

# Digital Ship

September 2013

www.thedigitalship.com

## Satellite launch to extend FleetBroadband capabilities

The successful launch of Inmarsat's Alphasat satellite will see the company able to extend the capacity of its FleetBroadband network - while also providing a welcome counterpoint to worries over whether a Proton rocket failure could cause the launch of the company's Global Xpress programme to be delayed

An eventful summer at Inmarsat has seen the company mix triumph with trepidation, as its successful launch of the latest satellite in its constellation, Alphasat, was preceded by market worries about the launch provider it has selected for the introduction of Global Xpress (GX).

To start on a positive note, the I-4A F4 launch of Alphasat, a telecommunications satellite which will complement Inmarsat's L-band FleetBroadband network, should provide a significant boost to performance and availability of FleetBroadband services in the Europe, Middle East and Africa region, where traffic is currently heaviest.

An Ariane 5 rocket carrying the spacecraft took off on July 25 from the Guiana Space Centre in Kourou, French Guiana, and a successful spacecraft separation was achieved 27 minutes and 45 seconds into the mission. The Alphasat Mission Operations Team confirmed that they had taken command of the satellite shortly afterwards.

I-4A F4 was placed in a temporary position in the geostationary ring at the beginning of August, where it deployed its 11m-diameter main antenna. The satellite has also successfully deployed its twin four-panel solar wings, spanning 40m.

The solar panels rotate automatically, following the Sun, while Alphasat's attitude control system tracks its position above Earth.

At the time of going to press the satellite was scheduled to stay in this

slot for several weeks while Inmarsat, together with ESA (European Space Agency), continues testing the telecom payload, the backup units on the Alphabus platform and ESA's four hosted payloads.

Inmarsat, which owns and operates Alphasat, has invested \$350 million into what it calls one of the most technically advanced telecommunications satellites ever constructed for civilian applications.

The satellite has previously been called an 'I4-and-a-half', given that it will be used to augment the existing I4 satellite network used to provide FleetBroadband services since 2009, extending the life of the fleet and providing additional redundancy.

"Alphasat will strengthen our existing I-4 series satellite constellation, providing coverage over Europe, the Middle East and Africa," said Rupert Pearce, CEO of Inmarsat.

"The launch demonstrates Inmarsat's long-term commitment to L-band services, and marks a significant milestone in the evolution of Inmarsat's flagship satellite fleet, bringing new capabilities both in terms of performance and resource availability."

Alphasat was designed and manufactured by Astrium, and Inmarsat

*continued on page 2*



Alphasat was successfully launched at the end of July

### IN THIS ISSUE

#### satcoms



Flat antenna for maritime satcoms - 4

Thuraya delivers MBB in Asia - 10

Polar VSAT - the next step in Arctic broadband - 16



Maritime bandwidth - full speed ahead or steady as she goes? - 20

#### software



CSCL equips container ships with ECO-Assistant - 22

Maritime technology R&D venture in Japan - 29



Steaming into the cloud - 30

#### electronics and navigation



ECDIS training - the reality - 40

Getting more from VDR - 44

The importance of BWAS - 46



The case for early ECDIS - 48

## "Ready for the Internet"

Captain Victorio Velonza, Q.C. Manager, Ishima Shipmanagement Singapore

Ishima International Shipmanagement in Singapore operates 27 ships in world wide trade. Captain Victorio Velonza has already installed Dualog Connection Suite on all the ships with a clear plan to move forward.

"Our experience with Dualog is a combination of a user-friendly system and people you can trust. As we are now looking forward to introducing Internet onboard, we know that Dualog Connection Suite will provide exactly what we need to manage and take control in an effective way", concludes a smiling Captain Velonza.



www.dualog.com  
(+47) 77 62 19 00 or sales@dualog.com





# Digital Ship

Vol 14 No 1

Digital Ship Limited  
2nd Floor,  
2-5 Benjamin Street,  
London EC1M 5QL, U.K.  
www.thedigitalship.com

PUBLISHER  
Stuart Fryer

EDITOR

Rob O'Dwyer: Tel: +44 (0)20 7017 3410  
email: odwyer@thedigitalship.com

SENIOR NEWS REPORTER

Cecile Brisson: Tel: +44 (0)20 7017 3405  
email: cecile@thedigitalship.com

CONFERENCE PRODUCER

Cathy Hodge: Tel +44 (0) 20 7253 2700  
email: cathy@thedigitalship.com

ADVERTISING

Ria Kontogeorgou: Tel: +44 (0)20 7017 3401  
email: ria@thedigitalship.com

EXHIBITION SALES

Young Suk Park: Tel: +44 (0)20 3287 9317  
email: yong@thedigitalship.com

PRODUCTION

Vivian Chee: Tel: +44 (0)20 8995 5540  
email: chee@thedigitalship.com

EVENTS MANAGER

Jo McGhee  
Tel: +44 (0)20 7017 3412  
email: jo@thedigitalship.com

CONSULTANT WRITER

Dr Andy Norris (navigation)  
apnorris@globalnet.co.uk

DIGITAL SHIP SUBSCRIPTIONS

€180 per year for 10 issues  
contact subs@thedigitalship.com,  
or phone Stephan Venter on:  
+44 (0)20 7017 3407

DIGITAL SHIP JAPAN

The Capitol Hotel Tokyu, Tokyo  
3-4 September 2013

DIGITAL SHIP SINGAPORE

Suntec, Singapore  
1-2 October 2013

DIGITAL SHIP HONG KONG

KITEC, Kowloon  
30-31 October 2013

Printed by

The Manson Group Ltd  
Reynolds House, 8 Porters' Wood  
Valley Road Industrial Estate  
St Albans, Herts AL3 6PZ  
U.K.

No part of this publication may be reproduced or stored in any form by any mechanical, electronic, photocopying, recording or other means without the prior written consent of the publisher. Whilst the information and articles in Digital Ship are published in good faith and every effort is made to check accuracy, readers should verify facts and statements direct with official sources before acting on them as the publisher can accept no responsibility in this respect. Any opinions expressed in this magazine should not be construed as those of the publisher.

continued from page 1

says that it is the largest and most sophisticated European telecommunications satellite ever built. It is also the largest Public-Private-Partnership space project in Europe, notes Inmarsat, which has teamed up with the European Space Agency (ESA) to carry it out.

Commercial operations on the Alphasat satellite are expected to begin during Q4 of this year.

## GX delay fears

The success of the Alphasat launch provided a timely boost to Inmarsat, coming just a few short weeks after the explosion of a satellite launch attempt by a Proton M rocket from the Baikonur Cosmodrome in Kazakhstan had prompted fears that the introduction of Inmarsat's Ka-band Global Xpress network could be delayed.

International Launch Services (ILS) has been contracted by Inmarsat to provide launch services for all three launches of its GX satellites, also using the Proton launch vehicle from the Baikonur Cosmodrome.

The first of these GX launches is currently scheduled for the fourth quarter of 2013, but the failure of this most recent launch has led to renewed concerns over the viability of the Proton rocket for these flights.

The launch of the Proton M/Block DM-03 mission with three Glonass navigational satellites for the Russian Federal Government resulted in a failure when, about ten seconds after lift-off, the rocket veered off of its flight path and returned to earth.

This most recent failure is the third troubled launch for the Proton M rocket in the last twelve months.

In August 2012 a mission to launch Indonesian and Russian telecommunication satellites failed to deliver them into orbit, while a December 2012 launch of another Russian satellite was hampered by a premature separation of the satellite from the rocket.

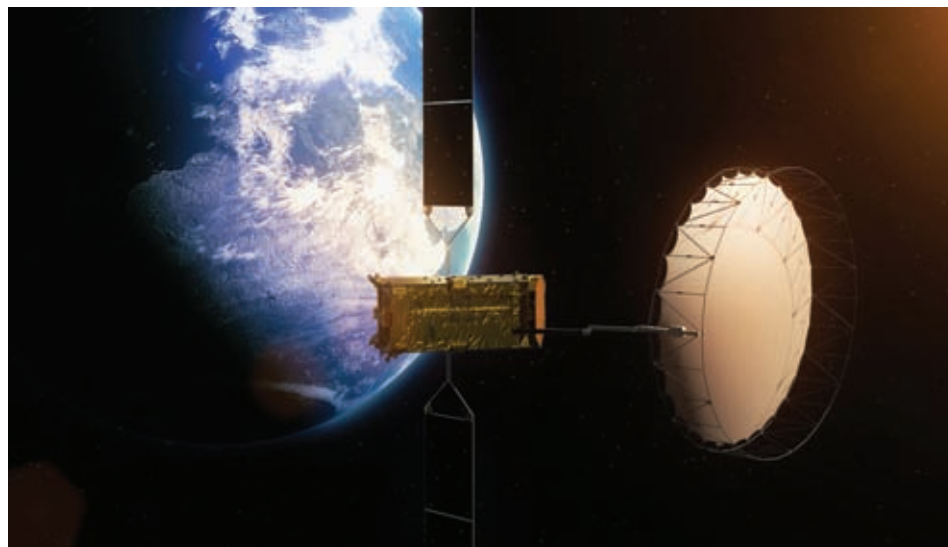
Inmarsat has said that it is currently awaiting the outcome of an investigation into the failure of the Proton launch vehicle, and notes that, "while it is too early to determine any schedule impact of the failure, there is a risk of a short delay to the launch of the first Inmarsat-5 satellite, and therefore, to the start of GX services."

Inmarsat CEO Rupert Pearce expressed "disappointment and obvious concern" over the Proton situation, but believes that the company can still be positive about its launch plans for two main reasons.

"(Firstly), Proton has a very good track record of resolving failures and quickly restarting operations with the industrial capacity to minimise delays - indeed, this is one of the key reasons why we picked Proton in the first place," he said.

"After the last failure Proton successfully returned to flight about three months later. If you allow for a normal period between Proton launches then this points to a short delay risk for the first satellite of perhaps a couple of months."

"Second, as our satellite manufacturing programme is very much on track, a delay to the first launch does not mean the same for the second and third launches. There is still the expectation that global coverage for GX can still be achieved on, or very close to, plan."



The satellite's twin four-panel solar wings span 40m. Photo: ESA

This uncertainty over the launch of the GX programme led to a drop in Inmarsat's share price, which had closed at 695p on July 2nd before the news broke but fell to 663p by the close of trading on July 3rd - a drop of approximately 4.5 per cent.

However, subsequent positive financial results as well as an increase in dividends to shareholders have since more than compensated for this drop, with the share price having climbed above 720p at the time of going to press, well above its level prior to the Proton failure.

## GX developments

Despite the issues with the Proton launch vehicle, Inmarsat has been able to announce a number of positive recent developments for its GX programme.

The company reported that the first fully assembled Inmarsat-5 Ka-band satellite, which will be used to provide the Global Xpress service, has successfully completed mechanical testing at Boeing's manufacturing facility in El Segundo, California, and that the satellite is now ready to move to the next phase of testing as preparations continue for launch.

The recently completed tests included a simulated launch, which was designed to expose the spacecraft to the environmental conditions it will be subjected to during the actual launch.

"This is a very important and significant milestone in the construction and test cycle of the spacecraft as we progress with the test programme and move forward to launch day," said Franco Carnevale, Inmarsat's vice president for satellite and launch vehicles.

"Exposing the satellite to the realities of the launch experience allows us to know with confidence that it can withstand the real thing."

During the testing process, a 'shaker' unit was deployed to simulate the vibrations induced by the rocket's engine thrust and its 'cut-off' at stage separation.

Additionally, a concrete reinforced chamber blasted the spacecraft with acoustic waves, much like those which will impact the rocket and its payload during lift-off.

Following the shaking and blasting processes, all mechanical appendages on the satellite were deployed and tested.

The company says that the Inmarsat-5 satellite passed each of these tests and simulations and will now move to the next

phase, where it will be subjected to the void of space and the large temperature variations it will experience in orbit.

Inmarsat says that these tests are designed to ensure that the satellite can operate reliably for its projected life cycle of more than 15 years.

The second and third Inmarsat-5 satellites, currently in development by Boeing Space & Intelligence Systems, will endure similar testing prior to the launch.

"With each passing test, another step in the process is completed and we move forward to launching the satellites that will power the first global Ka-band broadband network over satellite," concluded Mr Carnevale.

Inmarsat has also recently agreed a new strategic partnership with RigNet, a satcom services provider to oil and gas markets, which will see RigNet become a Global Xpress distribution partner for the global energy sector.

Inmarsat says that RigNet has entered into a "significant four-year Global Xpress capacity pre-purchase" agreement as part of the deal.

As part of the partnership agreement Inmarsat has also agreed to sell to RigNet its retail energy operations, currently managed within the Inmarsat Solutions Enterprise business unit, for a total consideration of US\$25 million.

The sale will include Inmarsat's microwave and WiMAX networks in the US Gulf of Mexico serving drillers, producers and energy vessel owners, its VSAT interests in Russia, the UK, the US and Canada, its telecommunications systems integration business operating worldwide, and its retail L-band energy satcoms business.

"We are excited about this partnership as it enhances the strategic positioning of both companies as we seek to address the communications needs of the global energy sector together," said Mr Pearce.

"RigNet is the perfect partner for Inmarsat, supporting a large customer base of oil and gas VSAT customers, whom we expect to be at the forefront of the transition to Global Xpress services. We also welcome the opportunity to work with RigNet's management team with its extensive knowledge of VSAT operations and customers."

"This partnership prepares the way for a fast and successful take up of Global Xpress services in the global energy sector."





# KEEP IN TOUCH

FROM  
**\$1.400**  
PER MONTH  
36 MONTH LEASE

**83 CM VSAT SYSTEM**  
(INTELLIAN)

**+ AIRTIME**  
(EUROPEAN COVERAGE)

**+ COMPLETE INSTALLATION**  
(ADE + BDE + INSTALLATION)

**GLOBAL COVERAGE**

**24/7 SUPPORT**



**Intellian**

**VSAT**

**inmarsat**



**iridium**

**THURAYA**



# Flat antenna for maritime satcoms

www.kymetacorp.com

American company Kymeta, a developer of flat antenna technology for Ka-band connectivity, has announced that it has secured \$50 million in funding and confirmed that it intends to introduce a high-capacity antenna for the maritime market with no moving parts.

Existing Kymeta investors including Bill Gates, Lux Capital and Liberty Global were joined in the financing by Osage University Partners and The Kresge Foundation.

The Redmond, Washington-based company has already partnered with Inmarsat to design a flat Ka-band antenna for airplanes, which it plans to launch in the first quarter of 2015. The goal is to allow airline passengers to access broadband services through Inmarsat's Global Xpress network which is scheduled to be operational at the end of next year.

However, Kymeta confirmed to *Digital Ship* that it also intends to make the technology available for the maritime industry, initially in the Ka-band, and then possibly in the Ku- and L-bands.

"Merchant ships, cruise ships, and yachts of all sizes are all target markets for us. The technology is incredibly robust," Bob McCambridge, Kymeta's president and COO, told us.

Unlike typical VSAT satellite communications antennas currently in use in maritime, which use a stabilised dish that moves to keep the dish pointing at the

satellite in orbit, Kymeta's mTenna is flat and forms and steers the antenna beam electronically, which the company says eliminates the need for moving parts.

Its shape is that of a square tile, whose sides can be 30 to 70 centimetres long, and it is 3 centimetres thick – similar in form to an oversized pizza box.

"What the antenna does is: it creates a beam electronically. The beam then tracks satellites with no mechanical, moving parts," Mr McCambridge explained, during an interview.

"That is really what becomes such a revolutionary and breakthrough aspect of our proprietary technology. It's a next-generation alternative to expensive, heavy, power-consumptive, mechanically steered devices. Our antenna technology is similar to a flat panel TV display technology driven by electronics and software with no moving parts."

Kymeta has designed a working Portable Satellite Terminal prototype that can deliver 30 mbps on the receive side and 3 mbps on the transmit side. The company is confident it can improve those speeds further to 50 mbps down and 5 mbps up for the maritime segment.

Mr McCambridge also insists that the mTenna has a "much lower cost of usage" than VSAT or Inmarsat's BGAN terminals, the land-based equivalent to FleetBroadband.

"Our technology in combination with the high-throughput Ka-band satellites will be a revolutionary change and bring

true broadband to the marine sector," he added.

Kymeta intends to "work with all the major satellite systems operators and their distributors," he said.

"There are several Ka-band operators already in full operation and several more who are launching their constellations now, including Inmarsat, O3b, Eutelsat, and Intelsat. So it's a very exciting time and our product launch schedule lines up very nicely with the existing Ka-band operators, as well as the new capacity coming online in 2014-15."

"Our development schedule allows our initial products to be available in the market place in the first quarter of 2015," Mr McCambridge adds.

"Our initial launch is in the Ka-band. But we are not limiting our development to the Ka-band. There is a very large install base of Ku- and hybrid L-band users, especially in the maritime world. And so we're very interested in delivering solutions that meet the need for customers using those Ku- and L-band hybrid solutions as well."

"It's not a difficult process for us to deliver our technology in Ku-band," he



Kymeta plans to adapt its flat antenna technology for use in the commercial maritime market

said, though he notes that Kymeta has not so far committed to a date for the introduction of either a Ku- or a hybrid L-band solution.

"What we would really like to do is line up some launch partners for Ku- and L-bands and develop our terminals to meet the system requirements of those partners. We're in discussions with Ku-band providers now."

"Although we haven't set up a date for commercial availability in Ku- or L-band, it could be as short as a few months after the launch of our Ka-band solutions."

## New 83cm SAILOR VSAT

www.cobham.com

Cobham has announced the forthcoming launch of SAILOR 800 VSAT, a 3-axis stabilised Ku-band antenna system with an 83 cm reflector dish, which it says provides the same radio performance as competing 1m antennae.



The 83cm antenna is lighter and more compact than its 1m predecessor

SAILOR 800 VSAT is based on the same technology platform as Cobham's SAILOR 900 VSAT 1m antenna. It can be used on various vessels including workboats and fishing vessels, notes Cobham.

The manufacturer says that SAILOR 800 competes in the 1m VSAT antenna market. It says that its antenna is lighter

and more compact than the competition while offering equal or even higher RF performance (G/T >18 dB/K).

Cobham adds that each SAILOR 800 VSAT leaves the factory fully configured, with all RF equipment installed, which reduces the time needed on board for installation.

"SAILOR 800 VSAT is designed to out-perform competing 80-100cm antennae, despite coming in a smaller, more competitive and flexible package," said Casper Jensen, head of maritime, Cobham SATCOM.

"With SAILOR 900 VSAT as our starting point, our in-house engineers have created an 80cm class antenna that punches well above its weight."

Cobham says that it will start shipping the new SAILOR 800 VSAT in September.

## Smart services for Filipino sailors

www.smart.com.ph

Telecoms company Smart in the Philippines has unveiled a range of services designed to help Filipino seafarers stay in touch with their loved ones through phone calls, text messages and via the internet.

Smart says that three services will soon be made available: Marino Phonepal, Marino Textmate, and Link Plus.

Marino Phonepal will allow seafarers sailing in Australia, the Middle East, Africa, Europe, and Asia-Pacific to call their families in the Philippines while Marino Textmate will allow them to send text messages at what Smart says will be affordable rates.

Link Plus, an online application which will have both mobile and desktop versions, will enable users to make calls, send text messages, and access the internet.

Charles Lim, EVP and head, Wireless Consumer Business for Smart and Sun

**MTN Satellite Communications (MTN)** has appointed Mark Walter to the role of chief financial officer (CFO) in replacement of Peg Grayson, who has been named president of MTN Government Services (MTNGS).

**KVH** has named Andrew Bush, a former **C.A. Clase** (UK) executive with 17

years of experience, as its Original Equipment Manufacturer/Leisure Marine sales manager for Europe, the Middle East, and Africa (EMEA).

Cellular, notes that the products have a substantial target market with Filipinos making up one third of the global maritime workforce.

"As a testament of our support in promoting their well-being, we are happy to launch Smart Satellite Services, by which a complete array of mobile services like voice calls, text, and online applications for smartphones and personal computers will be made available for Filipino workers on deck," said Mr Lim.

Capt Ronald Enrile, vice president for Operations at Philippine Transmarine Carriers, also commented that "most of our Filipino seafarers spend around 20 to 30 per cent of their earnings in communication. Calling their loved ones using a satellite phone, for example, is still expensive."

"With the new service of Smart, not only does it offer wider coverage but it is tailor-fit to Filipino seafarers' budget as well. I believe our seafarers would love it."

www.mtnsat.com  
www.kvh.com





Your input is the most important piece of the puzzle.  
You ask, INFINITY delivers.

Everything drops into place.  
Ask for more, get more.

## KVH doubles mini-VSAT capacity in Asia-Pacific region

www.kvh.com

KVH Industries has announced that it has more than doubled the capacity of its mini-VSAT Broadband network in the Asia-Pacific region. This follows similar upgrades in the Caribbean, EMEA, and African and Brazilian regions.

KVH started increasing its network capacity in late 2012. The on-going process involves deployment of Variable Coding, Spreading, and Modulation (VCSM) technology provided by its partner ViaSat.

This is part of a strategy that includes upgrading the TracPhone terminals used to deliver the mini-VSAT Broadband service, and delivering news and entertainment content to seafarers through the IP-MobileCast service which is expected to be available later this year.

"Increasing mini-VSAT Broadband network capacity in the Asia-Pacific region is a key step in our strategy to provide mariners with the connectivity they need at sea," said Brent Bruun, executive vice president of KVH's Mobile Broadband Group.

"This area is a major hub for commercial shipping and the vessels travelling there need affordable, fast, and convenient connections in order to optimise their operations. The mini-VSAT Broadband network, particularly with the new TracPhone V-IP series terminals and upcoming IP-MobileCast service, provides those connections at an affordable price combined with a number of benefits that other providers do not offer."

"There is no denying the importance of the Asia-Pacific region to the international

shipping industry," added Mr Bruun.

"KVH's solutions provide outstanding communications for the mariners who frequent these waters, with downloads as fast as 4 Mbps and uploads as fast as 1 Mbps, as well as crystal clear Voice over IP (VoIP) telephone lines with optimised service and prioritisation of applications."

"Expanding network capacity and offering new services like IP-MobileCast will help these mariners to improve on-board efficiency as well as crew morale."

KVH says that its four-part strategy for the mini-VSAT Broadband network involves: deploying VCSM technology to increase network capacity, upgrading TracPhone, creating a content delivery service, and building alliances with application providers to deliver a variety of content via that service.

## SpeedCast buys Pactel

www.speedcast.com

SpeedCast has announced the successful closing of a US\$55 million Senior Secured Credit Facility, whose proceeds have financed its acquisition of a 100 per cent effective interest in Pactel International.

The new credit facility also allowed the company to refinance existing indebtedness held by TA Associates, its controlling shareholder.

Pactel is a satellite communications services provider headquartered in Sydney (Australia). The company offers internet and voice services to customers that include oil & gas operators, telecom companies, governments and mining companies.

The buyout of Pactel follows the November 2012 acquisition of Australian Satellite Communications and the January 2013 buyout of Netherlands-based Elektrikom Satellite Service.

The Facility was fully funded by ING Bank, Singapore Branch, as mandated lead arranger, facility agent and security agent, and programs advised by Partners Group on behalf of its clients and Siemens Financial Services, as mandated lead arrangers.

Pierre-Jean Beylier, CEO of SpeedCast, said: "We are delighted to have on board ING, Partners Group and Siemens, three top tier financial partners."

"Together with TA Associates, this gives SpeedCast the potential to fund further growth, both organic and by acquisition, and to take advantage of opportunities as they arise."

## Telenor and Harris CapRock renew 1° West agreements

www.telenorsat.com  
www.harriscaprock.com

Telenor Satellite Broadcasting (TSBc) has announced the signing and renewal of multiple agreements with Harris CapRock for the provision of satellite capacity services from its 1° West orbital location.

Norwegian company TSBc owns and operates a fleet of satellites while US-based Harris CapRock provides communications to remote and harsh environments. It serves maritime clients in Europe using TSBc's THOR 10-02 satellite, which is positioned at 1° West, and uplinks serv-

ices via its own teleport facilities located in Aberdeen (Scotland).

"Over the past two years, TSBc has been working closely with Harris CapRock to deliver satellite capacity, for services to some of its most important customers," said Morten Tengs, vice president and CEO of TSBc.

"TSBc holds a strong European maritime position at 1° West for the delivery of satellite services to the main maritime and energy satellite communication service providers."

"With our new satellite, THOR 7, expected to start commercial operation in

2014, we look forward to being able to extend our satellite capacity and related services to Harris CapRock and continue to strengthen our growing partnership."

Andy Lucas, global operating officer of Harris CapRock, also commented that "some of our largest customers require increased bandwidth to support remote monitoring, diagnostics and other information that have a direct impact on how ships and vessels operate effectively at sea."

"The satellite-capacity solutions offered by TSBc allow for continued requirements that are intended for both our existing customers and new prospects."

## O3b launches first four satellites

www.o3bnetworks.com

O3b has successfully launched its first four satellites and says it should start providing Ka-band services after placing another four into orbit in September.

Headquartered on the British island of Jersey, O3b plans on offering a maritime VSAT service aimed at cruise ships and superyachts, with speeds of up to 350 Mbps download and 150 Mbps upload.

The coverage area will encompass Latin America, Africa, the Middle East, Asia and Australia, as broadband connectivity will be delivered within 45 degrees of latitude north and south of the equator.

Designed by Thales Alenia Space, the eight satellites will be in Medium Earth Orbit (MEO), some 8,000 kilometres from the Earth, as opposed to standard Geosynchronous (GEO) satellites which operate approximately 36,000 km away from the planet.

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

The first four satellites were launched on June 25th from French Guiana, aboard an Arianespace Soyuz vehicle. After successfully clearing in-orbit testing (IOT) control and operation of the Ka-band satellites was handed over to O3b by manufacturer Thales Alenia Space.

Customers witnessing the event included: Royal Caribbean Cruise Lines, O3b's first maritime customer; Telecom Cook Islands, which will receive the first commercial signals across the network this summer; and Maju Nusa, soon to roll out a 3G backhaul network in Malaysia.

Royal Caribbean has signed two deals with O3b to get satellite broadband services on board two of its cruise

ships, the Oasis of the Seas and the Allure of the Seas.

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

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

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

O3b says that a second group of four satellites will be launched on September 30th, completing the first phase in the constellation and ahead of the launch of the company's service in the fourth quarter of 2013. A third four-satellite launch is planned for 2014.


After the successful tests on the first four satellites of the constellation, Jean-Loïc Galle, CEO of Thales Alenia Space, said: "We are very pleased to celebrate the in orbit acceptance of the first four O3b satellites. With the upcoming four additional satellites to be launched at the end of September, we wish great success to O3b Networks in the development of its business."

O3b's CTO Brian Holz said: "The handover was successfully completed ahead of schedule. Performance of all four spacecraft has been outstanding with all link parameters at or above specification. Thanks to the great work of the O3b and Thales teams, we can now look forward to our second launch with great confidence."



O3b will follow this initial launch with another at the end of September



- 
- Broadband speeds up to 8Mb & 8 x voice lines
  - All ocean regions covered
  - 24 / 7 / 365 technical support
  - Free of charge service number
  - Service engineers, spares and support available globally

For more information:

**Tel:** +44 (0) 1737 648 800

**Email:** [enquiries@nsslglobal.com](mailto:enquiries@nsslglobal.com)

**Fax:** +44 (0) 1737 648 888

**Web:** [www.nsslglobal.com](http://www.nsslglobal.com)



**NSSL**Global

ON LAND ■ ONBOARD ■ ONLINE



## CrewCommCenter on 3,000 vessels

www.smsglobal.net

SMSGlobal has announced that 3,000 vessels are now equipped with its CrewCommCenter system.

The Hong Kong company launched the maritime service 10 years ago as a simple two-way e-mail and SMS messaging system. CrewCommCenter has since evolved into a larger communications platform.

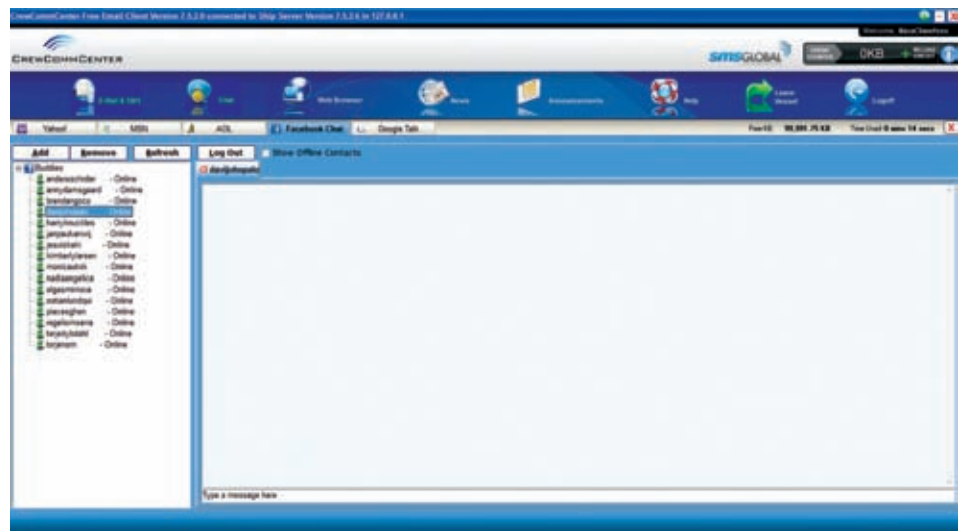
SMSGlobal says that 120,000 seafarers use it, sending an average of 2.2 million messages a month. Besides e-mails and SMS, they can read News from home in 14 multilingual editions, consult the Fleet Announcements Board, browse the internet, and converse through low data

Instant Messaging.

SMSGlobal says that its software-based solution addresses the concerns of shipowners. Cost is predictable as there are fixed monthly charges for each module and limits are set for sending and receiving messages.

Security is protected through access restrictions, content control, and whitelisting or blacklisting of sites, and the system can be administered remotely to ease maintenance.

SMSGlobal says that CrewCommCenter will soon feature Bring-Your-Own-Device (BYOD) environments, seafarer-focused social networking portals, iOS or Android apps, online gaming, VoIP, video chatting and personalised content.



CrewCommCenter includes various communications options, including a Facebook chat function

## BBC World News for commercial vessels

www.telemar.se  
www.nsslglobal.com

From the autumn, BBC World News bulletins will be available on board commercial vessels via Telemar Scandinavia and NSSLGlobal, the three companies have announced.

BBC World News will be broadcast several times daily to all vessels that opt into the service, providing crews with access to BBC's coverage of international news, current affairs and sport.

Telemar and NSSLGlobal says that customers using their Ku- or C-band network will be able to watch the news bulletins without impacting on broadband speeds through the use of a Multicast service.

"We're pleased to join together with Telemar and NSSLGlobal to offer BBC World News to over 800 vessels around the world," said Colin Lawrence, distribution director, BBC World News.

"With journalists in more places than any other global news broadcaster, we're able to deliver the news that marine crews need to remain connected to the

wider world."

Tomas Martinsson, general manager at Telemar, notes: "The importance of crew retention for ship owners is crucial. Providing additional TV services will improve morale for crew and also be done without amassing an unexpected airtime bill or imposing on a broadband package."

Sally-Anne Ray, managing director of NSSLGlobal, added: "The new service will provide a great deal of opportunities for the future and NSSLGlobal and Telemar are pleased to be at the forefront, leading the way in satellite communications for our customers."

BBC World News is already available on 173 cruise ships.

Telemar is a provider of Inmarsat and other satellite airtime. Telemar Scandinavia AB specialises in satellite communications, including broadband solutions.

Headquartered in the UK, NSSLGlobal provides satcom and IT solutions. Its maritime customers include Teekay Shipping, BW Gas, and Shell Tankers, to which it provides hardware and airtime.

## Diamlemos implements SmartBox

http://thenetwork.cisco.com

Cisco has announced that Diamlemos Shipping has decided to implement the Cisco-based SmartBox-V system for its vessels' communications.

SmartBox-V is a bundle of software and services from Setel running on a Cisco server which is hosted within a Cisco modular 2900 series router. The box enables WAN/LAN/VLAN architecture on demand.

At the same time, the Cisco Integrated Service Router (ISR) offers bandwidth management, firewall, VPN, proxy and mail server, an internet gateway and telephony - all on a single platform.

This is meant to simplify on-vessel communications equipment, optimise communications themselves, and offer a set of crew welfare applications.

Cisco says that the system will help to consolidate Diamlemos' IT infrastructure as its Unified Communications Manager will interconnect offices in Piraeus, London, Arizona and Monaco. Then the SmartBox-V, as the Cisco Cloud

Connector, will be hosted on a 2900 ISR with the Cisco Unified Computing System (Cisco UCS) E-Series blade server.

Cisco says that the VoIP capabilities of the system in this regard will "practically eliminate vessel-to-office communication costs."

"Cisco Cloud Connector helped us increase productivity both at sea and ashore through comprehensive unified communications, mobility, flexibility, redundancy and high availability," said captain George Balabanos, managing director of Diamlemos Shipping.

"High performance is very important in our business, because a short delay in making a trade can lead to the loss of hundreds of thousands of euros."

Antonis Tsiboukis, Greece, Cyprus and Malta general manager at Cisco, said: "Cisco in collaboration with Setel Hellas implemented the SmartBox-V Cloud Connector with features especially for the shipping market."

"We will continue working hard towards this target: to help organisations in the shipping industry operate more efficiently through innovative Cisco technologies."

## Remote office a reality for Simon Møkster vessels

www.marlink.com

Simon Møkster Shipping has completed a 'remote office' project that has resulted in the company's 23-strong fleet of offshore supply and specialist vessels becoming fully connected to the Microsoft Lync platform via its installed VSAT systems.

The Norwegian offshore vessel operator is using Marlink's customised VSAT service Sealink to roll-out Microsoft's standardised business collaboration and communication platform across its organisation on land and at sea.

The company expects that the project will offer a number of operational benefits, in addition to creating substantial savings in the cost of crew calling.

Using Lync via VSAT will enable Simon Møkster bridge and engine room teams to access telephony, video conferencing, instant messaging and data sharing capabilities.

Custom dynamic allocation of dedicated bandwidth has also been agreed as part of the Sealink VSAT package for the company to enhance reliability, particularly for bandwidth hungry applications.

"Standardised software enables significant IT efficiencies and through the use of Lync we can collaborate across our whole organisation to a greater degree than before, making every one of our vessels into a remote office," explains Terje Gjerde, ICT manager at Simon Møkster Shipping.

"The file and document sharing, and communication aspects, have provided tangible improvements in ship operations but in order for them to function fully we need a secure and reliable communication network. Sealink provides this with the added benefit that we can work closely with Marlink people to ensure availability and compatibility with our IT infrastructure."

The Lync platform has been fully inte-

grated with Simon Møkster's own corporate telephone system, so calls from terrestrial and mobile networks, or from other Lync users, can be made to the vessels and received via Lync.

A specific VoIP solution has also been implemented for crew members from the Faroe Islands, which reduces their calling costs by at least 50 per cent.

"With on-going antenna testing collaboration aboard the Stril Myster, we already have a strong working relationship which gives us insight on Simon Møkster's, and other operators' communication needs," said Tore Morten Olsen, head of Maritime Services at Astrium Services.

"Simon Møkster's IT standardisation introduces operational, management and crew welfare improvements. Marlink is well positioned to support operators wishing to explore the possibilities of this approach to vessel and fleet management."

## Dutch merger gives birth to Globecomm Europe

www.globecommsystems.com

Satcom provider Globecomm Systems has announced that Carrier-to-Carrier and Mach 6, two Dutch communication services companies, have merged to form Globecomm Europe.

Based in the Netherlands, Globecomm Europe is a fully owned subsidiary of Globecomm Systems, a publicly traded US company.

Globecomm Europe provides satellite, terrestrial and wireless based communication solutions to customers who include governmental organisations, enterprises, and the maritime industry.

"These teams bring their own demonstrated success in the industry to our newly formed Globecomm Europe," says Andy Silberstein, senior vice president and general manager of Globecomm.



# MARITIME SOLUTIONS AT SEA



crédit photo : Shutterstock

With capacity commercialised on 31 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.

Come & meet us at the Monaco Yacht Show, 25-28 September 2013





## Thuraya delivers MBB in Asia

www.thuraya.com

Thuraya reports that it has completed the delivery of its Maritime Broadband (MBB) solution to an offshore company in South East Asia.

The system was installed on a vessel with an existing VSAT connection, which

could deliver."

Thuraya says that the customer has placed an order for a second terminal to support its business operations.

Kenny Koh, of Devor Technologies, said that other potential clients in the offshore maritime sector have also expressed interest in the Thuraya MBB solution.



The MBB unit will be used as an alternative to the onboard VSAT system

had been rendered unstable by unsettled weather in the Gulf of Thailand.

The Dubai-based satcom provider was contacted by its service partner Devor Technologies, concerning a company in South East Asia that operates more than 100 offshore vessels. The unnamed operator needed an alternative to its Ku-band VSAT to continue providing internet connection to an anchor handling tug supply vessel.

"The VSAT on board was affected by unpredictable weather in the Gulf of Thailand," explained Kenny Koh, business development manager for Devor Technologies.

"The operator was obligated by their charter to provide high-speed internet connection and even though the speed was acceptable, the connection was not stable enough to connect to the shore."

Devor Technologies suggested Thuraya Maritime Broadband (MBB), which provides L-band coverage over Asia, the Middle East and Europe and offers standard IP throughput at speeds of up to 444 kbps.

Devor arranged for priority shipping to the customer, and the MBB equipment – comprising the Thuraya IP terminal and Spacecom antenna – reached the vessel within a day, with Devor and Thuraya working on its immediate installation.

Thuraya says that the customer has reported 85-95 per cent signal strength with MBB and that the vessel hasn't encountered any service disruption to date. It adds that the crew expressed satisfaction with the uplink and downlink speeds as well.

A senior representative from the maritime operator is quoted as saying: "We were also impressed by the low hardware cost, and Devor gave us the chance to test the system on board our vessel before making the outright purchase."

"That clearly showed the confidence Devor has in the product's performance and within a few days of usage, we were convinced that the Thuraya solution

"There was once a perception that Thuraya products were not designed for the maritime sector but solutions such as Thuraya MBB have proven to be suitable for a variety of other vessel types," he said.

"What owners want is a product that is easy to install and configure, while giving them reliable throughput speeds. The Thuraya IP terminal is truly plug-and-play and Thuraya's congestion-free network ensures that we can always be confident that our clients will receive what they have invested in."

In other news, Thuraya has also launched a new adaptor to use the iPhone 5 with its SatSleeve system, which is now available from all its service partners.

The company says that users can have full walk-and-talk capability in satellite mode once they slide their iPhone 5 into the SatSleeve.

An application, available in 12 languages, allows them to integrate their iPhone contacts when making satellite calls and SMS.

The SatSleeve works in satellite mode across the coverage area of the Thuraya satellite network.



A SatSleeve for the iPhone 5 is now available

## FCC details satellite inquiry issues

www.fcc.gov

Further details on the US Federal Communications Commission (FCC) investigation into allegations of anticompetitive behaviour in the satellite industry have been released in a Federal Register Notice, outlining some of the specific areas the Commission is examining.

The FCC is seeking comment on whether and to what extent incumbent satellite operators are inhibiting competition in the market for satellite services, particularly in the fixed-satellite services (FSS) arena.

Specifically, the Commission seeks comment on whether FSS operators are warehousing satellite orbital locations and frequency assignments, and preventing competitors from purchasing capacity on incumbent-owned satellites.

Comments to the FCC are due on or before August 19, 2013, and reply comments are due on or before September 17, 2013.

This Notice of Inquiry results from comments submitted in response to two Congressionally mandated reports, the Orbit Act Report and the Satellite Competition Report, which raised two main allegations of anticompetitive behaviour.

The first of these allegations was that Intelsat and other dominant satellite operators are warehousing scarce orbital resources, i.e., hoarding satellite orbital locations and frequency assignments by failing to replace aging satellites on a timely basis or otherwise failing to provide transponder capacity that reflects current technology.

In this regard the FCC is asking, for example, whether it should adopt a rule that declares unused spectrum available for reassignment as soon as service is terminated, unless an operator can demonstrate that it terminated service because of an unforeseen catastrophic circumstance.

Alternatively, the Commission asks whether permitting some gap in service would strike a better balance between providing an operator flexibility in managing its fleet while still safeguarding against warehousing.

The FCC is also seeking comment on whether lengthy extensions on licences for satellites nearing the end of their projected lifespan allow inefficient or partially-functioning satellites to block customer access to newer, state-of-the-art satellites.

Additionally, the Commission wishes to elicit comment on whether satellites that are not operating at full capacity create a concern that the operator is warehousing spectrum, and asks whether it should pro-

pose a rule that automatically terminates a space station licence if the percentage of unused capacity exceeds a certain amount.

Even if the authorisation for an under-utilised satellite is not cancelled, the Commission asks whether, at a minimum, the unused spectrum should be made available for reassignment.

The second major allegation included in the Notice relates to Intelsat's status as a vertically integrated company, which allows it to provide its customers both space and ground communications services. The allegation is that this status allows the company to discriminate against other competitors.

The Notice states that, as a vertically integrated company, Intelsat not only provides satellite services to integrators (resellers) who need satellite bandwidth to fashion their own customer-specific service offerings, but Intelsat also competes against integrators because Intelsat is now able to offer its own customer-specific services.

Consequently, some integrators allege that this dual role has resulted in them being vertically foreclosed or barred by Intelsat from securing satellite bandwidth capacity.

While Intelsat is the only operator explicitly mentioned in this allegation, the same competition logic could be applied to an operator like Inmarsat, which also operates both a satellite network and a direct sales channel – so comments on these issues will be viewed with interest across the maritime satcom sector.

The FCC says that it is specifically looking for more details on the nature and scope of the alleged foreclosure in question, asking that commenters detail the time period, the geographic routes involved, the amount and type of bandwidth capacity (Ku-band, C-band, etc.) involved, and the size of the disputed business.

Among the further information requested by the FCC is data on whether Intelsat vertical integration was facilitated by horizontal collusion among satellite operators, or whether the vertical integration has enhanced or deterred coordinated interactions among potential bidders.

Intelsat has already commented that it is confident that the investigation will find no wrongdoing, having said, when the investigation first went public in June, that it believes that "there is no shortage of evidence supporting our view that the satellite industry is fully competitive."

Interested parties can find details on how to submit their comments on the FCC website.

## Digital Ship conferences and exhibitions

go to [www.thedigitalship.com](http://www.thedigitalship.com) for more details





# Your Telecom Partner Globally



## Services:

**Inmarsat - VSAT - Iridium**

## Value Added Services:

**s@tGate**-B2B & Crew Internet

**MailonBoard**-B2B & Crew mail

**IP Security**-Firewall, Antivirus, Antispam

**Web Admin Services**

**BNWAS**

**GMDSS Radio Survey & APT VDR/SVDR**



**otesat\_maritel**

MEMBER OF OTE GROUP



Tel.: +30 210 4071111 Fax: +30 210 4071110

e-mail: [customer\\_care@otesat-maritel.com](mailto:customer_care@otesat-maritel.com)

[www.otesat-maritel.com](http://www.otesat-maritel.com)



## Lord Nelson and Tenacious stay connected

www.globecommsystems.com  
www.jst.org.uk

Globecomm Maritime has partnered with Iridium to install OpenPort terminals on two tall ships taking part in challenges for British charity Jubilee Sailing Trust.

STS Lord Nelson and STS Tenacious have both been designed to allow disabled and able-bodied people to sail side by side. The former is sailing around the world while the latter is heading to the Baltic Sea to run in the international Tall Ship Race series this summer.

Since Lord Nelson's voyage includes Antarctica, Iridium was chosen as it is the only satellite constellation that covers the poles.

Trevor Whitworth, Globecomm Maritime vice-president of sales, Asia Pacific, said: "Staying in touch is a vital part of living and working at sea and we wanted to assist in making sure the crew and volunteers could get online and update friends and family with the experience of life on board."

In addition to the Iridium Pilot antennas and below decks units, Globecomm Maritime says that it has supplied two crew phones and a master's phone along with a Wi-Fi access point.

The 55-metre square rigger Lord Nelson is taking part in the Sail the World Challenge, a 50,000-mile journey designed to promote equality and inclusion in every

port of call. Would-be sailors aged 16 and over can take part with no previous experience required.

A 'buddy' system on board pairs able-bodied and disabled crew to offer mutual help and support during the passage.

Lord Nelson's Captain, Barbara Campbell, said: "It is vital that we have reliable communications, not only for safety and operational purposes but also so that our voyage crew can share their life-changing experiences with the

outside world."

"Both Lord Nelson and Tenacious can maintain ship-to-shore voice and data communication even in the most remote oceans with the Iridium system's pole to pole coverage."

Also installed on board is the se@COMM communication suite, which can be used to configure and control access to the communications system, and Globecomm's Nimbus network security device.



Capt Barbara Campbell will use the Iridium Pilot system to stay connected while at sea

## Pro Nautas expands in Germany and the Netherlands

www.pro-nautas.com

German maritime technology provider Pro Nautas reports that it has significantly expanded its customer base in Germany and the Netherlands, having agreed contracts to supply 112 vessels in the last 12 months.

The new deals cover 18 different shipowners across the region, for a range of vessels including container ships from 800 to 8,000 TEU, multipurpose vessels, tugs, bulkers and ro-ro's.

Implemented projects include installations of VSAT, FleetBroadband and other Inmarsat existing & evolved services such as Fleet 77/55/33, as well as connectivity systems integrating LAN / wireless LAN networks with the maritime communication platform.

Pro Nautas has also provided operator and administrator training to a number of these customers, both for onboard system users and IT personnel within the shipping companies.

The company says that this growth has been influenced by its introduction of a Total Solution package, combining ship-to-shore connectivity with airtime provision, accounting authority services, radio registration, and service and maintenance for the communication and navigation equipment.

## FleetBroadband growth for Otesat

www.otesat-maritel.com

Greek company Otesat-Maritel has announced that it has won new contracts with two shipping companies, Chandris and EPIC Shipping, to provide their vessels with FleetBroadband services.

Headquartered in Singapore, with additional offices in Athens and Manila, EPIC Shipping owns and operates a fleet of 22 gas carriers.

Besides FB services, it has signed up for Otesat-Maritel's s@tGate solution to provide crew pre-paid internet access and web e-mail services, as well as post-paid B2B services.

"Offering the capabilities of FleetBroadband satellite services and solutions, we ensure the simple, high-speed and cost-effective daily communication of the vessels with their companies and the crew with their loved ones," said George Polychronopoulos, CEO of Otesat-Maritel.

Glen D'costa, managing director at EPIC, also commented: "FleetBroadband

is an optimal solution as it provides the capacity and reliability we needed, while enabling us to keep close control of our costs."

"Crew welfare is also important for our company. With this solution we have given the capability to our people on board to communicate better with their family and friends at home."

Otesat-Maritel has also been chosen by Greek ship management company Chandris to provide FleetBroadband and value-added services.

Otesat-Maritel says that the contract, covering business communications and crew welfare, extends an already successful co-operation with Chandris, which specialises in the management and operations of tankers and bulk carriers.

"Our long co-operation with Chandris is a result of Otesat-Maritel's strategy to provide top quality, reliable and integrated satellite communications solutions to the maritime industry," said Mr Polychronopoulos.

**Marinavi**

**"Marinavi" is the electronic edition of The Japan Maritime Daily, the leading maritime industry newspaper in Japan.**

**The multilingual service of "Marinavi" was launched. Some exclusive news items can be read in not only Japanese, but in English and Hangul.**

**One week free trial is available.**  
<http://www.marinavi.com>

**We hope your business will benefit through the use of our site.**

**The Japan Maritime Daily**

5-19-2 Shimbashi, Minato-ku, Tokyo, 105-0004, JAPAN / TEL: +81-3-3436-3222 / FAX: +81-3-3436-3247

**Keep your finger on the pulse with our weekly e-mail newsletter and our online network for maritime IT professionals**

[www.thedigitalship.com](http://www.thedigitalship.com)





# DIFFERENT USERS - DIFFERENT NEEDS



## VESSEL USER

- EASY USE
- EASY CREATE
- EASY OVERVIEW



## OFFICE STAFF

- MY REPORTS
- MY VESSELS
- ACCESS ANYWHERE



## HSEQ & MANAGEMENT

- FOLLOWUP
- ADMINISTRATION
- ANALYSIS & REPORTING

## THE RIGHT INFORMATION TO THE RIGHT PEOPLE AT THE RIGHT TIME



THE INFORMATION YOU NEED - WHEN YOU NEED IT!

APPS FOR IPHONE, IPAD AND ANDROID DEVICES

DASHBOARD ANALYSIS WITH DRILL DOWN

### KEY SOLUTION DETAILS

- Web, Mobile, Tablet
- Easy to use
- Easy to implement
- Offline capability for vessels
- Centralized administration
- Role based security
- Automated data synchronization between vessel and office

### SAFETY & SECURITY

- Incident Reporting
- Safety Observations
- Risk Assessment
- Safe Job Analysis
- Toolbox Talk
- Permit to Work
- Emergency Log
- ISPS

### QUALITY & PROCEDURES

- Procedures & Manuals
- Management of Change
- Circular Letters
- Bulletins
- Dashboards and statistics
- Master Review
- Audits & Findings
- Inspection Reports
- Vettings

### OPERATION & MANAGEMENT

- Daily Report
- Superintendent Report
- Handover Report
- Employee Evaluation
- Emission Report
- 14001 & Garbage Record Book
- Contract Management
- Management Visit Report
- Tender support
- Meetings (Safety, P&E, etc)
- Dashboards and statistics





## Free Wi-Fi at Dover Port

[www.doverport.co.uk](http://www.doverport.co.uk)

The Port of Dover has gone live with a new free Wi-Fi service at its Eastern Docks.

Aimed at ferry passengers, Europe's busiest international ferry port says it has already seen almost 4,000 Wi-Fi accounts created.

"This is a clear and tangible example of how the Port is working hard to improve the experience of its customers and to provide the quality of service and level of facilities that everyone using a major international gateway in the 21st century, such as the Port of Dover, should expect," said Tim Waggott, chief execu-

tive, Port of Dover."

The Port says it is planning to follow up with all new Port of Dover Wi-Fi customers to see how well the free service is working for them and to find out what further improvements can be made to make the customer experience even better.

"This is the first phase of an exciting project to bring free Wi-Fi to every part of the Port," said Mr Waggott.

"We are working to bring this important service to our cruise terminals and to our marina later this year, which will benefit even more of our customers as we continue to drive towards becoming the best port in the world."



4,000 Wi-Fi accounts have been activated at the Port.  
Photo: Clem Rutter

## Imtech Marine and Furuno extend exclusive contracts

<http://imtech.com>  
[www.furuno.com](http://www.furuno.com)

Imtech Marine and Furuno signed a three-year extension of most of their exclusive contracts to mark the 50th anniversary of their strategic partnership.

Both companies also agreed to explore ways of extending their cooperation to new opportunities worldwide.

Over the years, thousands of vessels have used Furuno equipment that has been sold, maintained and serviced by Imtech Marine.

Imtech Marine, headquartered in Rotterdam, exclusively represents Furuno in the Netherlands, Belgium, Portugal, South Africa, Egypt, United Arab Emirates (UAE), Curaçao, Trinidad & Tobago, Hong Kong and in a number of allocated shipyards in China. Most agreements have now been extended until 2017.

Imtech Marine already services parts of West and East Africa for Japan-based Furuno, further cooperation is being explored in Africa.

Imtech Marine offers a range of

Furuno's navigation and communications portfolio. Additionally, Furuno has developed, in cooperation with and on behalf of Imtech Marine, the RHRS-2014 OEM river radar for the inland shipping market.

Eric van den Adel, managing director of Imtech Marine, said: "Furuno is a vital part of our portfolio. We not only sell, install and commission the equipment, we also consult and advise and we service the equipment around the globe."


Muneyuki Koike, managing director of Furuno Electric Co., said: "Our products



and solutions together with a powerful sales force and a fully capable service team of Imtech Marine have been working in tandem on a number of projects worldwide, and we have succeeded in achieving customer satisfaction from the industry together.



"Looking back at what we have contributed to the industry, it is our natural selection of the course that the amicable working relations between the two companies should continue and be further extended in the future."



inmarsat | Iridium | THURAYA | Globalstar | GSM | 3G | EDGE | WiFi | WiMax | VSAT

The Maritime Communications Experts™







No gimmicks.  
Just great software.

With Dualog® Connection Suite™ you get two things: An impressive bundle of solutions for optimised ship-shore communication - and the freedom to choose everything else.

Unlock the Potential of Internet On Board



On Board IP Traffic Control | Powerful Web Optimisation | Fully Automated Anti-Virus | Seamless Business E-Mail | Zero Admin Crew E-Mail

[www.dualog.com](http://www.dualog.com)

REFORMASTUDIO www.reformastudio.no



From ship to shore,  
**Simplicity is the key to Success.**



**20 years experience. 1 simple solution.**

- Type Approved PMS
- Minimal Training Required
- Rapid Technical Support Service
- No 'Per Seat' or any Annual License Fees
- Global Customer Base from VLCC's to Workboats
- Complete Package or Single Modular Components available
- PMS, Stock, Procurement, Dry Dock, Safety & Document Management Solutions

Visit [www.marinesoftware.co.uk](http://www.marinesoftware.co.uk)  
or email [info@marinesoftware.co.uk](mailto:info@marinesoftware.co.uk)

 **MARINE  
SOFTWARE**  
*'Simplicity is the key to Success'*



# Polar VSAT – the next step in Arctic broadband

**Shipping routes through the Arctic have always offered the promise of drastically reduced journey times between continents – if the voyagers are willing to brave the often treacherous conditions in this remote part of the world. New plans are underway to try and make these journeys a little easier, through the launch of a dedicated Polar VSAT service**

As the polar ice melts, shipping through the Arctic is becoming both more frequent and more attractive, but its development depends on reliable communications.

At present, only Iridium's low Earth orbit satellite constellation currently covers the poles. However, Telenor also has plans to introduce Arctic broadband, and the Norwegian company believes it has found an effective technical solution – two highly elliptical orbit satellites. The issues it now faces are time and money.

The Norwegian Marine Technology Research Institute (Marintek) has carried out studies on behalf of Telenor which have examined the potential benefits and challenges associated with Arctic satcoms.

"Arctic has some special challenges with regard to communications," notes Beate Kvamstad, researcher at Marintek.

"The most normal maritime communications systems being used in other places on the Earth are based on satellites orbiting the Earth around the Equator. However, using such satellites has its limitations up in the North because you can't read the signal," she explained during a presentation at Nor-Shipping.

The theoretical limit of coverage for geostationary satellites (used by Inmarsat or VSAT systems) is 81.3° north, but instability and signal dropouts can occur at latitudes as low as 70° north under certain conditions.

"Moving up north, especially further north than 75°, communication is a huge issue because you're not able to exchange information, you're not able to download the chart updates, you're not able to download ice maps and so on," Mrs Kvamstad told *Digital Ship*.

"The Iridium system is designed in a way such that the signals from an end user might 'jump' from satellite to satellite until it reaches either the correct receiver or an earth station. This way of transmitting signals introduces a latency which is acceptable for many applications, but not acceptable for other more time critical applications."

The Marintek scientist also predicted that the bandwidth available via the 134 kbps Iridium system would not be sufficient "as users' demand for digital communications in the High North increases."

Iridium is in the process of modernising its system however, with plans already underway to start launching a new constellation called Iridium NEXT in 2015. The US-based company says that it will recreate the existing Iridium constellation architecture of 66 cross-linked LEO satellites covering 100 per cent of the globe, but delivering higher data speeds than are currently possible with OpenPort.

"This will increase somewhat the capacity," commented Mrs Kvamstad.

"However, this will not meet the users' needs in the future."

"We need new solutions in order to meet future demands."

## HEO

Since 80 per cent of today's ship traffic in the Arctic takes place in Norwegian waters, Telenor and the Norwegian Space Centre have initiated a new project where they want to look into the Norwegian possibilities for launching a new system.

The partners have proposed a new project based on two high elliptical satellites which will provide continuous communication in polar areas.

The satellites in Highly Elliptical Orbit (HEO) follow a course that has the shape of a rugby ball. The Earth, inside that rugby ball, is close to one tip of the ellipse and far from the other one (see picture below).

The closer a satellite is to the Earth, the quicker it moves. So if it is high up over the North Pole, it will stay there for a relatively extended period, moving slowly, before moving quickly around the Earth and the South Pole and resuming its position over the North Pole.

To have continuous Arctic coverage, two such satellites are required as one of them needs to be over the North Pole while the other one is doing its quick revolution around Earth via the South Pole.

Mrs Kvamstad said that her studies have suggested that HEO satellites provide the best solution for Arctic coverage.

"However, this is not available today for commercial use nor for communications," she notes, explaining that the HEO satellites that already exist are military or weather observation satellites.

Canada is also contemplating a similar initiative – its PCW (Polar Communication and Weather) mission is looking at introducing two HEO satellites to provide high data rate communications and monitor Arctic weather and climate change.

"It will probably be focusing on the Canadian borders," Mrs Kvamstad said. She added that another HEO system was also being discussed in Russia – "but we're not very sure how far they've gone into the planning."

The Norwegian project of two HEO satellites would cost between 2 and 3 billion kroner

(between US\$335 and \$505 million), she estimated. She added that Telenor most likely doesn't have a big enough market to fund this on its own.

"So it should probably be a joined effort between governmental institutions, Telenor and perhaps other industry actors who'll depend on the new system," she said.

Hege Lunde, business development director at Telenor, confirmed that this is the approach that her company is also taking.

"We have initiated a project together with the Norwegian Space Agency to look at the user requirements for broadband in the Arctic and also to look at what sort of system would work, define the system requirements," she told *Digital Ship*.

"We are looking at two satellites in highly elliptical orbit to cover that region. We haven't found any other solution that we think would work."

Asked about the advantages and drawbacks of the HEO system, she explained: "The pros are that you can get proper polar

coverage, very similar to what you can get further south with the geostationary satellites. But you need two satellites instead of one to have 24 hour coverage."

"The drawback is that it's a very high cost investment to get started, and that's why we think we need a sort of private-public partnership or some sort of government financing to do this."

Mrs Lunde also confirmed that the estimated cost of two to three billion Norwegian kroner is in the same range as Telenor's own calculations.

"That we will verify probably in the fall when we go up to the industry and ask for a request for information to verify the figures. But it's in that magnitude if you look at a pure broadband system," she said.

## Business case

One key aspect of the project from Telenor's point of view is that it wants to design a system that wouldn't require ship owners to change antennas.

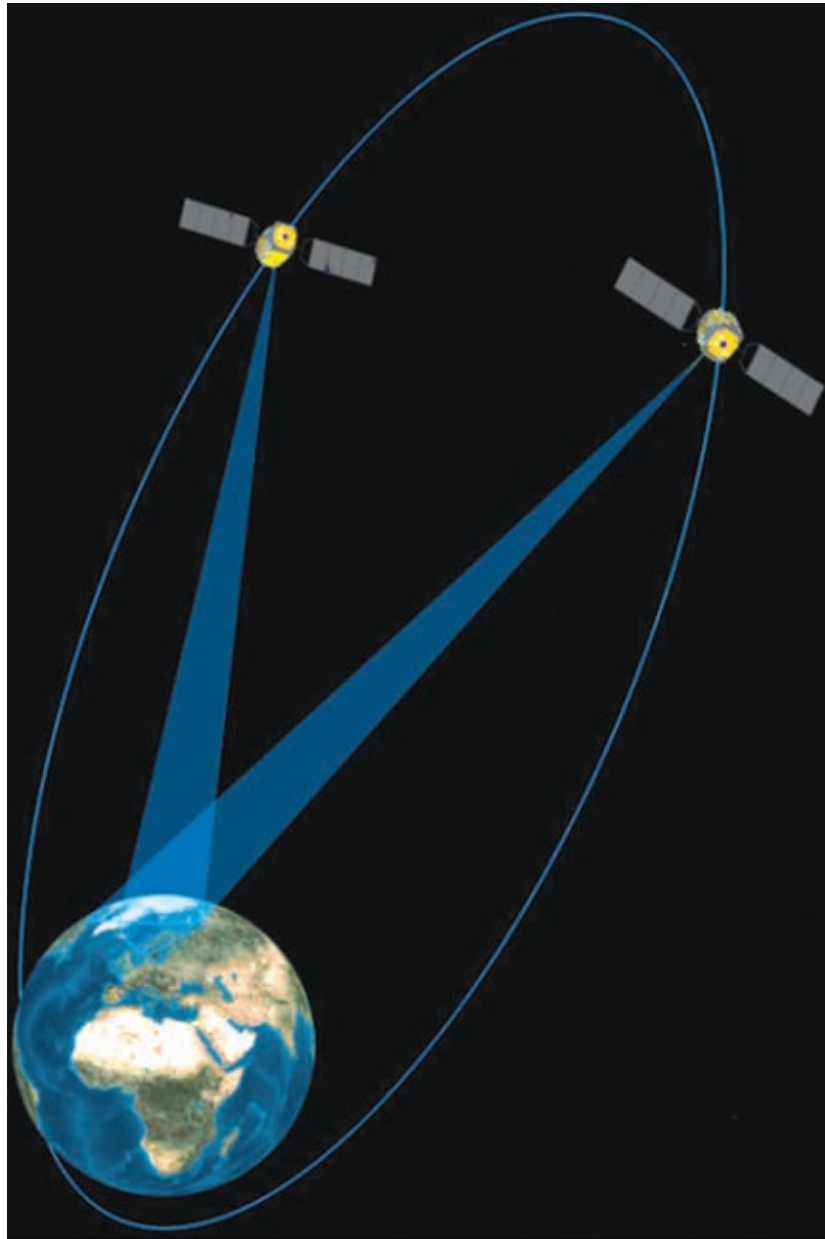
"The goal is to be able to roam between geostationary systems and this system," said Mrs Lunde.

This view is reinforced by Astrium Services, and in particular its Norwegian based Marlink business unit, which is also examining options to participate in the project.

"Anything that has a stabilised antenna could in principle use the new system. It should not take a lot of changes to the technology," said Tore Morten Olsen, CEO Astrium Services.

Astrium already provides satellite coverage using systems in the various frequency bands currently available (C-, Ku-, L-band, and soon Ka-band) and says it is following the Arctic coverage plan closely.

"The philosophy is that this would be just another network where the maritime clients could roam on to," said Mr Olsen.



The HEO satellites will follow an elliptical orbit to maximise coverage.  
Photo: Norwegian Space Centre



We keep you connected  
from **up there**

to ensure smooth passage  
**down here**

TEBWA/CORPORATE - Asifia Paris - © Astrium 2012, © Getty Images

By joining forces with Vizada, we have created the new Astrium Services. Now, as the world's number one communications provider across the major commercial satellite networks in the maritime sector, we offer you more. More choice thanks to our multi-satellite technology strategy. More productivity from our convenient solutions and efficient services. More engineering power as part of the world's leading aerospace company. Now more than ever, we support your smooth business operations at sea. Connect. Inform. Protect. [www.astriumservices.com](http://www.astriumservices.com)

**VIZADA** IS NOW PART OF THE NEW ASTRIUM SERVICES



AN EADS COMPANY



"That is where the interest from our side really lies, in being able to provide seamless services not only in the geostationary coverage locations but also for those who are using the north-eastern and north-western passages."

"For shipping, that is kind of key that they don't need any additional equipment. In principle you can say that the stabilised antenna systems provided by companies like Cobham and Intellian should be able to operate on the HEO satellites without modifications."

Mr Olsen also said that he believed that a public-private partnership was necessary to make such a project a reality. The northern routes are open during the summer months, when the ice has melted, but the satellites' costs will be there for the whole year.

"It's that business model that makes it a bit challenging in terms of justifying this in purely commercial terms," said the Astrium Services CEO.

"There will naturally have to be more studies done on the cost of the service and the price per megabit or whatever model we want to put in place, because of the significantly higher cost of this coverage compared to the others."

"But we also know that the shipowners are saving a lot of time by taking this route, versus going through the Mediterranean, through the Suez Canal and around India. They could go from Europe to Asia in two weeks rather than in four to six weeks. So there should also be significant savings for the shipowners by taking up this route."

Telenor says that, under current plans, it is contemplating launching the HEO satellites within six years.

"The early stage would probably be 2018-19," said Mrs Lunde, noting that operations would be expected to start shortly after the launch.

Asked whether she was confident that the project would be carried out, she replied: "Personally I believe it will happen. It has to do with financing."

She said that sources of funding could include the Norwegian military, oil companies – once exploration starts in the Arctic – and government institutions involved in search and rescue or scientific research.

### Arctic traffic

The potential customer base is rapidly expanding, as traffic has been increasing sharply in the Arctic in recent years.

In the summer of 2012, 46 ships used the Northern Sea Route. By 2050, three of the four major Arctic shipping routes will be fully accessible from July to September to Type A vessels, which have limited ice-breaking capabilities, according to researchers from UCLA (University of California, Los Angeles).

In this context, the CEO of Astrium Services is confident that there will be broadband in the Arctic region.

"I believe it will happen. The question is more: when?" Mr Olsen said.

"There will be something. Whether it is this system by Telenor and whatever PPP alliance one is able to find, or whether it is something else that will come up. But there will be broadband in the future in the Arctic, clearly."

The Norwegian Shipowners Association (NSA) supports this view, considering that it is "extremely important

from a maritime safety perspective" for Norway "to secure a leading position in data, telephone and satellite communications for the High North."

NSA notes that the volume of goods transported along the Northern Sea Route (also called the Northeast Passage) is expected to increase from 3.1 million tonnes in 2011 to 50 million tonnes in 2020.

This expansion will be boosted by the fact that, while the Northern Sea Route, which hugs the coast of Russia, is the most trafficked shipping lane in the Arctic, it is only one of many possible routes across the High North.

There is also the Northwest Passage, which runs along the coast of North America (conditions are more difficult), and the Arctic Bridge, which links Churchill (Canada) to Murmansk (Russia), and is already reliably open during summer months.

UCLA researchers have also said that a "North Pole Route", stretching from Rotterdam (Netherlands) to the Bering Strait, would be seasonably accessible to Type A vessels by mid-century.

"If you can imagine taking a boat from Europe directly to Alaska, that would be possible according to our results for the North Pole Route," said Laurence Smith, a professor of geography at UCLA.

Based on climate forecasts for the years 2040 to 2059, he also said that the ice sheet would thin to the point that polar icebreakers will be able to navigate between the Pacific and Atlantic oceans by making a straight shot over the North Pole.

"Nobody's ever talked about shipping over the top of the North Pole," he noted. "This is an entirely unexpected possibility."

However unexpected, shipping lines are already calculating the time – and money – they could save by using one of these routes.

Norwegian shipping company Tschudi considers that "the potential savings are too high to be ignored", with its calculations showing that the Rotterdam to Shanghai route is 30 per cent shorter via the Northern Sea Route than through the Suez Canal, and Kirkenes to Yokohama is 56 per cent shorter.

The Norwegian Shipowners' Association notes that "for Yokohama to Hamburg, a saving of 40 per cent in distance and around 20 per cent in bunkers can be obtained by navigating the Northeast Passage compared with sailing through the Suez Canal."

"Experience shows that, from Murmansk, the Northeast Passage offers savings over the Suez Canal of 13 days to Japan, 11 days to South Korea and 8 days to China. The distance between Kirkenes in the far Northeast of Norway to Qingdao in China is 6,650 nautical miles via the Northeast Passage, 12,405 nm via Suez and 15,842 nm via the Cape of Good Hope."

### Previous success

Certainly, the appetite for Arctic shipping is set to continue to grow as more and more companies successfully complete voyages through these routes and prove the viability of the concept from both a technical and an operational perspective.

In 2009, Beluga Shipping was the first

Western company to have commercial vessels transit the Northeast Passage without the need for icebreakers. It said that it cut 4,000 nautical miles off the journey from South Korea to Rotterdam compared with transit via the Suez Canal.

The two Beluga heavy lift project carriers involved in the journey used the Iridium OpenPort system, supplied by H2OSatellite, for voice and data links throughout their transit of the extreme Northern waterways.

"By the completion of the Northeast Passage transit, and previously the safe offloading of the cargo in a rather remote area in Siberia, we have opened the gate to a seaway which will further gain in importance in the future," said Niels Stolberg, then president and CEO of Beluga Shipping, at the end of this landmark journey.

For the Beluga voyage, planning had started 12 months before, involving consultations with meteorologists, safety and security experts, and Beluga's satcom provider H2OSatellite.

"We knew that Iridium OpenPort was the only choice for full coverage in those extreme regions where other systems are patchy or non-existent," Robert Kenworthy, managing director of H2OSatellite, said at the time.

"The system allowed Beluga Shipping to stay in constant touch with its vessels, which is essential for safety and security in an area with drifting ice fields, ridges and freezing temperatures."

In a few years, however, shipping lines that want to take advantage of the Northern routes may have their choices expanded to include both the Iridium system and the HEO satellites.

"Travelling the Northeast Passage is an ambitious and worthwhile project since it offers great advantages for saving time, bunker and thereby money, but also reducing environmentally harmful emissions which have to be decreased in the maritime sector," said Mr Stolberg, of Beluga, in 2009.

"The possibility of a direct seaway connecting the prosperous European and Asian markets offers unmatched opportunities for both strong cargo trade and efficient sea traffic, and Beluga Shipping was determined to make the possibility a reality."

Mr Stolberg's views on the potential of this sea route have been backed by others since, as an increasing number of ships soon followed the Arctic trail.

Four vessels sailed through the Northern Sea Route (or Northeast Passage) in 2010, which has grown to 34 vessels in 2011 and 46 last year. The trend is unlikely to reverse.

"The Arctic is now warmer than it has been at any time during the last 2,000 years," according to researchers from the Arctic Institute.

"Summer ice extent has declined by 40 per cent since satellite observation began in 1979. Over the same period, Arctic sea ice has thinned considerably, experiencing a decline in average volume of 70 per cent."

"Within the next decade this warming trend may transform the region from an inaccessible frozen desert into a seasonally navigable ocean and the Arctic Ocean may be ice-free for short periods as early as 2015."

DS

**creating seaworthy software**

[www.autoship.com](http://www.autoship.com)

- Autoload® Cargo Operations
- Onboard Stability for all Vessel Types
- Customized Cargo and Voyage Planning
- World-Wide Service & Support

**Catch information as it happens.**

**autoship**



# SMSGlobal installs CrewCommCenter on 3,000 vessels

SMSGlobal Ltd. is proud to announce that 3,000 vessels are now equipped with its CrewCommCenter system – having 120,000 seafarers exchanging 2,200,000 messages monthly with over 1,300,000 friends and loved ones on-shore.

The milestone is doubly significant as SMSGlobal marks its 10th year in the Maritime industry as the crew communications provider of choice by both the seafarer and the ship owner. The achievements further cement CrewCommCenter as the market leading crew communications solution that merges each sector's divergent concerns into a single platform.

## Bridging the Gap

Bridging the distance with friends and loved ones has always been a serious concern for anyone working at sea. This is especially true in this age with quicker port turnaround times – more often less than a day – and longer stretches out at sea – sometimes 30 days straight.

Cost affordability of personal communications has always been and still is a big challenge. Seafarers typically spend at least USD 100 per month on personal communications, which for some is already a tidy sum.

Privacy and confidentiality of personal communications is also an ongoing concern for seafarers. Nobody needs the aggravation of having his personal and family matters be the talk of all his colleagues on board the vessel.

## Crew Welfare is Crew Retention

The significance of crew retention as a key factor in bottomline results has been growing rapidly the last decade, so much so that crew welfare is now a key focus on any shipping operations mindset. Personal communications by the crew with their loved ones and friends back home is widely acknowledged as the most crucial of all crew welfare initiatives.

While most shipowners have already acceded to providing crew access to personal communications such as E-mail and SMS messaging, many are still concerned with the challenges providing crew Internet access; cost and usage controls, ship operations security and IT compromises, support, maintenance or administrative hassles and costly initial investments or capital outlays.

## Addressing the Needs

SMSGlobal's success has been anchored on merging these divergent concerns by both the seafarer and the shipowner.

CrewCommCenter provides the seafarer convenient, affordable, private communications with their loved ones and friends, enabling them to send and receive E-mails and SMS, read News from home, read ship manager Announcements, converse through low data Instant Messaging, and Browse the World Wide Web.

While the crew enjoys all these features, CrewCommCenter also strongly addresses the shipowners concerns: limits are set for sending and receiving messages, thus usage is controlled; fixed monthly charges for each module, thus cost is predictable; access restrictions, content control, whitelisting or blacklisting thus security is guaranteed; simple, industry standard protocols and interfaces for system management and remote configurations thus ease of maintenance and administration is guaranteed; and finally; CrewCommCenter is a software-based solution thus no need for costly capital outlays for additional hardware.



*Capt. Ivar Thomasli, Chairman SMSGlobal Ltd.*

Three thousand vessels under operation is a solid testament to CrewCommCenter as the crew communications solution of choice.

The whole team with SMSGlobal is proud to reach this milestone and we are excited for the developments ahead.

Much has evolved from the simple 2-way E-mail and SMS messaging system when we started 10 years ago to a full-blown Internet Café facility that it is today; with Fleet Announcements Board, World-News in 14 multilingual editions, Online Instant Messaging with all major networks such as MSN, Yahoo, Facebook, Google and AIM and secured Web Browsing.

While CrewCommCenter is well-equipped to address today's demands, it is as well a dynamic technology that is highly leveraged to meet the growing demands of the continuously evolving "connected" world:

Web-based, client-free interfaces, Bring-Your-Own-Device (BYOD) environments, seafarer-focused social networking portals, native iOS or Android apps, Online Gaming, VOIP, Video Chatting and Personalized Content are just some of the modules that seafarers will soon be enjoying.

## About SMSGlobal Ltd.

SMSGlobal was founded in 2003 when the company introduced the first universal 2-way SMS text messaging and crew E-mail service for seafarers.

SMSGlobal has established offices in Hong Kong & Philippines and works hand in hand with over 800 telecom operators world-wide integrating various state-of-the-art technologies.

CrewCommCenter is offered by some of the biggest maritime industry service providers: Inmarsat Direct Sales, J-Sat Mobile, Beijing Marine and SeaSecure.

For more information:  
[www.msglobal.net](http://www.msglobal.net)  
[andreheggem@msglobal.net](mailto:andreheggem@msglobal.net)

## CrewCommCenter brochure

To download the CrewCommCenter details:  
[http://www.msglobal.net/filedownloads/CrewCommCenter\\_presentation.pdf](http://www.msglobal.net/filedownloads/CrewCommCenter_presentation.pdf)



# Full speed ahead or steady as she goes?

**Excitement has been growing in the maritime market over the potential benefits that the next generation of high throughput satellites (HTS), set to be launched in the coming years, will offer – but for most shipping companies these new services won't be a viable replacement for current offerings for a long time yet, writes Geoff Davison, Thuraya**

The launch of HTS services over the coming decade promises to provide something like communications nirvana for the maritime industry.

The potential increases in bandwidth capability and available airtime suggest that where once the maritime industry laboured to do a fraction of what we take for granted on land, it would finally achieve some kind of parity.

In some cases this may be true but it is far from the whole picture. A comprehensive understanding of the maritime satcoms landscape needs to recognise not just the changing dynamics of demand and supply but a clear understanding of customer behaviour and needs.

Do just that and it becomes immediately clear that for the majority of owners and operators, legacy L-band systems will continue to command the lion's share of voice and data traffic over coming years.

That may seem counter-intuitive given the lower per megabyte costs and package deals to be had by upgrading but the fact remains, shipping is only now coming to the end of a seven year down cycle, with some analysts suggesting that anyone imagining a return to uniform pre-2008 business conditions is likely to be disappointed.

Ask the average shipowner how much he pays per megabyte and the chances are he does not know. Ask the same shipowner how much his communications bill is every month and he will be able to tell you quite easily.

Look ahead even to the medium term and the drivers to satcoms adoption are likely to remain focussed on a service package that delivers on price, quality of signal, robustness and ease of use and installation.

HTS launches – by Inmarsat, Intelsat and O3B for example – make great news; they capture the imagination and give hope to those users who want to see their ships as an extension of the office rather than a remote branch where no-one answers the phone.

But the fact remains that HTS, exciting though it is, will be expensive to use and far more complex in day to day operation than legacy maritime services.

The demand is certainly there and one only need read the pages of *Digital Ship* to see that owners of tanker fleets and other specialised tonnage are moving ever closer to full VSAT as a prelude to HTS services when they come on stream.

Even so questions remain. Do the majority of shipowners need a bandwidth pipe that big? Are they prepared for the higher Capex on ground equipment and maintenance? Will these services work as well as L-band in the mobility market?

Even their providers also accept that these services are likely to be attractive to comparatively few high-end users, making

their penetration small as a percentage of the addressable market. That's despite the users already having in some cases contributed to the cost of their development.



*L-band's inherent reliability in difficult conditions will mean that it remains a mainstay of maritime communications. Photo: Jonathan Lally, USCG*

But anyone who has spent time in the maritime industry knows that the leading edge is not always representative of the majority. Shipping's middle ground is a place of fragmented ownership and small to medium sized companies which exist in far lower profile niches than the big fleets and publicly-listed companies.

## Adoption drivers

The drivers to adoption of VSAT and higher bandwidth services also need to be examined in more detail. As has been noted by recent research, many VSAT vendors are making sales based on the unprecedented demand for crew welfare communications.

This is in part because they struggle to make the case at boardroom level for VSAT or high bandwidth services for business communications and also because the promise of a fat pipe that can keep the crew happy for a fixed monthly fee is almost too good to be true.

In some cases it is just that. Any communications package comes with limits, regardless of what the sales brochures say and providers will build into contracts clauses covering best effort, committed information rates, throttling back and normally some figure covering maximum MB consumption. Crew use of social media will test all those parameters.

Service partners with a solid package of Value Added Services are best placed to succeed because even with 'unlimited' packages, the best use still has to be made

of the bandwidth and user experience.

This suggests that the sale of VSAT services for crew use is distorting the demand figure. Crew usage may be taking

2021. Maritime L-Band revenues will be double those of Ku- and Ka-band combined by that date, the research suggests.

True, L-band is hardly global. Only one operator claims a truly pole to pole service and others provide a regional footprint, while the incumbent covers the majority of ports and trade lanes over three ocean regions.

But 'regionality' is not limited to L-band providers. Most current VSAT coverage is put together from beams operated by FSS providers and coverage is rarely if ever global.

Even when it is marketed as such, VSAT systems require an L-band failover for backup – seen by some as a source of some contention and by others as opportunity to offer price plans tailored for this purpose.

## Future markets

The fact is that maritime has never been a one size fits all market and emerging from the worst downturn for almost a generation this is more true than ever.

The successful shipping company in the second third and fourth decades of the 21st century will need to be connected, but it will also need to keep costs under control and take advantage of proven systems and services that are designed to fit its specific needs.

More often than not conversations with owners and managers about HTS follow a similar pattern – interesting concept, potentially very exciting, but after you... Those banner contracts will come – the groundwork is already laid and we would accept that the trend is set – betting against bandwidth has been discredited in the past.

But that bet has been won and lost on land. Maritime is a different environment, one where equipment must be designed for purpose and reliability.

A consistent and reliable service, albeit at unstarry data rates, might be of equal value to a mid-sized operator than a high speed connection that only gives him 70 per cent coverage and a high dropout rate.

The price equation will continue to play a key role. Shipowners do not spend their hard earned dollars without measurable and meaningful payback – look at the market for energy efficiency devices for proof of that – so there is good reason to believe that dedicated L-band operators who understand their customers and have close links to their partners cannot just survive the HTS wave, they can prosper in the niches that a patchwork global recovery creates.

DS



**About the Author**  
*Geoffrey Davison is product manager, maritime, for Thuraya Telecommunications.*



# THURAYA MARITIME BROADBAND

Reliable | Flexible | Affordable

Cost of Ownership:



50%\*



Network Strength:



100%



Quality or value?  
Now you don't have to choose






## Maritime Broadband from Thuraya MarineComms

Maritime Broadband (MBB) from Thuraya MarineComms has been designed to provide shipping industry customers with the connectivity they need to keep their ships running efficiently.

Combining a reliable L-band service with proven hardware, Thuraya MBB provides a very competitive price proposition for maritime users who want to enjoy broadband connectivity and also keep control over costs.



[www.thuraya.com/MBB](http://www.thuraya.com/MBB)

Follow us on    /thurayatelecom

**THURAYA**  
MARINECOMMS 



# CSCL equips containerhips with ECO-Assistant

www.gl-group.com

Germanischer Lloyd (GL) has announced that China Shipping Container Lines (CSCL) has rolled out a trim optimisation software developed by its consultancy unit on eight vessels and has signed an agreement to deploy it on another eight.

ECO-Assistant is the name of the software developed by FutureShip, the maritime consultancy unit of classification society GL.

With trim being a central driver of energy efficiency, the ECO-Assistant delivers an optimum trim angle for a specific ship with an input of such operational parameters as current speed, displacement and water depth.

GL says that it can help reduce CO2 emissions and save enough fuel to amortise the initial investment over a relatively short period.

During a sea trial carried out on one of the eight 14,000TEU containerhips operated by CSCL the shipping line calculated that it reduced fuel consumption by up to 8.2 per cent.

As a result, CSCL has rolled out ECO-Assistant on its entire fleet of eight 14,000TEU container vessels. It also signed an agreement to expand the deployment of the trim optimisation software to another eight 9,600TEU container vessels in its fleet.

Vincent Li, vice president of FutureShip China, says that ECO-Assistant is easy to install as there is no need to modify the vessels.

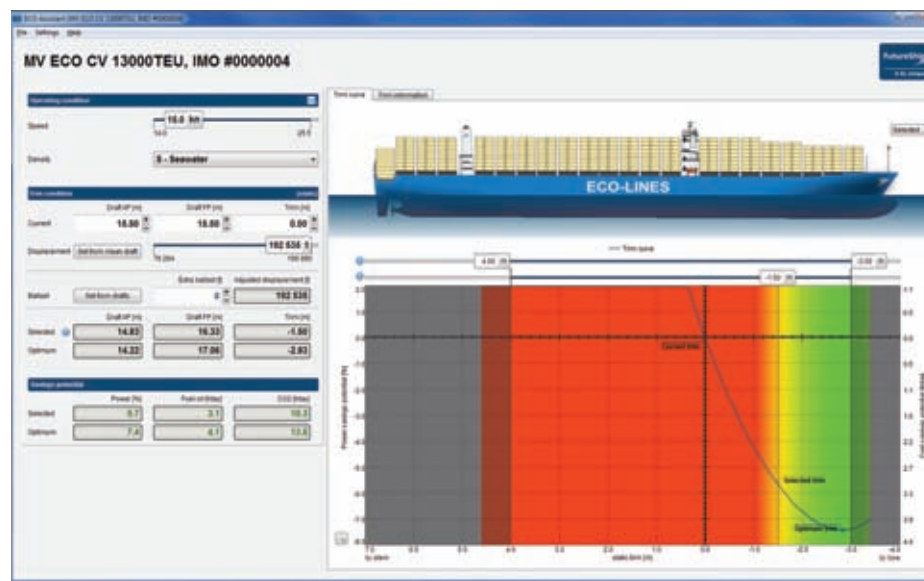
"The software itself is also very user friendly, so the training required is minimally time intensive," he notes, adding that the system can be deployed not just on containerhips but on all types of vessels, including multi-purpose vessels and bulk carriers.

GL says that there have been more than 300 installations of the tool on board and onshore since it was launched in 2009.

In related news, GL has also developed

a web-based application designed to help in the preparation and the maintenance of a vessel's Inventory of Hazardous Materials (IHM).

The IHM Green Server (IGS) aims at supporting shipowners in managing IHM aspects of the newly adopted European Union regulation on ship recycling and the Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships.



ECO-Assistant will eventually be installed on 16 CSCL vessels

The new EU regulation is scheduled to enter into force at the end of the year. It requires owners of EU flagged ships or ships calling at ports within the EU to establish an Inventory of Hazardous Materials.

GL says that IHM Green Server can gather and process the entire volume of ship component data, which are required to be maintained and updated through the ship's lifetime. From the central web based data repository all parties involved, such as shipowners, shipyards, suppliers, hazmat experts, class societies and recyclers, can work in parallel on the same platform.

IGS also allows for the management of all

the required documentation, e.g. Material Declarations, Supplier Declarations of Conformity and IHM Documents.

"We have developed the IGS as a smart tool for generating documents which comply with the regulations in the most transparent and easy manner possible," said Gerhard Aulbert, GL's head of global practice Ship Recycling.

"It facilitates communication between the various parties and will support own-

data networks have become more and more complex, while also integrating safety-critical and non-safety-critical application systems.

An increasing number of application systems are connected through data networks in order to minimise the length of cabling, and thus reduce the cost and weight of the cabling.

In merchant shipping, more and more vessels are equipped with integrated bridges that link information from the navigation and automation systems. Integrated systems comprise monitoring sensors, control systems for the propulsion and power-generating systems, and monitoring and alarm systems.

GL says that type approval is required for data networks which connect application systems related to classification such as: automation system, navigation system, alarm & monitoring system, general alarm & public address system.

Non-class related application systems would include entertainment systems such as: radio, television, audio and video on demand and private internet access. The required approval would cover the entire network, including routers, switches, and process controllers connected with network cables.

In order to follow a risk-based approach for the approval process, a so-called Requirement Class is assigned to the respective data networks. The scope of documents to be submitted for approval and the required function tests depend on this assignment.

GL explains that there are five different Requirement Classes, differentiating the individual network according to the magnitude of the damage which would result from a potential component or system failure and its effect on the persons on board, the environment and the technical condition of the vessel.

This approach follows the same procedure as the approval process for computer systems under GL's Rules and Guidelines.

ers in maintaining high quality ships and a clean working environment on board, while also enabling ship recycling facilities to benefit from comprehensive IHMs for preparing to recycle vessels and monitoring of hazardous materials on board of ships."

In other news, GL has also announced that it has published new guidelines for data networks which are implemented on board ships or on offshore platforms.

The guidelines are available for download on the GL website for requirements that entered into force on 1 August 2013.

GL notes that as the maritime industry makes greater use of automated systems,

## 60,000 reasons to celebrate CrewToo anniversary

www.crewtoo.com

Headland Media, purchased in May 2013 by KVH, reports that its Crewtoo social media site for seafarers has now passed 60,000 members in the 12 months since its introduction in August 2012.

Membership growth has been steady, with the company having announced that it had passed 40,000 members in April of this year.

"For many of the world's 1.2 million seafarers, the initial romantic vision of a life at sea was too soon replaced by the reality of hard work in harsh conditions and increasing isolation," commented Mark Woodhead, managing director of Headland Media.

"Crewtoo's unique objective is to combat that sense of loneliness and lack of

contact that most people at sea experience, by providing a space where seafarers feel they belong and can converse. It is also a space where they can learn and it is becoming a platform for seafarers to help and inspire each other."

"Our company has focused on offering services to improve the lives of seafarers for the past 60 years. With Crewtoo, we wanted to create a direct relationship with seafarers so we could understand their situation first-hand and ultimately provide services that are better designed to suit their needs. It is gratifying to see large numbers of people joining our site, and exciting to see how their input and our new relationship with KVH are already leading to plans for a new generation of exciting services."

## Vroon signs to KeepUp@Sea for 3 more years

www.palantir.no

Norwegian technology provider Palantir has announced that Dutch shipping company Vroon has renewed its KeepUp@Sea fleet deal, first signed in 2010, for a further three years.

The delivery includes hardware, logistics, roll-out and migration services, KeepUp@Sea Antivirus and KeepUp@Sea Inventory services.

Vroon operates a fleet of approximately 160 vessels, 90 of which are covered by the Palantir solution.

Rob Frenks, group ICT manager, notes that using the Palantir system has dramatically reduced the work required to support and maintain the networks on those vessels.

"We only require one ICT FTE to manage and coordinate the installs and ongo-

ing support," he said.

"We had zero impact of viruses on any of these 90 vessels during a period of three years (and) we only had to attend a vessel once to remediate an issue."



'We had zero impact of viruses on any of these vessels' – Rob Frenks, Vroon



# The No. 1 maritime VSAT network brings a new dimension to broadband at sea.

## SATCOM... and beyond!

KVH's new IP-MobileCast is a unique content delivery service providing affordable news, sports, entertainment, electronic charts, and weather *on top* of your mini-VSAT Broadband connection.

### Introducing IP-MobileCast™

Movies & IPTV

TV News  
& Sports Clips

Newspapers

Radio

Training &  
e-Learning

Crew  
Social Media

Weather Files  
& Forecasts

Full ECDIS  
Chart Database  
Delivery &  
Updates

KVH's end-to-end solution empowers you to deliver the bandwidth your operations demand, keep your crew happy, and manage your budget... *all at the same time.*

Get the details:

[www.minivsat.com/VIP](http://www.minivsat.com/VIP)



New VIP-series features powerful Integrated CommBox™ Modem (ICM) - the hub for IP-MobileCast services.

## KVH INDUSTRIES WORLDWIDE

World HQ: United States | [info@kvh.com](mailto:info@kvh.com)  
+1 401.847.3327

EMEA HQ: Denmark | [info@emea.kvh.com](mailto:info@emea.kvh.com)  
+45 45 160 180

Asia-Pacific HQ: Singapore | [info@apac.kvh.com](mailto:info@apac.kvh.com)  
+65 6513 0290



## Krill introduces bunkering software

[www.krillsystems.com](http://www.krillsystems.com)

Krill Systems, an American developer of fuel monitoring systems, has introduced a new bunkering software.

Krill Bunkering System (KBS-100) uses mass-measuring metres to minimise inaccuracies found in Heavy Fuel Oil (HFO) transfers.

Flow rate, temperature and density are displayed in real time and a 'Bunkers in Progress' display area shows the total volume of bunkers delivered, ticket number, start time and stop time. A ticket can be printed as soon as bunkering is completed.

Back-flow oil is measured as a negative and therefore reflected as bunkers not having been delivered.

Bunker history, including aeration percentage, is also stored.

The software uses Microsoft SQL server database technology to record sensor data and storage capacity. Any communication system supporting SMTP e-mail protocols may be used to transmit customisable reports and sensor data menus, in Excel format, to any number of operators, with no monthly fees or charges.

KBS100 can be ordered as a stand-alone system or incorporated into an existing Krill system.

"The KBS-100 was developed at the request of many of our clients, for a variety of applications," said Brian Staton, vice-president of sales and marketing.

"They told us what they needed and how they wanted the information to be displayed. We have paid close attention to their input in developing this product."

## OstiaEdge includes Emsys

[www.esrgtech.com](http://www.esrgtech.com)

ERSG has announced that its OstiaEdge analytics platform now also monitors emissions, after it struck a partnership with WR Systems, the developer of Emsys.

ERSG's software OstiaEdge already analyses the performance and health of shipboard equipment such as engines, generators, fuel metres, torque metres, ballast systems, and navigation systems. WR System's Emsys is a laser driven system which monitors emissions and particulate matter (PM). Installed within the funnel space, Emsys can monitor up to 10 exhaust stacks with

only one penetration per stack for both emissions (NO<sub>x</sub>, SO<sub>x</sub> and CO<sub>2</sub>) and PM sampling. Monitoring for optional gases such as CO and CH<sub>4</sub> is also available. GPS interface ensures geographical position recording for assured compliance within ECA zones. Emsys is Type Approved in line with MARPOL Annex VI.

Emsys is now part of the collection of shipboard equipment monitored by OstiaEdge. ESGR says that this combination of emissions data and engine performance analytics can be used to tune the engine and generators to ensure emissions compliance as well as optimise the engine for fuel efficiency.

## Dubai maritime authority pays Singapore an IT visit

<http://dmca.ae>  
[www.mpa.gov.sg](http://www.mpa.gov.sg)

Dubai Maritime City Authority (DMCA) has announced that it recently completed a technology benchmark visit to the Maritime and Port Authority (MPA) of Singapore as part of on-going efforts to launch a range of maritime services using IT and automation.

DMCA and MPA recently renewed a Memorandum of Understanding (MoU) between the parties on maritime cooperation. During their visit, members of the Dubai delegation discussed with their Singaporean counterparts marine licens-

ing procedures using IT technologies, including vessel licensing and permits, crew assessment, licensing and certification and bunkering permits.

"DMCA is currently in the process of introducing a range of maritime services, many of which are being offered for the first time in the UAE and the region as well," said Mahmoud Ewidah, senior manager - IT, DMCA.

"It is imperative that we conduct technology benchmark visits to some of the world's leading ports authorities to explore best practices and technologies which DMCA can eventually adopt."

## 5 Ukraine deals for CrewInspector

[www.crewinspector.com](http://www.crewinspector.com)

CrewInspector, a software provider headquartered in Latvia, has recently won contracts with five crew recruitment and crew management agencies based in Ukraine.

Its software, which is also called CrewInspector, is primarily designed for crewing agents and ship management companies. It aims at helping with crew database, scheduling, certificate management, payroll calculations and customer invoicing.

The Riga-based provider says that its five recently signed Ukrainian clients are KDM Shipping in Kiev, Wellteam Marine

and Sea Gold in Kherson, and Navis Crew Management (NCM) and Kaas Crew Services in Odessa.

Andy Lipsberg, co-owner of CrewInspector, explained: "We see that companies are looking for straightforward software solutions not requiring long setup and integration."

"CrewInspector offers a high quality solution at a very attractive price and that's the main reason why we are so popular among start-up and middle-size crew management agencies. At the same time, we fully satisfy the needs of larger organisations as well, thanks to CrewInspector's scalability."

## Macsea ramps up Hull Medic

[www.macsea.com](http://www.macsea.com)

American developer Macsea is ramping up its hull condition monitoring service. Called Hull Medic, the system uses automated, cloud-based data analytics.

Analysis can be done from data already collected or Macsea can provide an automated data acquisition system.

Hull and propeller performance degradation can cause a 15 to 20 per cent loss in vessel efficiency, with a corresponding increase in fuel consumption, notes Macsea, adding that ship owners can save money through condition-based maintenance.

Prices for Hull Medic start at \$495 per month per ship for ten ships or more.

## CJ Korea Express orders OCTOPUS-Onboard

[www.amarcon.com](http://www.amarcon.com)

Amarcon, a member of the ABB group, has announced that it has received an order for two OCTOPUS-Onboard motion monitoring systems for heavy freight cargo vessels from CJ Korea Express.

Resulting from the merger between Korea Express and CJ GLS, CJ Korea Express is South Korea's largest total cargo delivery company.

Amarcon's Motion Monitor system (TMS-3), based on three accelerometers, will be installed on two heavy freight cargo vessels, KOREX SPB no.1 & 2. By using OCTOPUS-Online, authorised users will be able to download and display all

measured motions and accelerations that are collected from the vessel. The integration of Google Maps provides a viewing of routes and ship positions.

General manager Leon Adegeest from Amarcon said: "It is good to see that OCTOPUS has become such an established name within the heavy lift cargo shipping sector. In total we have had thirteen orders for vessels that are involved in the heavy lift cargo transportation within the last two months."

The OCTOPUS product line is part of ABB's Vessel Information and Control (VICO) systems suite. Amarcon, a developer of vessel motion prediction solutions, was acquired by ABB in August 2012.

## Training Matters video

<http://videotel.com>

Videotel, a London-based provider of maritime training material, has released a video to demonstrate the importance of good training.

Entitled 'Training Matters', it shows how ship operators can receive what Videotel calls a tangible return on investment with more efficient operations; fewer accidents; less off-hire time; lower insurance premiums; improved compliance with legislation and a more motivated workforce.

"In today's tough financial and litigious environment, being trained to minimum standards is clearly not adequate," said Nigel Cleave, CEO of Videotel Marine International, when introducing the video to an audience of ship owners and ship

managers in Angola.

"Ship owners and ship managers must comply with increasingly complex legislation, engage crews that are competent to cope with technically advanced equipment and deal with an ever growing number of ship inspections and audits."

"It does, of course, need to be high quality, effective training that results in good practices. This will reduce claims ultimately directed towards owners, inspectors, charterers, managers, banks and insurers."

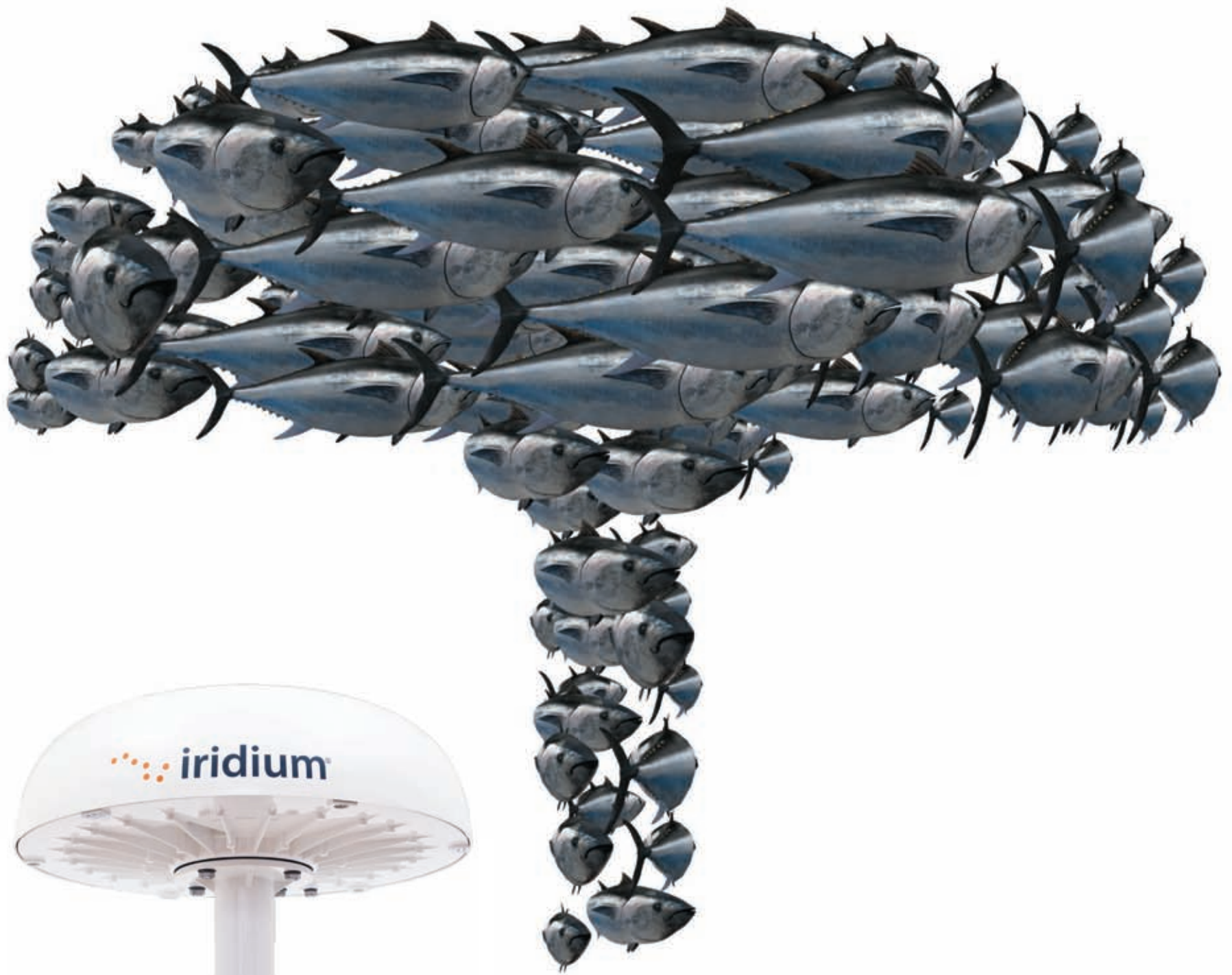
The video was shown at a safety seminar organised by Sonangol Shipping, a subsidiary of the Angolan state oil company Sonangol. The company is implementing a fleet-wide policy requiring all managed vessels to have Videotel On Demand on board.



The CJ Korea Express vessel KOREX SPB No 1 is one of two ships to be installed



# Ship Shape



- Reliable pole-to-pole global coverage
- Delivering email, weather, crew calling and more
- Best value installation and airtime

## Iridium Pilot™

### All your maritime communications reporting for duty

Iridium Pilot delivers reliable, high-performance global voice and data communications, backed by an industry leading five-year warranty for peace of mind — no matter where you are.



[www.iridiumpilot.com](http://www.iridiumpilot.com)



## NAPA to offer Tidetech current data

www.napa.fi  
www.tidetech.org

Tidetech has announced that it has reached an agreement with NAPA to supply the Finnish software house with tidal current prediction data for ship optimisation, initially for South East Asia and the UK-Europe.

The agreement follows a three-month trial aboard a 8,530 dwt cruise ship using Tidetech's Singapore and Malacca Straits models. The deal includes developing an expanded data model to cover the vessel's full operating area of Phuket, eastern Thai waters, the east side of Malaysia and the Malacca and Singapore Straits.

"We supplied a custom data file which

is pre-defined by NAPA to suit the bandwidth capability of the vessel," said Tidetech managing director Penny Haire.

"Integrating our data into optimisation systems and software is a relatively simple, quick and low-cost way for ships to gain demonstrable percentage savings in bunkerage and emissions."

Napa executive vice president for oper-

ations Esa Henttinen said: "By adding Tidetech's accurate oceanographic data to NAPA's voyage optimisation solution, we have been able to provide our customers with more precise voyage predictions."

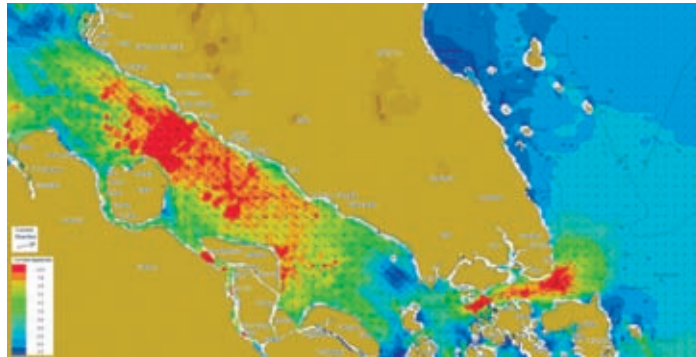
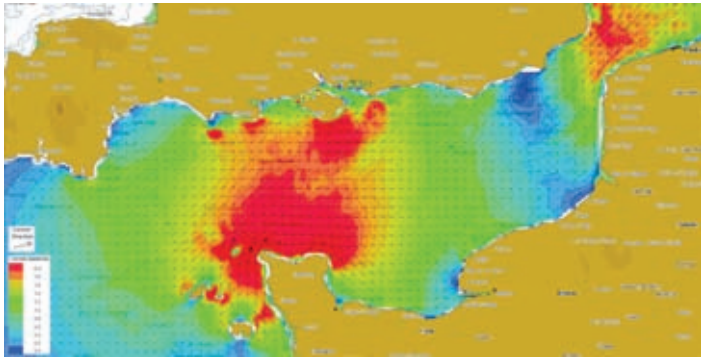
After the cruise ship trial, NAPA added Tidetech's North Sea and English Channel models to UK-Europe ferry routes.

Ms Haire notes that cruise ships and passenger ferries were already well equipped to download data files.

"Passenger vessels in particular usually already have broadband connections aboard," she said.

"With optimisation solutions in place, it's relatively straightforward to integrate the data once downloaded."

In addition to expanding its South East Asia model to Thai waters, Tidetech says that it is also developing a 100m resolution model for the Singapore Straits and a 1km model for the South China Sea region.



NAPA will make use of tidal current data from Tidetech for the UK (left) and Malacca Straits (right) under the new agreement

## Beltship signs up to ShipServ

www.shipserv.com

ShipServ has announced that Beltship Management Limited (BML) has signed up to its TradeNet maritime e-commerce platform.

Monaco-based BML manages six bulk carrier vessels for a mining giant, as well as three self-discharging bulk carriers in a transshipment project in Sierra Leone.

TradeNet connects ship owners and managers with maritime suppliers.

Beltship will connect to ShipServ through the ABS NS5 software suite which it has already been using for purchasing and planned maintenance.

Marjolijn van Tiel, purchasing manager at Beltship, said: "Beltship is already using

the ABS NS5 software so it was a straightforward decision to use ShipServ to help us with our purchasing activity."

Lars Bratshaug, vice president Sales EMEA for ShipServ, said: "We are delighted to welcome Beltship to the ShipServ community. To bring such a highly-respected manager onto TradeNet really demonstrates that ShipServ is the preferred partner for shipmanagers."

Shipmanagement clients include Anglo-Eastern Shipmanagement, MMS Co Ltd, MK Shipmanagement, Bernard Schulte Shipmanagement (Deutschland), Goodwood Shipmanagement, OSM Shipmanagement and Wilhelmsen Shipmanagement.

## Trim and list auto-correction for tank gauging

www.psmarine.com

PSM, a UK-based manufacturer of marine control instrumentation, has released a new version of its tank gauging system which can take into account a ship's trim and list.

Two options are available, both using hydrostatic level transmitters. For draft measurement only, two transmitters are installed, fore and aft. To also take account of trim, four transmitters can be installed, adding one each mid-ship on

port and starboard.

PSM notes that when trim and list are not taken into account, readings of the liquid volumes can be inaccurate.

It says that its latest tank gauging system combines the level measurement transmitters with a display and control system that is capable of calculating the required corrections to take account of uneven keel and/or trim. PSM says that its system thus provides automatic correction of the tank volumes based upon measurement of the vessel's draft and/or inclination.

## Free App to follow freight and commodity swaps markets

www.freightinvestor.com

Freight Investor Services, a UK-based broker of freight and commodity swaps, has launched a free mobile App that helps users keep an eye on the markets it covers.

Available for both iOS and BlackBerry devices, the FIS App indicates market prices for dry freight, iron ore, steel and scrap, coking coal, fertilizers and fuel oil. It also displays forward curves and historical spot prices, and provides FIS daily reports, including closing curves, commentaries, spreads and ratios.

The App is available in both English and Mandarin and users can customise it to deliver the prices, reports and chart data for the commodities and contracts that are of most relevance to them.

FIS managing director John Banaszekiewicz said: "Today's freight and commodity swap markets are unrecognisable from when FIS was founded 10 years ago. We have seen the development of new liquidity, new products, new services like clearing and new entrants who want to access information on the move."

"The FIS App enables these players to keep up to speed with the market, putting our prices, daily reports and forward curves on a mobile platform for the first time."

The FIS App can be downloaded for free by visiting the App Store or Blackberry App World. Links to download locations can also be found on the FIS website. Users must register for an account and will receive confirmation of access on approval by FIS.

## BASSnet for Icon Offshore fleet

www.bassnet.no  
www.iconoffshore.com.my

Norwegian software developer BASS has announced that Malaysian company Icon Offshore has decided to install three of its ship management modules on all 34 vessels in its fleet.

The deal covers the BASSnet Maintenance, Procurement and HR Manager modules.

Based in Kuala Lumpur, Icon Offshore is the holding company of Icon Ship Management and Icon Fleet. Its fleet comprises 34 offshore support vessels.

"Prior to the merger, Icon Ship Management was already using BASSnet solutions, while Icon Fleet utilised a planned maintenance system from another service provider," said Icon Offshore's CIO Zaleha Abdul Hamid, who also oversees the integration of IT solutions.

"After evaluating the two systems, it was clear that BASSnet has a distinct edge, and we opted to adopt it across the fleet."

BASSnet fleet management systems are built on the Microsoft .NET platform.

BASSnet Maintenance is designed to

help users plan and execute fleet maintenance, manage their global stock of spare parts, and standardise job practices, material procurement and reporting of equipment condition. The module 'pushes' information, reminders and alerts regarding key maintenance issues.

BASSnet Procurement is a purchasing system covering the procurement cycle from budgeting to electronic approval of expenses.

BASSnet HR Manager is a web-based module designed for crew planning and scheduling.

BASS' vice president of Sales - Asia Pacific Mark Ravi said: "We are very pleased to have won the confidence of Icon Offshore as their stringent decision-making process shows that BASS meets the high standard for cost-effectiveness and productivity gains that companies must have to thrive in the turbulent maritime industry."

Existing users of BASS software include Neptune Orient Lines, headquartered in Singapore, South Africa-based liner Grindrod Shipping, French luxury cruise liner Compagnie du Ponant, IMC Shipping, Hapag-Lloyd, NYK and K-Line.



The FIS app is free to download for iOS and BlackBerry devices



# A telephone system for ships is being upgraded in half a century

NET.Co.,Ltd located in Ulsan, Republic of Korea announced that it succeeded in developing VoIP based Automatic Exchange Telephone System for maritime commercially for the first time in the world.

A specialized shipboard internal communications network and equipment small & medium sized company NET.Co.,Ltd is known as one of the world's top companies that holds about 2,000 ships system installation performance since 1999.

The world's first commercial marine Automatic Exchange Telephone system organized by the government of the Republic of Korea as part of research and development projects meet the government policy to jointly develop and commercialize by NET.Co.,Ltd and DSME (Daewoo Shipbuilding & Marine Engineering) in that promoting the coexistence between both SMEs and large

equipment for routine calls was developed in appropriate modules for marine environment including an IP-PBX waterproof phone, indoor phone and salinity proof phone

NET.Co.,Ltd also supply development of programs for monitoring and managing these internet-based phone system on land as well as server development in conjunction with analog-based broadcast(ing)system.

An internet-based phone system for maritime has the following differentiated features compared with a conventional analog system. First, ships that are equipped with wireless communications interlocking with smart phone also can be used with corded phone



Joint research and development group photo after the regular meeting

enterprises for about two years

The early stage of the convergence of sea-based wired and wireless internet is underway as the popularization of smart phone and mobile devices have rapidly expanded.

Next-generation Internet-based services emerged as the core of digital convergence, the Internet telephone system with the development of maritime satellite communications is drawing new attention as the standard for voice transmission. The demand in the area of shipbuilding and offshore is steadily increasing due to the relatively low communication cost compared with analog phone system.

However, it hasn't been made localization because of cost, relatively low margins and lack of skill for special product development that can adapt to marine environment.

The difference between Automatic Exchange Telephone System for maritime and Land-use phone system is as follows.

First, it should meet the conditions a link with a broadcasting and alarm system in an emergency. Second, waterproof and explosion-proof featured phone is required to adapt a marine environment. In order to meet the demanding conditions on the sea, the basic

system. This expanded option makes communications possible anywhere on the ship with the land. Second, it can meet communication needs to use message function on land use for crews on the ship. Third, it is (was) difficult for an operating ship to provide unified time information when passing through an international date line. It has a function of notification converting standard time provided by GPS to current local time on LCD monitor and is developed to offer additional functions providing information such as notice and menu guide.

In order to establish a seamless communication system, is prepared for increased traffic that designed data separately by applying dual power device, uninterruptible power supplies, the internet telephone traffic on connection port of PoE (Power over Ethernet) and VLAN (Virtual LAN) technology applied PC data traffic.

Additionally, dual system control enhanced stability via autoswitch mode technique and bypass routing system in order to use an extra network channel in case of network

failure disconnects the Internet. In addition to it, a remote maintenance system has also been developed to monitor an IP-PBX and a phone status on land. IP-PBX can be monitoring in conjunction with the backbone network management program.

The system is able to provide uninterrupted service for the new system that has been developed to manage tens of and hundreds of phone status regularly by modifying on-off function and software.

VoIP based Automatic Exchange Telephone System for maritime has been adopted as the standard for ship's design by DSME Ten ships already are being operated equipped with new system among 50 ship's order such as LNGC, container and Pipe Laying Support Vessel (PLSV). Additionally, more than 10 ships are built by Daewoo Mangalia Heavy Industry with DESC design. It will be equipped with the tanker that is scheduled for construction in United States Nassco shipyard.

Daewoo Mangalia Heavy Industry built container was delivered with new telephone system last June.

A new developed domestic applied domestic technology is accelerating globalization by entering into the shipyard in Europe.

A specialized shipboard internal communications network and equipment company Net Co.,Ltd is commercializing through ongoing research and development for more than ten years not only an internet-based phone system for maritime but All-IP based CCTV system development for maritime, Wi-Fi-based new concept time information system, a remote maintenance management system for an internet-based equipment. The Net Co.,Ltd is pursuing global markets through commercialization based on successful technology development.



The company is continuing its efforts to grow a global player in its own industry, while proceed research and development of new networks for ships and offshore floating units

## Optimum network environment also for the future expansion of convergence

- VoIP
- IP CCTV
- IPTV & VoD
- IP Master Clock
- Remote Maintenance Platform for IP Devices
- Wireless Network



複雑さを克服する

# OVERCOMING COMPLEXITY

Ulysses Systems has provided award-winning information management solutions to ship owners and ship managers since 1996.



## SOFTWARE

### SVIS 2.0

[www.rightship.com](http://www.rightship.com)

Ship vetting company RightShip has chosen IBM's predictive analytics to upgrade its online risk management system SVIS (Ship Vetting Information System). SVIS 2.0 will be launched in the first quarter of 2014.

It will be powered by IBM's Cognos Business Intelligence and SPSS Predictive Analytics software, and will be designed and optimised for smartphones and tablets.

RightShip's CEO Warwick Norman said: "Risk management in the maritime industry is paramount. In today's business environment, marine industry operators must be able to efficiently and cost effectively assess the suitability of a nominated vessel. RightShip is the first vetting company to harness the power of Big Data and predictive analytics will bring a new dimension to our risk management system, including deeper and exciting customer insights."

"The system will allow RightShip to better target substandard performance and forecast risk dynamically in response to changing factors and with much greater accuracy."

Mr Norman added: "Charterers will be better able to predict a vessel's performance, while seamlessly considering emerging risk factors. A terminal will benefit from a more bespoke service and ensure physical vessel fit. A ship owner can benchmark its fleet in real time with tremendous accuracy and access more insightful measurement techniques. Banks and insurers can integrate our data with in-house systems to more precisely quantify risk."

Alan Morgan, Business Analytics Software sales manager at IBM Australia, said: "In order to continue to be an industry leader in maritime risk and safety, RightShip was looking to transform their systems to deliver greater information access to its customers, enhancing their level of service. IBM's expertise in business analytics is a key component of that vision."

"The integrated IBM solution offers RightShip an agile, scalable and flexible means through which a smarter analytics approach can assist them in their on-going growth as a leader in the maritime industry."

The project will be led by Bryan Guenther, who joined RightShip in February 2013 and was responsible for the design, development and implementation of BP Shipping's vetting system called iMAS.

### ClassNK releases EEDI calculation software

[www.classnk.or.jp](http://www.classnk.or.jp)

ClassNK has announced the development of a new software system, PrimeShip-GREEN/PSTA (Progressive Speed Trial Analysis), to help shipyards comply with EEDI requirements.

Amendments to MARPOL Annex VI introducing an Energy Efficiency Design Index (EEDI) for the prevention of pollution from ships came into force from January 2013, enforcing mandatory EEDI calculation and EEDI regulation values for vessels contracted from 1 January 2013 onwards.

The new software from ClassNK is used to analyse the results from speed trials and calculates a ship's speed in calm sea conditions.

When calculating EEDI, external factors such as the wind, waves, tides, shallow waters, and displacement during speed trials can be corrected for to allow for higher accuracy when determining a ship's speed in calm sea conditions, so ClassNK has also developed the software to provide a straightforward method for compensating for external factors in progressive speed trial analysis.

This analysis method is based on ISO Standard 15016:2002, recognised in the IMO EEDI Guidelines '2012 Guidelines on survey and certification of the Energy Efficiency Design Index (EEDI)'.

PrimeShip-GREEN/PSTA is provided to shipyards free of charge, with application forms available for download from the ClassNK website.

### Westsea Marine installs MPM on newbuild PSVs

[www.marinesoftware.co.uk](http://www.marinesoftware.co.uk)

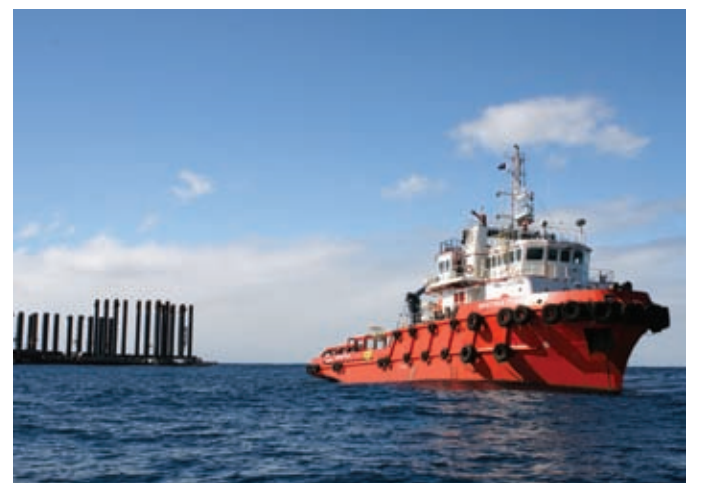
UK-based Marine Software has recently delivered Marine Planned Maintenance (MPM) systems for two newbuild Platform Supply Vessels (PSVs) for Westsea Marine.

Headquartered in Perth (Australia), Westsea Marine transports large, oversize and bulky cargos for the mining, oil and gas industries.

The contract covers two 77m PSVs and follows an earlier contract in 2012 to supply MPM software on four tugs.

Westsea Marine says that it chose Marine Software because "we found their product to

be the best cost effective option. (It's) extremely user friendly, offering an excellent product support helpdesk if required. Our engineers on the vessels have commented on this fact and the transition time for implementation was very short."



Two Westsea vessels will be installed under the deal



## Damen Shipyards rolls out ERP system

www.damen.com  
www.ifsworld.com

Damen Group, which operates 40 shipyards around the world, is to roll out a uniform Enterprise Resource Planning (ERP) system across its various locations.

IFS 7.5 went live at its Romanian branch in Galati this week, following an earlier implementation at Damen's headquarters in Gorinchem, the Netherlands.

Damen explains that with this system, it wants to keep a closer watch on stock levels, plan more expeditiously and transparently, and improve efficiency throughout the supply chain.

The IFS software includes supply chain elements, engineering, planning job preparation and manufacturing modules. Galati is now using the Finance, HR, Distribution, Manufacturing and Projects applications and will soon implement all other modules.

Damen's new shipyard in Haiphong, Vietnam, is scheduled to go live in late 2013. Damen plans to roll out the IFS software there and at its various branches worldwide in the next few years.

"Implementing IFS software across our various branches will make it easy for us to track the entire logistical process," said Marc de Thouars, director of Group IT at Damen Shipyards Group.

"By having a better understanding of the supply chain, we can shorten throughput times, optimise procurement, and drastically reduce the number of rush orders. Installing a streamlined supply chain supported by a standard ERP solution will bring calm to the organisation."



Damen will roll the system out worldwide

## Maritime technology R&D venture in Japan

www.mijac.co.jp

A new joint venture to pursue R&D projects on various types of maritime technologies has been established in Japan, featuring a number of the country's shipyards as well as other leading companies in its shipping sector, such as ClassNK and NYK (Nippon Yusen Kabushiki Kaisha).

MIJAC, the Maritime Innovation Japan Corporation, began operations on July 1 2013, with head offices based in Tokyo and a staff of 14. The full list of MIJAC cooperating partners includes Oshima Shipbuilding, Shin Kurushima Dockyard, Tsuneishi Shipbuilding and Sanoyas Shipbuilding, in addition to ClassNK and NYK.

MIJAC was created with share capital of ¥10,000,000 Japanese Yen (approximately US\$100,000), split between the cooperating companies, with Oshima Shipbuilding, Shin Kurushima Dockyard, Tsuneishi Shipbuilding and ClassNK owning 19.7 per cent each, Sanoyas Shipbuilding controlling 14.95 per cent, and NYK taking the remaining 6.25 per cent.

These companies will then provide the funding for MIJAC's research and development activities, which will focus on technologies in the fields of ship design, ship construction and ship operations technology, as well as new innovations to reduce CO2 and other hazardous substances discharged by ships and to promote the efficient use of marine energy.

Masato Nobuhara, general manager of the Technical Strategy Group at Monohakobi Technology Institute, a wholly owned NYK subsidiary responsible for R&D at the company, has been appointed as the first president of MIJAC.

"With MIJAC positioned at the centre, our vision is to take the state of Japanese



"Our vision is to take Japanese maritime technology to a new level" - Masato Nobuhara, MIJAC

shipbuilding, shipping and maritime technology up to a new level and make them known to the world as Japanese technologies," he said.

"Our customers include cargo owners utilising ocean shipping, maritime shipping companies handling ocean shipping, shipbuilding companies that build the ships, classification societies that handle the ship surveys, and marine equipment manufacturers that produce major equipment for shipboard use."

"Doing research and development together with our customers is our motto, and we always make our efforts to put our customers' interests first. We ask customers directly about what their needs are, and through them we rapidly get a precise sense of global trends and changes that we will always make our efforts, at full speed, to tackle with the objective of developing technologies that are among the best in the world."

Germanischer Lloyd



# Enhanced Productivity.



## GL ShipManager.

You need a smart solution that supports your technical, quality & safety and crewing requirements, overall operations, and procurement and finance departments. We offer GL ShipManager, an integrated information system that simplifies data management between office and ship – providing increased productivity and transparency.

www.gl-maritime-software.com



# Steaming into the cloud

**Cloud-based bunkering intelligence can help fleet operators gain tighter control over their fuel budgets and enable savings of up to five per cent of bunkering budgets, using the latest technology to gain unprecedented levels of intelligence to inform their decision making, writes Jean-Herve Jenn, Inatech**

In the wake of the global economic crisis, competition between operators is fierce and the ability to control costs is becoming ever more important in the drive for profit, with efficient fuel procurement being one area where cost control can translate into financial performance.

While fuel is one of the biggest ticket items for fleet operators in the shipping industry, engaging effectively in the \$180 billion market for bunker fuel is far from simple.

Vessel operators are always looking at how to reduce their bunkering costs, which can reach 60 per cent of an operating budget, equivalent to billions of dollars for a large fleet.

With this in mind, even a small percentage improvement can have a significant impact on a fleet's financial viability, and using proof-of-concept evaluations on real-world operational data it's been estimated that savings of up to five per cent of a bunkering budget are possible.

Taking a holistic view of fuel management into account, this can equate to savings on the bottom line of up to \$630k per ship, so it's well worth the time of any fleet operator to consider how to use modern cloud-based technology to make the best possible use of their resources.

## Specialist procurement teams

An operator may well have a fleet of over 500 ships, submitting an average of 20 fuelling requests per day to a global bunker purchasing team of fewer than 10 people.

This small team of experts has the role of keeping fuel costs down to a minimum, keeping the fleet fuelled and delivering cargo whilst taking into account many variables, including ship speeds, loading and routes.

Bunker procurement is something of a dark art because the market for marine fuels is a complex one, with price and availability of different grades and blends varying widely between ports and port prices being set by local supply and demand.

This leads to low prices for the most common local fuels but ships passing through on longer voyages can be stung by an unusually high price for a blend that its crew can find cheaper at its home port.

Introduced in part to combat the impact of the recession, the practice of 'slow steaming' and 'super slow steaming', designed to cut fuel consumption, has added an extra layer of complexity in recent years. By reducing ships' speeds from 25 knots down to 20 knots and 12 knots respectively, operators can make significant fuel savings.

It's often the case that while a ship might secure bunkering in a port, it might be worth holding off for a lower price elsewhere, stocking up on only enough to travel between the two, cutting speed to conserve fuel until reaching a port where

the price for a particular stock is most attractive, or making the most of fuel tank capacity by stocking up where the prices are lowest.

But with ship crews often overlooking the big picture, they frequently present purchasing professionals with last-minute requests for fuel.

Other issues include vessels having to bunker in ports close to their route, despite fuel prices being held lower else-

By analysing the bigger picture, setting out a bunkering plan and taking control of bunkering procurement, shipping companies can make significant savings.

## Appeal of the cloud

Much has been written about the corporate world's move to cloud-based systems in the last few years but only now are corporations starting to realise the benefits as super-fast broadband becomes the norm.

huge volumes of rapidly changing data.

The simplicity of a single interface presenting this range data helps to inform decision-making.

Cloud-based solutions for bunker management and procurement are likely to change the game of shipping in the next few years. While the traditional approaches are prone to human error, modern systems are based on live bunker fuel prices, which are fed in from a global network of suppliers.

## Realising savings

But while it is claimed that smart fuel procurement can save fleets between two and five per cent of their bunkering budget, how have these figures been established?

In the typical case of a vessel that consumes 75 tons of fuel a day at a cost of \$625 per ton, the ship's operator will need to stretch to \$12.7 million to keep the vessel moving.

By streamlining the vessel's procurement using a cloud-based procurement system, the shipping operator can optimise fuel consumption and make significant savings.

This is achieved by – firstly – using a systematic workflow tool that avoids last minute purchases that force the operator's hand in fuel purchasing.

Secondly, an in-built 'best buy' process will support fuel-purchasing negotiations.

Lastly, the solution that is used must ideally integrate operations and claims handling as it will help ensure accuracy of data about both quality and quantity of fuel.

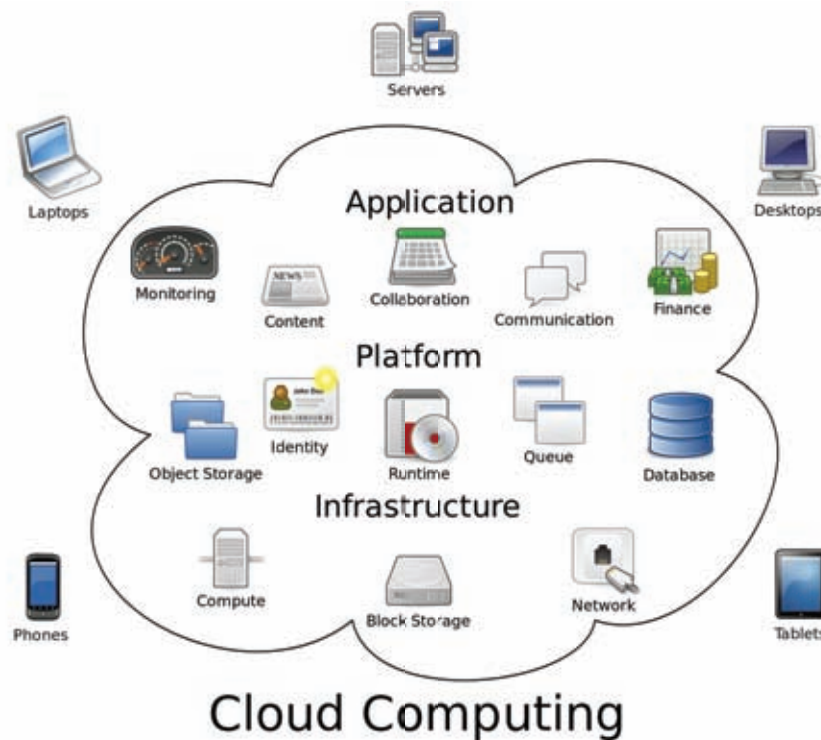
Predicting the ship's route while taking fuel consumption, availability and price trends into account, it's possible to make a saving of \$40 (or more) per ton of fuel from port to port, or even within ports.

By adapting business processes across bunkering, operation and supplier organisations, companies can achieve the higher limit of savings but it's vital to have buy-in from the very top echelons of management to ensure that the entire fuel ecosystem embraces fuel management as the central tenet of keeping operating costs to a minimum.

Ultimately, the overall savings on a fuel bill can reach as high as two to five per cent, which translates to savings from \$250k to \$630k per vessel per year – a significant figure when an operator might have a fleet of 500 ships.

In a business where times are tough, smart bunker procurement may well represent the competitive edge that CEOs are seeking.

DS



Cloud-based systems can offer faster updates to data, allowing for improved planning.  
Photo: Sam Johnston

where; bunkering more fuel than is required; or under-utilising vessel capacity, as well as planning for available time slots and barge pump capacity.

## Old and new

While the conventional approach has been for bunker procurement teams to rely on manually updated computer spreadsheets, or even on paper-based systems, the advent of live pricing being available online has ushered in a new era of cloud-based systems.

It is often the case that while shipping firms' existing in-house systems have been developed and tailored to suit, they require manual updates, which can lead to errors and make it tricky to monitor constantly moving fuel prices in real time, calculate margins and make the best deals.

A modern system will give today's purchasing professionals better access to market data than ever before, and when compared to real-time information on ship location and route, allows procurement teams to build up an accurate bunkering plan for individual ships and entire fleets.

Analysis of bunker prices at a range of alternative ports allows shipping operators the opportunity to optimise their orders for bunker fuel, finding the most cost effective plan for a given vessel.

Freeing up businesses from the cost and complexity of purchasing and maintaining expensive IT systems, cloud computing gives the opportunity to subscribe to services as and when they're needed rather than committing to a long-term solution.

There's no need to purchase a server or a new licence when storage space can be rented in a data centre and the same data centre can host specialist software solutions, to which a company can subscribe in its effort to source competitive intelligence.

A trend towards cloud-based subscription means that businesses are moving away from software being an item for major capital expenditure (CAPEX) to operational expenditure (OPEX), requiring far simpler internal approval and sign-off procedures.

Bunker purchasing intelligence is one area that is well suited to being hosted in the cloud, making it easy to integrate with other standard shipping management systems, as well as scaling up to meet the growing and changing demands of a fleet as its operation evolves, either by the addition of more vessels, additional procurement staff or changes to the operating routes.

Today's modern bunker management systems enable traders to compare prices and develop scenarios that keep overall costs down, with interfaces designed to help them access, monitor and analyse



**About the author**  
**Jean Hervé Jenn** is CEO of Inatech, a provider of intelligent cloud-enabled and on-premise consulting, enterprise resource planning services and marine solutions





Fleet Management Solutions

# What do these market leaders have in common?



## TM Master... Fleet Management Solutions

Maintenance & Inventory - Docking Management - Centralised Procurement - Crew Management - Voyage e-Log - HSEQA





## Raytheon for Nor Lines and NSC

<http://ecdis24.raytheon-anschuetz.com>

Raytheon Anschütz has won a contract to supply its ECDIS 24 system to Norwegian shipowner Nor Lines, as part of a retrofit programme, and has also been selected by German shipowner NSC to supply its Synapsis INS (Integrated Navigation System) to a series of containership newbuildings.

Under the contract with Nor Lines, Raytheon will supply ten ECDIS 24 systems for installation on board five ships, with MV Cometa the first vessel to be refitted. All five shipsets will be

supplied and commissioned by Raytheon Anschütz' Norwegian distributor, Syberg AS.

"With ECDIS 24 we can offer customers both a proven, easy to operate ECDIS software and a dedicated hardware solution to meet the particular needs of a cost-efficient retrofit," said Jörn Fischbach, sales manager at Raytheon Anschütz.

"ECDIS 24 comes as a turn-key solution, easy to install and without any hidden cost for the shipowner."

The ECDIS 24 retrofit package consists of a 24-inch TFT Panel-PC, an interface box providing necessary interfaces

required by the ECDIS performance standard IEC61174, a trackball, DVD drive and cabling. It also includes an integrated automatic switch-over between AC and DC power supply, so an uninterrupted power supply (UPS) is not required.

The exchange of data, routes and charts between the two ECDIS on board is facilitated via a LAN network cable.

One ECDIS on each Nor Lines ship will also be equipped with an integrated weather overlay.

This new feature combines sea chart and weather chart in one display. All weather parameters are presented as values or symbols on a separate layer and can be switched on and off at any time.

These parameters include the mean wind (with direction and speed) as well as gusts, wave height, wave direction and swell, period intervals of waves and swell, current, air pressure, weather conditions and air temperature.

In addition to the ECDIS retrofit solution, Raytheon Anschütz is also offering approved manufacturer-specific ECDIS online training free of charge, in cooperation with Safebridge. Land-based training courses at training centres around the world will additionally be made available.

German operator NSC will see Raytheon integrated navigation systems supplied to a series of 9,000 TEU vessels currently being built by Korea's Hanjin Heavy Industries & Construction's Subic

Shipyard, in the Philippines.

They are scheduled to start operating in 2014 under a long-term charter with Compania Chilena de Navegacion Interocena (CCNI).

Raytheon will supply integrated navigation from the Synapsis Intelligent Bridge Control series in accordance with IMO's new INS Performance Standards.

The bridge system will consist of four Synapsis multifunctional workstations, X- and S-band radar sensors, NautoPilot 5300, a steering gear control system, and a gyro compass system. Navigation sensors and a radio communication system are also included.

A workstation can process tasks such as Radar, ECDIS, Conning, or third party applications simultaneously. Operators have central access to the different applications by using the task switch on the screen.

The workstations are connected through an Ethernet ring network. A software framework offers the central processing of formerly local organised tasks.

"Delivering an IMO-certified Integrated Navigation System was surely a key reason for us being selected as the supplier to this project," said Jens Falkenberg, sales manager at Raytheon Anschütz.

"Being the first manufacturer who gained IMO type approval for Integrated Navigation also underlines the innovative technology and the high standards we are used to delivering."



Raytheon's ECDIS 24 system will be installed on five Nor Lines ships

## Safebridge adds online course for the Imtech SeaGuide

[www.safebridge.net](http://www.safebridge.net)  
[www.imtechmarine.com](http://www.imtechmarine.com)

Safebridge, a Hamburg-based training provider, has released its eighth online type-specific training course for the Imtech SeaGuide ECDIS.

The Imtech SeaGuide ECDIS works as a generic system but also includes the additional features of radar overlay, ARPA targets, AIS and Navtex interface and integrated conning.

"The Safebridge training course is fully approved by Imtech Marine Germany and in compliance with all relevant regulations," said Jürgen Ostrowitzki, head of Product Management at Imtech Marine Germany. "The training on our equipment is now available worldwide via the web at a price that does not have a major impact on the cost of implementation."

Safebridge says that seafarers must complete an IMO 1.27 generic training before taking its type-specific courses, which represent 16-18 hours of study in a three-week window. It says that schedule allows the student enough time to use the "FreePlay" feature to access the ECDIS software in simulation mode over the internet and practice real-life scenarios, prior to taking the online test.

After the release of the Imtech SeaGuide course, Safebridge managing director Ulf Steden said: "We are drawing closer to our goal of providing a comprehensive range of flexible, cost-effective, online courses for all major ECDIS suppliers in anticipation of increasing demand for type-specific training."

"This was the last of the releases completed in the first half of 2013. The second half will include the release of one further new course and then be followed by a series of updates to those existing courses, where the manufacturers have released new software versions."

"The phased schedule for mandatory (ECDIS) carriage is still only in its first year but we are already seeing growing demand for our online courses as customer awareness and understanding of the requirements of STCW 2010 increase. The next carriage milestone has just come into effect in July 2013 and applies to new-build cargo vessels of 10,000 GT and over. Whilst this will not have a major impact on the training market immediately, the growth in the installed base of ECDIS equipment together with safety considerations and the full operational implementation of existing ECDIS installations is driving demand forward."

## CEACT updated to version 2.6

[www.sevencs.com](http://www.sevencs.com)

SevenCs, and partner CEACTION in the US, have announced the release of version 2.6 of the CEACTION software system.

The navigation software, specifically designed for professional towboats and workboat operations engaged in inland river navigation, will now be able to read BSB raster charts, NOAA / USACE charts and overlays as well as all official ENC charts worldwide.

"Since 2002 we have constantly developed CEACTION in accordance with our customers' feature requests. With more than 50 per cent market share most of the US workboats can now benefit from the best CEACTION ever," said Bjoern Roehlich, sales director at SevenCs.

"We reduce workload, improve efficiency and allow safe navigation for all professional users. With multiple chart formats and advanced CPA calcula-

tion for rivers, along a route and at open sea, CEACTION now is expanding into the workboat market in coastal areas."

"All CEACTION customers will benefit from our special update conditions for the new version CEACTION 2.6. New clients can get a free trial to experience the best CEACTION ever."



CEACTION can calculate CPA on river miles, route or open sea



## Totem ECDIS now compatible with AIO

[www.totemplus.com](http://www.totemplus.com)

Totem Plus has announced that its ECDIS is now compatible with the Admiralty Information Overlay (AIO) provided by the United Kingdom Hydrographic Office (UKHO).

Seafarers around the world use the weekly Admiralty "Notices to Mariners" to manually update paper charts.

The AIO does this job automatically,

displaying the same information directly over the ENC. It is a free service to Admiralty Vector Chart Service (AVCS) customers and it includes worldwide Admiralty Temporary and Preliminary Notices to Mariners (T&P NMs) and ENC Preliminary Notices to Mariners (EPNMs).

Dudi Shefer, product manager at Totem Plus, said: "We are delighted that Totem ECDIS is now compatible with the Admiralty Information Overlay (...). By

delivering the UKHO's trusted 'Notices to Mariners' data in a digital format that can automatically be integrated with electronic charts, the AIO is a vital tool in our efforts to support safe, efficient navigation."

Within the Totem ECDIS, the AIO display is a selectable feature that can be switched on and off. When passage planning and route checking, the AIO is used to ensure the Mariner has all the latest information.

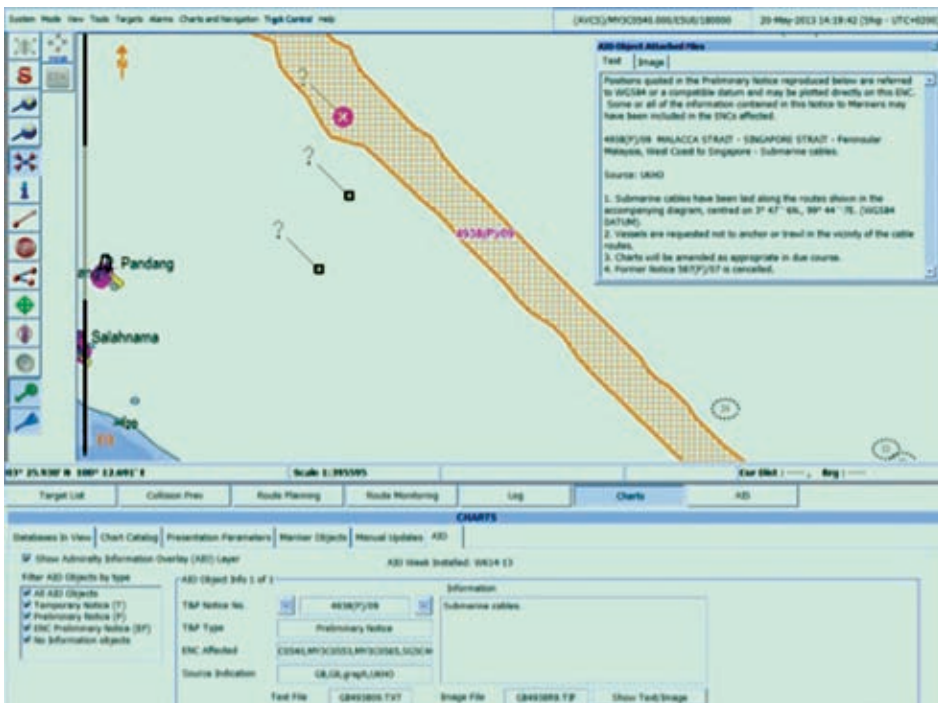
If there is an AIO object of interest, this can be transferred to the ECDIS in monitoring mode. This process removes the necessity to turn on the whole AIO display when critical navigation is underway.

Hugh Phillips, head of products at UKHO, said: "We are very pleased to be working together with Totem Plus in order to provide Totem ECDIS users with the essential navigational information provided by the Admiralty Information Overlay."

"We are working closely with leading ECDIS manufacturers like Totem Plus to ensure that as many vessels as possible that are navigating digitally can share the benefits of the updates provided by our AIO service."

Based in Israel, Totem Plus says that its ECDIS was the first in the world to provide collision avoidance in the form of Decision Support Tools.

Implementing a free upgrade policy, it invites users to get the required software patch that includes the AIO module.



AIO data can now be displayed on an ENC on the Totem Plus ECDIS

## NauticalCatalog to order Jeppesen ENCs

<http://jeppesen.com>

Jeppesen has launched NauticalCatalog, a web-based application allowing maritime customers to order its Electronic Navigational Charts (ENCs), PRIMAR ECDIS Service and Professional+ chart data.

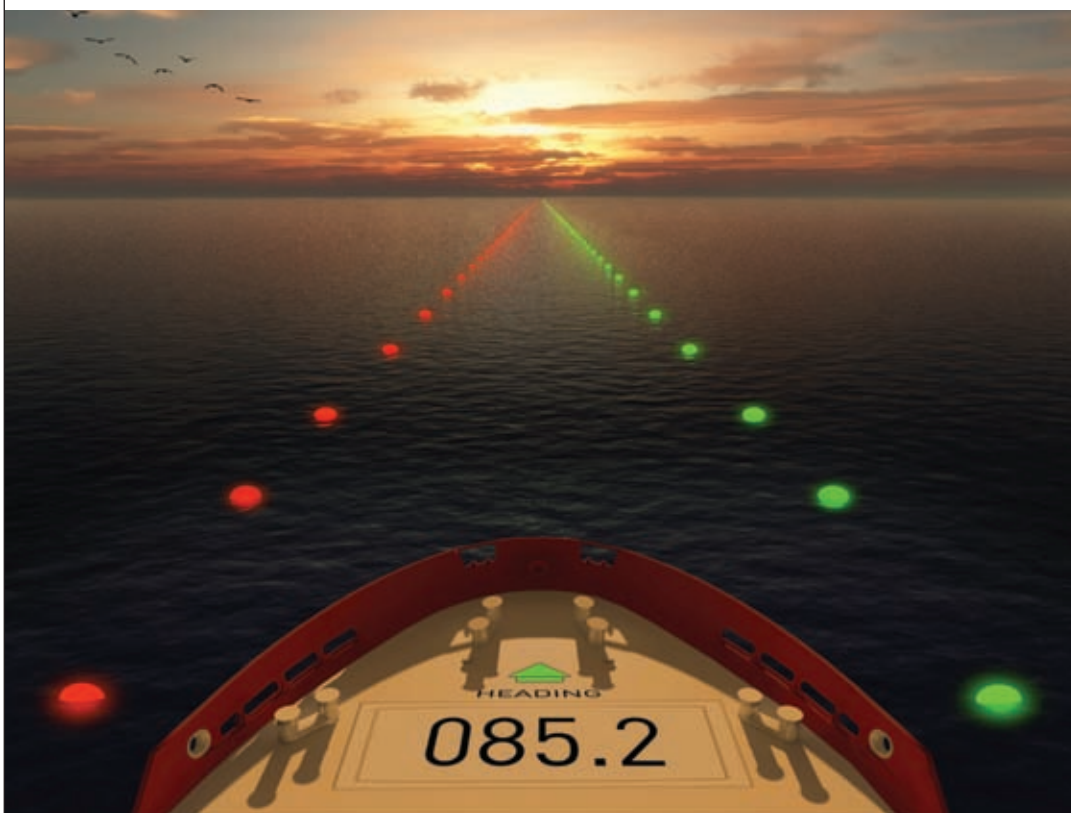
Users can plot routes from their ECDIS/ECS, automatically selecting charts that intersect any given route and exporting/importing routes in 18 ECDIS/ECS formats. After logging into NauticalCatalog, they can auto-select charts for any route and calculate the aggregated cost.

They may order chart licences from their chart distributor or directly from Jeppesen.

Order history can be saved for later reference. NauticalCatalog lets users review orders for approval, and provides reports of orders and costs incurred.

A Boeing company, Jeppesen says that the ability to easily view and renew the entire vessel portfolio is a feature that has been particularly well-received by early users. When using NauticalCatalog, operators have a full overview of available charts with an "ordering wizard" to help select the right chart for a given voyage or route.

## KNOW WHERE YOU'RE GOING...



The Marinestar Manoeuvring System provides high accuracy position, course and speed - both in the forward direction and athwartships.

Marinestar assists manoeuvring in restricted waters and confined port areas. Quay distance calculation aids berthing of large vessels.

Marinestar can be integrated within ships bridge systems to provide stable accurate, position course and speed data. This is especially valuable to ships using electronic charting.

Fugro Satellite Positioning, Norway  
 Tel: +47 21 50 14 00  
 Fax: +47 21 50 14 01  
 E-mail: [marinestar@fugro.com](mailto:marinestar@fugro.com)  
 Web: [www.fugromarinestar.com](http://www.fugromarinestar.com)





## India's first navigation satellite launched

www.isro.org

The Indian Space Research Organisation (ISRO) has launched the first satellite in the Indian Regional Navigation Satellite System (IRNSS).

The entire IRNSS constellation of seven satellites is planned to be completed during 2015-16. IRNSS is designed to provide position information in the Indian region and 1,500 km around the Indian mainland.

It would provide two types of services: Standard Positioning Services (SPS) - to all users - and Restricted Services (RS) - only to authorised users.

The first satellite of the constellation, IRNSS-1A, was placed into orbit by ISRO's

Polar Satellite Launch Vehicle, PSLV-C22, 20 minutes after take-off from Satish Dhawan Space Centre, Sriharikota. The solar panels of the 1,425 kg satellite were deployed automatically.

After injection into elliptical orbit, ISRO's Master Control Facility in Hassan (Karnataka) assumed control of the satellite. It has since conducted five orbit manoeuvres to position the satellite in its Geosynchronous Circular Orbit at 55 degrees East.

A number of ground stations responsible for the generation and transmission of navigation parameters, satellite control, satellite ranging and monitoring have been established in 15 locations across India.



India has successfully launched its first navigation satellite. Photo: ISRO

## Black box for small ships

www.amimarine.net

UK-based marine electronics manufacturer, AMI Marine, has launched a VHF 'black box' recorder for small ships and a wireless deck intruder alert.

The VHF recorder saves audio and GPS time, date and location on a supplied SD card that can be replayed on a PC. AMI says that the SD card has enough capacity for around 80 hours and individual files are saved at one minute intervals.

"We have been working with Telemar UK to develop a VHF 'black box' recorder that helps provide small ship and workboat owners and operators with a means to verify ship-to-ship and ship-to-shore communications together with the time,

date and location of the vessel at any time," said Stuart Newman of AMI.

"This technology is already available on larger vessels where it is recorded on their VDR, but below 3,000gt there is no requirement to carry a VDR."

"The VHF Black Box recorder is an inexpensive but effective tool to assist owner/operators of smaller vessels to put together an accurate history of events, whether it is for evidence or for training and education purposes."

AMI has also launched a stand-alone wireless Deck Guard 1000 intruder alert. It is powered by a re-chargeable battery and has a remote arming / disarming functionality.

"We have a strong forward order book for Deck Guard," said Mr Newman, "as owners realise that the unit can quickly pay for itself by savings of cost and time and inconvenience caused by having to replace stolen goods."

"We have also developed a convenient tool for service engineers that make it a lot easier to diagnose problems on the bridge. The NMR183 NMEA Reader is easy to use thanks to its clear, easy-to-read screen and menu operation, and is housed in a rugged and compact case that allows it to be used anywhere."



The black box is aimed at ships that do not require VDR

## First Praxis installation for SES

www.ses-marine.com

Ships Electronic Services (SES) is to supply North Star Shipping (Aberdeen) with a Machine Alarm and Monitoring system developed by Netherlands-based bridge systems manufacturer Praxis.

SES is the UK's sole supply and service provider for Praxis, and North Star Shipping is its first customer for the new product range.

North Star's vessel Grampian Frontier will be fitted with the new system, supplied and fitted by SES. Wiring for the system commenced during the vessels dry dock lay up in July with final installation carried out during August while the vessel is in operation.

"This is a great start for our Praxis relationship, not only are we supplying the advanced monitoring system, we have been able to meet the operator's requirements for part installation during dry dock and completion of the installation at sea," said SES director Colin Anderson.

"This has been possible due to our

strategic location and a highly trained team of engineers. We are used to carrying out installation and testing around a working vessel as our engineers' professionalism ensures there is no interference with the ship operations and the system can integrate with other ships' services as soon as testing is complete."

"Praxis has built an excellent reputation for functionality and reliability and we are looking forward to carrying out a large number of installations in the coming months."

In related news, SES has also announced new relationships with Iridium Communications and Raytheon Anschutz.

The company has been appointed as a warranty service provider for Iridium's Global Service Programme in the UK and will provide support services to customers that are using Iridium Pilot through its eight Service Centres in the major ports of England and Scotland.

Raytheon Anschutz has appointed SES as its sole distributor and service provider for the UK, effective from August 2013.

## Alaska extends AIS coverage

www.exactearth.com

The Marine Exchange of Alaska (MXAK) is to work with exactEarth to form a new Alaska vessel tracking alliance, built on the MXAK PacTracs product offering.

PacTracs is a vessel tracking display system that utilizes the MXAK's 100 coastal Automatic Identification System (AIS) receivers throughout Alaska. With this new agreement, users will be able to upgrade their PacTracs service to include the exactAIS satellite AIS feed from exactEarth.

This will expand coverage from the coastal waters around Alaska to include the entire North Pacific and the Arctic, from 45 degrees north latitude all the way to the North Pole.

MXAK expects this new hybrid AIS and satellite tracking system to address all aspects of the organisation's mission of providing services that aid safe, secure, efficient and environmentally responsible maritime operations.

"The Marine Exchange of Alaska provides the Alaska maritime community with many valuable services, which now will include exactEarth's satellite coverage of vessel movements on the open ocean," said Chandler Smith of exactEarth-USA.

"We are excited to support the PacTracs vessel tracking application for the Alaska maritime community. We expect there to be increasing interest in both North Pacific and Arctic vessel tracking, and are proud to be allied with the Marine Exchange of Alaska to provide this important service."

## NAUTIS simulators in Egypt and Australia

www.nautissim.com

VSTEP has announced that it has supplied new simulator systems to customers in Egypt and Australia.

Six of its NAUTIS Desktop Simulators have been installed at the headquarters of Egypt's Regional Institute for River Transport (RIRT) in Cairo.

The equipment was purchased by the STC Group to allow the Egyptian River Transport Authorities (RTA) to provide certified training. This is part of The Netherlands Initiative for Capacity development in Higher Education project.

The main governmental body supervising transportation on Egyptian domestic waterways, the RTA provides professional education and training through RIRT for inland navigation personnel and trainees at its premises in Cairo.

In Darwin, Australia, VSTEP has also delivered a NAUTIS simulator to Seafood and Maritime Industries Training (SMIT) for specialised ship handling, manoeu-

ring and radar training of coxswains.

The Rotterdam-based developer says that its NAUTIS DNV Class A Full Mission Bridge simulator allows specialised navigation and ship handling training of coxswains and maritime personnel alike in full compliance with the latest STCW requirements.

The simulator features a 240° field of view and an additional projected stern view, as well as a Kelvin Hughes Radar system for radar training. A NAUTIS Instructor Station was also delivered to SMIT Australia, which focuses on training of maritime personnel aboard fishing and recreational vessels.

VSTEP's CEO Cristijn Sarvaas said: "SMIT is well-known for its high quality training of maritime personnel in the region. We are pleased that our NAUTIS simulators were selected to enhance their training curriculum. We have previously delivered multiple NAUTIS simulators to the Australian Army and Australian volunteer Coastguard and are proud to add SMIT to our clients in Australia."





## More than ECDIS

- ✓ Fully in house developed and produced
- ✓ Almost 25 years of ECDIS experience
- ✓ Complies with 2014 S-63 Edition 1.1
- ✓ Meets current IHO standard
- ✓ Online TST courses available
- ✓ Support of AIO for AVCS
- ✓ Close to 10,000 ECDIS TST trained officers
- ✓ Global support and after sales service
- ✓ AVCS pre-installed & C-Map e-Token standard
- ✓ Over 1,000 trained engineers globally
- ✓ TST training available in over 30 countries
- ✓ Solid State Drive for OS and JRC software





## Korea Lines upgrades navigation software

www.thomasgunn.com

Korea Lines is to upgrade the digital chart management systems on four LNG gas carriers from Thomas Gunn's Voyager 3 to the new Voyager 4, with immediate effect.

Cho Han-Ung, principal superintendent, fleet management team 2 at Korea Lines commented that, "We needed a navigation solution which would best serve the needs of the internationally trading vessels operating within our fleet."

"Thomas Gunn's new Voyager offers a range of options and unique features that enable us to navigate safely and efficiently in all areas."

The new version of Voyager offers a complete British Admiralty update service, including key compliance requirements, Annual and Cumulative Notices to Mariners, Navarea Warnings and the Admiralty Information Overlay (AIO).

The system downloads, updates and displays both AVCS (Admiralty Vector Chart Service) charts and the AIO.

In addition, the new Voyager offers a number of additional third party services, such as Regs4ships, findaport, AtoBviaC, Piracy information (via ICC) and Met515, displayed in one single interface.

"This is great news for Thomas Gunn," says Mike Bailey, Voyager development manager, Thomas Gunn Navigation Services.

"We very much value the long term

partnerships we have built up with our customers, and when the choice is made to upgrade it is a validation not only of the product but also of the level of service we have worked hard to achieve."

Thomas Gunn says that Voyager 4 has one of the best data compression rates available, to improve data download times and reduce costs, and includes a free Vessel Management Service to assist in administration.



*Korea Lines' navigators will have access to a greater range of data with the new version of the software*

## ETC offers SAM and JRC ECDIS training

www.etc-training.com

ECDIS Training Consortium (ETC) has partnered with SAM Electronics and Japan Radio Company (JRC) to provide training for the companies' ECDIS products.

ETC is a joint venture of training partners working under the patronage and control of MSG MarineServe GmbH, a sister company of Safebridge. It comprises 18 training centres.

Following the new agreements, training on SAM ECDIS CHARTPILOT and ECDISPILOT equipment will be available in a variety of formats. ETC partners can provide classroom or on board face-to-face training, while Safebridge offers web-based training (WBT) and an off-line PC solution for on board usage.

"With a view to the already started ECDIS implementation scheme, SAM Electronics has best positioned itself strategically for the upcoming ECDIS training demand by bundling its training activities with Safebridge and ETC," said Arne Melzer, vice president Operations - Automation, Navigation and Communication.

ETC can also provide type-specific training on JRC systems, following its agreement with the Japanese manufacturer.

MSG MarineServe has been approved to run end-user ECDIS training for the JRC JAN701/901-B and JAN 2000 systems, and to act as JRC's extended outlet for instruc-

tor training under the ETC initiative to its partners.

JRC had already set up a training network worldwide, to which this new training capability will be added.

"Adding ETC to our training locations underlines our efforts in this direction and means a great leap forward in our sales and customer support scheme," said Bas Eerden, JRC's marketing and product development manager.

ETC says that ECDIS type-specific training on JRC systems is now available in more than 30 countries.

"Ship operators will have the advantage of even better geographic accessibility and availability of ECDIS classroom and onboard training worldwide," said Prof Ralph Becker-Heins, the instigator of ETC.

"All of this will run under assured and monitored quality standards based on a standardised course structure, uniform course material and centralised, strategic, course management but with each local partner guaranteeing the full range of local support, services and on-site tutorship."

In addition to SAM Electronics and JRC, other ECDIS manufacturers such as Danelec Marine, Imtech Marine, Martek Marine, Navico Simrad, Raytheon Anschütz, Northrop Grumman Sperry Marine and Chartworld are also using the ETC training network.

## NS5 Enterprise: the trusted name in fleet management software.



software service training consulting integration understanding

**ABS Nautical Systems**

www.eagle.org



## Transas DP simulators for Romania and Greece

www.transas.com

Transas Hellas has announced that it has signed contracts to supply Dynamic Positioning (DP) simulators to COSMOS Nautical Training Centre in Greece, and the Romanian Nautical College.

Transas Class B and Class C DP simulators are to be installed at COSMOS NTC. They will expand the existing Transas Full Mission Bridge and the Mini Bridge Simulators.

Adding a DP2 station with MT controls

will make it possible to use the Full Mission Bridge as a DP simulator Class B. The Mini Bridge Simulators will be extended with two DP1 stations for use as a DP simulator Class C.

Class C DP infrastructure is currently being commissioned, while integration and commissioning of the DP Class B arrangement will commence by the end of the month.

Transas says that accreditation by the Nautical Institute is expected soon, with the DP courses starting at the COSMOS

Nautical Training Centre by the beginning of academic year 2013-2014.

In Romania, Transas reports that it has completed an upgrade of the simulator facilities at the Romanian Nautical College, which will allow the College to become the first commercial company to offer an accredited DP training course in Romania.

As part of the project, Transas upgraded the existing navigational simulator to the latest NTPRO 5000 software, to ensure that training is in compliance with STCW 2010.

In addition, a DP tutor and a DP simulator class 2 were installed in the college, to meet the requirements of the Nautical Institute and corresponding DNV standard.

With this upgrade the college will be able to offer basic and advanced DP courses, DP refresher training and concept familiarisation courses.

The Transas DP simulator features a dedicated Instructor DP Panel for monitoring and introducing faults to the DP related equipment. The instructor can introduce faults and errors for any equipment, including frozen pitch, poor GPS coverage, low UPS battery and even blackouts.

All parameters are recorded in a log file for debriefing and playback, which also may include audio and video recording of the trainees' actions.

## Havila extends Veripos contract

www.veripos.com

Veripos, which provides GNSS services, has announced that Havila Shipping has extended its present contract for positioning services until the end of 2015. Both companies are based in Norway.

Under the renewed arrangement, Veripos will continue to provide its Standard 2 dual-beam service aboard nine Havila Shipping offshore support vessels.

The service features both GPS and Glonass capabilities in order to increase observation redundancy while ensuring positioning to accuracies of 1m or better.

Ancillary equipment installed aboard vessels comprises a series of Veripos LD2 integrated mobile units for generating any proprietary positioning solution. Veripos says that they are the only ones of their type capable of realising 10cm GPS-Glonass solutions.

Alphatron Marine Systems has signed a deal with Net-Logic to distribute NavWatch, a dual compass monitor and selector.

www.net-logic.co.uk  
www.alphatronmarine.nl



DP simulators will expand the full mission bridge simulators currently in use at COSMOS NTC

# ECDIS

Electronic Chart Display and Information System

# FURUNO

### Fast, intuitive route planning and navigation monitoring



#### FURUNO provides thoroughgoing ECDIS training programs:

Proper ECDIS training is available at FURUNO's own training centers, INSTC and at the NavSkills network of training centers. The training programs consist of:

- Generic ECDIS training in accordance with IMO ECDIS Model Course 1.27. Presently only available at INSTC Denmark.
- FURUNO type specific ECDIS training, available at INSTC Denmark, INSTC Singapore and at the NavSkills facilities:  
FURUNO Deutschland GmbH, GMC Maritime Training Center (Greece), OCEAN TRAINING CENTER (Turkey), Odessa Maritime Training Center (Ukraine), A.S. Molobhoy & Sons (India), FURUNO Shanghai (China), COMPASS Training Center (Philippines) and VERITAS Maritime Training Center (Philippines)

Please contact INSTC Denmark at instc-denmark@furuno.com for details.

- ▶ Multifunction display capability, featuring ECDIS, Conning Information Display, Radar/Chart Radar and Alert Management
- ▶ Instant chart redraw delivered by FURUNO's advanced chart drawing engine, making redraw latency a thing of the past
- ▶ Task based operation making the ECDIS operation simple and intuitive
- ▶ Fast, precise route planning, monitoring and navigation data management



FURUNO ELECTRIC CO., LTD.  
www.furuno.com



## Furuno introduces new ECDIS series

www.furuno.co.jp

Furuno has introduced its new FMD3x00 series of ECDIS systems which it says has been developed based on the insights of commercial navigators.

The FMD3x00 uses a task-based Graphical User Interface and incorporates an "InstantAccess Bar" to make features accessible. The chart redraw is instantaneous when panning and zooming, and a new split screen mode allows for chart display at different scales on the same screen. The equipment can be networked with Furuno's FAR2xx7 Radars for target over-

lay, TTM, route and waypoint display on the Radar screen.

Furuno says that its FMD3x00 ECDIS allows for up to five profiles to be customised by individual watchkeepers. A playback function allows the bridge team to replay a voyage for training or review purposes. Furthermore, a customisable conning display may be utilised by connecting an additional monitor.

In this series, the FMD3200 includes a 19" LCD display, while the FMD3300 has a 23" LCD display. Also available is the FMD3200BB, which is a Black Box version that allows you to connect virtually any

size monitor.

The FMD series ECDIS is fully type approved with existing MU201CE and MU231CE monitors.

The systems are delivered pre-loaded with official NOAA S57 ENC and IENC Inland Waterways Charts.

IMO (International Maritime Organization) regulations already require ECDIS on certain newly built passenger vessels and tankers. New cargo vessels will be required to fit ECDIS no later than July 1st, 2014. Existing ships will begin to be affected by these regulations at the same time, with final fitting dates scheduled for 2018-2019.

Furuno says that it has already sold more than 5,000 ECDIS units worldwide. To design the FMD3x00, its engineers worked with a focus group comprising experienced commercial navigators to identify what features were essential, which functions weren't necessary, and how to make electronic navigation more efficient.

In related news, Furuno says that it has added type specific training for the new ECDIS FMD-3200/FMD-3300 in the Philippines.

The COMPASS training centre in Manila had training workstations installed in May and its instructors have been trained through Furuno's train-the-trainer programme.

The training programme for the FMD-3200/FMD-3300 available at COMPASS is

identical to the type specific training for the same models provided by Furuno's own training centres in Denmark and Singapore. The syllabus has been developed by INTC Denmark in compliance with the STCW and ISM Codes as well as with all currently known requirements from flag states.

Since COMPASS joined the NavSkills network in April 2012, it has concluded about 170 Furuno type specific ECDIS courses for the FEA2107/FEA-2807 and issued just about 1,000 certificates to Filipino navigators.

Furuno says that besides the Philippines, it can provide type specific training for the FMD-3200/FMD-3000 ECDIS in Denmark, Singapore, Germany, Greece, and China.

## Meridian gyros get China type approval

www.teledyne-tss.com

Teledyne TSS, a UK-based manufacturer of gyro compasses, has announced that the China Classification Society has granted type approval to its Meridian Standard and Meridian Surveyor gyros.

Teledyne TSS notes that this approval opens the Chinese shipbuilding and offshore survey markets for these products.

"The Chinese market is very important to us," said Brian Huntsman, vice president and general manager of Teledyne TSS. "Obtaining type approval for China required a major investment by our company but I am confident that it will prove worthwhile."

The Meridian range is already IMO, Wheelmark and Russian Maritime Register of Shipping approved. Teledyne says that more than 4,000 gyrocompasses are in use aboard ships, boats and submersible craft.

Positioned at the top of that range is the Meridian Surveyor, which Teledyne describes as a high-precision gyrocompass capable of providing dynamic heading accuracies of  $\pm 0.2^\circ$  even in extreme sea conditions. With a settle time of 40 minutes, the instrument can maintain heading accuracies through turn rates as high as  $200^\circ$  per second, says its manufacturer.



Meridian gyros – now certified in China

## Dual gyrocompass solution launched

www.net-logic.co.uk

Net-Logic has announced the launch of its new NavWatch Dual Compass Monitor and Selector for use with gyrocompasses.

NavWatch includes an integrated Course Monitor which it says provides system redundancy on any gyrocompass combination from any manufacturer.

Ships over 500gt are required to carry a gyrocompass on board and must employ a fail-safe mechanism in case of error. These errors include a streaming error, where rapid changes in a vessel's course, speed and latitude cause deviation before the gyro can adjust itself.

Net-Logic notes that the best solution to

this problem is to carry two gyrocompasses in order to comply with the legal requirements, but due to the high cost of buying two with the required pairing capacity operators often have to rely on other methods.

The company says that NavWatch eliminates this problem by allowing any two gyrocompasses to work together, which gives the vessel the opportunity to select a combination of gyros to suit their needs and budget.

NavWatch comprises three functions.

The first of these is CompassWatch, which monitors input from any combination of gyrocompass pairing and alarms when a threshold is exceeded.

The next is HeadingWatch, which monitors vessel course and alarms when a user definable threshold is exceeded, and the last is DualWatch, a combined display of course and compass monitor.

"Installing NavWatch allows the vessel to use any two gyros in combination regardless of brand or cost," said Jack Robinson, global distribution manager for Net-Logic products.

"We have also added additional features that monitor your heading while simultaneously monitoring any drift in Gyros. The system also lets you know exactly which one of the gyrocompasses produced the error and a simple switch over can avoid a major incident."

## Next generation EnduraNode embedded computer

www.comarkcorp.com

Comark Corporation, an American designer and manufacturer of ruggedized custom computer solutions has announced the next generation of its EnduraNode Series, featuring Intel's i5/i7 processing options.

The computer has been tested to meet the requirements of IEC60945, with type approval for marine applications expected this summer.

Comark says that its EnduraNode supports up to 16GB RAM, with options for DVD, PCI express and Legacy PCI expansion

slots, and operates on either AC or DC vehicle input power. All electronics are conformal coated to protect against moisture.

"Our next generation EnduraNode Embedded Computer provides our customers with a current technology rugged computer that meets the requirements of marine and vehicle environments," said

business development manager Keith Vreeland.



EnduraNode supports up to 16GB of RAM



## UK adds eLoran as GPS backup

www.ursanav.com  
www.gla-rnav.org

The United Kingdom is to install seven eLoran stations on its southern and eastern coasts, offering passenger and cargo ships sailing the busy waters of the English Channel and the North Sea a backup to their GPS systems.

The stations will provide alternative Position, Navigation and Timing (PNT) information to ensure that ships equipped with eLoran receivers can navigate safely in the event of GPS failure.

GPS signals are vulnerable to both accidental and deliberate jamming – and GPS jammers are available online for as little as £30.

Many devices and applications on board ships rely on GPS-based information. E-Loran technology is based on long-wave radio signals and is independent and complementary to GPS.

Earlier this year, the General Lighthouse Authorities (GLA) of the UK and Ireland tested a prototype automatic resilient PNT (positioning, navigation and timing) system using eLoran. The trials were carried out aboard the THV Galatea out of Harwich on several excursions between 28th February and 1st March this year.

Following approval by the UK Department of Transport, it was announced that seven differential eLoran

stations will be installed along the South and East coast of the UK. The equipment will be replaced in two prototype stations at Dover and Harwich, and five new stations will be deployed in the Medway, Humber, Middlesbrough, Firth of Forth and Aberdeen.

The GLAs have contracted UrsaNav for the deployment to deliver initial operational capability by summer 2014. Full operational capability covering all major ports is expected by 2019.

The UK is the first country in the world to deploy this technology for shipping companies operating both passenger and cargo services.

South Korea, which suffered a 16-day GPS jamming attack by North Korea last year, has expressed its wish to establish an eLoran alliance with the UK while it pursues its own rollout of differential eLoran stations, due for completion in 2015.

The UK's Minister of Shipping Stephen Hammond said: "The deployment of seven eLoran stations follows the successful demonstration of eLoran as a resilient PNT technology and puts the UK at the forefront of developments to improve navigational safety."

Martin Bransby, Research & Radionavigation manager at the GLAs, also noted: "(This) announcement is a significant step towards improving safety at sea, but few vessels currently have



The prototype eLoran station already providing signals at Dover will get new equipment, and will be one of seven eLoran stations around the UK

receivers to take advantage of the new stations. We hope that the maritime industry will respond proactively to the new stations rollout by installing eLoran receivers on more vessels."

Charles Schue, president and CEO of UrsaNav, said: "We are very proud to be working with the General Lighthouse Authorities on this project, which is the

most advanced of its kind in the world."

"The number of enquiries we receive about eLoran and other resilient PNT technology continues to increase and we are now approached for further information on a daily basis. Much of this is testament to the example being set in the UK, raising awareness of the need for a robust backup to GPS."



## Rugged, Weatherproof & Seaworthy

Are you transmitting voice, video and data via satellite to offices onshore? By deploying our solutions, you can improve communications to your vessels at sea – even in extreme environments.

We offer industry-leading modems, dynamic SCPC-based managed bandwidth, frequency conversion and amplifier solutions that provide efficient, high-quality, reliable and scalable transport. Our advanced technologies facilitate fixed and on-the move communications – integrating with major stabilized antenna platforms, maintaining connectivity moving through different satellite footprints and enhancing communication capabilities at sea.

Contact us to learn more about how our rugged, weatherproof and seaworthy solutions can support your offshore satcom needs.

+1.480.333.2200  
sales@comtechefdata.com  
www.comtechefdata.com





# ECDIS training – the reality

**International regulations as well as varying demands by different stakeholders necessitate that shipping companies worldwide provide sufficient ECDIS training for their crew – and type-specific training is becoming one of the most important aspects of a seafarer's education. Julie Ann Chan spoke to officers from Peter Döhle Schiffahrts-KG about their real life experiences of ECDIS training**

According to the Manila amendments to the STCW Convention and Code, every officer sailing on a SOLAS vessel is required to complete ECDIS training in the next few years. Provisions for this transition time need to be taken according to individual national regulations, with respect to both generic as well as type-specific ECDIS training.

The large number of ECDIS-related accidents at sea are the result of a deficit in training, according to major accident reports. Crew sailing on ECDIS navigated vessels agree.

"It is very important to have proper training for all the instruments used on board," notes John Grecia from the Philippines, third officer for shipping company Peter Döhle, who himself is a trainer (navigation, seamanship etc.).

"Without the necessary education, navigators lack the confidence to properly use the instrument and are prone to make mistakes, especially since there is not much time for trial and error once the vessel is under way and little room for correcting errors."

"Operating an ECDIS without the proper knowledge can be very dangerous."

As a consequence of this training deficit, international regulations such as the Manila Amendments to the STCW set down competence requirements making ECDIS training mandatory for masters and officers, coming into effect at the beginning of 2017.

During the transition period however, there is no binding or even clear international standard. Different stakeholders have set down their own varying ECDIS

training regulations, with flag state administrations, port state control inspection requirements and vetting inspection regulations all requiring different levels of training to be completed before 2017.

For example, the MCA (Maritime and Coastguard Agency) in the UK stipulates that both generic and type-specific ECDIS training should be completed before 2017. In addition, training has to be approved by the MCA or an EU Member State and failure to provide the respective certification has been known to lead to refusal of recognition and imposition of sanctions.

The Australian Maritime Safety Authority (AMSA) has also issued a Marine Notice concerning Port State control inspections which says that port inspectors are expected to ensure that both generic and type-specific ECDIS training has been undertaken by the master and officers in charge of a navigational watch.

Today, ECDIS is a topic of concern for many shipping companies, especially the approval of ECDIS training by the different stakeholders as experts urge shipping companies to carefully assess their crew's need for training.

Comprehensive information about the relevant international regulations, set-down both by the flag state and the respective port states, is essential in order to perform the gap analysis necessary to ascertain the shipping companies' individual ECDIS training demands.

## Type-specific training

The regulations on ECDIS training and the requirements with regards to approval by different entities can be confusing, howev-

er, most stakeholders accept type-specific training that has been approved by the manufacturer.

According to the 2010 Manila Amendments, masters and officers on ships fitted with ECDIS need to fulfil basic competence requirements. This knowledge is conveyed through generic ECDIS training.

In addition, the Manila Amendments stipulate the need for crew to be 'familiarised' with safety and navigational equipment prior to boarding. This requirement is met by type-specific ECDIS training.

Accordingly, type-specific training should convey theoretical knowledge and also include practical exercises to familiarise crew with the ECDIS equipment they will use on board, including its back-up arrangements, sensors and related peripherals. Type-specific training can be conducted on-site in a (mobile) classroom or on board, but also online and via CBT.

ECDIS manufacturer Furuno has been offering type-specific ECDIS training for over two years.

In 2011, Furuno set up a type-specific ECDIS training course in Hamburg. Since then more than 250 trainees from around 30 companies, half of which are German, have successfully passed the final exam, certifying that the required competence has been obtained, and have been issued with their certificate.

Trainees come from all over the world to Hamburg for the ECDIS training course, although the largest groups of participants come from Ukraine, Russia and Poland.

Shipping company Peter Döhle has equipped the largest vessels in its consid-

erable fleet with Furuno ECDIS. Consequently, the shipping company sends its staff to Furuno for type-specific ECDIS training.

In order to participate in the type-specific training, officers need to have successfully completed a generic ECDIS training course. Furuno offers type-specific ECDIS training, but has a BSH-approved cooperation agreement with the Department of Maritime studies at Hochschule Warnemünde in order to provide customers with generic ECDIS training.

The combined generic and type-specific ECDIS training conducted by Furuno can be completed within five days on the premises at Hochschule Warnemünde, where all the relevant simulators and equipment is provided.

Although the shipping company has its own training facility in Manila, where type-specific training for Transas and Sperry Marine units is completed, it cooperates with a variety of different training providers, such as Furuno and Safebridge, for ECDIS from other manufacturers.

"Shipping companies should ensure the quality of the generic ECDIS training," says Simon Penz, service and training manager at Furuno in Germany.

"We have heard of training institutes in other parts of the world where generic training is offered for a price that suggests that the training is not conducted very thoroughly. I have been asked by customers if such training is good enough. Well, you will obtain a certificate for your officers but don't expect quality and don't expect that they know much afterwards."

"On the German market the average price for a generic ECDIS training is between €1000 and €1200. If you can get it for \$50 somewhere else, you must ask yourself where the difference is. However, although there are notable differences depending on where the generic training has been completed, we have never had a trainee yet that didn't pass our type-specific training."

In addition, it is helpful if the type-specific training is completed soon after the generic training, though in practice, this varies greatly.

Some trainees, says Mr Penz, have literally just finished the generic training a couple of days before, whereas others, especially the younger ones who complete their generic training at the Academy, may have a gap of several years.

However, he adds, relevant knowledge from the generic course, such as abbreviations etc, is refreshed during the Furuno training and any trainee with valid certification can complete the course successfully.

"My generic ECDIS training, which I completed in Bombay on a JRC ECDIS, was six months ago," notes Kaustubh Gawde



John Grecia from the Philippines is a third officer with shipping company Peter Döhle, and one of its designated ECDIS trainers



**DISCOVER THE ROUTE THAT IS  
BOTH SAFE AND EFFICIENT**



**KONGSBERG**

**THE FULL PICTURE**



#### **MARINE TRANSPORTATION**

#### **SCALABLE SOLUTIONS ENABLE YOU TO GET THE MOST FROM EVERY VOYAGE**

KONGSBERG gives you control of marine transportation, on vessels of all purposes and sizes. Scalable solutions with smart functionality enable you to increase efficiency, without ever compromising passenger safety, comfort or cargo condition. These solutions evolve over your vessel's lifetime, ensuring that you can always get the most from investment, time and conditions. Utilizing experience from all forms of sea operations, we provide you with certainty in all circumstances. For every aspect of every voyage, we provide you with THE FULL PICTURE.

[www.km.kongsberg.com](http://www.km.kongsberg.com)



from India, second officer at Döhle.

"I find that there is not such a big difference between the types of ECDIS that I have so far used. Most features are similar and only some, such as the symbols, the display and route planning, are different."

"I completed my generic ECDIS training three years ago," adds Mr Grecia, "but I still remember a lot."

"Ideally, the theoretical knowledge should be conveyed by the generic training and the type-specific training should focus more on the practical aspects and give us more hands-on experience."

Also, says Mr Penz, it is easier to train officers that have not been sailing on ECDIS previously.

"We have made the experience that trainees, who have used ECDIS for a while, often develop a certain automatism," he explained.

"Then, when they come to the training and we show them that operations can be done more efficiently, they often have trouble discarding the old work habit and adapting to a new routine, especially since two days is a very short timeframe to change automatic procedures. On the other hand, trainees with no previous experience can be guided into the most effective use of ECDIS much easier."

Mr Grecia agrees. "A lot of the information conveyed by the course was new for me as I have never sailed on an ECDIS vessel or attended a type-specific ECDIS training course, although I have been sailing on vessels that use ECS," he says.

"I am very pleased that I can use ECDIS correctly from the start. I found the training tremendously helpful and I think it saved me a lot of time and effort."

"Sometimes, when trainings are less thorough, you still need to go back to the manual again and again in order to double-check some information or correct some action. This, I think, will be obsolete with the Furuno ECDIS training."

## Two days, eight students and two trainers

Furuno type-specific ECDIS training is conducted by a former engineer, competent in both the technical and operational aspects of the equipment, as well as Mr Penz, who has more than 10 years' experience in marine software training.

The training is spread over two full days and offers a combination of theoretical and practical elements, containing roughly 60 per cent theory. The exact amount however, says Mr Penz, depends on the base knowledge of the respective trainees and is adjusted individually in each class.

Some companies send trainees that have previously worked with the equipment, so the course can be tailored to contain more practical exercises.

However, if theoretical knowledge is lacking, practical exercises are of very limited use, Mr Penz explains. In this case, the class focuses on building up the foundations on which practical experience can be gained.

"Ideally, the course should be a day longer to give some more time for practice," Mr Grecia emphasizes, and his colleague from India agrees.

"For a really thorough understanding and some solid practical experience an

additional day for more hands-on practice would be extremely helpful."

Mr Penz however notes that Furuno shortened the training from three days down to two on customers' requests.

In general, the training course consists of five to six trainees but can take a maximum of eight if needed. Some shipping companies, like Peter Döhle, wish to book a full course, but it is often difficult to align crew changes in Hamburg, Mr Penz notes, and most of the time students come from different companies. Furuno offers fixed dates for the courses, but is flexible if companies choose to book an entire training course.



Peter Döhle's largest vessels all have Furuno ECDIS installed

"I appreciate the size of the class," notes Mr Gawde.

"Small classes enable better interaction between trainees and instructors and during this training all questions were answered thoroughly. The most important thing is that each of us had their own computer to practise on."

The course starts with the presentation of the most relevant ECDIS functions. During the first day, trainees are familiarised with the ECDIS set up, manuals, documentation as well as chart handling. On the second day, students study sensors, alarms and fall back arrangements, learn how to update the software, use planning tools and finish off with monitoring the route plan.

The practical training is conducted not on the original ECDIS equipment but on PCs. However, in order to create a near real-life experience, Furuno supplies every trainee with the original input unit, the ECDIS control unit, that they will be using on board.

"It is most important that trainees learn to operate the control unit properly," says Mr Penz.

"The trainees need to get used to the individual buttons on the control unit and learn which function is assigned to which button. We have a maximum of eight trainees, so that each of them can practise on their own unit."

"In our experience the feel and touch is extremely important. The monitor on board, on the other hand, makes no big change to what we use during the training."

In terms of training material, Furuno uses its own paper documentation, which is issued by the Furuno training head-

quarters in Copenhagen and approved by DNV. As part of the company's overall crew training concept, Navskills, all ECDIS trainers are trained according to the same standards and Furuno training centres all over the world use uniform training materials and texts.

By conducting the training on original Furuno software, although not necessarily exactly the same version as that used later on board, the company aims to see trainees gain first-hand experience, which will enable them to more easily settle into the on board handling of the equipment.

Once the training has been completed successfully, trainees should be able to go

Döhle's largest vessels, but say they would have opted for more practical exercises if possible.

"I think I am very well-prepared by the course and will not need to do much additional work, although I used my spare time after the first day to go through the notes again as there is a lot of information squeezed into the two days," Mr Gawde says.

"The instruction we received was in-depth and comprised everything I think I need to know about navigating with a Furuno ECDIS," Mr Grecia adds.

"However, I am very pleased that we take home a comprehensive manual, which will allow me to check up later on board if I feel the need to."

His colleague from India adds that, "compared to other manuals I have come across the Furuno handout is very thoroughly prepared. However no manual can substitute a knowledgeable instructor. Luckily we have both!"

In terms of the topics covering the different functionalities of a Furuno ECDIS, the trainees are confident they have learnt what they need including backup arrangements, sensors and related peripherals.

"An ECDIS unit has more than 600 different functions, and although we could of course not cover every single one we have learned about all the ones that are important for navigators," Mr Grecia says.

Mr Gawde agrees: "I feel very confident that this course has enabled me to handle any Furuno ECDIS that I might come across on board. Especially the most important functions that are required for day-to-day work, which we have covered very thoroughly during the two days," he says.

In light of the demands created by the various national and international regulations on ECDIS training, the course has prepared the Peter Döhle officers for all eventualities.

"The course has prepared me for dealing with different regulations concerning ECDIS. We have learned about legal aspects and port state issues, what we need if we have an inspection and more," Mr Gawde explains.

"But the most useful aspect of the course was undoubtedly the practical experience, especially the route planning, monitoring and the exercises that prepared us for correcting the route on the ECDIS."

## From the classroom to the vessel

Having completed their training duties, the outlook of the students at the end of their type-specific ECDIS training course is thoroughly positive. The students are convinced they have learned how to operate a Furuno ECDIS safely.

"This course has taught me to recognise every button and know its underlying function," says Mr Grecia.

"But only day-to-day practise will show the exact benefit of this ECDIS training."

Indeed, most of them will leave the course and make their way to their new place of work.

"I step out of the Furuno training centre and onto the vessel," concludes Mr Grecia, "and I am sure that the training will enable me to know what I am supposed to do with the ECDIS and to do a safe and good job!"

directly on board and operate the real equipment, says Mr Penz.

## The future of navigation is paperless

Eight Peter Döhle trainees are discussing the last two days as their course comes to an end. A lot of information has been covered during the intense training sessions, allowing the students to gather practical experience, and Peter Döhle's officers feel positive about the new means of navigation.

"The future of navigation is paperless," says Mr Gawde. "And I learnt a lot about paperless navigation in the Furuno ECDIS training."

"Things become a lot easier with electronic navigation. Especially the manual corrections on the paper chart, which I found cumbersome, are now much easier."

"The disadvantage of an ECDIS is, of course, that it can fail any time and if no backup ECDIS is on board we have to resort to paper navigation again."

In addition to those mentioned by Mr Gawde, there are a number of other advantages to paperless navigation, notes Mr Grecia.

"In my opinion, a big plus of electronic navigation is that the updating is eating much less into my time. This allows me to concentrate on other important tasks at hand," he says.

"A CD and a few clicks are enough to ensure that I navigate according to the most up-to-date chart, whereas if I use paper charts I need to manually draw, erase and correct the route. It is much more complicated."

In general, the trainees feel well-prepared for their future tasks on board Peter





## Connections made simple.

Thanks to SeaAccess™ from Harris CapRock, it's never been easier to connect all the right people in all the right places.

Providing a range of communication solutions as wide as the world itself, Harris CapRock gives you the winning combination of global coverage for easy scalability and local resources for more responsive service. What's more, you won't find a broader portfolio of communication services anywhere. And if that weren't enough, we offer you more customizable, flexible technologies and services than any other service provider in the world.

From an ultra-compact 60 cm C-band solution enabling phone and texting service, to a high-end passenger solution providing over 50 Mbps to a single vessel, SeaAccess has the most reliable and comprehensive solutions for maritime communications.

Leveraging more than a dozen self-owned and -operated international teleports, customer support centers and a worldwide support team of more than 275 certified field technicians, we put it all together to deliver global communications you can always count on.

It's that simple.

[www.harriscaprock.com](http://www.harriscaprock.com)

**HARRIS**  
**CAPROCK**™

RELIABILITY NEVER REACHED SO FAR™



# Getting more from VDR

**VDR equipment is mandatory on a wide range of vessels, and records a vast array of information – but is the maritime industry getting the most out of the information that is provided? A report by OCIMF suggests that shipping companies could be doing more to maximise the benefits of VDR**

The Oil Companies International Marine Forum (OCIMF), a voluntary association of oil companies with an interest in the shipping of oil and gas, has issued a revised edition of its information paper on the use of Voyage Data Recorders (VDR), with a number of suggestions about how the maritime industry could improve its use of this technology.

In its *Recommendations on the Proactive Use of Voyage Data Recorder Information*, available from the OCIMF website, the association outlines a number of ways in which it believes that the shipping industry could make better use of the data collected.

Mandatory regulations concerning the carriage of VDR are contained in chapter V of the Safety of Navigation of the International Convention for the Safety of Life at Sea, 1974 (SOLAS).

These regulations state that passenger ships, and ships other than passenger ships of 3,000 gross tonnage and upwards, constructed on or after 1 July 2002 must carry voyage data recorders (VDRs) to assist in accident investigations (though certain type of ships are permitted to carry a simplified voyage data recorder, or S-VDR).

The specifications and types of data that must be collected by the equipment are set out in a set of performance standards, which state that the VDR should “continuously maintain sequential records of preselected data items relating to status and output of the ship’s equipment and command and control of the ship.”

These include Date and Time; Ship’s Position; Speed; Heading; Bridge Audio; Communications Audio; Radar data and Echo Sounder, as well as a range of other status information about various ship systems.

In theory, this information should be examined after any accident involving the ship, to, as IMO suggests, “permit subsequent analysis of factors surrounding an incident” and, hopefully, assist the industry at large in making sure that any mistakes that may have occurred can be prevented from happening again.

However, in its report OCIMF suggests VDR data is often found to be “incomplete” and notes that the potential benefits of the regulation are reduced as a result.

The association recommends that a greater level of attention is given to the collection and analysis of VDR data, and says that an opportunity to collect good data showing how the navigation of the ship is actually performed is being lost.

This data could be analysed to provide feedback learning to prevent incidents, and as such OCIMF is advocating that such data collection should be a normal part of safety management.

There is plenty of scope for improvement – figures from Intertanko, the International Association of Independent Tanker Owners, show that collisions, contacts or groundings have consistently

made up between 40 and 60 per cent of all tanker incidents each year since 1978, though this figure has remained at under 50 per cent in the last five years.

However, OCIMF notes that the proportion of oil spills caused by collisions and groundings is a higher proportion – approximately 64 per cent between 1974 and 2010, according to figures sourced from ITOFF, the International Tanker Owner Pollution Federation.

## Learning from aviation

One of the recommendations made by OCIMF in its report is to learn from the action taken by other industries in assessing accident prevention data, particularly aviation.

On aircraft, Flight Data Recorders, popularly known as the ‘black box’, perform a similar function to shipboard VDR systems, collecting a range of data related to the operation of all of the electronic systems on board as well as audio recordings of conversations between members of the flight team.

Various different versions of this technology have been in use on aeroplanes for more than 50 years, giving the aviation industry a significant head start when it comes to the application of this kind of data.

OCIMF’s report points to a number of different research projects that helped to establish a link between proactive analysis of voyage data (i.e. regular analysis taking place before any incident has occurred) and improved safety.

These research results prompted the International Civil Aviation Organisation (ICAO) to add an amendment to its own regulations to require that “an operator of an aeroplane of maximum certificated take-off weight in excess of 27,000kg shall establish and maintain a flight data analysis programme as part of its accident prevention and flight safety programme.”

OCIMF believes that the maritime industry should consider the possibility of taking a similar approach, noting in its report that while it took the aviation industry “some 20 to 30 years to fully appreciate and realise the potential benefits from routine analysis of FDR data ... similar benefits are available to the maritime industry.”

The software used in today’s VDR systems could be programmed to detect trends or significant events in the data that is being collected based on a defined set of parameters, and that the data could help to identify behaviours that could potentially lead to accidents before they occur.

For example, various combinations of vessel speed and heading could be combined with AIS (Automatic Identification System) and electronic chart data to illustrate the way a ship is being handled in particular circumstances, and compared with other ships to see if best practices are



VDR systems carry a wealth of information that shipping companies could use to analyse performance. Photo: Hervé Cozanet

being observed.

Identification of areas where improvements can be made will allow the company to provide additional training as required – and potentially avoid a costly accident in the future.

## Challenges

OCIMF does note that there are a number of challenges still to be overcome before more advanced use of VDR data might be seen as a viable option for the industry at large, both on the technology side and in terms of practical ship operations.

On the technology side, OCIMF’s report says that “some VDRs only receive data from a single unit of each type of equipment, such as one of the radars or one VHF set, when multiple units are installed.”

This is obviously a less than optimal arrangement, and OCIMF suggests that “consideration should be given to providing separate feeds to the VDR from each item of equipment.”

Also, the report points to the fact that since, in most cases, VDR data is not examined until an incident has occurred, “it is not uncommon to find that the VDR was not fully operational at the time of the incident and that some or all of the data was not recorded correctly.”

This problem of lost data can also be compounded by the fact that the performance standards for VDR only require data to be stored for 12 hours – older data may simply be overwritten and lost forever.

Another OCIMF recommendation is that shipping companies undertake “a central assessment of information from all ships in (the) fleet (to enable) the correlation of occurrences of events which may be associated, for example, with particular ports, Masters, pilots or weather conditions.”

However, the association notes that the 12-hour data storage limitation would also

hinder any efforts in this regard – if the information on the VDR was downloaded once the ship got to port, any voyage data older than 12 hours would be lost.

As such, OCIMF suggests that “the ‘standard’ VDR therefore does not lend itself to facilitate the implementation of comprehensive voyage assessment and analysis.”

In an era when digital data storage has become so cheap that a 1 terabyte disk drive can be bought at a retail computer store for less than \$100, this seems like an unnecessary limitation. If that data could be used to improve operations or prevent an accident it may also prove to be an expensive limitation.

OCIMF’s report offers its own potential solutions, noting that external units to integrate with the VDR and extend the data record to 90 days are available for approximately \$3,000, while modern sat-com systems could also allow companies to manage the transmission of 20-30 MB of daily data required to shore without breaking the bank.

The report also points out that “the regular download of data also has the benefit of providing a check that all data inputs are functioning correctly.”

OCIMF’s list of recommendations makes a lot of sense in terms of promoting a continuing cycle of improvement at a shipping company.

An improved level of data gathering and analysis will certainly help to identify any areas of weakness, allowing for corrective measures to be taken. Continued data analysis following these corrective measures can help to judge their effectiveness, or otherwise – allowing them to be refined and improved.

An iterative process like this would be sure to improve safety in shipping – exactly the reason why VDR technology was introduced in the first place. DS



# Digital Ship

## Conferences and Exhibitions

**Don't miss out on the premier events in the shipping industry:  
make a date in your diary for our forthcoming  
conferences and exhibitions**

**Digital Ship JAPAN**  
3 - 4 September 2013, Capitol Hotel Tokyu, Tokyo

**Digital Ship SINGAPORE**  
1 - 2 October 2013, Suntec, Singapore

**Digital Ship HONG KONG**  
30 - 31 October 2013, KITEC, Kowloon

**Digital Ship ATHENS**  
27 - 28 November 2013 Metropolitan Hotel, Athens

**Digital Ship HAMBURG**  
5 - 6 February 2014 , Magnushall, Hamburg

**Digital Ship SCANDINAVIA**  
5 - 6 March 2014 , Grieghallen, Bergen

**Digital Ship CYPRUS**  
9 - 10 April 2014, Grand Resort, Limassol

**Digital Ship KOREA**  
13 - 14 May 2014, BEXCO, Busan

**To enquire about Digital Ship Events,  
contact Youngsuk Park,  
E: [young@thedigitalship.com](mailto:young@thedigitalship.com),  
T: +44 20 7017 3409**

Digital Ship Limited  
2nd Floor, 2-5 Benjamin Street,  
London EC1M 5QL , UK  
Tel: +44 (0)20 7253 2700

[www.thedigitalship.com](http://www.thedigitalship.com)



# The importance of BNWAS

**As mandatory requirements for bridge navigational watch alarm systems (BNWAS) begin to be phased in over the next few years, recent accident reports have shown how this technology could offer a simple, yet effective way to prevent many maritime accidents**

The summer of 2013 marked the first anniversary of the introduction of mandatory fitting requirements for bridge navigational watch alarm systems (BNWAS) on certain types of vessels.

On vessels of 3000GT and above, all new and existing ships built on or after 1 July 2002, in accordance with the amendments made to SOLAS Chapter V Regulation 19 through the IMO's Marine Safety Committee resolution 282(86), were required to have a system installed by 1 July 2012.

A BNWAS is an onboard alerting system which monitors bridge activity to detect operator incapacity.

An OOW is required to either reset the system regularly or operate navigation equipment within certain time intervals. If the system is not reset as required, visual and audible alarms are generated on the bridge.

If the OOW does not respond, the alarm is transferred to other areas of the vessel to notify crew members of the OOW's incapacity.

The potential safety benefits of such a system are obvious, in making sure that an active and attentive watchkeeper is present on the bridge at all times – and the potential consequences of not having this technology available is clearly illustrated in some recent accident investigation reports.

The excellent reports produced by the UK's Marine Accident Investigation Branch (MAIB) have recently included the cases of the vessels Coastal Isle (Marine Casualty Report No 9/2013) and Beaumont (Report No 14/2013), both of which were involved in groundings that could have been prevented if an operational BNWAS had been in place.

## Coastal Isle

As reported by MAIB, on 2 July 2012, while on passage from Belfast to Greenock, the 89m feeder container vessel Coastal Isle ran aground on the Island of



*The Coastal Isle also ran aground, on the island of Bute. Photo: MAIB*

Bute. The grounding resulted in significant damage to the forward section of the vessel, including minor breaches to the forward ballast tanks.

At about 0240 the chief officer, who was on watch at the time, had dismissed the ordinary seaman who was on lookout duties; shortly afterwards he left the bridge himself. The bridge was unmanned from that time until the vessel grounded at 0443. The chief officer was subsequently found in his cabin.

The vessel had two independent bridge watch alarms, which should have warned of the fact that the bridge was not manned for this period, but neither of them was in use at the time. The power to the voyage data recorder had also been switched off nearly two weeks before the accident.

The prescribed performance standard for BNWAS requires that it should have three modes of operation: 'manual ON' (in operation constantly), 'manual OFF' (does not operate under any circumstances) and 'automatic' activation based on input from the vessel's heading or track control system.

It is also required that access to the system be password protected, with the password available to only the master.

The MAIB report notes that Coastal Isle had installed a new BNWAS system from Martek Marine on 14 June 2012, called Navgard, which complied with the BNWAS requirement. However, during installation, the terminals for connecting to the autopilot system could not be identified and therefore the BNWAS could not be set up to work in the automatic mode.

The master on board at the time of the accident did not know how to switch on or set the system. His predecessor had received instruction from Martek Marine technicians when the system was commissioned, but these had not been passed on.

After successful commissioning, the system was not turned on and the original, default password set by Martek Marine was never changed.



*The Beaumont ran aground on Cabo Negro. Photo MAIB*

The MAIB carried out function tests of the system and established that it worked correctly in both the 'manual ON' mode and the 'manual OFF' mode.

Coastal Isle was originally fitted with a watch alarm that could be set to give an alarm after 1.5min, 3min or 12min of dormant time.

MAIB notes that it was a simple on/off system that had no facility to operate automatically. When the system was switched on, the watch alarm sounded on the bridge after the set dormant time; if not cancelled within a certain time, the general alarm would sound.

At the time of the accident, this system, although fully functional, was switched off. There were no written instructions on board concerning its use; it was left to the watchkeepers to use it at their discretion.

As MAIB describes it, after the lookout was dismissed, the chief officer was alone on the bridge and he could have then switched on the vessel's original watch alarm as protection against the hazards of single watchkeeping; however, he chose not to use it.

In addition, the new BNWAS compliant watch alarm, though functional, was not switched on after it was installed.

Both watch alarms were capable of warning the rest of the crew if the bridge watchkeeper was absent or asleep; MAIB says that, had either been in use, this accident probably would not have happened.

MAIB also notes that it was not possible to determine exactly why the original watch alarm was not used, but it was considered most likely that it was used so infrequently it had been forgotten.

In light of these circumstances the report's conclusion is that the Coastal Isle ran aground because there was no one on the bridge to correct the vessel's heading when it was set off course, and had either

of the watch alarms on the bridge been switched on, the absence of the bridge watchkeepers would have been detected and this accident could have been avoided.

To try and stop this kind of incident reoccurring the vessel operators have now connected the new BNWAS to the autopilot system and set it up so that the password is available only in offices on shore.

## Beaumont

The lack of an operational BNWAS was also a key factor in the grounding of the 2545gt dry cargo vessel Beaumont, which ran aground on Cabo Negro on the north Spanish coast while on passage from La Coruña to Avilés at 0308 UTC on 12 December 2012.

According to MAIB's report on the incident, Beaumont was sailing with the minimum permitted safe manning of six. The vessel's two navigating officers, the master and chief officer, shared navigational watches equally, with the master on watch between 0600 – 1200 and 1800 – 2400.

Following his handover to the master the chief officer went below and, at around 1900, went to bed. By that time the deckhands had completed their preparation of the cargo holds and at about 1930 the master's night lookout (deckhand 1) joined him on the bridge.

During his watch the master monitored Beaumont's progress along the navigational track using an electronic chart system (ECS), and he plotted the vessel's position on the paper chart used for navigation every two hours. The vessel's course was maintained by an autopilot.

Two radars, one of which was set on the 6 mile range scale and the other on the 12 mile range, were operational but no guard zones had been set. An onboard echo sounder was not switched on, nor, crucially, was the installed BNWAS.



At about 0055, MAIB notes that the chief officer was required to call the Avilés pilot to provide information about Beaumont's expected arrival time, but it slipped his mind.

Around 0130, the chief officer, like the master before him, sent his lookout below to rest in the mess deck. When deckhand 2 left the bridge, the chief officer was seated on what MAIB describes as a "comfortable port side bridge chair" and the starboard bridge wing door was about 75mm ajar.

At 0308, Beaumont ran aground on Cabo Negro, at a speed of 11.5 knots.

Following the accident, MAIB reports that the chief officer recalled attempting to call the Avilés pilot at 0155 and again shortly after 0200, receiving no reply, though no calls from Beaumont were heard by Avilés pilot station.

The vessel's position at 0200 was recorded on the chart, and the report says that the chief officer thought he fell asleep shortly after 0200.

Following the grounding the master ran to the bridge, where he found the chief officer still asleep. He roused him and simultaneously placed the engine control to neutral.

The chief officer awoke confused and was shocked to find that the ship was aground, though MAIB notes that there was no indication that the chief officer was under the influence of alcohol or any other narcotic.

MAIB's analysis of the incident suggested that the chief officer fell asleep on



*The BNWAS control panel on the Beaumont – the system was not switched on. Photo: MAIB*

watch due to lack of stimulation and probable fatigue.

Lack of stimulation occurred as a result of being alone in a quiet, cosy bridge environment where none of the available safeguards had been utilised. The chief officer's fatigue would appear to be a result of the change to his pattern of work and rest on the day preceding the grounding.

MAIB suggests that it is likely that the chief officer fell asleep within two hours of taking over the navigational watch from the master.

Situations such as these precisely demonstrate the reasoning behind the

introduction of BNWAS, a simple technology that should have quickly identified the fact that there was nobody on the bridge keeping an attentive watch.

While Beaumont was equipped with a BNWAS, specifically designed and fitted to alert or draw attention to an incapacitated OOW, the vessel's managers did not specifically require the BNWAS to be in operation at sea.

Consequently, as MAIB notes, it was seldom, if ever, used by the bridge watchkeepers.

In addition to BNWAS, MAIB's analysis points to the other navigational aids fitted on the ship also featured with alarm functions that, if used effectively, could have provided additional stimulation to prevent the chief officer from falling asleep.

Both radars had guard zone facilities which could have been set to alarm if targets such as land or vessels came within a predetermined range.

The echo sounder, which the SMS stipulated was to be used, was not switched on. It too had an alarm function which could have been set to activate if the under keel clearance reduced to less than a predetermined setting, as it would have done as the vessel approached the shore.

The ECS's cross-track error facility detected when the vessel strayed more than 1 cable distance from her planned route, prompting audible and visual alarms. The ECS alarm was sounding and flashing at the time of the accident but the volume had been adjusted to

render it barely audible.

MAIB's report concludes that, in light of these facts, the vessel operator should have required the appropriate use of navigational aids and ensured that the BNWAS was operational at all times while at sea, to ensure that all the available safeguards for maintaining a proper watch were in place.

Consequently, the shipping company has now revised its SMS to require the use of BNWAS when vessels are underway and, where technically possible, linked BNWAS systems with autopilots so that the watch keeping alarm is operational whenever the autopilot is in use.

## Conclusions

The two MAIB reports described above cover just two incidents within six months of each other where the application of simple technology systems could have prevented costly accidents.

There are undoubtedly many more similar cases around the world that would further demonstrate the benefit of having a system like BNWAS installed on board a vessel.

By this time next year, in July 2014, all cargo vessels over 150 gt will be required to have a BNWAS in place by the time they are presented for their next annual survey.

Hopefully, more widespread use of the technology will prove to be a significant step forward in reducing the frequency of accidents such as those that occurred to the Beaumont and the Coastal Isle. **DS**

# I can see CLEARLY now!

With AWT's latest BVS onboard weather system, ship's masters can now benefit from high resolution weather data.

[www.awtworldwide.com](http://www.awtworldwide.com)

# AWT

The Fleet Optimisation Experts



# The case for early ECDIS

**While the mandatory ECDIS implementation schedule is still only in its earliest stages, an increasing number of shipping companies are getting in early and installing the equipment ahead of the deadline. Two shipping companies in Italy and India told *Digital Ship* about why they have moved to paperless navigation**

Italian shipping company Navigazione Montanari currently owns and operates a fleet of 28 vessels, comprising nine Aframax tankers and 19 oil / chemical tankers.

While most of the fleet trades on a worldwide basis, a few are trading within the Mediterranean.

The company is currently in the process of rolling out ECDIS to its entire fleet of ships, and reports some significant benefits of using the technology via its experiences on the vessels installed so far.

"The biggest advantage of having ENC's is the additional and un-interrupted time available to the navigator for keeping a safe lookout without the need of visiting separate chart rooms for plotting vessel positions on paper charts," explained Capt Savio Fernandes, marine superintendent at Navigazione Montanari.

"This delegation to an electronic system allows navigating officers to focus on other critical tasks, i.e. collision risk assessment and avoidance. This automatically enhances navigational safety."

"Six of our Aframax and oil / chemical vessels are fitted with the Transas Navi Sailor 4000 ECDIS, on these vessels it is used for primary navigation. As per our planned schedule we intend to install the Transas ECDIS on our entire fleet."

The company's decision to adopt ECDIS has been driven by a need to keep up to date with the latest navigational technologies, to promote the highest possible level of safety, according to Capt Fernandes.

He welcomes the mandatory implementation of ECDIS as a positive step from the IMO in enhancing navigational safety, and believes it will indirectly improve the performance of watchkeeping officers and encourage safe navigational practices.

"ECDIS and ENC's are the future of modern technology aided navigational methods, leading to more safer voyages and replacing the old conventional methods. This was the foregoing thought for deciding to adopt ECDIS and ENC's," he said.

"Our objective was to identify and implement the most suitable ECDIS for our fleet. While making the transition to electronic navigation we had to ensure that the complete benefits of ENC's were available on a reliable and stable system."

"Our extensive market research helped convince us that Transas were the market leaders with very few problems experienced with the systems even when ECDIS was not made mandatory. We had to however first ensure that Transas was also included in the list of flag-state approved ECDIS manufacturers."

Capt Fernandes notes that making this switch also introduced significant challenges for the company in training its seagoing staff, most of whom had never used ECDIS.

"As per our risk assessment and management of change procedures, any imple-

mentation of new equipment and procedures is always accompanied with the training requirements for our staff so as to experience and utilise the full potential of changes incorporated," he said.

"However, easy availability of Transas training centres both in Italy and India, where all our staff is employed from, helped us resolve this issue. Furthermore, the user friendly interfaces used were an additional advantage. The Transas training centres help us in complying with both generic and type specific training under a single schedule."

"As the Transas ECDIS was installed on board nine of our vessels prior to yard delivery, our officers were imparted with the ECDIS training in the shipyard itself. Subsequent staff were trained in shore based training centres which were equipped with Transas Simulators as their training equipment. Effectiveness of the training carried out was verified during ship visits by our Marine Superintendents."

Capt Fernandes says that the company's goal of improving navigational safety has been achieved on the vessels where it has implemented ECDIS to date, and points to some specific examples of where the technology has been of benefit in this regard.

"When a radar image is overlaid on top of an ENC chart image, uncharted hazards such as other ships are shown on the same display as charted hazards such as shoals relative to the ship's position. This is a significant help for the watchkeeper in assessing the overall traffic situation in relation to navigational hazards. In addition, a radar image of a fixed object can be compared with the same charted object to confirm the integrity of the position and heading sensors," he explained.

"Automatic Identification System (AIS) integration assists in identifying other ships in the vicinity, plus additional information that may be available from electronic aids to navigation such as virtual buoyage."

"Also, NAVTEX alerts can be received directly on the ECDIS display thus alerting the OOW, and various navigational alarms incorporated in the ECDIS help in alerting the OOW thereby enhancing navigational safety."

From a business point of view, Capt Fernandes also notes that the switch to ECDIS has led to a reduction in costs with regard to navigational charts.

"Changing over to ECDIS and ENC's has definitely decreased our chart expenditures, especially when we had to make available paper charts at ports where an authorised chart supplier was not available, thereby incurring considerable amounts in logistics," he explained.

"Another important fact is that we are saving a big amount of working hours

on board."

"The Pay-as-you-sail (method of licensing also) appears to be a welcome idea to help reduce costs of procuring charts. The same shall be considered for the future, beginning with a trial period to confirm our usage costs reductions. We are already applying it on retrofits."

## Five Star Shipping

Like Navigazione Montanari, Five Star Shipping Company, based in Mumbai, India, operates mainly on a global basis, and has also decided to equip its vessels with ECDIS technology.

The company operates a fleet of seven bulk carriers consisting of cape size and panamax size vessels. Vessels are on long term charter, mainly spot trading, carrying grain, coal, iron ore and fertilizers, and cover routes worldwide.

One of the most important drivers for Five Star to press ahead with implementa-



The Five Star Shipping vessel Maha Anosha has dual ECDIS on board

tion of ECDIS on its newly delivered vessels ahead of the mandatory carriage requirement was the equipment's ability to streamline the chart updating process, as Kayhan J Irani, deputy general manager at Five Star Shipping Company, explains.

"Although ECDIS was not mandatory, during our first yard delivery in 2009 we felt that there was a need to upgrade ourselves with the latest technology," he told us, "and so we opted to install ECDIS as primary and secondary means of navigation on our vessels."

"The main business objective was to get up-to-date charts on the go rather than having to procure paper charts from port."

"With last minute fixtures, ENC charts can be procured at a click of a button anywhere in the world and also can be updated instantly."

Five Star has also examined the potential benefits of Pay As You Sail licensing, and Mr Irani notes that for his company, with vessels tramping all over the world on unpredictable trade patterns, it does seem to make economic sense, though savings are dependent on the actual voyage routes.

Five Star's ships have been equipped with dual ECDIS systems, to allow them to sail paperless. Similar to Navigazione Montanari, the company also opted for

Transas Navi Sailor 4000 as its primary source of navigation.

"We chose Transas as they are one of the leading ECDIS manufacturers with a vast expertise and customer experience in ECDIS installation and use, which would definitely benefit us," Mr Irani explained.

"Also, since Transas has an office in Singapore where our ships normally bunker, it would be a proper hub for maintenance and upgrade that would be economical."

In addition to its improved chart updating capabilities, Mr Irani has also seen that the ECDIS equipment installed on the company's ships has offered a range of safety and operational benefits when it comes to managing vessel voyages.

"ECDIS and ENC's have improved navigational safety and risk management as the vessel is monitored in real time and various alarms warn the navigating officers before encountering any navigational hazards," he said.

"Voyage planning using ECDIS has become more easy and flexible. Additional information can be obtained easily at the click of a button."

"The Radar and AIS target overlay on ECDIS makes navigation easier in coastal and restricted waters. The tangible benefit of ECDIS is mainly the anti-grounding features and at any given instant tells the navigator 'where you are and how far you can safely go'."

In terms of training, Five Star officers undertake both the standard IMO generic ECDIS course as well as type specific training before being allowed to operate the systems on board the company's ships.

"Training is very important in safe handling and use of ECDIS, and all our masters and deck officers are trained on IMO model 1.27 course from an approved institute," said Mr Irani.

"Familiarisation on Transas ECDIS is also done. Since all our vessels have the same type of ECDIS, the officers in rotation are quite familiar with the system. We also send the officers to institutes which have the same ECDIS so that they are more familiar and trained with the equipment and the functions."

"In addition we have ECDIS familiarisation training on board which forms part of our shipboard procedure manual."

In short, Mr Irani believes that implementing ECDIS has benefitted the business in a variety of ways - through efficient route and voyage planning, better chart management, an improved display of navigational information and a higher level of integration between bridge systems.

"Our goal to increase the safety of navigation and reduce the work load of officers on board is being achieved by ECDIS," he said.



**Marine & Offshore**

**Ufi**  
Approved Event

[www.kormarine.com](http://www.kormarine.com)

**ONLINE  
Pre-Registration  
OPEN!**

**DEADLINE ▶ Oct. 15 (Tue)**

**THINK  
HOW TO  
MOVE  
AHEAD**

# KORMARINE 2013

**International Marine, Shipbuilding & Offshore Exhibition  
OCT 22 - 25 / BEXCO, BUSAN, KOREA**

## CONCURRENT EVENT

- KORMARINE CONFERENCE 2013
- BALLAST 2013
- International Shipbuilding & Marine & Offshore Seminar

## KORMARINE CONFERENCE 2013

- Date | Oct. 23(Wed)~24(Thu), 2013
- Venue | Rm.321~326, Exhibitions Center 2, BEXCO
- Registration | [www.kormarineconference.org](http://www.kormarineconference.org)

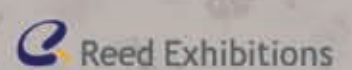
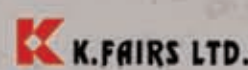
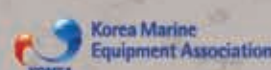
## REGISTRATION FEE

Categories	Early-bird Until September 15, 2013	Late/ Onsite After September 15, 2013
Full Registration	US \$ 200	US \$ 250
One Day Pass	US \$ 150	US \$ 150

## SECRETARIAT OF KORMARINE 2013

K.Fairs Ltd. | E-mail. [kormarine@kfairs.com](mailto:kormarine@kfairs.com) Tel. +82-2-555-7153 Fax. +82-2-556-9474

Organized by





# The future of differential positioning services?

**Satellite-based augmentation of positioning information has begun to become available across many parts of the world in the last couple of decades – perhaps the time is right for the maritime industry to adopt this technology, writes Dr Andy Norris**

It is interesting to see that the US Coast Guard is analysing the current and future user needs of the US Nationwide Differential GPS service, as recently announced in the Federal Register.

Differential services are recognised by IMO, with performance standards for DGPS and DGLONASS receivers being agreed in 2000.

Part of the good thinking on the maritime DGPS and DGLONASS concept was to choose the 300 kHz LF band for the transmission of the differential signals.

This band was being used by radio beacons in the days before full GNSS coverage, enabling navigators to obtain directional fixes on their transmissions.

The reuse of this band considerably

SBAS has been designed to be able to provide the extremely high integrity needed in the aviation field, even allowing it to be used as the position fix for the auto-landing of passenger aircraft, albeit in good conditions.

However, such use of SBAS takes particular benefit from the very clear view that aircraft generally have of the sky in all phases of the flight. It means that even at high latitudes, geostationary satellites remain in view, except in very special circumstances, such as when landing close to a mountainous area.

Ships also normally have a good view of the sky. But this is not always the case, for instance, when entering some ports and when operating close to high terrain.

In contrast, the one kilometre wavelength of the 300 kHz maritime GBAS signal enables it to negotiate obstacles particularly well, generally resulting in an extremely reliable differential signal even when there is no line-of-sight.

In fact, many type approved GNSS receivers installed on vessels today are SBAS enabled. This is because the facility is embedded into most receiver chips manufactured today – although it is not always activated on particular receivers.

## A case to change to SBAS?

From a performance point of view the existing maritime differential service is certainly excellent but it does come at a cost.

In the US alone there are 49 coastal DGPS stations, each needing an LF transmitter and associated mast, in addition to other equipment, such as that needed to ascertain the current positional errors.

SBAS also monitors position from ground-based stations but they do not need the large additional expense of an LF transmitter. Fewer stations are required because they work as an integrated group. For instance, WAAS uses only 25 to give coverage over the whole of the United States.

Furthermore, the satellite service is not hugely expensive to operate. This is evidenced by the fact that the first satellite-based differential systems that came into being in the 1990s were commercial services offering reasonable subscriber rates to a relatively small number of specialist users.

The user equipment costs for SBAS are also lower, just needing a relatively standard GNSS receiver and not needing specialist hardware to additionally receive the differential signal.

With this in mind, maybe an answer for the future of maritime services is to go for a hybrid implementation. In SBAS-covered areas and where the augmentation signal is not obscured by the terrain,

coastal states would perhaps not normally provide GBAS signals.

In other areas, GBAS coverage would be maintained as today.

IMO could issue revised standards for new GNSS receivers, mandating an SBAS compatibility with defined minimum features. In SBAS coverage areas this would give differential standards of positional accuracy and integrity to all ships fitted with the new equipment, without needing a separate differential receiver.

For coastal areas that are within SBAS coverage but have known issues with line-of-sight to the differential signal, the coastal state would need to consider maintaining an LF differential beacon and, as today, vessels could opt to carry a differential receiver to access them.

Where SBAS is unavailable, either due to fundamental coverage limitations or because of screening of the SBAS geostationary satellite, the receiver would appropriately alert the user.

## Potential benefits

By adopting such a strategy all ships would eventually have a differential capability in SBAS coverage areas, giving the benefits of differential GNSS in those areas to all vessels – and not just those fitted with a GBAS differential receiver.

Since the mandatory requirements would probably only apply to the fitment of new receivers, the benefits would effectively come at no cost to shipowners, as well as giving much reduced costs for many coastal states.

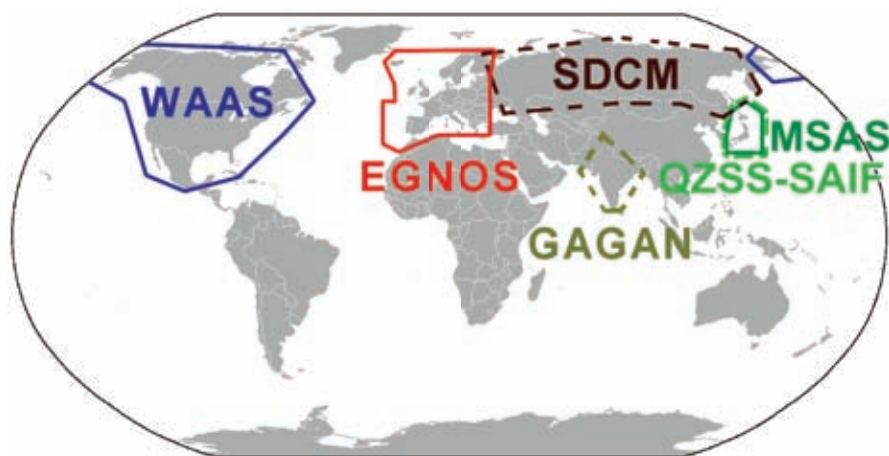
Because of the potential cost savings to governments, not least by recognising the common requirements for maritime and aviation, SOLAS adoption of SBAS may also serve to increase its coverage into other national areas.

If adopted, great care would need to be taken in the siting of GNSS antennas on vessels in order to optimise the reception of the SBAS differential signal.

Also, better consideration of the integrated use of two or more GNSS receivers should be made to ensure that the primary position fix at any one time was from a receiver whose antenna was not masked from receiving the SBAS signal by the vessel's infrastructure.

Of course, this would not help when the satellite transmitting the SBAS signal is masked by the surrounding geography of the area.

Solely from a performance point of view the retention of GBAS is certainly favoured but by adopting SBAS it potentially provides substantial savings in overall cost and an increased uptake in its use. **DS**



SBAS is already in use across the globe. Photo: Persimplex

Such systems are not a mandatory fit, except on SOLAS High Speed Craft. It is difficult to estimate the number of vessels worldwide that actually have systems on board, although it is far from being uncommon.

DGPS initially came about because Selective Availability was being applied to the GPS signal, purposefully limiting its accuracy for civilian users to about 100 metres.

However, a ground station with known position could readily determine the particular range offset being applied by SA to the signal of each satellite and transmit this information to users' DGPS receivers, enabling an automatic correction of their GPS position.

This considerably improved the accuracy of GPS – to generally better than 5 metres. But in 2000 the US abandoned the application of SA, allowing a modern stand-alone GPS receiver to have an accuracy typically rather better than 10 metres.

With the removal of SA, differential systems started to achieve accuracies of around 2 metres, which today can be considerably bettered by specialist systems.

By 2000, the other benefits of DGPS were also being appreciated, not least in providing greater integrity to positioning.

Ground stations could rapidly identify malfunctioning satellites and prevent receivers from using data from these in their calculation of position. Improved warnings of possible positional errors could be given to the user.

In addition, differential systems would automatically compensate for inaccuracies caused by anomalous atmospheric propagation, at least for receivers relatively close to the ground station.

helped the cost effective implementation of differential services, as the new system used the same coastal masts and other equipment.

## Satellite based augmentation systems

In parallel with conventional ground-based differential systems, the idea of using satellites to broadcast differential and integrity information was also being developed during the 1990s.

This concept is now often termed satellite-based augmentation systems (SBAS) – with ground based augmentation systems (GBAS) becoming a group name for systems such as DGPS and DGLONASS.

Ground stations are still used by SBAS to ascertain positional corrections but the offset and integrity data is sent to users' receivers by satellite.

Geostationary satellites are typically used for this on a carrier frequency identical to that of the main GNSS signal, so that they can be picked-up by the same antenna and receiver as used for the primary positioning service.

In North America the specific system is known as the Wide Area Augmentation System, WAAS. Europe's system is known as the European Geostationary Navigation Overlay Service, EGNOS. Similar systems are available or under development in other parts of the world, including Japan, China and India.

The accuracy of such systems is typically quoted as 7 metres but, in practice, is generally rather better.

Although they have been particularly attractive to the requirements of the aviation sector, they have not been officially adopted for SOLAS use.

This initially appears surprising since



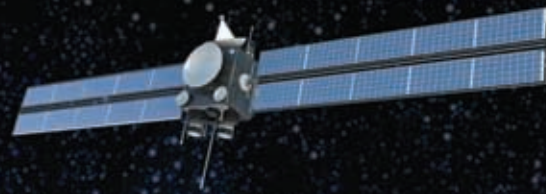
Dr Andy Norris has been well-known in the maritime navigation industry for a number of years. He has spent much of his time managing high-tech navigation companies but now he is working on broader issues within the navigational world, providing both technical and business consultancy to the industry,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





THE NEW STANDARD OF MARITIME COMMUNICATION

www.kns-kr.com



# High Throughput Satellites

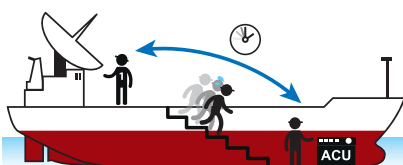
KNS, a market leader in design and integration of marine communication systems introduces the Next Generation Antenna designed for HIGH THROUGHPUT SATELLITES and KA-BAND beams.



SuperTrack Z10MK3

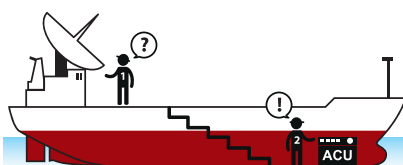
## KNS WIRELESS CONTROL SYSTEM

**Time Consuming and Inefficient**



One Person

**Labor Costs Increase and Efficiency Reduced**



Two Person

**More Control, Better Efficiency and Reduced Cost**



One Person with Bluetooth

### WIRELESS ACU CONTROL SYSTEM

The new MK3 antennas are accessible via Bluetooth technology. Connectivity via Bluetooth eliminates the time and energy for a technician to run below deck and make adjustments to the ACU and run back above deck to check all settings. KNS MK3 antennas can be connected via wireless Bluetooth technology up to about 100 meters from the radome. The KNS Self Diagnostic mode can be selected from the paired computer to check all settings and movements of the antenna after service has been conducted through a wireless Bluetooth connection.



# DESIGN FOR THE FUTURE

High performance Ku-band system prepared for rapid Ka-band conversion

Aptus software for ease of control and system monitoring

Three year global warranty

Global service and support network

Available from stock

From installation to operation, consider yourself connected to better RF performance, better reliability, better warranty, better ideas and higher surfing speed.

The all new v100GX is a high performance, 1m Ku- to Ka-Band convertible VSAT antenna system. Providing world class performance in a simple to convert package, ready for the future. Experience the latest designs in VSAT antenna technology with Intellian.



Learn more about the Intellian v100GX at <http://www.intelliantech.com>

**Intellian®**