calling solutions, and is more cost-effective than accessing multiple voice calls on a standard VSAT."

"This new capability increases the value of FleetBroadband, and ensures that the service is future-proofed for a vessel's growing communications needs."

Thrane & Thrane has already announced that the Multi-voice service will be available across its entire SAILOR FleetBroadband portfolio as standard, and is accessible on existing terminals with a software update.

SAILOR 500 FleetBroadband will offer the full nine simultaneous voice lines available through Multi-voice, while a SAILOR 250 FleetBroadband will offer up to six concurrent calls and a SAILOR 150 FleetBroadband up to four concurrent calls.

Once existing SAILOR users have the software update in place, all that is required is to configure their FleetBroadband terminal via the web-interface and attach the required number of handsets, or if desired connect an existing PBX.

Thrane is offering its own model of handset for use with the service, though third party equipment can also be used.

With the Thrane handsets a dedicated BGAN menu is available via the integrated screen, where value-added supplementary voice services, such as a phone book and call forwarding, can be operated from the handset itself.

Thrane SAILOR FleetBroadband terminals can offer Multi-voice with a free software upgrade

"With multiple handsets integrated to a single terminal, facility for dedicated voice lines can be made anywhere on board, from the engine room or canteen on a merchant vessel and the public areas on a passenger vessel, to the saloon and staterooms aboard a luxury vessel," said Casper Jensen, VP maritime business unit, Thrane & Thrane.

"Additionally, we have ensured that the SAILOR 3771 Alarm Panel FleetBroadband works alongside the Multi-voice service, ensuring that distress alarms can be sent, regardless of how many voice lines are being used."

"Multi-voice will enable operators to offer even better crew and passenger welfare services, by increasing the number of telephone lines available on board. The design of SAILOR FleetBroadband allows Multi-voice functionality to be introduced without the need for engineers or hardware changes to the BDU, making it extremely straightforward to add extra voice lines."

Vocality

For FleetBroadband terminals other than the SAILOR range, Vocality has developed new PBX hardware that can be used alongside the terminal to access the additional telephone lines.

The extra phone lines will be charged by Inmarsat at the same per-minute tariff for both pre-paid and post-paid calls. The lines will also all support the free-of-charge '505' FleetBroadband emergency calling capability that connects a vessel immediately to a Maritime Rescue Centre.

Ofer Ship Holding has become the first company confirmed to have implemented the new service since the announcement of the availability of Multi-voice.

The deployment on the 4,250 TEU container vessel Zim Constanza came a matter of days after the multi-voice capability became commercially available on FleetBroadband, and will be available for use by the ship's 27 crew.

Inmarsat distribution partner Station 711 installed the system, which is using Vocality PBX equipment to work alongside the ship's installed JRC-500.

"It was easy to integrate the FleetBroadband Multi-voice capability into the vessel's infrastructure," said Dotan Sofer of Ofer Ship Holding.

"The high quality of the multiple voice lines is the same as we had previously on the existing FleetBroadband terminal. The crew really appreciates the added flexibility and privacy that this service provides."

Globe Wireless launches R6

Globe Wireless meanwhile has also announced the latest software release, R6, for its Globe iFusion satellite communications system, which will add a Fixed-Multiple Voice option for FleetBroadband.

This extended calling option has been developed separately to Inmarsat's own multi-voice enhancement to FleetBroadband, and will allow connection of the additional voice lines via the existing iFusion hardware.

R6 will be launched in July 2012 as a free upgrade to all existing users, and will also feature VSAT auto-recovery tools and a pre-paid/sponsored e-mail solution as part of the upgrade.

Globe's iFusion service will offer it's own multi-voice technology, separate from that developed by Inmarsat

The additional voice lines will build on the existing multiple GlobeMobile voice lines on FleetBroadband equipped vessels, currently numbering approximately 1,000 ships, running calls over VoIP.

This service utilises Globe's Digital Quality Voice (DQV) technology on both GSM and VoIP phones over a standard FleetBroadband terminal.

With this release, up to five inbound and outbound calls are available over DQV, while the standard circuit switched voice line remains free at all time for the captain's use or for emergencies.

Up to eight VoIP handsets can be used onboard the vessel as well as a standard telephone handset plugged directly into the i250.

Each handset is configured from shore via the browser-based Globe iPortal, allowing a simple name to be assigned, as well as an international inbound number if requested and PIN codes to restrict outbound calls.

Split billing for sub-accounts is also supported, with PINs able to be created as needed, either fleet wide or per ship. Prepay PINs may be used that are independent or tied to a GlobeMobile GSM account.

For example, in the case of a chartered vessel the charterer could have a unique PIN allowing all calls to be billed under a sub-account in the customer's invoice each month.

Another feature of the multiple voice lines capability is the ability to assign international phone numbers from approximately 60 countries to each phone line onboard, reducing the cost to call the ship from shore as no 870 number is required.

Customers who have offices in the designated countries can have a local in-country number that will be routed to the vessel and charged at the same rate as if they were making the call from ship to shore.

Remote access

R6 also contains additional features for users with VSAT terminals connected, developed to keep VSAT terminals online and minimise backup L-band usage.

Automated scripts monitor the VSAT system and will attempt an auto-recover if required. If auto-recovery does not work a Globe Wireless VSAT technician can still access the iFusion via L-band, for remote access to all the core components and systems onboard with the same status and control data as used on shore.

"This new feature assures the customer that over 95 per cent of all outages are recovered remotely. We have found that for every one vessel that does require a visit another 20-25 vessels are brought back online remotely, saving the customer thousands of dollars per month," said Brad Rogers, director VSAT engineering.

"With our live monitoring, typically within one hour of any outage, our engineers are already online checking the system and coverage. If there is an issue, most vessels are recovered within 15 minutes after remotely accessing the vessel."

The pre-paid and sponsored e-mail addition to R6 will allow users to set up, via the Globe iPortal, 'sponsored' monthly quotas of free e-mail for crews, with message size limits to control how much traffic the crew can generate. These settings can be configured fleet wide or can be specific to each crew member.

The pre-paid account can be tied to the crew member's GlobeMobile GSM account allowing them to share the pre-paid balance between GSM calls, pre-paid Fixed-Multiple Voice, e-mail and SMS.

Crew members will be able to pick up any of the Fixed-Multiple Voice handsets, enter a PIN and password and pay the same rate as the GlobeMobile service.

If a crew member has a GlobeMobile number and uses a Fixed-Multiple Voice line, the end user on shore will see the GlobeMobile number on their phone as the caller ID rather than the vessel's phone number. If there is no GlobeMobile number associated with the crew member then no number is displayed.

Globe says that these features will be available on VSAT and FB terminals.

"This is a very exciting update to our software," commented David Kagan, president Globe Wireless.

"We are providing unique voice solutions, going far beyond what our competition offers, as well as great VSAT enhancements that have never been seen before in the market. This is just the start of several new updates and features we have planned for Globe iFusion and our customers in the coming months." DS

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Small Vessel Plans add to Inmarsat pricing debate

Having introduced a new pricing structure on May 1 2012, Inmarsat is to add to its portfolio with a new range of Small Vessel Plans. Will this new addition help to deflect some of the criticism that has resulted from its pricing strategy? *Digital Ship* spoke to Frank Coles, Inmarsat Maritime, about the new plans and the issue of satcom costs

Inmarsat has introduced a new addition to the FleetBroadband family, revealing its plans to introduce a new low cost terminal and package of pricing plans that will target sectors of the market using small amounts of data.

The service will run over the Inmarsat-4 satellite network, used by all of the other FleetBroadband products. These Small Vessel Plans will sit below the current FleetBroadband minimum airtime package of 10MB, but with a smaller minimum monthly spend required to keep the system linked to the network.

The flip side to this increased level of flexibility will be a higher per MB price than the standard plan, and a throttled quality of service that will offer speeds of just 32 kbps – significantly lower than the 150 kbps available on the smallest existing FleetBroadband terminal.

As Frank Coles, president of Inmarsat Maritime, explains, the aim of the product is to produce a terminal that is smaller and cheaper than the FleetBroadband 150 and which will specifically address the leisure boat and fishing market.

"The existing fishing and leisure plans in the market were not as successful as we'd hoped, because there was a high penalty if you went outside of the plan. The overage charge was considered high. So what we've done is that we've redressed it, and come up with two new small boat plans," he told us.

"One is a global post-paid account, with no penalty and the same rate whether you're in plan or out of plan. There's a minimum commitment and then there's the same rate if you go out of that. The minimum is 5MB."

"There is also a prepaid account, which is available globally except in the United States, simply because at this point of time we are not able to sell prepaid accounts in the United States. It's a legal issue. This will be cheaper than the post-paid account. If you pay a minimum fee every month up front (like a subscription fee, to keep the account active) you will have a service that is cheaper."

'There was a lot of misinformation and a lot of noise and a lot of misunderstanding about the price changes' – Frank Coles, Inmarsat Maritime

Both of these services will be provided at the 32 kbps bandwidth speed, with voice calling charged at the same rate as on other FleetBroadband plans.

Mr Coles admits that the new offering will be positioned to compete directly with Iridium services. Though Iridium offers its Pilot system (previously OpenPort) at 134 kbps, Mr Coles claims that the experience using his new service will be similar.

"In the fishing and leisure market I'm really targeting the Iridium handset, which is a $1,500 product. Yes, it's cheaper, but it's only 2.4 kbps in speed," he said.

"(Our terminal will be) as fast as the normal speed you will get on an Iridium OpenPort, though a FleetBroadband 150 is much smaller than an Iridium OpenPort, especially the antenna. It also means that small vessels, instead of using an Iridium handset, will be able to use a FleetBroadband 150."

"The 32 kbps is more or less guaranteed, and we may provide different levels of service. It could well be that we'll have a 64 kbps service as well, using the same antenna, but we just haven't got to that point yet. At 32 kbps, we believe that we will actually be able to provide that level of service, where Iridium claims to provide it but doesn't necessarily provide it."

While the new product will target the fishing and leisure markets, it could also be an option for commercial vessel operators looking for a low cost option for their ships that will offer basic communications for a low monthly spend.

"The prepaid account will be the cheapest service on the I-4 network. It should retail in the market at a rate of more than $100, but less than $150, per month for 5MB. It might even be less than $100. I know what the wholesale rate is, but I don't know what retail will charge," said Mr Coles.

"If they want to go into that area they will have to pay a much higher rate than they pay in the current plans. What we're doing is allowing people who want to spend less to spend less, as a total number. But they will pay a higher per-MB rate for that service. This will be higher per MB, but much less commitment."

Price wars

The release of these Small Vessel Plans, with their reduced monthly spend requirements, comes at a time when Inmarsat has had to respond to a barrage of criticism concerning the recent restructuring of its pricing for both FleetBroadband and its Existing & Evolved (E&E) services, such as Inmarsat-B and Fleet.

These pricing changes were seized upon by competitors and others with their own vested interests as a way of attacking Inmarsat with accusations of 'arrogance' and 'contempt for its customers', as might be expected from those looking to profit from shifts in the market.

However, what will have really stung the satellite operator will have been the public protestations of its own shipping company customers to the changes.

In particular, an Open Letter published in the May 2012 issue of *Digital Ship* from Greek group AMMITEC (the Association of Maritime Managers in Information Technology and Communications) described Inmarsat's price changes as "morally questionable" and showing a "blatant disregard" for the customer base.

Although Mr Coles did offer a response to these claims at that time, which was published alongside the AMMITEC letter, discontent regarding the pricing changes has lingered. *Digital Ship* asked Mr Coles to expand on the thinking behind the move, and give us his reaction to the negativity that has since been generated.

First up for discussion was the increase in price on the E&E services operating on the Inmarsat-3 satellite network.

"I think it's fair to say that there was a lot of misinformation and a lot of noise and a lot of misunderstanding at what was actually going on. Inmarsat increased the price (on E&E services) in two ways – first of all, we took away the volume discount scheme between ourselves and our key partners," said Mr Coles.

"They knew that was coming, over the last several years they knew it was something that was a possibility in the new agreements. That shouldn't have been a surprise to them. The way that was handled by the partners was different for each partner, and we don't have any control between what we do wholesale and what they do retail."

"The reason we did it was partly that, as more and more ships transition off the I-3 satellites onto the I-4 satellites, we still have to continue to maintain the land Earth stations, the networks, the satellites. When you have less traffic there, you have less to go around."

It was put to Mr Coles that the market would expect that declining user numbers would have been part of any projected lifecycle of the satellite network, and that the

business plan should have anticipated this reduction in users as part of the overall financial projections for the constellation.

"What we do as a commercial organisation is no different to what anyone else does – as a service goes away you increase it to take care of the running costs," he replied.

"We are naturally seeing more and more customers going over to FleetBroadband, the transition has been much quicker than we expected. And this points to something else, which is the much quicker take-up of cheaper data communications that exists today in the maritime industry."

Mr Coles notes that the actual evolution of customers from E&E products like Inmarsat-B and Fleet on to FleetBroadband happened faster than the company had expected and had built into its projections, and that this was one of the reasons for the change in pricing on the E&E systems.

"It's no different than any other IT industry and communications industry, and the way we all react. When computers first came out people were slow to buy them. Now, the moment there's a new version of an iPad people jump to it. On a communications service, if you want someone to buy the new service you make the old service more expensive," he said.

"When Inmarsat-A came out it was out for the longest time, we had to drag people kicking and screaming on to Inmarsat-B. The move from –B to F77 was faster, and the move from –B and F77 to FleetBroadband has been much faster. 9,000 terminals a year (on FleetBroadband) – that's very, very fast."

"The economics of running those (E&E) services are much more labour intensive – land Earth stations, for example, Vizada and others have a large number of land Earth stations. We've made the new I-4 service much more efficient from a network perspective, because you have fewer land Earth stations around the world. So (the E&E network) is inefficient compared to FleetBroadband."

FleetBroadband price changes

The argument of a declining number of users doesn't apply to changes in the pricing of Inmarsat's flagship FleetBroadband product, which recently passed 30,000 terminal activations but was also subject to price restructuring as of May 1st.

For FleetBroadband, Inmarsat has tried to alter the landscape by reducing the cost of its larger plans to make it cheaper for ships committing to many hundreds of megabytes and above, while increasing the cost for lower level users on pay-as-you-go (PAYG) plans.

These changes were communicated to the Inmarsat distribution channel at the turn of the year, though it appears that the lines of communication between the satellite provider and the end user did not function quite as well as Mr Coles might have liked.

"They (the distribution partners) found out about it in January. We're required to give them 90 days notice, and they were told 30 January, I believe," he said.

"It is fair to say that, in the previous month beforehand, there was discussion amongst partners. We don't make any changes without a discussion with the partners – though we don't always accept the information they provide."

"We fulfilled our obligations. The fact that the partners sat on the information, and the fact that things were handled the way they were, made the nonsense and the noise."

This movement in pricing was partly motivated by a wish to remove FleetBroadband as an option for competing VSAT providers wishing to offer an L-band back-up at a low cost, but also by a wish to increase the use of bulk plans among the customer base.

"We increased the price of the PAYG service, we increased the minimum commitment and the per megabyte rate. Why? Because we probably underpriced it in the first place," said Mr Coles.

"Secondly, it is much more inefficient for us to run the network and to run a service on a PAYG basis, than it is to sell a bulk plan. So we increased the price on the PAYG service to our DPs (distribution partners)."

"What we then did was make it much more attractive for people to commit to volume plans. We didn't change the price of the entry plan. We did take voice out, but that's the way it is treated in the VSAT market and in the general communications market – voice is kept separate from data. We want there to be clarity about how much data you are using and how much voice you are using."

The removal of voice calling from these packages has been one of the issues that has caused the most anger among ship operators. Previously, companies could buy an allowance or bundle that would allow them to deduct both voice and data from their total as it was used.

Under the new FleetBroadband pricing system however, each voice call is charged separately, in addition to the data plan – for example, a company that has signed for a 200MB monthly plan but only uses 150MB cannot convert its extra 50MB into voice calls, as it may have previously been able to.

Some customers have complained that this will add a new voice calling bill to their monthly data plan spend, and as such push up their costs significantly. Mr Coles however believes that the difference should not be extreme in most cases.

"It doesn't make it an awful lot more expensive. (Using voice as part of a money bundle) wasn't always passed on by the service provider, and the service provider was getting the benefit and the end user was not. We're trying to give clarity and visibility to the end user," he said.

"We increased the price of the PAYG plan, but all other plans either stayed the

The removal of voice calling from package plans has caused disappointment among some Inmarsat customers

same or reduced in price, to our DPs. All the bulk plans."

According to *Digital Ship's* understanding of the profile of commercial shipping customers using satcoms, based on information from various providers of Inmarsat services, the majority of vessels operate on a budget of less than $500 per month when it comes to communications.

This group would be those most likely to be negatively affected by the pricing changes, and includes shipping companies that have claimed that their budgets will come under enormous pressure as a result.

Mr Coles disputes that the majority of users falls within this bracket however, and notes that, in general, the cost of satellite communications has fallen dramatically in the last couple of decades and is still great value, even with any increase in costs.

"Originally the Standard plan (PAYG) was a 6MB service – we made it a 10MB service. We asked for a 10MB commitment and increased the per MB rate. In truth, if someone stayed on that plan and sent an amount of data in the 50MB range, it might be about $90 per month more in cost," he said.

"Let's take a step back here – we have reduced the cost of satellite communications systematically for the last 30 years. You can now send data on a FleetBroadband package, depending on the package you buy, for well under $1 per MB."

"But our revenue shows that you are low on the $500. Our average ARPU (average revenue per user) is higher than $500, and we're the wholesaler. The number of deep sea ships spending less than $500 per month is very little."

Averages, of course, do not quite tell the full story in this regard – if a group of five ships has four using 10MB and another using 1GB, the average will offer a different picture to the reality. However, as a wholesaler Mr Coles notes he is not in a position to accurately determine traffic on a per ship basis, and so cannot confidently confirm or refute any such figure.

Customer communication

While Mr Coles accepts that there has been criticism from particular sectors of the customer base and that elements of the price restructuring have led to a backlash from some quarters, he insists that Inmarsat customers have not been unfairly treated.

"We are talking to our customers, and we won't always do things that they might like. But I dispute that there's been any kind of gouging, and I certainly dispute that we're not trying to service the customer," he said.

"We're seeing a trend towards more and more data, and we have made all of our data plans cheaper and cheaper. It is still cheaper, even at the Entry level, to use Inmarsat satellite service globally than it is to roam on a cell phone."

"All of the people who are complaining are using cell phones and probably running up bills at a per MB rate that is far in excess of what Inmarsat charges. I'm not trying to be arrogant about it, but let's take a step back and take a look at what's really going on here."

Mr Coles does concede, however, that the whole process could have been handled differently, and looking back accepts that mistakes may have been made, particularly with regard to the timing of the restructuring.

"You never get it right for everybody. Did we make a mistake? Perhaps one mistake, which we could have done right, is that we could have announced this earlier," he said.

"With the benefit of hindsight, I would probably do it at the end of the year, and we should have done it earlier to time it to the budgets (of the customers). Perhaps we would have adjusted the Small Vessel Plan as well at the same time."

"I can understand that there was some disappointment, but I'm not sure what else to say. Business is an iterative process, and we're moving in that direction. I think I can say that it's hardly likely that there'll be any increase in prices in the near future."

While these criticisms are seen as justified, it is talk of 'arrogance' and 'monopoly' that Mr Coles feels is an inaccurate portrayal of the situation.

"I accept the criticism that we probably could have timed it better and given more notice. I do not accept the criticism that we have sought to behave in a monopolist fashion, because I don't believe that we're a monopoly. I don't accept the position that we have attempted to gouge customers, because we have a complete set of pricing plans and a complete choice for the customers to adjust," he said.

"Is it true that the costs of communications may have gone up for some users? For those who use very little, that is true. For those who are more committed to the use of Inmarsat communications, their costs may well have gone down."

"I can't say it plainer than that, but I'm happy to go and meet any shipping industry company. I've stood and faced my accusers, such as at (*Digital Ship*) conferences, which you facilitated."

Mr Coles believes that, despite the protestations of some shipping companies, for the majority of Inmarsat customers the effect of the price changes is neutral.

"It depends how the partner has treated the communications, but most customers should see no more change than $3 per day, $90 per month. A maximum increase should be about $3 per day (wholesale price), and that's if they did not move off their plan," he said.

"It depends on how many megabytes they're sending. If all they send is 10MB each month, then I think their price has gone up about $1 per day. If a guy sends 25MB per day, at our level he's gone up maybe a little over $2 per day. There shouldn't be anyone going beyond an extra $3 per day, at the wholesale level."

"Going beyond 70-80MB per day you should be reaching a situation where you can get a 200MB package for the same price. I did all the pricing on that basis, to give people who are around that average level (of 70MB) an extra 130MB for the same price. Those were the exact specifics of how I priced it. But 70MB of data should be buying you the Entry level plan anyway – and then you've got space to run your business."

To extend this point further, Mr Coles believes that one result of the price restructuring will be that vessel operators will take a closer look at their communications agreements and may begin to move to service plans that are better suited to their specific requirements.

In the end, he believes that this will benefit the shipping company and the distribution channel, as well as Inmarsat itself.

"Part of the adjustments we've made are also to protect our distribution channel, that was in danger of driving itself out of business," said Mr Coles.

"We need them to survive, to distribute our products. We've given them an opportunity to realign themselves so they can continue to make money, and continue to provide our services on a global basis."

"We've seen a lot of realignment in service plans, which probably means that customers have probably gone into pricing plans that they should have been in in the first place. Things are slow to move, and a lot of people were on the wrong plan in the first place. Which probably means that actually some people may not have seen their costs go up at all."

With the discussion at an end, the major conclusion that can be taken from this examination of Inmarsat's pricing changes is that Mr Coles genuinely believes that the approximately $90 per ship per month that he is asking for to have FleetBroadband onboard represents value to the customer.

However, the issue is one of perception – it's hard to argue that $3 per day is a lot of money when it would barely buy a tall latte at Starbucks, but if you are a $500 per month customer then $3 per day is an increase of about 18 per cent, which could be more difficult to swallow.

Of course, the prices vary and the numbers will need to be adjusted in every case. But at any rate, it is whether the customer shares the 'latte a day' view or sees it as a large percentage price rise that may hold the key to the success, or otherwise, of this new pricing strategy.

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High-Throughput Satellites to cut maritime data costs

The upcoming launch of a number of new high-throughput VSAT satellites in both the Ku- and Ka-bands by various operators will significantly increase the capacity available, and should help to drive down data costs, *writes Terry Neumann, iDirect*

As communications requirements have evolved over the last decade, demand for satellite services in the commercial maritime sector has grown significantly.

To meet this demand, and deliver reliable broadband connectivity for everything from crew welfare to improving operational productivity, ship operators have increasingly turned to VSAT solutions.

Now, with a host of new high-throughput satellites on the horizon, VSAT is becoming an even more essential component of maritime communications networks, making satellite connectivity more affordable, powerful, and dynamic than ever before.

When it comes to high-throughput satellites, the keyword is capacity.

For as long as satellite technology has existed, one of the main barriers to adopting satellite has been its cost. With limited satellite capacity, bandwidth has traditionally been a somewhat scarce commodity, forcing satellite operators to charge higher prices.

With the launch of high-throughput satellites, however, new Ka-band and Ku-band capacity is coming, which means satellite operators will have more flexibility in how they price bandwidth.

This change will have significant implications for the economics of the satellite industry. Luckily, in the case of maritime end users, all of them will be good and here's why.

Because bandwidth will become more abundant, capacity will become less expensive for satellite operators. As such, operators have the option of selling capacity to a greater number of users for a lower cost. However, that is only half of the equation.

As their name suggests, high-throughput satellites will deliver higher throughput rates for end users. This is essential as maritime customers seek to implement higher bandwidth applications, such as enterprise resource planning, remote IT solutions, video conferencing, and more.

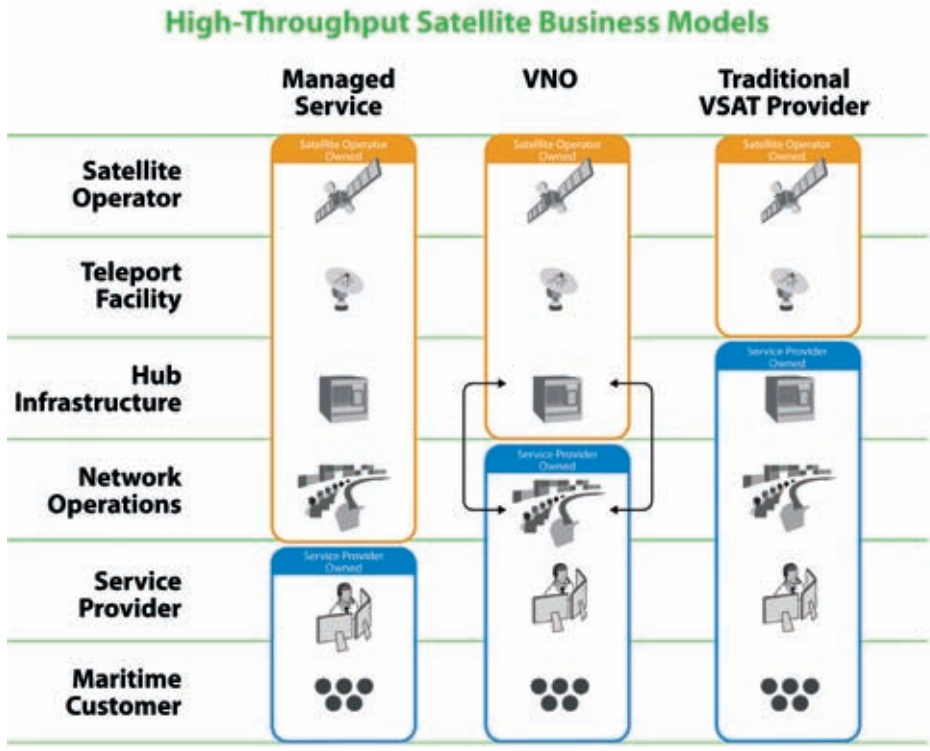
Given that high-throughput satellites are poised to offer more capacity, and thus higher throughput, this presents a few interesting options for satellite operators.

They can either provide users with better throughput at the same price that they are currently paying, or they can provide users with bandwidth at the same throughput level, but for a significantly lower cost per MB.

However a satellite operator chooses to price its services, maritime end users end up winning. They either increase the strength of their existing investment in VSAT or they expand VSAT to more of their fleet at a lower cost.

When you factor in the lower capital expenditures associated with high-throughput satellites, the picture becomes even prettier for maritime users.

High-throughput satellite terminals will be smaller in size, easier to install and quicker to deploy onboard a vessel. As such, the overall CapEx required will be less than traditional VSAT services have required in the past.



Service on high-throughput satellites could be offered via a number of different business models

Maritime customers will also see more integrated terminals where the antenna manufacturers have built all the infrastructure and functionality into a more contained unit.

This means current VSAT users can upgrade their existing networks to accommodate high-throughput satellites quickly and efficiently. It also means that ships not using VSAT can deploy the technology for the first time at a lower cost, opening up a greater segment of the maritime market that includes small to mid-sized shipping companies, fishing vessels, yachts, and other specialised vessels.

High-throughput value chain

In addition to impacting the cost of satellite capacity, high-throughput satellites will also have a strong impact on the way that satellite is delivered to end users.

By their nature, high-throughout satellites are fundamentally different in terms of design and ground segment requirements than traditional satellites. Traditional satellites use large regional beams that cover an entire footprint with fixed capacity.

Any service provider can own a hub and teleport and offer services to customers as long as they're in the satellite footprint.

By contrast, high-throughput satellites employ multiple spot beams to increase capacity through a process called frequency reuse. These spot beams will bring focused capacity to a specific area, ensuring that required capacity is available throughout key commercial shipping and trade routes.

Due to the number of beams being used, a service provider would not have a hub or earth station within a single beam.

For a satellite service provider this means there will be a number of options for how they can get and offer service to the maritime market. Here are just a couple of examples of how the services might work.

1. **Managed Service:** A satellite operator may decide to offer a managed service. In this model the satellite operator would control the satellite, teleport, hub infrastructure and all network operations and the service provider would manage the service provisioning and relationship with the end customer.
2. **Virtual Network Operator:** In this model a satellite operator will own the satellite, teleport and control the hub infrastructure, but will allow a service provider to lease hub space and establish their own HTS service with full control of the network and service being offered to their customer.
3. **Traditional VSAT Operator:** This model is what has been available for many years and is common in Ku- and C-band services. A service provider can put up their own hub infrastructure or co-locate a hub in the satellite operator's teleport and purchase bandwidth from the satellite operator to manage and control as they desire.

If some of this seems familiar, it should. While high-throughput satellites change the value chain for satellite operators and service providers, not much is different for a maritime customer who is getting service from a provider.

Here again, a maritime customer sees the ultimate benefit of high-throughput satellites through increased capacity, lower cost hardware and less expensive service options.

They will still be working with the major providers of satellite communication services that they work with today, these operators will just have more options in terms of where they get their bandwidth and what types of services they offer to their customers.

Several leading satellite operators have already announced high-throughput satellite networks.

In 2013, Inmarsat plans to launch Global Xpress, its global Ka-band broadband network. Meanwhile, Intelsat plans to offer the EpicNG platform, which combines C-, Ku- and Ka-band capacity for a global network.

There are also many opportunities for regional high-throughput satellite coverage from operators like Telenor, Avanti and O3b that will open up interesting service options for specific segments.

With these and other high-throughput offerings, operators are giving service providers an easy opportunity to deliver their own high-throughput services.

With more capacity available to serve the market, maritime customers will have more options for choosing a VSAT-based broadband solution that meets their needs. And with more availability options, maritime companies can expect to see lower prices, more value-added features, and other benefits.

Making the switch

Given that there will be more choice for end users, what are some of the things that maritime customers should do to plan for this important change in the industry?

This is by no means an exhaustive list, but here are some of the preliminary steps

that maritime customers should take to prepare for high-throughput satellites.

1. **Discuss high-throughput satellites with your current service provider –** If a maritime company currently uses VSAT technology, they should look at when their contract expires and begin planning for their next contract now. Many providers will be able to offer a range of VSAT services and high-throughput satellites may just fit into part of a broader connectivity solution. Maritime customers should ask their service provider partner about their plans for high-throughput satellites and what their strategy is for adding this technology to their portfolio. Ask about pricing, new features, and what it would take to upgrade.
2. **Research the technology** – Learn more about what constitutes a high - throughput satellite network to see whether you're currently equipped for high-throughput satellite capacity. Again, you will want to talk with your satellite service provider to learn more about what it might take to capitalise on the expanded capacity.
3. **Understand your application requirements** – Maritime companies may have a long wish list when it comes to communications. Make sure that there is an understanding throughout your organisations about the increased capabilities that satellite can now offer. Find out the application requirements from the different parts of your organisation including HR, Operations, Procurement and IT. They may want high-speed internet access, streaming video, efficient ship-to-shore communications, business collaboration tools, and more. High-throughput satellites promise to make many of these applications a reality.

As you discuss high-throughput satellites with your service provider, explain what applications you want and see whether they can provide them.

Ultimately, high-throughput satellites will expand the adoption of maritime broadband connectivity for the betterment of the entire industry.

They will offer a more cost efficient way to deliver high-quality communications, global coverage, and seamless mobility, giving maritime companies the flexibility to choose the services they need to expand and improve their business and the lives of the crew onboard. DS

About the author

***Terry Neumann** is director of corporate marketing at iDirect. iDirect provides a VSAT platform used by maritime satellite service providers to deliver solutions to the maritime market.*

Vizada extends VSAT service

www.vizada.com

Vizada has announced that it is to extend the coverage area of its Pharostar Ku-band VSAT service, and is introducing a range of new packages to appeal to a wider section of the market.

Pharostar's coverage area is planned to be extended twice this year, to offer services for vessels operating in the South Atlantic and Indian oceans. The service can be combined with a mobile satellite service (MSS) back-up for full global coverage.

The new range of service plans will be based on 'data allowances', differing from a more common 'throughput-based' VSAT offering. Packages will start from 5GB for an airtime cost of $1,000, with top-up options available.

New 60cm and 80cm Ku-band antennas have been also been added to the portfolio, to supplement the existing 1m version. Data rates of up to 1.5Mbps will be offered.

"These additions are the latest components in our strategy to offer the largest choice to the maritime community and to develop the most comprehensive maritime broadband solutions portfolio in the market," said Ghani Behloul, Vizada chief marketing officer.

"They will allow us to welcome more vessels onto our network and contribute to improve the service for the existing ones."

IsatData Pro integrated into Fuel Monitoring system

www.skywave.com
www.kemilink.com

Kemilinks International has become the first company to deploy the Inmarsat IsatData Pro system from SkyWave Mobile Communications, integrating the service with its Fuel Monitoring System.

Kemilinks' Fuel Monitoring System is built to interface with any flow meter model and other sensors such as engine control panel, anemometer and GPS, to capture data regarding engine RPM, engine load, propeller pitch, propeller load and rudder angle.

Data can be sent back to shore over the IsatData Pro satellite system, allowing graphical trending reports to be analysed at the vessel's corporate headquarters, to determine the best ways to maximise efficiency.

IsatData Pro can deliver up to 10,000 bytes of information to the device and up to 6,400 bytes from the device.

"The efficiency this design offers to onshore management is unrivalled and it comes at a very cost effective price," said S. H. Tay, director of marketing and projects for Kemilinks International.

"Benefits include always knowing the location and operational performance of the vessel and having the capability to immediately make effective directives to correct operational inefficiencies."

4G networks for US Navy

www.batswireless.com
www.cambiumnetworks.com

Cambium Networks and Broadband Antenna Tracking Systems (BATS Wireless) are to provide a wireless point-to-point (PTP) radio and antenna tracking solution which will be incorporated as part of a 4G mobile communications networking project for the US Navy.

The project, being led by Oceus Networks and using its Xiphos family of mobile 4G LTE network systems, will see the system to provide onboard and ship-to-ship broadband data and communications piloted by the Navy as the first US Department of Defense operational deployment of Fourth Generation Long-Term Evolution (4G LTE).

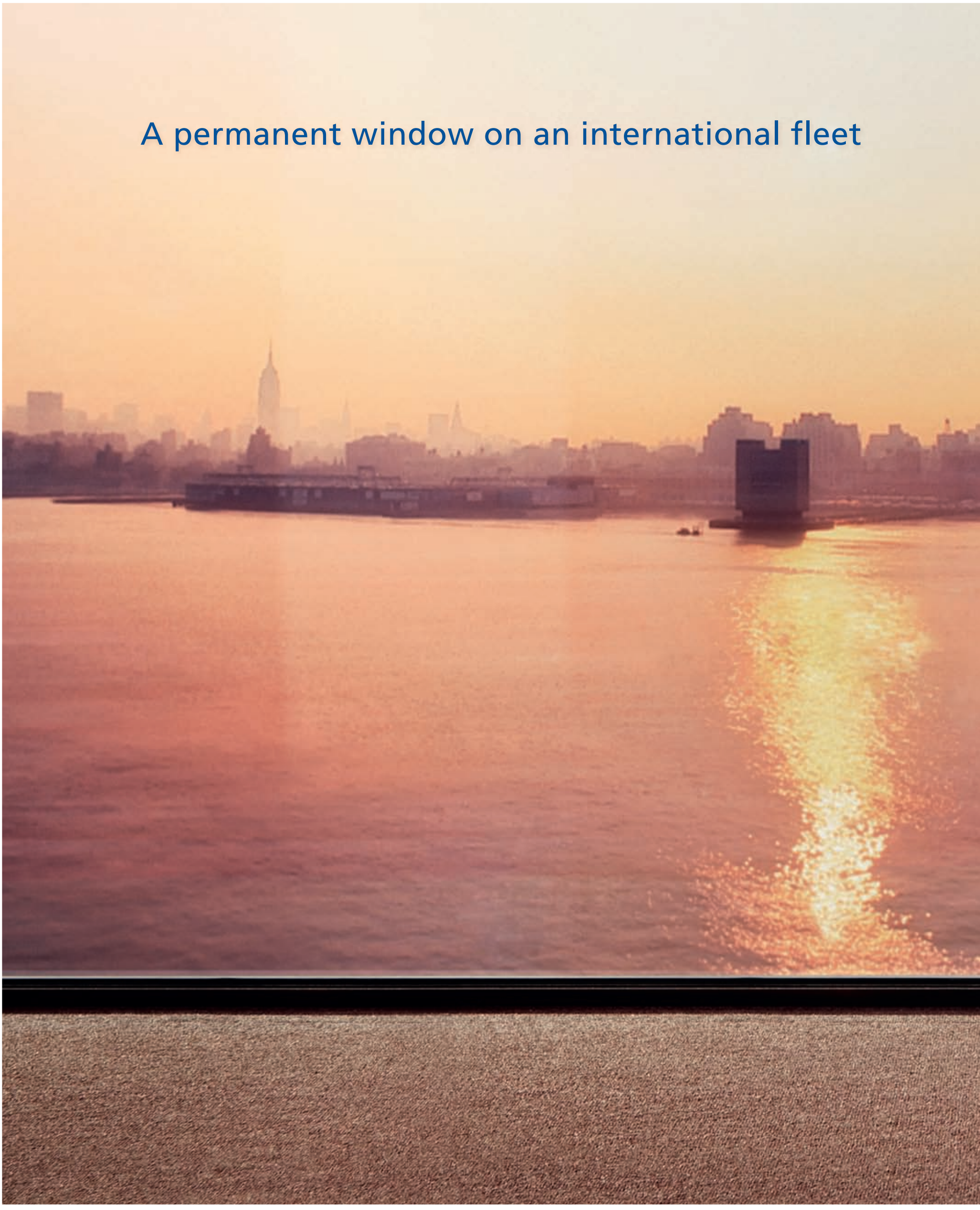
The Cambium and BATS Wireless systems will provide a ruggedised, self-optimising wireless network for ship-to-shore, inter-ship or intra-ship broadband applications.

The systems also allow for a number of mobility scenarios, including fixed (tower to tower, building to building), fixed to mobile (ship to shore, air to ground), and fully mobile deployments (ship to ship, air to mobile command).

"By incorporating BATS antenna tracking capabilities and Cambium's strong and reliable PTP system into our Xiphos-based solution, we're able to offer defense customers a broadband solution that will allow ships to communicate with each other even in the harshest ocean conditions," said Cal Shintani, chief growth officer, Oceus Networks.

Imtech

A permanent window on an international fleet



Radio Holland

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

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

Imtech Marine

Vessel sailing schedules added to Hamburg port data system

www.dakosy.de
www.linescape.com

DAKOSY AG, the port community system for the Port of Hamburg, has announced a cooperation agreement with vessel data company Linescape whereby DAKOSY will provide its members with access to Linescape's database of sailing schedules.

In addition to the existing 'Hamburg ship departure list' DAKOSY can now also offer current sailing schedules for 8 million voyages from over 120 container carriers, with approximately 9,000 ships and through 3,000 ports worldwide.

"Our cooperation with Linescape brings many advantages to our customers," said Dieter Spark, member of the board of DAKOSY.

"Customers can save much time and effort in transport planning when they have a comprehensive overview of ship schedules directly integrated into order processing."

"This avoids searching by external tools, where data must be collected manually, and thereby avoids data entry errors."

Instrumentation software updated by AVEVA

www.aveva.com

AVEVA has introduced an enhanced version of its instrumentation and control engineering software, AVEVA Instrumentation 12.1, available for both plant and marine environments.

New functionality introduced for this version includes an improved interface, with enhanced graphical engineering capabilities. This allows tabular data such as component references to be represented at the click of a button.

The company says that the latest version of the software has been designed and tested in collaboration with AVEVA customers, who have demonstrated significant man-hour savings.

"AVEVA Instrumentation has proven to be a highly successful engineering product for AVEVA," said Bruce Douglas, senior vice president- marketing & product strategy, AVEVA.

"AVEVA Instrumentation integrates with AVEVA Electrical, which is a compelling piece of additional functionality to this platform. No other supplier provides such close synchronisation between these two important disciplines enabling true integration."

"We are excited to be able to provide the plant and marine markets with two mission-critical applications that are so tightly integrated and offer our customers such compelling quality improvements and efficiency savings."

Erria agrees Intelloship deal

www.intellocorp.com

Software developer Intellocorp has announced that it has agreed a new deal with Erria A/S, a Denmark-headquartered company managing a fleet of 43 ships.

Erria had been using a trial version of Intellocorp's new SaaS (Software as a Service) program Intelloship on one of its combined dry-cargo and container ships, but officially signed a fleet-wide contract for the service before the trial period was half way through.

"We chose Intellocorp as they have a vast knowledge and understanding of the industry," says Erria managing director, Henrik Andersen.

"After just a few weeks, we gained a better picture of our business. There is no backlog in the office, and the dashboard is available 24/7, 365 days a year."

Intelloship, launched earlier this year, is designed to give real-time data on fuel performance, crew performance and several other key performance indicators (KPIs) for a variety of container, cargo, cruise and Ro/Ro vessels. Data is provided at sea as well as onshore to company executives.

Intellocorp used Microsoft technologies and tools to build Intelloship, which runs in the Microsoft Azure cloud infrastructure. Microsoft has since invited Intellocorp to become a new strategic partner.

"Microsoft did a great job in making this happen and we had great success," said Intellocorp CEO, Morten Bjoern.

Ship operators can use the software to view fleet information in one place, the Executive Dashboard which is constantly updated. This allows for transparency of data across fleets and from ship to shore.

Intellocorp says that the biggest benefits of the system are that it is web-based, requiring no on-site installation unless the user chooses the On-Premise version, and therefore needs no local maintenance.

"Companies are looking for advanced software systems to monitor their fuel performance, and more, and typically end up making huge investments," said Mr Bjoern.

"Some programs can cost millions of dollars to develop, plus you also have the added high cost of software analysts. All of this is removed with Intelloship."

Intelloship also incorporates LDAP (Lightweight Directory Access Protocol) user authentication, Excel spreadsheet web uploads, filtering capabilities, benchmarking and a 'lite' design to minimise bandwidth requirements.

Users can download cumulative trend data directly from the website in Excel format and integrate it with Crystal Reports or other Microsoft tools, while a historical archive of all voyage reports entered into the system in Excel format is available, accessed via the Dashboard.

Intellocorp says that a future release of the system will include a 'Data Threshold' feature where data validation will range between minimum and maximum values and trigger alerts if it doesn't meet specified criteria. These alerts can be sent via e-mail or automated phone call.

"Making data work for the customer is our prime directive," said Mr Bjoern.

"Most companies only utilise between 5-10 per cent of the data collected to monitor vessel performance. But now they can get back to the basics by using the data they already have available while having our software help analyse it."

"Then they'll have a clear, failsafe decision-making tool that has minimal risk and huge savings. As Erria A/S now knows, this is business intelligence at its best."

The Intelloship program is available for a fixed monthly fee.

Rickmers to implement ABB technology

www.abb.com

Rickmers Group in Germany has agreed a deal with ABB to supply advisory systems for dynamic trim optimisation and fleet management solutions for five multi-purpose vessels operated by Rickmers-Linie.

The technology will be used to operate the vessels in the most efficient way possible, to save on fuel consumption.

ABB's trim optimisation system aims to do this by dynamically measuring the actual trim and advises the crew on optimal floating position of the ship via a range of displays.

All data generated onboard is also transferred to a cloud based application for vessel benchmarking. This provides the management onshore with full visibility of the fleet's energy consumption, as all systems are connected together by the ABB system.

Together these systems form what ABB calls its Advisory Suite of software products, newly developed by the company after an expansion of its portfolio of products for Vessel Information and Control systems in 2011.

The range now includes integrated automation, vessel management and control systems, as well as marine instrumentation and sensors, which can all be combined to improve performance.

The installation of the system will be done vessel by vessel, with the first system expected to be commissioned in the third quarter of 2012.

The complete system for five vessels is expected to be fully operational by the end of year.

"With current fuel prices, the estimated payback of the system is less than a year," said Mikko Lepistö, advisory systems manager for ABB's marine and cranes business.

"Through industry experience and tests on-board we are certain that our trim optimisation system can help our customers save up to 5 per cent in fuel consumption and consequently reduce emissions significantly."

Rickmers will use the new systems to reduce fuel consumption on its ships

AMOS Mail 9.2 introduced

www.spectec.net

SpecTec has launched a new version of AMOS Mail, with version 9.2 offering optimisation and compression algorithms which the company says could save up to 80 per cent on satcom costs.

Integration with SpecTec's other software applications, within AMOS Business Suite and the AMOS2 Enterprise Management Suite, has also been improved.

Like version 9.1, the new upgraded application runs on Sybase, Oracle and Microsoft SQL Server Database management systems, with MySQL support recently introduced.

AMOS Mail is compatible with all Microsoft Operating Systems, both 32 and 64 bit, Windows 8 included, and includes a native interface to Microsoft Exchange Server.

On the user side, new interface customisation options have been added, including Spotlights and Smart Folders to assist in organising and searching messages, and a Message Categories function to facilitate invoicing communication costs to different areas.

"The efforts we are spending on the product to add new features and make the existing one better are remarkable," said Alberto Rinaldo, AMOS Mail product manager.

"The AMOS Mail Team is working hard implementing features the customers were asking from years, but also engineering brand new applications the customers will take advantage from in the future."

"Right now we are working to add some extra protection while exchanging data with the office and to optimise the communication protocols when working on the latest broadband satellite equipment. The new features will be introduced on AMOS Mail 9.3.0, which is planned to be released before the end of the year."

AVEVA has expanded its Latin American presence by opening an office in Chile. The office in Santiago de Chile will serve a number of Latin American countries providing sales and support for AVEVA's entire product portfolio.

SpecTec has appointed Evan Efstathiou as executive director of SpecTec Americas. Mr Efstathiou previously worked at **Veson Nautical** as director of client services.

www.aveva.com
www.spectec.net

Subsea 7 to install OCTOPUS

www.amarcon.com

Subsea 7 has ordered the OCTOPUS motion monitoring and ship response forecast system from Amarcon for the recently delivered Pipelay/Heavy Lift vessel Seven Borealis.

In addition to the onboard motion monitoring and forecast functionality, the Seven Borealis shall also be equipped with DP Capability Forecast, to enable the production of DP (Dynamic Positioning) plots based on forecast thruster utilisation.

This tool provides a forecast, displayed within the OCTOPUS-Onboard software, showing how the vessel will be able to maintain its position and heading in changing environmental and weather conditions, hours and days ahead.

By using the OCTOPUS-Online service all the collected motions and accelerations from the Seven Borealis will be sent to a central database server, allowing authorised users at the Subsea 7 office to view and analyze the recorded motion and acceleration data.

Subsea 7 has also ordered Amarcon's hydrodynamic analysis software OCTOPUS-Office, for calculation of sea keeping characteristics for the Seven Borealis prior to new pipe lay projects.

The Seven Borealis has installed the monitoring system

Crew software deals for HAV and BachmannHR

www.crewinspector.com

HAV Ship Management Kaliningrad and BachmannHR Group Ltd are both to implement online crew management software systems, following the agreement of contracts between the respective companies and CrewInspector.com.

CrewInspector will provide an online crew management database, an integrated online application system for seafarers, and crew payroll software.

The crew management system allows crew managers to create seafarer employment contracts, monitor certificate expiry and organise crew planning across the fleet.

Based on crew employment contracts, a payroll module assists in calculating crew wages and respective deductions.

The online crew management system can now be accessed via mobile apps

HAV Ship Management Kaliningrad will use the system to manage crew for its 26 dry-cargo ships under management, classified by Germanischer Lloyd and carrying bulk and general cargoes.

There are currently about 450 Russian seafarers working for the company.

BachmannHR Group will use the system across its group of companies, to integrate the crewing process.

"We introduced CrewInspector into our company in the spring of 2011 and we are using it with more and more clients," said Nick Saul, managing director at BachmannHR Group.

"What we like is the fact that it is web-based and can be set up with the minimum of fuss and complication. Our clients love it as they too are able to see what is happening to the crew and best of all we can control what everyone sees."

"The CrewInspector team are responsive and keen to sort any problems (big or small) and have been accommodating on any changes we have asked for."

In other news, CrewInspector has also announced the release of a new online application specifically tailored for mobile phone and tablets, to allow users to access the crew management database through their mobile phone carrier network.

The app is specially optimised for mobile phones with the aim of minimising data traffic, and specifically controlling roaming costs while users are travelling in different countries.

It is available on a variety of platforms, including Apple iOS, Android, Windows Phone, Blackberry, Palm WebOS, Firefox Mobile, Chrome for Android, Opera Mobile, Samsung bada, and Nokia Symbian.

Data safety book launched

www.imca-int.com

The International Marine Contractors Association has published a new book to provide guidance designed to minimise or prevent unnecessary corruption and/or loss of data in the use of IT systems.

'Guidelines on the Safe Management of Survey and Inspection Data' (IMCA S 020) aims to help users understand how to safely handle large volumes of material, looking at the risks involved, and how to address and mitigate them.

The book has been written from a project perspective, addressing the various aspects of data management that can occur during the project lifecycle, from the preparation phase through to project completion.

"The real cost of corrupted or lost data on a project can be significant, particularly if any re-working is required. It is important that proper systems are in place to protect data and ensure it is safely archived and delivered to the end client or end user," explains IMCA's technical director, Jane Bugler.

"The principles outlined in our new publication can be applied to any survey or inspection data, from acquisition phase to final end delivery and archiving, irrespective of the volume of data, project duration or complexity, and are intended to ensure data security and quality."

The guidance is available for downloading free of charge for members and non-members alike from the IMCA website at www.imca-int.com.

16 Grinrod ships to install BASS

www.bassnet.no

Grindrod Shipping has signed a deal to implement the BASSnet Fleet Management System on 16 vessels.

Grindrod's shipping division, headquartered in Singapore with a technical management team based in South Africa, will implement the BASS software on nine product and chemical tankers and an additional seven dry cargo vessels technically managed by the company's third party managers.

The implementation project commenced in January of this year and included the use of various dashboard applications for functions including maintenance, procurement, human resource management, safety management and vetting, and management reporting.

In mid-February, a team from Grindrod Shipping visited BASS Software's operational office in Kuala Lumpur, where the full transformation project to BASSnet kicked off with a series of discussions between the two parties.

"Our choice of BASSnet is logical, as we are very confident of BASS's array of products, having diligently appraised their presentations and conducted research of our own," said Quentin Foyle, general manager – marine, Grindrod Shipping.

"Furthermore, our dry bulk third party ship manager, Sandigan Shipping, also uses the BASS systems to technically manage their vessel operations efficiently."

"Now we can streamline our maritime processes effectively."

Turkish yard implements Paramarine

www.grc.qinetiq.com

The RMK Marine shipyard in Tuzla Bay, Turkey, is to implement the Paramarine marine design software, developed by QinetiQ GRC, for manoeuvring analysis.

"We were looking for a software solution that had extensive manoeuvring functionality that would be easy to use and integrate into our existing systems," said Ersin Koyunoglu, CAD application engineering, IT department, RMK Marine.

"We selected Paramarine based on its track record and its proven capabilities developed from operating in both the commercial and defence markets."

The capabilities of the Paramarine system have recently been extended with the release of a new version with enhancements to its reporting, concurrent design and documentation functions.

"The sale of Paramarine to RMK Marine represents another step in the take up of our solution in the commercial market," said Vittorio Vagliani, managing director, QinetiQ GRC.

"In addition to establishing ourselves in Turkey it demonstrates the increasingly global nature of our extensive customer base. Over the last twelve months we have added a significant number of new customers in both the defence and the commercial markets across the world."

SENER agrees Korean deal

www.sener.es

Three months after being established, SENER Korea Engineering and Systems Co (SKES) has won its first contract, a licence agreement with KR Engineering Co (KRE) for the use of FORAN, SENER's 3D-model based software for ship design and production.

The FORAN modules for hull form generation, hull structure, outfitting and drafting are being implemented at KRE's offices in Seoul and Busan, while end-users are being trained at SKES facilities in Busan.

KRE was established in 1997 by the Korean Register of Shipping (KR). The company carries out consulting, design and inspection activities in shipbuilding and other industries.

SENER is hopeful that the agreement with KRE will expand the user base for its FORAN system in Korea, and also help to expand business opportunities across Asia through wider collaboration between KRE and SENER.

Chartering data software system updated

www.axsmarine.com

AXSMarine has introduced AXSDry4.0 to replace its current AXSDry software, used to manage chartering information.

AXSDry4.0 will offer access to embedded databases to improve analysis capabilities, and will feature an updated navigation system.

Two new optional features have been added, the first being a new auto-e-mail updater called AXSReader. This system automatically recognises e-mail text and updates vessel positions into clients database views, with an approximately 90 per cent recognition rate.

For an additional fee, adjustments for the remaining ~10 per cent can be provided by the AXSMarine team.

The other new feature is embedded AIS information, which allows users to see live vessel positions and port traffic, and compare AIS with commercial positions.

AXSMarine sources this data under a commercial agreement with Vessel Tracker and exactEarth.

All of these new capabilities include AXSMarine's databases for vessels, ports and distance.

Eco-tech online search tool launched

www.fathom-ctech.com

Fathom has launched CTech, an online tool that provides a searchable critical analysis of eco-efficiency technologies for the shipping industry.

Supported by shipping association BIMCO, the web tool enables users to examine, compare and contrast technology providers, as well as access emissions savings calculators, case studies and peer reviews.

CTech is an extension of Fathom publication 'Ship Efficiency: The Guide', and is searchable by parameters such as ship type, technology type, company and retrofit or newbuild.

The company says that the tool provides "independent reviews, analysis of the technologies, savings potential, ROI period and viability."

"Investing in the right technologies can save ship owners and operators millions of dollars," said Alison Jarabo, managing director of Fathom.

"But right now the maritime community faces a vast information void when it comes to having access to the right information and objective insight that can help them make these vital decisions."

"Organisations, tasked with the huge responsibility of steering through some of the most challenging market conditions ever known, now have instant access to the information that can help improve operational performance, efficiencies and profitability with just the few clicks of a mouse."

The system offers interactive functionality that enables members to submit updates, reviews, case studies and questions about particular technologies, which will be reviewed by the CTech team before going live to the site.

A £250 / $350 annual subscription is charged for the service.

Lars Robert Pedersen, deputy secretary general of BIMCO, who support the initiative, commented: "In the current economic and regulatory environment, improving technical and operational efficiencies is becoming a vital consideration."

"BIMCO believes that CTech is a promising initiative that owners and operators can use to explore a wide range of possible options and inform the decisions they make to realise these efficiencies."

"BIMCO was pleased to support Fathom in the publication of 'Ship Efficiency: The Guide' and maintain its commitment by supporting the launch of this next-generation, online platform."

Kornet extends software contract

www.mirtac.nl

Dutch shipping company Rederij Chr. Kornet & Zonen has extended an existing agreement with Mirtac to manage the installation of a software package from Star Information Systems on its latest ship.

The Star fleet management system will be used to manage compliance with various regulations, but is hoped to also drive improved operations.

"Customer and ISM compliance, together with proven increased efficiency throughout our existing fleet, have led to a new contract with our knowledge partner MirTac for our newest vessel," commented Chris Kornet, managing director of Kornet & Zonen.

"MirTac has proved to be an expert in translating our daily practice into a successful management tool."

The software will be installed on the multi-purpose vessel Merweriver, to bring the company's fleet to 13 general cargo and container dry cargo vessels.

The vessel Merweriver is the latest to be installed with the software

New CBT courses released

www.seagull.no
www.videotel.com

Seagull and Videotel have both introduced new CBT programmes, with Seagull offering training in ship security, and Videotel introducing courses for lifting appliance surveys and dynamic positioning.

The Norwegian Maritime Authority (NMA) has recently approved the new ship security training package by Seagull, which the company says can be used to assist in compliance with the Manila amendments to the STCW Convention and Code.

The revised STCW, which came into force in January this year, introduces more stringent requirements for onboard security training, with particular provisions designed to ensure seafarers are properly trained in case their ship comes under attack by pirates.

Seagull's new security training courses will be available in September of this year, and the courses have also been certified by classification society DNV through the SeaSkill programme.

Seagull has developed two new CBT training levels - Level 1, covering security-related familiarisation and awareness for all seafarers, and Level 2, for seafarers with designated security duties.

Level 1 includes two e-learning modules; one on security awareness and one on piracy and armed robbery. These are supplemented by a workbook with exercises and a security familiarisation checklist.

Level 2 comprises an onboard course for personnel with security duties, which includes the same two e-learning modules on security awareness, and on piracy and armed robbery. This is supported by a workbook with practical exercises.

It has also updated its existing Ship Security Officer (SSO) course, which is the designated Level 3 of the Seagull Security On Board training system, in line with the Manila amendments.

Level 3 training will comprise the same two modules as Level 1 and 2, CBT 115 Security Awareness and CBT 156 Piracy and Armed Robbery, with the addition of a specific SSO e-learning module and workbook. This will be delivered through the CBT 121 Ship Security Officer course.

"With the new Security On Board training system we offer three courses and, with continued NMA backing, shipowners can be assured that certification through these courses will demonstrate the proficiency, as well as the competency, of their seafarers in security matters," said Anders Brunvoll, Seagull senior course instructor.

"A key concept of the Seagull Security On Board training is that seafarers will be able to start at any of the three levels, depending on their position and duties onboard. If required they can then easily move up to a higher level, without repeating any of the e-learning modules they have already taken."

"The training is also designed so that seafarers are more or less obliged to familiarise themselves with the particular security requirements of the vessel they are on and the company employing them."

Videotel meanwhile has introduced a new Survey and Examination of Lifting Appliances training course for surveyors, with the aim of reducing the number of injuries and deaths caused each year by lifting operations, as well as a Dynamic Positioning Basic Training Course, in conjunction with C-MAR's The Dynamic Positioning Centre.

The survey of lifting appliances course was created in association with Lloyds Register, with the objective of ensuring that examinations of lifting appliances are carried out thoroughly and consistently, and that personnel who perform the task are acknowledged as "competent persons" as defined by the International Labour Organisation (ILO).

Videotel says that successful completion of this course is a significant step towards gaining the relevant knowledge needed to fit that definition.

The programme is delivered via CBT with multiple choice questions at the end of each module and a final assessment.

"When a lifting appliance fails, the consequences can be far-reaching," said Nigel Cleave, CEO of Videotel Marine International.

"Serious injuries and deaths can occur, not just to onboard personnel but to the general public. As a result, legal claims can also arise with the inevitable impact of associated legal costs – and those costs are rising."

"Likewise, when equipment fails, the costs of disrupted operations and off-hire can also be considerable."

The Dynamic Positioning Basic Training Course meanwhile is aligned with the Nautical Institute DP Basic/ Induction course syllabus and covers all areas of DP, including system architecture and basic principles, together with modes of operation, operational procedures and risk considerations.

The system contains mixed media in the form of text, images, animations, video and audio.

On completion of the course, which Videotel says reduces the training time required at a C-MAR DP Centre, users intending to become DP Operators will have sufficient understanding of the principles and practice of DP to undertake simulator exercises as the next step towards gaining a recognised DP qualification from the Nautical Institute.

The Dynamic Positioning programme is available as an online course and should take approximately six hours to complete.

"A basic knowledge of DP is becoming increasingly important to a wide range of maritime professionals," said Mr Cleave.

"The rise of the offshore oil and gas industry and its constantly changing demands has brought about great developments in the field of DP. Yet interestingly this growth is not now confined to those industries, and at least a basic knowledge of DP has become important to many, both based at sea and based on-shore."

Blue Belt aims to streamline EU shipping

The results of the EU-backed Blue Belt pilot project, which aims to reduce the time spent on documentation and administration in intra-EU shipping trade through the use of technology, have been released, with the publication of the project evaluation report

In September 2010, an informal meeting of EU transport ministers dedicated to inland and maritime transport embraced the 'Blue Belt' concept, an initiative that aims to create a European maritime transport space without barriers.

The long term objective was to allow ships to operate freely with a minimum of administrative formalities, irrespective of their flag.

The 'Blue Belt' will be complemented by 'Blue Lanes', defined as administrative, technological or physical facilitations granted by ports and customs authorities to ensure swift processing of goods in free circulation in the EU.

Following the development of this concept, a Blue Belt pilot project was formalised by the EU Council in December 2010.

The Blue Belt Pilot Project provides ship notification reports to customs authorities of all EU Member States, with the aim of supporting customs by providing verified information about the voyages of vessels engaged in intra-EU trade.

The notification reports are generated automatically by a specific module of the European vessel monitoring system, SafeSeaNet (SSN). SSN is the maritime information exchange system developed by the EU Commission in cooperation with Member States to ensure the implementation of Community legislation.

The reports created by SSN are delivered to the relevant customs authority two hours before a ship's estimated arrival.

The pilot project was rolled-out in different phases. Initially, a planning and preparatory phase took place during which the requirements from EU customs authorities and the shipping industry were collected and integrated into a project implementation plan.

Once approved, technical adjustments to SSN functionalities were made, followed by the appropriate validation tests.

At the same time, a Correspondence Group (CG) with the participation of the related Commission services, EMSA and volunteering Member States, as well as an Advisory Group (AG) comprising shipowners were established with the aim of assisting in the implementation and monitoring of the project.

The pilot project monitored 253 vessels (the 'Blue Ships'), which participated in the pilot project on a voluntary basis.

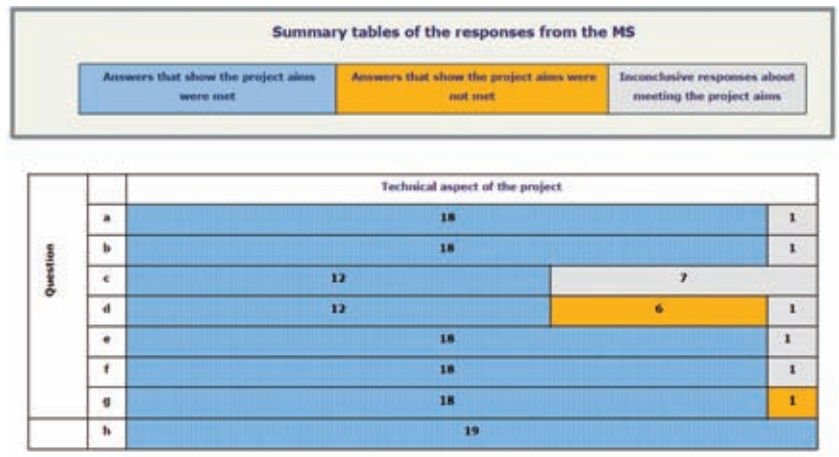
A cross-section of vessels was chosen to be representative of the different trades most frequently seen in the European Union, such as pure intra-EU movements (under the authorised regular shipping service regime (RSS) or not), feeder or main haul liner shipping vessels and bulk carriers.

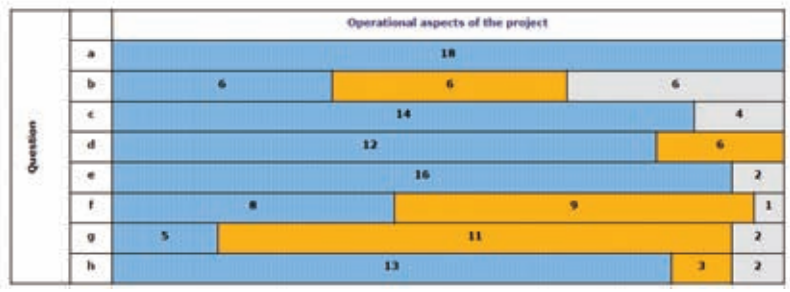
During the operational phase ship notification reports were delivered to the customs authorities. These reports are composed of two attachments:

1) the voyage report containing information about the vessel, its recent ports of call and the last voyage details; and
2) a screen shot indicating the Blue Belt ship track toward the destination port, plotted on a nautical chart.

Additional features were introduced later in the project, such as the integration of Satellite AIS position data, to track the Blue Ships beyond the limits of coastal coverage of AIS shore stations, and information on vessel behaviour (e.g. encounter at sea, not reporting, etc.).

The outcome of the evaluation of the Blue Belt pilot project will determine whether existing customs procedures can be adapted, using reliable ship notification reports as a support instrument, to simplify intra-EU trade.





It was agreed that the pilot project would be evaluated at the end of 2011, in order to assess how the Blue Belt service contributed to fulfilling the objectives of the Blue Belt concept. The results of this evaluation have now been released.

Evaluation

The Blue Belt project was launched in May 2011. In order to effectively evaluate the project, it was agreed that the concerned Member States and industry would provide feedback to the European Commission and EMSA on the technical and operational aspects of the project.

Data was collected via questionnaire from the EU Member States and also from the industry participants. The data will allow an assessment of the practical impacts of the Blue Belt pilot project both from the customs and industry perspective.

Concerning the technical aspects of the project, information was collected twice from the Member States' customs authorities via a questionnaire covering the periods May-July and August-October 2011.

For the operational aspects of the project a questionnaire was sent to the Member States covering the period May-November 2011. This information provided feedback about the service delivery of the pilot project.

The purpose of collecting data relating to the operational aspects of the project was to assess whether the information contained in the reports had been useful to customs authorities when carrying out customs procedures.

It also aimed to assess if the information contained in the reports had been accurate and whether providing reliable information related to ships' voyages to the customs authorities could in the future lead to facilitations for vessels trading in EU waters.

The shipping industry also sent out questionnaires to the participating companies and ships in order to get accurate information about the impact of the pilot project on customs procedures for the participating vessels.

Responses to the questionnaires (technical and operational rounds) came from 19 Member States for the technical indicators, and 18 Member States for the operational indicators.

Technical questionnaire results

The following section presents the responses to the technical questions (a-h). The technical questionnaire focussed on the timeliness of the report delivery, the completeness and accuracy of the information contained in the notification reports, and the transmission mechanism of the report.

The questions were as follows:

a - Have you been regularly receiving Blue Belt reports for your port?
b - Has your port been called regularly by 'Blue Ship' vessels?
c - How many of these vessels were engaged in a RSS - Regular Shipping Service?
d - Did the 'Blue Ship' vessels inform of their status upon arrival?
e - Did the notification reports arrive within 2 hours of a vessel's arrival?
f - Did you notice any missing data in the notification reports?
g - Did you experience any problem when receiving the Blue Belt reports via e-mail (e.g. filtered-out as spam, blocked by antivirus or antimalware software, etc.)?
h - Would you see the benefit to continue receiving the Blue Belt reports through e-mail messages or would you find it useful to be presented through existing national customs systems?

A summary of the main points highlighted by the technical responses is as follows:

- Most of the coastal EU Member States have been regularly visited by Blue Ships but only half of the ships informed customs authorities of their participation in the Blue Belt pilot project;
- Generally the blue belt notification report was received on time (two hours before arrival) though in some cases it arrived slightly before the arrival or in a few cases too late in respect of the actual ship's arrival. The cause of such inconsistencies may lay in the definition of actual time of arrival which differs from port to port and from country to country;
- Technical problems in accessing or reading the reports were encountered in very few cases and existing issues have been resolved;
- Cumulatively, there were around 26,000 calls from Blue Ships at EU ports during the operational phase (5 May – 2 November 2011), of which around 1,200 ship calls were made by Blue ships whilst engaged in RSS;
- In very few cases information was missing from the Blue Belt Report. In the future the customs authorities would be interested in receiving more details about the vessel's voyage in the report.

Operational questionnaire results

The operational questionnaire was circulated at the end of November 2011 and invited the Member States' customs authorities to answer questions on how the Blue Belt notification reports were used in the period May-November 2011.

The results are based on 18 Member States providing responses. The questions in this survey were generally more open-ended than the Technical Questionnaire and not just answerable with 'yes' or 'no responses, as follows:

a - Please indicate how you used the notification reports.
b - Please indicate the impact of the report's use in general, on Regular Shipping Service, on AEO or on authorised consignors.
c - Please indicate which information of the notification report was previously not available.

d - Did the information included in the Blue Belt report effectively complement other information that was already available locally (e.g. FAL forms, ISPS notifications etc.)?
e - How many cases have you identified where a notification report did not correspond to other information or facts?
f - Did the report help with the risk assessment tools at national level, and consequently help target shipments carried on 'Blue Ships' for inspection?
g - Did the reports facilitate customs processing and clearance, including confirming proof of Community status?
h - Did the reports provide assurances to customs for verifying the correctness of the vessel's declared routing?

All but one Member State who responded used the Blue Belt notification reports and of these, 10 Member States found new information in the reports, while the others found confirmation of other information obtained from existing sources.

12 Member States replied that the reports provided information that was used in the risk assessment process, either directly or when used in combination with other sources.

With regard to facilitation of customs processing and clearance, eight Member States stated that the reports did not facilitate current Customs procedures, however five Member States indicated that the Blue Belt reports facilitated certain aspects of customs procedures.

Concerning the Blue Belt notification reports providing assurances to customs about the correctness of the vessel's declared routing, most Member States indicated that the reports provided assurances and only one Member State stated that the reports did not provide any assurances.

The following suggestions were made by respondents on how to improve the Blue Belt service:

- To improve the automated information integration with other existing (national or other) systems and to include cargo information;
- To extend the service to include all vessels trading in the EU;
- To enhance the information about vessel voyages.

Based on the technical and operational questionnaires, the majority of Member States indicated that the reports provided assurances about the correctness of the vessel's declared routing.

The project has however also demonstrated that the information provided by the notification reports can be used to support customs operations and may be a component offering assurances to customs authorities that can support risk assessments.

Shipowners' view

Shipowners' representatives were invited to provide feedback and comments throughout the project.

This was collected by the European Community Shipowners Association (ECSA) and the World Shipping Council (WSC) on a monthly basis from the shipowners, the ship's masters and their agents. The shipping industry identified the 253 ships that are participating in the Blue Belt pilot project.

Their feedback gave indications of the impact of the project by monitoring the way these participating ships were treated at port level by the customs authorities during the project, as compared to the situation before the project.

In terms of awareness of the project, the shipowners noted a lack of awareness from local customs of the Blue Belt pilot project and of the 'Blue Ship' status in a large number of ports in EU Member States.

Despite noticing the political interest at EU and central customs level for the Blue Belt project, there was a perceived lack of engagement at local/port level. Thus no change in procedures was experienced by the participating ships and no improved customs processes were offered.

The shipping industry also noted that no benefits had been felt by participating Blue Ships, regardless of their status or type of service.

Despite this, some benefits of the project as a whole were recorded. From the industry perspective, there was an interest in finding out how customs used the Blue Belt notification reports and whether these reports create any added value for customs.

Furthermore, the industry felt that the information provided to the customs authority through the pilot project provided them with data that they did not have access to previously, and that the Blue Belt reports could better inform customs officials about ships' particulars, status and voyage.

The industry felt that the information provided during the Blue Belt pilot project demonstrated to customs that the movements of the participating vessels can be verified, and provides evidence that the vast majority of ships have normal behaviour.

The information provided to customs should give them confidence about the movements of the ship (and the cargo on board the ship) which in turn creates an incentive to simplify customs procedures, especially regarding proof of EU Community status.

The representatives of the shipping industry were also invited to make comments on the impact of the Blue Belt pilot project with regard to the issues raised in the questionnaires.

Their statements aim to reflect the experiences of the vessels participating in the project and also take into account the responses of the Member States.

One area examined was that covered by the Operational Questionnaire's Question D – Did the information included in the Blue Belt report effectively complement other information that was already available locally?

When noting the majority of positive responses to this question from the Member States, the industry representatives agreed that the Blue Belt project succeeded in providing confirmation of the information available from existing sources used by the Member States.

The shipping industry was encouraged that several Member States also came to this conclusion, and believes that the Blue Belt service has, by filling the information gap about vessels and their voyage, reinforced the level of trust felt towards the industry by the Member States.

Questions F and G of the Operational Questionnaire were also looked at – Did the report help with the risk assessment tools at national level, and consequently help target shipments carried on 'Blue Ships' for inspection? Did the reports facilitate customs processing and clearance, including confirming proof of Community status of the goods?

Regarding questions F and G, it was noted that one of the aims of the Blue Belt pilot project was to provide additional certainties to the customs authorities by improving the quality of information available to them by complementing existing sources of information used for risk assessment and for customs procedures. This was confirmed by the answers provided by the Member States to both questions.

It can be stated that the project has demonstrated that information about ships and their voyages is useful to customs authorities.

A similar argument is used in response to question F which stated that the Blue Belt notification reports do not contain "enough information" to carry out a risk assessment.

The intention of the Blue Belt project was not to use these reports as the sole element of a risk assessment, but to confirm other available information on the itinerary of a ship and its cargo when sailing between two EU ports.

Using the Blue Belt pilot project's evaluation results as a starting point, discussions should begin with the customs authorities of the EU Member States that should aim to find an acceptable way in which to further facilitate the processes for ships carrying goods between EU ports and to create a level playing field for the shipping industry when trading within, to or from the EU.

This was an objective of the Blue Belt concept and the pilot project was able to demonstrate that this could be achieved. In this regard, the outcome of the trial can be perceived as successful.

Analysis

Drawing from the questionnaire responses of the Member States, comments received during the meetings of the Electronic Custom Group (ECG), the discussions held during the Correspondence Group & Advisory group meetings, and the comments received from the shipping industry, a number of findings can be highlighted.

At the beginning of the project, four specific aims were defined:

- Project aim 1: A ship can be effectively tracked when sailing between two EU ports, even when it sails outside Member States' territorial waters
- Project aim 2: Information about a vessel's voyage given to customs authorities can be of assistance for implementing existing legal provisions with more confidence
- Project aim 3: Receiving more accurate scheduling information on a ship's arrival and departure can contribute to improve efficiency in allocating resources for carrying out customs procedures
- Project aim 4: To demonstrate the economic importance of the project for maritime trade between EU ports and the effect on the modal split of transport between ship, rail and truck

The stakeholders believe that the pilot project achieved most of the project aims. For project aim 1, the Blue Belt notification reports have provided vessel voyage information to the Member States for their voyages. For waters outside the EU, the use of satellite-AIS has provided additional coverage.

For project aim 2, the extent of the information provided about vessels and their voyages has been useful, timely and relevant for the customs authorities. To this extent the pilot project has helped to improve efficiency and to give sufficient reassurances to customs about a ship's voyage.

Furthermore, nearly all Member States used the Blue Belt notification reports regularly and the quality of the reports was sufficiently high for these to be relied upon to support their risk assessments.

With regards to project aim 3, where receiving more accurate scheduling information on a ship's arrival and departure can contribute to improve efficiency in allocating resources for carrying out customs procedures, the Blue Belt reports have provided new information to the Member States' customs authorities and helped to confirm information provided through other sources.

This has strengthened the information available and supported the tools available to them to carry out their tasks.

The information provided via the Blue Belt service has also helped to improve efficiencies by enabling more accurate ship targeting which has allowed a better use and allocation of staff resources.

Finally, project aim 4, which was to demonstrate the economic importance of the project for maritime trade between EU ports, could not be achieved.

Following the analysis of the results within the context of the project aims, the tables on the previous page present the responses by the Member States to the project monitoring questionnaires.

The pilot project has demonstrated that it is possible to deliver accurate and timely information about vessel voyages to customs and that this information is indeed useful and can support customs procedures.

The pilot project did not lead to simplifications in customs procedures for ships sailing between EU ports as the current legal framework has remained unchanged and, for similar reasons, it did not lead to any improvements for ships trading in the EU as called for by the EU Council.

At the request of the Member States, the services delivered by the Blue Belt pilot project should continue whilst the legislative issues are addressed.

Further enhancements of the service are desired by the customs authorities, such as the integration of the Blue Belt service into the existing customs systems as well as extending the scope of the Blue Belt service to provide additional information about all ships trading in the EU.

Any technical developments of the Blue Belt service which help the Member States carry out customs procedures should be supported by legislation which simplifies procedures and offers facilitations for the shipping industry whose vessels are engaged in trade in the EU by keeping the Community Goods status when sailing between EU ports. DS

This article is an abridged version of the full EMSA Blue Belt evaluation report, which can be downloaded from the EMSA website by following this link: http://bit.ly/MrqC6g

Reederei Claus-Peter Offen agrees 103-ship software deal

German shipping company Reederei Claus-Peter Offen has agreed a deal to implement the ABS Nautical Systems fleet management software package across its entire fleet of ships

ABS Nautical Systems reports that implementation of its NS5 Enterprise software system has begun on Reederei Claus-Peter Offen's 103-strong fleet of container vessels.

Based in Hamburg, the company will be utilising three modules from the ABS Nautical Systems software package, having purchased the Maintenance & Repair, Purchasing & Inventory and Voyage Management modules for its fleet.

These systems will be used to track maintenance expenses, upcoming drydocks and repairs, inventory replacement needs, fuel consumption and cargo operations across all of the vessels.

"We needed technology that offered both a centralised and standardised solution, and was user-friendly," said Lutz Miesen, project engineer for Reederei Claus-Peter Offen.

"Our engineers and crew wanted a one-for-all solution for their day-to-day workloads and ABS Nautical Systems' software suite has provided that."

Reederei Claus-Peter Offen initially installed the software on four of its vessels for testing and familiarisation purposes ahead of the implementation on the remainder of the fleet, which is scheduled for completion over the next two years.

ABS Nautical Systems will be assisting the shipping company's own team with this process.

"Working closely with our clients during the initial stages of the software implementation allows them the ability to fine tune the system for their specific operations," says Karen Hughey, president and COO of ABS Nautical Systems.

"Through this process, Reederei Claus-Peter Offen was able to customise the software to meet their needs and they are now our largest client in Germany."

Global expansion

The deal with Reederei Claus-Peter Offen is just one of a number of new contracts that ABS Nautical Systems has recently confirmed with a range of global companies, with a further two companies in Greece, one in Dubai and another in Malaysia having also agreed to use the software package.

In Greece, shipping companies Petrochem General Management S.A. and Opera S.A. have agreed deals to implement NS5 Enterprise software. Both companies will be part of the ABS Newbuild Program which offers free software to ABS-classed vessels built after 1 January 2009.

Petrochem General Management S.A. will implement the Hull Inspection module on seven of its chemical carriers. The Piraeus-based company will integrate the new software with its current Planned Maintenance System to facilitate information sharing between its vessels and central offices.

Athens-based company, Opera S.A. will computerise its current in-house PMS system and will implement Hull Inspection and Maintenance Manager modules on two of its vessels and in one central office location.

In Dubai, Arina Offshore (Fze) will use NS5 Enterprise software in its vessel chartering and brokerage operations, utilising the Maintenance Manager module on one of its offshore vessels through the ABS Transfer of Class Agreement (TOCA) Initiative which offers free software to any vessel that transfers class into ABS.

Arina Offshore (Fze) will also implement the Purchasing & Inventory module from the NS5 software suite on two additional vessels.

Finally, in Malaysia, Saujana Marine Sdn Bhd has signed an agreement for the use of NS5 Enterprise software on two of its 300 pax accommodation barges, and will implement the Maintenance Manager and Drawings Management modules.

This agreement also falls under the ABS Newbuild Program.

ABS Connect

In other news, the ABS classification society, of which ABS Nautical Systems is part, has launched ABS Connect, a package of products which it hopes will improve information transfer between the society and its clients around the world.

ABS Connect incorporates a mobile interface for its website, as well as ABS Bookshelf, a mobile library of ABS' publications.

Currently available for download, at no charge, from Apple's App Store, ABS Bookshelf includes the more than 100 Rules and Guides available electronically and used in the design, construction and maintenance of vessels and offshore structures to ABS classification.

"The ABS Bookshelf app provides designers, builders, owners, managers and operators the ability to take ABS' Rules and Guides anywhere in the world on their iPad or iPhone," said ABS chief technology officer, Todd Grove.

"The functionality of the app allows users to easily search and annotate key pieces of information that previously required internet access or large volumes of printed documents - all within a dedicated app designed to organise a user's ABS documents."

The ABS Connect service aims to improve access to class information

The mobile version of the ABS website also allows for the downloading of ABS publications, including the Rules and Guides, onto any mobile device like Blackberrys and Android phones or tablets.

The company says that the new mobile website and Bookshelf app will soon be joined by ABS Survey Manager and ABS Directory apps, prototypes of which have been recently launched.

The ABS Survey Manager app allows owners and managers to securely search real-time class and survey information on their ABS-classed fleet and then store it on their device.

The ABS Directory provides contact details for ABS offices around the world through a direct search or GPS location functionality. Both apps will be available this summer.

"As the class society of the future, ABS will continue to raise the bar in providing comprehensive services that help the marine and offshore industries meet the wide spectrum of operational and regulatory challenges," says ABS president and CEO, Christopher Wiernicki.

"In today's global environment, timely access to information is critical to managing the operations. ABS Connect will allow our clients to access key classification information at the time and place of their choosing."

"ABS Connect is the first phase of the new ABS class experience. In the coming months, through ABS Connect we will roll out additional products and applications to allow quick and efficient access to the information and class services decision makers need. It's all about having ready access to information whenever and wherever you need it." DS

Ships in the Reederei Claus-Peter Offen fleet will use ABS software to manage a range of functions

South Tyneside College upgrades simulators

www.kongsberg.com

The School of Simulation & Senior Marine at South Tyneside College in the UK is to install a range of upgraded navigation, engine room and Vessel Traffic Service (VTS) simulator hardware and software, supplied by Kongsberg Maritime.

The upgrade project is being carried out during the summer and will include installation of the simulation systems and improvements to the buildings that house them.

"Although our simulation facilities are continually updated and improved we understand the need to keep at the cutting-edge of technology and quality in order to meet the changing training requirements in the industry," said Paul Hodgson, technical and projects manager, School of Marine Simulation and Senior Marine, at South Tyneside College.

"Our first Kongsberg simulator was installed in 1997, when we decided that the Polaris ship's bridge simulator/Neptune engine room simulator combination was a more powerful and flexible system than the available competition."

"This opinion hasn't changed and we are looking forward to offering the possibility for our students to train on the very latest versions of these simulators, using the extensive library of exercises and models we have developed over the years."

The project will feature a total refurbishment for the main Polaris bridge simulator, which includes two full-mission bridges and four part task bridges, with new consoles including K-Bridge and Polaris Radar ARPA upgrades.

Multiflex panels will also be used, which offer the ability to change functionality through software, rather than swapping out hardware panels.

The bridge will feature a new projection system that is twice as bright and provides twice the resolution of the existing system, while all standard PCs will be replaced and the computer network upgraded from CAT5 to CAT6 cabling.

The second Polaris bridge simulator, which consists of eight desktop simulators and a VTS simulator, will move to a newly refurbished building at STC, which brings all School of Simulation & Senior Marine simulators into the same location.

The school's full mission engine room simulator will be upgraded to include use of touch screen technology and new Local Operating Stations for mimic presentations, as well as 65 inch touch screens for interactive virtual engine room applications.

The simulators will allow different engine types to use the same hardware, as all dials, indicators, buttons etc are presented on screens and either controlled by mouse/trackball or touch.

All four full mission simulator models (MAN B&W 5L90MC VLCC L11-V, Wärtsilä RT-Flex Container L11, M22 PC Ferry-IV and DE22 Cruise vessel-III) will be integrated with the main Polaris bridge simulator.

Kongsberg has supplied upgraded simulator bridge system consoles to the college

SAM equips Carnival Breeze

www.sam-electronics.de
www.valmarine.com

Hamburg-based SAM Electronics and its associate group company, L-3 Valmarine of Norway, report that they have completed the delivery of integrated navigation and automation control systems to the 130,000-gt Carnival Breeze, Carnival Cruise Lines' latest flagship,

The 306 metre-long vessel, delivered at the end of May by Fincantieri's Monfalcone yard, will use SAM's NACOS Platinum navigation assembly to provide a range of ship management functions using a shared set of standardised workstations with multi-function displays supported by a common operational network.

The complete system comprises dual S-Band and X-Band IP radars linked by an Ethernet network to six Multipilot workstations, each of which can be operated as a radar or ECDIS while also providing conning functions.

A further two Multipilot consoles are additionally assigned for specific ECDIS and conning operations.

L-3 Valmarine's Valmatic Platinum automated system is integrated with the SAM Electronics' NACOS assembly, and is able to handle around 20,000 input/output signals controlled by six processing stations covering seven different fire zones.

Operator control is via ten multi-function workstations variously sited at strategic control points such as the engine control room, ship's bridge and officer cabins.

A supplementary Information Management System (IMS), which includes a one-year historical database as well as analysis tools, reporting and diary functions, is also available for optimising ship's operational performance.

Fugro's Marinestar Manoeuvring System has been approved by the **BSH** marine authority in Germany as both a Speed and Distance Measuring Equipment (SDME) and Transmitting Heading Device (THD). This means that the system can be installed as an alternative to a doppler speed log in order to meet SOLAS requirements, and can act as an alternative to one of the gyro compasses.

MARIS and **Consilium** have reached an agreement to cooperate on the service and installation of all MARIS products through Consilium's network of subsidiaries and agents in more than 50 countries. MARIS will provide a technical training programme for engineers in the Consilium network, covering competence in all MARIS products.

SELEX Elsag, a Finmeccanica company, reports that it has been selected as the UK distributor of Watchkeeper, a wireless Bridge Navigational Watch Alarm System (BNWAS) product from **Net-Logic.**

Ocean Signal has appointed **Taylor Marine** as its dedicated Australian distributor. Based in both Henderson, Western Australia and Brisbane, Queensland, Taylor Marine will be responsible for distributing Ocean Signal's SafeSea range of GMDSS products, which are approved for use by Australian registered vessels.

Fugro Satellite Positioning has also appointed Genoa based **CAIM** as national sales agent in Italy for the Marinestar range of navigation products and services for deep sea commercial shipping.

Unique Systems FZE, a **Unique Maritime Group** company, has been appointed as **Teledyne's** authorised service provider for the United Arab Emirates. Unique Systems will extend warranty and non-warranty repair services for Teledyne's Meridian Gyrocompasses and ancillaries.

SRH Marine Electronics of Greece has entered into an agreement with **IHC Merwede** to act as a supplier to its group of companies worldwide. IHC Merwede, headquartered in the Netherlands, offers design and construction services for the specialist maritime sector.

Norway-based cruise line operator **Hurtigruten** is to install **WESMAR's** NS860 searchlight sonar for navigational safety and hazard avoidance aboard the Antarctic expedition ship Fram. The NS860, designed for cruise ships and excursion vessels, is used to detect underwater hazards near the surface as well as beneath and around the vessel.

Frequentis reports that it has taken a 51 per cent stake in **AMT Shanghai,** as part of its strategy to access the Chinese market. AMT will now become the Frequentis Group's sales and operations unit in China. The current directors will remain with the company, with Rolf Unterberger, member of the Frequentis executive board, representing Frequentis on AMT's board of directors.

ETC, the **MSG MarineServe GmbH** operated 'ECDIS Training Consortium', has reached agreement with **Elcome International** in Dubai to act as its local partner. MSG will provide ECDIS training courseware, systems and Train-the-Trainer courses, together with certificate authentication and trainee database services, for Elcome to deliver the training.

www.fugro.com
www.caim.it
www.maris.no
www.consilium.se
www.selexelsag.com
www.net-logic.co.uk
www.teledyne.com
www.marineserve.de
www.elcome.com
www.frequentis.com
www.oceansignal.com
www.wesmar.com
www.srhmar.com
www.ihcmerwede.com

Satellite-AIS continues to develop

www.orbcomm.com
www.exactearth.com

In addition to Google's efforts to bring AIS data to the masses (see page 32), existing satellite-AIS providers have announced their own respective recent developments with the agreement of a new contract by ORBCOMM and the launch of an expanded data product by exactEarth.

ORBCOMM reports that it has agreed a multi-year framework contract with the European Maritime Safety Agency (EMSA) for the provision of satellite Automatic Identification System (AIS) data.

The deal, agreed through ORBCOMM's partner, LuxSpace Sarl, an affiliate of OHB System AG, will see the information used for ship tracking and other maritime navigational and safety efforts by EMSA, in designated regions and for specific maritime projects.

The framework contract covers up to €500,000 Euros (approximately US$625,000) for the first year, with options for an additional two years (at a cost that is yet to be determined).

When choosing among competing satellite-AIS providers EMSA noted that the ORBCOMM and LuxSpace service was "was the most advantageous in regards of quality price ratio."

Headquartered in Lisbon, Portugal, EMSA is one of the largest consolidators of AIS data and is responsible for maritime safety, pollution and security on board ships for the European Union and its Member States.

In addition to the EMSA contract, ORBCOMM says it is also actively participating in a number of other AIS demonstrations and tests, including a Naval exercise conducted by 22 Pacific Rim nations in the Pacific Ocean which started at the end of June.

The company says that eighteen additional AIS-enabled satellites that will make up its next generation constellation are scheduled to begin launching later this year, which will further enhance the coverage and performance of its service.

exactEarth meanwhile has announced the release of a new product, exactAIS Premium, combining satellite and terrestrial-based sources of data in order to provide detailed global information on ship location.

The service will provide a single provisioning of global AIS data, eliminating the need to de-conflict AIS data from multiple sources.

With access to this new data service, customers can integrate data into their operational and analytical systems and have instant access to the dataset of exactAIS Premium for vessel tracking purposes.

The system currently offers users daily visibility of approximately 80,000 vessels worldwide.

"We are very proud and excited to announce this addition to our exactAIS capability," commented Dave Martin, VP, product management at exactEarth.

"exactAIS Premium builds upon our existing and proven exactAIS service and provides the most complete record of global AIS vessel movements on a global scale, now delivered as a single integrated data service."

"We believe customers who wish to move on to the next level of maritime surveillance will gain great benefit from having such a rich and high quality source of maritime vessel movements available from a single integrated source."

NavSync ENC updating system launched

www.navtor.no

NAVTOR has announced the introduction of NavSync, a new system to allow the most up to date versions of Electronic Navigation Charts (ENCs) to be uploaded directly to an ECDIS from a USB device.

The system has been developed to work in tandem with NAVTOR's recently launched 'Pay As You Sail' DNV-approved ENC service, which allows access to charts through a subscription-based model.

"When a new subscriber signs up to our service, we distribute the ENCs on the NAVTOR NavSync USB compatible device, the NavStick," explains NAVTOR sales manager Børge Hetland.

"By using the USB port on the ECDIS, the ENCs are installed from the NavStick in one simple operation, as opposed to loading multiple CDs into the ECDIS. Updates can then easily be downloaded to the NavStick via an internet enabled onboard computer and transferred to the ECDIS on a rolling basis."

"It really is a time and cost-saving way to get the latest ENCs at the touch of a few buttons."

As an added feature, the NavSync program also offers a print function for producing relevant port authority reports to verify that vessels are equipped with the most up to date versions of ENCs.

NAVTOR marketing manager Willy Zeiler sees the new service as a way of bypassing the problem of most current ECDIS systems not offering internet access, and that NAVTOR will work with manufacturers to help them tailor the technology to their systems.

"We have commenced a development program in connection with the major ECDIS manufacturers to jointly implement technology developed by NAVTOR for the future of ENC handling," he said.

"It is a comprehensive program managed by some of the best skilled and most experienced people in the industry. Together we'll be looking to rollout technology that will further enhance the use of ENC and ECDIS in preparation for the introduction of the IMO mandate."

Børge Hetland and Willy Zeiler, NAVTOR, demonstrate the new system

DNV predicts emissions technology uptake to 2020

www.dnv.com

DNV has developed a simulation model using global shipping data and technology specific information to predict the deployment of emission reduction and energy efficiency technologies up to 2020, and has released information on the results of its work.

These results have been obtained by examining the technology choices available to ensure regulatory compliance and how these technology options will be adopted based on simulated investment decisions for individual ships.

DNV notes that the model is not restricted to the newbuilding market alone and also offers insights on fuel choice, exhaust gas treatment and ballast water treatment for existing ships, with over 20 technology options having been included in the modelling process.

According to the company the model predicts that high fuel costs will result in a drive towards more energy efficient ships ahead of the EEDI regulatory timeframe.

Fuel choices up to 2020 will be driven by the time spent in an Emissions Control Area (ECA), but distillate fuel is a more likely option than scrubbers for most ships towards 2020.

By 2020, it is expected that new tankers, bulkers and container vessels will be up to 30 per cent more energy efficient than today's newbuildings. DNV predicts that one-third of the reductions will be cost effective for shipowners.

The Energy Efficiency Design Index (EEDI) will be the driver for the remaining two-thirds of the efficiency gains.

The results of a survey conducted in March 2012 involving a number of shipping companies have been used as the basis for the investment decisions. The model also factors in fuel availability, regulatory timelines and the net growth in the world fleet, amongst other things.

DNV stresses that this is not an optimisation model trying to predict the optimal choices for the world fleet, but a model that aims to simulate the most likely outcomes amongst a multitude of technology options and preferences in an environment of uncertainty.

An analysis of fuel choices predicts that between 10 and 15 per cent of the newbuildings delivered up to 2020 will have the capacity for burning LNG as fuel. This equates to about 1,000 ships, with larger vessels benefitting more from using LNG than smaller vessels.

Furthermore, a gas-fuelled engine can be justified if a ship spends about 30 per cent of its sailing time in ECAs. In 2020, the number of ships using LNG will increase significantly with the introduction of a global sulphur limit.

"Incorrect investment decisions could be devastating for individual shipowners and collectively they could impact negatively on the environment as well," said DNV president Tor Svensen.

"This model gives shipowners a clear technology and market context to work in, with the opportunity for targeted analysis of individual ship profiles. Shipowners' costs will increase sharply in 2020 when even more stringent air emissions regulations take effect. It will be unfamiliar territory for us all as the fuel market adjusts."

"The investment decisions made over the next few years will be critical preparation for this time and DNV is dedicated to ensuring that the industry as a whole is ready and able to make the correct decisions to ensure responsible environmental stewardship that also makes good business sense."

Setel launches remote monitoring system

www.setel-group.com

Setel Hellas has launched a new addition to its 'Intelligent Vessel' package with the addition of the SeeMBox-V remote performance monitoring system.

The new system, which has been designed to work with the requirements of IMO's mandatory Ship Energy Efficiency Management Plan (SEEMP) that comes into force on 1 January 2013, was officially introduced at the Posidonia exhibition in Greece.

The SeeMBox-V offers a real time platform for the remote monitoring of a ship's performance, and operates independently of the equipment manufacturers' own monitoring systems.

Setel says that the new service can be integrated with "any known existing monitoring system" and can accommodate equipment that is not included in standard Alarm Monitoring Systems.

Online ECDIS training now open

www.safebridge.net

Safebridge has announced that the first of its new ECDIS online familiarisation courses is now available online directly via the company's newly restructured website.

The first course covers type-specific training on the Northrop Grumman Sperry Marine VisionMaster FT ECDIS system and is fully approved by the manufacturer, thereby fulfilling the mandatory requirements of a number of Flag States. Courseware for the Transas Marine NaviSailor 4000 is expected to follow shortly.

The online course content follows the competencies set out by the recommendations of various Flag States and requires the student to have completed IMO 1.27 generic training as a pre-requisite.

It takes the trainee through those competencies again in a series of modules using the required, type-approved, ECDIS software in a virtual machine, in this case the Sperry Marine VisionMaster FT, to learn how the actual equipment controls and displays the information.

This part of the course is covered under the Learning Management System's 'GuideMe' mode and represents 16-18 hours of study, a similar amount of time as would be allowed in classroom training.

Every training package allows a three-week window from first log-in to completion of all the lessons. The purpose of this is to permit the trainees to repeat lessons if required and to thoroughly familiarise themselves with the ECDIS equipment in the 'FreePlay' mode without any tutorial.

"After being guided through the basic functions, the best way to gain proficiency is simply to exercise and 'play around' with the system as it operates in the real world," says Ulf Steden, managing director of Safebridge.

"Take a modern mobile phone for example. You will not learn much from reading the manual only, you become familiar by using and playing around with it, gradually gaining confidence that way."

"A similar pattern can be seen for ECDIS training, which is why we believe that the interactive GuideMe mode combined with the FreePlay mode, in conjunction with the additional time allowed, are so important."

Upon completion of the learning content, the 'TestMe' mode is activated. After successful completion of the test, a manufacturer-specific certificate is issued.

Shipowners, managers and crewing agencies can make 'Fleet Bookings' and then allocate these to individual officers progressively, managing the whole process from within the corporate account facility on the Safebridge website.

Wind-power trialled on bulk carrier

www.lr.org

Lloyd's Register's Strategic Research Group has joined forces with Totempower Energy Systems and Zodiac Maritime Agencies to assess the potential of wind-generation devices onboard commercial ships.

A fully autonomous wind-monitoring system designed and assembled by Totempower has been installed on the Zodiac-managed bulk carrier Cape Flamingo.

Sensors have been installed in locations where the best wind conditions and the most relevant environmental data (wind speed, direction and turbulence) could be expected, with consideration given to the most effective locations for onboard wind generation.

The project is expected to identify and measure the potential generating capacity from wind power for the ship's trading patterns. The data will be used to support the development of computational fluid dynamics-based simulation models that could be suitable for predicting the energy yields on other Zodiac ships.

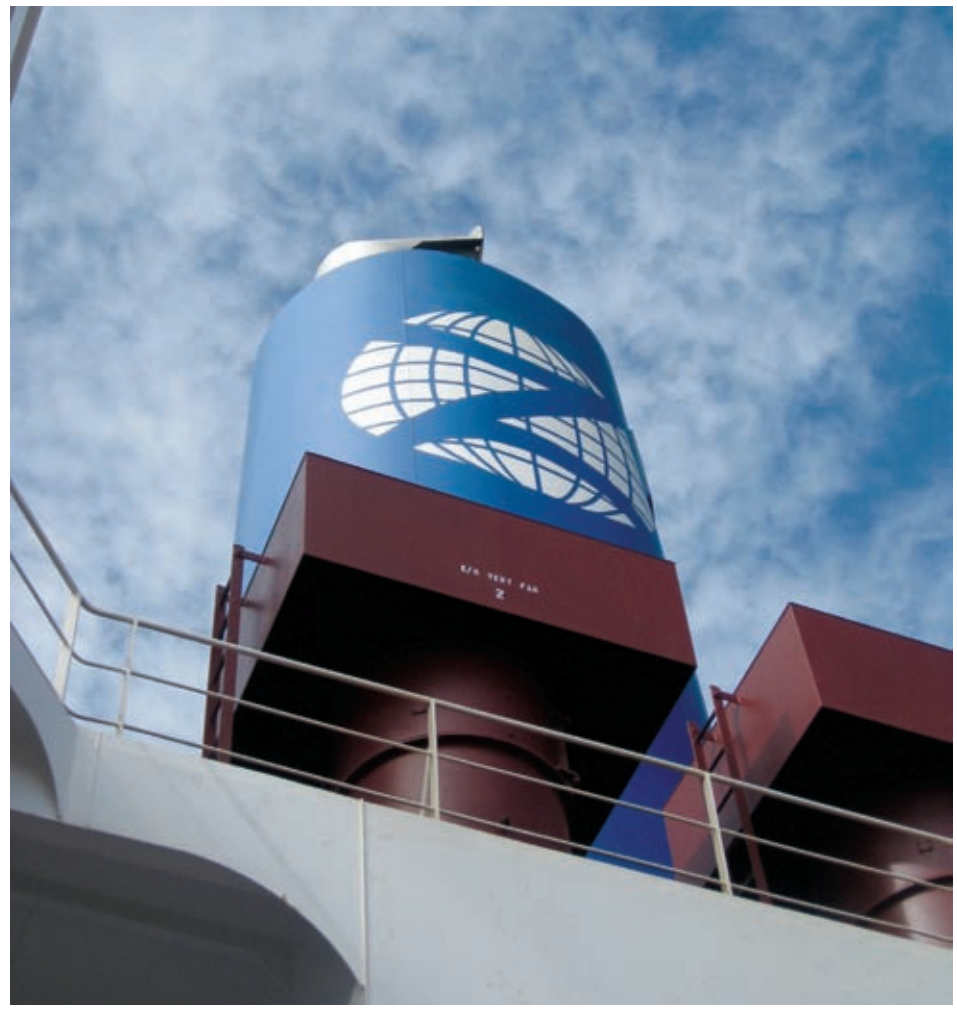
"We are very excited to embark on this initiative," said Simon Turpin, environmental superintendent for Zodiac Maritime Agencies.

"The data-collection phase is expected to last four to six months. When the field trials are completed, we hope to have a better understanding of the feasibility of implementing wind turbines onboard our ships and the associated economic and environmental benefits."

Supplemental wind power is just one of many cleaner energy options being explored by the marine team at the Strategic Research Group in concert with shipowners, designers and operators; others include research into LNG as fuel, nuclear propulsion systems, solar and tidal energy and the potential of fuel cells.

"This is innovative work, and better onboard energy management is the goal," said senior specialist Spyros Hirdaris, Lloyd's Register.

"To save fuel and maximise the understanding of alternative sources of power, we need good data. This project is designed to provide the information that Zodiac needs to evaluate the effectiveness for effective wind-energy solutions."



The wind monitoring system will be installed on the Zodiac-managed Cape Flamingo

Pole Star SSAS unit upgraded

www.polestarglobal.com
www.skywave.com

Pole Star Space Applications reports that it has released an upgrade to its DSAS Ship Security Alert System, featuring new hardware from SkyWave Mobile Communications.

The upgraded DSAS is designed to provide continuity of service and a smooth upgrade path for Pole Star SSAS customers, as well as future-proofing their investment by routeing data traffic via the IsatData Pro network.

The new SkyWave IsatData Pro service utilises the Inmarsat I-4 satellite constellation, also used to run the FleetBroadband service, to provide remote management and communication with mobile and fixed assets worldwide.

"Since first release in 2003, our DSAS product has established an excellent reputation as a sturdy and robust unit and proven itself to be very reliable in service," said Pole Star product manager, commercial shipping, Paul Morter.

"A number of our clients have used this hardware in real-life threat situations and the equipment has always performed well. When we came to consider an upgrade it was critical to maintain the confidence of our customers as well as ensure that it met the requirements of SOLAS regulations."

The DSAS redesign process required Pole Star to produce a unit that could be retrofitted with the minimum of disruption, working to the same physical footprint as previous models, with no requirement for re-cabling or other structural modifications.

That new unit has now completed IEC testing and received fresh classification society Type Approval.

Installation of the new DSAS can be performed by the ship's crew and the upgraded system promises faster message delivery. The unit offers 5-6 days of independent battery back-up and an alarm signal in the event of a security alert.

"Pole Star wanted to be an early adopter of IsatData Pro technology and, effective from May this year, all our DSAS units will employ the new transceiver. This makes the new DSAS effectively a future-proof option for Pole Star customers," said Mr Morter.

"And because the shore user will continue to operate fleets with a mixture of old and new DSAS hardware in the short term, the Pole Star DSAS web application will support both systems with no software upgrades necessary."

S3 vessels to install Veripos positioning

www.veripos.com

Veripos reports that it has been commissioned by Aberdeen-based Specialist Subsea Services (S3), the survey, positioning and ROV subsidiary of the Reef Subsea group of companies, to supply facilities and equipment aboard two of its new multi-purpose vessels, Reef Despina and Reef Larissa.

Under the agreement, both 98.6m vessels, which have been chartered by S3's parent organisation, Reef Subsea, are being provided with Veripos's Ultra Precise Point Positioning service.

Veripos says that this system helps to remove or minimise GPS system errors by direct calculation, precise modelling or estimation, offering continuous decimetre-level accuracies globally with a typical correction update rate of 30 seconds.

Associated facilities for each of the Ulstein-designed vessels, including Veripos LD2-GGT2 integrated mobile units incorporating demodulators and multi-frequency receivers, will be supplied, supported by Verify QC software for real-time position and quality control information.

Retrofit ECDIS from SAM Electronics

www.sam-electronics.de

SAM Electronics has introduced its ECDISPILOT Basic, a new small ECDIS unit specifically designed for retrofit applications aboard ships of all types and sizes, in accordance with IMO carriage requirements beginning this July.

The stand-alone 22-inch panel PC system includes a high-resolution TFT display, and is compatible with all main chart databases such as ENC S57/S63, Admiralty AVCS and ARCS, and C-MAP CM93-3.

Features include an extendable navaid sensor interface module, route planning facilities, a separate layer for user objects (Notices to Mariners), overlays of ARPA and AIS targets, on-screen NAVTEX information, and tidal and current data. There is also an integrated conning page.

SAM says that, depending on class, flag or customer requirements, the system can be extended to include options for a printer, installation of an uninterrupted power supply (UPS), and an interface unit for external radar overlays.

The new ECDISPILOT was officially unveiled at this year's Posidonia exhibition by SAM Electronics' representatives in Greece, Environmental Protection Engineering.

SAM's new ECDIS features a 22-inch Panel PC

Canadian Coast Guard to update ITC

www.dfo-mpo.gc.ca

The Canadian Coast Guard reports that it is to upgrade twelve Marine Communications and Traffic Services Centres across the country with new technology to assist in the provision of communication and traffic services to mariners.

Canada's Marine Communications and Traffic Services Centres broadcast maritime safety information such as weather and navigational warnings, as well as regulating traffic movement and monitoring distress and safety calls.

Information is transmitted from a network of 214 radio towers and 24 radar installations across the country.

The telecommunications network provides standard coverage in all regions of the country, but the Coast Guard notes that the communication and traffic services centres currently use outdated technology and are limited in their ability to cover or share workload in emergencies or unforeseen events like power failures.

"The safety of Canadians and mariners is the top priority of the Canadian Coast Guard," said Keith Ashfield, Canadian Minister of Fisheries and Oceans.

"Improving and integrating communications centres across the country will ensure that important information can be properly broadcast to mariners and emergency calls will be received under all circumstances."

As part of the upgrade programme Marine Communications and Traffic Services will be modernised and consolidated into twelve centres across the country equipped with the latest technology to be better interconnected. As such, the modernised centres will be able to pick up any calls from other connected facilities.

Some facilities will also increase their areas of responsibility and will receive additional staff and resources accordingly. As a result, the Coast Guard will be able to consolidate services into these better centres and close those with outdated technology.

All of the radio towers and radar facilities will remain where they are to maintain the current level of coverage.

This process is an extension of the Coast Guard's general policy over the last 30 years to integrate services into fewer communication and traffic services centres as new radio and navigation technology has become available.

During the past three decades, the Coast Guard has twice expanded the capacity of these centres using new technology - for example, in the 1990s, the Coast Guard used new technology to go from 44 centres to 22 centres.

The upgraded Marine Communications and Traffic Service Centres will be strategically located across Canada, with three in Newfoundland and Labrador, two in Nova Scotia, two in Quebec, two in Ontario, two in British Columbia, and one in Nunavut.

Actisense and Raymarine collaborate on data conversion device

www.actisense.com
www.raymarine.co.uk

Actisense has teamed up with Raymarine to launch the new NGW-1-STNG, a SeaTalk Gateway designed to link data networks.

The system can be used to link old and new data networks using the NMEA standard. The NGW-1 can convert NMEA 0183 data into NMEA 2000 data, and vice-versa.

"We are delighted to partner with Raymarine, a global leader in marine electronics," said managing director of Actisense, Phil Whitehurst.

"Our combined vision for the SeaTalk Gateway (NGW-1-STNG) is to be the number one device for data handling, conversion and reporting for NMEA systems and we have spent a significant amount of time and resource in developing this very user-centric product."

The NGW-1-STNG is available for sale via Actisense's worldwide distributors.

Warsash agrees Digital Publications deal

www.ukho.gov.uk

The United Kingdom Hydrographic Office has agreed a deal to supply Warsash Maritime Academy in the UK with training licences for its full portfolio of Admiralty Digital Publications.

The agreement will see Warsash Maritime Academy, part of Southampton Solent University, utilise the Admiralty Digital Publication portfolio in its passage planning, ECDIS, navigation and radio module training.

The applications, which include the Admiralty TotalTide, Admiralty Digital Lights List and Admiralty Digital Radio Signals (volume 6), will be installed on up to seventy work stations across the Warsash campus.

"We always strive to prepare our students not only for their exams, but also the reality they will face at sea," said Chris Lowe, senior lecturer at Warsash.

"Our new training licences will ensure that officers trained at Warsash are ready to serve on the many ships that are using Admiralty Digital Publications."

SES to supply hybrid ferries

www.ses-marine.com

Marine electronics supplier Ships Electronic Services (SES) has announced that it has been awarded a GBP£375,000 contract to supply all the navigation and communications equipment for two new Hybrid Ferries being built at Ferguson Shipbuilders, Port Glasgow for Caledonian Marine Assets.

These will be the world's first hybrid diesel electric Ro Ro vehicle and passenger ferries to enter service, and will be operating on the Clyde and Hebrides Ferry Service from spring 2013.

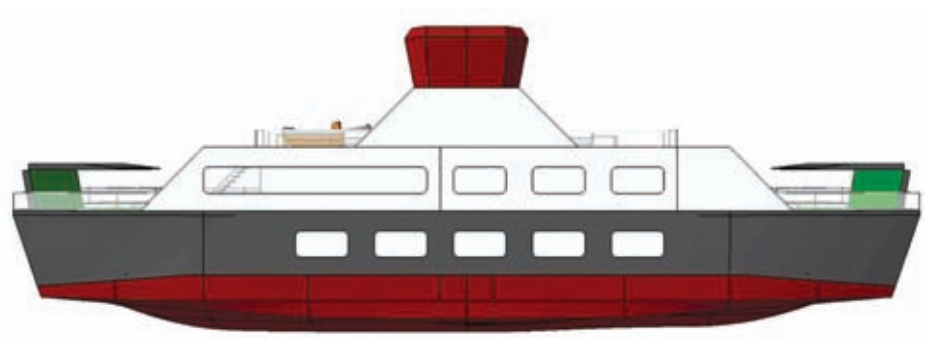
Green technologies will be incorporated throughout the ships, supplying a minimum of 20 per cent of the energy consumed on board.

SES will be fitting the electronic systems for the hybrid ferries, including Furuno Radars and Transas ECDIS.

A double ended heading system from Raytheon Anschütz will be installed enabling all the headings to the AIS, ECDIS and Autopilot to be changed 180 degrees, along with all the navigation lights, at the touch of a single switch.

"These are important vessels for the yard and show Scottish ship building at the forefront of green technology, substantially reducing fuel usage and emissions," said Richard Dean, managing director of Ferguson Shipbuilders.

"We are delighted to be working once again with SES who have provided exceptional service to the yard over the years."



The hybrid ferries will incorporate green technologies throughout the ship

Thomas Gunn launches Voyager 4

www.thomasgunn.com

Thomas Gunn Navigation Services has launched Voyager 4, the latest version of its navigational software system, featuring a number of new applications.

The system is linked to a database of navigational data, displayed using an interactive map interface with the Admiralty information overlay. The software can also be customised for individual voyage requirements.

Subscribers to the Voyager system will automatically receive the new Voyager 4 update.

"We have incorporated a number of industry firsts into the new Voyager," explains Thomas Gunn, founder and managing director of Thomas Gunn Navigation Services.

"The new Route Planning functionality will enable the mariner to plot an optimum route and then automatically receive a tailored list of corrections for that route alone. Our Digital Loose Leaf application delivers digitised loose leaf updates straight to the vessel."

"We are also very proud of our partnerships with organisations such as Shipping Guides, Regs4ships and SPOS, and of new features such as ENC display and touch screen technology which have been developed in response to customer feedback. Voyager 4 will ensure the bridge has access to the specialist navigation tools essential for a safe and efficient passage."

Weekly updates for British Admiralty Notices to Mariners and Tracings, and the Admiralty Vector Chart Service and Admiralty Raster Chart Service are all delivered directly to Voyager, using the system's own file compression technology to minimise data traffic.

Any available amendments to port information will also be included in the weekly Voyager updates service.

The company says that it is also working on a number of additional extra services to incorporate into Voyager, including distance tables from AtoBviaC, publications from the Witherby Seamanship library, as well as anti-piracy tools. These enhancements will be announced when ready.

The Voyager service does not require any additional communication equipment, and is installed on a Windows PC to be updated via e-mail or the web.

The new system is linked to a database of navigational data, which can be displayed in an interactive map

Swedish patrol boats to install IBS

www.northropgrumman.com

Sperry Marine reports that it is to supply integrated bridge systems (IBS) for the new class of patrol boats being built for the Swedish Coast Guard.

The IBS for the patrol boats is based on the company's VisionMaster FT technology, which integrates the vessels' navigation and ship control functions within an Ethernet network.

Each vessel will be equipped with three TotalWatch multifunction workstations, which include ECDIS, navigational radars, GPS positioning, autopilot, steering control and conning information. Voyage data recorders (VDR) will also be supplied to the ships.

The contract includes five new vessels, with the first vessel, built by Baltic Workboats in Estonia, recently delivered to the Swedish Coast Guard.

CA Clase Marinelektronik AB, Sperry's sales and service representative in Sweden, will provide technical support to the Swedish Coast Guard for the project.

"Our state-of-the-art navigation technology will provide optimum situational awareness for the ships' watch officers in carrying out their missions on these new patrol boats," said Hans Rasmussen, director of global business development, Sperry Marine.

Trinity House orders new racons

www.tidelandsignal.com

Tideland Signal reports has won a new order from Trinity House for seven dual-band racons (radar beacons).

The order of these -50dBm SeaBeacon 2 System 6 units falls under an existing framework agreement with the General Lighthouse Authorities of the UK and Ireland (GLAs), and brings the total recently supplied for installation round the British and Irish coasts to 26.

In most cases, the new racons are being installed to replace older and less capable racons.

Tideland says that one of the key features of the SeaBeacon 2 System 6 is its dynamic range and sensitivity of -50dBm for both X- and S- Band.

The racon can respond simultaneously to both X and S-band radars, which the company says helps in displaying its identity and location. Proportional scaling should allow the racon trace to remain visible on radar displays regardless of the range scale selected.

Vessel data to be added to Google Earth

Google is to leverage its considerable resources to extend its indexing of the world's information to include vessel and ocean data. Michael Jones of Google Ventures outlined the plans at a recent conference in the US

Technology giant Google has detailed its plans to include ship and ocean information in its continuing mission to index the world's information, with the aim of making vessel traffic and ocean bathymetry data freely available on the world wide web.

Speaking at the 2012 Joint Warfighting Conference in Virginia, US, chief technology advocate at Google Ventures Michael Jones presented some of the company's new initiatives to change the face of maritime information.

"There are about 200,000 ships, vessels 300 gross registered tons or larger, active on the ocean every single day, all moving around," he said.

"Some of them are fishermen, a lot of them are fishermen, some of them are cargo carriers, oil tankers, some of them are ships from North Korea doing illicit transhipment in the middle of the ocean. There are all kinds of people who enjoy the ocean."

"You might wonder, from a national perspective, what they're doing, and you might want to track them. How would you track a ship at sea?"

One of the most straightforward methods of collecting basic vessel information is through the use of the Automatic Identification System, a mandatory requirement for ships over 300gt.

Mr Jones wants to incorporate this data into the Google Earth system that he jointly developed, to offer a live picture of maritime traffic. However, the limitations of the technology on the ground are not in keeping with this grand vision.

"(AIS) was designed to work at 10 mile range," he notes.

"It turns out that if you build a really big antenna you can put an antenna on shore and get it at even greater range. So the University of the Aegean in Greece built tools for how to build your own AIS ground station, how to attach it to your PC, and how to network them together online so people could build this shore, coastal-watching, ship tracking system."

"You can go to vesseltracker.com and you can see all the ships that are within a certain distance of shore, in real time. What they're doing, what their heading is, click on them and get their information. It could be anybody, though obviously if it's the illicit bad guys they don't have AIS on. For everybody that's good, so to speak – you get them."

The problem using antennas to collect AIS data is that there is a limit to how far from shore it is feasible to operate such a system, and the picture of vessel traffic starts to disappear as they travel out into the ocean.

"(It) doesn't work, they're over the horizon, the signal's too weak," said Mr Jones.

"It turns out that what you need is some kind of exoatmospheric sensor platform – you need a satellite, in low Earth orbit, with AIS radios on it, that has a really good ear and listens all the time."

"One problem that happens in that imagination is that the ships just broadcast at random, they're not synchronised. If I talk and you talk, and we talk at the same time, nobody can tell what we said. It's called superheterodyning. There are ways to deal with that. If Lockheed had built the satellite it would be a 20GHz sample rate and they would deconvolve the signals."

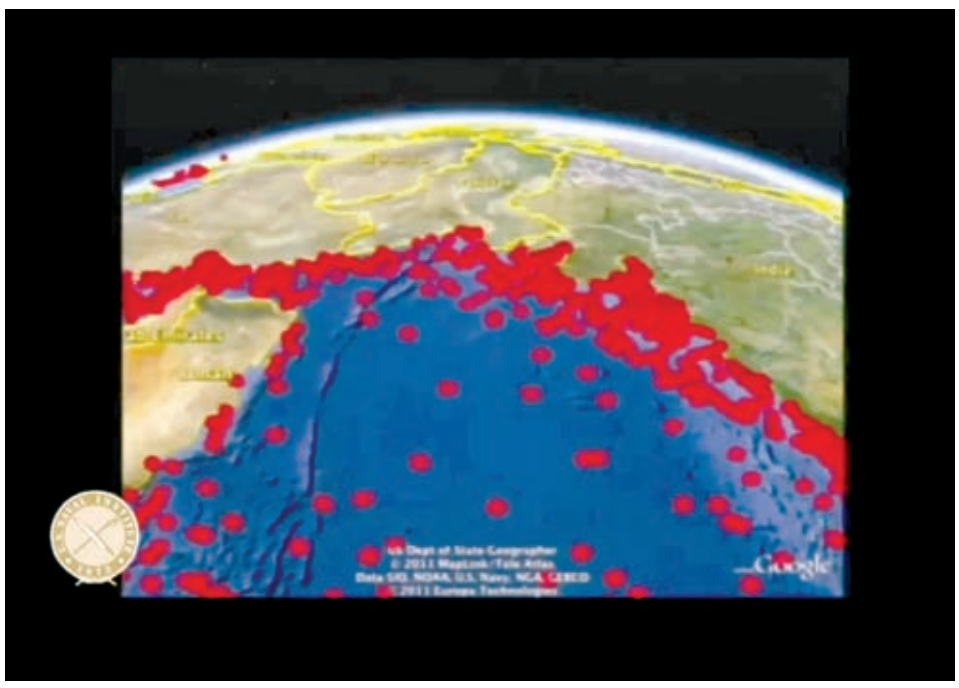
Google's solution was different – the company had two satellites built, of approximately 25cm^3 each. These satellites would be linked to avoid the superheterodyne.

The project was run by just two people, at a cost of approximately $3 million. After construction the company arranged to have them launched as a hosted payload aboard a Russian launch vehicle.

"You pay to get a little spot and a spring, and they toss you overboard at the right time," said Mr Jones.

The result is that Google now receives AIS data, which can be displayed on Google Earth, that displays the location of approximately 200,000 ships.

"We get that on a global basis – every single day, for the last year," said Mr Jones. "If you click on those dots you can see the ship, what it is."



During the presentation a sample of the AIS data was demonstrated, integrated with Google Earth

Free data

Satellite collection of AIS data in and of itself is not a new technology, with existing providers like ORBCOMM and exactEarth already offering services to various countries, including the US, for maritime tracking and surveillance. However, these services are offered on a contracted basis and are paid for as part of multi-million dollar contracts.

Google is suggesting making wide-ranging AIS data freely available, and the wisdom of allowing free availability of AIS data is something which has sparked debate before, with some commentators suggesting that it could potentially create security risks.

Mr Jones accepts that these are issues that Google has considered, but argues that this data is so easy to collect that it is more important to accept the fact that people of dubious intent may well be able to gather this information anyway.

"There's something sort of unsettling about that. There are questions, like should you delay the report of the data?" he said.

"You could easily get Google to do whatever the right thing is – but you couldn't get Al Qaeda to do the right thing. If these things cost $3 million for the whole programme everybody could do that. Syria could do that, North Korea could do that."

"It angers me, as a citizen, that I can easily do this and the entire DoD (US Department of Defence) can't do this. The NRO (National Reconnaissance Office) can't do this. It's somewhat lamentable to me. Part of my mission here is to tell you that this is going to go live at some point, and if you are surprised on that day that's your fault, because I told you."

When the AIS data is displayed in Google Earth, users will be able to click on a dot representing a ship and see a range of information about that vessel. Mr Jones demonstrated this during his presentation by clicking on one particular oil tanker in the display.

"That's a time view over the course of a month. He leaves Gibraltar loaded up, and he runs down along the coast. He fills up in the Canary Islands with local oil and diesel fuel, and then he makes a stop on the coast of Africa and he runs back up to Gibraltar," he said.

'If you click on those dots you can see the ship, what it is' – Michael Jones, Google Ventures. Photo: US Naval Institute

"I'm working with presidents in Indonesia and Iceland to make this kind of thing a primary weapon which they're going to use, an intelligence weapon, to defend their EEZ from illicit fishing. It's a service that the US can't help them with, but that Google can help them with, and these two guys who built the satellite."

Ocean bathymetry

In addition to its work on bringing AIS data to the masses, Google is also involved in a project to extend its Google Earth product beyond just the surface of the planet.

"It also occurred to us that the floor of the ocean is just as big as the surface. Unlike the surface, you can't even see the floor, you don't know what's down there," said Mr Jones.

"The way the Navy validates NOAA nautical charts is by diving into uncharted sea mounts, with submarines. It doesn't seem like the best way to me."

"So we had this idea that maybe we should map out the ocean – we have satellite photography of the dry part of the Earth, maybe we could do undersea mapping? Not in a coarse way, but in a minute, Google Earth-quality way."

To begin with Google collated all of the available information to see how much existing data it had access to, and how much more would need to be gathered. This included known ocean bathymetry from research groups, NOAA, NAVOCEAN, and others.

"This has been a five year project, and it's hard," said Mr Jones.

"We've got all the data that anybody has, put it all together – but globally it's not very much. It's a big planet."

To fill in the missing pieces, Google needed a way to chart the ocean floor. Multi-beam echo sounders can be used for this, but as Mr Jones notes, there's a lot of ocean to cover and that only allows it to be done in small strips.

"That's not going to work. What you need is something that's a kind of robotic undersea swimmer that can measure this bathymetry almost like a photograph – but the technology for that didn't exist," he said.

"What you need is synthetic aperture sonar – this isn't something you can just buy somewhere, so how are you going to build that? You need to do it on a pretty big scale – 100,000 km^2 per day to be able to get the whole ocean in five years or ten years, a reasonable interval."

Google's answer was simple – the company just built the technology itself.

"It turns out that the ONR (Office of Naval Research) had done research on this, but they ran out of funding during some political squabbles so they cancelled the project at MIT and CMU and ONR," said Mr Jones.

"The students went off to get jobs, get married and have real lives. We found out about this afterwards from one of the professors. We tracked down all the students, 17 of them, and convinced them to quit their jobs, sell their house and move to California."

"We set up a little start-up company, put them in it, and they could build this thing. They did it."

The equipment that the team created is described by Mr Jones as resembling a torpedo, with a 30-inch diameter. The technology built into the unit can fix details of the sea floor to within a few centimetres, at full ocean depth.

"There isn't one of those anywhere else," he said.

"The Navy's tested this and it works great. It's everything they'd wished it would be if they could afford to do it, but then they got too poor and they couldn't do it. We could do it as a hobby and they couldn't do it as US Navy."

"We told the Navy 'we're your friend and it was your idea in the first place, we have the exclusive rights to it now but we'll sell them to you at cost or give you the data or something'."

Similar to his earlier point about parties of dubious intent being able to run their own projects to gather this type of data, Mr Jones expressed his concerns that the US military was unable to gather this type of information while being unaware of whether other parties would know things that it didn't.

"We're going to measure the ocean. It's going to take a long time, and I don't know when we'll start but when we survey the South Pacific we'll run across wherever it is the NRO de-orbits its satellites. If we put that on Google Earth there'll be a treasure hunt. That seems like a bad treasure hunt to encourage," he said.

"So we spent a lot of time talking to the right people, to say 'if you've got stuff lying around we're going to find it'. Along with Amelia Earhart's aeroplane, Captain Cook's steering wheel, and all kinds of stuff."

"Google of course are going to have that dialogue, but if we were the Chinese government we wouldn't have that dialogue. And if we can build this thing so could they. And so could almost anybody else."

As a final point, Mr Jones reiterates the that this information is available – and that Google's job is to make available information easily accessible. It is important for everyone to recognise that this information is out there, and deal with the consequences of that reality.

"I don't feel that all information should be accessible, and neither does Google," he said.

"We organise the world's information, but there's an implicit exception there – we organise the world's voluntarily provided information. If you make a website, we'll index it."

"We're not going to break into your house and look for your website. If you make it public and want the world to find it, we'll help the public find it." DS

Letter to the Editor – response to The future of Positioning

Dear Sir,

The article on 'The Future of Positioning' by Andy Norris in the June/July *Digital Ship* was interesting and thought provoking, but some clarification may be helpful.

eLoran is not a hyperbolic system, it is an all-in-view ranging system, operating in a similar way to GPS, but with high-powered transmitters on the ground, precisely synchronised to clocks independent of GNSS, instead of low-powered transmitters in the sky. Hence its suitability as an alternative, when satellite systems are disrupted.

The impression may also have been given that eLoran infrastructure is expensive. That is not the case, it is far less costly than a satellite system and much of the basic infrastructure is already in place.

The number of additional stations needed to cover the world's major ports and waterways should be quite manageable. A study by the General Lighthouse Authorities Of the UK and Ireland has shown that it is the most cost-effective option for ensuring resilient positioning in our waters and the same is probably true for other extensive areas with dense traffic.

Another option considered in the article, inertial systems, would be attractive, but there is no sign that these will be available with sufficient performance, other than for very short GPS outages, at a cost acceptable for non-military applications in the foreseeable future.

That leaves the option of improving the performance of GNSS receivers, within an integrated navigation system, supported by radar positioning. This is undoubtedly the right way to go, but it will require a complete rethink of design concepts and standards, which will take years, if not decades to achieve.

The fact remains that eLoran is the only proven option for supporting GNSS, available in the short to medium term. Without it we will be relying on GNSS (effectively GPS) as the sole means of positioning for many years to come.

Yours sincerely,

Nick Ward
Research Director,
General Lighthouse Authorities Of
the UK and Ireland

Dr Andy Norris -

Nick Ward is quite right in emphasising that eLoran is not strictly a hyperbolic system.

However, its chosen name makes it clear that it should be considered as an enhancement of the original Loran hyperbolic system. My use of the term 'hyperbolic' was meant not only to convey this close association to Loran but also to other hyperbolic systems, such as Decca and Chayka.

It was particularly used to help suggest the similarity of the technology involved, such as its use of low frequency electromagnetic waves, tall transmitting masts, powerful transmitters, etc. In the possible transition to eLoran I believe that the 'hyperbolic' term remains useful, even though it is technically a misnomer.

If eLoran is adopted, maybe the term 'LF ranging system' will be more precise into the future but an internet search on this at present highlights unrelated historical aviation systems.

My article was not suggesting that eLoran would be as expensive as the infrastructure for a full Global Navigation Satellite System, which amounts to many billions of dollars – but how much would eLoran cost, even for a regional system?

It appears to be in the order of hundreds of millions of dollars – just decommissioning Loran-C in the US was quoted in 2009 to be $146M. eLoran is undoubtedly a good technical solution but the international community needs to be assured that it is also cost effective.

Relying on technology

As the range of technologies available to navigators continues to develop, and bridge officers increase their reliance on the information provided, the potential consequences of a machine failure will grow in magnitude. *Dr Andy Norris* examines the risks

We are encouraged to use the term 'navigational aid' for items of navigation-related equipment onboard a vessel. This helps to emphasise two important points concerning their use.

Firstly, that they are there to aid the bridge team in the safe navigation of the vessel. Secondly, that the loss of any one aid does not prevent safe navigation, even though it could result in it becoming a more demanding task.

For instance, a failure of the log or gyro is unwelcome but far from being a major safety issue, simply because other installed equipment can be used to provide a satisfactory, if not ideal, alternative.

Even though smaller ships carry only one radar, its potential failure is not a catastrophe, although it would have a major influence on the way that the vessel must be navigated to ensure continued safety, ideally to the nearest port to enable a repair.

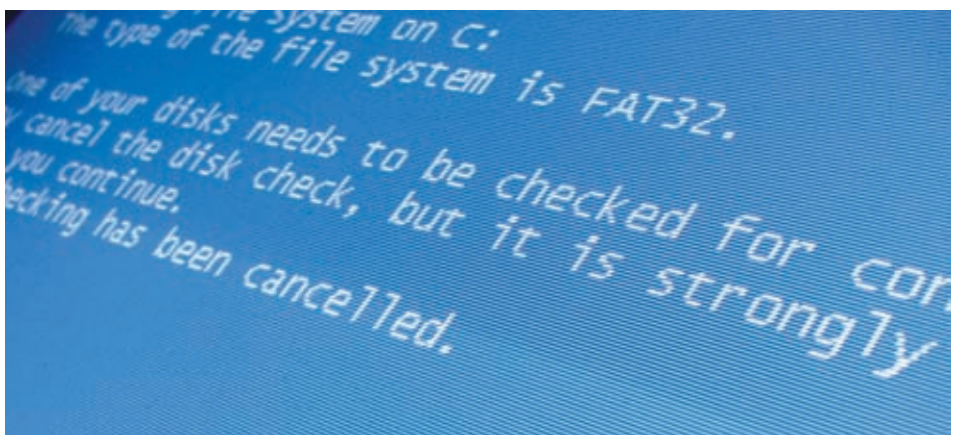
ic navigational tasks from the human. Revised thinking about the failure of such equipment is essential.

ECDIS

It is obvious that if all ECDIS functionality is lost, the ship will not be inevitably involved in an accident – but continued safe navigation will become highly questionable. One of the few benefits of paper charts is their remarkable resilience to failure.

If the formal back-up is not paper charts a minimum of two ECDIS units are required to be carried – but what is the probability that both could fail during a voyage, either randomly or by succumbing to a circumstance that causes both to fail simultaneously?

Most importantly, users need to be trained in coping with such a situation, however rare. In particular, companies need to have explicit onboard procedures in place to ensure best practice.



As reliance on technology increases, the consequences of machinery failure become more serious

For larger ships at least two radars are required, greatly increasing the probability that radar information remains available.

With multiple GNSS equipment onboard complete loss of electronic position is becoming increasingly rare.

However, a ship is well equipped to enable position fixing by alternative methods, such as by using visual and radar sights or by log and gyro to enable DR or EP based position estimates.

Whenever using alternative methods to compensate for the non-availability of a particular navigational aid, the overall risk of an accident clearly becomes greater but remains acceptable – at least until the vessel next berths, when repairs have to be carried out.

Of course, there are functions related to the safe navigation of a vessel that are essential, such as the steering gear. A failure of such functionality results in a true emergency.

But we have entered an age where some newer items of navigational equipment are also providing essential functionality.

ECDIS is a leading example, but in the foreseeable future a major group will arise, of equipment that takes over specif-

In coastal waters perhaps a Pan-Pan message would be the appropriate first step, immediately alerting authorities and nearby vessels.

But then what should happen on the vessel – and what different actions should be taken when the event occurs in ocean waters? All this surely needs to be the subject of best practice studies – and perhaps even of legislation.

Perhaps it makes sense for essential equipment, such as ECDIS, to be designed to meet defined reliability criteria, so at least the rate of such emergencies would be under some control and at 'acceptable' levels.

Until ECDIS can be shown to meet laid-down reliability requirements, should there a further level of emergency backup? This could be a requirement to carry a set of small scale paper charts suitable to get the vessel, with appropriate care, to any pilotage area close to the planned voyage.

This would only be practicable if there was no requirement to update these charts on a weekly basis but just to renew them regularly, perhaps every two years.

Another feasible solution would be an emergency laptop computer capable of displaying ENCs.

In fact, it is far from unknown for ships navigating on paper to receive copies of missing essential charts by fax or e-mail. This is also a potential emergency backup for ECDIS.

Little international thought has apparently been applied to this problem but it surely deserves some real attention.

Evolving skills

The skills required for the safe navigation of ships continue to evolve, not least because of advances in technology.

Despite these changes, the OOW continues to be the central integrator of all navigational data. This human-gathered knowledge is then used to make the navigational decisions to ensure safety.

However, in the immediate future we will need to think more clearly about the options ahead, simply because the technology that is becoming feasible will steadily undermine the need for human involvement in an ever-increasing number of navigational tasks.

An item of equipment making complex decisions on behalf of the navigator effectively ceases to be an aid but becomes an essential item.

The human navigator is removed from the particular loop, effectively losing the skills to take over should the equipment fail.

It is therefore only appropriate for the equipment to be fitted if the machine can perform consistently much better than a human at the specific task.

It must have a very high availability – and on the rare occasions that a failure occurs the vessel needs to be navigated in accordance with defined emergency procedures.

An example is the automatic position and motion integrity checking function of an integrated navigation system (INS). Such systems could become mandatory in the foreseeable future through IMO's e-Navigation programme.

It appears evident that an INS and associated equipment could be designed to greatly outperform humans in the integrity checking of position, including reliably establishing whether GNSS position is being compromised by interference, jamming or other problems.

It would also be able to compare GNSS position with any future alternative positional sensors such as eLoran and automatically make available the best position and motion data, with appropriate warnings, if accuracy has been degraded.

The INS will be taking continuous measurements, 24 hours a day. Unlike humans, it will not get tired or bored with the activity, will effect a greater accuracy and will react faster than even the most diligent officer in alerting a potential problem to the bridge team.

If this technology is proven, the OOW can be relieved of having to make positional integrity checks, enabling more time to be given to navigational tasks that benefit from being human-centred.

The result would surely be enhanced overall safety, especially because an increasing number of OOWs appear to neglect this onerous and generally non-rewarding task – 'it's always right so I don't need to be particularly careful' .

Humans and machines

The tasks that humans presently excel at include situation awareness monitoring using the windows and radar displays, collision avoidance decisions and ECDIS-related activities.

Humans are also good at comprehending and appropriately reacting to the latest area-related information, such as that given by Maritime Safety Information sources and weather forecasts.

Importantly, humans can generally react very well to unexpected or unique situations.

However, when resilient and always accurate positioning truly becomes available, machines will be able to take over an increasing number of tasks.

Whenever automation can be shown to give greatly improved safety and environmental protection at an affordable cost there will be inevitable pressure for its introduction.

In the rather more distant future, the resultant limited human interaction needed may be best performed by shore-based personnel, perhaps culminating in the unmanned vessel.

On the route to greater automation, the increasing reliance on navigation technology will mean that equipment design and production techniques have to evolve. The equipment rather than an individual will be increasingly the cause of remaining accidents.

We currently despair that 80 per cent of marine accidents are caused by human error, but what would we think if 80 per cent were caused by machine error, even if the total accident rate were lower?

In particular, equipment manufacturers would have to get to grips with the issues created by this greater liability.

It will be a different world, but it is the direction that technology is presently going in all transport sectors – road vehicles, trains and aircraft – with platforms for warfare, such as drones, unsurprisingly at the forefront. **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

Digital Ship

Asian Events 2012

DIGITAL SHIP HONG KONG, 10-11 OCTOBER 2012
KITC, HONG KONG

DIGITAL SHIP KOREA, 30-31 OCTOBER 2012
BEXCO, BUSAN

Photo: Carey Ciuro

Selection of last year's delegates of Digital Ship Asian events

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