# **March 2013** www.thedigitalship.com

# **Globalstar launches final** second-gen satellites

After years of ups and downs, with stock market stutters and reports of satellite problems, Globalstar is ready to start a new chapter after completing the launch of the final six satellites in its second generation constellation

lobalstar has successfully launched its final six new second-generation satellites from the Baikonur Cosmodrome in Kazakhstan.

The Globalstar satellites lifted off aboard the Soyuz launch vehicle with the Fregat upper stage on Wednesday, February 6, 2013.

Launch services provider Arianespace confirmed that, as planned, the upper stage accurately injected the six second-generation satellites into their targeted low earth orbit of approximately 920 km, and that all six satellites were successfully acquired following separation from the Dispenser and Fregat Upper Stage.

Initial satellite in-orbit testing is currently underway. All six spacecraft were reported to be operating normally immediately following the launch.

This mission was the fourth and final launch for the new network, completing Globalstar's plan to orbit 24 second-generation satellites.

Globalstar has previously launched 18 second-generation satellites in launches that occurred on October 19, 2010, July 13, 2011 and December 28, 2011, all of which have already been placed into commercial service.

This second-generation of satellites has been designed and manufactured by Thales Alenia Space with a service life of fifteen years, twice that of



The Soyuz launch vehicle successfully lifted off from Kazakhstan on February 6. Photo: Arianespace

Globalstar's first-generation satellites. "I am pleased to announce the successful final launch of our secondgeneration constellation," said Tony Navarra, president of global operations for Globalstar.

"In 2006, we set out to be the first mobile satellite services company to successfully deploy a second-generation constellation of LEO satellites. This extraordinary undertaking took years of dedicated effort and a singularly focused mindset to complete the mission."

Jay Monroe, CEO of Globalstar, added, "We fully expect Duplex service to be restored to the high level of quality that Globalstar customers historically enjoyed."

"We thank all of our employees and partners who were able to make this successful launch possible, including launch services provider Arianespace and satellite contractor Thales Alenia Space."

Globalstar expects to place these final six second-generation satellites into commercial service by this summer, with the first two being raised and placed into service by the end of February.

#### Finance

This successful launch has crowned a positive start to 2013 for Globalstar, continued on page 2

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#### SATCOMS

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#### continued from page 1

which recently reported that it had reached an agreement for a new round of financing through the sale of up to \$30 million of its voting common stock to investment fund Terrapin Opportunity.

The company says that it has obtained a "committed issuer managed equity financing facility" under which it may sell chunks of its voting common stock to Terrapin from time to time.

"This facility provides us with funds to help finance our capital obligations over the next two years," said Mr Monroe.

"The structure of this facility gives us flexibility and pricing control that we can use to manage the potential dilution of additional equity."

"On the basis of the past year's revenue and profit growth and our execution on our long-term strategic plan, this financing demonstrates investors'

increased confidence in Globalstar as we continue with final preparations for our fourth launch of six new satellites in February."

Under the terms of the transaction, Globalstar can draw up to \$30 million over the 24-month period once a registration statement it has agreed to file with the SEC becomes effective.

Globalstar will be able to determine the timing, price and amount of the stock sales itself, which will be based on the company's share price over time.

This announcement followed disappointing earlier news towards the end of 2012 that Globalstar's common stock had been delisted from the NASDAQ stock market.

NASDAQ took this action due to the fact that Globalstar's common stock had been trading below the minimum bid

price of \$1.00 for a period longer than that permitted by NASDAQ listing rules.

Despite this, the company says that it intends to once again obtain a listing for its shares on a suitable stock exchange in the future.

"The board of directors carefully deliberated, over an extended period of time, the advantages and disadvantages of effecting a reverse stock split in order to seek to regain compliance with NASDAQ's listing qualifications, and decided that doing so was not in the company's or its stockholders' best interests at this time," said Mr Monroe.

"We remain keenly focused on the execution of our satellite communications and spectrum strategies to drive stockholder value. We fully intend to seek listing on an accredited exchange as soon as it is feasible to do so." DS

# **VSAT roll out for De Poli Tankers**

www.marlink.com

De Poli Tankers BV has recently completed a communications upgrade project which has seen a series of new VSAT installations aboard its vessels.

Based near Rotterdam, De Poli Tankers operates a fleet of six IMO 2 chemical tankers, two LPG tankers and one Ice classed 1A chemical/ethylene tanker.

The communications project was carried out by Marlink in close co-operation with De Poli's in-house affiliate company Maritime Performances BV, which is responsible for management of the tankers, and began with the installation of WaveCall Ku-band VSAT services aboard the chemical tanker Miro D.

Marlink and Maritime Performances have worked together for over three years, starting initially with Inmarsat FleetBroadband services, and most recently collaborated on the integration of standardised Ku-band VSAT packages on

The Miro D VSAT installation, which took place in Riga, Latvia, featured a 1 metre Ku-band antenna, iDirect modem,



The De Poli vessels have installed Ku-band VSAT and network management technology

#### **Hybrid broadband for Scandinavia**

www.net1.se www.ancylus.com

Ancylus AB and Net1 have entered a strategic partnership in order to offer a hybrid broadband solution to the Scandinavian and Nordic maritime markets.

The hybrid offering will include Net1's wireless broadband service to vessels operating close to Scandinavian shores (at a range of 50 – 60 Nautical miles) or in the region's ports.

Once the vessels leave the reach of the wireless network the communication switches over to broadband via satellite, provided by Ancylus.

The companies say that this service is aimed at sectors like short sea trade, the fishing industry, offshore projects, and other marine activities in the region.

"At a time when the shipping industry is suffering from an economic down-turn, we are happy to help their businesses by substantially lowering the communication costs," says Ulf Harderup, CEO of Ancylus.

"The shipping industry is increasingly getting dependent on high speed internet and voice, both for business and for leisure. By introducing the hybrid solution we are both increasing the data speeds and decreasing the costs."

Net 1 uses the NMT 450 frequency and covers approximately 95 per cent of Sweden's land area, reaching up to 120 kilometres from the coastline.

The network is supplied by Ericsson and state Teracom operators.

Globalstar has signed a Value Added Reseller (VAR) agreement with Wireless Innovation, which will now market the Globalstar SmartOne device to the maritime and transportation sectors throughout the EMEA, particularly to customers involved in asset tracking.

Globe Wireless and Arimar have entered into a long-term cooperation agreement to provide Globe Wireless products and services to Italian flagged vessels and other Mediterranean maritime customers. As part of this agreement, Arimar will act as the billing agent for Globe Wireless Italian flagged vessels.

www.globalstar.com www.wireless-innovation.co.ukwww.globewireless.com www.arimargroup.com

De Poli tankers.

VoIP adapter, Ethernet switch, antenna and ACU, as well as an XChange network and traffic management unit.

This configuration is identical to the systems subsequently installed on five other De Poli Tankers vessels as part of the upgrade project.

The bundled package supplied by Marlink has already been deployed on more than 100 other vessels over the course of 2012, and combines VSAT and MSS connectivity services that can switch automatically via the XChange platform.

XChange also allows the shipping company's shore based staff to connect to the ship and manage its communications.

"We have good control of the available connectivity," said Ardi van der Wagt, IT specialist at Maritime Performances.

"We can manage the internet access based on time slots for the crew, which means they are able to focus on the job at hand but have freedom to communicate when off duty, which is the important part of ensuring they are happy on board."

"Vizada XChange helps us to manage the connectivity in this way, especially with the new update which allows us to manage access during specific hours or create allocated time slots for users."

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## **'Business Class' service from KVH**

#### www.kvh.com

KVH reports that it is launching new Unrestricted Rate Plans featuring what it calls 'Business Class Service' for its mini-VSAT Broadband network.

The Business Class Service will provide unrestricted, prioritised, multimegabit service with unfettered access to all internet applications and protocols, including streaming media formats, Voice over IP (VoIP) services like Skype, and mediaheavy websites.

KVH says that the new service will be "competitively priced" when compared to other shared maritime VSAT services.

"The launch of our new Business Class Service culminates a two-year initiative to upgrade our network, increase our capacity, integrate network management capabilities into our core product offering, and devise unrestricted rate plans that provide unprecedented performance while also being cost effective," said Brent Bruun, executive vice president of KVH's Mobile Broadband Group.

"We're working hard to keep up with the exponential growth of the internet and mobile data services. In the past five years there has been an 18-fold increase in the use of mobile data, while more than half of all internet traffic is now video. There are more than 700,000 apps for iPad, iPhone and Android devices, millions of which are sold every year."

"Connectivity services that don't embrace these new technologies will not be able to keep up with the new cloudbased services and other exciting innovations we are sure to see in coming years. KVH is constantly working to improve our service to ensure we provide our customers with the connectivity they need."

KVH says that, rather than block highbandwidth services or limit access through deliberately reduced speeds, its new usage-based rate plans provide a defined amount of data in a monthly package and give the customer the opportunity to buy more service if the package threshold is exceeded during the month.

Heavy users can accordingly consume as much bandwidth as they desire because they are paying for that additional service. Further, with these new plans, KVH says it will dynamically monitor usage and can add satellite capacity as required.

Bundles range from 5 GB to 40 GB, with additional gigabytes starting from \$200 (\$0.20 per megabyte), offering speeds up to 4 Mbps.

To support the Business Class Service, KVH has incorporated the features of its CommBox Ship/Shore Network Manager into the integrated below decks unit of its new TracPhone V7-IP and TracPhone V11 products.

Users can manage a range of aspects of the service from this unit, and will be able to set up distinct, firewalled networks for operations and crew use.

KVH says that it is also offering internet café and VoIP calling card services to help the crew self-manage their use of the service. Transmission optimisation and onboard caching, least cost routing and email management are additionally available as part of the CommBox solution, at the owner's discretion.

In related news, KVH has also recently announced that it has doubled the capacity of its mini-VSAT Broadband network in the Caribbean region.

This capacity increase was provided as part of its ongoing global network upgrade involving deployment of Variable Coding, Spreading, and Modulation (VCSM) technology provided by ViaSat, KVH's partner in the mini-VSAT Broadband network.

This major upgrade to the network followed closely after previously announced improvements that increased capacity in Europe by more than 60 per cent.

"The Caribbean region upgrade is part of our planned expansion to support the increased demand of our rapidly growing customer base," said Mr Bruun.

"We are rolling out a new version of



'Connectivity services that don't embrace new technologies will not be able to keep up' – Brent Bruun, KVH

our modulation technology that enables us to handle transmissions much more efficiently, thereby increasing the amount of data that our network can carry."

"Thanks to our end-to-end design approach, we are able to upgrade the software in our large population of fielded TracPhone systems over the air, providing a future-proof solution that we continue to improve as we add new features and network enhancements."

#### IMO secretary-general visits IMSO to discuss tech development

#### www.imso.org

Koji Sekimizu, the Secretary-General of the International Maritime Organization (IMO), has paid a visit to IMSO (International Mobile Satellite Organization) headquarters in London to discuss "matters of mutual interest", in particular in the field of the future of maritime communications and how new technologies can support the sustainability of the maritime sector.

An Agreement of Cooperation has



Capt Esteban Pacha, director general of IMSO, and Koji Sekimizu, secretary general of IMO, during the visit

existed between the two Organisations since May 1982, revised following the privatisation of Inmarsat in 1999.

IMSO and IMO enjoy reciprocal observer status at the meetings of each Organisation, and exchange information on their activities and programmes of work in the field of maritime communications for maritime safety and efficiency of navigation.

Mr Sekimizu also met the executive chairman of Inmarsat, Andrew Sukawaty, during the visit, and visited the Inmarsat Satellite Control Centre.

"The working relationship between IMSO and IMO is most important as it recognises the crucial role that GMDSS plays in the safety of life at sea, and the important improvement that its modernisation over the next few years will bring to shipping," commented Captain Pacha-Vicente, director general of IMSO.

"In addition, as LRIT Coordinator, IMSO continues to work closely with IMO in ensuring the system is efficiently implemented and fits the purpose for which it was created."

Mr Sekimizu also added that "our exchange of views about a number of issues surrounding satellite communications for ships reconfirmed the established value of our partnership which is fundamental to the activities of both Organisations to maintain sound legal and administrative frameworks for sustainable shipping."

# Station711 crewtalk integrates Multi-voice

#### www.station711.com

Station711 has announced that its crewtalk solution has been integrated with the FleetBroadband Multi-voice service.

As a result of this integration project up to nine simultaneous voice calls will be available via the service, which the company says should increase both operational and personal communication accessibility.

The Station711 crewtalk solution offers operational and pre-paid voice services, allowing different profiles to be allocated to different users and onboard extensions.

The system integrates with the existing onboard PBX to the FleetBroadband terminal and ensures that all crew phone calls are routed through the prepaid system from dedicated voice lines, or from the PBX extensions. This allows the system to be used to manage telephony usage and costs as well as the Multi-voice capability.

Up to nine simultaneous voice lines can be used with FleetBroadband 250 or 500 terminals, and up to four simultaneous voice lines with FleetBroadband 150.

Thrane & Thrane Sailor terminal users can create a fully-integrated crewtalk and Multi-voice solution with just a firmware update. For other FleetBroadband terminals, additional hardware can be used alongside the terminal to access the additional telephone lines with the



SAILOR users can access Multi-voice with a firmware upgrade

#### Multi-voice services.

"Station711's crewtalk solution is tailored to address varied onboard needs and challenges faced by crews at sea," said Ohad Har-Lev, managing director mobile satellite services at RRsat, parent company of Station711.

"The integrated solution allows shipping companies to take advantage of the Multi-voice service to increase the commercial and operational onboard productivity and significantly enhance crew welfare through this proficient solution."

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# **HEEP IN TOUCH**





#### SpeedCast buys Elektrikom

www.speedcast.com www.vsat.nl

Hong Kong based SpeedCast Ltd has completed, with the support of its majority shareholder, TA Associates, a buyout of Elektrikom Satellite Services, a satellite communications service provider based in the Netherlands.

Elektrikom will be combined into SpeedCast's maritime business unit to form part of one maritime satellite communications service provider.

Elektrikom has provided satellite and wireless-based communications solutions to the maritime industry since its foundation in 1985. The company is headquartered in Rotterdam.

The company has delivered a range of Ku-band and C-band VSAT systems as well as L-band services, in addition to wireless technologies and a range of other IT solutions.

"SpeedCast is well established as the leading provider of maritime communication solutions in Asia," said Pierre-Jean Beylier, CEO, SpeedCast.

"While our services are global, we wanted to strengthen our presence in Europe to further support our partners in this key region. With its strong position in the most important European shipping hub, Elektrikom is an ideal fit."

"With the acquisition of Elektrikom, we are well positioned to deliver a higher level of service and support to SpeedCast and Elektrikom customers' vessels in Europe and worldwide."

Joining the SpeedCast Group, Elektrikom will be able to offer its maritime customers a wider portfolio of products and services and to better serve its global customers' needs in Asia.

Elektrikom will also benefit from SpeedCast's certified field engineers, able to support maritime services and antennas onboard vessels and platforms.

Elektrikom's worldwide satellite communications infrastructure will be added to SpeedCast's existing global network, adding an overlay network which will provide redundancy and backup as well as introducing new options for SpeedCast's global customer base.

"The acquisition of Elektrikom by SpeedCast is a very positive development for our customers, our partners and our employees," said André Eerland, managing director, Elektrikom.

"There are significant synergies between the two companies, with two leading technology platforms, iDirect and Comtech EF Data, and worldwide coverage, which will greatly enhance our ability to deliver customised solutions to meet our customers' needs."

Mr Eerland will remain with the merged entity and will serve as head of maritime globally.

This acquisition follows shortly after SpeedCast's acquisition of Australian Satellite Communications (ASC), a satellite communications service provider in Australia.

#### 20-mile comms system launched in UK

www.buzzconnect.co.uk/marine

UK-based Buzz Marine has launched HubbaX, a mobile broadband system specifically designed for the marine environment which it says will offer ADSL equivalent broadband speeds for vessels operating up to 20 miles offshore.

Using patented aerial technology and 3G networks, HubbaX will provide WiFi internet access onboard, as well as voice access via VoIP, without a satellite connection.

An integrated data SIM is used to create a WiFi hotspot, though the unit can also be wired via an Ethernet port to connect to multiple devices such as laptops and iPads.

The IP66 rated HubbaX can be mounted with a standard one inch marine antenna mount, and is powered by a 12v DC power pack. The unit is also protected by industry standard security protocols WEP, WPA and WPA2.

"The HubbaX offers an economical solution by utilising 3G networks to access an internet connection on the move, and up to 20 miles offshore, that can be easily connecthubba

The HubbaX system creates a Wi-Fi hotspot onboard

ed to your favourite devices," said Steve Smith, managing director of Buzz Marine.

"It's simple to add on the telephony service to make the most of the connection. With connectivity provided by our Hubba marine broadband range it is now possible to add a landline equivalent phone service to your boat even at sea."

The antenna dome houses a quadruple antenna system and offers typical download speeds of 7 Mbps and uploads of 1 Mbps.

#### **Intelsat signs Global IP deal**

www.intelsat.com

Intelsat has announced that Spain-based satellite communications provider Global IP has signed multi-year agreements to provide broadband service to its maritime customers in the Indian Ocean region.

Global IP will use capacity on Intelsat 22 at 72° East, Intelsat 702 at 33° East, and the IntelsatOne terrestrial network to offer the services.

The Spanish company will collocate its DVB-S2 high-throughput platform at Intelsat's teleport in Fuchsstadt, Germany, enabling access to the IntelsatOne infrastructure and Intelsat's satellite fleet.

The agreements enable Global IP to introduce worldwide Ku-band maritime services to customers in Africa, Europe, the Middle East and Asia-Pacific.

"These agreements add multiple strategic beams to our global network that are highly optimised for advanced mobility applications in the Indian Ocean region," said Jesus Barber, general manager for Global IP.

"Collocating our hub in Fuchsstadt gives us access to IntelsatOne and the world's largest satellite fleet, enhancing and extending our services to our oil, gas and maritime customers."

Intelsat did suffer a recent setback in the scheduled roll-out of its global broadband mobility platform with the announcement that the launch of its Intelsat 27 satellite at the end of January had failed, approximately 40 seconds after lift-off.

A Zenit 3SL launch vehicle was carrying the satellite, built by Boeing, which was to operate from 304.5° East, an orbital location currently occupied by Intelsat 805 and Galaxy 11.

The satellite was designed to serve customers in the North Atlantic, as well as North America, South America and Europe.

Sea Launch will establish a Failure Review Oversight Board to determine the cause of the failure.

Service to customers on Intelsat 805 and Galaxy 11 will not be interrupted as a result of the unsuccessful launch, and Intelsat notes that both the satellite and launch were fully insured.

"We are clearly disappointed with the outcome of the launch. The cause of the failure is unknown, but we will work closely with our launch and manufacturing partners to determine the necessary next steps," said Intelsat CEO David McGlade.

#### **KNS launches latest VSAT antenna**

www.kns-kr.com

Korean antenna manufacturer KNS Inc has launched its latest VSAT antenna, the new SuperTrack X10Mk3.

The X10Mk3 is designed with a rotating polarizer and operates at Rx: 7.25-7.75 GHz; Tx: 7.9-8.4 GHz. It includes a brake system, shock absorbers and high torque motors, and is anodized to eliminate corrosion.

An external air conditioner option is

also available for high power Block Up Converters, which enables the antenna to operate in harsh environments, and it has been built to meet military vibration, shock and EMI/RFI standards.

KNS's SuperTrack series of VSATs are built on the company's own 3-Axis platform that allows them to constantly track and lock in on satellite sources.

The antennas are able to gyrate along the X, Y, and Z axes and move more than 90 degrees per second.

#### Second ship signed to O3b service

#### www.o3bnetworks.com

O3b Networks has signed a second multiyear deal with Royal Caribbean Cruises to provide satellite broadband services aboard one of its cruise ships, Allure of the Seas.

More than 8,000 guests, staff and crew members travelling the Caribbean will use the service for connectivity at sea.

Royal Caribbean was the first to agree a deal for O3b's forthcoming maritime offering O3bMaritime, for the Allure of the Seas' sister ship, Oasis of the Seas, last summer. "Cruise ship guests expect the same quality voice and internet services they experience on land," said Bill Martin, chief information officer for Royal Caribbean Cruises Ltd.

"We are proud to be the first cruise line to offer guests and crew aboard our innovative Oasis class of ships connectivity services that are in a league of their own."

"This latest agreement underlines our confidence in O3b Networks and the game-changing level of connectivity it is set to provide aboard our ships."



Royal Caribbean Cruises will use the O3b network to deliver high speed internet onboard two of its ships

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# **App Stores and price wars – the year ahead at Inmarsat**

The beginning of 2013 has not been dull for Inmarsat – excitement over the latest emerging details on the network infrastructure it is developing for Global Xpress, scheduled for its first launch later this year, has contrasted with customer anger over another round of price rises. *Digital Ship* spoke to the man at the centre of the storm – Inmarsat's Frank Coles

**F** rank Coles, head of Inmarsat Maritime, doesn't seem to be the type of man that enjoys the quiet life.

While he has the privilege of spearheading the biggest change in the way Inmarsat satellite services are to be delivered since it came into existence more than 30 years ago, with the introduction of the Global Xpress Ka-band service, he is also the man who has had to face up to the angry protestations of disgruntled customers as the company has restructured its pricing in such a way that those using the lowest data volumes have felt the most discomfort.

Significant changes to the cost of Fleet services and the standard Pay As You Go (PAYG) FleetBroadband package were introduced in May 2012, and led to an outcry among some users at industry events and on internet forums.

Mr Coles himself was accused of abusing a monopoly position and disregarding the enduring loyalty that many customers had shown to the satellite operator during its lifetime, squeezing them for profits while the shipping industry was suffering an unprecedented downturn.

However, having weathered the storm of 2012 and maintained creditable financial results over the course of the year, it seems that life at Inmarsat was getting a little too easy – and so, at the close of the year at the Inmarsat partner conference in Hungary, Mr Coles had the job of introducing a new range of price changes to the market, set to take effect in March 2013.

The reaction from some customers, at least publicly, has been less than enthusiastic, as most industry watchers might have predicted. And so, with 2013 only just underway, Mr Coles is set to suffer the slings and arrows of outraged forums, not to mention industry gatherings around the globe, once again.

The quiet life? Not quite. But to be honest, I'm not sure he would want it any other way.

#### Cisco deal

While the issue of pricing, to which we will return later, may fuel more emotive discussion in the short term, what is of more significance to the maritime industry in the longer term is Inmarsat's plans for it's Global Xpress service, and particularly the new direction it is taking in developing a complete communications infrastructure in conjunction with partner Cisco.

Cisco has been tasked with the development of what will be called a Service Enablement Platform (SEP) for Global Xpress (GX) following an agreement of a partnership deal between the companies in 2012.

With the first GX satellite scheduled to be operational by the end of this year, the form that this new system will take is now beginning to become more defined.

The SEP will feature a Cloud platform, offering centralised user databases, portals, billing and interconnections, presented through a single IP connection for GX.

The shoreside network infrastructure will have a single IP address, while a Cisco hardware unit on the ship, called the Shipboard Network Service Device (NSD), will offer interfaces to terminals, local equipment, PBXs and analogue telephones.

The shipboard unit will also be used to administer user authentication and enforce access controls, and will provide the user with the ability to do automatic download and installation of applications, and the immediate ability to update or patch software.

Being involved in the development of an infrastructure like this marks a completely new departure for Inmarsat, having for so long been focused merely on running its satellite network and delivering traffic from ships to its distribution channel on shore, and back again – but it is a change that Mr Coles says makes him "extremely excited."

"The agreement with Cisco is much larger than just an agreement. It's a strategic relationship where they are going to provide a network service device on board the ship, rather like a Cisco router but one developed especially for Inmarsat, at least on the content side," he told us.

"Data is growing exponentially. Historically, Inmarsat had LESOs (land Earth station operators) where all we did was delivered our traffic from our satellite down to a LESO. At FleetBroadband level, we became the LESO, but we still had a complex connectivity to our channel that required them all to go off and develop individual boxes with their own firewalls and so on."

"We are just taking that one step further, to complete the network and then provide an interface in one place where they can build as many applications as they want and differentiate from each other on the quality of their applications and quality of services they provide."

The system that is being designed is not something that would only work with Global Xpress in particular, but is being developed initially with Global Xpress in mind. It will include a Cisco router similar to those that can be bought today, but with Inmarsat software inside.

While the software included on the Cisco 'box' on the ship will be made to Inmarsat specifications, it is Cisco itself that will be responsible for the development.

"Cisco will do it. You will have the network service device on board the ship which will talk to a portal ashore, which will run the network and have all the billing systems and the activation systems

'If you imagine the Apple scenario, where you go to the App Store and you buy your applications – it's the same principle' – Frank Coles, Inmarsat

and the ability for third parties and our partners to build the applications onto," said Mr Coles.

The network service device on board will be designed to be the central point managing a number of different on-ship functions.

"First and foremost it will manage the handover between the Ka- service, the GX service, and the FleetBroadband, so it will automatically run the two. It's a dual constellation redundant service which we want to run seamlessly for the customers, in a package with applications available from third parties as well as our channel," said Mr Coles.

"It will be the onboard media centre, onboard management of the firewalls and all of the controls for that. It'll also be a conduit into all the systems on the ship for IT services."

"We're developing a story, this is new to us as well. This started off initially as a maritime idea, for Global Xpress, but because of its power and because of how good it is in the breadth of flexibility we've embraced it across the organisation. I'm not the father of this, I'm certainly one of the strong drivers now but I think these discussions were being had before I came."

As Mr Coles describes it, the onboard 'box' has already been developed, as well as much of the related infrastructure, based on existing Cisco technologies, but has to be modified to fit into the Global Xpress infrastructure and to talk to the Inmarsat billing system.

Mr Coles notes that details like SIM acti-

vation and pricing plans are among the further details that are yet to be finalised.

#### Shore portal

One of the most interesting aspects of this new communications infrastructure that will be put in place for the GX launch is the creation of a shoreside portal which bears a number of similarities to the Apple App Store, and will be used to deploy software and other services on the ship via the satellite communications system.

Essentially, this will see a range of approved 'Apps' being hosted within a Cloud environment, where users can connect, search for and select various types of software packages for use on their vessels.

"If you imagine the Apple scenario, where you go the App Store and you buy your applications and then they reside on your phone – it's the same principle," said Mr Coles.

"So your phone, your Android phone or your iPhone, is like the (Cisco) network service device and the App Store is like what we have on our portal ashore."

"Depending on the application, we will both push services to the ship and pull services, it will be both a push and pull network."

Basic access to this portal will be open, but then split into various silos where application providers will be able to control who has access to their products.

"We'll have a partner section where you can access it by username and password, for instance, where our partners, our valued added partners and current distribution for GX, will develop their

# CONNECTING OCEANS

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With capacity commercialised on 30 satellites, Eutelsat is one of the world's leading satellite operators. Eutelsat has pioneered the development of today's maritime telecommunications and continues to build its success on the reliability of its in-orbit resources, its expertise and continuing commitment to innovation. Our VSAT technology provides corporate class networking services, interconnectivity and real-time data applications for all business, leisure and crew welfare needs.



own applications and host their own services like billing and chat cards and anything else that they do just for their customers," explained Mr Coles.

"Then there is a third party section where you might have media applications, monitoring applications, weather applications, engine monitoring, cargo monitoring. Anything you can think of will reside there. It's very flexible, the owner will decide if he wants to buy one of those services, and he can subscribe to it on the platform."

"If he subscribes to it, then any software that will be on the router on the ship will then be activated. *Digital Ship* could have its own app. So, if the owner says that the ship can have a copy of *Digital Ship* and he subscribes to it on the application, then every month it will be distributed to the ship. The box onboard the ship will make it available to the crew to read."

Cisco will manage the shore portal for a number of years under the agreement, before turning responsibility over to Inmarsat. Inmarsat will distribute the Cisco box, and ongoing support will be provided by Inmarsat and the distribution channel.

"Cisco are building this whole infrastructure with our team," said Mr Coles.

"Towards the middle of this year we will then release the programming APIs (application programming interfaces) so people can build applications to reside on our community platform. We are enabling, or powering the global connectivity behind it."

"(Application providers) will have to develop their product to our specification and our quality – that part is the same as Apple. We will have a test laboratory by the middle of this year, where we will test it and provide them with all the documentation and interface programming requirements, and then we will have the certification process so that we will sign off those applications which can reside on the platform."

#### Total control

While the creation of this comprehensive network infrastructure should help to ensure quality and simplicity in connecting applications to the communications system on the ship, it does also lend itself to similar criticisms to those that have been levelled by some at Apple.

The eco-system within which Apple's products operate does not allow users to take too much control over the technology they have purchased, and prevents application providers from offering their products directly to the consumer without agreeing to Apple's own terms.

Should the GX network follow this model closely, those working in the maritime IT sector, as well as users with their own particular requirements and favoured pieces of software, may feel concerned that they could potentially be excluded from the infrastructure should they not meet Inmarsat's demands.

When pressed on this point, Mr Coles insisted that the similarities to the Apple App Store begin to diverge at this point, and that he doesn't intend to see anyone 'locked out'.

"No, it doesn't mean that at all, we want to maintain quality, that is the main thing we have to do. What we've said to the partners we've had conversations with is that what we would like them to do with the applications they've developed is port them to the portal. In other words, write the programs so that they work through the portal," he told us.

"It just means that there will be applications available, third party and partner applications available, that you will be able to subscribe to. You don't try to reinvent the wheel. If the ship owner has his own software, there's still a means to pass that data backward and forward from his program residing in his office."

"You still have to use the (Cisco) box, and you have to write a connection into the network. That would have to approved by Inmarsat. We not going preclude (applications), but we want to just make sure you built the right links into the system."

Mr Coles insists that, once an application is of a required level of quality the vessel operator could connect whatever they want to the satcom connection.

"The intention is to build a community

"The business model is not completed yet, but that is one of the items under discussion," he said.

"It's likely that we will have some sort of commission structure, though it's not going to be the same size or share as Apple's, I think Apple takes 30 per cent or something. We are not going to be anywhere near to that number."

"But, for instance, we've been in touch with nearly 50 application providers. We have entered into NDAs with quite a number of these who are all very interested in the ability to develop their application and provide their wares in this community."

Of course, one group of providers that may not be thrilled by this arrangement are those that are selling various types of onboard satellite communications 'boxes' of their own, offering firewalls, traffic management and a host of other related services.

In Mr Coles' view of the future there will be room for only one such 'box' onboard



The App Store model should make installation of applications simpler – but may also impose restrictions on what can be connected to the network

portal for the sharing of data and information, where we will enable it and deliver it and power it - not to control it, other than on quality," he said.

"Android, for instance, doesn't have as many controls in place on the phones, so what you have is Android working in a lot more free way on different phones and therefore not always as well. Apple have been much more strict on getting approvals on the apps. The result is a much more stable platform."

"Where they've slipped up is where they have tried to develop applications of their own, like Maps. We're not going to try and reinvent the wheel - why would we try and do that? Somebody else can do the charts, somebody else can do the radar monitoring. Cobham and Intellian will build applications so they can lookup their terminals, and so that they can sell it to the ship owner so that they can lookup the condition of their terminal, or to our channel partners so that they can lookup the condition of the terminals."

Another criticism levelled at Apple by application developers is the commission that the company charges on every application purchased through its store, thought to be around 30 per cent of the price of the App.

Mr Coles concedes that the GX infrastructure is likely to follow a similar route, though he expects the percentage charged in each case to be lower than what Apple demands. the ship – the one provided by Inmarsat as part of the satcoms installation.

"If you look at the FleetBroadband market today, there may be 20 'boxes' there, all claiming to have the latest singing and dancing technology," he said.

"They will be redundant. But the services they provide will not. What we're trying to encourage them to do is to port their quality and the products they have on those boxes into this new network."

"In theory they can plug their box straight into the back of our box, but if they port them to us, then each person doesn't have to have their own portal talking to our portal. There are three partners that I can think of who want to sell their application in the main area."

While some of these services, for instance firewalls, will already come as standard on the Cisco onboard unit, Mr Coles believes there are still significant opportunities for providers of rival 'boxes' to offer their services to GX customers.

"Everyone has a firewall now. It's kind of like, yesterday's value-add is tomorrow's requirement. Those are no longer what I call 'value-adds', they are things you have to have," he said.

"But a smart chat card that works on internet and phone and e-mail for the crew, that's a value-add that some of the partners have and others don't. GSM, as a handset that works on board a ship – that's a value-add that some of our partners have and others don't." "Those are the value adds where you'll build your portal to this box. The GSM product will be able to connect to the box and work the same way as it does on their current service – that's a value-add. We just want a stable platform."

#### **Benefits**

To Mr Coles' mind, the most obvious benefit of the kind of infrastructure that Inmarsat is trying to create is to reduce complexity for the ship operator in rolling out IT systems onboard – or simply, to borrow a phrase from the late Steve Jobs, to ensure that "it just works."

"I think it will be a cheaper to roll out and even cheaper to maintain," he said.

"The big problem with the VSAT services to date has been the complexity of the installation on board. When you add the complexity of rolling applications out, choosing which is the right one – where do you go for that sort of thing?"

"The idea of having one platform, which is a community platform where you bring together the pipe that delivers it as well as the services, allows the ship owner to know that (a) he as got the choice of applications and (b) we are trying to simplify the installation on board for everybody."

On the flip side, there are other benefits to Inmarsat itself that make this an attractive proposition, as Mr Coles notes.

"Certainty of quality; scale; and our channel distribution partners can focus on what they do best – which is servicing the customer and building applications for the customers," he said.

"In the current FleetBroadband DP (distribution partner) structure, they have a lot of time and effort spent on keeping up this connectivity, having an IT infrastructure, billing services."

"Every time we made a change they have to change their billing services. It's just tighter integration (with the new infrastructure)."

In the long run, with the substantial investment that Inmarsat has made into building this new network platform, it is conceivable that it will also be applied to other Inmarsat communications products, such as FleetBroadband. While Mr Coles accepts this as a possibility, he notes that there are no current plans to do so.

"Initially it won't be for FleetBroadband, though it will apply to the FleetBroadband working with Global Xpress. But as we move forward it's quite possible that we will use this to work with FleetBroadband as well," he said.

"You can do it with anything, I mean, my vision of this, down the road, is that you will have iPhone applications and Mac applications, or heavy data applications or less data applications. So people might produce a lighter program and a heavier program, depending on which channel they want to use to deliver the message."

#### **Price wars**

With the long term development of the Global Xpress network covered, it was time to return to the more immediate issue of pricing – and specifically the restructuring on Fleet and FleetBroadband service costs that Inmarsat is set to put into effect at the beginning of March.

As was the case with the changes in pricing introduced in 2012, the reaction in some



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#### SATCOMS

quarters to this new strategic move has been less than favourable, with established Inmarsat customers venting their anger on online industry discussion groups.

When asked why it was necessary to make further changes less than 12 months after an initial price rise, Mr Coles begins by attempting to draw a distinction between the two distinct service areas the company is involved with – safety and commercial communications.

"Inmarsat Maritime, as a team and as an organisation, has a commercial aspect to it and a safety aspect to it. The safety aspect, because of our history as an IGO and then private and then public, we were always just there. For a long time we were the only communications provided," he said.

"The safety part we take extremely seriously, the GMDSS part, and that's the part where I think the ship owner and our customers believe that Inmarsat, to some extent, belongs to them. And they're right, we do belong to them from a safety perspective. However, we are now a publicly traded company that has shareholders and we need to deliver shareholder value too, and like any other business we have employees who look for pay raises, we have rising costs of running our business, leases that we need to pay for, infrastructure around the world that we need."

"So when we make decisions about running our business, we look at 'do we need to put our prices up to run our business?' and some of these decisions are 'yes, we do'. We put our prices up for a number of reasons, one is to take account of the rising cost of doing business in other areas. Another is the increasing cost of doing our business, the employees and resources. And the other is – are we getting value from the products and services we are providing?"

The specific changes that have been made, which will kick in on the 1st of March, include a 10 per cent increase in the cost of sending data over the Fleet service.

"This is because it's a service where people are already moving to FleetBroadband anyway," said Mr Coles.

"It is a percentage increase, it's an increase to our distribution channel and what they mark it up afterwards is up to them."

Inmarsat has also increased prices on its Standard Plan on FleetBroadband, the Pay As You Go plan, which has a minimum fee.

"It retails in the market for around \$150, depending on which channel partner you're going through. We have not changed the standard minimum fee at the wholesale level, but we have increased the rate you pay per megabyte afterwards. In the marketplace it has probably gone from \$12 to \$14 per day, up to that," said Mr Coles.

"That's what we've done; we have not changed any of the other plans, our old fishing and leisure plans which we advertised last year came to an end on January the 1st and we have new plans for that. There are 25 and 50 megabyte plans in the market, but they are not created by Inmarsat."

"That is the sum total of it. We increased the Standard Plan rate because if people use us a backup for VSAT, we want it to be painful. We also did it because our costs have gone up and we need more money to take care of our costs, just like everyone else."

#### Market reaction

Whatever the direct impact on customers' satcom budgets might be following these price changes, it must have been clear to Inmarsat and Mr Coles that there would be many in the industry that would not take the news well – particularly after Mr Coles had told this very magazine, in an interview for our August 2012 issue, that it was "hardly likely that there'll be any increase in prices in the near future."

Mr Coles responds by admitting that this did not turn out to be the case, and that he misspoke on that occasion.

"Well, I erred when I said it, I'm not the only one who makes a decision at Inmarsat. I made a mistake," he said.

"I'm on what you'd call a hiding to nothing on this. But I'll argue that FleetBroadband has never been cheaper. I get these arguments that I see appearing on LinkedIn and other places that the ship owner doesn't want to buy the 200 MB package, he doesn't need any more data. But then the same arguments and the same people in the next paragraph are talking about VSAT and 'all you can eat' packages, and that's what the ship owner wants."

"Well, we need to make up our minds on what he does want. FleetBroadband has never been cheaper, if you commit to a bundle, it has never been cheaper. I think we perhaps got the PAYG rate wrong in the very first place when we launched FleetBroadband. I mean, there's significant value in this."

In the end, Mr Coles, and Inmarsat, believe that they have made decisions and followed a strategy that will be in the best interests of the company. Ultimately, it will be the tens of thousands of customers using Inmarsat's Fleet and FleetBroadband products who will decide whether those choices were the right ones.

"I know some of the criticism is because the shipping industry is, in itself, facing a tough time. But they've also enjoyed years of very high profits as well," said Mr Coles.

"We are making strategic and required changes in pricing. As we discussed in the past, I believe that you can spend a little bit more on communication and actually deliver operational efficiency to your business, and I can go on for a long time on that. So we're not really making an apology for running our business profitably, and our channel has also benefited from some of the differences."

"It's not so much about the diatribe on LinkedIn or whatever you wish to call it, because people have their own agendas, and that's fine. If I'm the one everyone loves to hate, so be it."

#### Hybrid comms provides free internet on Stena Line

#### www.marlink.com

Stena Line has implemented a hybrid communications system from Marlink to provide improved free internet connectivity for passengers on seven ferries serving Norwegian, Swedish and Danish routes.

The CoastalRoam system is a specially developed addition to the Marlink Sealink customised VSAT services already in use aboard the ferries, integrating satellite, 3G and 4G for Norway, Sweden, Poland, Germany and Denmark.

The system is also capable of integrating other carrier technologies, such as Wi-Fi and WiMAX. Whenever the vessels are within range, the public internet on board switches automatically to the fastest service available, using a lower cost carrier for free passenger connectivity.

The implementation of CoastalRoam follows a recent user trial, aboard the Stena Danica ferry, on its route between Sweden and Denmark.

Stena Line operates 20 routes with a fleet of 38 vessels including fast ferries (Stena HSS), traditional combi-ferries, RoPax ferries for freight and passengers, and RoRo ferries purely for freight in Scandinavia, the North Sea and the Irish Sea.

"Our goal is to make any voyage as

comfortable and convenient for passengers as we can," explains Calle Sedelius, IT support specialist, Stena IT.

"Internet connectivity is vital in this day and age but provision of free Wi-Fi on board for hundreds of users is very hard to achieve cost-effectively. With CoastalRoam, we are able to confidently offer the service and balance the cost versus the high levels of customer satisfaction we get from it."

Stena Line says that it aims to continue the CoastalRoam roll out across more routes as soon as it can find telecom providers with satisfactory 3G and 4G coverage and competitive prices.



www.telenorsat.com

Telenor Satellite Broadcasting (TSBc) reports that the company is to consolidate all of its satellite capacity under the THOR name.

This means renaming TSBc's payload on Intelsat 10-02, with the aim of making it easier for customers and the external community to immediately identify the TSBc satellite fleet and capacity at its orbital home at 1° West.

As such, the company's satellite fleet will now consist of THOR 5 T1, THOR 5 T2, THOR 6 K1, THOR 6 K2, THOR 10 02 S1 and THOR 10 02 S2.

In other news, TSBc reports that Morten Tengs has been appointed as the new CEO of the company.

Mr Tengs previously held the position of senior vice president at Telenor Group's regional office for Asia, in Bangkok. He succeeds Cato Halsaa, who is to retire this summer.



Morten Tengs, new CEO at TSBc



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# What to do when you have more data

Shipping companies have a variety of different reasons why they might want to increase their volume of data traffic. However, one of the most interesting aspects of new technology deployments is how users often begin to introduce new applications far removed from their original intentions. Denis Dorigo, Norbulk Shipping, told *Digital Ship* about his company's experiences with expanding data

he argument over how much data is 'enough' for shipping companies tends to be split into distinct camps, to a greater or lesser extent.

One group, which might be loosely described as 'traditionalists', look on the transmission of information from ship to shore as something to be minimised and restricted, an irritating cost most happily avoided.

The rationale behind this train of thought is often based on the belief that the core processes required to operate a shipping company have run perfectly well for decades without a non-stop trail of emails flying back and forth to the ship.

Another group, often more enthusiastic about the adoption of new technologies, see data as a precious and necessary resource that is fundamental to achieving operational efficiency.

Shipping companies operating in this camp will have ships equipped with the latest gadgets and gizmos, high-speed connectivity and widespread access to communications across the vessel.

Sometimes this attitude will be influenced by the specific requirements of the company's own customers, or by the belief that a strong link to shore is imperative in maintaining the highest level of efficiency in operations.

However, recent years have seen an inbetween group, mixing elements of both of these mindsets, emerge in growing numbers in shipping, in direct response to increasing concerns over manning levels and the availability of qualified crew. Many of those who see data transmission as an unnecessary expense are nonetheless being persuaded to improve the technological infrastructure on their ships to offer greater levels of access to those serving onboard, with 'crew communications' often mentioned as a driving factor in new installations.

An interesting side effect of this development is that these reluctant techies may prove to be the missing link in expanding the use of IT in shipping.

Vessel operators that invest in new levels of connectivity for their ships to satisfy crew demands will undoubtedly look to wring as much value as possible from these systems and will look to apply them to other areas where operational improvements might be achieved.

Should these new applications prove to be of benefit, it is likely that they will slowly find their way into the standard procedures of more and more organisations.

#### Driving improvement

Norbulk Shipping is one example of how the introduction of technology to improve crew communications can lead to even greater unexpected gains on the operational side.

In 2012, Norbulk Shipping Group, a ship management company with offices in Glasgow, Saint John (New Brunswick) and Riga, which has 70 vessels under full technical management including tankers, bulk carriers, Ro-Ro's and multi-purpose / reefer ships, began a project to install 3G data communications services on four of its own vessels engaged in regular trade between Canada and the US.

The major driver behind this project was the company's desire to provide improved internet access for its crews, to a level that wasn't really possible using the Iridium OpenPort systems it had installed on the ships, which at that time had a standard contract for 50MB and 300 voice minutes per month.

Implementing the system simply involved affixing a small antenna on the ship, with a cable to connect into the network.

Since those four ships in particular had mobile phone reception for a long part of their voyages, being in range of the coast of the US and Canada, 3G and 4G mobile phone services offered the company the ability to significantly increase its data traffic without a huge additional cost – in fact, a subscription of a few hundred dollars per vessel covered 12 gigabytes of data transfer per month.

Obviously, moving from 50MB to 12GB adds a significant amount of leeway in what can be offered to crews to communicate with shore. However, once these systems were installed and running on these four ships Norbulk began to realise that the potential benefits to be had in other areas were significant.

In an interview with this magazine last year following the roll-out on those four ships (see *Digital Ship* August 2012 issue), Norbulk IT manager Denis Dorigo noted that: "with vessels that have high-speed data, where you don't look at the data con-



*'With this we manage to roam at about \$0.60 per MB' – Denis Dorigo, Norbulk* 

sumption, the sky really starts to become the limit."

"What data do you want from the ship? You can do anything – maintenance systems, purchasing systems, forms, all those kinds of things. It just makes life much easier," he said, at that time.

Mr Dorigo was so impressed in fact that, subsequent to that interview, he began to look at how he might be able to extend similar capabilities to other ships in the fleet, and embarked on another communications project to do just that.

That project is now entering its closing stages, and will see all of the ships in the Norbulk fleet equipped with 3G communications equipment onboard by the end of the first quarter of 2013.

#### **Extended capabilities**

With the extended roll-out reaching its conclusion, Mr Dorigo spoke to *Digital Ship* once more to describe the process and the change in strategy that led from crew internet into a range of other operational areas.

"The whole idea came from what we did with our Canadian fleet, basically to give internet access to the crew with some 3G modems," Mr Dorigo explains.

"(After those experiences) we were thinking of trying to do it fleet wide, however that posed some problems, with roaming charges more than anything. You can't really find a contract with anyone that makes sense to give full internet access to the crew while they're in port."

"(Finding a contract covering a number of different countries) proved to be almost mission impossible. I think they have spe-



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cial deals between Canada and the US, but if you decide to do anything else, especially being based here in the UK, you just can't get a good 3G roaming deal. "

Eventually, after much searching, Mr Dorigo managed to agree a suitable deal with a company in the UK called Setel, that supplied Norbulk with Vodafone SIM cards on a specially structured Pay As You Go deal.

"With this we manage to roam at about \$0.60 per MB," he told us.

"For our fleet, it's cheaper to do that than use satellite. The price per MB depends on where you are roaming, but in the most popular ports around the world \$0.60 is the price."

"We queried our databases to see where our ships normally are, and in most cases we are able to get the best rates. It was difficult to find a good deal, because of course we're not doing it through Vodafone directly, we're doing it through a third party, and they balance out between the high roaming places and low roaming places, and I suppose that's how they make their money."

Mr Dorigo notes that this type of arrangement wasn't just a new departure for his company, but also for the communications provider.

"The SIM card deal, I'm the first one that asked for it. They never had that kind of request before," he told us.

"I've seen some internet offers for various things that I looked at, where you could cap your roaming charges, and I was quite happy with them until I discovered that you couldn't connect back in to the ship's system. So I had to keep looking."

Having reached an agreement with a ommunications provider on the 3G services, the company also had to create an infrastructure that would allow the ships' networks to connect when in range.

Norbulk decided to do this by creating its own 3G ship routers, which would use standard industrial hardware but would be loaded with firmware specifically created for its purposes.

"The initial cost for us was on the firmware, we developed the firmware with our colleagues in China and that

added some cost to the routers, which cost about \$300," said Mr Dorigo.

"In fact, I think it's under \$400 per unit with the firmware included, if we calculate the whole thing. I think we paid about \$8,000 on the firmware."

Development of the system proceeded at a breakneck pace, with the final version ready to go within two months.

"We started discussions back in August last year and the firmware revision that we currently have is the November one. Then we did a lot of in house testing. We had four or five units here in the office and we were trialling it," said Mr Dorigo.

"When we reached the stage of being fairly happy then we deployed four units to ships, just to make sure everything is plug and play as we wanted it. After that we placed the rest of the order."

"We asked for several things that we were interested in. If, in the future, new features are required we will ask for the firmware to be upgraded, but for now we are fairly happy with it. All the testing we have done, we haven't found any problems as such. It has a robust firewall on it, we're fairly happy with it."

Initially, Mr Dorigo had hoped to get some of his industry colleagues at other shipping companies involved in the project, to help to spread the development cost - though it soon became apparent that outside interest was lacking.

"When we were doing the firmware and everything we were trying to see if we could get a big bulk order to reduce the price, I did offer some colleagues who are working in the industry with me to join me, but not that many people were interested," he noted.

"So we've done it alone, the whole thing."

"The idea initially was that the more we ordered the smaller the price would be, so we could split the various costs. But I placed my order and split it between my ships, and it still made sense."

#### **Remote access**

While the main driver for Norbulk in rolling out 3G technology to its ships was to provide internet access to the crew, it didn't take long for the other potential applications of the technology - particularly in the area of remote access and control – to become apparent.

"It was immediately after the roll-out on the initial four ships that we started to notice this," said Mr Dorigo.

"Initially it was supposed to pick up large e-mail attachments instead of picking them up over satellite. We work with Dualog and with them large attachments are automatically placed in a container until the 3G router comes into reach and we'll pick up all those messages."

"Of course, we had some kind of interest in being able to connect back into other ships and doing proper work, but we could barely patch things up using slow comms, with the Inmarsat systems or the Iridium systems where it's very slow to remote control machines."

The benefits of using the 3G system to remotely connect to the ships introduced advantages that outweighed any of the improvements that the company had expected in its crew communications.

"We have noticed that it just saves us so much time and effort, and travel costs more than anything. These were things that were a big part of this before," said Mr Dorigo.

"Of course, you also have the language barrier and the knowledge barrier (when trying to offer remote support without direct access). You can make as many instructions as you want to try and talk the crew through some problems, but it's difficult."

"We've noticed now that we can do full Danaos (procurement system) installations for about £30 on the 3G router. The server was placed on board, and from there we took over with remote control and installed the various schedulers and synchronisation modules. So we could either have a million problems trying to tell the crew what to do or you go and do it yourself when the ships are near enough. Now we do all of that remotely."

One of the particular benefits that Mr Dorigo has identified in the service it is using from Setel is the provision of a static IP address on the ship that it can use to connect for remote access.

This allows the company to establish a secure VPN as a base for its sessions, and allows for the use of specific access tools.

"The Wavetec system on the original four ships (in the US and Canada) will give you a public IP address, but it's one of those public IP addresses with NAT (network address translation) so you will never be able to reach back to the ship," said Mr Dorigo.

Local Network Ship-Net.com WIFI WAN 3 Alarm Onli

"The only way that we can reach back to the ships was through TeamViewer and things like that, which makes the whole remote control process a bit of a nightmare - you need to remote access TeamViewer, and then from TeamViewer you need to start to 'hop' and remote control other machines, so you've got three or four screens on your screen."

"Now we have a VPN to our office here, and to the ship. (Setel) set the whole thing up, but once the VPN is up and running, and we established the VPN between our office and their office, it opens up the SIM cards to us."

As an example of one specific new process the additional technology has allowed the company to adopt, Mr Dorigo points to the use of KVM (keyboard, video and mouse) systems onboard the vessels a simple but hugely effective way of remotely controlling what's happening on the ship.

"This is a little box that you plug into the back of your computer between your screen, mouse and keyboard, and then you plug it into the internet. Then from the other side you can see what's happening on the machine," he explained.

"You don't need the operating system or anything like that. If the machine is down, for example, you can ask the captain to plug it in, and we use the KVM over IP and have fixed IP addresses so we can VPN in, and we can see what the fault may be."

"Previously you would prepare and try to gather as much information as you can before you go to the ship, then you would get there and discover that the information that they gave you was incorrect and you're there with the totally wrong parts. Now, of course, we can check it ourselves and go there with the proper parts. All we require is the captain to spend 10 minutes with us plugging in this KVM, and from there we can take it ourselves."

This particular way of working, using KVM, is not particularly data intensive something that is always welcome in the maritime environment.

"We've done some initial testing and really we're finding that with 70 or 80 MB you can be on it for hours," said Mr Dorigo.

"You can greatly reduce all the colours and the screen resolution, we can control things like that. We're still trying to keep the cost down, but we want the speed."

It is also worth noting that, having gotten a taste of what could be achieved by extending its communications options to the ships, Norbulk has now also increased

The system uses standard 3G routers, but with specially developed firmware

its standard Iridium satellite communications package that it uses outside of 3G coverage areas.

"We discovered that we had started to exceed (the 50 MB allowance). People just keep asking for more and more data, and it has to happen now," said Mr Dorigo.

"It's the regulations, but also our clients. The more you give them, the more they want - which is fine. The 200 MB package from Iridium is a good deal, so it makes sense."

"We're hoping not to go over that, but the more you open things up the more people want."

#### **Future projects**

Having already started to see the company's data usage rise, and with it discovered new ways to use that data to create new operational benefits, Mr Dorigo is continuing to look forward to evaluate where Norbulk might be able to further extend its capabilities in the future.

The goal is to do things cheaper, quicker and easier - though he notes that, unfortunately, 'cheaper' is often a very key word in these decisions. Having said that however, in the right circumstances and with the right package there are communications deals which could be tempting to the company.

"We spotted some cheap VSAT packages, around the \$1,000 per month mark that we might look at. For \$1,000 per month, we're going near to that anyway for our 200 MB on Iridium," said Mr Dorigo.

"These new VSAT units can be assem-

bled by the crew too, you don't need cranes or anything like that, so it may make sense. I'm talking to some people. We may do a trial on a few ships and see how it goes."

One way or another, Mr Dorigo believes that in the future, the amount of data required to effectively run a shipping company is only going to increase.

"It's the only way forward for everybody," he said.

"Even if you're an owner-manager, you'll still want all the data, but for us, our clients are asking for more and more and more, and it has to be now. So for us it makes sense to look at new systems that are cheap to run."

"We're working with budgets and need to make proposals on how to move forward, and I suppose some kind of alwayson connection is the only way forward. But it's a lot of money, and there are still a lot of ships that aren't making a lot of money."

In the end, the major maritime stumbling block remains - convincing those with the money that they can, in fact, make more money implementing new technologies than continuing on with less efficient systems.

"If you propose something like this to your clients they probably laugh at you. It's one of those things," said Mr Dorigo.

"But I know they will be pretty happy with this 3G project. Once we get past these bad times and people start to make money again, maybe it will be an easier option to talk about. For now, we do the best that we can and see how it goes." DS

#### Kordia extends Aussie comms contract

#### www.kordia.com.au

The Australian Maritime Safety Authority (AMSA) has extended its current contract with Kordia Solutions Australia on a multi term basis, that could see the relationship continue for a further ten years.

Kordia designed, built, maintains and operates the High Frequency (HF) maritime communications network for Australia's Search and Rescue Region, a critical element in the delivery of the Global Maritime Distress and Safety System (GMDSS) across one of the largest ocean areas in the world, covering approximately 52 million sq km.

As part of the agreement, a number of key network elements will be refreshed, taking advantage of new and improved technologies.

"The refreshed contract builds on a relationship spanning 10 years of excellent service to AMSA and the maritime industry," said Amanda MacKinnell, manager planning & business support, Emergency Response Division, AMSA.

"The extension provides for continued operation of the service, as well as a net-



work refresh project that will see major components of the network, including the transmitters, receivers and control system, replaced over the next 18 months."

"AMSA congratulates Kordia on their record of sterling service and looks forward to partnering with them into 2018 and beyond."

Frequentis Australasia is to provide technology for use in the provision of the GMDSS in Australia, under contract with Kordia Australia.

In fulfilment of this deal Frequentis will provide its MCS3020 plus VCXiP and T&T Rel 2.6 covering DSC, voice communication, scheduled weather fax transmission, scheduled voice broadcast for weather reports and navigational warnings.

A maritime Radio Telex Service (NBDP) is also included.

All services are implemented utilising HF radio technology and a satellite based IP communication network.

The Australian SAR (search and rescue) region is a massive area covering 11 per cent of the world's surface. The project will be delivered in 2013 and includes a long term maintenance contract.

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# Crew communication survey reveals interesting results

A recent Crew Communications survey for the maritime industry has found that 68 per cent of crews are now connected, and that 70 per cent are willing to pay for access, *writes Roger Adamson, Stark Moore Macmillan* 

For many years the safety of ships and crews drove developments in maritime satellite communications. The huge investments in satellite infrastructure required by organisations such as Inmarsat, and the complex nature of the technology, translated into costly terminals

and airtime for ship owners and operators. Until recently, traditional L-band services dominated and there was little choice when it came to the type of communications system fitted, but the advent of VSAT networks and Inmarsat FleetBroadband has ushered in a new era of higher-bandwidth – and with it, new opportunity.

Ships are now becoming highly functional remote offices, integrated with corporate networks and other applications, including those to improve vessel management, and, importantly, extend the communications infrastructure to personnel on board.

Crew welfare and communications has been a consistent driver in the development of satellite communication products and services for some years. The significant upswing in web and social network usage means that the expectations of the new generation of seafarers are markedly different than those of their predecessors.

However, whilst ship owners and operators are focussed on communications as a key plank of their crew retention strategy, actual qualitative and quantitative research among crew themselves is comparatively rare, and certainly unavailable on any significant scale.

#### **Crew survey**

Astrium Services' new Business Communications division was created following the acquisition of the Vizada



"The objective was to establish a clear picture of current crew communications requirements, the level of access to communications, what crew paid for these services and how they paid for them," says Tilmann Michalke, senior product manager crew communications at Astrium Services.

"Many shipping companies face staff retention issues and these solutions can represent an attractive incentive to crew members."

"Astrium currently provides the most advanced pre-paid and crew communications solutions portfolio on the market. The only way we can ensure it remains so is by understanding today's and tomorrow's needs of crew and ship-owners, and building propositions for their different requirements and budgets."

To undertake the ambitious study, Astrium Services turned to my company, Stark Moore Macmillan, based on our experience in data collection and interpretation, having previously undertaken studies, both independently and in association with industry partners, to address gaps in understanding and identify trends within the maritime sector.

In order to deliver the volume of seafarer responses necessary we worked in conjunction with two major Philippine crewing agents, Philippine Transmarine



Carriers Inc. and CF Sharp Crew Management Inc.

These two companies handle the arrival and departure of approximately 47,000 crew per annum, providing officers and ratings to over 1,000 vessels in the Tanker, Gas, Bulk, General Cargo, Container, Offshore, Car Carrier and Passenger sectors.

We were fortunate to be working with two such respected companies who were extremely keen themselves to understand the crew communications landscape, and the quality and volume of the data from respondents was unprecedented.

The survey was completed by 960 Filipino officers and ratings departing the Philippines to commercial vessels during 2012.

The sample group consisted of 12 per cent officers and 88 per cent ratings who

sailed on commercial vessels in the Dry Bulk, General Cargo, Container, Gas / Car Carrier, Offshore, Passenger and Tanker sectors.

62 per cent of the respondents served on commercial cargo carrying vessels whilst 38 per cent of respondents served on Passenger vessels.

The majority of respondents (75 per cent) were aged between 25 and 44 with only 6 per cent less than 24 years in age. This latter group also had the lowest percentage of officers of any age group. The largest concentration of officers (43 per cent) was in the 35-44 year age range.

#### **Findings**

Chief amongst the findings is that access to communications equipment onboard shows an improving picture, with 68 per cent of all respondents stating that they



#### Monthly Expenditure by Sector

#### Payment Methods at Sea



Digital Ship March 2013 page 18



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#### Percentage of Seafarers with no Access to Free Communications - by Sector

#### Percentage of Services Provided Free to Crew







had access to communications equipment most or all of the time they were at sea.

30 per cent of respondents said that they had access only sometimes, and just 2 per cent indicated that they were never provided access.

In terms of communications services generally provided onboard for crew, it is those sectors with high data requirements that provide the greatest level of onboard communications.

Probably as a result of its widespread use of VSAT technology, the Passenger sector provides crew with the highest levels of communications equipment, whilst those sectors with lower data requirements and less advanced communications infrastructure had fewest services available to crew.

Despite having access to these services whilst at sea, 46 per cent of respondents were not provided with any form of free communications services by ship operators.

The service most often provided free of charge to seafarers was text-only e-mails, with no attachments. However, this was only available to 20 per cent of respondents. Other services were typically available free to less than 15 per cent of respondents.

This lack of free communications whilst at sea is further reinforced by responses by sector. Ironically, it is the Passenger sector, with the greatest range of service provision, that provides the least free of charge access to crew.

66 per cent of respondents from the Passenger sector were not provided with any free communications services at all, and crew in many major commercial sectors also fared badly.

Only in the Offshore sector, where qualified crew are in short supply and charterer requirements dictate high bandwidth satellite solutions, are crew communications widely available free of charge.

Crew were questioned as to their preferred method of access to crew communications and the answer across all vessel types, ages and ranks, was clear: via the use of a laptop with a Wi-Fi connection.

Call quality was rated the most important element of service delivery, followed by price, security and privacy.

However, when questioned about their spend on communications both at sea and in coastal waters, there was a strong divergence between officers and ratings.

Respondents' average actual spend was \$150/month, which, as a fraction of disposable income, represents approximately 17 per cent of officers' disposable income and 40 per cent of ratings' disposable income – but in reality, officers' spend was approximately twice that of ratings'.

The highest levels of expenditure on crew communications were made in the Passenger, Tanker and Car Carrier sectors.

There was no discernible difference between levels of access to communications services granted to officers compared to ratings, which indicates that company policy on access is being applied evenly between the groups.

There were, however, significant differences in the provision of free services, with officers being provided with more free communications services in general than ratings. Overall, 50 per cent of ratings

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had access to free services compared with 65 per cent of officers.

Access to credit cards was significantly more widespread amongst officers than ratings and officers had a greater tendency to use online payment methods such as online banking and PayPal. This suggests that they not only had access to a wider range of payment methods but could also access these online services readily whilst at sea.

However, in general the overall picture is similar for officers and ratings, with deductions from salary, cash and crew payment cards still favoured onboard.

When it came to their appetite for internet whilst at sea, overall 68 per cent of the group answered that that they would be prepared to pay to access internet content, increasing to 80 per cent for the officer subset.

Perhaps less surprisingly, when asked to identify the top websites they would visit if access were granted, Facebook was the most popular and the first choice of nearly half of all respondents.

In addition, just under half of all respondents said that they would be prepared to pay to access on-demand media services consisting of video and audio podcasts, but there were marked differences between ages and ranks, both in their appetite and willingness to pay for such services.

Officers were more prepared to pay than ratings, with 61 per cent indicating they would pay, compared to 47 per cent for ratings. Ironically, it would seem that it is the older, higher-ranking seafarers who have the money and inclination to spend on services who are being provided the most access free of charge.

#### Spread the word

For any ship owner, operator or maritime satcom supplier the full data offers a timely and fascinating level of detail about the requirements of seafarers in an environment rapidly being transformed by digital technology and expectations.

Astrium believes that, with the advent of new high throughput satellite networks including IridiumNEXT, Inmarsat's Global Xpress and Intelsat's EPIC, the results offer the type of insight required to develop the solutions and the crew retention strategies of the future.

"Clearly this data is extremely valuable, but it's key that the voice of seafarers is heard by ship operators and solution providers," points out Tilmann Michalke.

"That's why we took the decision to share some of the key findings with the maritime industry as a free whitepaper. By doing so we hope to give those who took part in the survey the best chance of seeing a real benefit from it."

#### About the Author

**Roger Adamson** is CEO of maritime marketing company Stark Moor Macmillan. This article is based a whitepaper commissioned by satcom service provider Astrium Services, and produced by Stark Moore Macmillan.

You can download the full Research Whitepaper free of charge at: http://goo.gl/9Q4WB

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## **DNV and GL to merge**

www.dnv.com www.gl-group.com

An agreement has been signed to merge DNV and GL, creating a new entity called DNV GL Group.

The DNV Foundation will hold 63.5 per cent of the new organisation, while GL's owner Mayfair SE will hold 36.5 per cent of the shares. The new company, with a combined turnover of approximately  $\in$ 2.5 billion, will be headquartered in Høvik, outside of Oslo, and registered in Norway.

DNV GL Group will be organised as a Norwegian limited company (AS), with the transaction now requiring approval from competition authorities.

"We see this as a good strategic match. The two companies have a common set of values and complementary strengths," said Leif-Arne Langøy, the chairman of DNV's board of directors.

"Both have strong brands and solid market positions as well as a reputation for high quality and strong integrity. There were negotiations between DNV and GL both in 1999 and in 2006 on closer cooperation. I am very pleased that the timing now seems to be right."

DNV GL Group aims to operate in the maritime, oil & gas, energy and business assurance sectors, with the maritime business unit to be headquartered in Hamburg, Germany.

Oil & Gas will be headquartered at Høvik, while Energy will be headquartered in Arnhem, the Netherlands, with a hub for renewables in Bristol, UK, and Business Assurance in Milan, Italy.

"DNV is the partner of choice for GL," said Guenter Herz, chairman of Mayfair SE.

"Besides DNV's clear commitment to



"As a long-term oriented shareholder we consider this partnership to be the continuation of our successful investment in Germanischer Lloyd."

In related news, the German Aerospace Center (DLR) and GL have renewed and expanded a strategic innovation cooperation agreement between the organisations, to jointly identify and develop new technologies and applications for the shipping industry.

The agreement will build upon the cooperation of the two partners which began in 2010 with joint projects that aimed at addressing ship emissions, indoor navigation, advanced materials and wave prediction via satellite.

"The maritime industry has begun to take a hard look at the ways in which it operates, especially in the area of energy efficiency and the use of new fuels," explained Dr Pierre C. Sames, head of GL's department of research and rule development.

"With optimisation of ship hydrodynamic performance becoming rapidly standard, we now see the optimisation of ship structures as an additional target, with a view to applying modern non-steel materials, and this is certainly a field where bringing together creative minds from both our industries can result in the emergence of new and innovative ideas."

GL and the DLR Institute of Communications and Navigation are both founding members of the 'Network for Maritime Applications' at the Research Port of Rostock.



Hinrich Stahl, Maryland GmbH; Erik van der Noordaa, CEO of GL Group; and DNV CEO, Henrik Madsen

Software and IT services company **Inatech** has appointed Alok Sharma as European head of sales for its recently launched Marine Solutions Unit. Based at the company's UK headquarters, Mr Sharma will be responsible for the European sales of Inatech's ShipTECH Shipping Solution, used to manage the procurement process and manage risk, and Inatech's BunkerTECH Bunkering Solution, developed to manage bunker fuel. **Star Information Systems (SIS)** today announced that Erik Sarmento Staubo has joined the company as head of oil & gas. This appointment sees Mr Staubo rejoin SIS, having spent three years at the company up until January 2006 as area manager for the organisation's shipping activities.

> www.inatech.com www.sismarine.com

#### **Digital Ship**

#### NSC to leverage condition monitoring data

#### www.gl-group.com

German shipping company NSC Schifffahrtsgesellschaft mbH & Cie. KG (NSC) is to use Condition Monitoring (CM) data to reduce the number of openup inspections across its fleet.

A survey arrangement with Germanischer Lloyd on the main diesel engine pistons of 49 GL-classed vessels will see condition monitoring trend data, for example from regular inspections through the scavenge ports of large 2stroke diesel engines, documented in electronic forms provided by the engine designer and presented annually for analysis at GL's head office.

After evaluation and assessment of the data, according to the engine designer's instructions and class rules, a statement is sent back to the superintendent and forwarded to the vessel. This statement can then be recognised during the next annual class survey performed by GL surveyors.

If there are no indications of areas of concern with the machinery, the surveyor is encouraged to credit the respective components - without resorting to a further open-up inspection.

"The prevention of unnecessary openup inspections and surveys is one of the significant benefits of the CM survey arrangement," says Dr Jörg Rebel, GL's condition monitoring expert.

"Open-up inspections and surveys are

costly and time-consuming, especially in the case of piston overhauls for large diesel engines. The dismantling and reassembling of the engines always holds the risk of damaging a system which is running well."

GL offers the CM survey arrangement for crank-train bearings and pistons of 2stroke diesel engines, as well as for rotating auxiliary machinery, such as centrifugal pumps, electric motors, fans and purifiers.



Diesel Engine Pistons are among the items that can be monitored under the new arrangements

#### **CMA goes for ShipServ**

#### www.shipserv.com

ShipServ has signed a new deal with CMA Ships, the wholly owned fleet and crew management subsidiary of the CMA CGM group, for the provision of e-commerce services.

CMA Ships will take advantage of a number of new modules available on TradeNet, including e-invoicing and elogistics.

The Marseille-based company is currently responsible for the procurement activities of around 100 container vessels, and will connect to ShipServ through its current BASSNet fleet management software suite.

"We are delighted to welcome such a

major container company to the ShipServ community," said Lars Bratshaug, VP sales EMEA for ShipServ.

"To bring such a highly-respected operator onto TradeNet really demonstrates that ShipServ is the preferred partner in this sector. We look forward to working with CMA Ships as they use TradeNet in the future."

ShipServ says that, with more than 15 containership owners and operators trading on its system, it has close to a 50 per cent share of vessels in the liner sector. These companies include AP Moller-Maersk, Mediterranean Shipping Company, Seaspan Corporation, NYK Line, CSAV Group, K Line, MISC, Matson, Crowley Lines Reederei and Claus-Peter Offen.

#### Chinese shipping company in AMOS deal

#### www.spectec.net

SpecTec has agreed a deal to proceed with an AMOS installation project for Shanghai Jinjiang Shipping Co. Ltd (JJ Shipping).

The collaboration agreement covers an initial AMOS installation order for eight ships. The installation project covers Maintenance, Purchasing and Stock Control modules of the software. Maintenance and purchase orders will be centralised within the fleet, and connected at the company's Head Office. The system will also be used to keep ships' stock items under control.

SpecTec will install the AMOS software on the eight ships over the course of 2013.

JJ Shipping specialises in near- sea international container transportation and conducts Yangtze River feeder services.



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### Videotel polishes garbage program

#### http://videotel.com

Videotel reports that it has updated its Garbage Management training programme in response to new updates to MARPOL Annex V that entered into force on January 1, 2013. "Garbage isn't high on the agenda for many senior executives in most businesses," says Nigel Cleave, CEO of Videotel Marine International.

"But for shipowners and shipmanagers the prevention of pollution and the proper management of waste is a key issue.



Improve your knowledge of garbage with Videotel

Annex V will have an enormous impact on the ways ships handle their waste and demands an entirely new approach to waste management. The whole onus of responsibility has changed. Effectively, the regulations are now about preventing the discharge of waste at sea."

"Where in the past most categories of garbage could be discharged in limited circumstances, that rule has been reversed and most waste streams may now not be discharged at sea except under certain strict conditions. In addition, written evidence of compliance must be readily available."

Videotel notes that, under the new legislation, shipowners and operators must now plan their whole garbage management strategy in advance, with the emphasis on minimisation and disposal in port reception facilities.

Port control officers are empowered to inspect ships for compliance, and where there is clear evidence that the Master and crew are not familiar with procedures relating to the prevention of pollution by garbage the vessel can be detained until this is rectified.

The new Garbage Management training package from Videotel demonstrates how to comply with the revised regulations on garbage collection, processing, storage, disposal and record-keeping using the Garbage Record Book.

It also presents good practice guidance to assist Masters, officers, ship operators and owners to reduce and manage selfgenerated garbage more effectively.

It is available through Videotel on Demand (VOD), DVD, CBT and Workbooks.

#### Seafarers app launched

www.itfglobal.org/seafarers-trust

The ITF Seafarers' Trust has published a smartphone app, focused on seafarers' needs.

'Shore Leave' is an offline app, which allows seafarers to store the contact details of all ITF Seafarers' Trust centres around the world. The data for the app has been supplied by the ICSW.

The current version is available for Android, via the Google Play store, and through Blackberry's Appworld. An iPhone version is expected to be available shortly.

The app allows seafarers to contact the nearest seafarers' centre in a few clicks, and ask for transport, telephone cards or any other kind of assistance provided.

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The App provides a range of information for seafarers visiting global ports

#### Seagull announces new CBTs

#### www.seagull.no

Seagull has announced the release of six new CBT titles to add to its library of Computer Based Training (CBT) modules.

The new titles will be available for both onboard and online training.

Seagull has also updated and revised six of its existing CBT titles.

The new titles cover Bunker Fraud; Development of Heavy Weather; Safe operation and maintenance of Grinding wheels; Anchor Mooring procedures; Seafarer Appraisal; and Behavior Based Safety.

The titles that have been revised include Ship General Safety; ISM Code; Flue Gas Plant; Vessel Structural Condition; IALA Buoyage; and Marine Fuel Properties II.

## **Regs4ships expands digital service**

#### www.regs4ships.com

Regs4ships has announced the launch of the 17th flag product for its Digital Maritime Regulations Service.

Regs4ships will offer a Vanuatu regulations product that contains all relevant flag state documentation along with digital copies of SOLAS, MARPOL and STCW, ILO Conventions and EU Legislation. Customers will have access to Vanuatu maritime Acts, regulations, bulletins, fleet safety letters and forms.

The system also offers the option to subscribe to additional IMO and international regulatory guidance, codes and conventions, including the IMDG Code.

The Vanuatu flag state regulations have been added to those of 16 of the world's most popular flag states, including Panama, the Red Ensign Group flags, Liberia and the Marshall Islands.

The Digital Maritime Regulations service provides fleet managers, HSEQ executives and DPAs with access to a webbased version of the product, while vessels can utilise the service by subscribing to a compliance disc service.

Bi-monthly update discs are sent to the

ship containing the required flag state documentation along with amendments and updates to the international legislation. An update dashboard illustrates any changes. The compliance solution is recognised

by flag states and the IMO as being digitally equivalent for their carriage of nautical publication requirements, which means vessels can carry the discs on board and dispense with regulations printed on paper.

Additional flags are being prepared for launch in 2013 and the 18th product will be launched in the spring.



Vanuatu is the 17th flag to be added to the service

#### **TORM to implement Sertica**

#### www.sertica.dk

Danish shipping company TORM has signed a contract with Logimatic to implement the Sertica solution as its Fleet Management System.

TORM's global operation includes the operation of approximately 130 tankers and bulk carriers, and the new system will be used to manage maintenance, safety, performance and protection of the environment.

TORM's Technical Division will be the primary users of the software.

Up until now the Technical Division and its departments has used a multitude of different systems for technical maintenance, support, purchasing, documentation and certificates, vetting and safety functions – following the implementation, the Sertica system will be used to manage all of these areas.

Having one single global platform should allow the Technical Division to have a greater overview of the operations of the company, while also simplifying data management. It will also include a dry-dock module.



Michael Paarup, CEO of Logimatic; Hans Christian Jensen, sales manager, Logimatic; and Allan Rasmussen, vice president of fleet & newbuilding support, TORM

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www.dualog.com

# Putting trust in the internet

We are entering the critical phase of the Age of Trust for maritime e-commerce as mechanisms help overcome the issues of doing business over the web, *writes Mark Warner, ShipServ* 

ccording to a survey carried out in the US by market-research firm Harris Interactive last year, 98 per cent of people distrust the internet.

The firm surveyed 1,900 Americans, yielding the overwhelming statistic that they have little trust in the information we find and use online.

Thankfully, the Internet and Social Media Use in Shipping survey we carried out at the end of last year with 150 shipowners, managers and key suppliers wasn't quite as pessimistic and showed that companies are slowly but surely trusting the internet as a platform for business.

But it did reinforce the fact that trust is vitally important in an online environment.

Traditional trade over the centuries has been shaped and standardised through a number of associated sectors and institutions that have acted as middlemen to help us trade on a global scale.

Institutions such as banks, insurers and dealers have provided mechanisms to help us buy and sell and also provide information to help us to learn and most importantly TRUST our trading partners.

Let's face it, trust always has been and always will be at the core of business relationships, whether online or offline. Arguably it becomes more prominent in the online environment, especially if a transaction is carried out without any prior face-to-face contact.

When the internet came along in the late 1990s there was talk about disintermediation, even in the shipping industry, but this didn't happen as fast as we all thought, as the trust mechanisms were missing from the new digital world that needed to be put in place first.

#### Changing eras

From our perspective in shipping e-commerce, we can now see three clear



Maritime companies are increasing their usage of the internet to do business, and have developed a growing level of trust in completing transactions online

eras/ages of e-commerce that have developed in the last thirteen years: Connectivity, Information and Trust

When ShipServ launched in 2000, we went through a period of five years of helping to connect both buyers and suppliers, which can now be described as the age of connectivity.

Once we had enough buyers (shipowners and shipmanagers) connecting with suppliers across the globe, came the age of sharing, curating and using information. Using the knowledge gained through the first five years of connectivity, we were able to begin to expose this information through the creation a supplier directory providing the ability to match buyers with relevant suppliers according to trading history.

The information period and the curation of data aided by social media has gained growth and traction over the last five years, and we are now entering the age of trust – and this is where the technology provided by the internet can be really powerful.

#### Growing trust

But trust and the internet have not always made for easy bedfellows. In the early days of the internet, users simply didn't understand it or failed to grasp its potential, and there are still many even now that prefer to ignore it.

Even as its influence has grown, many business users have remained wary of embracing e-commerce and the internet as a staple means of doing business. If you were to place shipping's adoption of ecommerce on the classic technology bell

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# Vessel IT is considered expensive. Until now.





curve, it would still only be in the early majority phase.

But the internet has shaken off its growing pains and has emerged into something new, driven by the phenomenon that is social media and the plain fact that business users are familiar with using Amazon and e-Bay, so are now more trusting in a B2B context.

Our survey last year showed that a lack of trust is still the biggest barrier to shipping companies using the internet to trade, but this has decreased dramatically from the previous surveys in 2010 and 2011.

The same survey showed that the issue of lack of understanding of using the internet to trade has decreased substantially from the previous two years.

This shows a very noticeable shift in attitude in the understanding of the benefits associated with e-commerce as people are no longer asking why they should use it but asking how they can use it to gain the biggest advantage.

This is a seismic change and was highlighted by the fact that 85 per cent of users felt that e-commerce in shipping would increase over the next 12 months.

About the author

But as trust still continues to guide behaviour while users are online and using e-commerce, new trust mechanisms are helping to bridge the gap with traditional offline business relationships.

The growth of eBay, Amazon and TripAdvisor has been built on the ratings and rankings of their community of users and these are now common in B2B.

Reviews were only part of the trust mechanisms that we implemented at ShipServ alongside TradeRank and Verifications, enabling buyers to gauge each supplier by their activity and recommendations from peers.

Now users not only know what suppliers say they do, but can see what they actually do through their trading history and also see what others say they do through reviews and brand verification – which ultimately means that they have three separate but important trust mechanisms to judge whether they are worth trading with.

And as the Age of Trust continues, it will be vitally important to keep developing further tools and services that will increase the ease of trading with partners around the globe.



Mark Warner is business development director with maritime e-commerce provider ShipServ. He has previously worked as deputy editor on Lloyds Shipping Economist, content manager for Lloyds List, and head of digital for Informa's Maritime and Professional Division





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# **Competing in a new era of marine terminal management**

The latest generation of terminal optimisation technology is helping third-party terminal operators to streamline key self-assessment and reporting procedures now mandated by major oil companies – making the process more efficient than ever before, *writes Jason Tieman, PortVision* 

erminal operators have a new set of challenges to navigate, thanks to expectations that were recently set by the Oil Companies International Marine Forum (OCIMF).

With the goal of improving safety and environmental protection standards throughout the industry, the OCIMF recently published its Terminal Management and Self Assessment (MTMSA) guide, which establishes standardised Key Performance Indicators (KPIs) and best practices that terminal operators can use to assess management system effectiveness for berth operations and the ship-to-shore interface.

Major oil companies will be using this guide to evaluate their own terminals and those of prospective third-party operators. Those operators who fail to upload their results to the OCIMF database and achieve high enough scores may find themselves losing business to competitors who do.

While the oil majors may have ample resources with which to implement an MTMSA program throughout their own company managed terminals, smaller third-party operators serving these organisations are likely to find the process challenging, costly and time-consuming.

Now, these small- to medium- sized operators can speed up and simplify several important MTMSA measurement and reporting tasks – and improve their scores – using the same terminal process optimisation platforms that are already widely used to improve visibility, accelerate key terminal processes and activities, and provide an enterprise view of operations across multiple sites.

The latest terminal enterprise software suites combine a database of both realtime and historical vessel movement data with dock management, scheduling, analysis and reporting tools.

These kinds of platforms have been implemented by most major oil companies and a large number of terminal operators to improve scheduling, vetting, logistics, loss control and demurrage management, while streamlining activities associated with front line dock activities and management.

These platforms can similarly be used to expedite many important elements of the MTMSA process, specifically in the area of vessel and dock operations spanning many terminals.

#### The MTMSA Guide

The hard copy MTMSA publication and an eBook version are available from Witherby Seamanship International, and the web based program can be found on the OCIMF's website, at www.ocimf.com.

The MTMSA Working Group describes the guide as "a significant milestone" in its larger Marine Terminal Information System (MTIS) initiative, which is aimed at improving marine terminal safety and environmental protection standards.

The MTMSA document includes best practice guidance based on current international legislation and recognised industry guidelines and codes of practice. In addition, the online version includes supplementary information via a 'Help' facility to assist users when completing the assessment. trends that can be used to target resources in priority areas.

A fundamental element of effective safety management is risk assessment, and the OCIMF believes that use of the guide will also assist terminal operators in demonstrating that risks have been identified, analysed and reduced to a level that is as low as reasonably practicable.

The MTMSA guide also can be used by



Modern technology is vital in managing the movement of vessels in and out of oil terminals

The format of the MTMSA guide is consistent with that of its forerunner, the OCIMF Tanker Management and Self Assessment (TMSA) guide. The MTMSA guide replaces the OCIMF's earlier Marine Terminal Baseline Criteria publication, and provides the industry with a uniform structure recognised by oil majors for selfassessment of terminal activity.

According to the OCIMF, the MTMSA self assessment process encourages terminal operators to review performance by means of the key performance indicators (KPIs) that are detailed within the document. Analysis of this data will establish both OCIMF members and third-party terminals (including non-member terminals) to develop their own internal review methodology, and to continuously improve their safety and environment performance while identifying and sharing best practice around their terminal network.

Additionally, terminal operators are encouraged to submit the results of their self-assessments online to OCIMF's central database for distribution to recipients approved by the terminal operator.

While this is currently a voluntary process, it is likely to become a de facto requirement for any terminal operator that wants to win business from OCIMF member companies, and it has been speculated that it will become mandatory in the future.

The MTMSA guide will be joined in 2013 by the final two elements of the MTIS initiative: the Marine Terminal Operator Training System (MTOTS), and the Marine Terminal Assessor Accreditation Programme (MTAAP).

Among the most challenging MTMSA elements to benchmark, monitor, evaluate and improve are those having to do with vessel and dock activities.

This includes KPIs regarding vessels, their movements and their contracted personnel, as well as the safety and efficiency of the dock's layout and various dock operations including scheduling, liquid cargo transfer activities, and communication and information sharing both inside the organisation and between the dock team and various port and harbour entities.

These KPIs can be more easily monitored, reviewed, optimised and reported using maritime enterprise business solutions with Automatic Identification System (AIS) based vessel tracking.

#### How technology can help

Terminal process optimisation platforms have already been used for OCIMF KPI measurement related to TMSA guidelines, adopted by approximately 90 per cent of all tanker operators.

For instance, enterprise business solutions have provided a platform for monitoring and assessing fleet-related TMSA KPIs that involve high levels of data integration, a collaborative approach to managing voyages, and the ability to move information across departments.

Now, similar benefits can be realised by terminal operators who must implement the extensive MTMSA guidelines.

The latest terminal optimisation solutions can provide a web-based service platform that integrates vessel tracking, dock management and analysis in a single, convenient operational dashboard for marine terminal operators.

Platforms such as these can be used by OCIMF members as well as non-member petrochemical refineries, third-party midstream facilities and other marine terminal organisations to optimise marine operations in the petrochemical supply chain.

Terminal process optimisation platforms are designed specifically to enhance visibility and improve terminal business management, analytics, reporting and operational safety and efficiency.

Combined with purpose-built dock management tools, these platforms support dock scheduling, comprehensive dock activity logging, and business intelligence reporting.

They also provide real time opera-

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tional benefits such as predictive ETA of inbound vessels, and real-time alerting of stakeholders based on dock schedule changes. In addition, they can be used to streamline MTMSA KPI evaluation and reporting in the following areas:

Management, Leadership and Accountability – Policies and Procedures

*Challenge:* This element includes KPIs and best practice guidance related to maintaining vessel compatibility criteria for each berth, demonstrating that nominated vessels accepted by the terminal meet minimum standards of safe operation, and that there are vetting procedures in place to confirm operational safety.

*Solution:* Terminal process optimisation platforms with AIS-based vessel tracking enable managers to automatically record and share dimensional criteria for each berth and indicate the most current vetting condition of all nominated vessels.

The platforms also provide direct links to both the USCG Port State Information Exchange and Q88 Vessel Detail Database to ensure easy access to information about nominated vessels' operational safety. Management of Contractors

*Challenge*: This element's KPIs and best practice guidance cover the monitoring and assessment of contractor performance. This includes establishing requirements for formal reviews at defined intervals using appropriate KPIs that are identified and agreed upon for use in monitoring contractor performance.

*Solution:* AIS based terminal optimisation platforms with dock management tools allow consistent collection of contractor-related, event-based data associated with the ship-to-shore interface. They should also enable response and task duration times to be benchmarked and reported, so that this information can be shared with contractors and used to review and measure performance. All event-based KPIs are captured once they have been identified and agreed upon for use.

Port and Harbour Operations

*Challenge:* The MTMSA guidelines have established KPIs and best practices for this element in areas including information exchange between the vessel and terminal before the vessel berths, and the terminal's ability to ensure that all internal and external interested parties (i.e. the Port Authority, agents and pilot associations) are aware of any changes to the water depth.

Another KPI focused on the participation by terminal management/personnel in company and industry port and terminal operation forums to share experience.

*Solution:* Terminal process optimisation platforms should provide a predictive ETA function that allows terminal managers to meet best practices regarding their readiness to commence berthing operations. They also should enable terminal managers to record and share information about water depth for each berth.

Some providers hold user summits for terminal management and personnel that provide a forum for them to share their experiences.

#### Terminal Layout - General

*Challenge:* This element identifies, among other things, the need for terminal managers to study the impact of passing traffic on vessels moored alongside, and to deploy speed-of-approach equipment.

Procedures should be in place that



#### pertvision



AIS tracking data can be a significant aid in effectively monitoring ship traffic

enable the terminal to monitor traffic movements and, if necessary, take precautionary action. Identified personnel should also be trained in the use of speedof-approach equipment, which may include features to indicate the vessel's angle of approach.

*Solution:* Terminal process optimisation solutions should provide real-time data and up to five years of historical vessel data in areas of interest around the terminal, which can be used to study the impact of passing traffic.

These solutions should also trigger near real-time alerts regarding improper speed or angles of approach, which can be delivered by e-mail, text messages, or a warning siren.

#### Ship/Shore Interface

*Challenge:* One KPI in this MTMSA element focuses on the need for terminals to have ready access to information from remote reading tide gauges and current meters.

*Solution:* Terminal process optimisation platforms can be used to monitor information from tide gauges and current meters, and to alert personnel when documented limits are being, or are at risk of being, exceeded.

#### **Transfer Operations**

*Challenge:* This MTMSA element includes KPIs related to the systematic inspection of the berth and equipment prior to each vessel's arrival, and the monitoring of independent cargo surveyors to ensure that their activities comply with all applicable requirements.

Performance should be analysed at regular intervals to identify opportunities for improvement.

*Solution:* Terminal process optimisation platforms with dock management capabilities can be used to collect information in a consistent manner regarding pre-arrival inspection events, and store them in a dock log for future review. They

#### About the author



Jason Tieman is director of operations for terminal management technology provider PortVision. This article has been adapted from a whitepaper entitled 'Competing in a New Era of Marine Terminal Risk Assessment and Management'

also can be used to collect information about dock utilisation, dock events, and other details about each job.

This input should be available to feed various performance analysis reports that can be used for process improvement in alignment with MTMSA guidelines. **Operations at Buoy Moorings** (Supplementary)

*Challenge:* The KPIs and best practices for this element are focused on clearly establishing requirements for a visiting vessel's non-routine activities (such as clearing hoses with water for maintenance purposes) prior to its nomination.

*Solution:* Terminal process optimisation solutions allow ship-specific information to be collected and shared.

Terminals Impacted by Ice or Severe Sub-Zero Air Temperatures (Supplementary)

*Challenge:* This element's KPI related to terminal procedures for scheduling tanker arrivals and departures. These procedures should take into account ice conditions and severe sub-zero temperatures to avoid besetting.

*Solution:* Terminal process optimisation platforms with dock management capabilities can be used to schedule vessel visits well in advance of their arrival. Ideally, they should also provide information about current weather conditions, and calculate the estimated departure time based on volume and pumping rates.

Terminal operators will be expected to meet these and other OCIMF guidelines in the coming months, as the industry strives to improve safety and environmental protection standards.

These challenging vessel- and dockrelated elements can be expedited by implementing terminal optimisation platforms that are already widely used to streamline and improve a variety of marine terminal operations throughout the petrochemical supply chain.

#### **ECDIS workbook from Transas**

#### www.transas.com

Transas Marine reports that it has published an ECDIS Workbook, for use with Transas ECDIS demo software. Both the Workbook and software are available as a free download from the company's website.

According to the STCW 2010 Code, ECDIS training is mandatory for all deck officers serving on board ships fitted with ECDIS equipment.

The main goal of the ECDIS Demo Workbook is to provide a vessel's crew with the knowledge and understanding required for the use of Transas' Navi-Sailor 4000 ECDIS and Chart Assistant Utility.

The workbook is designated for nautical officers and other persons in charge of navigational tasks, and consists of both theoretical and practice components.

Transas says that, during 2012, it trained hundreds of seafarers and issued 1,005 ECDIS certificates through its own training infrastructure, including the award of 144 instructor certificates for qualification of in-house trainers at shipping companies and training institutes, as required by some Flag States.

In related news, online training provider Safebridge has also released its own ECDIS familiarisation training package for the Transas Navi-Sailor 4000. Using the Navi-Sailor software running in real time, the content follows the requirements set by the various Flag States and provides 16-18 hours of study followed by an online test. A manufacturerapproved certificate is delivered immediately and automatically upon successful test completion.

Completed IMO 1.27 generic training is a pre-requisite before starting the Safebridge online ECDIS familiarisation training course.

The online training programme costs  $\notin$ 185 for a single log-in. Discounts are available for fleet training or prepaid packages.

"As the programme for the mandatory carriage of ECDIS progresses and more information is emerging from Port State Control checks, the need for effective, available and accessible ECDIS familiarisation training is becoming ever more apparent," said Ulf Steden, managing director of Safebridge.

"This latest release increases our ability to meet the market's needs for one of the major ECDIS manufacturers and we will be adding to our portfolio again in the very near future."

Course bookings can be made via the Safebridge website, where corporate clients with fleet bookings can manage the training development of their officers from within their corporate account, allocating courses to individual officers.

#### WR Systems agrees China and Korea deals

#### www.wrsystems.com

WR Systems (WR) reports that it has agreed a number of new construction contract awards to supply multiple ship sets of its Emsys emissions monitoring system to shipyards in China and Korea.

The company says that the value of these contracts exceeds \$1 million.

The Emsys system was introduced in September 2010 and is a second generation emissions monitoring technology system featuring laser based multi-gas sen-



'We are now working with the world's largest shipbuilders in Korea, China and Japan' – Dave Edwards, WR Systems

sors and an integrated Particulate Matter (PM) sensor.

WR has been recently awarded a patent on this PM sensor, which allows measurement of soot and particulates 'outside of the exhaust stack' – something the company claims is a "world first".

"We developed Emsys for two reasons, firstly to demonstrate to the industry our capability to design a robust high-tech sensor which overcomes the traditional reliability and maintenance issues with first generation EMS systems, and in addition, we were determined to earn a solid reputation for equipment performance and dependable, affordable service," said WR president, Dave Edwards.

"We are now working with the world's largest shipbuilders in Korea, China and Japan, in addition to oil majors, drilling contractors, cruise ship operators, containership operators, LNG operators and scrubber manufacturers amongst others."

"Our commercial maritime team has grown extensively since Emsys was launched, culminating in the recent opening of our Commercial Maritime Technology Centre in Jacksonville, Florida, which specialises in manufacturing full navigation bridge suites and service/support of marine electronics worldwide. Our success in supporting suppliers of scrubber systems has meant we are becoming the de-facto standard for these applications."





Swire Blue Ocean has chosen the One Box solution from KJAER DATA to secure communication and IT-operations between the world's largest wind turbine installation vessel, Pacific Orca, and the office headquarters onshore.



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#### **UK switches on GPS backup**

#### www.gla-rrnav.org

Ships in the UK's Port of Dover, its approaches and part of the Dover Strait can now use eLoran radio navigation technology as a backup to satellite navigation systems like GPS and Galileo.

The ground based eLoran system provides alternative position and timing signals for improved navigational safety.

The IOC Dover installation is a differential-Loran (DLoran) Reference Station in the Dover area. This unmanned installation has been accommodated within existing infrastructure and is monitored remotely along with the General Lighthouse Authorities of the UK and Ireland (GLA) routine 24/7 monitoring of Aids-to-Navigation.

The DLoran reference station determines local navigation corrections and monitors local service integrity for eLoran. The corrections and integrity status are made available on the eLoran Data Channel as an integral part of the eLoran broadcast signal.

These can be used by the ship's receiving equipment to improve the accuracy of positioning and to alert the mariner in the unlikely event that the position cannot be trusted for navigation.

In order to use the new service, Additional Secondary Factor (ASF) data should be obtained from the GLAs and stored within the user's eLoran receiver. Differential corrections from this Reference Station are broadcast using the Eurofix Loran Data Channel, message Type 10. The Dover DLoran Reference Station has been assigned ID number 101 in that message format.

In order to obtain positioning accuracy at the 10m level both ASFs and differential Loran should be used.

The GLA says that the Dover area, the world's busiest shipping lane, is now the first in the world to achieve this initial operational capability (IOC) for shipping companies operating both passenger and cargo services.

The commencement of this new service represents the first of up to seven eLoran installations to be implemented along the East Coast of the United Kingdom.

The Thames Estuary and approaches up to Tilbury, the Humber Estuary and approaches, and the ports of Middlesbrough, Grangemouth and Aberdeen will all benefit from new installations, and the prototype service at Harwich and Felixstowe will be upgraded.

Although primarily intended as a maritime aid to navigation, GLA says eLoran could become a cost effective backup for a wide range of applications that are becoming increasingly reliant on the position and timing information provided by satellite systems.

"Our primary concern at the GLA is for the safety of mariners," says Ian



eLoran coverage extends into the Port of Dover Approaches and Dover Strait Traffic Separation Scheme

McNaught, chief executive of Trinity House, "but signals from eLoran transmitters could also provide essential backup to telecommunications, smart grid and high frequency trading systems vulnerable to jamming by natural or deliberate means."

"We encourage ship owners and mariners to assess eLoran in this region and provide feedback to the GLA on its performance."

P&O Ferries will be one of the early companies to take advantage of the service, having installed an eLoran receiver on its new vessel Spirit of Britain, based at Dover and one of the largest passenger ships on the Dover/Calais route.

"Accurate real-time positional information is essential for the safe navigation of ships with modern electronic charts," said Captain Simon Richardson, head of safety management at P&O Ferries.

"Satellite navigation systems are vulnerable to degradation of signal strength and our ships have also experienced occasional loss of signal. We welcome the development of a robust alternative to provide redundancy in real-time positional information and we see eLoran as the most effective solution to countering the problem."

## **Snowflake to work on S-100**

#### www.snowflakesoftware.com

Snowflake Software has been awarded a contract by the United Kingdom Hydrographic Office (UKHO) to provide an open standard Geography Markup Language (GML) encoding and profile for a basic route specification S-100 based maritime data specification.

This work builds on Snowflake's previous involvement in implementing the International Organization for Standardization (ISO) Model Driven Approach to managed GML application schema design and optimisation for use in practical applications and web services.

The International Hydrographic Organization's (IHO) Transfer Standard Maintenance and Applications Development Working Group (TSMAD) is currently developing new product specifi-

**Transas** received **RINA** and **Lloyds Register** approvals to perform Radio Communication equipment survey and VDR/SVDR Annual Performance Testing. The RINA certification authorises Transas service engineers to perform inspections of vessels' Global Maritime Distress and Safety System (GMDSS) communication equipment and annual performance tests of Voyage Data Recorders (VDR/SVDR).

**Det Norske Veritas (Norway)** has also issued statements of compliance for **Transas** navigational and DP simulacations for electronic chart data based on the recently published S-100 standard.

Electronic Navigational Charts (ENC) are used in ECDIS, and currently a wide range of formats exist for the exchange of route information. However, a requirement has now been identified to create a standard basic route specification to sit along-side the new ENC Product Specification based on S-100 and the ISO/OGC open standards for geospatial data products.

Snowflake was initially contracted to review the draft specification and has now been tasked to provide an optimised GML application schema and profile which it says could potentially be used across other S-100 GML maritime vector product specifications.

Snowflake has also been contracted by the UKHO to provide extensive XML and GML training to UKHO staff.

tors. The Transas Navi-Trainer Professional 5000 has now been certified as a Bridge Operation Simulator Class A with class notation 'Integrated simulator system, NAUT AW (SIM), DYNPOS – AUT (SIM), HSC, TUG, ICE, AHTS' and Dynamic Positioning Simulator Class A as per the latest edition of Standard for Certification of Maritime Simulators No. 2.14 January 2011.

**Pole Star** has appointed Andrew Peters as chief executive of the company. The appointment follows the retirement of interim CEO, Colin Hook, who will con-

#### Indonesian coastal awareness enhanced by Xanatos system

#### www.xanatosmarine.com

Xanatos Marine reports that it has successfully conducted a trial on sixteen Indonesia Maritime Police (IMP) vessels of a system that can transmit AIS and ARPA targets surrounding the vessel over 2,000 km back to headquarters.

AIS data generally has a transmission range of approximately 60 NM, but Xanatos Marine says that the company and partners have come up with a way of extending this for the IMP, to cope with the fact that the country has a lengthy coastline and it was neither cost efficient nor practical to place AIS base stations along its length.

The solution has seen sixteen of the Maritime Police Vessels equipped with radar and AIS, with data being sent to

tinue to serve as a non-executive director of the board. Mr Peters has previously worked as CEO of **Telefonica UK** and **Deutsche Telekom Ltd.** 

**ChartWorld** and **SevenCs** have moved to new premises in Germany, right opposite the BSH (German Hydrographic Office), at Atlantic House, Zirkusweg 1, 20359 Hamburg.

SRH Marine Electronics has signed a distribution agreement with the United Kingdom Hydrographic Office (UKHO) for Admiralty Xanatos Marine's TITAN Voyager system which converts that data to an encrypted signal.

Using a Rockwell Collins radio, this data is then transmitted to Jakarta. The data received at IMP headquarters is decrypted and displayed by Xanatos Marine's TITAN Sentinel VTS software.

The patrol vessels are then displayed in real time on the national overview screen along with all AIS equipped vessels and ARPA targets surrounding those vessels.

Xanatos Marine, through local agents PT Transavia Utama of Jakarta, says it is planning further installations on patrol vessels and strategically selected ground stations equipped with AIS, Radar and CCTV to provide complete situational awareness.

Navigational and other related products. The agreement covers all Admiralty Digital Products specified under 'Admiralty Digital Distributor' (ADD) status.

> www.transas.com www.dnv.com www.rina.org www.lr.org www.srhmar.com www.polestarglobal.com www.chartworld.com

#### **ELECTRONICS & NAVIGATION**

#### **Digital Ship**

# **SAM supplies Viking Line**

www.sam-electronics.de

SAM Electronics reports that it has equipped Viking Line's new 57,000-gt passenger ferry, Viking Grace, with a NACOS Platinum integrated navigation control system, together with a Valmatic Platinum integrated automation system from its associate company, L-3 Valmarine.

Built by STX Finland, at its Turku yard, and designed for cruising the shallow waters of the Finnish and Swedish archipelago, Viking Grace is the world's largest LNG-fuelled ferry.

Having entered service in January 2013 the vessel will be able to operate in compliance with stringent 2015 Baltic regulations on gas emissions.

The NACOS Platinum bridge system comprises four S- and X-band radars linked to a series of five Multipilot, Chartradar and ECDIS pilot multifunction workstations for control of all main radar, ECDIS and conning operations, in addition to those for automatic steering and voyage planning.

Supplementary workstation consoles and displays are located at starboard and port wing areas as well as in the captain's cabin. Secondary sensors, consisting of AIS, VDR, DGPS, doppler log and echosounder navaids, also include SAM's new Bridge Navigational Watch Alarm System (BNWAS).

A dedicated communications network

connects to multifunction workstations in the engine control room and on the bridge, while L-3 Valmarine's Valmatic Platinum integrated automation system will provide control of all machinery, and includes added capabilities for vessel power management and emergency shutdown.

In addition, the system also includes

four control/monitoring workstations around the vessel and a ship-wide network for monitoring access via portable multifunction workstations.

Also interfaced via redundant connections to the communications network is an Emergency Shutdown System (ESD). An independent facility based on the same platform, it operates its own process control station communications network, remote IO units, hard-wired control panels and associated workstations. In addition to these systems from SAM Electronics, Navis Engineering has also delivered its dynamic positioning system to the Viking Grace.

The DP system delivered by Navis Engineering is a non-redundant DP0 (joystick control system) solution comprising two control stations located in the wheelhouse wings.

It will be used mostly for docking the cruise ferry at points on the Turku – Mariehamn – Stockholm route.



The Viking Grace has been installed with a number of new navigation technologies

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# Maersk Training implements Kongsberg sims

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Maersk Training's new centre in Rio de Janeiro, Brazil is to implement integrated DP, navigation, and offshore operations simulators from Kongsberg Maritime.

The delivery to Maersk Training Brazil Treinamentos Maritimos LTDA is under a non-exclusive frame agreement signed by Kongsberg Maritime and Maersk Training 13 months ago, which covers supply of simulators and on-going support for a 10 year period.

The first multiple integrated simulator delivery within this frame agreement was to Maersk Training's centre in Svendborg – Maersk Offshore Simulation And Innovation Centre II - which opened in November 2012.

The contract for this new delivery to Brazil was signed August 2012, with an extension in December 2012.

The Offshore Vessel Simulator at Maersk Training Brazil will be operational in the second quarter of 2013, and will be integrated with a K-Pos Dynamic Positioning Simulator.

The contract also includes a Long Term Service Support (LTSSP) agreement ensuring delivery of support and new software versions for a five year period.

"The maritime industry will benefit from training on these state-of-the-art Kongsberg simulators, since offshore crews and specialists can practice on procedures and emergency situations prior to a mission. This ensures that all possible scenarios can be planned for, for every different operation," said Hans Dürke Bloch Kjaer, manag-

ing director at Maersk Training Brasil. "Our new simulators will be highly flexible so our experienced staff will be able to develop customised anchor handling, DP courses as well as other types of maritime courses to meet the needs of the Brazilian market for all companies in the maritime and offshore maritime industry."



The Brazilian centre will see a similar simulator set-up to that at Maersk's MOSAIC II Training Centre in Svenborg. Photo Credit Maersk

For 12 years Digital Ship magazine has provided the digital community of the world's maritime industry with the latest news and developments, including satellite communications, software, navigation and electronics, to help keep shipping operating with maximum safety, efficiency and crew comfort.





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## **Danish ECDIS deals for Transas**

#### www.transas.com

Transas has agreed a couple of major deals in Denmark, with the announcement of contracts for the supply of dual ECDIS to both Eitzen Chemical A/S and TORM.

The deal with Eitzen will see Transas supply and install the Navi-Sailor 4000 Multifunction Display Dual ECDIS on 28 vessels and upgrade the Transas Dual ECDIS on six existing vessels to the latest hardware and software standards, over the next two years.

The package for each vessel includes two 26-inch Hatteland monitors, RS6B computers, radar overlay and firewall enabling a direct connection between the vessel's satellite communication equipment and the ECDIS.

After the installations all vessels will operate using the Transas 'Pay As You Sail' chart concept, which will provide the Eitzen Chemical fleet with a licence and access to install, view and pre-plan using official (S)ENCs without any additional cost.

The company will only pay for the 'best scale charts' actually used for navigation monitoring.

TORM meanwhile is to install Transas

ECDIS on five of its vessels.

Navi-Sailor 4000 Dual ECDIS will again be installed, this time on five L-Class tankers. A 'Back of the Bridge' station will also be added on each of the ships, which will provide access to three fully operational ECDIS stations.

The ECDIS 'Back of the Bridge' planning station comprises a 24-inch Panel PC including Transas Navi-Planner with full voyage plan functionality along with the ECDIS software.

Installation has already been completed on the vessel TORM Louise, and the companies say that the remaining four vessels should be equipped over the next few months.

Transas has also upgraded eight other ECDIS-equipped TORM vessels with its latest hardware and software versions.

In related news, Transas reports that it has also received an order to supply its Navi-Sailor ECDIS systems to the Swedish Armed Forces.

After an evaluation period, the Swedish Defense Material Administration (FMV) has selected Transas to implement ECDIS onboard eight Swedish Armed Forces vessels.

The project is the first in the series of initiatives to implement ECDIS across

**US centre joins GET-Net** 

#### www.transas.com

Resolve Maritime Academy, a subsidiary of emergency response and vessel salvage company Resolve Marine Group, has became the first major training centre in the US to join the Transas Global ECDIS Training Network (GET-Net).

Transas GET-Net is an international partnership between Transas and ECDIS training providers whereby the training centres receive specified instructor training and have to pass a quality audit.

The ECDIS training is based on a Germanischer Lloyd certified training course which follows the ECDIS IMO Model Course 1.27, and is fully compliant with STCW 2010.

Admission to the Global GET-Net ECDIS training network follows the implementation of full mission and classroom simulators from Transas at Resolve's 17th Street facility in Fort Lauderdale, during 2011 and 2012.

The Academy has successfully implemented ECDIS and multifunctional navigational displays at all levels of simulation, including classrooms with twentyone ECDIS workplaces and part task 'mini-bridges' with visualisation, full mission systems, and bridge wing simulation for precision docking using ECDIS.

Resolve Maritime Academy will provide generic and Transas type-specific ECDIS training and certification.

"Resolve is exceptionally pleased to join with Transas as a partner in training," said David Boldt, simulator group manager at the Resolve Maritime Academy.

"The Transas GET-Net programme is a great way for us to access markets we otherwise would find difficult to reach. This strategic partnership allows Resolve to meet the STCW 2010 objectives and all Flag State requirements for ECDIS Type Specific training."



An ECDIS classroom at the Resolve Academy - now part of GET-Net

the Swedish Navy fleet.

Transas will supply Dual Navi-Sailor 4100 ECDIS with Radar overlay, including project management, integrated logistics support and system safety process implementation.

The equipment will be installed on five

school ships and three hovercrafts.

The school vessels are used to train officers in navigation, with a crew consisting of 10 people. The vessels are 26 metres long and 6 metres wide.

The Hovercrafts are a part of the Armed Forces' amphibian battalion with a crew of three. The vessels are 22 metres long and 11 metres wide and can carry 50 fully equipped soldiers.



Eitzen will install dual ECDIS on 28 vessels, and upgrade a further six existing installations. Photo: Eitzen

#### Satellite AIS data goes online

http://shipmaps.exactearth.com

exactEarth has launched a new website called Ship Maps, which aims to demonstrate the applications of satellite-AIS (S-AIS) data in solving real-world issues across the maritime industry.

The site combines maps and multimedia to provide interactive tours of the world's oceans, showing how ship movement information is being used in areas like Arctic monitoring, casualty alerting and fishery monitoring. In each area users will see a simple map with sample ship traffic information collected from space.

More information can be overlaid using various map layers, building greater context into the ship map and demonstrating

how a combination of situational information and empirical satellite data can be combined to gain insight and knowledge about key maritime issues.

A Layers menu allows users to toggle on and off the various data layers by clicking on check-boxes. Each data layer in Ship Maps has its own styles and colours representing different attribute characteristics.

Features drawn on the map include physical shipping data, such as Positions and Tracks, which may be clicked on for feature information. Information icons and Passage Zones are included, as well as Shipping Density maps, Wave Heights, Aquatic Species Distribution, Exclusive Economic Zones, and Ice Extents.

CASUALTY ALERTING MAP.



Visitors to the website can access historical data gathered by satellite





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# **E-navigation – a web-based approach?**

The continued evolution of maritime satellite communications, and the consequent increase in the availability of online access at sea, could play a significant role in the development of IMO's e-navigation strategy, writes Dr Andy Norris

he e-navigation programme has been ongoing at IMO since 2006. The initial stages of the programme have not been aimed at rapidly instigating new hardware and practices but have effectively concentrated on developing a new coordinated structure and mindset for maritime navigation and its related communications, based on the latest technical understanding and practical experience.

Shipping in the 20th century - in common with all other areas of life - was epitomised by the numerous introductions of entirely new concepts in technology, many arising out of the basic research into electromagnetic theory undertaken in the latter half of the 19th century.

In general, developments resulted in new standalone items of specific functionality. Because of technological constraints there was little physical integration with other equipment apart from due consideration being given to their respective operating positions.

For instance, new items of ships' radio communications equipment were successively introduced and updated but remained as entirely separate identities.

Radar was entirely standalone in concept and so were other newly developed navigational electronic instruments such as the log, gyro and LF positioning systems.

However, from about the late 1970s integration increasingly became a driver of the technological world, prompted by the ever-growing capabilities of digital processing. Not least, new equipment could exchange data with other systems with ever increasing sophistication.

Much of life in the early 21st century is epitomised by previously unimaginable levels of technological integration, not least leading to our business and social lives becoming increasingly web-centric.

No new base technology has been required to achieve this - just ever evolving capabilities in such areas as digital processing, communications, sensors and user interfaces.

In the maritime world it is the e-navigation programme that is attempting to ensure that advantage is taken from both the technological and philosophical aspects of full integration.

#### E-navigation and the web

Effective integration will give bridge teams and associated shore staff all the necessary information to make safe, clean and cost-effective navigational decisions.

E-navigation basically relies on competent human navigator skills, complemented by easy access to relevant and integrated data. It uses data from both onboard and remote sources of information.

Such sources range from the very slowly changing - such as charted information and sailing directions, to the regularly changing - such as meteorological and Maritime Safety Information and to highly dynamic sources - such as onboard navigational sensors.

Included is the need to handle reactive information from authorities, ship operators and other vessels, not least vocal interaction. It also needs to be integral with an enhanced GMDSS service.

It is highly relevant to note that the activities on such a list are all web-consistent. If all ships already had access to the internet the basic 'low-level' technical infrastructure for e-navigation would effectively be in place.

Concentration could then immediately be applied to aspects specific to e-navigation, such as the provision of the data sources, the necessary e-navigation user applications and the detailed integration of navigational sensor data.

This is not implying that e-navigation should be based upon open access to any source of information on the World Wide Web. It needs to be aimed at the secure use of high integrity data from official or approved sites.

that created the original Inmarsat system.

that mitigate costs into the future.

efficiency is ever increasing.

pared to the total spend.

politically.

capability.

all vessels.

mic radiation.

areas?

could then be planned.

their extensive use?

The first is that digital transmissions

costs per byte of data steadily decrease

with time. The second is that the amount

of digital data seen to optimise business

fore be a very minimal extra amount com-

of e-navigation would be effectively gov-

erned by when the associated communica-

tions costs are considered to be interna-

tionally acceptable - admittedly not an

easy target to set, both practically and

e-navigation need to be geared to the prac-

tical and affordable bandwidth available.

ties of evolving satellite and shore based

web-accessible systems for e-navigation, it

does seem appropriate to have an emer-

gency backup system, albeit with a limited

day VHF and MF systems. Of course, such

systems would be needed in their present

form during the presumably quite lengthy

transition into an e-navigation world by

These systems could feasibly continue

to serve as a last resort safety system, not

least covering the potential worst-case sce-

nario of all satellite systems becoming

inoperable due to an extreme burst of cos-

these systems into a proper integrated

backup role in the true age of e-navigation

strategy needed to deal with small vessels

entering an e-navigation world. Can VHF

for such vessels be generally replaced by a

4G-based system and its future derivatives?

is perhaps feasible - but what about other

the increased use of small or handheld sat-

coms systems. But will the associated costs

of these ever become acceptable and is

there available and suitable spectrum for

system of SOLAS vessels could readily be

designed to give adequate integration to VHF communications with small vessels.

at least giving access from any e-naviga-

igation certainly seems to warrant detailed

A conventional web-approach to e-nav-

DS

tion compatible workstation.

Nevertheless, the onboard e-navigation

With good coastal coverage of 4G this

Another possibility, into the future, is

A programme to eventually modernise

A further major consideration is the

In the initial phases of implementation perhaps these should just be the present

For any solution, the requirements for

Despite the apparent technical capabili-

Into the future, the e-navigation 'statutory' cost of communications could there-

Perhaps the statutory implementation

Such a model was effectively abandoned by governments in 1999, with Inmarsat becoming a private organisation. The provision of a suitable connectivity infrastructure would probably have to be based on encouraging commercial providers to provide suitable services.

The use of satellite based systems for a web-based e-navigation service does appear to be the basis for a good technical solution. In principle, some existing systems may already be able to support such a service.

The advent of advanced terrestrial mobile phone networks, such as 4G, also provides a possibility for its professional use by vessels in many coastal areas. These would be accessed through an appropriate transceiver, not by a simple handheld phone.

Operators of such networks may see a commercial advantage in getting better



Shipboard web access would provide a 'low level' infrastructure for e-navigation

If a web-based architecture was adopted for e-navigation it would then naturally evolve alongside the mainstream technical capability of the web.

It would consequently not have its capabilities virtually frozen to the technological constraints of its first implementation as has tended to happen with presentday maritime communications systems.

Future technological enhancements being mainstream would be cost-effective to implement, with long and well-publicised overlaps in the compatibility of old and new - perhaps analogous to the ongoing evolution of mobile phone systems.

However, for e-navigation to take this apparently obvious route, emphasis needs to be put on a cost-effective implementation.

#### Access to the web

The strange reality is that in many parts of the world most manned vessels, from the tiniest leisure vessels up, probably already have web access when in waters adjacent to reasonably populated coastlines, at least in the form of a smartphone.

However, the real issues involved with using the web for safety-related services are maintaining high integrity connectivity over the complete voyage at an affordable cost.

To achieve this it is highly unlikely that a specific worldwide web-based communications system would be set up by governments along the lines of the thinking seawards coverage if their services were to be used by passing vessels.

The future e-navigation communications requirements for SOLAS vessels should perhaps just specify certain minimum requirements for web connection systems, whereby a defined probability of appropriate network connection over the whole voyage is ensured.

These would include such essential items as minimum data speeds and maximum delay times, as well as needing appropriate integrity.

The instantaneous choice of communications system in any circumstances would normally be made on ship by an automatic process, taking into account all the appropriate factors, such as availability, required bandwidth, urgency, integrity and cost.

#### **Practical considerations**

A big issue is the cost of communications. The present-day use of such systems as VHF and MF for statutory communications is effectively free of charge. Commercial satellite and phone systems are not.

However, there are two related factors



Dr Andy Norris has been well-known in the maritime navigation industry for a number of years. He has spent much of his time managing high-tech navigation companies but now he is working on broader issues within the navigational world, providing both technical and business consultancy to the industry, governmental bodies and maritime organizations. Email: apnorris@globalnet.co.uk

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