Digital Ship
November 2013
www.thedigitalship.com

Good news and bad news on 2014 Inmarsat pricing

There has been either good news or bad news for Inmarsat's customer base this month depending on your choice of service, as the company announces a freeze in FleetBroadband costs but a significant hike in its E&E pricing

Inmarsat has pledged to freeze its FleetBroadband pricing for next year, stating that there will be no price rises on the service up to the end of 2014. However, the company has also introduced plans to make a significant increase in the cost of its other E&E services, which will rise by 48 per cent.

Inmarsat Maritime president Frank Coles announced the FleetBroadband price freeze during a presentation at the *Digital Ship Singapore 2013* conference at the Suntec Singapore International Convention & Exhibition Centre in early October.

Mr Coles said at the conference that he could "categorically state that we (are) telling our channel that there will be no changes in the FleetBroadband pricing for 2014 - where we have over 38,000 SIMs active today."

However, this commitment to FleetBroadband customers was soon followed by news that the company had chosen to follow a different strategy on its existing and evolved (E&E) services and is set to increase prices by almost half in the new year.

Inmarsat distribution partners have begun communicating with customers to explain that the company will introduce a planned price increase on E&E services, with prices set to go up by 48 per cent as of 1st of January 2014 on services for 2.4 kbps Fax and Data; 9.6 kbps Fax and Data; ISDN/HSD (64 kbps); MPDS; and F77 128 kbps ISDN.

Inmarsat has decided to raise its E&E prices but hold FleetBroadband at current levels

This price increase is likely to impact a significant number of Inmarsat's maritime customers, with an estimated number of approximately 60,000 E&E terminals in service today, compared with the 38,000 active FleetBroadband terminals mentioned by Mr Coles.

In response to a request for confirmation of the price increase from *Digital Ship*, Inmarsat issued a statement to confirm the move and suggested that the change in pricing was a result of a reducing number of users on its older satellite networks needing to cover the costs of maintaining those services.

"In close consultation and broad agreement with its partners, Inmarsat recently completed an annual review of its wholesale pricing strategy. Following this, the company confirmed to partners that FleetBroadband wholesale pricing will remain at its current levels and that the company is investing further in new technologies to support Global Maritime Distress and Safety System (GMDSS) services," the statement said.

"Inmarsat also advised partners that, owing to the rate of customer migration from legacy E&E services to FleetBroadband and XpressLink, which continued to grow significantly, Inmarsat had carefully considered the financial impact of maintaining legacy E&E services for a declining customer base. As a result, it was planning to align the value of the data services on its Fleet77 services with that of the increasingly popular FleetBroadband and XpressLink."

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Digital Ship

Vol 14 No 3

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DIGITAL SHIP SUBSCRIPTIONS
€180 per year for 10 issues
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+44 (0)20 7017 3407

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KITEC, Kowloon
30-31 October 2013

DIGITAL SHIP ATHENS
Metropolitan Hotel, Athens
27-28 November 2013

DIGITAL SHIP HAMBURG
MagnusHall, Hamburg
5-6 February 2014

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

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"Due to its contractual obligations, Inmarsat cannot confirm any specific figures in relation to this alignment."

Inmarsat pricing has been a controversial issue for the company over the last two years, with two rounds of price restructuring causing something of a customer backlash in places, particularly from the Association of Maritime Managers in Information Technology and Communications (AMMITEC) in Greece, which published an open letter marking its strong objections to the move.

The changes introduced during 2012 and 2013 included reductions in bulk plans on FleetBroadband, but increases in the price of Pay As You Go and legacy E&E services.

Despite the controversy, Inmarsat's published revenues from maritime since the price changes have seen consistent growth – which would suggest that, even in the face of these industry objections, shipping companies have continued to use Inmarsat services at the new price levels, and the firm has still seen steady growth in activations of FleetBroadband terminals.

Fourth GX satellite

In addition to its pricing manoeuvres October also saw Inmarsat announce that it had triggered an option to purchase a fourth Inmarsat-5 satellite, under its existing contract with Boeing Satellite Systems International.

Boeing will immediately begin construction of the fourth Inmarsat-5 satellite, the Ka-band generation of the network which will be used to provide Global Xpress services, with the total cost of the option and certain related expenditure expected to be between US$220m and US$250m.

The programme schedule from Boeing has a satellite delivery date of mid-2016, and Inmarsat says that the fourth Inmarsat-5 satellite will have a dual strategic role.

Initially the satellite will serve to provide an early available spare in what the company calls "the unlikely event of a launch failure of any of the first three Inmarsat-5 satellites."

A fourth I-5 has now been ordered. Photo: Boeing

Having another satellite constructed and ready would allow Inmarsat to more rapidly replace any spacecraft lost in a launch failure and minimise any delay in establishing the three-satellite network required to achieve global service for Global Xpress (GX).

Inmarsat believes that this measure of redundancy in its launch programme could be expected to "encourage further commitments to GX."

In the event that the fourth satellite is required as a spare in this way, the company notes that the impact on total capital expenditure over the period to 2016 will be broadly neutral as the insurance proceeds from any loss would be expected to cover the construction, launch and insurance costs for the fourth satellite.

In the event the satellite is not required as a launch spare, Inmarsat says it is developing "an incremental business case" to determine how the fourth satellite might be launched at a later date to increase capacity and enhance network coverage.

"Our confidence in the Global Xpress programme and our target market opportunities continues to grow. We have signed multiple pre-sale agreements and received significant expressions of interest, some of which are tied to the completion of global coverage with three satellites," said Rupert Pearce, Inmarsat's chief executive officer.

"This has encouraged us to not only move to a strategy to physically insure our global service date with a fourth satellite, but also to consider incremental opportunities that have emerged and could drive enhanced returns via the launch of a fourth satellite."

"(The decision) reflects the fact that we are already close to incremental opportunities that could justify a fourth satellite, but our highest priority is our coming launch campaign and we will take time to develop these plans in the coming year. In the meantime, our target markets can now be confident of our commitment to the GX global service delivery schedule."

Inmarsat-B extended

Inmarsat's head of maritime safety services, Peter Blackhurst, also announced at the *Digital Ship Singapore 2013* conference that the company has extended the retirement date of Inmarsat-B by two years, from 30 December 2014 to 30 December 2016.

On that date Inmarsat will retire all services provided by Inmarsat-B, including GMDSS distress functionality from the terminal. The company says that it is in the process of advising the International Maritime Organisation and channel partners of this extension to the cessation date.

Inmarsat says that the extension has been given because the numbers of vessels continuing to utilise the Inmarsat-B service is "still significant" and it believes that additional time is needed to allow vessels "to migrate to alternate services such that Inmarsat and its partners can continue to provide the services that these vessel owners value highly and rely upon." DS

Astrium Services has opened a new logistics centre in Rotterdam (The Netherlands) to streamline the global distribution of VSAT and MSS equipment. The new facility will be responsible for delivery of all hardware components for Astrium Services' satcoms portfolio, including antennas, modems and spare parts, in addition to bundled solutions containing VSAT and MSS systems.

John Diercksen, an executive vice president of **Verizon Communications** with experience in technology investments, has been elected to **Intelsat's** board of directors. He will also serve on the Audit Committee.

www.astriumservices.com
www.intelsat.com
www.inmarsat.com
www.intelliantech.com

Charlie Snooke, new man at Intellian

Marine satellite antenna manufacturer **Intellian** has appointed Charlie Snooke as global director sales engineering, based at its UK office in Southampton.

Inmarsat chief financial officer Rick Medlock has decided to leave the company to take up a position with a private equity-owned business. Mr Medlock will stay with the company until early 2014 as Inmarsat searches for a successor.

Infinity compatible with FB multi voice

www.navarino.gr

Navarino has announced that its Infinity communications management system has been updated to be fully compatible with the Sailor Fleet Broadband multi-voice service.

This new functionality means that multiple crew calls can be made through the Infinity unit while not tying up the main business line of the vessel, says the Greek-based satcom company.

Infinity updates are pushed free of charge to all users each quarter, and no action will be needed on the part of the vessel operator or master to upgrade the system.

Infinity is a maritime bandwidth management and optimisation solution that can be used on ships equipped with satellite communications systems including, but not limited to, FleetBroadband or VSAT systems (Ka, Ku or C-band).

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Marlink delivers 12 Mbps satellite link for seismic vessel

www.marlink.com

Marlink has announced that it has delivered Ku-band VSAT services with a dedicated return link of 12 Mbps to a seismic survey vessel.

The Atlantic Explorer, owned by Petroleum Geo Services (PGS), used the service during a four-week North Sea project to transfer survey data to shore.

Marlink says that the throughput connectivity, equivalent to 120 GB per day, was an upgrade to the ship's existing Sealink customised VSAT service, which it had previously supplied.

The connection was ordered by PGS in mid May 2013 and was live by the end of June using the existing 1.5 m Ku-band antenna on board Atlantic Explorer. Marlink says that one of its engineers installed a new 40W BUC (Block Upconverter) prior to the commencement of services to enable the higher throughput, which was activated whilst the vessel was out at sea.

The throughput available on the Atlantic Explorer was equivalent to approximately 120 GB of data per day

Atlantic Explorer used the link to transfer survey data to shore, where it could be analysed. Based on the results, survey schedules could be amended. Marlink notes that there was no need to wait for the ship to return to port, nor to arrange to have the data collected by a helicopter, as is usually the case.

Tommy-Konkol Dybvad, director of customised VSAT at Astrium Services, said: "Taking into account overheads, packet loss for instance, the link enabled throughput of approximately 5 GB per hour. To put it into context, this is about 50 times more throughput than an average offshore vessel needs for heavy operational and crew use."

"A link of this scale was necessary in order to facilitate the transfer of survey data. The project was a success, with the link providing massive amounts of bandwidth that enabled PGS and its client to conduct a highly operationally and cost efficient offshore survey."

Tore Morten Olsen, head of maritime, Astrium Services, also noted that the project "represents the very cutting-edge of what is known as customised VSAT; the kind of services used by the offshore industry because every platform and vessel has different requirements."

"This kind of high-level connectivity is not an off-the-shelf product."

"Our delivery supported PGS in providing a very high-end service to its client and in the very competitive seismic survey market, being able to offer advanced capabilities such as the electronic delivery of survey data from vessel to shore makes all the difference."

DigiGone on Thuraya

www.digigone.com
www.thuraya.com

DigiGone has announced that its video communications system and software platform has been approved for use with Thuraya's IP terminals.

DigiGone says that its product, optimised for narrowband satellite channels, offers encrypted video and audio conferencing, video streaming, Voice over IP (VoIP), IM Chat and file transfer using a small fraction of the bandwidth needed for some other video telecommunication solutions.

The company adds that the system can be customised, depending on users' bandwidth speed requirements and their choice of audio and video quality. They can raise or lower bandwidth at any time during a call for better image resolution or reduced cost.

"DigiGone is an important addition to our current service offerings and an ideal tool to enable videoconferencing for Thuraya IP, IP+ and Maritime Broadband customers," said Randy Roberts, vice president of innovation at Thuraya.

"This cost-effective communications solution will be made available through our extensive network of service partners globally for use across a variety of vertical markets including maritime, energy and humanitarian NGOs."

Michael Dunleavy, president and CEO of DigiGone, noted that he believes that his company will be able to provide secure video and audio transmission for videoconferencing to Thuraya's customers "with satellite airtime costs much lower than other teleconferencing services."

DigiGone says that the software now certified to work with Thuraya's Maritime Broadband terminal can be installed on most PCs, laptops, tablets or smartphones.

Pullmantur extends MTN contract

www.mtnsat.com

MTN Communications has announced that Pullmantur Cruises has renewed its contract with the VSAT provider, signing up for broadband communications, crew calling and internet café services.

A Royal Caribbean International brand, Pullmantur offers Mediterranean, Caribbean and South American cruises. It has been an MTN customer for 11 years and has followed a bring-your-own-device (BYOD) strategy for both passengers and crew.

Under the renewed contract, the Spanish cruise company will be updating the Wi-Fi infrastructure on its fleet. MTN says that this update will enable more existing and new communication offerings ranging from specialised apps, enhanced internet and social media access, and calling solutions.

"We want our guests to have the best experience possible in all aspects of a Pullmantur cruise, and over the years we have relied on MTN for consistency and reliability," said Antonio Diez, CFO, Pullmantur Cruises.

"During our relationship with MTN we have experienced the highest standards of quality, reliability and responsiveness; the full suite of products and services has been more than suited to support our passengers and crew. It is clear our visions are aligned on how communications at sea should be managed."

Chris Leber, executive vice president, commercial business development, MTN, said that his company was looking forward to continuing its partnership with Pullmantur Cruises.

"We share the same passion and vision for the future of communications at sea," he said.

"We have the technology and infrastructure that meets, and exceeds, its crew and passengers' expectations, and we very much look forward to serving this important organisation."

O3b and Kymeta team up on flat antenna

www.o3bnetworks.com
www.kymetacorp.com

O3b Networks, which recently launched the first four satellites in its planned Ka-band constellation, has signed an agreement with Kymeta to develop flat panel satellite antennas for use on its network.

The two companies say that they will jointly develop the satellite tracking antennas and terminals to be optimised for the satellite services that O3b will be offering. A prototype is expected by the end of 2014.

Headquartered on the British island of Jersey, O3b Networks placed four Ka-band satellites in medium earth orbit (MEO) in June and is planning on launching another four in Q1 2014 before starting commercial services shortly after.

Its maritime service will be aimed at cruise ships and superyachts in Latin America, Africa, the Middle East, Asia and Australia, as coverage will be within 45 degrees of latitude north and south of the equator.

US-based Kymeta holds the exclusive licence for Metamaterials Surface Antenna Technology (MSA-T) which can be used to develop flat panel antennas capable of forming beams for satellite communications.

"At O3b, we are striving to bring the benefits of affordable, low latency bandwidth to a growing number of people around the world and to deliver an ever expanding set of applications," said Steve Collar, CEO of O3b Networks.

"Kymeta's flat, light, low cost and low maintenance antennas promise to provide O3b customers an extremely powerful, high-performance solution at a very attractive price."

"Kymeta antennas will have utility across all our market segments and we are excited to be partnering together to develop this highly innovative and game changing technology."

Bob McCambridge, president and COO of Kymeta, also added: "O3b's network with fibre-like speeds is a natural fit for Kymeta antennas that electronically acquire and track non-geostationary satellites."

"The O3b network architecture is a perfect fit for Kymeta's unique technology and capabilities."

Kymenta's flat antenna technology could be used with the O3b network

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iDirect for THOR 7

www.telenorsat.com
www.idirect.net

Telenor Satellite Broadcasting (TSBc) reports that it has chosen to implement iDirect's Velocity product line as the ground infrastructure platform for its new THOR 7 high throughput satellite (HTS).

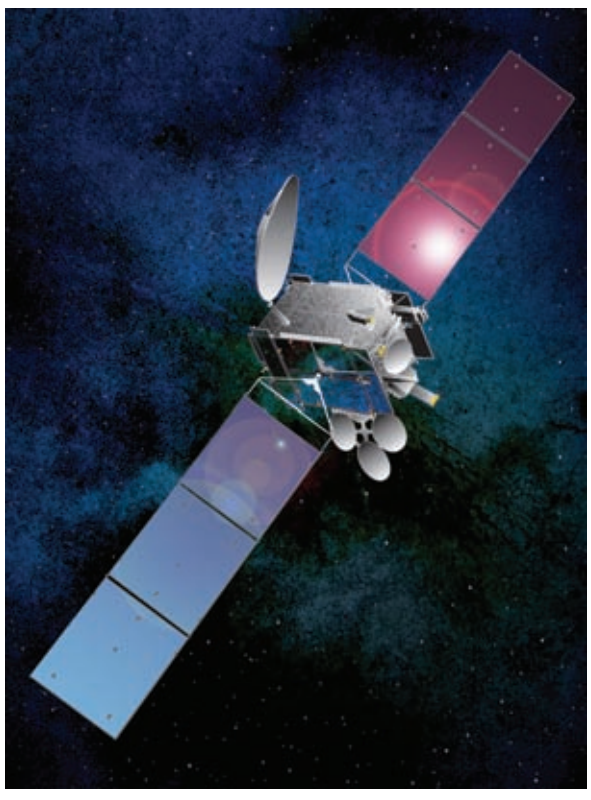
The satellite operator will deliver a Ka-band HTS payload of up to 9 Gbps of throughput across 25 spot beams, providing capacity over the North Sea, Norwegian Sea, Mediterranean, Baltic Sea as well as the Middle East. This will cover Europe's main shipping routes and oil and gas exploration areas.

Both companies say that the iDirect platform will enable automatic, seamless spot-beam handover across all beams on the THOR 7 satellite.

The platform will also establish an integrated capacity pool that can be distributed, enabling the development of service plans for individual terminals as well as for groups across the entire coverage area. A global bandwidth management system will also be established to enforce Service Level Agreements (SLA) at the group level across all beams.

Furthermore, Telenor Satellite Broadcasting aims to leverage the iDirect platform to facilitate inter-network roaming with other Ku- and Ka-band satellite operators, enabling end users to travel outside of their service providers' networks, while maintaining coverage through a single service provider.

Telenor expects to launch the THOR 7 satellite in the second half of 2014, with the aim of increasing capacity for current maritime and energy customers and to enable Telenor Satellite Broadcasting to expand its business in other markets.



The iDirect system will help to manage spot-beam handover on the THOR 7

"(The) THOR 7 Ka-band HTS payload is strategically positioned over the main shipping routes and major oil and gas exploration areas in Europe, enabling our maritime and energy customers to grow their businesses and bring much needed capacity into the region," said Julian Crudge, divisional director Network and Data Services, TSBc.

"There's no better platform than iDirect to bring our new capacity to market, giving us the flexibility we need to capture a broad range of high-value markets, whilst offering the possibility for roaming between Ku- and Ka-band satellites in the future."

Caribbean Ku-band deal for SES and KVH

www.ses.com
www.kvh.com

SES and KVH have signed an expanded capacity agreement to provide high-speed internet access and voice over IP services to vessels traversing the Caribbean, the Gulf of Mexico and coastal waters off the US Eastern Seaboard.

As part of the multi-year deal, KVH will utilise a 36MHz Ku-band transponder aboard SES' AMC-21 satellite.

SES is a satellite operator with a fleet of 53 geostationary satellites. The Ku-band satellite AMC-21, at 125 degrees West, provides coverage to all 50 American states, the Gulf of Mexico, Central America and the Caribbean.

"KVH is expanding its mini-VSAT broadband network capacity around the world to provide mariners with the connectivity they need at sea," said Brent Bruun, executive vice president of KVH's Mobile Broadband Group.

"This latest agreement with SES is aimed at delivering the reach and reliability a growing number of luxury yachts, commercial vessels and US Coast Guard cutters need to seamlessly operate in deep and coastal waters."

"Our mini-VSAT broadband service is growing at a rate of 35 per cent a year, reflecting our growing customer base and the increased emphasis being placed on improving ship crew welfare and operational efficiencies ranging from real-time data to better voyage planning and reduced emissions."

John Matlaga, vice president of Enterprise and Mobility Services for SES' North American region, also noted that "SES is making unprecedented investments in new satellites, mobility beams and increased capacity across our global fleet to meet the fast-growing demand for connectivity and mobile communications capabilities anywhere, including vital shipping routes around the world."

"Together, SES and KVH are putting advanced broadband and voice offerings aboard ships and at the fingertips of passengers and crew and playing a major role in keeping them connected and in touch with colleagues and family."

O3b and Huawei enable 3G over sat

www.o3bnetworks.com

O3b Networks and Huawei have announced that they have enabled a system to allow full 3G voice, data and video transmission over satellite.

The companies report that O3b's system has been tested in the Huawei Interoperability Lab in Shanghai, China. The simulation tested performance and latency over UMTS/3G mobile backhaul links, including voice, data and video.

Furthermore, Huawei's telepresence, video surveillance, unified communication and datacom solutions have been able to demonstrate interoperability with O3b's MEO (medium-earth orbit) satellite simulation system.

Huawei and O3b Networks say that they are working together to provide a service that can act as a suitable alternative to fibre with seamless voice, video and data communications. The companies will primarily aim at deployment of satellite-based broadband in remote land locations, but also on marine ships and drilling platforms in the ocean.

In addition, the two firms have said that they will work together to establish MEO satellite backhaul capabilities for 2G/3G/4G (LTE) systems for Malaysian service provider Maju Nusa. Last June, O3b signed a deal with Maju Nusa to provide 3G Backhaul services across rural Malaysia.

"Huawei is glad to cooperate with O3b in providing high-performance satellite based communication solutions," said Patrick Zhang, president, Enterprise Marketing and Solutions.

"Huawei utilises advanced technologies to save transmission bandwidth, increase speed, and overcome jitter introduced by satellites."

Steve Collar, CEO, O3b Networks, also added: "Winning Solution Partner Certification from Huawei is an excellent endorsement of our network and further underlines the quality of our offer ahead of our commercial launch in 2014."

"Huawei testing and passing O3b's network proves that O3b is almost equivalent to fibre for rural 3G/4G and enterprise communications deployment. By comparison, the latency of geostationary satellites means that there is a noticeable delay in voice conversations and many mobile data applications either perform slowly or not at all."

C-Bird trialled in Germany

www.maritimebroadband.com

A ship management company in Germany is to begin a trial of the C-Bird VSAT system from Maritime Broadband, following a recent agreement.

The Hamburg-based shipping company has not been named, though installation of the trial system has been confirmed to have been scheduled for October on the East Coast of the US.

This trial contract is a result of a new agency agreement whereby Nordic IT Marine Communications in Germany has been appointed as Maritime Broadband's agent in the country. The company trialling the system is one of Nordic IT's German clients.

"Working with Nordic IT offers Maritime Broadband the very best foothold in the important German marketplace," said Mary Ellen Kramer, CEO of Maritime Broadband.

"The company is extremely well respected in the shipping community in Germany. Nordic IT has over 800 vessels and shoreside users taking advantage of their optimised software and hardware solutions. We are excited to offer our premium global VSAT package to their clients."

Heiko Hoefer, owner of Nordic IT Marine Communications, also commented that he believes C-Bird has the ability to change how communication is done in the maritime industry.

"Until now, C-band has been unavailable to the commercial shipping market world, because of its size and weight, making it impossible to fit. C-Bird changes all that. It is easy to assemble and offers affordable service," he said.

"Ship managers and owners have shown great interest in the benefits that the C-Bird antenna makes easy, such as a global reach, easy assembly, and affordable pricing including unlimited data at the contracted speed. Added to that, the crew can finally feel closer to the world by getting all the voice and unlimited data functions that they would get at home."

"I am very excited about the prospects for the coming months and years as I believe that the C-Bird will not only be of interest to my existing clients, but also open new client avenues as well."

The C-Bird antenna will be installed on a ship operated by a Hamburg-based company

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Princess Cruises chooses 3G with MCP

www.mcp.com

Maritime Communications Partner (MCP), a Telenor subsidiary which provides phone coverage to cruise and ferry passengers, has announced that it has been chosen by Princess Cruises to equip one of its ships with on-board 3G wireless communication services.

Built in 1995, the Sun Princess can carry 2,022 passengers and 900 crew members. It has just finished its first Japan-based cruise programme and will now continue on to other Asian and Australia itineraries for the rest of 2013.

"The most important thing for us is to meet the needs of our customers' passengers and ensure that their cruise experience is fulfilling and satisfying at all levels – especially when it comes to keeping in touch with friends and family onshore and accessing the mobile internet in their usual way," said Fred Sorensen, managing director of MCP.

Eivind Madsen, CEO of MCP, also commented that "For MCP it is important to deliver solutions that take advantage of the latest, smartest technologies in order to move forward into the future and Princess Cruises shares the same mindset."

"We are very excited to have been chosen by Princess Cruises to take this next step in the mobile revolution at sea – together."

The Sun Princess is now 3G enabled. Photo: Princess Cruises

SAM expands VSAT capabilities

www.sam-electronics.nl

SAM Electronics Nederland has announced that it has signed a series of agreements with multiple airtime partners to meet increased demand for its VSAT services.

The Rotterdam-based company says it is targeting offshore and dredging markets and that, to date, it has sold and installed over 250 KVH TV and VSAT systems on behalf of Belgian- and Dutch-based customers such as DEME, Van Oord, Vroon and Wagenborg.

SAM Electronics Nederland says that the agreements it has signed with its unnamed airtime partners enable it to provide users with customised solutions covering virtually any type of VSAT assembly with any type of airtime subscription.

"Having successfully installed sophisticated IP-networked VSAT equipment for Allseas aboard Pieter Schelte, the world's largest construction vessel, our increased capability and flexible solutions will be of particular interest to offshore and dredging markets requiring the latest equipment and standards of performance," says SAM Electronics Nederland president Jelmer Domela.

"Performance standards continue to be especially crucial for crew welfare and our latest solutions will enable us to provide cost-effective, all-inclusive TV, radio, video and messaging services during all stages of a voyage or operation aboard vessels of any type or size."

SAM Electronics Nederland is a subsidiary of Hamburg-based SAM Electronics, an L-3 company.

Thuraya for Smart crew calling

www.thuraya.com
www.smart.com.ph

Thuraya has announced that it has been selected by Smart Communications, a Philippines-based wireless services provider, for the launch of its new crew calling service, Marino PhonePal.

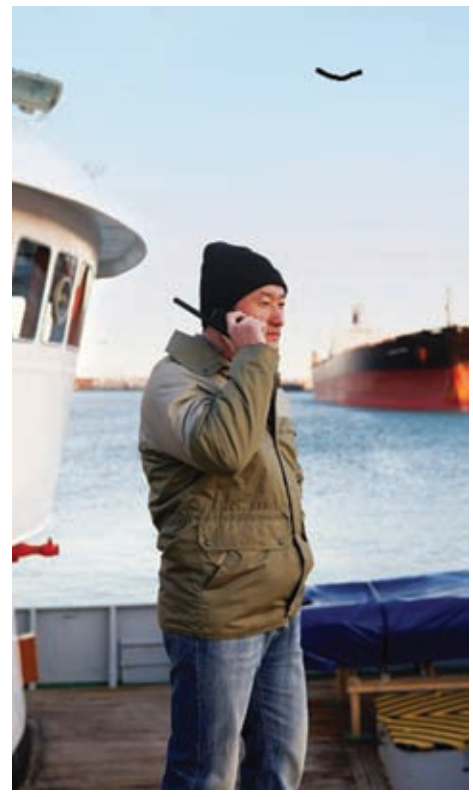
The Dubai-based operator says that the multi-year deal will see it partner with Smart on network services and hardware for the maritime voice service.

Marino PhonePal is an expansion of Smart's current crew calling service, growing from an existing Asia Pacific footprint to now include major sea lanes in Australia, New Zealand, Indian Ocean, the Middle East, Africa and Europe (Thuraya's coverage area).

Through this partnership, Smart will offer low cost prepaid calls to seafarers while at sea using Thuraya's SF2500 voice terminals, says the Emirati satellite operator, adding that Marino PhonePal customers will benefit from a connection at fixed prices.

"Ship owners and operators understand the value of making a robust crew calling service available to their seafarers," said Smart's chief wireless adviser, Orlando Vea.

"Thuraya offers a strong and reliable solution combined with attractive price plans that fit these requirements. We are excited to embark on this partnership which is beneficial to all parties and, most importantly, will benefit seafarers around the world."



The Marino PhonePal service will now operate over the Thuraya network

Maritime entertainment delivery service launched

www.satstreammedia.com

UK-based company Satstream Media has announced the launch of SatstreamNet, a multicast-IP content delivery network developed specifically for the maritime industry.

SatstreamNet uses onboard VSAT or TVRO antennas to receive media streams providing over the air content to vessels on separate satellite channels, which the company says can be done without impacting the ship's existing communications networks.

It notes that because the network operates using IP multicast, it does not need to be integrated into the onboard operational communications network as there is no return channel data. SatstreamNet delivers live video and audio streams as well as file-based content to a Media Gateway installed on the ship, which is connected to a standard TV set. A handheld remote control is used to select content from a list of menu options.

The company says that, because SatstreamNet operates independently of the operational communications network, it has developed a Roaming Controller to support the movement of the vessel across multiple satellite beams during the course of its journey.

"With SatstreamNet we are aiming to work with a few select VSAT service providers to enable them to provide rich content to their customers," said Rob Urwin, director of Satstream Media.

"We believe the timing is right, especially now that MLC2006 has been ratified and is now in force in most countries, to start adding value to the customer base beyond a standard broadband service offering."

"We are not standing still however, as we are already thinking into the future with the development of a software upgrade to support the streaming of Pay-Per-Download content. This will enable content to be streamed to the crews' handheld devices such as smart phones or tablets by connecting their Media Gateway to an onboard Wi-Fi network. Software upgrades can be downloaded to the on-board equipment over the satellite so there is no need to return the equipment to add new features."

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Comtech EF Data Corporation has announced that it has completed interoperability testing with a selection of Cobham maritime VSAT stabilised antenna systems and the ROSS Open Antenna Management (ROAM) protocol.

The interoperability enables Cobham's Sea Tel XX12 series equipped with IMA electronics, including the 4012GX, 4009 MK3, 5012 and 6012, to globally roam across multiple satellite beams using the protocol, maintaining connectivity while moving through different satellite footprints.

This product range can be added to the Sea Tel USAT series, Sea Tel 3011, Sea Tel XX06, Sea Tel XX09, Sea Tel XX10, Sea Tel XX07 and Sea Tel XX97 antenna systems utilising a DAC-2202 antenna controller first implemented in November 2012, all providing systems capable of interoperability with the ROAM protocol.

Comtech EF Data says that the ROAM protocol offers a common management interface for its Roaming Oceanic Satellite Server (ROSS) and third-party Antenna Control Units (ACUs) by providing a generic set of commands, information, interfaces and status queries.

ROSS is a server that works in conjunction with Comtech EF Data's Vipersat Management System to facilitate on-the-move satellite communications for oceanic vessels. ROSS enables remote modems to interface with stabilised, auto-tracking antennas, with vessel position data, satellite signal and management status constantly monitored to determine when satellite handoff is necessary.

"The addition of ROAM and seamless satellite switching to our Sea Tel XX12 series ensures that users experience high service availability on a global basis," said Casper Jensen, vice president maritime for Cobham SATCOM.

"Combined with IMA, which features an extended user interface, simple software updating, new remote management capabilities and enhanced network integration, the Sea Tel XX12 series provides significant installation, servicing and operational efficiencies for global users."

In related news, Cobham has also unveiled its new SAILOR FleetBroadband Push-to-Talk (SAILOR PTT) system, which will provide over-the-horizon communication via GSM and L-band satcoms.

Scheduled to launch in the fourth quarter of this year, SAILOR PTT integrates Inmarsat's L-band service with GSM services to enable long-range, secure, multi-user communication. Cobham expects the solution to be popular within the work boat, OSV and fishing fleets.

SAILOR PTT will operate similar to VHF but, unlike radio which is an open broadcasting network, it will link vessels together in a private network. Cobham says that IP-based digital voice will improve quality over analogue VHF voice, with no radio interference or background noise, and without the need for VHF infrastructure.

Additionally, all connectivity aspects of the SAILOR FleetBroadband terminal that powers PTT are available to provide connectivity and voice for crew welfare and operations. SAILOR PTT is a hybrid solution, with automatic least-cost routing over FleetBroadband and 2G/3G/LTE networks. The system will use GSM wherever possible and switch to FleetBroadband when required. A voice transfer protocol is used to minimise FBB bandwidth usage.

"SAILOR PTT has huge potential to enhance communications between vessels in a fleet, especially those involved in hazardous or complex operations," said Mr Jensen.

"Our PTT technology is already deployed on land so we are keen to offer it to our maritime customer base. The advantages of PTT over traditional VHF group communication are clear; it really is the easiest, most secure way to broadcast messages to many people at once."

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Maritime VSAT – Q&A

The maritime satcom market has seen huge changes in the last 10 years, with the growing number of VSAT installations completely reshaping the landscape of communications in the shipping market. But where will we go to next? *Digital Ship* asked three major research groups to share their evaluations of the future of maritime VSAT

Making satcom decisions can be a difficult process for any shipping company. Modern systems will generally be supplied under contracts that run from three years upwards, requiring the vessel operator to peek into their crystal ball to an extent and visualise their own requirements as well as the market conditions a number of years down the road.

With this in mind, *Digital Ship* asked three of the leading research companies in maritime satcoms, who have each produced detailed reports with predictions on the future of this sector, to share some of their views on where the market is headed.

Conducted as a Q&A interview, with each company being sent a separate questionnaire, the three participants were: Simon Bull, senior consultant at COMSYS; Brad Grady, senior analyst at Northern Sky Research (NSR); and Richard Roithner, director of satcom at Euroconsult. Here's what they had to say.

1. *Digital Ship:* Based on your company's research, how would you evaluate the penetration of VSAT technology in the maritime market today?

SB: Satisfactory - growth has been good and in line with our forecasts over the past five years.

However, this must be viewed in the context of the hard times that the maritime industry is undergoing and we believe that the maritime VSAT industry has worked hard to provide a solution which not just adds a huge amount of functionality and utility, but can actually allow a vessel owner to reduce their operational costs at many levels.

BG: The question is really dependant on what sub-segment of the market you are considering – fishing, passenger vessels, merchant maritime, the offshore market or military & government.

Fishing and passenger vessels tend to see the lowest overall VSAT for a couple of reasons. Few leisure vessels venture far from shore-based connectivity when you look at the larger population of vessels over 30ft. Fishing vessels, although they do venture further from shore, typically have smaller bandwidth requirements such as catch monitoring/reporting.

'One of the things that everyone can agree on is the rapid increase in the amount of bandwidth required across the maritime market' – Brad Grady, NSR

'The maritime VSAT industry, although starting to gain maturity, is still a relatively young market compare to L-band maritime satcom' – Richard Roithner, Euroconsult

Only now do we see advanced applications such as weather monitoring, evaluating market prices, and crew-centric services gaining adoption within the fishing market.

On the other hand, the offshore and Military & Government markets have very clear bandwidth requirements, operate further away from shore and as such have fairly high levels of VSAT penetration where almost all of the larger vessels, a sizeable number of medium and an increasing number of smaller vessels have a VSAT-based service.

In the middle are merchant maritime vessels. The global vessels tend to have a VSAT-based service, with higher operational and crew-bandwidth needs driving adoption. Yet, MSS-centric services still are giving VSAT deployments a run for their money. Looking forward, NSR expects VSAT penetration to increase across all segments.

RR: The maritime VSAT industry, although starting to gain maturity, is still a relatively young market compared to L-band maritime satcom. Euroconsult estimates the number of active VSATs globally at around 10,000 today, growing at double digit rates in recent years, compared to more than 275,000 active L-band devices.

Across the various maritime markets including merchant shipping, fishing, offshore support vessels, government & military, cruise ships and leisure vessels, we estimate that at least 110,000 vessels today are potentially addressable for VSATs. This would put the current penetration rate of maritime VSAT, even when conservatively estimated, at less than 10 per cent of the addressable market with significant room for growth.

While certain segments, such as cruise ships or off-shore oil & gas have obviously achieved very high penetration rates already, the merchant shipping, fishing or the leisure market still provide a lot of upside potential. As a comparison, MSS maritime broadband services (primarily FleetBroadband and OpenPort) stood at around 38,000 active terminals at the end of 2012.

2. *Digital Ship:* How do regional differences in approach to technology affect the overall take up of maritime VSAT systems, in your view, and do growth trends differ significantly between markets?

SB: We see technology differentiating acceptance, take up and use by maritime segment, rather than region.

BG: Growth does tend to differ amongst different regions. As we see global economic activity continue to shift towards Latin America, Africa/Indian Ocean, and Asia we also see a similar uptake in maritime VSAT activity.

I wouldn't go so far as to say it is a difference in their approach to technology, as I think a ship operating in the Indian Ocean tends to have similar requirements as a ship operating in the Pacific, but rather their stage of development is a greater indicator.

In the Offshore segment for example, there is a greater emphasis across the sec-

'We see technology differentiating acceptance, take up and use rather than region' – Simon Bull, COMSYS

tor towards the Indian Ocean and Pacific – which is helping to boost overall VSAT uptake. Similarly, a new 'pivot strategy' towards Asia in the military & government markets is helping to boost VSAT rates throughout the Asia, Indian and Pacific regions.

RR: It is true that there are still quite some regional differences in the adoption of maritime VSATs with Northern Europe in particular as a leading market and early adopter today, followed by Japan and North America.

However, we see other regions currently catching up. In particular, Asia Pacific is growing strongly driven by a buoyant shipping and fishing market. While the usage of VSATs and its serving applications still differ among the various regions and markets, the increasing need for connectivity is however a trend observed across all regions.

3. *Digital Ship:* In the last 5 years, would you say that growth in maritime VSAT has been at a surprisingly high level, as expected, or underwhelming?

SB: As we mention in Question 1, COMSYS has not only published forecasts every two years, but gone back and compared the results with what our research shows actually happened two years later. We don't know any other research firm which has the nerve to do this!

In both cases – 2010 looking back to 2008 and 2012 looking back to 2010 – our forecasts were within 2 per cent of the market performance, so we would judge that maritime VSAT has met our expectations.

BG: As an analyst, I'd like to say it was expected because it is our job to properly characterise the opportunity for maritime VSAT services to the industry. But, setting that aside, one of the things that everyone can agree on is the rapid increase in the amount of bandwidth required across the maritime market.

Mostly driven by the larger offshore, cruise, and government end-users, nearly all segments of the maritime market have seen their bandwidth needs increase. And, they don't seem to be waning anytime soon – if anything the past 5 years has only really been a prelude to the bandwidth demand within the maritime market.

So, has growth been at a surprisingly high rate or as expected? I'd say that it has been in the middle of that range – not quite as explosive as the growth of smart-devices in the consumer markets, but it has been steadily in the double-digits to high single digits over the past five years, which is an impressive number for the satellite VSAT market.

RR: The maritime VSAT market has really started to gain traction around the middle of the last decade with decreasing hardware prices, better availability of C- and Ku-band over ocean regions, a multiplication in service offerings, and a growing number of specialised service providers who saw the market opportunities in increasing communication needs at sea, beyond what L-band could provide.

Since then, the market has experienced significant growth with the number of active VSAT terminals growing at over 15 per cent per year. Given the state of the global economic environment and the fact that the shipping industry has been going through one of its most severe crises in

Who's who: The Panel

The panel consisted of (abbreviations in brackets):

(SB) Simon Bull, senior consultant **COMSYS**

(BG) Brad Grady, senior analyst, **Northern Sky Research (NSR)**

(RR) Richard Roithner, director of satcom, **Euroconsult**.

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2008/09, we found the on-going high growth in maritime VSAT at double digit rates in recent years to be beyond what could likely be expected.

For us, this clearly shows that communications and connectivity has become a critical part of the maritime industry. It also shows that satellite broadband connectivity provides significant value and a return on investment for vessels at sea today.

4. *Digital Ship:* What particular aspects of the market do you see as differentiating the maritime VSAT market from the market for VSAT systems in other areas, such as on land or in aviation?

SB: At the hardware level it's related to the things like the advancement and cost reduction of stabilised antennas; at the systems level, it's things like global beam roaming, multi-satellite operation, network management and control.

However, the biggest differentiator in our opinion is really down to the operators – the logistics required to install, service and maintain VSAT installations across global vessel fleets is extremely challenging and frequently underestimated by a great many people.

The sea is a harsh environment and the reliability that most VSAT maritime services provide is not an easy thing to achieve – definitely a greater challenge than most locations on land will face.

BG: Beyond some of the more straightforward differences in operating environments or ground infrastructure – one of the key differences from the other mobility markets is that demand within the maritime market tends to be driven by a combination of critical business and crew-centric applications.

More so than land-mobile or aviation markets, maritime VSAT networks increasingly need to be designed to accommodate an extremely large variety of traffic from database replication or real-time drilling or situational awareness applications operating over a highly secure link, to powering Facebook or streaming video on a tablet or smartphone.

Aviation markets do not tend to have a requirement for both operational and general internet access, yet. We do see some need for these dynamic network designs on the land-mobile side, but for the most part land-mobile deployments are enabling specific services such as satellite-news gathering, or supporting disaster relief services.

Overall, maritime networks tend to have some of the most sophisticated network designs to enable these different business, operational, and crew-centric services to operate over the same infrastructure.

RR: The maritime market is one of the harshest environments on the planet, in particular for communication devices. Ships constantly move and are continuously exposed to extreme weather conditions, challenged by water resistance, corrosion, wind, limited place on deck, potential blockage, etc. This alone makes the maritime VSAT market a very distinct and different market compared to other VSAT markets.

Compared to other mobile VSAT markets, on land or in the aeronautical domain, the maritime market is a fairly established and mature market with years of experiences and a learning curve for a number of specialised service, equipment and application providers who have established a vast portfolio of proven solutions.

The ecosystem for maritime VSAT seems now well established and services have become an essential part of the market, which is not yet the case in the other two domains mentioned.

5. *Digital Ship:* There is, to some extent, a 'chicken and egg' aspect to the maritime VSAT discussion, where shipping companies may feel that the 'killer apps' to drive VSAT adoption are not there, but application developers will not invest in developing high-data applications for a market without a proliferation of broadband connectivity – how do you see this playing out in the future?

SB: We do not consider that this is the biggest problem – rather the issue is the low-tech nature of many shipping companies which simply do not have the resources or expertise to implement and operate highly complex systems.

This is partly due to the fact that there is a shortage of staff within the maritime industry generally and finding good people who both understand the challenges behind a maritime operation and are able to bring the IT skills as well is very hard.

BG: End-users are already deploying high-data applications over their VSAT link – real-time HD video conferencing, doing database replication between the maritime remote server and an onshore datacentre, etc. So, I do not think it is a matter of 'developing' the applications themselves but rather optimising the current best-of-breed applications to the higher latency of a satellite connection.

This is where specialist service providers (either the current maritime service providers or newer start-ups) can really bring value into the market – taking existing applications that enterprises are deploying across their shore-based locations and optimising them to run over a VSAT connection.

This is also where HTS (High Throughput Satellite) will help tremendously – increasing the pipe to accommodate a larger number of the 'best of breed' applications out-of-the-box, or with minimal optimisation.

RR: Euroconsult believes that the maritime VSAT market has reached a point of maturity, where solutions are proven enough for stakeholders to recognise its value. We also see clear commitments from players along the value chain to further invest in the maritime VSAT market, in particular with satellite operators deploying more and more capacity over the oceans as well as service providers and equipment manufacturers investing in enhanced products and value-added services.

This, combined with the increasing need of connectivity on board ships, and the evolution of broadband applications on land should lead to a positive upwards spiral driving applications for maritime users, which in turn will move the maritime VSAT industry forward as a whole and lead to a multiplication of applications in the future.

6. *Digital Ship:* HTS (High Throughput Satellite) systems have generated much of the recent hype in maritime satcoms, from providers like Inmarsat, Intelsat, O3b and Telenor – with these systems set to be launched in the next few years, what do you expect the market reaction to be? Will the effect on the mass market be limited for the foreseeable future?

SB: HTS has some way to go in its development before we can see what it will bring in the long term – i.e. beyond this second generation of satellites that are up or going up.

I have no doubt that the effect will be very beneficial to the maritime industry. Data consumption is simply exploding at every level that we cover in our research and the maritime industry is no exception – more bandwidth for less money sounds attractive, but it's actually more likely to mean a lot more bandwidth for a similar or slightly higher monthly price.

It also shouldn't be forgotten that control, management, reliability and availability also have their place in the cost structure of a service.

BG: I think the market response is already fairly positive when you consider HTS as a whole. Where the argument breaks down is when you talk about 'which HTS' rather than 'if HTS'.

There will be some maritime segments and some end-users within those segments that will be more cautious in their adoption of HTS, but others are already signed-up and waiting for the service to be enabled. Service providers have made the first step in this regard, by incorporating HTS systems into their network designs and service offerings to end-users.

HTS systems (both from geostationary orbital arcs like Inmarsat, Intelsat or Telenor, but also from Middle-Earth Orbit such as O3b) will have an impact across all segments of the maritime market – from high-end cruise-ships or oil platforms all the way down to fishing vessels considering a broadband VSAT connection for the first time.

The effect overall – definitely positive. Service providers and end-users alike will be paying careful attention to these early adopters in the next 12 – 24 months as they evaluate their own HTS plans. Key though, will be matching the right service to the right end-user for the right application.

RR: As outlined before, we see a significant amount of investment in capacity over oceanic regions including regular Ku-band, but to a greater extent in new generation HTS systems.

Some systems such as Inmarsat's Global Xpress or the Intelsat EPIC satellites will have a strong focus on maritime markets, but also other systems such as Telenor's Thor-7, the Viasat-2 satellite and even O3b have dedicated HTS capacity over the oceans.

The impact of these HTS systems on the maritime VSAT market is still uncertain, but we expect a significant increase in data traffic and the available bandwidth per vessel, enabling a range of new applications for end users. Other impacts should include a decreasing price per Mbps, a decrease in hardware prices, and ultimately new maritime VSAT markets that would have historically not been addressable for VSATs.

However, one has to be careful when looking at the increase in capacity supply through HTS systems, differentiating the total amount of capacity over ocean regions (aggregate) and the amount of capacity available to a single ship at any given point in time. Given the multispotbeam architecture of HTS systems, the two measures will be substantially different and the available capacity per ship, although growing significantly, may not grow to levels that some reports might suggest.

7. *Digital Ship:* Where would you expect to see major growth / decline for the three major frequency bands that are likely to dominate in the next five years (L-band, Ku-band and Ka-band)? What kind of market share would you expect to see for each by 2020?

SB: COMSYS would not expect to see any real decline – a change of use profile is more likely to be the major outcome. Ultimately, this will then change the way investment is made in capacity in these frequencies.

BG: In terms of number of In-service Units, the combination of broadband and narrowband units gives the lead to an MSS-based solution – across the globe.

Looking at the maritime broadband satellite market, MSS-based services continue to lose market share to the VSAT offerings – from both FSS and HTS-based offerings. They will remain the largest broadband satellite offering in the maritime market, with roughly 65 per cent of the market by 2020, as smaller and smaller vessel sizes continue to demand bandwidth.

Video conferencing is already happening at sea – high-data applications like this will drive uptake of VSAT systems. Photo: TANDBERG Corporation

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‘Simplicity is the key to Success’

Although VSAT-based offerings continue to make strides in terms of antenna prices and installation costs, MSS-based broadband connectivity will still have some of the lowest cost of entry into the maritime broadband market.

However, geostationary HTS-based solutions (at C-, Ku- and Ka-bands) will make strong in-roads throughout the maritime market. Higher overall throughput will help boost adoption within the higher-end segments such as Offshore and the higher-end passenger markets, where the better value-proposition will appeal to the merchant segment.

The Middle-Earth Orbit (where O3b is the sole player as of now) will be a strong player in the highest of high-end markets – large cruise-ships, military & government vessels, and the offshore market. Combined, both GEO-HTS and MEO-HTS will account for roughly 10 per cent of In-service Units by 2020.

Traditional FSS capacity (C- and Ku-bands), will account for the remaining 25 per cent of the market by 2020, down slightly from 2012 figures. Of that, Ku-band will account for the vast majority of In-service Units.

Merchant maritime vessels will help contribute the majority of growth for FSS Ku-band, as increased emphasis on managing costs while at sea and the growing global coverage of FSS Ku-band capacity help drive adoption rates.

Overall, across FSS, HTS, and MSS there is a steady shift towards emerging markets – within Latin America, Middle-East & Africa, and Asia. More maritime traffic continues to move into the Pacific and Indian Oceans, all while we see a levelling off of demand from established markets such as North America.

RR: L-band will definitely remain the leading frequency band in terms of number of active terminals, due to regulatory requirements as well as its higher reliability and availability compared to higher frequency bands. Usage and ARPUs of L-band may, however, decline over time with service revenue primarily driven by VSATs.

Looking at maritime VSAT only, Euroconsult expects that Ku-band will remain the leading frequency band accounting for approximately 57 per cent of all maritime VSATs by 2020 (versus 72 per cent today). Ka-band is expected to experience growth starting in 2014 with a major acceleration, however, not likely before 2015/16.

We believe that there will be a market for both Ku- and Ka-band depending on the end user requirements and that both frequency bands will continue to see growth. Ka-band should account for close to 30 per cent of active maritime VSATs by 2020.

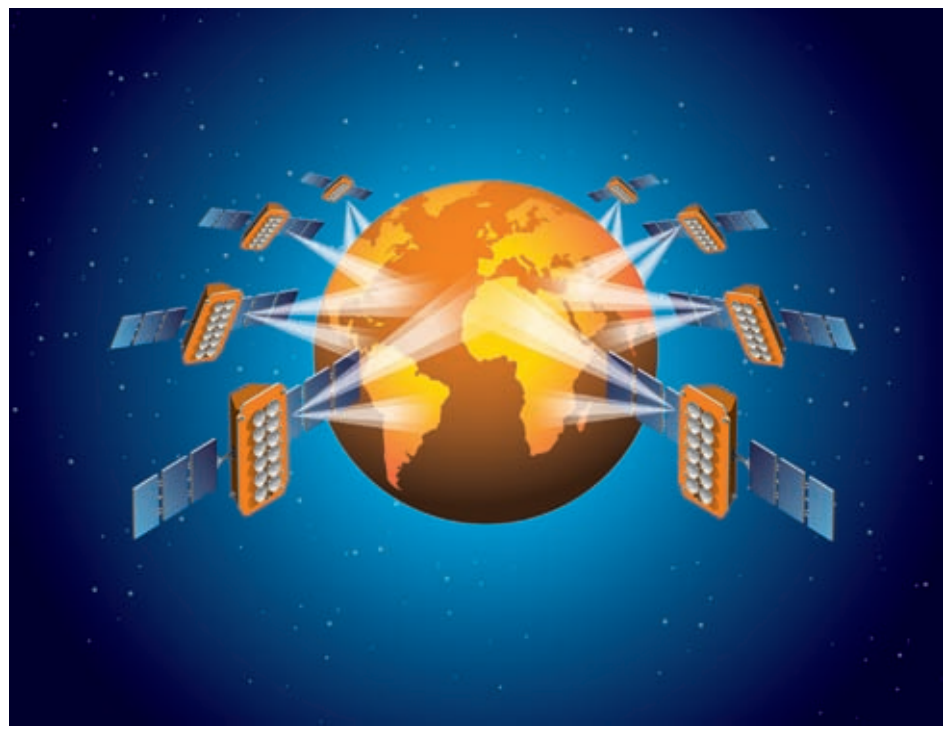
8. *Digital Ship:* Would you expect the number of companies offering satellite communications services to the maritime industry to increase or decline in the next 5-10 years? Why?

SB: We would expect it to do what the industry has always done – grow with new entrants, shrink with failures, but ultimately show a steady increase in companies providing service.

In the VSAT industry there is always room for niche players able to bring a particular customised solution to customers that can drive real competitive advantage from it. Sure there will be commoditisation, but for those who want or need something above and beyond the standard package there will always be companies willing to meet their need.

BG: The market continues to be leaning more towards consolidation, rather than expansion in terms of the number of service providers. As some of the recent acquisitions have shown there are some clear advantages with larger purchasing power, and end-user diversity.

Having a larger end-user base allows larger purchases of satellite capacity – at better prices – which can then be carried through ultimately to the end-user. Similarly, and especially important in this day and age, having a diverse base of end-users (both in terms of market segments, and geographic coverage) allows companies to ride-out the merchant market slowdown, or near-term government uncertainty.



HTS services will take an increasing share of the satcom market in coming years

What we are not seeing too much anymore are satellite operators moving into the service provider market as we saw with Inmarsat and Ship Equip. If anything, the more recent trend of Inmarsat selling off the energy-centric part of Stratos to RigNet might be a sign of an emerging trend over the next 5 – 10 years. The exception is the wholesale capacity side of the government & military market, where service providers have to compete against capacity providers.

All said, the market will still remain comprised of the larger players – who can provide coverage and service across the globe, and specialist companies focused on serving specific segments or regional markets. Overall, however, the market seems to be pointing towards on-going consolidation for the next 5 – 10 years.

RR: The number of service providers in the maritime market, in particular for maritime VSAT, has been increasing significantly over the past ten years, from approximately 10-15 in the middle of the past decade to over 70 today.

Given the achievable economies of scale and a number of smaller providers that seem to be struggling financially, we foresee increasing consolidation over the coming years which may reduce the total number of service providers, partially offset by some new entrants.

9. *Digital Ship:* Current economic conditions in shipping, as in most other industries, are as tough as they have been in living memory. How do you see this affecting the take up of VSAT, and do you think an upturn in fortunes would signal a significant change in the sector's approach to satellite communications?

SB: See our answer to Question 1. No doubt improved conditions in the maritime industry would help the penetration of the technology, but we would take the position that the VSAT service providers are actually helping to give the maritime business some of the tools needed to climb out of the hole the industry is in.

BG: Not necessarily, and I'll cite the old saying "Necessity is the mother of invention" – or adoption. If merchant vessel owners were to suddenly see margins improve overnight, I think there would be less incentive to adopt new or innovative approaches than if they continue to be pressured (as they are likely to remain).

Sure there are regulatory requirements driving some uptake of broadband connectivity, but one of the key determiners of adoption continues to be a cost/benefit analysis from the vessel owner/operator.

Already, merchant vessels are finding new ways to improve overall profitability such as running at reduced speeds to conserve fuel. VSAT can take that a step further and enable advanced routing and trip planning to further save fuel and increase merchant vessel profitability. Without the on-going pressure to improve margins, another benefit for adopting satellite communications would be lost.

Numerous studies across not only the maritime market, but almost all commercial enterprises point towards revolutions in IT – new infrastructure, workflows and applications – as a key to improving efficiencies and ultimately, profitability.

What is not going to go away are the regulatory requirements – ECDIS, GMDSS, the 'seafarer's bill of rights', etc. These will all 'force' some type of adoption for those subject to the regulations, but it is these other challenges that will help boost revenues for service providers. Overall, a continued focus on increasing profitability, combined with regulations will help satellite adoption.

RR: As stated earlier, we were somewhat surprised how little impact the tough economic environment had on the growth of maritime VSAT over the past years, which clearly shows the importance of communications and connectivity at sea today.

However, it is hard to quantify the real impact as growth would likely have been even stronger without the global financial crisis. We believe the industry will continue to grow at a healthy rate with the number of active VSATs growing at a CAGR of approximately 12 per cent over the coming ten years.

10. *Digital Ship:* Where would you expect to see the greatest innovation take place in the next 10 years – antenna technology, types of transmission technology (e.g. different frequencies, lasers etc), or software / network technology?

SB: Really difficult question because there is so much innovation in the satcoms industry today and much more that could change. If I had to choose one thing, my bet would be on antenna technology.

BG: Antenna technology is perhaps an area that has the greatest potential for innovation, but it is not a single piece of the pie.

A continued decrease in the cost to access space will help drive new and innovative approaches in the space segment, while material sciences continue to improve on the ground segment.

The truly innovative product will be able to take advantage of innovation across the value-chain, from antennas to transmission technology to software or networking technology. In that sense, the greatest innovation will likely come from the software and networking technology that binds all of this innovation together.

However, the greatest innovation will come from companies that can combine all of these different innovations into a compelling value-proposition to end-users.

RR: Euroconsult expects to see a significant evolution in the efficiency of systems and thus the bandwidth available per vessel, driving all sorts of innovation in terms of applications like real-time video streaming and cloud applications previously unthinkable on board a vessel in the middle of the ocean.

We also see many interesting innovations on the antenna side of the market, like flat panel antennas that reduce the number of moving parts of maritime VSAT systems. New innovative companies such as Kymeta are expected to drive new technologies in that domain. **DS**

In-depth research reports from each of the participants in our Maritime VSAT Q&A are available.

COMSYS: *COMSYS Maritime VSAT Report (published biennially). www.comsys.co.uk*

NSR: *Maritime Satellite Markets. www.nsr.com*

Euroconsult: *Mobile Satellite Communications Markets Survey, Prospects to 2022; and Maritime Telecom Solutions by Satellite, Global Market Analysis & Forecasts. www.euroconsult-ec.com*

FutureShip to optimise UASC newbuilds

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United Arab Shipping Company (UASC) has partnered with FutureShip on a project to find the most efficient design for its future containerships.

When the shipping line decided to order new 14,000 TEU and 18,000 TEU vessels it invited various shipyards to submit their designs. The four shortlisted builders then provided detailed information so that FutureShip could assess the hydrodynamic performance of each design.

FutureShip, a GL company specialising in maritime consultancy and engineering services, calculated the total costs of transport per container-mile.

The four sets of design for both 14,000 and 18,000 TEU ships went through numerical tank towing tests based on Computational Fluid Dynamics (CFD) simulations. FutureShip ran thousands of tests to determine the speed-power relationship for the two ship classes.

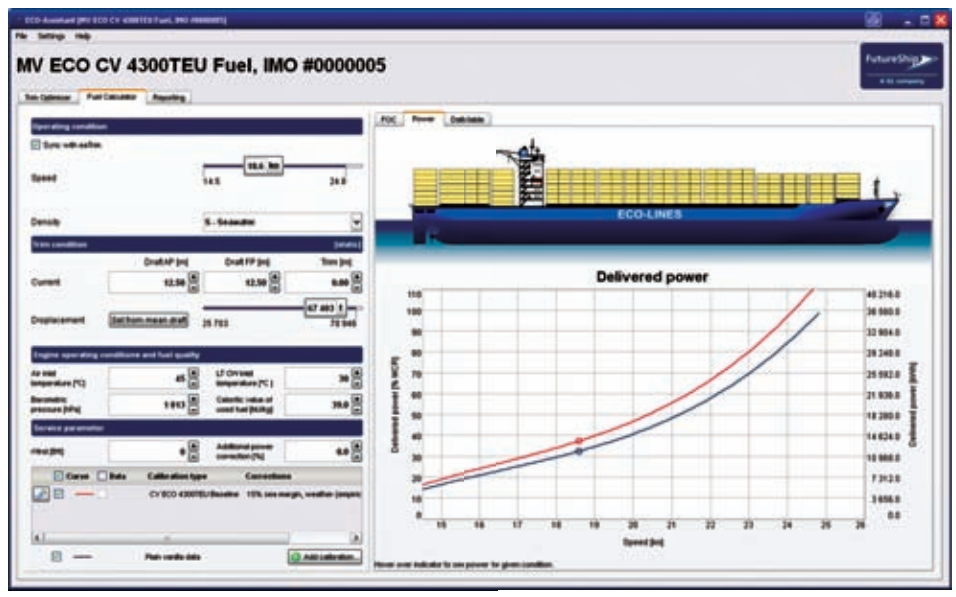
Hyundai Heavy Industry (HHI) outperformed the competition in the 14,000 TEU category and also designed the most efficient single-skeg vessel at 18,000 TEUs, DNV GL reports.

UASC signed a letter of intent following the tests and HHI proceeded with the design, enrolling FutureShip for formal parametric optimisation with the objective of reducing fuel consumption as much as possible.

More than 35,000 hull shape variants were investigated for each hull design, says DNV GL. For final validation, professional model tests were conducted at the Hamburg Ship Model Basin.

UASC has now ordered five 14,000 TEU vessels from HHI, with six on option, and five 18,000 TEU vessels with one on option. The new ship designs are currently being finalised at HHI with deliveries scheduled between 2014 and 2016, including all options.

UASC has also decided to implement FutureShip's ECO-Assistant, an interface which selects the most efficient trim for every voyage.



UASC will implement the FutureShip ECO-Assistant software program

A new version of the ECO-Assistant trim optimisation tool, which incorporates a fuel consumption calculator, has recently been released. ECO-Assistant 4.0 also features system usage monitoring, benefit reporting and an e-learning module to speed up familiarity with the system.

Developed in partnership with Hamburg-based ship operator NSC, the fuel consumption calculator predicts fuel consumption for the actual load condition, while also taking into account speed and ambient conditions.

FutureShip says that the hydrodynamic knowledge base behind the system's trim optimisation is used to generate this information. Performance data and semi-empirical corrections are utilised to provide fuel consumption curves that reflect individual hull fouling, ambient conditions, fuel quality and engine characteristics.

Björn Eichhorn, fleet director of NSC Schifffahrtsgesellschaft, said: "The ECO-Assistant data gave us the capability to reliably compute fuel consumption at draft and speed conditions not covered by model tests or sea trials."

ECO-Assistant's new reporting feature can generate PDF reports for periods or voyages, stating usage and achieved savings. These reports can be used for SEEMP (Ship Energy Efficiency Management Plan documentation).

To design the new e-learning module, FutureShip says that it has built on the experience gained from working with customers on some 600 installations of ECO-Assistant over the last three years. Through this module, crew members can familiarise themselves with ECO-Assistant, whether for an initial introduction, or for a brush-up on a certain feature.

Karsten Hochkirch, head of fluid engineering, FutureShip, noted: "ECO-Assistant can achieve efficiency improvements of up to 6 per cent. A typical 7,500 TEU container vessel operating at a slow steaming speed can reduce its CO2 emission by 2,740 tonnes per year by using the system."

"Additionally, ECO-Assistant can be integrated with a vessel's cargo planning system to realise even greater fuel saving potential, optimising ballast water management."

DNV GL started operating as one company in September as a result of the merger between Det Norske Veritas (DNV) and Germanischer Lloyd (GL).

Applied Weather Technology (AWT) has appointed Haydn Jones as its new CEO. Mr Jones had previously worked for Nera, ChartCo, the UKHO and Fugro Satellite Positioning before joining AWT in early 2013, taking the role of marketing director and business development manager.

Haydn Jones, new CEO at AWT

Veson Nautical, the US developer of the Integrated Maritime Operations System (IMOS), is opening a new office in London. Headed by George Giovas, Veson's regional director of Europe and Middle East Operations, the new UK office will serve as headquarters for these two regions and Africa, and will house dedicated sales, consulting, and technical professionals for EMEA.

Royal Dirkzwager, KVSA and **Port+,** service providers based in Rotterdam, Amsterdam and Antwerp, will launch a new version of the Ship2Report system by the end of the year, which will be accessible on tablets and smartphones. Ship2Report provides real-time information on vessel positions and movements. Once version 2.0 is launched, the developers expect to roll out new features and modules every two months.

www.veson.com
www.awtworldwide.com
www.dirkzwager.com

ADNATCO-NGSCO fleet installs Unique solution

www.uniquegroup.com
www.marorka.com

Unique System FZE has announced that it has been contracted to deliver Marorka's ship performance monitoring solutions to the ADNATCO-NGSCO fleet (Abu Dhabi National Tanker Co – National Gas Shipping Company).

Unique System FZE, a Unique Maritime Group company, will act as agents for the Iceland-based energy management company Marorka under the deal.

The project's objective is to implement energy management systems on the entire fleet of ships operated by UAE-based ADNATCO-NGSCO. The first stage of the project includes the installation of ship performance monitoring systems on board six vessels: two LNG vessels, two bulk carriers and two oil tankers.

To monitor the vessels' fuel consumption, Marorka's Onboard Energy Management System has been selected, together with Marorka Online, a fleet reporting tool. The system gathers data from various instrumentation points and provides real-time information on the overall efficiency of each vessel.

"Unique System FZE is known for its superlative technical knowledge and cost-effective solutions," said Dhia Hussain, project manager at ADNATCO-NGSCO.

"Backed by first-rate support from Marorka and factory-trained service engineers locally, we are confident that the on-board support for this project in terms of installation and commissioning of the system will be instrumental in achieving the desired results."

"Moreover, Unique System FZE and Marorka provided us with comprehensive technical input and support prior to the start of this project, which has helped to build the necessary level of confidence and trust. They have also carried out on-board surveys to check the type and status of the equipment that must be interfaced with the system."

Venkatesh Rao, division manager, Marine at Unique System FZE, said: "We have always strived to deliver the best in technology to our marine clients. We firmly believe that Marorka is a pioneer in energy management solutions based on extensive research and development activities."

The Mubaraz LNG vessel at a discharge port

Sea chefs hires Adonis

www.adonis.no

Norwegian software developer Adonis says that it is to provide its Human Resources modules to sea chefs, a Swiss-based agency which recruits and manages hospitality staff for cruise ships.

The Adonis solution will cover web-based recruitment, crew management, and payroll. Adonis says that its systems have been installed at the sea chefs' Hamburg and Limassol offices and are now being deployed on board a number of cruise vessels.

"Adonis will streamline our administrative procedures, eliminate manual workaround and increase efficiency in the crewing departments," said Michael Scheler, general manager of sea chefs.

"This will improve the service quality to our crew and cruise line clients, while we reduce operating costs of crewing departments and thus improve contribution to the company's bottom line."

"It was likewise important for us that the technology provided by Adonis was considered to be most designed for the future growth in our global operations we are expecting in the coming years."

In related news, Adonis also reports that it has released version 4.10 of its Personnel Manager software, which makes it possible to send SMS to any crew or other personnel directly from the Human Resource and Payroll system.

The system has featured a 'Send e-mail service' for many years, but Adonis notes that many of its customers considered e-mail not to be fully trustworthy as a communication channel to their employees.

E-mail addresses tend to change when an employee changes their internet provider, says Adonis, adding that mobile phone can prove a more stable tool for communication.

From the Adonis Personnel Manager, SMS can be sent about upcoming expiry dates, changes in travel itineraries, or any other information requiring an immediate notification to the employee.

The SMS function can also be used from the newly released Adonis Web Recruitment Service 3.0: to send login credentials, or informing the applicant if they are accepted for the job or not.

RS to use NAPA software

www.rs-class.org
www.napa.fi

The Russian Maritime Register of Shipping (RS) is to use NAPA software, the classification society and the Finnish software house have announced.

During design review of a newbuilding project or during existing ship modernisation, RS will use NAPA to assess and approve various calculations, such as stability calculations and statutory compliance.

"We believe the RS transition to NAPA will bring us additional competitiveness by enabling us to provide classification services in less time and with higher quality," said Pavel Shikhov, RS chief operating officer.

"It is very likely that use of NAPA by RS will promote the adaptation of this modern software application to the Russian market where the shipbuilding industry is ramping up."

Carl Johan Schauman, vice president of sales at NAPA noted that the company has a long history of cooperation with the Class Societies, maritime authorities, design agencies and shipyards globally.

"NAPA software has been type-approved by RS for a number of years, and we are very pleased to welcome RS to the group of NAPA users as well," he said.

"We are convinced that now when RS becomes a user of our software, we will together be able to support the Russian marine industry in a very effective way."

Korean Register patents world's first 'Smart Fleet' app

www.krs.co.kr

The Korean Register has obtained a patent on its 'Smart Fleet' app which was launched earlier this year.

The classification society says that the application delivers up-to-the-minute information on vessels, fleets, surveys, audits and port state control to a smartphone or tablet. Surveyors and others working in the field can access survey and technical information using the app on Android and iOS platforms.

'Smart Fleet' provides a complete vessel register, information on PSC detentions, classification rules, fleet lists, survey status, reports and schedules, among others.

Two levels of information are available. The ordinary user can view basic information while owners of KR classed ships are given visibility over the full range of data.

'Smart Fleet' also includes functions such as a push notification system to receive urgent messages concerning PSC and technical updates, as well as a surveyor locator which identifies the KR survey office nearest to the phone user.

Jung Dong-Jae, general manager of KR's information technology team and in charge of developing the application, said: "The Smart Fleet app is a great tool that is already making efficiency improvements to shipping companies. Today, busy people expect instant access to quality, reliable and bang up-to-date information and that is exactly what Smart Fleet delivers."

"We have already seen a rapid take-up of this app and we expect many more users to come online soon. Obtaining the patent demonstrates that we have developed another piece of unique technology for our global customer base."

KR chairman and CEO Chon Young-Kee also commented: "The award of a patent proves KR's exceptional IT technology skills and I firmly believe we lead the way in software development for ship classification."

"We will continue to research, innovate and launch more software products to improve the service and satisfaction we deliver to shipping companies across the world."

KR's apps can be used to access a range of services

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Fidelio equips Hurtigruten

www.fcruise.com

German IT provider Fidelio Cruise has replaced shipboard systems on two Hurtigruten vessels and plans to complete similar installations on the other ten ships in the Norwegian coastal cruise company's fleet by the end of 2014.

Fidelio says that Hurtigruten's 12 vessels will all receive new Shipboard Property Management System software, especially tailored for their coastal operations, as well as Fidelio's Materials Management, Fleet Management, iCrew and Simphony systems.

After the MS Kong Harald in January 2013, the MS Polarlys went live with the new software in September.

"We decided to install Fidelio Cruise software across our fleet following extensive analysis of advanced software systems available on the market and matching our complex operational requirements," said Hurtigruten CEO Daniel Skjeldam.

Sigrid Hov Fodnæss, Hurtigruten's ICT project manager, explained that the company has "worked very hard on the pre-installation phases in order to ensure that our business needs are translated into easy-to-use systems that can benefit the organisation in the long run."

"We are pleased with progress to date and we have already been able to demonstrate how this innovative IT can help to improve on-board and shoreside operations. We look forward to completing the remaining installations in the months ahead," he said.

Fidelio says that a particular challenge of the project has been the Hurtigruten's contractual schedule obligations. The schedule of daily calls to 34 ports along the Norwegian coast cannot be deviated from, meaning that the new systems have had to be installed whilst the ships have continued to run as usual.

Challenges specific to Hurtigruten included the high frequency of port rotation and the complex handling of passengers, crew, and car transport, all centralised in one software program. In addition, continuous crew rotation on a 22 day shift has presented a challenge for training on the technology.

Fidelio says that it is now addressing specific issues relating to the operation of the MS Fram, an expedition vessel which cruises in the Arctic and Antarctic Oceans.

"Fidelio Cruise has embraced this project as a great opportunity to serve this industry and to come up with the most innovative IT solutions designed and built to support Hurtigruten's business model," said president Antonius Heuer.

"We have partnered successfully with them in developing new software systems such as the Port Handling module and the Housekeeping module, specifically designed for an 'on schedule' business."

"These new developments expand our expertise into a new sector and have enriched our portfolio of products," he continued.

"We are delighted with progress to date and we are proud that we have been able to fulfil all of our customer's requirements. We are looking forward to a successful fleet deployment with benefits for individual business units and their profitability, as well as for passengers and, last but not least, crew."

The MS Polarlys went live with the software in September

Hansa orders trim optimisation module

www.interschalt.de

German developer Interschalt says that Hansa Shipping has placed an order to integrate a trim optimisation module into the loading computer of 30 of its containerships.

Hamburg-based Hansa has been using Interschalt's MACS3 loading computer for its own container fleet for several years and it has recently ordered 30 TROP modules.

Interschalt says that its TROP software optimises trim with regards to the current loading condition and main engine power. It adds that as an integrated module of the MACS3 loading computer, TROP also ensures best possible ballast distribution.

The software provider says that 30 container vessels ranging from 2,500 to 6,500 TEUs (twenty-foot equivalent units) are being equipped under the deal.

Hansa's managing director Dieter Mackeprang said: "Combining the loading computer with a sophisticated module for improving efficiency by optimising trim is another step in the right direction to being able to offer a modern, energy-efficient fleet to our charterers."

"Our vessels are equipped with state-of-the-art software technology. With TROP, every customer can optimise trim easily and hence save fuel and money."

In related news, Interschalt reports that it has also introduced a new stowage planning software called StowMan, which it expects to be market-ready in the second quarter of 2014.

The software was developed in cooperation with Professor Rune Møller Jensen of the IT University of Copenhagen, who demonstrated its use at a recent user conference in Germany.

StowMan makes it possible to plan stowage by taking into account trim by cargo instead of ballast water, for example, as well as load limits and hazardous goods handling. Interschalt says that it helps avoid unnecessary restowage and allows for shorter port laytimes.

The German developer says that the software can reduce stowage planning to a matter of seconds and save costs, e.g. through reduced laytimes or by decreasing the volume of ballast water needed and replacing it with cargo.

For the final development phase of StowMan, Interschalt says that it will be involving customers and that the first cooperation partners are already signed up.

"Aided by the input of pilot customers, we will ensure that the software is maximally adapted to the needs of future users," said Interschalt CEO Robert Gärtner.

The HS Paris, one of 30 ships that will implement the trim optimisation technology

MACSYS integrates systems on THOR

www.scisys.de

SCISYS has said that its marine integration software MACSYS is being used to integrate the systems on board a new Twin Hulled Offshore Raider (THOR) vessel from CTruk UK.

MACSYS integrates the engines, lights, electrics, Radar, GPS, VHF and internal comms, charting, as well as electro optical infra-red cameras and laser ranging systems onto a single display.

Each crew member can access the various systems and pass control via a "handover take control" function.

SCISYS says that the ability to integrate any known and future element of a ship's instrumentation and controls into a single screen is unique to MACSYS. The IT company says that it allows vessels to be easily repurposed and adapted and removes costly equipment disposal, upgrade and re-fit costs.

Unisea launches Emergency

www.unisea.no

Norwegian developer UniSea has launched an emergency management software application to add to its software portfolio.

UniSea Emergency is designed to help companies manage information flow and resources better during a crisis and during drills. It is built around an emergency log, described by the company as a kind of integrated workspace with a live data feed.

When a user creates a log entry, all previous communications related to the caller or the relevant crew member are displayed.

The Emergency Manager updates a shared list of objectives, which is reflected in the workspace for all users of the system.

A meeting and task solution is also available, to help the organisation drive a plan of action.

Predefined meeting templates allow for the creation of tasks directly in the meeting minutes. Every user works out of their personal task list, and all managers also have a list of tasks they have delegated. When a task has been completed, a mail notification is sent to the one who delegated the task.

Authorised personnel can access UniSea Emergency from their own computer, iPhone, iPad or Android device, while the system can also be displayed live on a big screen in the Emergency room.

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R&D project to create a model for managing regulations

A recently launched research project, partly funded by the EU, will look at creating a model for digitally managing the various maritime regulations emanating from international, European and national authorities.

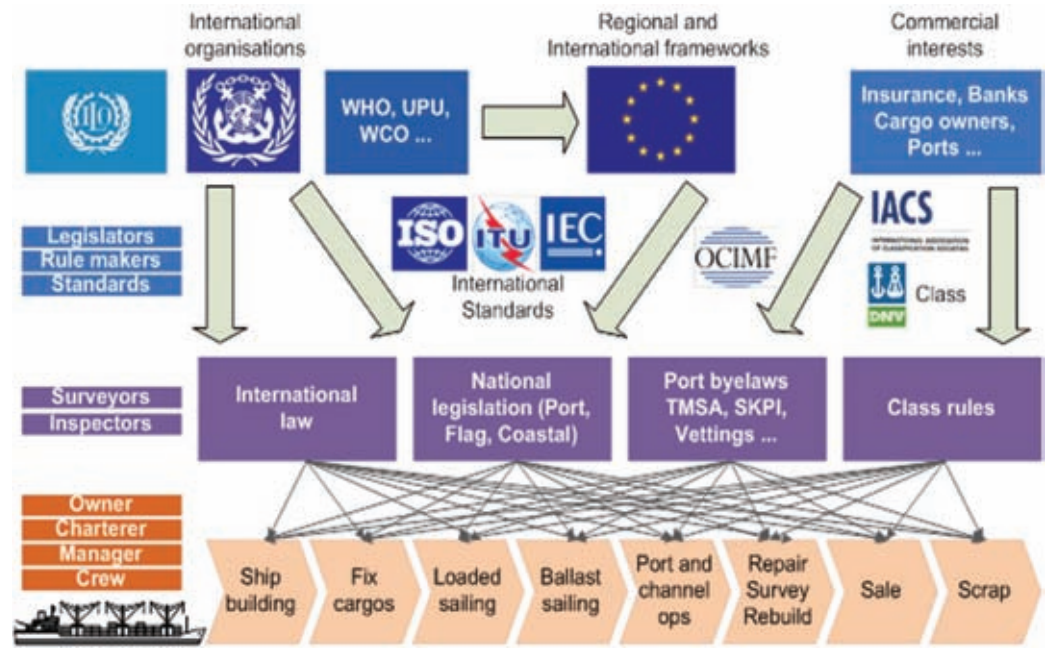
The three-year R&D project, called e-Compliance, will focus on establishing a cooperation model between regulation setting and enforcement authorities, both for port state control and IMO regulations.

It will also aim to demonstrate automated compliance management through modelling of regulations in electronic format and harmonised e-Services for controls and inspections. Finally, the project hopes to additionally formulate recommendations for e-maritime policies.

In the maritime domain, regulations are created by numerous different bodies, with little co-operation between them, says e-Compliance. As such, there is a significant lack of cohesion between the vast array of regulations and the possibility of conflicting regulations is very real.

By creating a model for managing regulations digitally and creating services for all the different stakeholders, e-Compliance says that it can harmonise these regulations and reduce the burden for those having to enforce the regulations as well as those who must comply.

e-Compliance consists of 10 partners: BMT Group Ltd, Det Norske Veritas (DNV), Danaos Shipping Co Ltd, INLECOM Systems, The Netherlands Organisation for Applied Scientific Research (TNO), TEMIS, Acciona Infraestructuras, PORTIC Barcelona, Norsk Marinteknisk Forskningsinstitutt AS (MARINTEK) and the Maritime Administration of Latvia.



e-Compliance aims to create cohesion in regulations from various authorities

VIKING acquires Saatsea

www.VIKING-life.com
www.VIKINGsafetyshop.com
www.saatsea.com

VIKING, a marine and fire safety equipment manufacturer, has acquired a majority stake in Saatsea, an IT start-up which offers cloud-based onboard training and competence management systems.

The company, headquartered in Esbjerg, Denmark, has been renamed VIKING Saatsea.

VIKING says that through the online training system crew members can complete and register module-based theoretical and practical assignments, with up-to-date competency assessments for marine and offshore inspections.

Saatsea has developed a training system for crew members of Emergency Rescue and Recovery Vessels (ERRV) and is authorised to conduct assessment on board ERRV vessels against the OPITO Approved Standard for OODTP.

The cloud-based solution ensures that the system works even when the vessel is not on the internet. The information is synchronised automatically whenever the vessel has the opportunity to come online.

The system is also designed to manage the upcoming regulatory requirements for documentation of STCW refresher courses for all IMO vessels.

"We're always on the lookout for anything that can make doing business easier for our customers while improving safety on board the vessels," said VIKING CEO Henrik Uhd Christensen.

"This addition to the VIKING portfolio has the potential to positively influence customer financials as well as safety."

"They think out of the box – and they've built a great solution. Now, with the VIKING brand and global presence, we can help them expand in the global market far faster than would otherwise have been possible."

Saatsea director Kim Baarsøe added: "First and foremost, we are a team of solution developers. To take things further, we needed the help of a partner where we could become part of a broader solution. And VIKING has always stood out for us as a global company that has the worldwide reach we could leverage, as well as an end-to-end quality approach right across the value chain."

RK Offshore agrees TM Master deal

www.teromarine.no

Norwegian IT company Tero Marine has won new contracts with RK Offshore Management Ltd, to install its TM Master software on 26 offshore vessels, and Indonesian offshore company Logindo to implement software on several of its ships.

The TM Master application includes crewing, maintenance, purchasing and stock control within the same system, with the aim of facilitating fleet management.

Under a five-year agreement, Singapore-headquartered RK Offshore will lease the software from Tero Marine for a contractually fixed annual sum, which has not been disclosed.

The Bergen-based developer says that the leasing contract covers 26 RK Offshore supply ships, with the possibility of extending this to an additional 15 vessels.

"We aim to ensure the process is as error free as possible," said Satish Kanakasabai, technical manager at the Tero Marine office in Singapore.

"For the system to deliver optimum performance from the word go, we make sure everyone using the software is properly trained first."

Rupesh Tiwari, of RK Offshore, noted that the leasing element of the contract has been an attractive option because it helps to keep operating costs predictable.

"This gives us greater flexibility, as it means we do not have to make a heavy investment in advance," he said.

The deal with Logindo meanwhile covers software implementation on three ships but with the possibility of being extended to include the company's entire fleet of 35 vessels, says Tero Marine, hoping the contract can help open several doors in the region.

"Logindo is a fast growing company, and one of the biggest in offshore shipping in the region," said Mr Kanakasabai.

"Over a relatively short period of time, they have expanded their fleet with a large number of vessels and are an exciting company for us to work with."

Tero Marine managing director Jan Erik Hårvei also noted that "This is our first local client in a new and exciting offshore market, and something that is going to mean a great deal for our future development."

Zeeland Refinery adopts CargoDocs for Barges

www.essdocs.com

Electronic Shipping Solutions (ESS) has announced that Zeeland Refinery has adopted CargoDocs for Barges.

CargoDocs offers electronic bills of lading (eB/L) and supporting documents for the Tanker, Barge, Bulker and/or Liner markets. Zeeland Refinery, in Vlissingen (Netherlands), is the first company in the Amsterdam-Rotterdam-Antwerp (ARA) region to go live on CargoDocs for Barges.

ESS says that Zeeland Refinery created a customised interface which allows nominations to be received directly within the company's mass balance system. This is the first multi-party, electronic interface at a refinery or terminal in the ARA market, it adds, and the first time that loading details have been distributed automatically from a loading terminal to all participants in the trade chain.

Zeeland Refinery's Ann Veraverbeke, manager Valorisation, said: "The move to eNominations via the CargoDocs process brings Zeeland Refinery a step forward in electronic handling of their logistic processes. After completing a comprehensive test phase, the nominations for export by barges will from now on be processed via the ESS platform interfacing with the refinery's logistic system."

Zeeland Refinery is a joint venture between Total and Lukoil. Litasco, which is responsible for Lukoil's international trading activities, used CargoDocs for electronic barge nominations unilaterally for over 18 months before Zeeland Refinery developed the interface to accept nominations to their refinery IT system.

Ms Veraverbeke said: "The different teams of Litasco Group, Zeeland Refinery and ESS have been working closely together to make this successful. At Zeeland Refinery, we are looking forward to benefiting from the efficiency gains in the electronic nomination and documentation process and thank the project team for their efforts."

William Harwood, head of operations, Litasco, added: "Litasco is pushing forward electronic solutions in the ARA barge market to modernise the way we do business. Electronic nominations transfer information as data packages, cutting out double input and summary spreadsheets. That enables the company to have live information about a nomination once it has been sent, accepted, rejected or amended."

"Most importantly for prompt invoicing and cash flow it gives immediate notification of barge loadings, not only for the first receiver, but right down the trade chain."

US shipbuilder to use SENER CAD/CAM system

www.sener.es

Spanish company SENER Ingeniería y Sistemas has announced that Florida-based Eastern Shipbuilding Group has signed a licence agreement to use FORAN, a computer-aided design/ computer-aided manufacturing (CAD/ CAM) system.

The deal covers the complete implementation of FORAN, comprising: Forms Generation, General Arrangement & Naval Architecture, Hull Structure, Machinery & Outfitting, Electrical Design and Advanced Design & Drafting.

SENER says that Eastern's engineers and designers have been trained over the summer and have now started a project using FORAN: a multipurpose support vessel of 340 feet.

From right: Verónica Alonso, SENER; Kenneth R. Munroe, Eastern Executive Vice President and Chief Operating Officer; Rodrigo Pérez, SENER; and two Eastern IT specialists

Veson Nautical announces cloud-based IMOSLive

www.veson.com

Veson Nautical has launched IMOSLive, a cloud-based version of its flagship Integrated Maritime Operations System (IMOS) product.

The Boston-based developer says that this hosted option eliminates the need for up-front IT infrastructure investment and management, in-house installation of software, and internal hardware and software upkeep.

IMOSLive clients are provided with hosting services but also software maintenance support by Veson Nautical. They can host their IMOS applications on regional cloud server instances and connect to IMOS from anywhere via a web portal. Additionally, they can opt for Veson-managed upgrades. Data is protected with 256-bit SSL encryption.

"It is a scalable way for shipping companies to get up and running with IMOS quickly," says Sean Riley, vice president of commercial operations at Veson.

"On top of IMOS' industry standard workflows, IMOSLive provides quick and resource-efficient implementation. Each server instance's security is guaranteed, so clients can leave infrastructure and maintenance concerns to us."

IMOS is comprised of core Chartering, Operations, and Financials modules, plus optional add-on functionality for bunker management, cargo scheduling, trading and risk management, demurrage, pooling, reporting lightering, Veslink, and LNG. IMOS can also interface to third party systems and market data feeds.

Eye-share wins new customers

www.eye-share.com

Norwegian company Eye-share, which develops invoice automation software, reports that it has won new contracts with eight shipping companies during the first half of 2013.

Its new customers are: MOL LNG, Star Reefers, K Line LNG Shipping UK Ltd, Anthony Veder, Rederiet Stenersen, Anglo Eastern UK, Norwegian Car Carriers, and Maestro Ship Management.

Eye-share says that its software digitises invoices and other documents which are streamed into workflow processes, and is now in use by about 40 shipping companies.

The company notes that its applications are integrated with a number of ERP and financial and procurement software suites, which it says helps to remove paper from work processes.

The documents are scanned, distributed and processed in a workflow that includes all necessary approvers, while compatible Apps allow users to approve invoices anywhere via their tablets or smartphones.

Hutton's electronic Product Guide

www.huttons-chandlers.com

Ship supplier Hutton has released a new Product Guide in electronic format.

The new Product Guide lists more than 10,000 items of marine, maintenance and safety equipment available for purchase. It is available online, downloadable from the web, and on USB sticks.

It also provides customers with an online ordering tool for its various products.

Hutton's managing director Alex Taylor said: "The website offers the ability to download the catalogue and save on a PC or handheld device – which is great for use onboard ship where an internet connection is not always available."

The Guide is now online

Seagull expands CBT portfolio

www.seagull.no

Norwegian company Seagull has released new additions to its portfolio of computer-based training (CBT) programs, as well as revisions to a number of existing modules.

The new releases include: Principle of Assessment; Onboard Assessment; Oil record book – part 11; Galley operations 3 – food handling; Electric propulsion – fundamentals; and Marine environmental awareness, Environmental Challenges.

Major revisions have been made to two Steering gear modules: operation; and construction and maintenance. Minor amendments have also been made to Introduction to computers; MLC 2006 – basic introduction; Galley operations – workplace and equipment safety; Galley operations – hygiene; and Drug and alcohol policy and testing.

"Owners and seafarers alike are facing an increasing array of demanding legislative requirements and Seagull's extensive learning modules are designed to ensure they are able comply with these," said Roger Ringstad, Seagull managing director.

"For instance, the Maritime Labour Convention, 2006 came into force in August and, as with our original MLC modules, the revised addition with the introduction of the Portuguese language assists seafarers and shore-based staff alike to make themselves fully aware of their rights and obligations in the event of non-compliance with the convention."

HPS calculates impact of antifouling paint

http://hps.jotun.com

Norwegian coating manufacturer Jotun says that Eitzen Chemical has decided to implement its Hull Performance Solutions (HPS), which includes a data management system to measure the impact of its antifouling paint system, on two chemical carriers.

Launched in 2011, HPS comprises SeaQuantum X200 antifouling and a tool that helps shipping companies measure the impact of the system on the energy efficiency of their vessels. The product is based on a no-cure-no-pay business model.

Eitzen's first vessel, Siteam Discoverer, applied SeaQuantum X200 to the hull at the COSCO Dalian Shipyard in China in May, while the next vessel will dock in October later this year.

"Through several years of measuring our vessel's performance, we recognise that the correct choice of antifouling is one of the low hanging fruits when it comes to increasing our vessel's energy efficiency," says Rasmus Kjaer, general manager technical for Siteam Discoverer at Eitzen Chemical.

"Eitzen Chemical is aware of its environmental responsibility and we strive to comply with and maintain high standards in order to reduce the environmental impact from our operations."

"We are therefore excited to see the first hull performance measurements on the two vessels and the effect the coating has had on their fuel consumption, emission and operating efficiency."

Jotun says that, compared to market average antifouling, SeaQuantum X200 is expected to deliver an improvement in propulsion efficiency of 15 per cent on a ship that maintains its speed over 60 months.

Eitzen Chemical operates a sailing fleet of 50 ships, mainly coated and stainless steel vessels.

Videotel launches new Ports and Pilots catalogue

http://videotel.com

Videotel has launched a new Ports and Pilots catalogue comprising over 70 courses.

Areas covered include navigation and ship handling, human elements and resource management, maritime security and environmental protection, personal safety, port facility and ship cargo operations.

Courses are delivered via a range of media: video, interactive CBT (computer based training), booklets and interactive maritime training courses. Training can take place in groups or by self-study, on board, on shore or online, while Videotel's cloud-based Continuing Competency Manager (CCM) provides continuous training assessment.

"A great deal is expected from personnel working in this specialist field," notes Nigel Cleave, CEO of Videotel Marine International.

"The breadth and depth of expertise required is vast, and Pilots and port workers operate in an area where human error can have very serious consequences, both financially and in terms of human life."

"It is almost unthinkable to those outside our industry to observe that the simple act of a Pilot or port worker joining or leaving a vessel can result in a risk of death or serious injury," he continues.

"Weather conditions, behaviour of other vessels – even human factors such as fatigue – have a very significant effect on operations in this arena. Ultimately all those working in the sector must take action to ensure that in addition to technical skills, they fully understand the hazards of even relatively straightforward procedures such as the transfer process, take responsibility for their own safety and carry out the necessary steps to mitigate the risks involved."

Videotel's portfolio of related courses includes Pilot on Board, Pilot Transfer, Ship Call, Safe Gangway and Ladder Operations as well as its Boarding and Leaving a Vessel at Sea course.

Hapag-Lloyd to implement GL HullManager

www.gl-group.com

The newly merged DNV GL organisation has announced that Hapag-Lloyd will implement GL HullManager as its central monitoring and reporting tool for hull maintenance activities.

DNV GL started operating as one company in September after the merger between Det Norske Veritas (DNV) and Germanischer Lloyd (GL) was approved.

GL HullManager is part of DNV GL's fleet management software portfolio and provides ship managers with hull inspection and thickness measurement support. Ship owners can use the system to plan, track and implement the inspection strategies for their fleets.

"We are convinced we can get an easier and faster overview of hull conditions across the fleet and much better preparation for dry dockings with GL HullManager," said Lutz-Michael Dyck, director of Technical Fleet Management at Hapag-Lloyd.

Sebastian Eggert, the GL software account manager responsible for the liner shipping company, noted: "Hapag-Lloyd set us a very stringent set of requirements they needed the system to meet and we are very glad we were able to match their expectations."

DNV GL says that the project has already started and the teams will look to deliver the first vessel groups during the course of this year. Hapag-Lloyd has more than 150 vessels in service.

Launched in 2011, GL HullManager keeps track of the condition of a vessel's hull on a ship specific 3D model complete with the ship's structural details. It supports the hull integrity process, from inspections to reporting and condition assessments of tanks, cargo holds and coatings, by means of crew inspections and thickness measurements.

The crew can mark any coating or structural failures on the 3D model, such as marking an individual finding or adding a photo and description, which can then be assessed by superintendents onshore.

Hamburg Express will be among the vessels to use GL HullManager

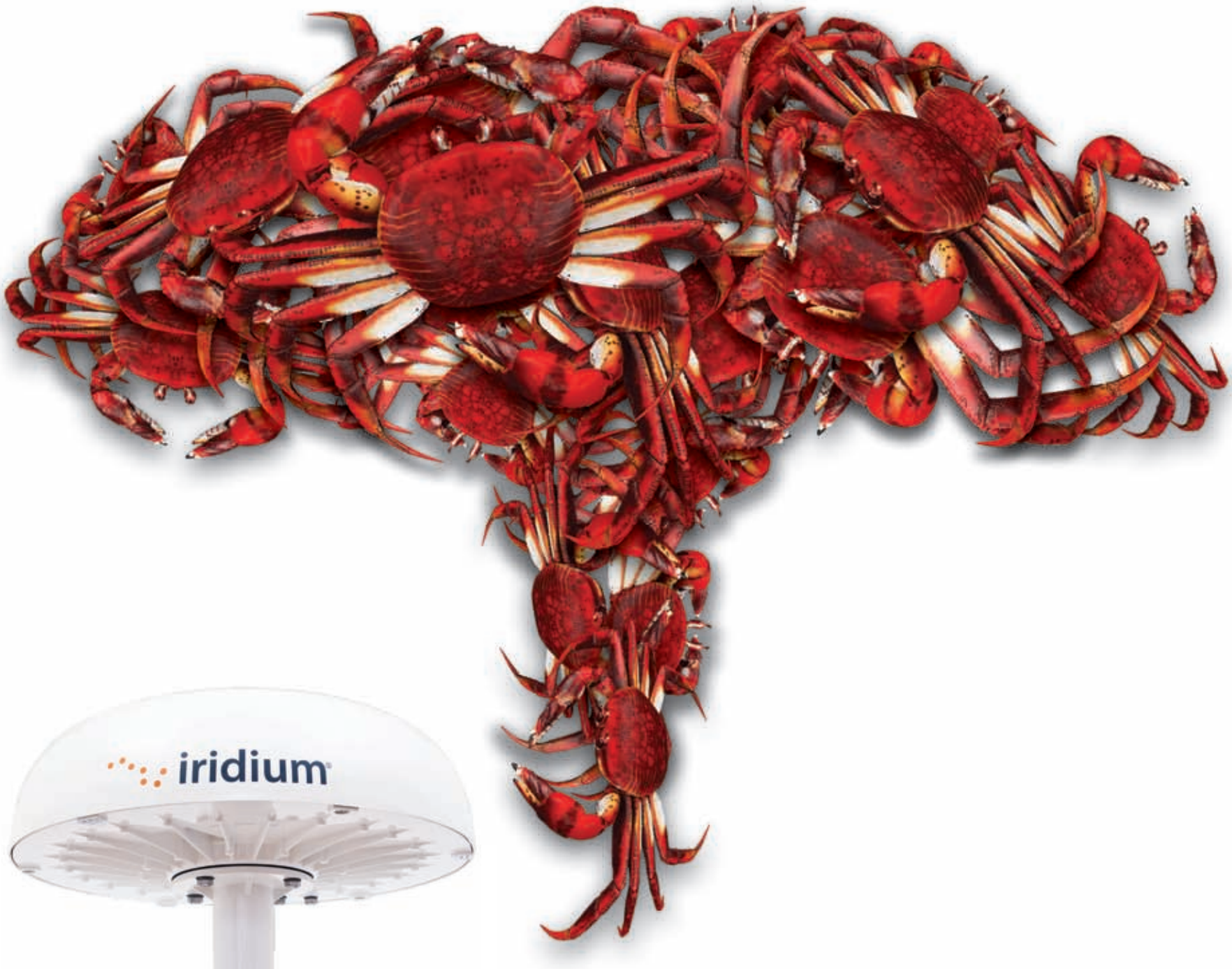
The system can make information on the condition of hull structures available to any employee across the company, once the inspection results have been approved and synchronised. Stored in a lifecycle database, hull condition data for each individual vessel can be traced over time allowing sister vessels from the same fleet to be compared.

DNV GL says that a dashboard overview of the entire ship is also available to allow the company to more easily pinpoint any critical findings by crew or third-party inspectors.

GL HullManager is currently used on more than 350 vessels worldwide, the company says, and was recently upgraded with a mobile client version.

Upcoming extra features in development include an automatic proposal for the amount of steel to be replaced for a dry dock tender specification, integration of hatch cover tightness measurement results and hot spot marking functionality.

Ship Shape



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Improving the 'fit' between docks and vessels

The costs involved with inefficient management of terminal operations and vessel scheduling can run into tens of thousands of dollars per day – applying modern software systems and changing the approach to this process can lead to significant improvements, *writes Robert Kessler, PortVision*

The challenge of matching the right vessel to the right dock has become increasingly difficult with higher barge and ship traffic volumes, the growing variety of liquid petroleum products that must be transferred, and increasing cost pressures.

This challenge can now be alleviated with the advent of enterprise terminal management tools that streamline the jetty or dock scheduling process and enable tighter collaboration among stakeholders.

This article will explore vessel scheduling best practices using tools that match existing ship and cargo characteristics with the terminal's dock restrictions, warn schedulers when there is a dock fit conflict, and support all of the key processes associated with dock fit, berth scheduling, and berth activity logging.

How does a cargo scheduler select the best vessel for the job, and a dock scheduler select the best dock for a specific ship?

Typically, a cargo scheduler uses many tools to evaluate the vessel's history, safety record, and configuration. One of the first questions asked is whether the vessel has all required documentation and certifications, in order to avoid lengthy inspections and the possibility of non-compliance issues that will delay the discharging process.

Vessels also must have all necessary equipment, such as vapour recovery systems in the case of gasoline cargo, without which they will be turned away from the dock. Additionally, the age of the ship comes into play, and there is a separate set of criteria for vessel vetting, which can be an annual process for older ships, or a two-to-four year process for younger ones.

Vessels also must meet all necessary docking criteria. Not all berths can handle each type of vessel including ships and ocean or inland barges. There are dock restrictions related to the overall length and beam of the ship, the maximum distance from the bow to the centre of the manifold, and the vessel's ability to accommodate the maximum safe draft of the dock.

Vessel owners may also have their own associated requirements related to under-keel clearance which, if not met, might require short loading and result in dead freight penalties.

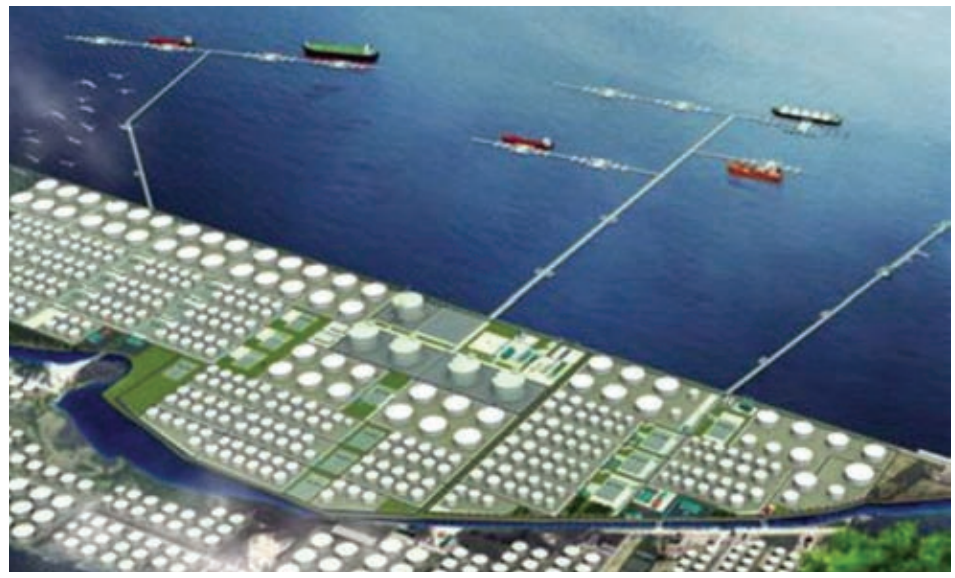
The Army Corps of Engineers publishes information about dock depth permits, which dock owners and managers must renew on a periodic basis. Some vessels might violate these permits if they are brought in to dock.

Meanwhile, tidal movements will affect permitted depth on a daily basis. The tide window is calculated and published each month and, depending on the day and time, a vessel with, say, a 40-foot draft might not be authorized to proceed inbound to a dock with a 42-foot depth until there have been two hours of flood tide.

Dock Schedulers also must take into account the most recent sounding survey, which is generally taken every six months at high-density, high-traffic docks.

Vessel cargo is another factor. There are hundreds of types of liquid cargo, each with different viscosity levels that can affect pumping speed and discharge efficiency. In a busy terminal operating at high capacity, the efficiency benchmark might typically be one hour for tying up, two hours each for connecting and disconnecting the hoses, and a total of 24 hours for the entire transfer process from the start of pumping to completion.

A vessel that pumps at a slower rate than average would need to be scheduled at dock for a correspondingly longer period. And yet any such delay affects other traffic that is waiting to dock and transfer.



Efficiently managing the arrival and departure of ships at terminals can be worth tens of thousands of dollars per vessel per day

There also are physical dock criteria to consider. For instance, each dock with loading arms will have a different maximum height, and the associated air draft between the water line and vessel's manifold, both of which are tied to the loading arm's warranty.

Some ships have masts that are too high to clear the loading arms. While they may be able to come into dock, they might not be able to exit without reducing ballast, which many docks will not allow.

If a dock doesn't have mooring winches, vessels must guarantee they have soft lines rather than wires that might harm barges loading on the other side of the dock, and that they can meet the requirements for movement fore, aft and off the dock so as not to harm the loading arms or cause a spill.

Hose configurations are also important. For instance, a ship arriving with a gasoline cargo might have prepared its 8-inch lines with reducers in order to adapt them to connect with the dock's 12- or 16-inch lines. If all of this has been done on the starboard side and the dock scheduler requests the vessel to arrive portside alongside, then the crew will have to disconnect and reconfigure, causing delays.

Worse, the ship might not have reducers at all, which in some cases can lead to a 24-hour delay while the proper parts are fabricated and installed. Gangways are also important: if a ship doesn't have its own gangway, the terminal will need to provide a shore gangway, which may not be available if and when it's needed.

Comparing data

Clearly, there are a large number of complex issues to consider and evaluate, and each terminal has unique restrictions.

For instance, it may be that dock one cannot be used if there is a ship at dock two. Or that dock three can handle two barge movements, or only one ship job at any given time.

All relevant ship characteristics must be compared with current terminal condition and restrictions. Plus, there are additional vessel fit criteria related to third party services.

As an example, some pilots operate in daylight only, and in many case tugs must be ordered well in advance of bringing ships in, as part of the inbounding pilot notification process.

It's also important to know whether the vessel is using an approved local agent or its own, out-of-town agent. Many dock operators prefer a local agent who is familiar with the area's rules and customers, and this can become part of the vessel fit criteria.

The cost of poor vessel fit can be extremely high. The cost to anchor one vessel during a delay can be as much as $25,000 to $30,000 a day, which covers the pilots, tugs, and cargo transportation delay.

Few refineries keep more than three to four weeks of crude inventory in their shore tanks, because of the lost income resulting from idling that much product, so any delay in transportation very quickly impacts the refinery production flow.

All of these issues can create a complex decision matrix when scheduling dock jobs. To mitigate these risks, dock schedulers generally maintain a database containing all of these details.

They use this information to choose vessels, and also consult the data during day-to-day scheduling tasks. It can be difficult to access this information, however, in a quick and efficient way during a busy day with many vessels to schedule and expedite.

There are additional challenges, other than dock fit, that face schedulers. Often, dock schedulers rely on experience and several spreadsheets and references to make decisions about what job goes on what dock.

This cumbersome and error-prone process can now be eliminated with the advent of enterprise-class terminal management systems that include dock management tools.

These systems can offer an end-to-end marine terminal optimisation solution that dramatically improves the visibility, speed, productivity and efficiency of marine dock operations, by combining vessel tracking, job scheduling, activity logging, and high-value business intelligence, utilisation, and demurrage reporting into a single integrated platform.

Using a software system creates the possibility for the operator to manage a comprehensive set of dock fit rules that, once configured, allow the dock scheduler to be notified of any violations to the rules when scheduling ships, and for this warning to continue to be displayed collaboratively throughout the scheduling process until it is corrected.

Using software in this manner will clearly improve on the process of operating with complex spreadsheets that may not be accurate, and Word documents that schedulers must reference on a daily basis.

Using an integrated modern software application can also ensure that all information is input into the system, so anyone can manage the schedule. All information is always up to date, and all information is collaborative. Anyone with access authorisation can see it at any time.

Terminal operators have smaller and smaller margin for error as they manage day-to-day workflow in an increasingly complex environment. Vessel fit is a key element that, when managed well, can make a big difference in expediting traffic flow, reducing cost and management headaches, and avoiding costly delays.

Today's enterprise terminal management systems offer important dock and berth management tools that significantly enhance vessel fit effectiveness and all other aspects of operating waterborne terminal docks. DS

About the author
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AIO for PC Maritime ECDIS

www.pcmaritime.co.uk

ECDIS manufacturer PC Maritime has announced that it is to add UKHO's Admiralty Information Overlay (AIO) to the functionality of its Navmaster ECDIS.

AIO is a free service to Admiralty Vector Chart Service (AVCS) customers and is claimed to be the only service available that includes worldwide Admiralty Temporary and Preliminary Notices to Mariners (T&P NMs) as an overlay on ENCs and new ENC Preliminary Notices to Mariners (EPNMs).

AIO also includes the results of the Admiralty Assurance Programme, a review of the world's Electronic Navigational Charts (ENCs) being undertaken by the UKHO (United Kingdom Hydrographic Office) to identify and resolve significant differences between ENCs and existing paper charts.

AIO automatically updates AVCS by displaying information directly onto ENCs. For the PC Maritime ECDIS, this information is incorporated into its Route Planning & Monitoring with an intelligent search function.

"We spent time thinking how we could make our implementation of AIO more useful to navigators," said Anne Edmonds, marketing director of PC Maritime.

"Navmaster users can check their routes against T&P NTMs and ENC-specific NTMs at the planning stage. We added an intelligent 'Search' and 'Go-To' function to make it quicker for the navigator to locate relevant Notices by either number or name."

PC Maritime is also an Admiralty Digital Distributor and can provide ECDIS customers with charts, installation, training and on-going support. Existing users of Navmaster ECDIS can upgrade their system and all new customers will receive the latest AIO-compatible software.

News of this PC Maritime development came shortly before UKHO issued an upgrade to its AVCS CD service to the S-63 format (Edition 1.1) on October 17th.

S-63 is an industry standard overseen by the International Hydrographic Organization (IHO) that provides Hydrographic Offices and ECDIS manufacturers with the tools to protect, via encryption, the data within Electronic Navigational Charts (ENCs) and to authenticate the originator of the ENCs.

The IHO will withdraw S-63 Edition 1.0 on December 31st and it has already released Edition 1.1, which ENC service providers will be required to use from January 1st 2014.

UKHO has announced that it will upgrade its AVCS CD service to S-63 1.1 two and a half months before the deadline. From October 17th, AVCS CD users will no longer receive 1.0 format disks, unless specifically requested via their Admiralty Chart Agent.

AVCS with S-63 1.1 is already available in DVD format and there is no extra cost to upgrade to S-63 Edition 1.1 on CD or DVD.

Jason Scholey, product manager for AVCS at the UKHO, said: "AVCS users need to transition to the latest version of the S-63 security standard by the end of the year in order to remain compliant, but there are plenty of benefits in making the switch as soon as our S.63 1.1 CD service goes live from 17 October."

"By upgrading to S-63 1.1, users will benefit from fewer warning messages than before and with no requirement to change the security scheme certificate, as newer ECDIS models come with the IHO certificate used by S-63 1.1 (IHO.CRT) pre-installed."

"The UKHO is working hard to provide as much information and guidance as possible to our customers in order to help them to make a smooth, seamless transition and to enjoy all of the benefits. Thanks to S-63 1.1, ECDIS users are assured of the security of their ENC data, the authenticity of their charts and the continued compatibility of all S-63 compliant chart services and ECDIS models, whilst enjoying faster, simpler and more effective ENC handling. Put simply, this means more secure and efficient navigation."

The UKHO has prepared some advice to support AVCS customers who are making the transition to S-63 1.1. A list of compatible ECDIS models, individual ECDIS installation guides and videos can be found under the Support and S-63 tabs at www.ukho.gov.uk/AVCS

AVCS is being upgraded to the new edition of S-63

The UKHO portfolio has also been strengthened by the recent announcement from the Russian Federation confirming that it has issued flag state approval for Admiralty Digital Publications, meaning that vessels flying the flag of the Russian Federation are now able to use ADP to meet carriage requirements for nautical publications.

The Russian Federation is the world's eighth largest flag state, as measured by the number of vessels, and this decision allows the 2,322 vessels flagged by the Russian Federation to carry digital nautical publications in order to meet their SOLAS (Safety of Life at Sea) carriage requirements for nautical publications, instead of carrying their paper equivalents.

With confirmation of this approval from the Russian Federation, UKHO says that a new landmark has been reached in the acceptance of digital nautical publications for voyage planning and navigation purposes, with over 75 per cent of the world's vessels over 2,000 gross tonnes in size now permitted to carry the electronic versions of the documentation.

Russia has now joined other flag states like Panama, Marshall Islands, Liberia, Singapore and Greece in approving the carriage of digital publications, such as lights lists, radio signals lists and tide tables.

"The Russian Federation has confirmed that the use of digital tide tables, digital lists of lights and digital lists of radio signals are acceptable alternatives to paper versions of the same publications, subject to their inclusion in the vessel's safety management system and approval by a classification society," said Josephine Washington, product manager (publications) at the UKHO.

"This is an important and welcome decision, as it means that all Russian-flagged vessels can now take advantage of the benefits offered by digital nautical publications when it comes to faster and more efficient voyage planning and navigation."

"69 flag states have now approved the use of ADMIRALTY Digital Publications, including 17 of the 20 largest flag states, covering more than 75 per cent of the world's fleet of vessels over 2,000 gross tonnes. The rapid rate of flag state approval for digital publications in the past 18 months demonstrates the speed with which maritime navigation is transitioning from a paper-based world to a digital one. It is also testament to the progressive attitude among leading flag states towards the use of technologically advanced navigational tools, as well as the degree of confidence that they have in Admiralty Digital Publications."

exactEarth sat-AIS data for US Coast Guard

www.exactearth.com

exactEarth, based in Ontario, has announced that the Marine Exchange of Alaska (MXAK) will provide its AIS data to the US Coast Guard (USCG) under a 12-month contract awarded in September.

The Marine Exchange of Alaska currently contracts with exactEarth for Alaska satellite AIS data, and will provide the exactEarth data to the USCG in addition to the coastal AIS data for Alaska from over 100 terrestrial AIS receiver sites that it already provides under a separate USCG contract.

"We appreciate the opportunity to continue providing satellite AIS data to the USCG", said Chan Smith, regional sales director for exactEarth-USA.

"By providing the data through the Marine Exchange of Alaska (MXAK), we can capitalise on their expertise in providing data for the Nationwide AIS programme."

Captain Ed Page, a retired Coast Guard officer and executive director of the MXAK, noted: "In working with exactEarth, it has become evident combining Terrestrial and Satellite AIS data provides both tactical and strategic information that is invaluable to the Coast Guard and other agencies as well as to the entire maritime community in aiding safe, secure, efficient and environmentally sound maritime operations."

Minerva to go paperless

www.transas.com

Minerva Marine, a Greek company which operates oil and chemical tankers and bulk carriers, has chosen Transas to shift to paperless navigation, the IT supplier has announced.

The Minerva fleet is to be equipped with Transas ECDIS and the Transas Admiralty Data Service (TADS) for the supply of ENCs. Five vessels have already been commissioned and are currently implementing the transition procedures from paper to paperless navigation.

Transas says that Minerva Marine has decided to deploy additional back-up arrangements both for hardware and software, including Transas TX-97 vector charts, and to implement satellite tracking of its vessels through the Transas FleetManager Online system.

Capt Dimitrios Stamoudis, safety & quality manager, said: "We have decided to move forward despite the slow process of ECDIS implementation in the industry the last few years."

"We consider that paperless navigation is an enormous navigational change and therefore we have developed an analytical Management Of Change Process which will help our Masters and the Navigation Officers to familiarise themselves with the new requirements and to obtain the equipment's maximum capabilities before switching to paperless."

"Our goal is to enhance the safety of navigation and to complete the change in the most effective way."

In related news, Transas also reports that it has installed a range of new simulators at the Estonian Maritime Academy in Tallinn and at Goodwood Marine Services' premises in Mumbai, India.

The Estonian contract, whose amount was not disclosed, was awarded following a tender process.

The deal covers a DNV Class A main bridge simulator with 270 degrees visualisation and three secondary bridges with 120 degrees visualisation each, all equipped with conventional and Azimuth controls. Transas has also installed an ECDIS classroom with capacity for 10 trainees.

The Minerva fleet will be equipped with Transas ECDIS

The Tallinn facility has additionally received a full mission Engine Room Simulator, which enables training of crews for LCC tankers, Ro-Pax carriers, cruise and container vessels. Transas says that the simulator platform can be easily reconfigured, making it possible to change between different ship models in just a few minutes.

Finally, a GMDSS class equipped with the TGS 5000 software from Transas will be delivered to enable training to obtain a General Operator Certificate or Restricted Operator Certificate.

Transas says that it has partnered with the Estonian Maritime Academy, which was founded in 1919, for more than ten years.

At Goodwood Marine Services meanwhile the equipment will be used for training in ship handling, including bridge team management and situational awareness training courses for all deck officers.

The new installation includes a full mission bridge simulator, the NTPRO 5000, with 270 degrees visualisation and a GMDSS simulator, the TGS 5000. Six trainees can be taught simultaneously.

Transas says that its simulators will allow Goodwood Ship Management to provide ECDIS courses in compliance with requirements issued last December by India's Directorate General of Shipping.

UK and Russia collaborate on Arctic navigation

www.gla-rrnav.org

The General Lighthouse Authorities of the UK and Ireland (GLAs) report that they have begun working with The Internavigation Research and Technical Centre in the Russian Federation to improve shipping safety across hazardous new high Arctic routes by introducing compatibility in advanced navigation technologies.

The UK – Russia cooperation refers specifically to the development of interoperable resilient position, navigational and timing (PNT) technologies; furthering the development and standardisation of eLoran in the UK and Ireland and its eChayka equivalent in Russia.

Arctic shipping routes have only become viable in the past few years due to melting polar ice, allowing a reduction in shipping times between Asia and Europe of around a third. Shipping traffic through the Northern Sea Route alone has quadrupled in the last year, according to the Northern Sea Route Administration.

This sharp increase in shipping traffic, however, is adding to safety risks in the Arctic region, along with hazards such as perennial ice cover, unpredictable weather, and reduced availability of GNSS data that ships rely on to navigate.

GNSS is also vulnerable to interference from space weather and threats from jamming by criminal means. Therefore, both the GLAs and the Russian authorities believe that advanced resilient navigation technologies are vital to ensure that vessels can travel these shipping routes safely and efficiently, even if GNSS systems fail.

"These new routes are undoubtedly an exciting prospect, and offer great advantage in terms of reduced fuel usage and consequent benefits for the environment," said Adrian Mundin, Nautical Manager – Safety and Environment, at the UK Chamber of Shipping.

"There are issues of safety still to be addressed, for example the ability to conduct search and rescue in such remote regions and the quality of hydrographic survey. We look forward to hearing the outcome of this activity and would support any development that is set to improve navigational safety."

Martin Bransby, Research & Radionavigation Manager at the GLAs, also commented, "Resilient PNT is increasingly accepted as requisite to shipping safety around the world. The GLAs are recognised as technical leaders in this field, and it's of paramount importance that we collaborate with other leading nations to encourage worldwide excellence in shipping navigation safety and efficiency."

Dr Victor Tsarev, Director General of the Internavigation Research and Technology Centre added, "There are many technical areas of mutual interest for the development of eLoran in the UK & Ireland and eChayka in Russia for which a future exchange of information and technical cooperation will be beneficial for both parties."

The UK recently became the first in the world to begin implementing initial operational capability of differential eLoran stations that will provide alternative position, navigation and timing information available to ships equipped with eLoran receivers. Seven stations along the South and East coast of the UK will deliver initial operational capability by summer 2014.

South Korea, which was the victim of a 16-day GPS jamming attack by North Korea last year, has also expressed that it wants to establish an eLoran alliance with the UK. Currently, South Korea is pursuing its own rollout of differential eLoran stations, due for full capability by 2020.

Wärtsilä 3C for dual-fuel LNG ferries

www.wartsila.com

Wärtsilä has won a contract to supply its Control & Communication Centre (3C) to a Canadian shipyard which is building two dual-fuel LNG ferries.

The 3C is an integrated bridge control, navigation, and communication control system, and will form part of an extensive contract covering a range of onboard systems.

The contract was issued in August by Chantier Davie Canada (Davie), Canada's largest shipyard, which is building two Ro-Pax passenger ferries on behalf of the Société des traversiers du Québec (STQ).

Besides the 3C, the deal for each vessel includes the supply of 20DF engines, an LNGPac fuel storage and treatment system, and electrical power and automation systems.

The Finnish manufacturer says that it will also provide the yard with site management and commissioning services.

The Ro-Pax ferries will operate on LNG fuel. Wärtsilä says that its dual-fuel engine technology allows a seamless switch to other fuels should it be necessary.

"Wärtsilä's extensive know-how and experience in developing dual-fuel technologies, together with our systems integration capabilities, brings significant added value to customers seeking environmental compliance with operating cost reductions," said Magnus Miemois, vice president Solutions, Wärtsilä Ship Power.

"By being able to offer a total solutions offering and integration support to the shipyard, we can reduce scheduling risks while increasing efficiencies and lowering costs."

According to Wilco van der Linden, head of business development for Merchant, Cruise and Ferry Solutions at Wärtsilä, "these orders highlight the global emergence of LNG as a prime fuel for ferries, and prove the value of our dual-fuel system for the uninterrupted and safe transport of passengers, cars and rolling cargo."

The two Ro-Pax double ended passenger ferries are each capable of accommodating 432 passengers and 8 crew members, and offer capacity combinations for up to 115 car equivalent units or 16 tractor semi-trailers.

They are scheduled to start service in 2015 between Tadoussac and Baie-Sainte-Catherine on the Saguenay River in Québec.

The integrated control, navigation and communication system will be installed on the Ro-Pax ferries

New Veripos GNSS mobile for offshore positioning

www.veripos.com

Veripos, an Aberdeen-based supplier of GNSS positioning services to the offshore industry, has introduced a multi-frequency system featuring GNSS heading, L-band positioning and wireless communication capabilities, the LD7.

The receiver is compatible with both GPS and Glonass

Compatible with both GPS and Glonass networks, the 272-channel system includes an additional processor for on-board configuration and customised applications separate from its GNSS engine.

Wireless options include Bluetooth connectivity and full-band UHF radio modem for transmission and reception of RTCM or RTK corrections.

Veripos says that, with 2GB internal memory, the LD7 features interface facilities for data output, timing and event marks. It also has a second antenna port for GNSS heading.

Executive vice-president Richard Turner said that with its heading capability, the system is aimed at survey customers, allowing them to derive GPS and Glonass positioning from a single receiver and so significantly reduce operational times and costs.

Emsys upgrade

www.emsysmarine.com

WR Systems has announced that it has upgraded Emsys to measure mass emissions rates in anticipation of the EU's MRV initiative.

With the proposed introduction of the EU's monitoring, reporting and verification (MRV) of carbon dioxide emissions from maritime transport, the maritime industry is investigating the various allowable options to record and verify its CO2 footprint, says Emsys.

Within the proposal, ANNEX 1, Method D allows for direct measurement of CO2 from engines, boilers, incinerators and other emitting devices.

WR Systems already has Type Approval (from ABS) for the measurement of mass emissions using its laser-based Emsys Emissions Monitoring System (EMS). The latest upgrade uses in-stack exhaust gas mass flow sensors to measure the total output, and calculations provide stack emissions rates in kilograms per hour (kg/h) and total mass emissions in kilograms and tonnes (kg/tonnes) for each measured gas, including CO2.

WR says that it has received a number of orders for Emsys emissions mass flow systems for new-build contracts in the Far East, with its current order book stretching into 2015.

"Emsys was always designed as a tool to help owners comply with the relevant emissions regulations, but additionally to provide data which can allow optimisation of vessel performance," said Simon Brown, WR's director of International Maritime Business.

"WR's Emsys program was created to meet the requirements of both IMO and market-based instruments (MBIs); therefore, we became the first company to type-approve a marine EMS for this purpose in September 2010. The maritime market is constantly changing, scrubbers are now being rapidly implemented to meet the forthcoming SOX regulations, and Emsys has proven itself the compliance monitor of choice on many different scrubber types."

"Many new technologies and vessel design features will be introduced and data from Emsys will help verify the efficacy of the reductions claimed using our new and unique mass emissions flowrate option."

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 enterprises for about two years

Joint research and development group photo after the regular meeting

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 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 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 egularly by modifying on-off function and software.

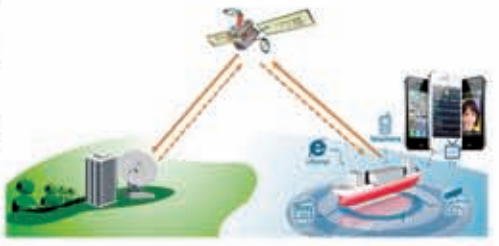
VoIP based Automatic Exchange Telephone System for maritime has been adopted as the standard for ship's design by DSME Ten ships already are being operated equipped with new system among 50 ship's order such as LNGC, container and Pipe Laying Support Vessel (PLSV). Additionally, more than 10 ships are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

A 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.

VoIP Automatic Exchange Telephone - SWAN IPT 3000S

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

Kongsberg to equip newbuild service vessel

www.km.kongsberg.com

Kongsberg Maritime has announced that it has been awarded a contract by a German shipyard to deliver an integrated control system to a newbuild 80m wind turbine service vessel.

Owned by Danish company DBB Jack-Up, the vessel will be equipped with navigation, automation and manoeuvring systems, and Kongsberg's recently launched LAN-based Radar system.

The Norwegian developer says that 'Composite Picture' Radar CP360 is an integral part of the K-Bridge navigation system to be installed.

CP360 distributes digital radar signals on a local area network (LAN), allowing radar images from multiple transceivers to be combined and displayed as a single composite picture, eliminating blind sectors and providing a single 360 degree view, covering different ranges, around the vessel.

The wind turbine service jack-up vessel being built by Nordic Yards in Wismar (Germany) will also be equipped with a K-Chief Alarm Monitoring & Control System, K-Thrust Thruster Control System, K-Bridge Integrated Navigation System and K-Pos DP-22 Dynamic Positioning.

Kongsberg says that key systems are accessible through its K-Master system, a dual redundant, seated aft and forward bridge solution, which will act as the control centre for vessel navigation, manoeuvring and jack-up operations.

Access to operational elements of the DP System, Radar system, ECDIS and Thruster Control are placed in the armrest panels of the Operator chairs.

"This is the very definition of a Full Picture delivery, as it covers all key technology systems for navigation, automation and manoeuvring," said Sebastian Jobs, manager Offshore Division, Kongsberg Maritime GmbH.

"The integration of our new network Radar solution and use of K-Master positions this newbuild as one of the most advanced Jack-Up service vessels in the world, and we are confident that our latest technology will integrate seamlessly to support greater operational safety and efficiency during navigation and operations."

Kongsberg will deliver an integrated control system to the 80m vessel. Photo: OSK-Ship Tech

Polaris in Mexican R&D facility

www.km.kongsberg.com

Kongsberg Maritime reports that the Instituto Mexicano del Transporte (IMT) is using its Polaris bridge simulator at the research facility it opened in August in Queretaro.

Ordered in April 2013, the multi-purpose simulator accommodates different bridge console configurations, instrumentation arrangements, hydrodynamic ship models and initial exercise areas covering navigable waters and adjacent shore lines for the ports of Lazaro Cardenas, Manzanillo, and Veracruz.

"The simulator is vital for us to provide research grade services in Mexico related to port and coastal area research and development such as coastal structures, hydrodynamics, sediment transport, field studies and port development studies," said IMT's Miguel Montoya, manager of the new simulation facility.

Tristan Ruiz Lang, coordinator of Port Engineering and Geospatial Systems, IMT, added: "This is a very flexible simulator installation that offers the ability to function as a wide variety of vessels including naval ships, merchant deep-draught, shallow-draught, and small boats, all of which can be simulated in harbour project development scenarios."

"Any waterway, any vessel, can now be developed here in Mexico."

BNWAS retrofit for Tidewater's African fleet

www.martek-marine.com

UK-based manufacturer Martek Marine says that it has supplied 125 Navgard BNWAS (Bridge Navigational Watch Alarm Systems) to Tidewater's fleet on the coast of Africa, in a six figure contract.

Martek says that Navgard is the only system available which has type-approval from all major classification societies.

The company notes that this can be important for fleets using different classification societies because getting additional certification for unapproved BNWAS can prove onerous and expensive.

Lyall Smith, Tidewater's regional technical manager, said: "I chose Navgard for our African fleet of offshore support vessels because the system had no hidden costs – our own engineers fitted them, the installation did not disrupt our operations at all, it already had type approval under ABS and all our flag states, including USCG and Martek were able to obtain blanket plan approval quickly and at very little cost."

Martek says that Navgard is designed to be easily installed. Screwed connections avoid the need for soldering and a bridge motion sensor is built into the device's control panel.

The company says that, while many systems require separate interface modules to be wired to the panel using different wire types, Navgard's alarms and resets are wired directly to the control panel using a single wire type.

Martek explains that it started the installation project for Tidewater by training the fleet's engineers while the first few vessels were in dry dock in Las Palmas. It then supplied the equipment for the engineers to continue the installation.

Navgard uses real-time data logging, providing operational evidence in the event of an incident, and requires a master password to be disabled. The system also notes when it is switched on and off so that checks can be made to ensure it is being used continuously.

Datema ENCTrack for HAL

www.datema.nl

Dutch company Datema Nautical Safety says that its pay-as-you-sail (PAYS) distribution service for ENCs has been installed on 13 cruise vessels for Holland America Line (HAL).

Datema says that ENCTrack allows users to pay only for the charts their vessels have actually used. Compatible with any ECDIS systems, the service eliminates the need for license management.

HAL expects to eventually have all 15 ships in its fleet on the service, says Datema.

Its 13th vessel to be equipped, the MS Rotterdam, also received the new GTTS-3000 tracker unit. The GTTS-3000 transceiver was developed by GTT Systems, a partner of Datema Nautical Safety in the field of tracking and tracing systems.

Jethro Beck, staff captain, MS Noordam, notes: "ENCTrack system is an easy, user-friendly service which is a great help to the voyage planning and navigation officer due to the ability to plan a voyage using cells which do not need to be paid for, or licensed, until the vessel actually sails through the cell's footprint (which is automatically logged via the tracking system with no user input required)."

"Another great tool is the update facility which is available even whilst at sea through the ENC4SAT and e-mail corrections service. If there are ever any queries or concerns a prompt response is always available by e-mail or over the phone."

Jeppesen introduces FlatFee for ENCs

www.jeppesen.com/marine/commercial

Jeppesen has introduced FlatFee licensing for its official Electronic Navigation Charts (ENCs), with the Boeing subsidiary noting that the system should help mariners to better predict annual charting costs.

Vessels can buy a one-year subscription to some or all of nine worldwide zones at a fixed price. They can then view and use the charts, for both voyage planning and navigation, without limitations.

If sailing needs change, additional zone subscriptions can be added without having to create new licences. Jeppesen says that it uses a variation of existing licensing methods to ensure accurate processing of Hydrographic Office commissions.

The ENC provider says that FlatFee streamlines the process of purchasing and using ENCs, while also simplifying Port State Controls.

"Initial reports from vessels testing our FlatFee licensing have been overwhelmingly positive," said Gary Minard, Jeppesen director, global marine sales and marketing.

"This new solution is better meeting our customers' needs by helping overcome both the hassles and unpredictable costs associated with using ENCs around the world."

3D sonar on Navi-Sailor

www.transas.com
www.farsounder.com

FarSounder and Transas have announced a partnership that will see Transas integrate FarSounder's navigation sonar systems into the Transas Navi-Sailor 4000 Multifunction Display series.

They say that this integration will enable the FarSounder-500 and FarSounder-1000 sonars to be controlled directly from the Transas software with the FarSounder navigation data displayed on top of the ECDIS/ECS chart.

Additionally, presentation of a 3D picture from FarSounder will be displayed in the Navi-Conning display and in a special Navi-Sailor panel.

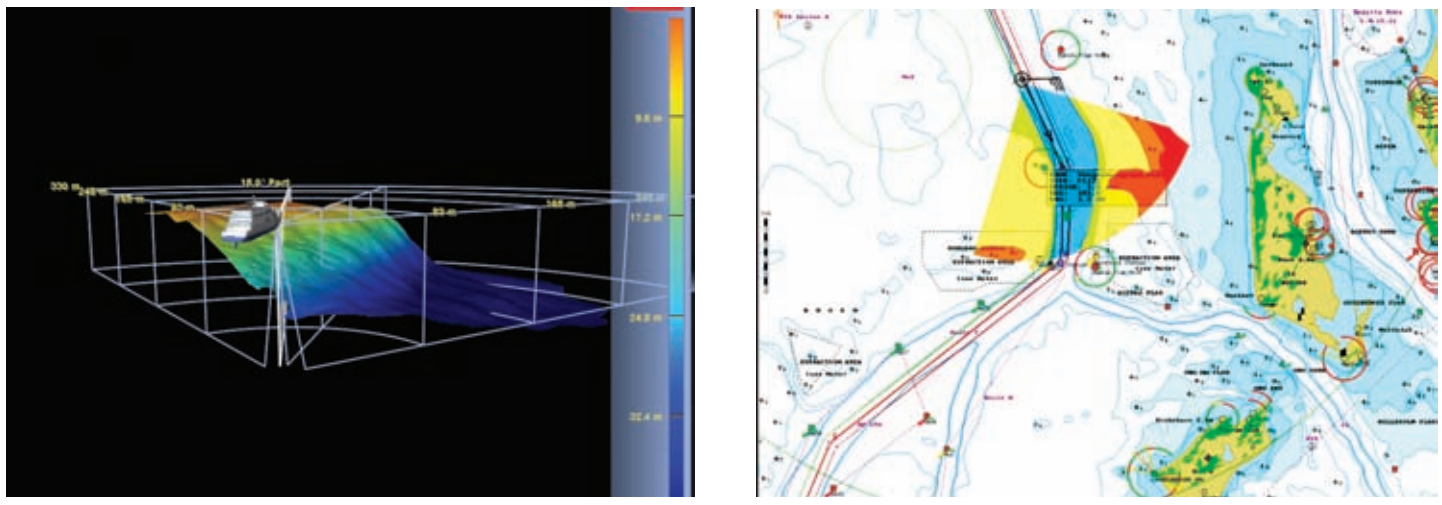
FarSounder is a US-based electronics manufacturer specialising in underwater acoustics and a developer of real time 3D sonar systems used for navigation and obstacle avoidance.

"We are pleased and excited to work with Transas, a market leading ECDIS manufacturer," said Cheryl Zimmerman, FarSounder's CEO.

"Our companies are both focused on increasing marine safety by offering our customers an advanced level of decision support and marine environment awareness."

"This integrated solution will serve an expanded base of commercial and yacht customers who recognise the important safety role that 3D Forward Looking Sonar is having on 21st century navigation."

Evgeny Karizhenskij, product development director, Transas Technologies, noted: "It's a very ambitious project for Transas that will bring essential benefits to our customers, such as advanced safety and expanded navigation capabilities."



FarSounder's technology can create 3D sonar models, with the data then displayed on the Transas ECDIS

New installations for VSTEP simulators

www.nautissim.com

Dutch developer VSTEP has announced that it has delivered a range of new simulators to two US training facilities and another in Spain.

The Maritime Academy of Toledo's Ohio school will be one of the centres provided with new simulators, which it will use as a demonstration centre. The project is expected to be implemented through 2017 in four phases.

The first phase will include a Class-A Full-Mission Bridge simulator and a simulation radar classroom for 16 students, both of which are certified for US Coast Guard approved courses.

These simulators are expected to be up and running by January 2014. Additional phases include a tug boat simulator, crane simulator, and eventually an engine room simulator.

The terms of the contract call for The Maritime Academy of Toledo to commit approximately $100,000 to launch the project, with the remainder being financed over ten years with a subscription model for the simulators.

The Academy's current navigation, radar, and engine room simulators were over 20 years old when they were damaged in October 2012 as the result of a power fault from an underground transformer explosion.

"For more than eight months we searched for a company suited and willing to help us replace the current simulators, at a cost we could afford while we wait for our insurance claim to be paid," said Renee Marazon, president of the Maritime Academy of Toledo.

"We negotiated with several companies who simply wanted too much money. VSTEP was able to provide us with the highest standard of simulation, but at an affordable price."

The project was discussed with VSTEP's NAUTIS Maritime Simulation Division in late July and VSTEP staff made a site visit to determine the suitability of the Maritime Academy campus to serve as a demonstration centre. The Dutch manufacturer says that within two months a partnership was forged.

"Toledo was a perfect fit for VSTEP as a NAUTIS Simulation Centre. Toledo is 45 minutes from an international airport and is centrally located on the Great Lakes. Once the new simulators are installed, VSTEP will use Toledo as a technology demonstration centre for its customers in the region," said Ms Marazon.

"Our new VSTEP simulators will allow not only our cadets to get the best training possible, but also allow us to expand our professional mariner training courses. This is just another step in making Toledo the key centre for maritime training on the Great Lakes."

"If you look at what it would have cost to purchase and install all these simulators, plus licensing and other fees, we would be looking at upwards of one million dollars. However VSTEP worked with The Maritime Academy to make this much more affordable over the ten-year period."

In Alabama meanwhile, SeaSchool-Mobile has also acquired a NAUTIS Full Mission Bridge Simulator and Instructor Station.

VSTEP says that, together with its US partner Annapolis Simulation, it is installing the simulator in the school's campus in Bayou La Batre, near Mobile.

The DNV certified NAUTIS Full Mission Bridge Simulator features a 180° external view angle, which exceeds the minimum 120° exterior view angle required for DNV Class B simulators. It allows for training in Advanced ship handling & manoeuvring, ECDIS Model Course 1.27, Radar/ARPA Model Course 1.07, VHF Radio Communications, Navigational Instruments (GPS, AIS, Echo Sounder, and Speed Log), and GMDSS Radio Communications Model Course 1.26.

Victor Tufts, VSTEP North America sales manager, said: "Together with our North American partner Annapolis Simulation, we are very happy to include the SeaSchool in the NAUTIS family."

"The acquisition of this Simulator and Instructor Station guarantees realistic simulator training of the highest quality for the SeaSchool students for years to come."

SeaSchool provides US Coast Guard approved courses and STCW-95 compliant training.

Finally, in Spain VSTEP notes that it has recently delivered and installed its NAUTIS Desktop Trainers at the Aigua Sea School in Palma de Mallorca.

The NAUTIS Desktop Trainers cover ECDIS Model Course 1.27, Radar/ARPA Model Course 1.07, VHF Radio Communications, Navigational Instruments (GPS, AIS, Echo Sounder, Speed Log) and advanced ship handling & manoeuvring.

VSTEP says that the equipment can be used to provide certified training in compliance with the latest STCW requirements.

Steve Brand, director at Aigua Sea School, said: "We are very happy with the purchase of these advanced desktop simulators. The professional installation and support received from VSTEP during the project has been excellent. These new simulators will allow us to further enhance the training curriculum at our Sea School."

Satellite evidence used in tanker case

The UK Maritime & Coastguard Agency (MCA) says that it has, for the first time, successfully used satellite imagery as primary evidence in a maritime pollution prosecution.

Maersk Tankers Singapore has paid a total of £22,500 in fines and costs after pleading guilty to a breach of UK legislation at Truro Magistrates Court.

On 25 February 2012, a satellite operated by the European Maritime Safety Agency (EMSA) detected a ship trailing a slick in the waters between Land's End and the Scilly Isles. A report was made to the MCA.

The ship was identified as the Singapore-registered tanker Maersk Kiera. The slick itself was within 12 miles of land.

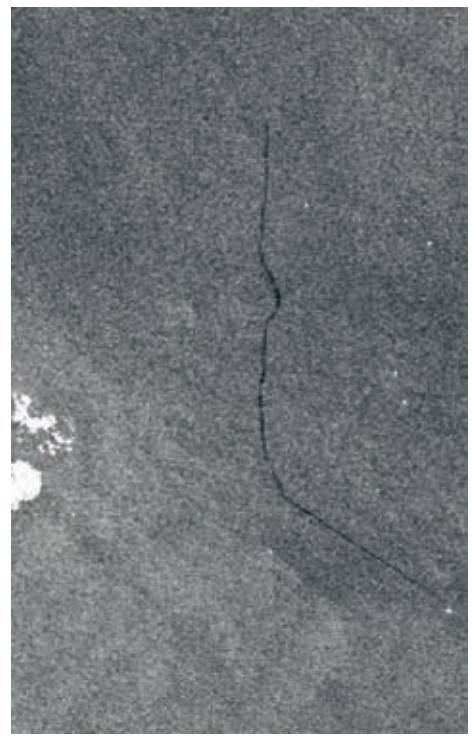
When contacted by Falmouth Coastguard, the Master of the Maersk Kiera confirmed that the vessel was undertaking tank cleaning and associated discharge following carriage of a cargo of palm oil, but that it was complying with international requirements.

Under the Dangerous or Noxious Liquid Substances in Bulk Regulations 1996 (SI 3010), discharge of palm oil slops is only permissible over 12 miles from the nearest land.

Maersk said that its vessel had stopped cleaning tanks before it was within 13.5 miles of the coast. However, the satellite imagery showed a slick trailing behind the vessel when it was within 12 miles of land.

Following this the owners of the tanker admitted a breach of the UK Pollution Legislation. They were fined £15,000 with a £120 victim surcharge and prosecution costs of £7404.88 were awarded.

Captain Jeremy Smart, head of enforcement at the MCA, said: "This is the first time satellite imagery has been successfully used as primary evidence in a maritime pollution prosecution brought by the Maritime and Coastguard Agency. The Agency will use all means available to identify and prosecute those carrying out illegal discharges within the UK Pollution Control Zone."



The satellite image of the oil slick used in the case. Photo: EMSA MDA

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jrceurope.com

London P&I Club highlights ECDIS training

www.londonpandi.com

The London P&I Club notes that the timetable for mandatory implementation of ECDIS is advancing and insists on the importance of familiarisation on specific equipment and proper use of the technology.

The first deadlines for mandatory ECDIS carriage have passed: passenger ships of 500 gt and upwards, tankers of 3,000 gt and dry cargo ships of 10,000 gt and upwards constructed on or after 1 July 2012 now have to carry ECDIS. The next phase-in will be in 2014 for existing passenger ships of 500 gt and over.

In its most recent StopLoss bulletin, the Club notes that it expects a number of new legal, procedural, technical and human resource issues to arise with the development of e-navigation.

One such issue is the potential risks involved in replacing more traditional means of voyage planning and monitoring with advanced technology, it said, adding that the incorrect operation of ECDIS was a causative factor in a number of recent grounding accidents.

Where ECDIS is used as the primary planning and monitoring system onboard, accident investigation reports have identified deficiencies in the level of training and a lack of understanding as contributory factors.

The P&I Club cites as an example the grounding of a laden bulk carrier in restricted coastal waters as investigated by the UK Marine Accident Investigation Branch. ECDIS was the primary monitoring system. All officers had undertaken generic ECDIS training, but not "equipment specific" training for the ECDIS type onboard.

The duty officer made premature course alterations to avoid a risk of collision, but failed to effectively monitor the ship's position and track on the ECDIS, also failing to notice the activation of the visual grounding warning alarm.

The ship's draught was 10.6m, but the safety contour was set inadequately at 10.0m. The bridge management team was unaware that the anti-grounding audible alarm had been disconnected. The location of the ECDIS unit on the bridge was not conducive to an effective operation.

The insurance underwriter insists that not only should the ECDIS / user interface be as user-friendly as possible, but it is also essential that the navigator is effectively trained in the proper use of ECDIS and understands the limitations of the equipment and its primary role as a decision support system.

The statutory requirements for ECDIS training are covered in the STCW Convention, the ISM Code and SOLAS Chapter 5. The IMO ECDIS Model Course 1.27 should provide the navigator with the required level of understanding, competency and confidence for application in all aspects of navigation.

However, the P&I Club insists, with a vast array of ECDIS manufacturers there is a challenge for the navigator to reach an acceptable degree of competency in a specific onboard system. Familiarisation on type-specific ECDIS, whether provided by the manufacturer, manufacturer's agent or a trainer, has been identified as a priority for training.

An additional challenge is to ensure the quality of such training, both generic and familiarisation, is of sufficient quality to reduce the risks associated with this transition to the new technology, whilst satisfying the scrutiny of external parties, such as Port State Control, where the focus will be on demonstrating operational competency on the ship's ECDIS equipment.

Laser-based DP launched

www.km.kongsberg.com

Kongsberg Seatex, a wholly-owned subsidiary of Kongsberg Maritime, is launching SpotTrack, a multi-target laser-based relative position reference system.

Primarily intended for Dynamic Positioning (DP) operations, SpotTrack is a motion-stabilised rotating laser sensor that delivers range and bearing measurements. Kongsberg says that it uses a detection system and tracking algorithms for true target recognition – minimising lock-on to false reflections.

"Laser-based reference systems represent an established technology, but SpotTrack introduces a new level of reliability and ease of operation for this type of product," said Vidar Bjørkedal, VP sales & customer support, Kongsberg Seatex.

"The sensor itself is a completely sealed unit, with all moving parts housed inside, so the system is less prone to mechanical wear from exposure to the elements."

SpotTrack is typically used in conjunction with satellite positioning, microwave based systems and subsea positioning. It can act as one of the three position reference systems required for the DP3 Class.

"With the addition of SpotTrack to our extensive reference systems portfolio, Kongsberg Dynamic Positioning customers now have the choice of a complete range of above surface and subsea reference systems developed by Kongsberg," said Gard Ueland, president of Kongsberg Seatex.

Though SpotTrack will primarily be used as a DP reference system, it can support other operations including automatic docking systems and vessel traffic monitoring.

By utilising roll and pitch stabilisation from a motion reference unit, SpotTrack can track targets even at high elevation angles. Kongsberg says that this makes it suitable for close-by operations, such as 3D positioning for maritime construction.

SpotTrack is a multi-target position reference system

Net-Logic BNWAS hits 2,000

www.net-logic.co.uk

UK-based developer Net-Logic reports that it now has 2,000 units of its wireless Bridge Navigational Watch Alarm System (BNWAS) operating on ships and yachts.

The type-approved wireless BNWAS uses a mesh network that monitors available signal paths. If one of these paths fails, the system re-routes to ensure it remains active in the event of a module failure.

"When we launched this product two years ago many people questioned its ability to work wirelessly through the structure of a large yacht, let alone a ship," general manager Dave Norton recalls.

"The actual results of the installations have been impressive, we have the system fitted throughout the world on passenger ships, bulk carriers, LNGs, megayachts – you name it. We have fitted it and it's proven beyond doubt that this technology is the future for this type of application."

Net-Logic says that the system can be fitted in a single day with no disruption to the interior or cabling infrastructure.

LNG trades reviewed for BP Shipping Distance Tables

www.atobviaconline.com

AtoBviaC, the UK-based company which commercialises the BP Shipping Distance Tables, says that it has carried out a review of LNG trades to ensure that key ports and vessel manoeuvres in this sector remain covered.

AtoBviaC, whose tables are used by RasGas, GDF Suez and BW Gas, notes that LNG vessels attract the highest charter rates, and consequently require absolute accuracy for voyage and capacity planning if journeys are to prove financially viable.

"Vessels' schedules are always being modified, and the tables are a perfect way to verify that voyage changes can be done on time," said Vincent Guillevic, shipping superintendent at Yemen LNG.

"They are also very simple to use with an important list of specific LNG destinations, and options, like being able to manually modify or add waypoints on automatic routes, make this application a must-have."

Capt Trevor Hall, director of AtoBviaC, also added that: "This review is of importance not only to our LNG clients, but also to every vessel owner and operator we work with."

"We have been able to make sure that our route tables continue to set the standards for routeing and distance information for the maritime industry, delivering high quality, realistic calculations of journey options."

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How to entice ship owners to support e-Navigation

Making e-Navigation work in an industry with a range of different proprietary technologies could prove extremely difficult and very costly for shipping companies – what is really required is a common architecture that will allow different systems to work together as required, *writes Fred Pot, Marine Management Consulting*

In 2006, at its 81st session, the International Maritime Organisation's Maritime Safety Committee (MSC) decided to include in the work programmes of the NAV and Radiocommunications and Search and Rescue (COMSAR) Sub-Committees a high priority item on 'Development of an e-Navigation strategy'.

The stated aim of the IMO in this regard is to develop a strategic vision for e-Navigation, to integrate existing and new navigational tools, in particular electronic tools, in an all-embracing system that will contribute to enhanced navigational safety while simultaneously reducing the burden on the navigator.

E-Navigation has been defined during this process as "the harmonised collection, integration, exchange, presentation and analysis of maritime information onboard and ashore by electronic means to enhance berth to berth navigation and related services, for safety and security at sea and protection of the marine environment."

In the intervening years since this initiative was first mooted IMO's Correspondence Group on e-Navigation (CG) and IALA's e-Navigation Committee have almost exclusively focused their efforts on developing requirements for the shore-side part of the system architecture.

For example, Annex 2 of the CG's report to IMO's NAV sub-committee (NAV 59) focused on the requirements for the system architecture of the "Maritime Cloud" and how shore-based authorities could use it, while IALA's e-Navigation Committee seems to focus mostly on the shore-based authorities' systems architecture.

So far ship owners have not proposed, let alone accepted a common ship board system architecture that will accommodate e-Navigation solutions.

Yet, ship owners will likely be expected to foot the bill for shipboard implementation of e-Navigation solutions. This will likely require them to acquire, install, maintain and train users of significantly more complex systems and it will likely increase the volume of wireless communications between ship and shore.

Primarily because of the additional cost of implementing e-Navigation solutions on new ships, most ship owners oppose or even attempt to block adoption of e-Navigation solution carriage requirements at the IMO level. They are using their Flag States and their associations (International Chamber of Shipping, BIMCO, Cruise Line International Association, Intertanko, etc) to resist new carriage requirements.

In response, Port and Coastal Authorities may well elect to start enforcing such carriage requirements in their regions rather than wait for IMO to mandate them.

What can we do to prevent local authorities from enforcing regional, possibly incompatible carriage requirements? What can we do to gain ship owners' support for e-Navigation? Can we quantify the cost savings that e-Navigation will bring them? If we can't do that, can we address other needs/issues/problems that ship owners face? What are these needs/issues/problems?

e-Nav issues

To stay competitive, ship owners must reduce crew size to the minimum level required by their Flag State, recruiting crews from a variety of countries each with their own language and culture and with varying levels of training and (system) competency.

Another issue is the increasing cost of maintenance and repair of on board systems. Their number, cost and complexity continue to grow. e-Navigation carriage requirements will undoubtedly add to this growth.

Systems invariably come with their own, often embedded, proprietary computer that is typically not able to communicate with the outside world because it is proprietary and closed. Many of these systems require traveling specialist service engineers to remote ports for maintenance, repairs and upgrades.

A related issue is vendor lock-in. Electronic equipment and systems are typically selected by the shipyard and offered with the ship as a package that can be changed, but the change order fees tend to be significant.

The result is that ship owners typically are prevented from using their own criteria (cost, maintainability, features, intuitiveness, quality, reliability, etc) to select on board systems. Also, the lack of inter-vendor compatibility prevents ship owners from 'Mixing-and-Matching' systems from different suppliers.

The result is that ship owners are typically locked into a single vendor's support and service for each system. That suits vendors because they can, and often do, charge a premium for their support and services.

The changes in crew characteristics in conjunction with the increasing maintenance cost of a growing number of complex proprietary on board systems make remote monitoring, trouble shooting, repairing and upgrading systems a must rather than a nice to have.

Plug-n-play

To gain ship owner support for e-Navigation, I propose that we develop a proposal for an on board system architecture that addresses e-Navigation infrastructure requirements but also addresses ship owners' issues:

- Cost of maintaining a growing number of ever more complex systems
- Vendor Lock-in
- Lack of Inter-Vendor Compatibility and resulting inability to Mix-n-Match systems
- Increasing volume and cost of wireless communications between ship and shore

Specifically, I believe that we should propose a ship board system architecture that is based on a secure Local Area Network (LAN) with a 'Maritime' version of Universal Plug-n-Play (UPnP) and add remote servicing capabilities for each system on the ship board network.

We all have experienced Plug-n-play in action, for instance when we add a printer to the router on our home network.

As soon as the printer's network cable is plugged into the router, the printer uses its DHCP client to obtain an IP Address from the router's DHCP host. You can then connect your computer to the printer, get status information (ink-levels, out of paper warnings, etc.) and start using it.

To do that your computer needs information from the printer. The printer publishes that information on its internal web server or lets you download its proprietary application to your computer that interacts with the printer.

The international standard for UPnP (IEC 29341-x) doesn't require that a system that wants to use UPnP to connect itself to a network first identifies itself with a security certificate that proves that it is trustworthy and not malicious.

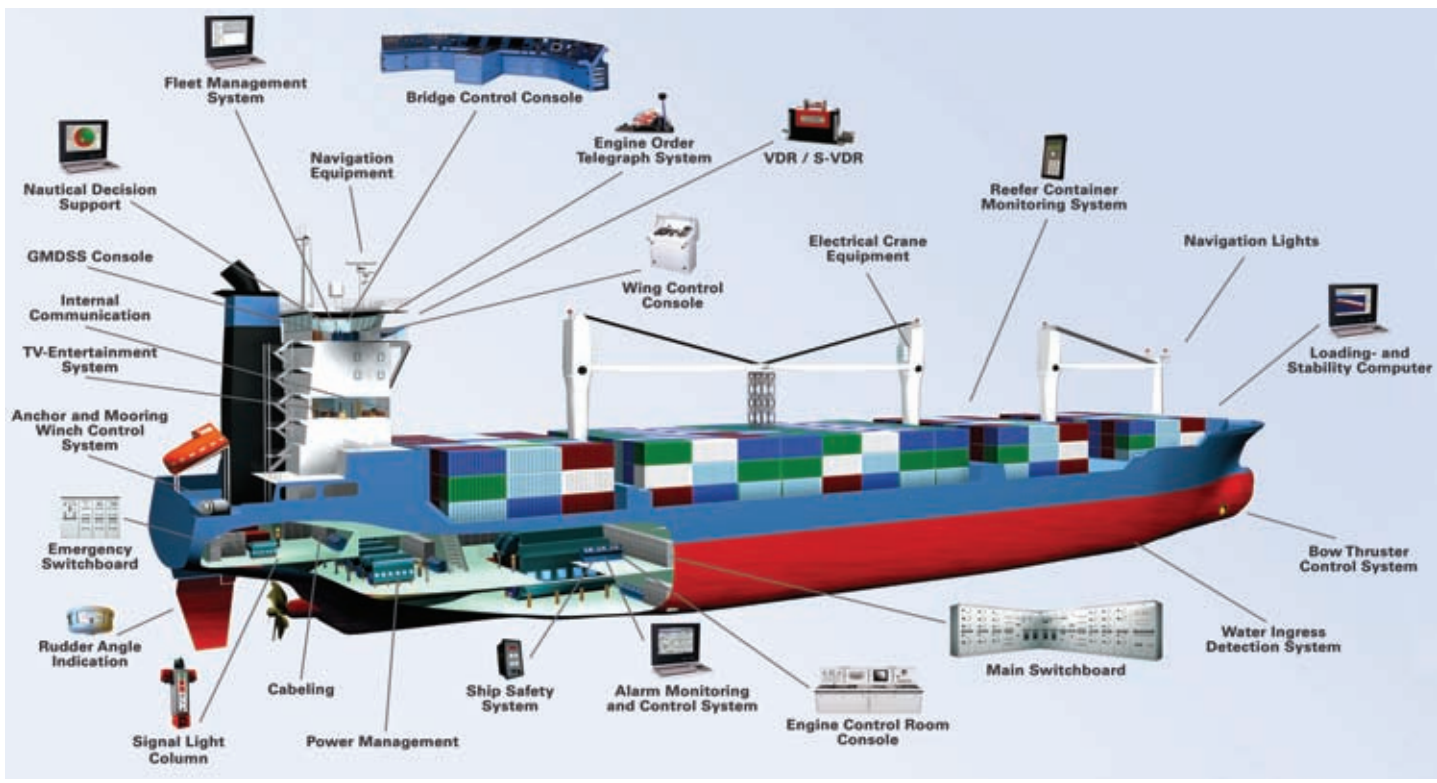
Such 'authentication' would need to be added to the maritime standard so that it requires that only systems whose security certificate is on a 'White List' are allowed to use 'zero configuration' UPnP to be added to the network.

This white list of systems that have a trusted security certificate would be created by the shipyard and maintained by the ship owner or his system integrator. A system's security certificate would be issued by the vendor and IMO would authorise vendors to issue certificates for the systems they sell.

The 'White List' would include security certificates of trusted systems/nodes/services that are offered in the Maritime Cloud (See Annex 2 of the CG's report to NAV 59).

The Universal Plug-n-Play standard would further need to be amended to require that all systems advertise on their webserver:

- A detailed description of the system's functions and controls
- Vendor details including the Vendor's IMO authorisation to issue security certificates
- The system's model number and, if applicable, its certificate of compliance with the IMO performance standard for such systems (i.e. Radar, ECDIS, etc.)
- Serial Number



A huge range of systems across the ship are required to communicate. Photo: Interschalt

- System Software Version and a link to the file on its webserver that contains a history of version upgrades
- Warranty Status
- Service Subscription details (expiration date, payments, etc.)
- A link to the System's Manuals

This would also need to include a link to the system's Maintenance & Settings Web Page on its webserver that lists the current configuration, details of subscriptions to software updates, and, if the system is a sensor, then a measure of its accuracy and an indication of the system's health (perhaps marking the time of the system's last 'Heartbeat' and any alarms generated by the system).

Maritime Plug-n-Play should not be limited to adding local systems to the ship board network. Systems on the ship board network should also be able to use Maritime Plug-n-Play to subscribe to trusted services that are available in the Maritime Cloud:

- Electronic Chart Updates
- Weather Information
- Maritime Safety Information
- Remote monitoring of on board systems
- Etc.

Connection

When a new system uses (Maritime) UPnP to connect itself to the on board network, then all other systems that are already on the network can be set up to connect with (to 'discover') the new system, just like any computer on your home network can be connected to (discover) your printer. Such Machine–to–Machine (M2M) connections are called subscriptions.

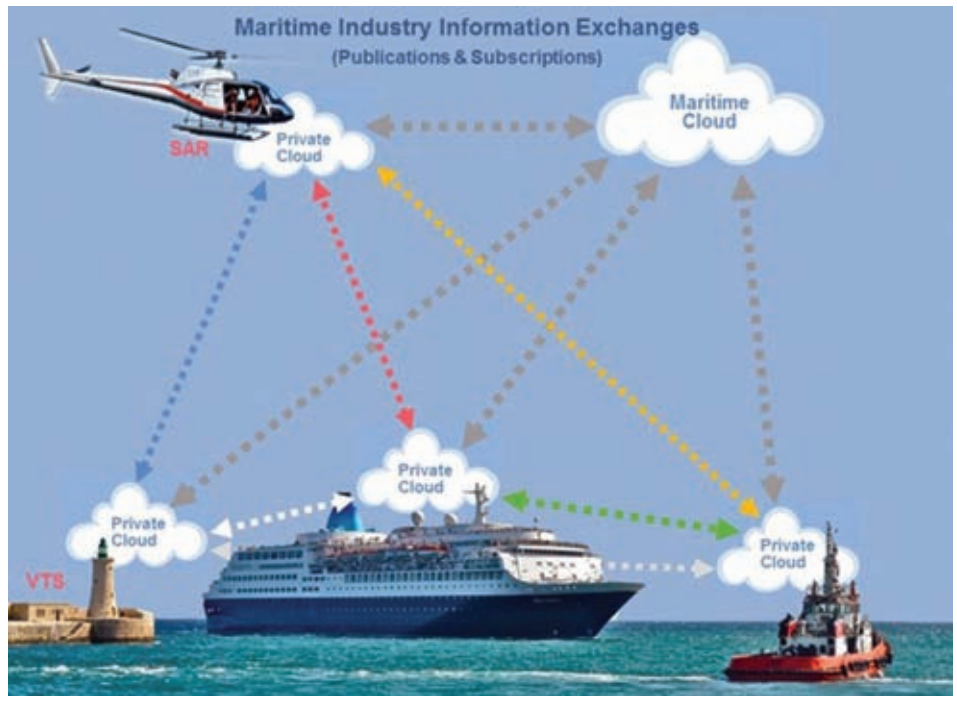
M2M subscriptions of systems (subscribers) to other systems (publishers) on the ship's network or in the Maritime Cloud will need to be managed. Only those subscribers whose system's security certificate is on the White List should be allowed to subscribe to another (publishing) system.

Ship owners will want to add to their White List the security certificates of (shore-based) subscribing systems that they and their vendors use to remotely monitor, trouble shoot, repair and upgrade on board systems.

Furthermore, to ensure availability of mission critical systems the master will want to have the option to limit maintenance access to such systems to periods when they are not needed for controlling the ship.

'Subscriber Pays' functionality should be one of requirements of the communications system infrastructure. This will require establishment of an invoicing system that bills subscribers for the cost of their subscription message traffic for each communications channel that is used to carry the traffic.

Shipboard and shore-based subscribers will want to use a sophisticated least cost message router that prioritises subscription message traffic and either routes it via a communications channel that is currently available or use a 'Store-and-Forward' system by putting it in a message queue to be transmitted via a lower cost channel that will become available later during the voyage (i.e. Cellular, WiMAX, VHF Data Exchange, WiFi and future technologies).



The Maritime Cloud would hold White Lists for trusted systems and data on connected ships

The ship board router will need to base its predictions of availability of lower cost communications channels on:

- The communications equipment that is available on board
- The ship owners' cost to use each channel
- Communications channel coverage maps
- The voyage plan

The ship's router will need to share its channel address and availability predictions with shore-based subscribers' message routers by publishing this 'channel connection' information on the Maritime Cloud.

For communications billing purposes and to enable least cost routing, subscription messages that use a wireless digital communications channel between ship and shore will need to indicate the ID of their subscription and specify their maximum acceptable message delivery delay (latency).

Implications

The major implication of this proposal is that all systems, both on board and in the Maritime Cloud, are amended to include Maritime Plug-n-Play functionality.

Vendors are likely to charge a premium for such systems and for remote monitoring and servicing such systems, thus driving up the Total Cost of Ownership (TCO), however, establishing this system architecture for the maritime industry will lay the groundwork for establishing a common (Android-like) ship board platform (cloud) that all applications can use, including the proprietary systems that currently require their own proprietary boxes, each with their own power supply, network cabling, processor, operating system, data storage, user interface, etc.

An example of a common platform such as I am describing is the Open Source project that created the Marine Systems Software Architecture (MARSSA).

Work on MARSSA began in 2008 by a team of marine software engineering experts and mariners at MARSEC-XL (Marine Software Engineering Center of Excellence). On the 14th of February 2011 MARSEC-XL donated the very first version of MARSSA to the Open Source Community and the work on MARSSA has continued as an open source project hosted by MARSEC-XL Foundation since then.

MARSSA sets out to provide a Reference Architecture (RA), which will serve as a base for the development of standards and, at the same time, an architecture to support the integration and interoperability of software-dependent devices and systems on board and on shore.

The RA learns from other domains such as avionics and automotive, however it directly addresses and takes into account the specificity of the maritime domain. It provides an architectural blue print for a set of products / systems based on the pool of previously successfully implemented solutions and combined with a set of new requirements.

Experience in other industries has shown that a common platform significantly reduces the need for proprietary boxes. MARSSA will allow vendors to focus on the quality of their application rather than on the whole stack (i.e. cabling, power supply, processor, operating system, data storage, user interface, etc.).

They can re-use proven software components and the functionality offered by the common onboard platform to develop their proprietary solutions thus significantly reducing their development cost and improving their quality. The cost of network cabling and the cost of building-in system redundancy with automatic failover will also decrease significantly.

Furthermore, developers other than those employed by hardware system vendors will be able to offer their own related innovative solutions. The effect of this increased competition will be to turn the current 'sellers' market' into a 'buyers' market'.

It will decrease the cost and increase the quality and the number of available solutions for ship owners to choose from and allow them to mix-n-match solutions that best fit their selection criteria.

And it will provide a system architecture that fully supports all possible e-Navigation solutions…. DS

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Type-specific ECDIS training? Think again

An industry group led by The Nautical Institute and including some heavy hitting maritime stakeholders has expressed its concern about the confusion it sees in the market when it comes to ECDIS training – specifically in relation to familiarisation requirements for the equipment. The Nautical Institute's David Patraiko spoke to *Digital Ship* about the issue

When IMO's NAV54 subcommittee meetings concluded in July 2008 the Organization was able to reveal, after years of discussion and debate, that its members had reached a consensus in favour of making ECDIS technology a required fit for ocean going vessels.

July of 2012 saw the passing of the first deadline in the scaled implementation period for the technology, requiring new passenger ships above 500gt and new tankers above 3,000gt to be fitted with ECDIS.

Since then mandatory carriage of the equipment has been extended to new cargo ships above 10,000gt, from July 2013, and will include new cargo ships above 3,000gt and existing passenger ships above 500gt from next summer.

The final class of ships to be covered by the carriage requirement, in July 2018, will be existing cargo vessels above 10,000gt.

The introduction of mandatory ECDIS to tens of thousands of vessels in the world fleet over the course of the six-year implementation schedule also brings with it the need for the crews of these ships to be trained in the use of the technology – a potentially daunting task given the scale of what's involved.

The ECDIS Training Consortium (ETC) in Germany, for example, last year noted that, according to its research, approximately 250,000 officers worldwide could be required to complete the training necessary for compliance with regulations by the completion of the implementation schedule.

All of these seafarers will be required to complete a generic ECDIS course according to the requirements of the Manila Amendments to the STCW (2010), reaching a level of competence equivalent to that set out in the IMO's Model Course 1.27.

This course is essentially used to prove that the student understands and has a level of proficiency in the general use of ECDIS in a navigation context, and can apply that in their work.

In addition to this, according to section 6.3 of the International Safety Management (ISM) Code shipping companies will also be required to ensure that personnel "are given proper familiarisation with their duties", while section 6.5 states that the company should "maintain procedures for identifying any training which may be required…and ensure that such training is provided for all personnel concerned."

While the generic training requirements for ECDIS derived from the IMO Model Course seem to be the generally accepted standard across the industry, the interpretation of the requirements within the ISM Code as it relates to the ability to operate the specific ECDIS equipment installed on each ship have led to some confusion over what exactly is necessary.

In an attempt to create some guidance on this issue, at the end of 2012 an industry group, led by The Nautical Institute and including stakeholder associations like OCIMF, Intertanko, InterManager and the ISF, among others, published an 'Industry Recommendations for ECDIS Familiarisation' document which it hoped would offer some generally acceptable standards.

This guidance note and its accompanying checklist were also published in the December 2012 issue of this magazine (downloadable from www.thedigitalship.com, see page 31).

However, approximately one year on, it would seem that this confusion still exists, as David Patraiko, director of projects at The Nautical Institute, explained to *Digital Ship*.

Regular readers of this magazine, or anyone involved with vessel navigation, will no doubt be fully aware of the wide ranging availability of 'type-specific training' for ECDIS – and while many shipping companies may believe that such training is necessary to maintain compliance with the requirements of the ISM Code, Mr Patraiko notes that this is not exactly accurate.

"This is where some of the confusion comes in, and it's around this term 'type specific'. When we sat down as this industry group we gave a lot of thought to it, and one thing we asked was 'where did this term type specific come from?', because IMO never said anything about type specific training. It's not in any IMO documentation, yet everyone talks about 'type specific'," he told us.

"As we dug we realised that it came from the fact that, with ECDIS, a lot of the manufacturers offer their own training courses – which is great – and they refer to it as 'type specific training', which it is. That's perfectly fine. But then Flag administrations cottoned on to this, and I think it started with the UK saying 'you must have type specific training' (see MCA Marine Information Notice 442)."

'IMO never said anything about type specific training' – David Patraiko, The Nautical Institute

"I know Australia originally said 'type specific' but when they saw what came out of this industry group they changed it to 'demonstrate familiarisation'. I don't know of any other countries that require 'type specific', I think it's starting to die down a little bit. It crept in to the industry with the very best of intentions."

Demonstrating competence

The Nautical Institute and its partners in the industry group are keen to clarify the point that it is 'familiarisation' rather than 'type specific training' that is the standard required when it comes to operating a particular piece of ECDIS equipment.

"Our message is fairly simple, in that there are two requirements – one is for generic training, and that should be closely aligned to the model course 1.27 which was revised last summer, and the other is the need to familiarise, which is covered by the requirement from the ISM code," said Mr Patraiko.

"Both of these are based on demonstrating 'competence'. So you need to demonstrate competence that you can do everything in the Model Course, and then, when you join a ship, before you take the watch you need to be able to demonstrate that you're familiar with the equipment."

This requirement for familiarisation could be then be achieved, for example, by the new crew member joining a ship simply demonstrating to the captain or first officer that they are competent in using this brand of ECDIS – as there is no requirement that a specifically qualified instructor is present to 'grade' this process.

"That's a 'grey area', for the Model

Competence in specific models of ECDIS is key – but the methods of achieving that competence can be varied

ECDIS is a critical piece of equipment – and as such requires proper familiarisation

Course and the familiarisation. The STCW and the IMO don't go into what the qualifications are for the assessor, so that is a bit of a grey area," notes Mr Patraiko.

"If you've done your generic course and demonstrated competencies to, presumably, a qualified instructor, and then you go on board a ship and look at the list of familiarisation tasks and demonstrate that to somebody in authority – then yes, you should be good to go."

Mr Patraiko says that, from a practical point of view, demanding actual type specific training adds a significant extra burden that might not actually be necessary.

"From a shipowner's point of view or a trainer's point of view or anything else, that's a huge demand. What is it that you actually want – is it that you want type specific training or is it that you want them to be familiar with the system that they're using?" he asked.

"The bottom line is that you need to be familiar. Now if you become familiar through type specific training that's great, but there are other ways."

"There's e-learning, there are extended handovers, on board training, there are lots of ways to become familiar. At the end of the day it really doesn't matter how you become familiar, as long as you are."

Definition and interpretation

Given the importance of proper use of ECDIS to the navigation of a ship it may seem inappropriate to some that it would be left up to the shipping companies themselves, and their representatives, to be the ultimate judge of 'competence' in the use of ECDIS.

In theory, leaving competence open to interpretation by specific officers could lead to later doubt about that decision, particularly after an accident. For example, if a watchkeeper has come on to the ship for the first time and spent ten minutes on a particular new brand of ECDIS, the shipowner might say they were competent but someone wishing to make a claim against them may argue differently.

Despite this, Mr Patraiko maintains that it is still right and proper that the shipping company should be responsible for these decisions, and that it remains the best approach to take.

"The familiarisation puts the onus on the shipowner, which is correct. The shipowner has to ensure that anyone using their equipment is familiar with its use," he told us.

"It's simple, straightforward stuff. And it's not just the ECDIS, it's any safety critical piece of equipment. It's just common sense."

"Everything is open to interpretation, and with a lot of these things you can't nail it down. For that matter, the ISM code itself is not prescriptive, it's descriptive. It says you need to identify risks and you need to identify how you're going to control that risk – that's basically what the ISM code says. It's up to each shipowner themselves which risks. If the IMO tried to identify every risk in the shipping industry we still wouldn't have it."

This even extends to the ECDIS Model Course itself, which Mr Patraiko notes is similarly open to being interpreted differently by different readers.

"Even the Model Course is 'guidance', and it's up to each Flag State as to how they follow the Model Course or whether they follow the Model Course. And even that is still dubious, the Model Course is based on a recommended 40 hours of training, though a lot of administrations out there do a lot less than 40 hours and claim that that's perfectly adequate," he said.

"The Model Course is there as guidance in the hopes that it will offer some sort of standardisation across the industry. Although the Model Course recommends 40 hours, a recommended time, the time is not what we're concerned about – it's the competence. But even the Model Course, particularly the new one revised last year, it specifically lays out all of the different tasks that you have to show competency in."

"This is the same with any regulation, any convention. Nothing that comes out of the IMO is law, there is no such thing as international law. Every convention that comes out, whether it be SOLAS, MARPOL or whatever, has to be interpreted by each administration."

However, while both the Model Course and the ISM 'familiarisation' requirement may be open to interpretation, the Model Course at least describes a suggested course timetable and a detailed teaching syllabus with the learning objectives for the student.

A similar IMO list of objectives for familiarisation has not been produced, which helps to fuel the potential for various different interpretations of the requirements – and it is for this reason that The Nautical Institute and its partners created its own ECDIS familiarisation guidance document.

"The industry got together and said 'look, there's a lot of confusion around this – we say you have to be familiar, but what does that mean?'. So the industry (via this stakeholder group) came up with a list, and that's the list that we published," said Mr Patraiko.

"We did a huge reference with this, we sent it out all over the world to get people to comment. It's a six page list, it's quite extensive – we've had people look at it and their first reaction is that it's too much, but then they study it and come back to us and say 'actually, you're right'. If you look through that list, there isn't a single thing on there that, if you were familiar, it could cause an accident."

Mr Patraiko notes that the list contained in the guidance document published by the group originally came from a book written by regular *Digital Ship* columnist Dr Andy Norris on ECDIS, published by The Nautical Institute.

"As he was writing that, he kept thinking in the back of his mind 'they need to know this, they need to know that' – so he started making a list. The original list is actually an Annex in his book, so it came about quite logically," Mr Patraiko explained.

"Before we published the book, we thought that this list was really important so we sent it all over the world to be commented on and we got lots of comments back. It was so important that, even though the book is a commercial product, we made that list freely available on the website. A lot of shipping companies have since adopted that into their SMS (safety management system)."

Until such time as an official standardised list of familiarisation objectives for ECDIS were to be released shipping companies could likely rely on this guidance document as a useful reference in making their own decisions on displays of competence in using specific equipment.

Were the assessor in any particular familiarisation case to follow this list, which a whole range of industry bodies have agreed is sufficient to show competence, it would be hard for anyone to argue that such competence in the use of that ECDIS has not been demonstrated – particularly when you have bodies like OCIMF accepting it as suitable for their SIRE inspections, as Mr Patraiko notes.

Clearing confusion

For The Nautical Institute and the industry stakeholders involved in the production of this ECDIS guidance document the fundamental message to be conveyed is that 'type specific training' and 'familiarisation' should not be confused.

Ultimately it is the Flag State that will determine the particular regulations for its ships, but in essence, for a shipping company to be in compliance with the ISM code it simply has to be completely satisfied that its crew are fully competent in using the model of ECDIS installed on the ship on which they are serving.

Once they are satisfied with that, then the familiarisation required can be said to have successfully taken place.

Type specific training will most certainly be very useful in achieving this – however, Mr Patraiko stresses the point that it is just one of a number of routes to familiarisation, and likens to the process to driving a car.

"You want a good robust generic test to start with, here in the UK my kids are going through driver training and the test to be able to get your driving licence is fairly robust," he explained.

"After that, if you want to rent a car you need to take 10 minutes to familiarise yourself with where the specific buttons and knobs are, and you're good to go. You don't need to relearn it from the start again, you don't need to go on a Toyota specific training course before you can rent a Toyota car."

In the end, the ultimate goal is to remove uncertainty for the market and smooth the path to effective training in ECDIS across the industry as the final stages of the mandatory implementation deadline approach.

"This all started a couple of years ago, we got together with all of these other organisations and said 'we're worried'. We had an initial meeting and established that yes, there's a lot of confusion around this," said Mr Patraiko.

"The aim of these guidelines is to take some of that confusion out of the market. IMO says that you must be confident, but, from an industry point of view, this is what we feel is meant by being competent. So it's very complimentary to the IMO but just in a little more detail."

"This was approved by 12 organisations, international bodies, and went out to all of their membership for approval. So it's pretty solid stuff."

DS

The ECDIS familiarisation training guidelines document published by The Nautical Institute and backed by a range of industry stakeholders can be downloaded at http://bit.ly/17Ck8sl

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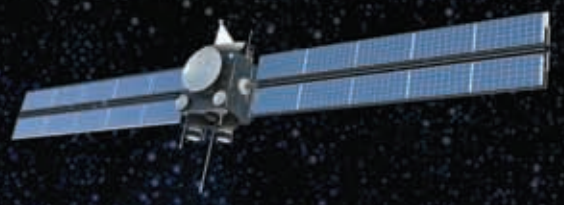

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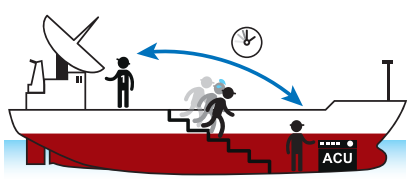

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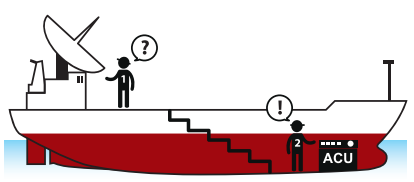

Two Person

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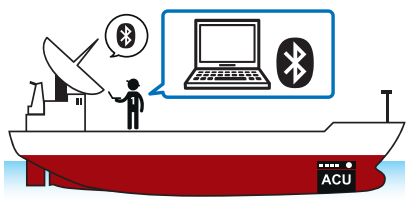

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