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www.thedigitalship.com

France Telecom and Telenor merge as Vizada

Apax Partners has announced that Telenor Satellite Services is to be merged with the former France Telecom Mobile Satellite Communications, under the newly created brand Vizada

Following the conclusion of a process that began more than one year ago, in July 2006, investment firm Apax Partners has announced that the former France Telecom Mobile Satellite Communications (FTMSC) and Telenor Satellite Services (TSS) companies are to merge into a single entity, trading under the Vizada brand established in June 2007.

This move had been widely expected since Apax Partners acquired FTMSC and TSS in July and October 2006 respectively, and was confirmed after EU clearance for the TSS deal was granted at the end of September. The resulting creation of this new satellite communications heavyweight is sure to create further ripples in a market that has seen a number of strategic consolidation moves in the last 18 months.

One area where developments will be most keenly observed will be in the market for Inmarsat airtime services, where the newly combined Vizada company and competitor Stratos will control a total estimated market share of approximately 85 per cent.

The showdown between these two dominant players, and the impact upon their offerings to the end user, is bound to lead to a shake up in the traditional route to market employed by the companies previously.

'We want to build a product portfolio that is independent from the satellite network operators' - Erik Ceuppens, CEO of MSS Europe-MES-Asia, Vizada

A further twist in the plot is the deal in the first quarter of 2007 whereby Inmarsat itself granted a loan of $250 million to another investment firm, Communication Investment Partners (CIP) of Canada, to purchase Stratos, in return for an option whereby Inmarsat can acquire 100 per cent of Stratos in 2009.

2009 will mark the conclusion of the current distributor deals between Inmarsat and its distribution partners, which include Stratos and Vizada, that prohibit the satellite operator from offering its services directly to the end-user.

Should Inmarsat exercise its option and begin to offer its own service through the Stratos distribution network it would create the peculiar situation whereby Vizada would be competing directly with Inmarsat for the sale of Inmarsat's own services to its customers.

How this scenario will affect the strategy of the firms over the next 18 months will be a matter of considerable interest to those operating in the maritime communications market.

Vizada setup

Whatever the future outcome of the creation of this new company, for the time being Vizada is looking to continue with a minimum amount of disruption within the operations of its two constituent companies.

The new company will organise its services into two lines of business, Mobile Satellite Services (MSS), offering standardised communications solutions, and Fixed Satellite Solutions (FSS), selling VSAT (very small aperture terminals) and integrated hybrid networks.

These will include satellite airtime products from suppliers such as Eutelsat,

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UPCOMING CONFERENCES

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Aegli Zappiou,
October 23-24, 2007

CYPRUS
St Raphael Resort,
February 5-6, 2008

SCANDINAVIA
Telenor Expo Centre, Fornebu, Oslo
March 11-12, 2008

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Inmarsat, Intelsat, Iridium, Loral, New Skies, SES Americom, and Thuraya.

These two lines of business will continue to operate independently following the integration of the two companies, explains Erik Ceuppens, CEO of Vizada's new MSS Europe-MEA-Asia business unit.

"We are in the early stage of the integration planning, and, as such, there are no immediate changes," he told us. "The only changes that have taken place are in the organisational framework of the new Vizada group."

"The Vizada group will be organised as a corporate body, with the head of the corporate group being Michael Collins as CEO and chairman. Under the corporate level you'll have the operating entities, an MSS business line and a VSAT (Very Small Aperture Terminal) business line. They will be separate businesses operating under the same name, under the Vizada brand. This is giving us strength and giving us new momentum in the market."

Mr Ceuppens confirmed that employees of both FTMSC and TSS will both continue to operate as they had done previously, at the market-facing level, though the company will be organised into a more regional reporting structure. The CEO at group level will be Michael Collins, appointed by Apax Partners, who was previously involved in heading other private equity projects.

"There will be no interchange of staff," he said. "The people of the two business lines were already present, at TSS there was already a VSAT business line and an MSS business line anyway, so people will be pretty much remaining with their activities. FTMSC had no VSAT activity, so the VSAT activity is indeed the former VSAT activity of TSS, and, of course, the MSS activity of FTMSC and TSS will be integrated into one."

"It's true that from the top management point of view these activities will be clearly defined. The VSAT business unit will be headed by Morten Tengs (former head of TSS) as chief executive officer, the MSS Europe-MEA-Asia business unit will be headed by myself as chief executive officer."

"To integrate the regional dimension, the MSS Americas business unit will also have a chief operating officer overseeing activities in the Americas, his name is Bob Baker. The three of us will report directly to the corporate office, to Michael Collins. That is the organisational framework that has been decided, there are two dimensions with the business lines split between MSS and VSAT and the regional focus on Europe-MEA-Asia, and the Americas."

Integration of the two different companies, and their two different ways of working, constitutes the biggest initial challenge to the new company.

"We (intend to) integrate our sales organisations to create a unique interface with our customers going forward, and afterwards we will start integrating our infrastructure and our back office systems," said Mr Ceuppens. "There we are going to keep the best of both worlds, which must allow us really to improve the service quality for our customers."

Changes going forward

When asked if the structure of the Vizada group was likely to change going forward, Mr Ceuppens told us that the focus would be on changes and improvements to the products and services that the company can offer rather than the infrastructure to deliver them.

"I think what's important is that we implement our business strategy on the MSS side, to really focus on the customers and give them the best possible satellite services," he said.

"That's why an important element in our strategy, and also an important reason for the merger is to be able to combine the product portfolio of TSS and FTMSC to build the best and widest product portfolio of satellite services and solutions for the customers."

Mr Ceuppens continued: "The increase in size (of the company), first of all where that's most important is in the size of the product portfolio we can make available. What was absolutely key in our strategy is to continue the strong partnership we have with our worldwide distribution network. Combining the distribution network of FTMSC and TSS will also give the new company more important reach and proximity with the customers."

"So our partnership with our worldwide distribution network will be further extended thanks to this merger, and that's a key element in our commercial strategy. We probably have close to 400 resellers in our channel, so we'll continue to use the former sales offices of FTMSC and TSS for the time being. In terms of sales offices there is no immediate change."

"This has been the main driver of the merger and will be the main driver of our strategy. And we want to build a product portfolio that is independent of the satellite network operators so that we can provide the best solution to the customer."

"(Deciding on the combined value added services), that is the work that will need to be done in the coming weeks, that's one of our first integration tasks. First of all it's to make available to our customers the best value added services of both companies, which until today was not the case."

"Until now FTMSC customers only had access to FTMSC services, while TSS customers only had access to TSS services - there is clearly an opportunity there to make the full range available to all customers. That's where we've really seen a demand from the market, to be able to access all of those services."

The addition of a major VSAT services provider like Telenor Satellite Service to the other satellite products already offered by the former France Telecom Mobile Satellite Communications forms a very large chunk of this expanded product strategy, and may prove to be particularly important should Inmarsat take control of Stratos in 2009.

"We will be able, through the combination of TSS and FTMSC to make available Inmarsat services for maritime, but also handheld services of Iridium and Thuraya and offer in-house value added services, (and) on top of that we will also have the in-house developed VSAT services," Mr Ceuppens told us.

"The difference to the customers in the value proposition of Inmarsat and Stratos will be different from Vizada's value proposition to the customers. That is part of the portfolio strategy, to be able to build the most complete portfolio of satellite services based on strong partnerships with over seven satellite operators: we want to really be able to be in a position to select the best possible service for our customers, independent of who is operating that service."

Mr Ceuppens believes that the VSAT option is gaining more acceptance as a communications solution in the shipping industry, and will continue to grow in the market in future.

"I think that's the reason why we've set up the business in an MSS business line and a VSAT business line," he told us. "The MSS business line will focus on selling the standard MSS solutions, combined with the in-house developed value added services of FTMSC and TSS, and sell that through the worldwide distribution network that we will have further extended through the combination of both companies."

"On the VSAT side, the VSAT business line is focusing on more customised solutions, and the objective is indeed to capture the growth potential of the VSAT market. TSS already has a very strong VSAT operation, so it will be the intention of the Vizada group to reinforce that activity, really develop it on a global scale and capture the global VSAT opportunity."

"I think the general development we see of broadband services, and VSAT particularly, are suitable to provide cost efficiency, and over the last couple of years there's been enormous technology evolution that's allowed VSAT services to become more compact and affordable for use."

Market share

The increased size of the combined companies will also create opportunities to solidify the relationship that Vizada has with the satellite operators, and is likely to lead to a stronger negotiating position when contracting with these companies.

"It's very difficult to talk about exact figures in terms of market share, but obviously combining FTMSC and TSS, two of the three largest Inmarsat LESOs is creating a key partner for Inmarsat," said Mr Ceuppens. "The combination only reinforces our position with the satellite network operators on the MSS side."

"Building a strong relationship with the satellite network operators is obviously an important part of the strategy, but it's not only about price, it's about value and about the product, having the right product to offer to the customers."

He added: "In our industry going forward, I think the focus should much more be on the value that is provided, I think we should move away from the pricing discussions that we have seen over the last few years and really focus on value and on services."

"If you look at the evolution of our industry for the last couple of years, the number of satellite services available today has really increased enormously. On top of that, the value added services that companies have developed have also multiplied. That's really what we have to focus on, on value and services rather than pricing as it has been for the last couple of years."

Whatever the direct result of the changes that Vizada will bring to the market, with its broader offering and stronger negotiating position, as well as a strong platform to compete with Stratos, it seems certain that there are changing times ahead in the maritime satellite communications industry. DS

Dualog has established a new sales and service office in Liverpool, UK, which will be headed by pre-sales technical manager Chris Walton. Mr Walton will be work in conjunction with Dualog's European sales manager, Lars Martinussen, who is based in Oslo.

Inmarsat has launched a new service for machine-to-machine applications called IsatM2M, a satellite telematics service based on the Inmarsat D+ system. **Satamtics** and **SkyWave** will be the distributors for the system, which the companies say will offer faster data forwarding rates, quicker responses to polling requests and shorter time to first transmission for a broad range of applications.

Maritime Communications Partner (MCP), with local partner MATERNA Communications, has signed a contract with Polferries to install MCP's CellAtSea vessel GSM system onboard the M/F Pomerania and M/F Wawel, which will be available to both passengers and crew. Users can operate their handsets in the same way as when roaming internationally on land, with charges appearing directly on their bills at home.

www.dualog.com
www.inmarsat.com
www.satamatics.com
www.skywave.com
www.mcp.com

CapRock signs 25-vessel VSAT deal with Green Reefers

www.caprock.com

Satellite communications company CapRock has signed a multi-year contract to supply Green Reefers' fleet of 25 vessels with its SeaAccess broadband VSAT (very small aperture terminal) communications system, including all equipment, service and support.

CapRock's Aberdeen office, one of the company's 10 support centres, will provide the majority of the installations. CapRock will also provide pre-paid crew calling solutions for the Green Reefers vessels under the terms of the agreement.

"Green Reefers' objective is to serve our clients with rational logistic solutions and manage their cargo through every part of the transition chain," said Green Reefers ICT Manager, Berit Haugen.

"SeaAccess provides us with ongoing insight into the operations and status of the vessels, enabling us to make necessary changes to further improve the transportation of our customers' goods."

SeaMobile signs VSAT deal with Global Marine Systems

www.seamobile.com

SeaMobile has reached an agreement to provide its Maritime Telecommunications Network (MTN) VSAT satellite services aboard three vessels of Global Marine Systems, a subsea cable installation and maintenance company.

Terms of the three-year contract were not disclosed.

SeaMobile has already installed VSAT (very small aperture terminal) services on two of the vessels and expects to install the third ship by the end of September.

The contract will also include the provision of SeaMobile's 'OceanPhone' prepaid calling cards, to be used for crew communications services.

SeaMobile says that it now provides broadband satellite services to more than 300 maritime vessels around the world.

ThurayaMarine launch date confirmed

www.thuraya.com

Thuraya CEO Yousuf Al Sayed, speaking at the GITEX 2007 exhibition, has outlined some of the company's plans for its new ThurayaMarine terminal, planned to be released to market in January 2008.

Mr Al Sayed noted that maritime is one of the biggest markets for satellite telecom operators, and expects that his company's new terminal, with its highly improved data capability, will make Thuraya among the best offerings for the international maritime communications.

"With new high-performance omni-directional and stabilised antennas and a built-in GmPRS feature, ThurayaMarine has been designed to offer quality, reliable, cost-effective and advanced satellite communications for the numerous sea-going communities," he explained.

"All these new and high-potential service innovations have been strategically designed to expand Thuraya's business portfolio, broaden its customer base and build new sustainable revenue streams."

Geo-mobile Packet Radio Service (GmPRS) can be used to run applications such as internet browsing and e-mail, and Thuraya is hoping to offer the system over handheld devices that can act as a "space-based Blackberry" for users in areas uncovered by terrestrial networks

Mr Al Sayed also confirmed that the launch date for the new Thuraya-3 satellite has been set for 28th October 2007. The new satellite is part of the company's strategic plans to expand Thuraya's current coverage towards East Asia, covering several key Asia-Pacific markets including China, Japan, Korea, Malaysia, Vietnam, Indonesia and the Philippines as well as Australia.

"This (will transform) the company into a multi-regional satellite telecom operator, and open great horizons for continued expansion and growth," Mr Al Sayed said.

Following the launch of the satellite, Thuraya expects to complete the satellite In-Orbit Testing (IOT) by 6th December and start commercial services in Asia Pacific markets by 23rd December 2007.

KVH appoints mini-VSAT distributors

www.minivsat.com

KVH has agreed that Mackay Communications is to offer the KVH TracPhone V7 with mini-VSAT broadband service as its exclusive maritime VSAT (very small aperture terminal) solution in the United States.

In addition to offering the TracPhone V7 and mini-VSAT Broadband service, Mackay will also carry KVH's range of TracVision marine satellite TV systems.

Mackay has 14 offices covering all major port locations on all three coastlines of the United States, and has been providing marine services for more than 120 years.

KVH has also appointed Hampshire based C A Clase as the exclusive distributor of KVH products in the UK

Mackay Communications will distribute the Tracphone V7 as its exclusive VSAT solution in the US

Globalstar agrees satellite launch contract

www.globalstar.com

Globalstar has signed an agreement with European launch services company Arianespace for the launch of 24 second-generation LEO (low earth orbit) satellites, with the launch schedule hoped to commence from the summer of 2009.

The agreement provides for up to eight launches from Arianespace's Guiana Space Centre launch complex located in French Guiana. The Soyuz launch vehicle, which has been used to successfully launch twenty-eight Globalstar satellites since 1999, will again be employed under the contract.

Globalstar had already launched four first-generation satellites on Soyuz in late May, and an additional four first generation satellites are scheduled for launch using the Soyuz booster at the end of 2007.

In addition to augmenting the current constellation, these eight first-generation spare satellites will also be integrated into the second-generation constellation, with a total of 32 satellites contributing to the company's initial deployment of its new constellation. The remaining un-launched second-generation satellites are intended to provide Globalstar with the capability to extend the lifespan of its constellation beyond 2025.

"We are very pleased to finalise this agreement which secures the launch of our second-generation space segment, and I would like to thank Arianespace for providing us with the flexibility needed to accommodate both our launch budget and the accelerated delivery and deployment schedule of the new satellites," said Jay Monroe, chairman and CEO of Globalstar.

"This completes the final major contract necessary to deploy our long-term space segment."

Korea to launch satellite in 2009

The Korean government has announced that it has begun assembling and testing the components of an indigenous maritime weather and communications satellite, to be launched in June 2009.

According to the Ministry of Science and Technology the satellite will cover all of Asia, the Pacific Ocean, Oceania and parts of Eastern Europe, and will be used to test a locally developed high-speed communications relay system, as well as conducting studies of the Korean marine environment.

"Once the satellite is in orbit, it will permit Korea to get all its weather-related satellite images without relying on foreign sources," said Lee Ki Sung, head of the ministry's space technology development division.

The Ministry also expects that information gained from the satellite might be sold to other interested countries.

The geostationary satellite is expected to have a seven-year lifespan, and has cost the government approximately 355.8 billion won ($379.7 million) since development began in 2003.

Singapore initiative to bring wireless internet to vessels

Singapore has launched a new initiative worth about US$8 million aimed at providing wireless internet access to vessels off its coast.

Speaking at the International Maritime and Port Technology and Development conference (MTEC), Minister for Transport Raymond Lim outlined the country's vision to offer improved maritime communications services to ships travelling to and from the port.

"Technology is critically important to the maritime industry," he said. "There is today zero tolerance for sub-standard shipping."

"To be in the port and marine business today, you have to be also in the technology business. Technology can give a valuable competitive edge to the company that invests in it well. The MPA (Maritime and Port Authority of Singapore) has made promoting maritime technology one of its key areas of focus."

The latest step in the MPA's efforts is the Infocomm@Seaport programme, a S$12 million joint initiative by MPA and the Infocomm Development Authority, or IDA, to encourage greater development and use of maritime information communication technologies.

The programme will co-fund information communications technology projects that Mr Lim hopes will "enhance the maritime industry's operational efficiency."

'To be in the port and marine business today, you have to be also in the technology business' - Raymond Lim, Singapore Minister for Transport

The first project under the scheme is the wireless-broadband access for Seaport, or WISEPORT, pilot project.

"Developed in response to feedback from the maritime community, WISEPORT will provide vessels with high bandwidth, low-cost and secure wireless broadband access up to 15 kilometres from Singapore's coastline," Mr Lim explained.

"When the system is in place by early 2008, Singapore will be the first port in the world to offer wireless broadband connectivity throughout its waters."

Blue Star to install Stratos crew communications across fleet

www.stratosglobal.com

Stratos reports that it has begun deployment of its AmosConnect Crew communications service on 34 vessels managed by Reederei Blue Star GmbH. Blue Star is a subsidiary of Maersk, the world's largest shipping company.

Stratos had previously outfitted each of Blue Star's 34 vessels with one AmosConnect license, installed on an Inmarsat Fleet F77 terminal. The AmosConnect Crew service will be an addition to this, to allow crews access to phone, e-mail and SMS that is separate from the ships' business communications.

Pre-paid cards for use with the service will also be rolled out across the fleet, which can be used with any of the different communications methods. These cards come in two versions, one of which can be re-loaded by the crew by using a credit card, and another which can be topped up online.

"(This system) lets us offer a full range of communications services as a crew benefit," said Peter Chifflard, Blue Star's fleet personnel manager. "E-mails are free of charge and the ChatCards enable crewmembers to make private calls at very competitive rates."

Blue Star is to deploy AmosConnect Crew on 34 vessels

Stratos launches FleetBroadband service

www.stratosglobal.com

Stratos has introduced its new maritime broadband satellite communications solution based on Inmarsat's next generation FleetBroadband service.

The company says that FleetBroadband from Stratos, through its Stratos Advantage service, can be expected to offer a range of value-added services, like cost and traffic control, firewall management, data optimization, high security options, easy VPN access, messaging services and a full IP range.

Stratos notes that the Stratos Advantage offering is already in use by more than 4,000 mobile users of the Inmarsat BGAN service, the land-based forerunner of FleetBroadband.

Crew communications features, such as pre-paid web-browsing, are also expected to be made available.

Stratos says it will continue to work with application partners to introduce further services in the future, including voyage management, remote management, IT management and cargo management.

The system, which is expected to be commercially available in November, will be available to end-users and Stratos channel partners in a number of different pricing packages, including group pricing, on-demand pricing and pre-paid pricing.

Further information on FleetBroadband from Stratos for maritime customers is available by visiting www.thepowerofmobilebroadband.com.

MTN and SES trial mini-VSAT antennas

www.seamobile.com
www.ses-newskies.com

SES NEW SKIES, an SES company, is to team up with SeaMobile's Maritime Telecommunications Network (MTN) VSAT business unit to conduct extensive field tests of new miniaturized VSAT antennas, to offer satellite communications services for small vessels.

The companies will test two new 60cm VSAT antennas, both using iDirect Spread Spectrum technology to allow the small-sized, lightweight antennas to be shielded against adjacent satellite interference, so that they can carry a strong enough signal to support a high-speed, always-on connection.

SES NEW SKIES is providing Ku-band capacity for the spread spectrum technology demonstrations on its NSS-7 satellite at the orbital location of 338° East.

"Small-sized and lightweight VSAT antennas open up completely new markets for small vessel broadband connectivity, be it for professional use, navigation support, safety services or pure leisure/entertainment," said Scott Sprague, senior vice president global sales of SES NEW SKIES.

Iridium set for IPO

Iridium Satellite is currently in the process of planning the development of its second generation satellite network, 'Iridium NEXT' - with costs expected to exceed $2 billion, the company has begun to prepare for an initial public offering (IPO) of its shares to the stock market

With plans now firmly in place for the roll out of its second generation satellite network, US satellite operator Iridium is now turning its attention to organising the financing to pay for the multi-billion dollar project, and is gearing up for a possible IPO (initial public offering) of its shares within the next two years.

'This new network is going to cost in the area between $2 to $2.6 billion' - Dan Mercer, Iridium

The company says that it is extremely happy with the levels of growth it is experiencing at present, reporting in August its highest number of subscribers for a single month (8,150) in its history. The feeling is that the time is right to forge ahead and open the company up to the market, and to take advantage of the opportunities for increased financial muscle that would follow.

Dan Mercer, Vice President, Europe, Middle East, Africa and Russia at Iridium, believes that it is important to get all of the plans in place while the current network is still strong, and well before it comes close to the end of its operational cycle.

"The constellation that we have has been operating exceedingly well, we've made modifications at the software level that has allowed us, where we've had anomalies, to fix them if the same anomaly happened again and they wouldn't cause a problem on the network, so as you move forward you build into extending that life out," he told us.

"The satellites originally had a lot of redundancy built in, they were designed to support millions of subscribers, but at the moment are only supporting about 250,000, so this will help to prolong the life of the existing constellation."

"With the existing satellites, the actual trends are way into 2020 to still be there, but we'll have a new constellation in place with that global canopy before that," Mr Mercer continued.

"We've already got nine spares and we're using less than one a year, and the important thing is that our success is based on network availability. Once we've used up those nine spares what would happen is that on the failure of the next satellite, the effect would be a hole (in the network)."

"We're not going to allow that to happen, and last year we kicked off the programme of 'Iridium NEXT', which is the programme of refinancing and defining, on a technical basis, what the requirements will be over the next thirty years. It's a huge project to replenish a constellation, we're going to essentially retain similar core elements - very high availability and global coverage - and have it backwards compatible for everybody."

"2013 is the planned date for launching the first new replacement satellite, so we'll be launching over a period, we have time to plan. It will take a couple of years to complete. And we can accelerate that at any time if we need to bring it forward or push it out, that can be done."

2013 is the planned date for the launch of the first satellites in the Iridium NEXT second generation constellation

Funding

While initial efforts since these plans were initiated focused on building a network of partners to work on constructing the new satellite network, working out the best blend of internal and external financing to bankroll the development has now become central to the company's planning.

"All of this has been coming to a head, and, of course, you've got to be able to fund that," Mr Mercer explained. "Ultimately, this new network is going to cost us in the area between $2 to $2.6 billion."

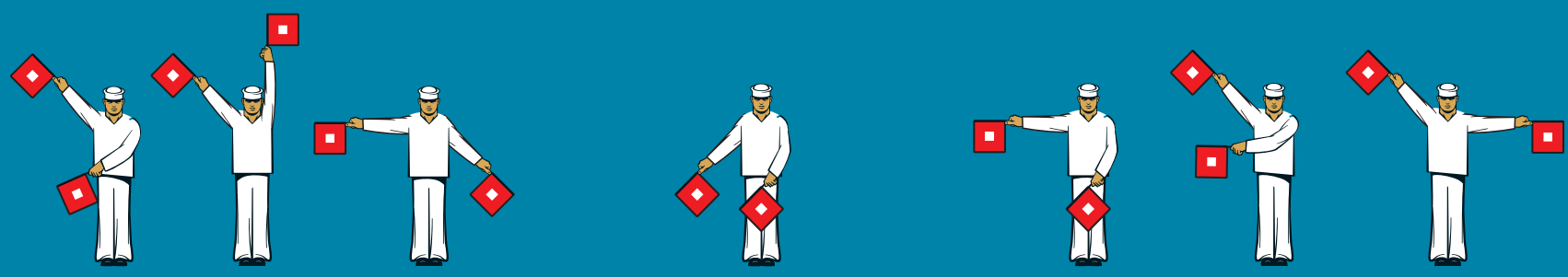
"(However), over the past 6 years or so that we've been in business, we've now been profitable for the last 9 quarters, have a growing EBITDA, and expect these earnings to continue to grow at ten to twelve per cent."

Iridium feels that the revenue driven by this growth, and cash that the company already has on hand, will be able meet a significant portion of the costs of this satellite project.

Plans for an IPO will help to raise the extra cash required, but are not a pressing need to get the programme up and running. Iridium says that it will also initially pursue private equity funding before confirming any IPO plans.

"We don't have a need (for extra funding at the moment), the company now is pretty attractive in terms of its performance," said Mr Mercer. "Around 2014 / 2015 we need to have the new network very much under way and under replacement, to maintain the service to the customers."

"For those using existing products there'll be no difference, it'll be completely seamless. In order to do that we're going to be spending $2 to $2.6 billion. If you run through the growth and what cash we're



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Boy, oh boy, we love being the bearer of great news.

www.CapRock.com/SeaAccess

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- 24/7 help desk
- Worldwide service locations

SeaAccess communications™ by CapRock

spinning off in earnings each year with the growth, then we will be able to fund ourselves around $1.5 or $1.6 billion, so we're only looking for a few hundred million dollars."

"At the same time, it's in the 'out years' of building the network when the heavy consumption of cash is required. It's nice to be in a position where you can go out to the market and raise money, but we don't need it. Right now we're looking at the business to do a private equity offering, and then the operational profits over the following years will be topped up by an IPO."

"We'll do it, number one, when the market's ready, and number two, when we're ready internally, because to become a public company, clearly you have to shape up slightly differently than being a privately owned company. When those two things are right, that's when we will do it. We don't need the cash now, we will need it clearly, but right now we're in the definition stages."

"It's totally in our hands. It takes time, we've been working the markets for some time now. It's not that long, we're not talking ten years. In 2013 we'll be launching, that's just over 5 years, that's nothing. It's a major programme."

When asked if the IPO option would be discarded if private equity fundraising gathered enough support to complete the funding for the new network, Mr Mercer replied: "Right now it's on the table - there's still a chance we wouldn't do that, but right now our plans are to do it in 12 to 24 months. But if the market isn't right it won't be 12 or 24 months, and, equally for us, we have to get our systems into that shape, and that's a year or so process."

"We're way ahead in the availability of funds as we need to spend them, and the next couple of years is very low in costs, we're not placing any orders, everyone's doing the work for us in terms of the design and our selection of partners. Then we move into the full design and manufacture, and if we backload that by 5 years, it's no time at all to get ready."

Secondary payloads

Iridium has also been considering another interesting fundraising opportunity to contribute to the cost of its new constellation, by looking at integrating secondary payloads from other companies in different industries into its satellites.

"We're going ahead with the comms payload anyway, so this is almost a low-cost way to buy / get into space," explained Mr Mercer.

"We've gone out to the international scientific community, as well as various governments (to discuss this with them). The scientific community is coordinated, in terms of earth observation, by GEO (Group for Earth Observation), based in Switzerland."

"They coordinate all of the world's earth observation space assets, and they are now backing us to provide secondary payload for the international scientific community, with about one sensor on every space vehicle, to measure the ice caps, sea colour, all of these things that indicate global warming and various other things that their customers in the scientific community need to know. They would have that information within minutes, globally."

The idea of incorporating these secondary payloads has only arisen recently during discussions on the funding structure, and was not

originally part of the plans for the satellite network. However, it could turn into a very valuable money-spinner that could possibly offer a significant contribution to the overall cost.

"We started out only a year ago, with people saying 'you're putting this global canopy up, you should be talking to these other communities'," Mr Mercer said. "It's something we hadn't really thought too much about, but very quickly that's been locked in to a very extensive programme."

"We're heading towards a G8 summit in South Africa at the end of this year where the whole concept will be laid out to all these other countries. So that may or may not happen, but it's a billion dollar investment from other communities."

He added: "We have to raise what it costs, and it really depends on how many sensors, is it one per satellite, or more, or less? Some of the applications only need half an hour updates, so that could be a sensor on every other satellite, for example. But you're talking significant sums of money."

"A lot of the big imaging companies that take photographs, most of those photographs they take, it's just cloud. With a system we could have on the back of our constellation they could immediately see in real-time where the weather is. So that's part of the model, and there's a desire from the scientific community and the military community for similar information, such as coastal imaging and weather."

Higher speed

In the meantime, before Iridium begins the launch schedule of its new constellation, it is also planning a new service offering over its existing network that will offer improved bandwidth to customers.

The company expects to be launching this new product in 2008, which will allow Iridium users to take advantage of speeds in the region of 150 kbps - an increased capability of more than ten times compared with the bandwidth capability of the existing services.

"We'll be talking more about that in the last quarter of the year, but it's on our existing constellation, with new terminal equipment, and new software," said Mr Mercer.

"That's really all we can say at this moment. As soon as we launch we will be a fully global service, we're not waiting to open up any other areas."

The company is also examining the possibilities of offering its services as GMDSS (Global Maritime Distress Safety System) compliant if the International Mobile Satellite Organisation (IMSO) opens up the market to include non-Inmarsat systems, though it does not count this as a major part of its future planning.

"We're very supportive of GMDSS and the modernisation work that's going on in the committees there, but it's not affected us in any way by not having GMDSS," Mr Mercer told us.

"We're supportive of modernisation of GMDSS to be satisfied by other networks as well, we are compliant and can be compliant in that area. Whether that happens or not, shortly or a bit longer down the line, it doesn't affect our core business. It would be a plus, of course it would, but it's another stream."

With a multitude of different plans on the table, it seems that the next few years will see some interesting changes for Iridium and its customers. DS

Installing VSAT at Seatrans

Norwegian shipping company Seatrans has embarked on a project to fit 16 of its vessels with Ku-band VSAT satellite communications systems. *Digital Ship* spoke to Kenneth Landro, Seatrans IT manager, and Pal Jensen of CapRock, about why VSAT was the right choice for this organisation

Following a thorough investigation process to take stock of its data needs, and observation and testing of a number of different systems, Norwegian shipping company Seatrans has recently embarked on a project to install high-speed VSAT (very small aperture terminal) satellite communications aboard 16 of its vessels.

While still in the early stages of the installation process, Kenneth Landro, IT manager at Seatrans, is expecting the SeaAccess VSAT system, supplied by US company CapRock, to be an important part of the company's operations once the programme is complete.

"At the present time we have fit two vessels, combined chemical and gas carriers, vessels roaming between the States and the Mediterranean," he told us.

"We are planning to fit at least 16 vessels in total, but maybe there will be more. I guess it will take this year and hopefully we'll be finished in the spring next year. We will roll out the system as soon as we can on the next 14, doing them all together."

"(The first two installations) took place in June and in early August (2007). The way those vessels are travelling is a challenge for CapRock, because they are roaming between two satellites, one for Europe and one for the States. It's not a worldwide system, it's a spot system with Ku-band."

"If you install it you have to put in some cables, and that will take some time, but I guess it all takes about three days to get the VSAT system up and running," Mr Landro continued.

"If you want to integrate the system into the network and things like that, maybe you'll manage in three days but you'll have to test them and so on. So I'd say between three and five days, having quality checked it and everything."

"Of course, you can do it faster, but you have to prepare for the cabling anyway. The last vessel we are going to install, I think we'll do it faster than the first one."

The system that Seatrans has opted for is a multi-regional Ku-band solution, which covers vessels travelling in the North Atlantic between the European and North American satellite spot beams. The package includes always-on connectivity at a fixed price.

Seatrans has successfully completed two of a planned 16 installations of multi-regional Ku-band VSAT

"The speed of the line now is about 400 kbps, that is exceptionally good I think," said Mr Landro. "I won't say that's an average speed, but we have a minimum bandwidth of 128 kbps (in both directions), but what we are seeing is that we are getting as much as 400 kbps."

"You can get a lot more out of the service when you have 400 kbps compared to 64 kbps. And the 64 kbps was even much more expensive a couple of years ago."

Savings

Mr Landro believes that there will definitely be significant savings to the company in the long run through the use of this system compared with a pay-per-use or pay-per-megabyte service.

"Earlier on there was no saving in going into the VSAT, but today it's quite a good saving in doing it," he said. "(The prices for VSAT) have come down, but it's more that the speed and the services provided by VSAT are becoming better."

"I really don't know how much data we use, I guess it's something like 10s of Megs for the month. Maybe 30 or 40 Megs. It is quite a lot, and that's because of this replication we do between the databases in Lotus Notes."

The database replication that Seatrans performs as part of its operations was one of the key drivers of the decision to use a fixed-price, always-on system.

"(We chose this for) all of the applications that need to replicate data in the office and on the vessel," Mr Landro explained.

"All of those applications will improve, because all of the data interchange will be seamless, it will be server to server instead of a manual operation from the captain or the crew. They are online all the time, so you can set up the server to do it automatically."

"The Notes applications we are using, Domino and Notes, and TQM 9000, a quality assurance system, it's a program based on databases in Lotus Notes - these are the applications where we need VSAT. When you are going to replicate you need good carriers, it's quite a lot of data you have to transmit, and it's much better when the VSAT system is up and running, these things can be done seamlessly."

When asked if Seatrans had tried using compression systems to improve the efficiency of data transfer, Mr Landro replied that the company didn't feel the need to use that kind of technology now that it has an always-on connection.

"We're not using compression today," he said. "On the mail we are using compression, but not on the database replication. It's something we might look at in the future, but the need for that is not so strong now because we have a very good carrier."

Challenges

With many major IT infrastructure replacement programmes there are often some particular challenges that companies will be faced with when trying to get the very best out of their new systems.

For Seatrans, the biggest issue they have had to face has been dealing with the downtime that will occur with the VSAT system, from 'shadowing', where the structure of the ship blocks the line of sight between the satellite and the antenna, and also when the ship travels outside the coverage of its regional spot beams and loses connectivity.

"Placing the antenna is very important, it's very important to try not to put the antenna in a shadow position," said Mr Landro. "The antennas that we have placed today have a shadow for 30

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degrees out of 360, so I suppose it's a little bit less than 10 per cent of the time it will be in shadow."

Mr Landro mentioned that Seatrans is making a very innovative attempt to counteract this problem by developing a moveable platform for the VSAT antenna to sit on, so that it can take a new position on the ship if necessary.

"We are thinking of ways to make new antenna pedestals, in order to maybe move the antenna if it is moving into a shadow position," he said. "If we can arrange some system to move the antenna we will have 100 per cent uptime, I think."

"We have made some drawings about how to implement that. Something like hinges with the antenna placed on some arms. We are working on it at the moment, and maybe we will be able to implement it on the next vessel."

The difficulty of the regional nature of the service also means that the vessels must carry a back up communications system.

"We have to do that, we are going to use Inmarsat-B then, or Fleet," Mr Landro explained. "We haven't implemented that (switchover capability) yet on the vessels. At the moment they have just been travelling in the Ku-band regions."

"We are using a mail communication system from Dualog, you can attach several carriers to that system. For the moment we are switching rather seamlessly with the e-mail, but not with the data replication, that's more manual. We will definitely have a tool or a program which will help us to switch between systems, because we can't totally depend on the VSAT. We also have to have another carrier."

"Another difficult part now is the roaming between the two satellites," Mr Landro added.

"When (the vessels) are entering the US (regional beam) after being in Europe, CapRock can't do it seamlessly, we have to do a manual switch and there some problems in addition to that. But CapRock will find ways to deal with those things, they are working on automatic switching."

Putting an always-on connection on the vessels does allow Seatrans to offer an extended range of communications services to the crews, as the cost of phone calls and internet can be covered by the fixed fee the company pays for its VSAT connection. However, unlimited internet access onboard then presents its own problems.

"One of the things that we experienced is when all of the computers are coming into the network with internet and things like that, you have to be prepared," said Mr Landro.

"It's easy for the crews to click on things they shouldn't, and suddenly you have spyware and viruses and things like that on the computers. The plan is to integrate (the vessels) fully with the office, but at the moment we have a firewall on the ship."

The idea of unlimited use for the crews is also regulated by the availability of the hardware on the ship, Mr Landro noted.

"We have only one crew call phone, so the crew have to discipline themselves in order to let everyone use the phone," he said. "The internet usage is also just on one computer for the crew. The officers on board will have internet on each machine."

Future

Going forward, Seatrans has plans to make the VSAT system the central part of an overall improvement in its IT network.

"We are going to roll out a new package of hardware and software on board all the vessels, with pre-installed software where it's possible to re-install everything in just a few minutes, that will be a great improvement regarding viruses," Mr Landro told us.

"That's a system by Palantir. It's very handy to have together with the VSAT."

"The main thing for us now is to get the VSAT system rolled out to all the vessels and to integrate the vessels with the office. You have to send quite a lot of data to put it all together in the office."

Once the vessels and offices are connected together in a single network, Mr Landro is convinced it will greatly improve company operations.

"With the VSAT we just need to have one guy punching in the details about something, but we can deliver it to the whole organisation straight away," he said. "It allows us to build statistics about the whole organisation, and gives us more data to make better decisions."

"So far the VSAT has been very good - and it's not even working as well as it will in the future after a little more time."

Vendor partnership

CapRock's vice president of sales maritime division, Pal Jensen, worked closely with Seatrans throughout the VSAT project, and feels that the company has made a good choice in fitting its needs with a technology that can fulfil them best.

"We knew that Seatrans had been evaluating new communications solutions and VSAT specifically for a long time, probably several years," he told us.

"Being a very typical representative for a commercial shipping company Seatrans fitted very well with the target customers we defined when we started building and implementing our SeaAccess services a year ago. We also knew that Seatrans had a very thorough process where commitment, engagement and quality in every part of the delivery from a future vendor would be the criteria for their choice."

As part of the proposal process Seatrans' team paid a visit to one of CapRock's teleport facilities to understand how the services are delivered and to meet field engineers and network operators who would be delivering the VSAT connectivity in the future.

Mr Jensen believes that this kind of thorough examination of every detail of the service is key in finding the best fit for any shipping organisation.

"This should be a very important part of every ship owner's criteria for choosing a VSAT provider," he said.

"It is always easy to be convinced by good sales people and nice Powerpoint presentations, but a choice for a VSAT turnkey service provider is a choice for a partner for your communications for several years and the important part is what's really behind the nice presentations."

"I guess we all have seen and noted the examples of new vendors coming into this industry with bright new ideas, but unfortunately not with any realistic feeling for what it takes to provide a good reliable satellite service to the maritime industry day by day and year after year. A few of them have had to cease from the market leaving existing customers with disappointment and also loss."

Despite the problems of some of these providers that have since left the industry, Mr Jensen sees the VSAT market continuing to grow in the future.

"Like every other industry the maritime industry needs new communications solutions to keep up with the global commercialisation going on, to stay competitive and improve efficiency to secure margins," he said.

"The attitude of the last ten years, driven by costly and low performing bandwidth, is simply not sufficient in today's business environment. Improving internal applications and the exchange of data between ship and shore, together with the increasing need for external communications with partners, agents, customers, official authorities, and so on, are the drivers for more flexible satellite solutions."

"The lack of educated crew due to increased maritime business development resulting in a boost in new ship buildings combined with limited access to new qualified maritime professionals is also contributing strongly to the need for the provision of new data and telephone solutions onboard vessels," he added.

"Another driver for modern satellite communications and VSAT is the maritime industry's need for predictable and fixed communications costs. To be able to explore and utilise all opportunities of bundling data and telephony communications into the operation in a ship owner's day to day business, the costs associated with this are required to be as fixed and predictable as possible."

Mr Jensen feels that competition in the communications market, with so many new technologies and new services available, will help to improve conditions for the customers, and provide them with an increased level of service.

"It is like I always take the opportunity of saying; the only real differentiator in the maritime satellite business is service, service and service," he said. "If that is mixed with well proven solutions and long lasting presence in the particular market place, I think this should be strong criteria for any choice of maritime satellite provider, or solution."

"Anyway, Seatrans liked what we told them and what we were able to show them and decided to work with us. We have now successfully been through a pilot phase and are in the middle of implementing the whole fleet of 16 Seatrans vessels with our SeaAccess solution." DS

KVH Launches Next Generation Maritime Broadband Service and New TracPhone V7

New mini-VSAT Broadband service relies on spread spectrum technology to deliver fast, affordable Internet and VoIP service via 60 cm TracPhone V7

Positioned to meet the exploding demand for affordable broadband service at sea, KVH Europe A/S has introduced a new type of satellite communications service that enables small, 60 cm antennas to provide affordable, "always on" broadband data connections to vessels.

The new mini-VSAT Broadband service uses sophisticated spread spectrum technology to provide vessels with data reception rates as fast as 2 Mbps and data transmission rates as fast as 512 Kbps via a new KVH-developed marine terminal only 60 cm in diameter. The mini-VSAT Broadband service is fast, "always on", and available in a variety of pricing packages that offer significant cost savings for heavy data users when compared with other traditional data solutions available for commercial vessels.

To support this service, KVH, under a joint development agreement with ViaSat, Inc., developed the TracPhone® V7 two-way broadband satellite terminal. The system combines KVH's market leading antenna technology with ViaSat's novel ArcLight™ spread spectrum mobile broadband technology. KVH created the 60 cm diameter antenna, the smallest stabilised satellite antenna available for providing broadband data connections to vessels. A breakthrough in antenna design, the TracPhone V7 is as much as 65% smaller and 40% lighter than Inmarsat Fleet F77 antennas, and 85% smaller and 75% lighter than 1-meter maritime VSAT antennas. ViaSat developed a new maritime version of its ArcLight spread spectrum modem currently used on business jets and by the military. The two companies jointly integrated these key technologies to enable the TracPhone V7 two-way broadband satellite terminal.

This is what broadband at sea was meant to be, in order to create a 'cable modem' experience at sea, KVH developed a 60 cm diameter, rugged antenna and integrated below-decks system that is well-suited for maritime markets and utilizes SES AMERICOM's satellite network. The seamless combination of TracPhone V7 and mini-VSAT Broadband service eliminates installation issues related to larger antennas while reducing the cost and significantly improving the performance. Mariners will now be able to rely on a fully integrated solution that creates reliable broadband links for commercial quality communications that support critical needs like ship operations, business connections, and crew morale.

The TracPhone V7 hardware and the mini-VSAT Broadband service represent the first end-to-end package of hardware, service, and support available for maritime communications. The smaller antenna will save vessel owners tens of thousands of dollars in installation costs that often must be invested to reinforce superstructures and build custom platforms to hold the larger 115-180 kg antennas currently needed to receive and transmit maritime broadband signals.

KVH will serve as the sole point of contact for hardware and airtime sales, activations, billing, and technical support, eliminating the issues created when relying on multiple vendors and service providers. Available starting in September 2007, the TracPhone V7 and mini-VSAT Broadband service will initially offer coverage of North and Central America along with the entire Caribbean. The TracPhone V7 is expected to begin shipping to European mariners in October 2007 when coverage is scheduled to expand to include the North Atlantic shipping routes and all of Europe.

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GL online database of regulation changes

www.gl-group.com

Germanischer Lloyd has released its new GL Rules Pilot system, an online database that gives individualised information about the effect that changes in regulations may have on any particular company, based on its fleet structure and specific information needs.

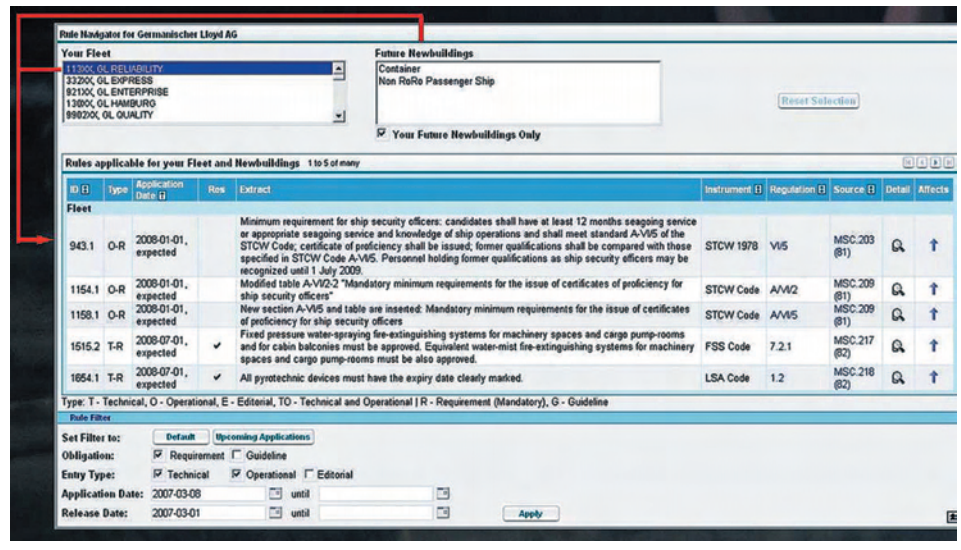
The service offers an overview of all the major changes in technical and operational requirements from organisations like IMO, ILO and IACS, with rule entries organised by application date and ship-type. The database automatically links rule entries to the shipowner's fleet (if a GL-classed ship) or planned newbuildings.

Reverse searches are also possible, whereby choosing a particular rule entry will generate a list of affected ships.

Information tables give a summary of the regulation alteration with references to the source document, instrument, and specific regulation, while also allowing access to those source documents, consolidated regulation texts, and interpretations of the changes by GL's own experts.

The database is constantly updated to reflect the very latest rule changes. Access is available via the internet, while an optional e-mail notification service is included so users can be actively informed about any changes applicable to their fleet.

The GL Rules Pilot registration page can be found at www.gl-group. com/RulesPilot.



By choosing a ship or future newbuilding from your fleet a list of rule entries is opened

ShipServ signs first shipyard to e-commerce platform

www.shipserv.com

South Korean-based Orient Shipyard has become the first shipyard to sign up to ShipServ's TradeNet e-commerce network, and will now be able to trade electronically with suppliers that are also connected to the system.

Orient Shipyard has two yards in Busan and Gwangyang which this year will launch 5,598,000 DWT tonnes of shipping between them. The yards specialise in building bulk carriers and LNG vessels for German, Japanese and Korean owners.

"From the moment we deliver a ship to a customer, they will know that all the parts in their ship can be ordered electronically," said Gideon Lee, managing director of Orient Shipyard.

ShipServ also reports that this year has seen a number of new shipping companies signing up to join the electronic purchasing network, including ASP Procurement Services, Dampskibsselskabet TORM, RKOffshore Management, Sealion Shipping, SMT Ship Management & Transport, and Tidewater Marine. This adds a further 372 ships to the total of nearly 3,000 trading across the platform, and brings the number of buyers close to 100.

BW Offshore to install SIS software

www.sismarine.com

Star Information Systems (SIS) has announced that BW Offshore will install the Star IPS software system across its fleet of FPSO/FSO's.

'This is a huge contract for us' - Per Anders Koien, SIS

BW Offshore had already used a number of maintenance management systems within its fleet, but conducted an evaluation of its software infrastructure and realised the need for an improved set-up.

BW Offshore Maintenance Manager Anders Aspelund commented: "BW Offshore Operations Division is highly focused on maintenance management. Data integrity and data traceability are key issues in this context. We conducted a system evaluation and found Star IPS to be the superior system to support our maintenance strategies."

The contract, which includes all Star IPS modules (maintenance, spares and inventory, docking, document management and safety management), also gives SIS responsibility for daily monitoring and operation services for the office and onboard systems. SIS will monitor data replication and troubleshoot any issues.

"We will be ensuring that the system is up and running at all times," said SIS Managing Director and CEO Per Anders Koien.

"This is a huge contract for us, as BW Offshore is a leader in this business," he added. "We are delighted to be chosen as preferred vendor after a comparison with our competitors."

Inchcape Shipping Services has launched a new PDA Mobile compatible website, suitable for use with mobile or other small screen devices. Any users visiting the ISS website via their PDA mobile device will automatically be redirected to the mobile-friendly site. The company has also launched a new cargo specific section of its website, at www.iss-shipping.com/cargo.

Veson Nautical reports that it has opened a new office in Singapore to be headed by Xiaobang Yue and Robert Marx. The company has also recruited Jesse DiIanni as project manager, who, prior to joining Veson, was project manager for MFC Global Investment Systems.

www.iss-shipping.com
www.veson.com

Philippines to computerise maritime certification process

The Philippine Star reports that the country's Technical Education and Skills Development Authority (TESDA) is to computerise its assessment and certification process for maritime industry workers, which it hopes will help to improve the efficiency of the accreditation system.

"We are aware that the present system has grown outdated and so we are integrating a simpler but still efficient system in place," said Augusto Syjuco, TESDA director general.

"We are talking here of a minimum 350 applicants for assessment per day. The system upgrade is expected to shorten the processing period from seven to four days."

He added: "The Philippine Overseas Employment Agency (POEA) said that in 2006, a total of 1,221,417 labourers left the country, which is 1.4 percent higher from (the 2005) figure."

Certified workers of different technical-vocational skills listed on the TESDA website currently number 84,720.

The planned upgrade for the system will include the introduction of on-line document verification and the construction of a database carrying digitised photos, signatures and fingerprints of all certified skilled sea-based workers. TESDA also expects that these improvements will make it more difficult for official certification to be forged or tampered with.

SpamBrig e-mail filter

www.spambrig.com

Canadian company Responsive Technology reports that it has introduced an advanced functionality to its e-mail servers that is specifically designed to meet the demands of companies working in the shipping industry, which it calls SpamBrig.

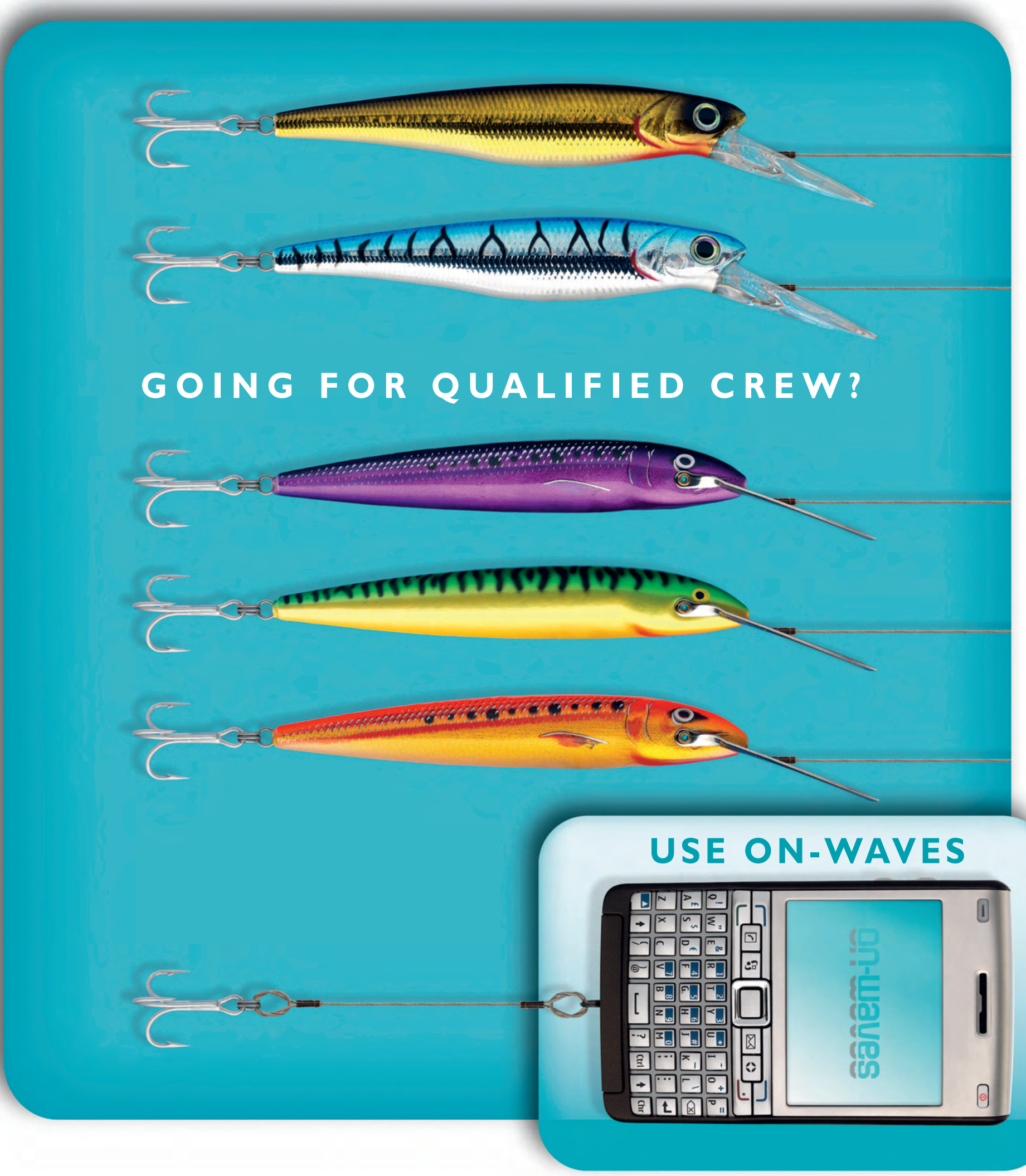
"We started providing email services to our clients after regular email providers were not able to provide the stability and performance that our shipping clients required," said Robert du Toit of Responsive Technology.

"After enhancing our mail servers to better serve shipping companies, we identified two areas where we could really help our clients with their email."

"Anti-spam filtering is in use at most ISPs, but we added common sense functionality to our spam managing tools. The other area where we added functionality is a scan and forward service. It's designed for the end user to be able to have selected messages forwarded to another e-mail address, typically a mobile device such as a cell phone or Blackberry."

The anti-spam filtering system includes the ability to import a client's whole e-mail address book to add as an e-mail 'white list', and will also add the e-mail addresses of any sent e-mails from the company after the initial set-up. This white list can apply to a single e-mail address, or be shared across the organisation.

The SpamBrig system costs $10 per month per anti-spam enabled mailbox, with a $30 per month minimum fee.



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Award for DNV virtual reality survey technology

www.dnv.com

DNV's (Det Norske Veritas) Survey Simulator technology has won one of the Golden Anchor awards at the International Shipbuilding and Shipping Exhibition BALTEXPO 2007, in Gdansk, Poland.

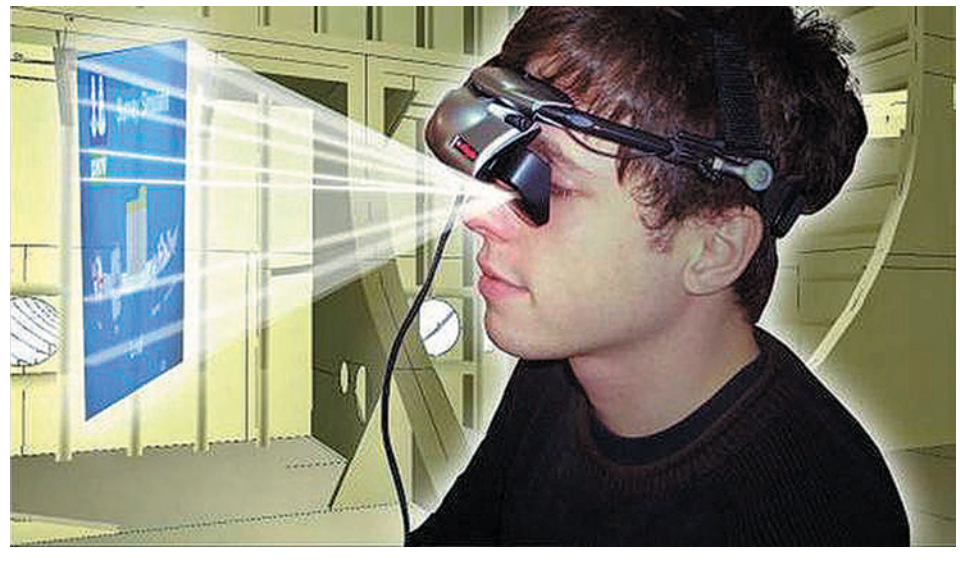
The system uses virtual reality technology and detailed 3D models of actual ships to assist in training surveyors to perform inspections and technical assessments, and can also be used by professionals who want to know detailed information about a vessel before they set foot onboard.

The simulator can also establish an interactive collaboration workspace for individuals who are working on the same problem from different offices, allowing them to meet on board the ship in the shared virtual reality.

Survey Simulator has been developed by DNV Poland's Technical Consultancy & Development department, and is a continuation of work done by the company's Nauticus Modelling Centre.

DNV Poland said: "Virtual Inspection is a just a forerunner of the generic and powerful technology of virtual reality in the training processes. It can be applied to many areas in industry, research and education."

"Its advantages are indisputable - it is highly realistic, flexible, easy to personalise and completely safe. With high confidence, it can be called the training technology of the future, thus we are ready to cooperate with customers to implement it according to their precise needs."



Conduct meetings with colleagues aboard the vessel in virtual reality with DNV's Survey Simulator technology

New file transfer system from Livewire

www.livewire.co.uk

Livewire Digital has launched a new Java Automated Transfer System (JATS) software package, which allows companies to increase the efficiency of large file transfers over satellite between remote locations.

Livewire says that its system can be integrated with the existing software systems within a company, and that it can reduce transmission times "from hours to minutes" using optimised transfer protocols. JATS also offers throughput optimisation and firewall traversal, and is capable of sending and receiving files from other JATS based systems.

The system includes automatic retry and auto append functions if a network connection is unreliable, as well as alert messages, statistics reporting, and a logging function.

Support for the system is available across Windows, MacOS X, and Linux platforms.

Marine Software launches online tools

www.marinesoftware.co.uk

UK based Marine Software Limited has released two new online tools to assist users of the software product, an Online FAQ service and an Online Helpdesk, which are accessible at www.marinesoftware.co.uk/support.asp.

The FAQ can be viewed by everyone but certain subjects are restricted for supported customers only.

The Online Helpdesk allows customers with a Marine Software support contract to submit questions on the website, which will then alert the support desk by email that a new ticket has been raised. The user will be updated via email and online as to the status of their inquiries.

Requests that are generic in nature can be migrated over to the FAQ section to allow others a chance to instantly solve a similar problem.

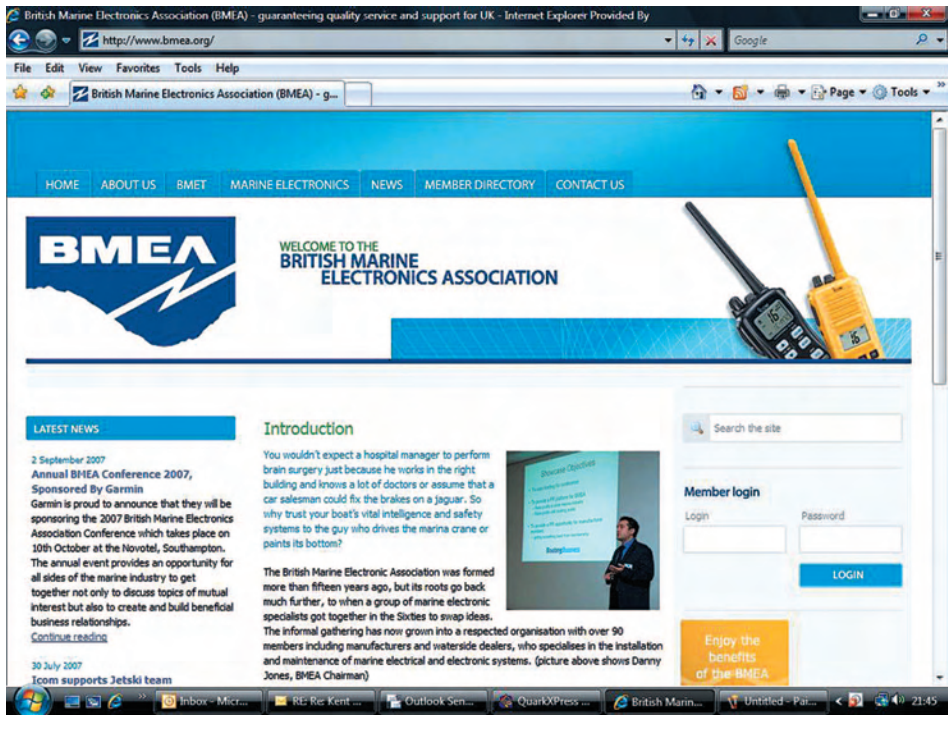
New website for BMEA

www.bmea.org

The British Marine Electronics Association (BMEA) has developed a new website, www.bmea.org, which allows both consumers and members to access information and news about marine electronics manufacturers and the association itself.

The site contains information for consumers about what to look for when purchasing marine electronics, as well as a directory which allows them to search the members list by region, company type and type of products sold.

BMEA members can access a password-protected area which includes members' news, committee communications and a copy of the Association's Code of Practice.



BMEA's website includes information for consumers about what to look for when purchasing marine electronics

Client-designed software - a collaborative approach

When OSG (Overseas Shipholding Group) went to its software provider, ABS Nautical Systems, and said it needed some new tools, it marked the beginning of a collaborative process whereby seven different shipping companies all became part of the design programme. *Digital Ship* spoke to ABS-NS, OSG, and Dorchester Atlantic Marine about the challenge of user-led software development

Early in 2006 US maritime software company ABS Nautical Systems was approached by one of its users and asked to create a new set of software functions to meet its changing requirements. This request led to the creation of a collaborative team that included ABS-NS and a number of its software users, and the development of a new drydocking module tailored to the customers' needs.

The fact that the system evolved mainly from the input of the clients themselves rather than in-house technical developers has made this a unique and interesting project for the company, says Jennifer Bewley, business development and marketing manager, ABS-NS.

"OSG (Overseas Shipholding Group) originally approached us about it, we had some preliminary meetings with them for a couple of days, and then began to realise that other clients were interested as well," she told us.

"So we went out to our client base and said 'we're going to invite 10 or 12 of you to come to Houston for two days to sit down and talk about what you need, and draw up the specifications'."

As the clients were asked about what they wanted to see included in their software it became clear that they also wanted to get involved in the creation of a program that would do exactly what they wanted.

"OSG was there, Great Lakes Dredge and Dock, Maritrans (since bought by OSG), Woods Hole Oceanographic Institute, Dorchester Maritime, Interlake Steamship Company, and SMT Services," Ms Bewley explained. "Those are the companies that came, it was 10 or 12 people, and they just literally hashed it out for two days."

"OSG kind of started it, and based on our work with OSG we had a preliminary specification that we presented, and they just went through bullet point after bullet point, us asking (all of the clients) 'how do you want to do your jobs and in what categories', because that's the key as to how the whole thing is organised."

"They drafted up a specification, we started to go through it, and we presented our specification at our users conference.

'When other operators became involved, their contributions resulted in areas of improvement that OSG had not anticipated' - Greg Doyle, OSG

(The new module) came out in our last release which is just now starting to be implemented across our client base."

The program that was developed was an add-on module for the ABS-NS5 software, that could be used to manage jobs and events during drydock and organise the different types of information needed to complete these tasks.

"We call it a drydocking module because that's the event that most of our clients were wanting this tool for," said Ms Bewley.

"The specifications are really heavily aimed at drydocking so, for example, they can write down their categories of all the different jobs that are going to take place, organising it according to their organisation, and then get the standardised job text and work those two together."

"What I like about what we've done is that we've basically got a bunch of our users together and come up with a general consensus, so that the same product will hit everyone's needs. As opposed to trying to do a tweak here for this particular client, a tweak there for another, we've merged the product."

Initiating development

As the first company to come to ABS-NS with its specific requirements in this case, OSG knew that it wanted to use its software system to improve efficiency and cut costs in certain areas. Bringing dry dock expenditure under control was one area where the software could have a major influence, said Greg Doyle, fleet manager, OSG Ship Management.

"After fuel and labour, the largest cost component of operating a ship is dry docking," he told us. "Dry docks are often the only planned out of service maintenance that can be done without incurring off hire."

"While in the past many companies (including ABS-NS) focused on maintenance, purchasing and repairs on the voyage basis, dry docks were not given the attention they deserved. At OSG we have made a significant investment with NS in utilising their software for the safe and efficient operation of our fleet."

"To make sure our goals and needs were met, OSG volunteered to provide our technical staff to work with NS to make sure the final dry dock module met these needs."

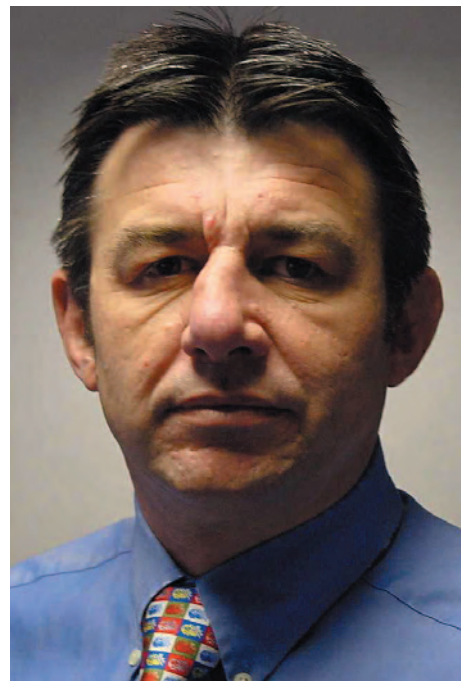
Once the seed of the development idea had been planted other customers like Dorchester Atlantic Marine, who have been using the ABS-NS SafeNet software since 1999, became interested in the opportunity to squeeze some further value from the data its software had been producing.

"We had (already) captured most of the dry dock job activities for machinery / equipment and tank spaces maintenance history purposes and cost recording purposes," said Mark Seed, planned maintenance systems superintendent, Dorchester Atlantic Marine.

"(But) our technical superintendents were limited to some extents with certain functional aspects of SafeNet. That is, in some areas, some reports and evaluations had to be performed within other applications, namely Excel and Word."

Mr Seed found that, when he met with ABS-NS clients from other companies, there were similar ideas about ways to improve.

"Those clients present put forward what was generally a common list of



Being involved in the product development process has enabled us to fulfil what we need in a simple manner - Mark Seed, Dorchester Atlantic Marine

requirements," he said. "Many of those requirements or enhancements were rolled out in the NS 5.3 release."

"We expected the module to capture all the specific criteria for the many and various jobs we perform during a repair period within a primary central source of information so as to be available to many end users within our company. That is, in order that standard detailed lists would be readily accessible for forthcoming dockings and in years to come, all past histories and costs would be readily available for easy reference."

"We are hoping that we will be able to generate dry dock specifications straight from NS 5. Thereafter, we intend to process all related records and daily reports directly from NS 5 - including cost data."

"The option to assign any standard job as a 'dry dock' job within its own 'module' will enable much swifter preparation of dry dock specifications, (and having) a facility to update job activities, progress, and completion information and cost details into a single application and report directly from it is vital to any superintendent responsible for the dry docking works."

"Most of my expectations were based on the format that was used at OSG including both Excel spreadsheets and Word documents," added Mr Doyle. "Having worked and evaluated other stand alone dry dock software, I had expectations of output similar to what was available from other software suppliers."

"(But) as the project progressed, and other companies became involved, the output was adjusted. (Things like) being able to cross reference across class of vessels, or shipyards is very valuable. As a public company maintaining clear accounting trails of development and approval of costs was important."

"When other operators became involved, their contributions resulted in areas of improvement that OSG had not anticipated, but also found useful."

Testing process

Once the clients had decided on the specifications they required ABS-NS produced a program for testing, which could then be adjusted as required to make sure it met the demands of the users. The program now available is the first step of what the company hopes will be a further evolution in the software.

"OSG was our big tester, as they came in at the start, and after the two day meeting with the group of people they probably came in three or four times to test it, and then tested it on-site throughout the development to make sure it was spot-on," said Ms Bewley.

"They (originally) came in March 2006, and we had the user community meeting in April 2006. In total it has been about a year's project, though if you really looked at it, it was maybe between 6 and 8 months before they had something in hand."

"There will be a phase one and phase two (of the software), and this is very much the phase one, we wanted this out there first to get the feedback from the clients who were not involved in the meeting before we move any further. But this is a usable tool, it's not like it's just a part of something, this is going to do the bulk or the majority of what everyone wanted."

Both OSG and Dorchester Marine believe that the new module will be able to help them improve their operations.

"I expect there will be some saving of

time in preparation of the repair specification, and tracking and reporting costs," said Mr Doyle. "There should also be some savings in time by making the reporting of findings and machinery history more efficient."

"I do not see any great opportunity to reduce the overall dry dock costs, but I do see potential savings by making sure needed work is identified, thus reducing the amount of work that is missed which otherwise would have resulted in potential down time or higher voyage costs."

Mr Seed added: "We expect a lot of time will be saved in preparation of dry docking specifications, reporting of daily dry docking activities and costs and gaining access to previous maintenance histories or related works on other vessels."

Installation

Installation of the module does require some hard graft on behalf of the users, including the transfer of data between systems, and has kept some clients busy since the new program was introduced.

"It's a big job," Ms Bewley told us. "One of our clients started to work on it in (mid-June), and (expected to) have it done by mid-July. So it takes about a month, a month and a half."

"There are several hundred jobs that they were not putting into their maintenance programme, because they were jobs that were only ever done in a drydocking. The module didn't have the ability to do that in the past, and now they've got to formulate all of the jobs and then load them into the system."

Since the information would not have been included in the existing maintenance software it will have to be imported from wherever it is currently located, and transferred into a recognisable format.

"Everybody was always managing it in Word documents and Excel, externally," said Ms Bewley. "So we've come up with some facility at least to let them move that information from the Word documents and Excel documents so they don't just have to type it in. They can import it from their Excel spreadsheets."

"There's still a little formatting here and there that you've got to do, you have to do that kind of thing, but it eliminates the hand typing."

"Their Excel sheets are not all going to look the same as ours, but what we do is give them our spreadsheet format, and for most of the clients the superintendent or whoever is working on it, they take the data from theirs and they put it into ours."

Dorchester Atlantic Marine expects that the software development will save a lot a lot of time managing vessel drydocking

"Most of our clients are going to be doing this without our assistance. It's not something that's going to be heavily consulted. We're giving them the tools so that they can manage."

Mr Doyle expects that implementation of the new module across the OSG fleet of 107 vessels will be a relatively painless process.

"The biggest part will be development of the specifications library and training," he said. "I expect 70 per cent of the training to be for the technical superintendents, 20 per cent for shipboard staff, and 10 per cent for senior management."

Mr Seed was also positive about completing the implementation phase, saying: "I would expect that given a clear run, then for our company we should be able to have all dry dock jobs, complete with specifics (Hull areas, material requirements etc), entered within a month from starting and collating the required criteria."

"I don't think any training for those end users responsible would be more than a day or two," he continued. "The main issue will be ensuring that those responsible are all agreed that the content of the SJ parameters and criteria is applicable and complete."

Benefits of being involved

Both OSG and Dorchester Marine feel that they, and other users of the software, have benefited from having the system users form a part of a development team in the creation of this new module.

"This customer focus has resulted in software that more aptly assists the operator in operating their ships rather then dictating to the operator how to operate their ships," said Mr Doyle.

"This approach has been very good for companies like OSG that have taken an active role in the development and improvements of the NS product. However I would think this method of development may not be so good for the companies that have special needs, and do not take an active role."

"The past years have proved that ABS-NS has understood many of our enhancement suggestions," added Mr Seed. "We are pleased to be involved with the product development processes as it has ultimately enabled us, and should enable us further, to fulfil what we need to capture in a reasonably simple manner."

"We endeavour to capture as much activity data into the NS 5 M&R and compliance modules as possible so as to process and access such data from a common primary central source of information. Duplication of any type should be avoided. We intend to take full advantage of (this new software's) capabilities." DS

Since the time of writing Jennifer Bewley has moved from her position as business development and marketing manager, ABS-NS, and is now manager external affairs at ABS. She has been replaced in the ABS-NS role by Chris McCourt

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Integrating e-commerce with logistics

E-commerce and logistics integration was one of the topics at this year's IMPA (International Marine Purchasing Association) conference. *Digital Ship* was there, to examine the improvements in the electronic purchasing system

The 2007 IMPA (International Marine Purchasing Association) exhibition this year featured a conference workshop session covering e-commerce and the integration of the purchasing and logistics functions.

Peter Spicer of ShipServ outlined with his presentation the moves being made by his company to provide a smoother interface between the IT systems of different companies in the supply chain, explaining how ShipServ is preparing to launch an upgraded service that includes automated interfaces with outside logistics systems.

"Looking across my experience, lots of people are supporting the idea of paperless purchasing and the paperless office, and I believe we're going to get there," he told us. "It will continue to grow."

"Many companies have been using EDI (electronic data interchange) for years, but it's now becoming even more commonplace, and people are beginning to expect this kind of facility from the people that they work with."

"In the last few years its happening more and more that the platforms are becoming dominant over the one-to-one transactions, and the benefits of that are becoming clearer."

Mr Spicer sees the integration of the logistics providers into the electronic purchasing network as being of key importance in the drive towards automation, and believes that applications like ShipServ's will lend themselves well to logistics companies' systems.

"People will discuss what is the most useful aspect of using this type of system and have different views, but we're still at the beginning of this and that will become clearer," he said.

"There's a lot of flexibility in the data formats and the other functions (in the system) - as it progresses I think this will be a benefit."

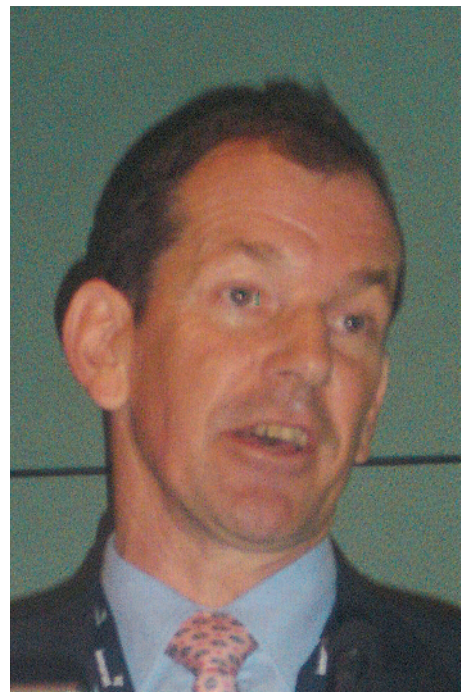
These benefits will come from reduced effort and improved efficiency, shared by the supply chain stakeholders.

"The core benefit of this is the reduction in the time spent on routine tasks, by eliminating things like phone calls and handling faxes," said Mr Spicer.

"You can avoid double entry of data into systems, and have an increased opportunity to standardise processes, if you have multiple people following the automated processes of the platform."

"Real-time, as the order is placed, access to order information will also allow for better operational planning and sourcing better shipping rates. It also helps to eliminate time-zone issues in sending information across continents. E-invoicing is another area we're working on, we're hoping to also bring that in on the freight side."

"There's plenty of talking to do with people in the industry to see the best way to incorporate this data flow with other people's systems. We can probably start with the reporting of exceptions as a starting point, people need to know when there's going to be an exception to what they expect to happen."



'This is a huge contract for us' - Per Anders Koien, SIS

Chris Steibelt, GAC Marine Logistics

Chris Steibelt, managing director of GAC Marine Logistics, gave the logistics provider's view of the benefits of IT integration. One reason he jokingly pointed at was to reduce the complaining he receives from technical people in other companies.

"I've already had four years of grief in this job from technical managers, but I still enjoy it!" he told us.

"But really, there is a need for collaboration in some of the things we do in the industry. Our customers want an expediting service from us, they want a single point of contact they can use to chase their supplies."

GAC Marine Logistics' experience was born out of the understanding that parent company GAC had of the market based on its ship agency business. The services it could provide grew out of the services it saw that people were requesting.

"Our experience as a ship agent was that we often had lack of notice from people about what was happening, when ships would come in late, or ships would come in early, or the documentation would be wrong," said Mr Steibelt.

"As a group we saw an opportunity to integrate the logistics with our existing marine capabilities."

The requests that the company had on the IT side seemed to be reasonable enough, so it was decided that it would make sense for the company to invest in their development

"When we come and talk to the shipping companies, we hear that logistics providers are an unwanted cost that they have to put up with!" said Mr Steibelt. "Then we hear them tell us that we must have a web-based tracking system to track the supplies."

"So we designed a purpose-built web system, which we think does all of the things that people had wanted. After a few months we checked the web usage figures and saw that they hadn't used it."

"We called them up and asked them 'is there a problem with the system?' And they said: 'No, it's fine, we just don't have the time to use it. Send us an Excel spreadsheet with the information'."

While what might seem like a suitable IT system had been put in place, the key remained not in being able to access information, but being able to access the information in the place where it was needed.

"The message we get from the customers is that they don't want to go looking through other systems for the information they need, they want it to show up in their own system with their own data," Mr Steibelt said.

"Integrating our systems with the shipping lines is not really possible, but we need to find a way to put the information into their purchasing system."

"There are web tools that can see orders by the depot, by ship, by status - there are many different options but there are particular milestones that are very important. These milestones in the orders, there are half a dozen or so usually, these kinds of things can be easily transferred into another system."

Deciding on these milestones, and on a format of reporting them, is an area that Mr Steibelt believes will require collaboration and cooperation by the industry partners needed to make it work.

"What I've seen in some of the procurement systems, there's a very wide variance in the information that's in there," he said. "The format of some of the logistics pages in there is inadequate."

"What we need is to have a forum of key interested parties, so we can move this ahead a lot quicker than we are doing today."

Further discussion

The assembled delegates in the audience offered some interesting insights of their own into the idea of integrated logistics systems.

One vessel operator remarked: "As a shipowner we would like supplies to be on time, and if not, we'd like to know before the vessels depart. It's important to get a very good system for this type of logistics reporting."

"Lack of manpower is a key driver for us, we need to eliminate double entry of information into the system," added Bart van Doorn, Vroon BV.

"We use the electronic purchasing system to get that information straight into our system without it having to be re-typed. Now we just have one girl in the office typing in data, the rest is automatic."

A delegate from BW Gas' purchasing department expressed his support for integrated logistics systems, and spoke of the benefits his company had already derived from their use.

'Lack of manpower is a key driver for us, we need to eliminate double entry of information' - Bart van Doorn, Vroon BV

"We are fully connected to our forwarding agent," he said. "We don't have time to go into someone else's system, we need the information in our own system."

"It works fantastically for us. When our spares are picked up at the hub, and then when they arrive at the port, the change appears in our system, so then we can contact our forwarding agent. We've used a lot of dollars and a lot of manpower to do it, but we're very happy with it."

A delegate from Jo Tankers concurred with this assessment, adding: "We have a fully integrated system with our logistics. As soon as I order something, all of the details go straight into the forwarders system."

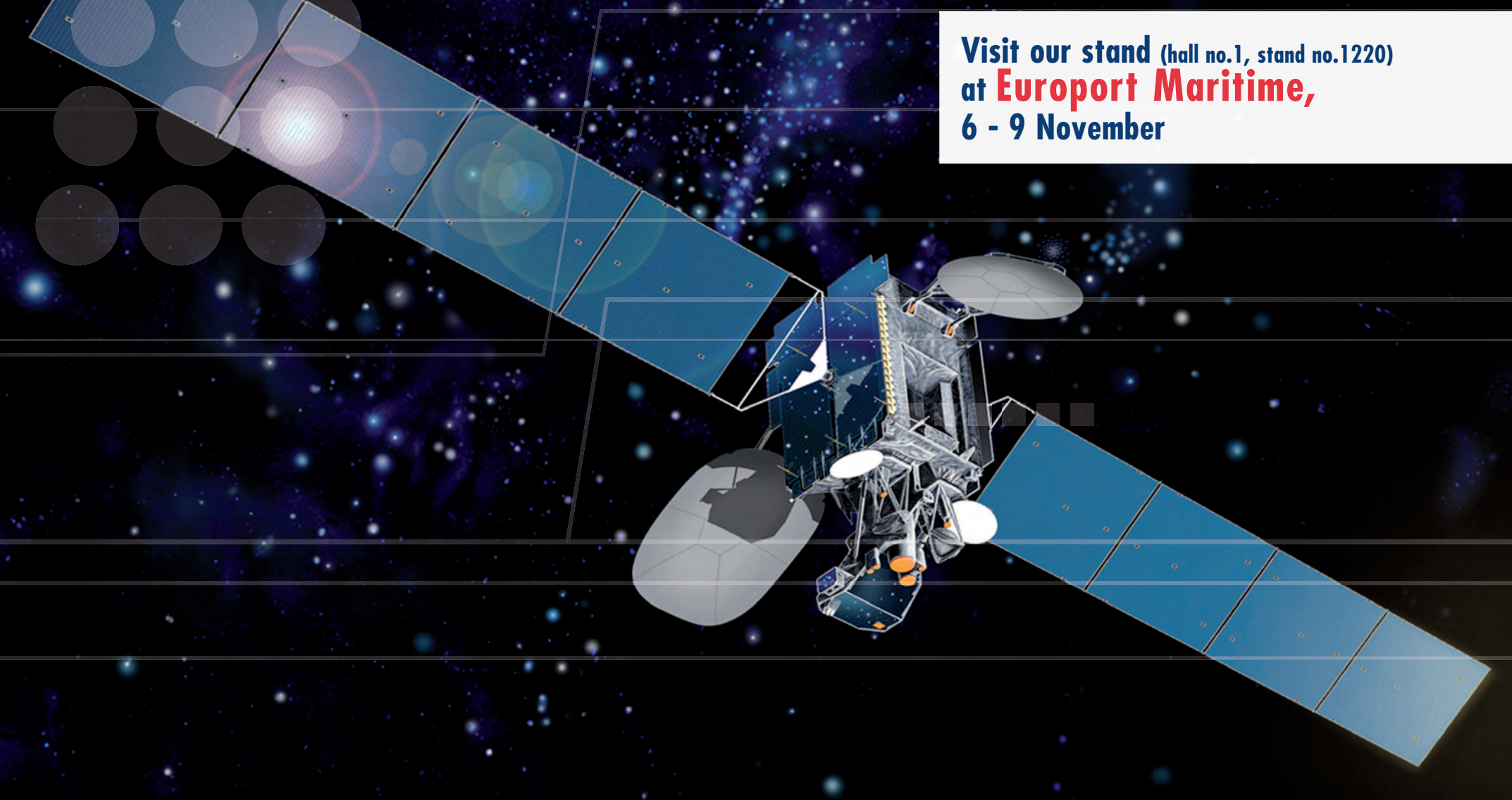
"When they receive it, it goes directly into my system, and tells me '25 September, 1 box, 10 kgs' or whatever. It's very easy to do that electronically. Like our friend who spent a lot of dollars, we have spent a lot of Norwegian Krone on this - but that's only one-sixth of a dollar!"

However, as ever when using electronic systems, accuracy is of utmost importance, as systems can be easily confused by even the simplest mix-up.

As one of the conference delegates pointed out: "Problems can come if something is delivered and put into the system as a 100 per cent complete delivery, when maybe there's only 95 per cent been delivered, with one item outstanding. Then when the outstanding item arrives it causes a problem in our system."

Despite these issues, it seems that from most users support is there for integrating the IT systems of the purchasing and logistics functions. Fixing the problem areas is just one further aspect of the systems that should help to keep the application vendors busy.

DS



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Transas has agreed a new S-VDR (simplified voyage data recorder) contract with DOF Management AS of Norway, covering the company's existing fleet of 13 vessels. Installations are already underway, with the 'Skandi Admiral' being the first ship fitted.

The Italian port of **Trieste** has ordered that, since September 16, all vessels fitted with Automatic Identification Systems (AIS) must keep the system running when calling at the port. Whenever the AIS needs to be temporarily switched off, such as when loading or discharging dangerous goods, the Master of the vessel must report the same in the preliminary communication presented to the Trieste Harbour Master's Office.

www.transas.com
www.porto.trieste.it

Visitors to the port of Trieste must now keep AIS running at all times

Transas completes Indian order for 139 ECDIS

www.transas.com

Transas has confirmed the completion of a contract to supply 139 ECDIS (electronic chart display information systems) to the Indian Navy fleet. The contract was signed in 2006, with the Republic of India Ministry of Defence.

The system in question, the Navi-Sailor 3000 ECDIS-I, includes tools for passage planning and weather routing, and allows users to customise the system to include multiple operational modes with charts in up to seven different formats.

Approximately 20 different navigational data sensors and information systems can be connected including gyro, log, two ARPAs, AIS, echo sounder and autopilot.

In addition to the ECDIS systems supplied, comprehensive system training using Transas' simulation systems will also be provided.

Transas commented that this is one of its largest orders for ECDIS to date, but still ranks behind a contract for 160 dual ECDIS systems with World Chart folio from the world's largest shipowner, A.P. Möller Maersk.

Signed in 2001, Transas says it believes this to be the single largest ECDIS order in the maritime industry.

Raytheon Anschütz releases universal course converters

www.raytheonmarine.de

Raytheon Anschütz has introduced a series of universal course converters, which enable ship operators to retain existing equipment such as repeaters and autopilots when retrofitting an old gyro compass with analogue step or synchro output.

Raytheon says that the converters can be used to replace nearly all available gyro compasses with step and synchro output including those from manufacturers like Anschütz, C. Plath, Sperry Marine, Tokimec, Yokogawa, Kurs, Amur, Microtechnica.

"We have a very comfortable product line with these new converters," said Heino Hoffmann, project manager with Raytheon Anschütz.

"Installation time and effort is reduced to a minimum. Existing cabling can be utilised, so we can offer a very cost efficient solution for ship owners."

New S-VDR from SAM Electronics

www.sam-electronics.de

SAM Electronics has introduced a new S-VDR designed for retrofitting to cargo vessels of all types and sizes, the S-VDR 4330.

The unit features a flash disk embedded operating system designed for straightforward installation, with a compact modular assembly that is user configurable via a terminal computer.

The Protected Data Unit (PDU) has a standard recording capacity of 2 GB which can be downloaded via an Ethernet link in 15 minutes. A special float-free protected data unit with an extended memory capacity of 8 GB is also available.

Data for the S-VDR is gathered from a pre-assembled 16-channel Main Unit (MU), which provides for 9 microphone and 3 VHF input interfaces, together with up to 4 video source inputs for radar and ECDIS (electronic chart display information system), or CCTV, and a port for AIS data.

SAM says that the recorded data can be retained for more than 10 years without power supply, and that a number of the new systems have already been commissioned by leading ship operators in Europe.

The standard 2GB recording capacity of SAM Electronics' new S-VDR can be downloaded in 15 minutes

Wärtsilä and MAN Diesel engine emissions project completed

www.wartsila.com
www.manbw.com

Wärtsilä and MAN Diesel say they have completed the HERCULES cooperative research project into the technology necessary for higher-efficiency engines with ultra-low emissions for ships.

HERCULES (High Efficiency R&D on Combustion with Ultra-Low Emissions for Ships) was tasked with developing marine diesel engines with technologies, components and equipment that will achieve drastically lower gaseous and particulate emissions, while at the same time gaining increased engine efficiency and reliability, thereby reducing fuel consumption, CO2 emissions and engine life-cycle costs.

The project team, which consisted of more than 40 European engine component suppliers, equipment manufacturers, universities, research institutions and shipping companies, were given a budget of EUR 33 million, partly funded by the European Union (EUR 15 million) and the Swiss Federal Government (EUR 2.5 million) for the 43-month cooperative research project, which has looked to achieve improvements in areas like extreme design parameters, advanced combustion concepts, turbocharging systems, emissions reduction methods, and adaptive and intelligent engines.

The results of the research are being shared among the participants and are expected to be incorporated in engines introduced during the next ten years or so.

MAN Diesel and Wärtsilä have since proposed a follow-up to HERCULES in a new large-scale collaborative research project - HERCULES-B, which will be evaluated by the European Commission by the end of September 2007.

The principal aim of the proposed HERCULES-B, based on the developed know-how and results of HERCULES, is to considerably improve the efficiency of marine diesel propulsion systems and achieve substantial reductions in fuel consumption and emissions.

More information about the HERCULES project can be found at www.ip-hercules.com.

Imtech Eur 35 million contract for vessel systems

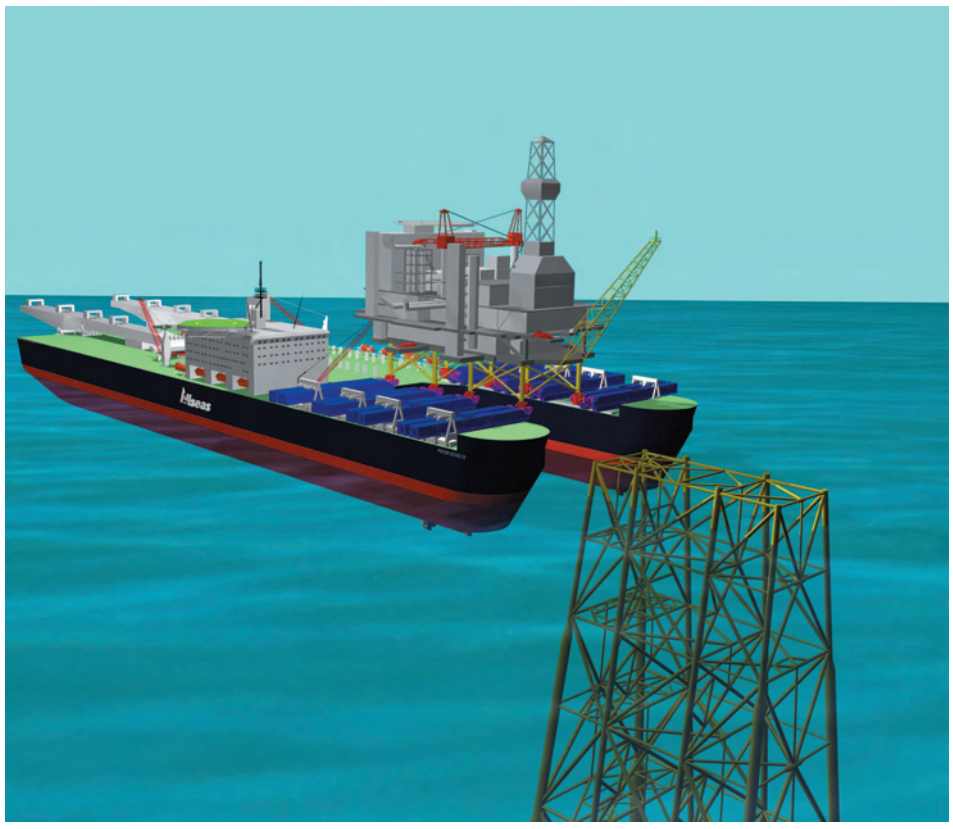
www.imtechmarine.co.uk

Imtech (parent company of Radio Holland) has signed a contract with Allseas to provide the automation and technical infrastructure on board the soon-to-be built vessel 'Pieter Schelte', which will be the largest offshore construction vessel in the world. The Imtech contract has a value of around Euro 35 million.

The new construction vessel will measure 360 metres in length and 117 metres in width, and will have the capacity to assemble, disassemble or relocate jackets of up to 25,000 tonnes (the substructure of oil or gas platforms) as well as topsides of up to 48,000 tonnes (the part located on top of the jacket where the oil and/or gas is processed).

Imtech, through Imtech Marine & Offshore, will provide part of the integrated power and automation package and technical infrastructure, as well as the vessel management system, including all the integrated automation solutions, and a dynamic positioning system. Imtech will also be responsible for commissioning and operation and will perform project management for the technical aspects of the build.

The design, engineering, implementation and commissioning will start this year and is expected to take several years to complete. The 'Pieter Schelte' is expected to be put in service by 2011.



When built, the Pieter Schelte will be the world's largest offshore construction vessel

USCG warning on equipment identity codes

The US Coast Guard (USCG) has issued a warning to users of marine radio and AIS equipment, saying that failure to properly input the device's Maritime Mobile Service Identity (MMSI) could delay the response of rescue services in an emergency situation.

The USCG statement reads: "Many marine communication devices, including marine radios equipped with Digital Selective Calling (DSC) and Automatic Identification Systems (AIS) equipment rely upon a 9-digit Maritime Mobile Service Identity (MMSI) number to identify itself and more importantly the user of the device."

"The US Coast Guard and the National GMDSS Task Force is concerned that many users of these devices are not obtaining, registering and/or properly entering their assigned MMSI into these devices. Lack of an MMSI will make some of these devices inoperable, such as AIS, or incapable of operating advanced features or distress alerting capabilities of the device."

"Leaving the MMSI unprogrammed, entering a false identity or not updating a previously-programmed device with your own identity may delay a rescue and under certain situations is unlawful. MMSI numbers are issued by the FCC if the vessel requires a Station License, otherwise they can be obtained from Boat US (www.boatus.com/mmsi), Sea Tow (www.seatow.com/boating_safety/mmsi), and Shine Micro (www.shinemicro.com) often at no charge. Those having MMSIs should keep registration information current, including phone numbers, address, name and type of boat."

"Most new marine radios have a special Distress Alerting Capability that will, upon the touch of a button, transmit a distress message which can include its identity (MMSI) and location only if the radio has been programmed with a MMSI and is connected to a electronic positioning system (e.g. GPS, LORAN). The Coast Guard recommends DSC-equipped VHF radios for all mariners because of these capabilities."

Wilhelmsen in emissions technology joint venture

www.wilhelmsen.com
www.yara.com

Chemical company Yara International has partnered with the Wilhelmsen Maritime Services (WMS) subsidiary of Wilh. Wilhelmsen to create a joint venture called Yarwil, that will be tasked with offering new emissions reduction technologies to the maritime market. Both parent companies will own a 50 per cent stake in the venture.

"NOx treatment is already one of our fastest growing markets, with a 35 per cent increase in the first half of 2007," said Yara president and CEO, Thorleif Enger. "Through the cooperation with Wilhelmsen, we're expanding our commitment to the maritime sector, which we see has a big potential."

Yara says that its deNOx solution could cut emissions of the gas from ships by 95 per cent. The removal process involves a catalytic technology already in use by land-based industry and transport, as well as on a number of coastal cargo vessels in Norway and Sweden.

The concept is based on adding a type of urea solution to the exhaust fumes from the ship's engines. The mix then passes through a catalytic converter where NOx from the exhausts reacts with the solution, and is converted into water vapour and nitrogen.

The technology is intially envisioned for use by vessels engaged in trades typically conducted close to land and covered by emissions regulations, such as ferries, fishing vessels, supply ships, and cruise liners.

Yarwil says that it is currently possible to remove NOx emissions from diesel generators on large ocean-going vessels, but that technology necessary for that particular type of propulsion machinery remains under development and will not be available until some time in the future.

S-mode - a standard for safety

As navigation displays become more sophisticated, the range of different display configurations available to the mariner has increased exponentially - but this also increases the possibility of confusion for a new face on the bridge. *Digital Ship* spoke to David Patraiko of the Nautical Institute about current projects to introduce an 'S-mode' industry-wide default display

Advances in maritime navigation technology are helping to create modern vessel bridges that can offer a wide range of assistance to the watchstander by providing up-to-the-minute, real time situational information, and alerts to forewarn of potential difficulties.

But with added options and complexity comes an increased potential for confusion. Making sure that this kind of 'technology overload' does not impair the ability of crews to safely navigate their vessels is of prime concern to seafarers' representative the Nautical Institute.

The Institute has been trying to find ways of dealing with this issue through the IMO (International Maritime Organisation) safety of navigation sub-committee dealing with e-navigation strategy, and has proposed the development of a standardised, industry-wide 'S-mode' navigation display that would be a required function of all shipboard navigational displays.

"If you look at an age where we have multi-function displays on the bridge system and everything is an input - the charts, the radar, the GPS, everything - you can re-arrange how that's displayed very easily," explained David Patraiko, director of projects, Nautical Institute.

"One of the big challenges is that your options for how you configure that grow astronomically."

"One of the things the Nautical Institute has proposed is something called an 'S-mode'. The concept is that, regardless of what manufacturer you have, you'll always have a mandatory button to jump to a standard display."

The ability to configure the navigation display in a number of different ways with a multitude of options is a result of an increasing level of innovation in the development of the technologies used on board. What Mr Patraiko proposes is that an option exists on each piece of equipment to revert to a standard layout that is recognisable by every seafarer.

"If you had a radar twenty years ago, and that radar only had six buttons, there's a fairly limited scope for configuration, but mariners still found it difficult going from radar set to radar set to know where the buttons that they wanted were," he said.

"Now you have the menu systems, with menu systems behind that and menu systems behind that, and the ability to configure a display. There are so many different configurations that it becomes very complex."

"This S-mode concept is that you have a button, you press it, and, regardless of what manufacturer's machine you're on, it reverts to a common display, a standardised display with a standardised menu system. So your speed is always in one

'S-mode doesn't actually have to be simple, as long as it's standardised' - David Patraiko, Nautical Institute

place, your course is always in another place, the way you change ranges is always in the same place, and so on."

"The advantage to that, if it works out, is that every training centre in the world can train on S-mode, and that S-mode can then be written into the STW, so every mariner coming out of a training school will know that he can go on any ship and there'll be a button that will revert the display back to something he is confident and competent in. That's the aim."

Mr Patraiko is keen to point out that the Nautical Institute is not trying to force manufacturers into developing systems that all look and act the same, with no room for differentiation.

"What we're not advocating is that we have standard units everywhere across the industry, because that's wrong," he said.

"You need to have innovation, and the manufacturers have done brilliant work, if you look at what's come out lately with radars and new technology radars, the use of polygraphics, the use of charting systems, and looking at things like infra-red displays, 3D charts. If we hadn't rewarded research commercially those would have never happened."

"We need to be able to find a way of balancing the innovation and the standardisation. We've been very glad to have a very close relationship with the manufacturers through people like CIRM, because there's no sense in the users coming up with a model that isn't supported by the manufacturers. We have to get the balance right."

"We know we're not going to get it 100 per cent right, you can never make everybody happy, but if we adopt a good methodology and make it transparent, then at least we can know where the compromises are."

Simplicity

S-mode is not just a case of paring a system down to the bare bones and having simple, limited functionality. The key is to find an effective display that can assist in safe navigation, and that is comfortable for the mariner because they are certified as trained in using this configuration.

"At the end of the day, S-mode doesn't actually have to be simple, as long as it's standardised and has the functionality that the mariners need to do their jobs," said Mr Patraiko.

"If the standardised stuff under S-mode is covered under STCW, you can assume that if you hire anybody out of any college or training centre in the world and they have an STCW certificate, you know that they can handle your S-mode."

"This becomes even more important with the growth of shipmanagement, for the most part shipmanagers can't dictate what systems are onboard, they can't say 'we don't particularly like that kind of bridge' on a ship that's already been built," Mr Patraiko continued.

"If you look at how fast the fleet is building overall, and how shipmanagement is building, this becomes absolutely essential for the industry, that mariners can feel confident and competent going on any ship and have a mode they can operate in."

"In addition to (the S-mode), if manufacturers also want to continue to innovate and develop other new things, if they can find a commercial market for that, great - but then the relationship is between the manufacturer and the shipowner to address the training in those systems above the S-mode."

Mr Patraiko has seen this idea evolve over time through the course of discussions and research at the Nautical Institute and at wider maritime events, and is glad to see a level of support for the concept growing among many of the different stakeholder groups.

"The concept of S-mode has been a long time coming, it's slowly come out of the series of conferences we've done on navigation, but it was formally published this year in March and got a lot of acclaim," Mr Patraiko explained.

"Mariners almost 100 per cent like it, and the training people very much like it because they don't have to decide if they should go for one manufacturer's system or the other."

"We've even had a lot of support from BIMCO and ICS (International Chamber of Shipping), because the shipowners see that it's not only going to improve safety and make training more effective, but it may also help in their purchasing. It puts the onus on the owner / manufacturer relationship to develop value-added benefits through other innovations."

Next steps

While the support of these different groups is welcome in promoting the concept, Mr Patraiko is now looking to reach the stage where hard cash can follow kind words to help bring the S-mode closer to reality.

"At this level, of course, the support so far is for the theory of S-mode, because we haven't actually said 'this is what it is, this is what it's going to look like', that's going to have to come," he said.

"We're getting political support from a number of different stakeholders, and that's important, but if we're going to not just sit in a back room and arbitrarily come up with what S-mode should be, if we're really going to involve everybody and test it through simulation, that does have to be financed."

"We're trying to find funding at the moment, we've got a little bit but we're trying to find some more to do an absolutely thorough user need assessment, contact all the different mariner stakeholders and get them to define what they want in S-mode."

"Then what we'd like to do is find an independent body, with independent financing to create simulated models, maybe three or four models, of a possible S-mode, and send those out internationally through simulator centres to be trialled by real mariners. That feedback would

then be analysed to come up with a final version of S-mode, which would again be sent out for testing."

"We've had offers from specific manufacturers to come in and do it but we don't want to go for a single player, we want to have a level of independence and transparency," Mr Patraiko added.

"There will be compromises involved, and we want to be as transparent as possible so that everybody can agree 'ok, we looked at something, it's been tried, it's been tested, but it's been shown not to be as effective as something else'."

"After that's brought back and refined, at that stage I think we'll have the equipment right. Then I'd like to take all of the knowledge that we've gained through those simulator exercises and create procedures for use and a model course, and bring that to the IMO in a few years and say 'here you have it, this is the technology, this is the training, these are the procedures, here's the bundle, have a think about adopting this'."

While this might seem like a well-structured route towards developing an S-mode system, completing all of this work, including the drafting of regulations at the IMO level, will include layers of bureaucracy that are bound to slow the process, and Mr Patraiko says he is careful not to underestimate the amount of effort that will be involved.

"It will take a long time, but it needs to be done," he said. "If we were to get funding tomorrow we might be looking at two or three years. The will is there to find a compromise, and to find some sort of solution."

"It's not going to be easy, it's sometimes said that if you ask 10 different mariners what they want you'll get 11 different answers. The manufacturers say 'look, we can do anything, tell us what you want and we will build it', but the problem is that every customer wants something a little bit different."

"This is going to be the first wide-scale approach, getting all of the user needs into some sort of methodology. It's not just going to be some kind of wish-list, because we're planning to do simulator trials on this it won't be just what the mariners like, it'll be what has been tested to be effective. Sometimes that can be different."

Simulation testing

Mr Patraiko believes that an exhaustive simulation testing programme, including mariners from a wide range of diverse cultures, will be the key in finding an 'S-mode' that represents a default navigation display that will work effectively across the board.

"I don't know (how many people would be needed for the simulations) in specific numbers, but we would want to see this simulated using as many different nationalities as possible, certainly in some of the biggest crew training areas, to get a realistic representation of the world fleet manpower involved," he said. "The bigger the better."

"There are certain areas of the world where you have a highly-trained, sophisticated mentality, and in other areas of the world you don't. It's very easy to look at some of the most sophisticated users and create sophisticated technology to meet their needs, and then forget that that same level of sophistication has to apply to other areas of the world."

"It's for a navigation display, but how you want to define that, again that's something that we have to work out by looking at how people work and how they make decisions. Is it going to be a single screen that does everything? Is it going to be multiple screens? These are all things that will have to be worked out."

New options and greater functionality have increased the possible number of display configurations exponentially

"If you're looking at a multi-function display that can do anything, your integrated bridge systems, they'll have a series of workstations with multi-function displays where the possibilities are endless. I'm being careful to be open-minded, I could sit down and say 'in my experience, this is what I like', but that would be a David Patraiko-mode, and I can't be presumptuous enough to think what suits me is what's best for the world."

"We need to find out generally what's most effective, and document it. It isn't going to be perfect but it will be an agreed compromise, and that means that it still leaves open the ability for companies to innovate. If a shipowner says 'I love S-mode, but I have a very specific need, I need more than S-mode can provide', then they can go off and look at different options."

Display manufacturers

Mr Patraiko believes that collecting detailed and accurate data about what constitutes the most generally effective display of navigational information, and being able to bring that to the manufacturers, will be a very positive development for the industry as a whole.

"This (level of examining user needs) has never been done before - every manufacturer consults with the users to create a sellable product, but it's usually a fairly small group of users," he said.

"In terms of customer feedback, there's often a big difference between who's the customer and who's the user. Very few mariners on board ship actually have the purchasing decision for the equipment they use. Quite often the purchasing decision is made by an accounts department, once it meets all of the regulatory requirements."

"We're looking to change that a little bit, and the manufacturers have been, shall we say, 'cautiously supportive'. I think that they realise that the best outcome is to work together and to come up with something that suits everybody, and creates a balance of user needs and innovative possibilities."

"I think the manufacturers are fantastic, the only challenge for them is that they've all put a lot of time and effort into getting their systems right, because obviously if they get them right there's the financial reward, and that's perfectly fine and good," Mr Patraiko continued.

"One of the problems that we have in the industry is when it comes to things like bridge systems and different

pieces of equipment is a lack of standardisation, and it's only a problem because it's very difficult to train somebody. If you assume that there are six or eight major manufacturers out there for bridge equipment, then the challenge for the trainer has to be 'which system do I train them on?'."

"That's where you have a bit of a challenge. Any one of those systems could be brilliant, and if any one of those systems had 100 per cent market share there'd be no problem, but in the maritime industry you don't have that. So although all of these systems are excellent in their own right, you still have the problem of what happens when a new crew member comes on board, what happens when a pilot comes on board."

"We need some standardisation, but it's not a simplification, it's going to use some of the tremendous innovation that's coming out, and use it to best effect."

Future developments

Mr Patraiko sees some sort of standardisation in the way that integrated navigation displays operate as an unavoidable next step in the development of these systems. Features on modern systems that allow for personal settings to be saved on USB memory sticks, or configurations that can be changed through thumbprint recognition, are steps he sees as heading in the right direction, though still not applicable across different manufacturers' products.

"I think that (these technologies do) have a role, and I've seen it to very good effect, but that's a personal configuration and still not standardisation," Mr Patraiko said.

"It still doesn't necessarily help a new pilot unless that USB feature is standardised in a way that there is a USB on every manufacturer's equipment in the same place that does the same thing. And it may come to that."

"The other thing is looking at bridge team management - it's fine if your young second officer who's very IT-savvy has a configuration that's very complex, and he likes that because that's the way he thinks, but then you may have a senior master who likes a more simplistic level of interface."

"Can they work together as a bridge team? Whose USB stick will go in? So again, with the S-mode, regardless of what their personal preferences are, they can both use the standardised mode when they're working together. But I do think there's a need to be able to have personalised settings."

Whatever standard emerges from the testing and simulation of possible S-mode displays, Mr Patraiko does not expect any dramatic shift in bridge practices to come about just yet.

"I think the future will see increasingly integrated systems," he said. "S-mode is not something that you're going to see in the next 5 years, maybe even 10 years."

"At the moment it's a concept, the quickest we could develop an S-mode would probably be two to three years, if not more. Then it would have to be submitted to the IMO, it would probably take a year or so at least to get through there."

"I don't think this is anything that shipowners should start getting worried about, saying 'I'm buying the wrong equipment, it's not going to meet the standards'. S-mode is a long term thing, and I don't think you're going to see any knee-jerk adoption of special equipm DS

Positioning, Situation Awareness and the Bridge Windows

With electronic chart systems, new technology radar, GPS, AIS and a host of other navigational technologies available to the modern mariner, a high level of situational awareness should be easy to maintain. However, a greater dependence on technology may have fostered a decline in use of one of the most basic navigational aids - looking out the window. Dr Andy Norris explains

The high availability of continuous and accurate position from GPS has contributed to a major change in the way that ships are navigated.

Enhancements, such as differential GPS, and RAIM (Receiver Autonomous Integrity Monitoring) have all proven to be influential in further increasing the basic effectiveness of GPS.

Planned routes are normally considered to be planned tracks, which are accurately followed, with deviations being immediately alerted to the bridge team as soon as the selected cross-track error is exceeded. The course-to-steer in the prevailing conditions is easily determined - and is automatic for those using a track-keeping autopilot.

Unplanned deviations from route, generally due to collision avoidance actions, typically result in the OOW wanting to get back to the planned route as quickly as possible, as this is the track of comfort; if the track is maintained, it minimises additional planning and the dangers of getting it wrong.

Old and new

Before GPS became widely used the planned route was just considered to be a guide and was not intended to be the ground track, except in areas with a very narrow safe passage.

In coastal waters, current position was fixed by frequent visual sights. Radar was used to back-up the position fix. After each fix a decision could be made on the course to steer.

Visual fixes were taken perhaps every 10-15 minutes - using running fixes when there were insufficient conspicuous ground-fixed targets to allow conventional fixes. In addition, often at even more frequent intervals, bearings were taken on vessels of navigational significance.

This was tedious and exacting work but it made bridge teams very aware of the situation and the surrounding navigational hazards.

Nowadays, GPS availability, linked with the capabilities of modern marine radar, has lessened the emphasis on visual bearings. This does not mean that the view out of the bridge windows is necessarily being neglected, but accurate visual bearings are taken far less often.

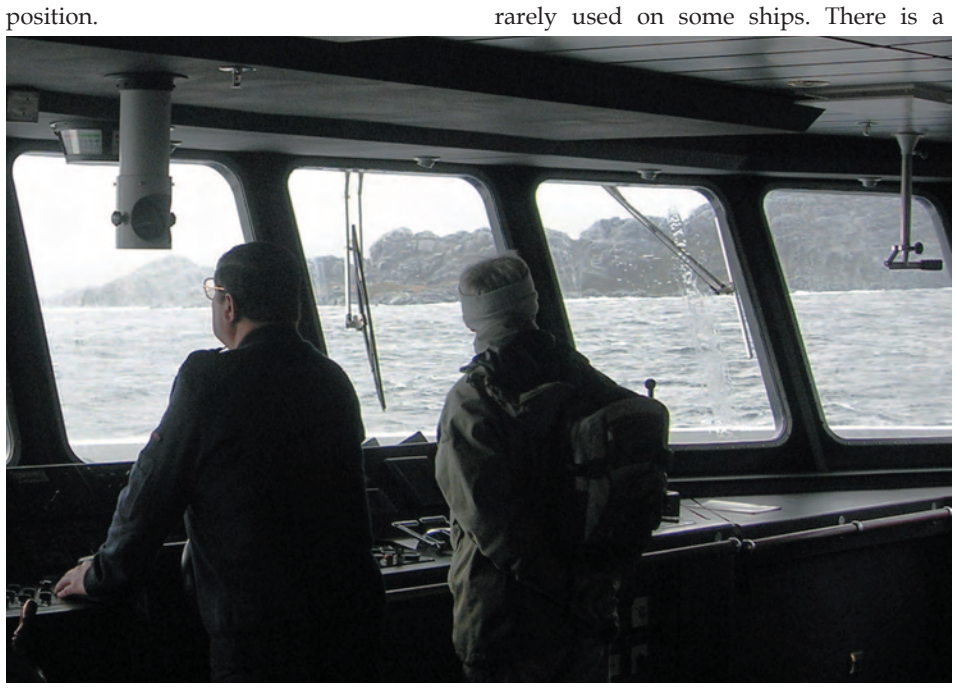
In fact, it is highly unlikely that safety would be optimised by continuing to take the traditional number of visual fixes in parallel with the use of modern navigational technology. Instead, there needs to be an intelligent association of visual, chart, radar, AIS and other navigational data, as part of maintaining full situational awareness.

Association

What is meant by association, is being able to confirm that there is consistency between the available data sources in the position and other attributes of objects. If an expected association cannot be made then the reasons need to be understood.

The very process of association acts as a check on the accuracy of indicated position. Many of the checks that can be made are instantaneous - a diligent OOW should quickly notice when an anomaly was occurring.

For instance, appropriate use of parallel index lines on the radar can readily indicate positioning errors - see the article in Digital Ship, October 2006. Using a chart radar or a conventional radar with a detailed ground stabilised map makes it easy to see if radar visible ground-fixed features correspond with their charted position.



For some younger navigators, used to using new technologies, the visual view is perhaps becoming secondary to electronic data

It is also easy on a radar with AIS display facilities to ascertain whether there is good association of radar and AIS targets. A fixed offset for all targets is likely to mean there is a problem with own ship's GPS position. An ECDIS or ECS capable of displaying AIS and tracked radar targets can also quickly indicate such a problem.

It is more difficult to do this check if only the MKD can display AIS targets but data from the MKD can be useful as a confirmation, if own GPS position is suspect.

Unexplained depth indications can also suggest a positional error but these are less definite. If unexplained depths are being observed the OOW should check to see if other indications of positional inaccuracy are present.

Visual association

In normal circumstances the bridge windows provide a critical overview of the navigational picture, assuming the OOW has a good mental image of charted hazards and features

The association of visual data with electronically derived navigational data and charted information is often just done by eye, with or without the help of binoculars. This can be sufficient but there are times when an accurate visual bearing is necessary.

The problem with taking visual bearings is that they are far from being part of an integrated system.

A single compass or pelorus often does not have a 360° view, requiring the selection of a particular instrument, perhaps on the bridge wing, to take a specific bearing. The bearing must then be compared 'manually' to radar or chart data - it cannot be automatically transferred.

This considerably reduces the attractiveness of using visual bearings and presumably is the main reason why they are rarely used on some ships. There is a growing concern that this needs to addressed, possibly by introducing new equipment standards to simplify both the taking and the electronic plotting of visual bearings.

The very act of taking bearings increases situational awareness as it focuses in on targets of navigational significance, whether moving or ground-fixed.

Also, a single line of position from a visual bearing, positively associated with radar, AIS or charted data, increases confidence in the perceived navigational picture; lack of or a poor association alerts the OOW to a situation that needs further examination.

It could, for instance, indicate positioning anomalies, equipment set-up problems - such as the radar clutter settings, or equipment failures.

Unless there is a complete loss of GPS there is normally no need to take full visual fixes, just single bearings.

Situation Awareness

Proper awareness of the navigational situation involves many factors. Included should be a good knowledge of the intended route, the immediate charted hazards and features, the surrounding vessels, the sea and tidal conditions, the existing and forecast weather and the handling capabilities of own-ship.

The act of associating visual, radar, AIS, chart and other navigational data not only increases awareness but also determines the confidence that can be put on specific data.

GPS, radar and electronic chart data can appear to have a higher standing than visual data because of the perceived significance they take on when appearing on a computer-like screen.

Some younger navigators are accused of burying their heads in instruments; for them, the visual view is perhaps becoming secondary to electronic data. A better balance will be created by making it easier to interact more fully with what is observed through the bridge windows.

The visual scene puts things into a human perspective, removing the computer-game mindset that can develop. Also, it is effectively a sensor, which is independent of other data sources, not least because it 'operates' at light frequencies.

The future

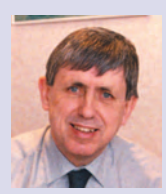
We have let the visual scene lag behind in its integration with other navigational equipment. It provides a good overview but how can we easily get data derived from it integrated with data from other sources?

Certainly, as mentioned earlier, we need to be able to easily take and transfer visual bearings.

We also ought to be thinking about other visual aids. For instance, researchers in Japan have demonstrated equipment that displays the visual scene with overlaid radar and AIS targets. In principle, this vastly helps the task of associating visual and electronically derived data.

There was a suggestion at a UK meeting that we should replace the bridge windows with large flat panels so that radar and other data can be optionally overlaid to aid association. When dark, the visual display would be from night vision-cameras, greatly enhancing visual detection.

This is very futuristic and obviously open to criticism - but what should we be doing now to better associate visual data? DS



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

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