Highlights of Europort

The Europort exhibition in Amsterdam, November 18-22, had some exciting new information technology developments in display. This is what we found most exciting

Sperry Marine

Sperry Marine has developed an entirely new bridge system, incorporating handheld computers, wireless data communications and a heads up display which shows critical information projected on the bridge window so the seafarer does not have to look down to read it.

The bridge console uses flat screens, with front panel access for maintenance and repairs.

Sperry has also lowered the bridge height from 1300 to 1100 mm, so it is easier for the operator to see through the bridge window. "We want to keep the driver's eye on the road," says Sperry's marketing director Frank Soccoli.

The new Sperry bridge

The "Voyage Management System" allows the radar picture, AIS targets and the ship's position to be displayed on an electronic chart.

There is a trackball control device and drop down menu windows, which should make it easier to learn how to use the system. The trackball's position can be altered, depending on whether the user is sitting down or standing up.

Sperry is keen to introduce technologies into the maritime industry which have already been thoroughly tried and tested in the aviation industry.

Mr Soccoli notes that seafarers should never need to depend on one aid to navigation to the exclusion of the others; so there is always redundancy there, other equipment to use if one piece breaks down. Equipment is not being replaced, but being added to.

Handheld computers

In conjunction with the new bridge, Sperry has launched a wireless data communication system, enabling the ship master and officers to view any data from the bridge computer screens on a handheld Palm-type computer.

The handheld computer cannot be used to actually control the ship, only to provide information which is already available on the bridge.

The wireless technology can also be used for the captain to keep a check of what is happening in the bridge while he is in his cabin or the ship's office.

For example, he can monitor the locations of the six closest ships (based on radar tracks or AIS data), or check the running of the engine.

The tool can effectively make it easier for more seafarers around the ship to get involved in navigation, like an extra set of eyes. This is a partial solution to the problems of not having enough watchkeepers on the bridge.

An interesting application of the handheld computer is for use in monitoring the position of passengers in the event of a ship evacuation. If each passenger has an identity card, or each life vest has a bar code on it, then this can be scanned, immediately giving the captain information about which passengers are at which muster station and which ones are still trapped in their cabins.

The system uses 802.11b wireless data protocol.

The pocket computer can also show CCTV pictures from cameras around the ship, and history of where the ship has been and the alarms which have sounded. It can also serve as a trigger for the ship security alert system, so that seafarers anywhere on the ship can sound the alarm if the vessel comes under attack.

The wireless communications technology can carry voice communications, so the handheld device can effectively act as a radio.

Heads up display

The "heads up display" shows information on the bridge windscreen, such as heading and speed, so that the navigating officer can look through the window continuously, not have to look through the window and then look down at his controls.

"Heads up display" has been used for many years in fast aeroplanes and racing cars, and is gradually being introduced on top of the range motor cars. So why not ships as well.

There is plenty of scope to expand the heads up display system, taking data from the GPS and the electronic chart. For example, the position of buoys could be projected on to the window if the navigator can't see them because it is nighttime or there is dense fog.

Kelvin Hughes

Kelvin Hughes has completed what the company describes as a complete restructuring to one that "faces and services the market and gives it what it wants," in the words of managing director Ron Nailer.

The company has rebuilt its website www.kelvinhughes.com and broadened its service into emergency communications services for ships, supplying an Inmarsat D+ based system.

It is developing its full bridge support contract service, now covering 200 vessels which contract Kelvin Hughes to do everything required to keep their ships bridges running.

The company has a network of service centres around the world and expects them to do over 75 per cent of fits first time.

Kelvin Hughes has a sister company, ChartCo, which has a distribution system for update details for paper charts, electronic chart updates and weather information. About one third of ChartCo customers are also Kelvin Hughes customers.

Until now, the two companies have been at pains to distance themselves from each other; now they have realised that it makes sense to work more closely together.

The two companies have jointly launched "ChartCo plus," a service to enable the ships to monitor whether or not they have all the necessary costs and updates.

Data can often be sent more economically over the ChartCo system than over standard Inmarsat channels because ChartCo has negotiated a specific amount of satellite bandwidth at fixed cost to broadcast data rather than paying by the minute.

Transas Navimonitor

Transas has launched Navimonitor, a receive only system for ports to monitor vessel traffic as a security device.

Under the terms of the ISPS code, ports are required to monitor their "port facility," including anchoring and berthing areas.

Data is fed into the device by a radar and also an AIS receiver. By comparing the two pictures the port authorities can quickly learn about any ships coming into the port which do not have AIS.

The system can be configured to set off for example automatic alarms if ships are in places they shouldn't be or exhibiting unexpected behaviour in other ways.

"It helps port authorities meet the ISPS requirements in an efficient and cost effective manner," says Transas.

The cost of the system is Eur 30,000 and upwards.

Iridium

Maritime satellite communications company Iridium is focussing its energies on the maritime market more than it has done in the past and has defined the maritime industry as a "key vertical industry" which it wants to chase. "Maritime has been the largest growth area for us," says a spokeswoman.

It is keen to throw away its old image, trying to be, as the company puts it itself, "all things to all people with a telephone that would not work inside," and demonstrating how the system can help shipping companies improve communications and reduce costs, with completely global satellite communication calls at $1 to $1.50 per minute.

The satellite constellation is expected to last until 2013-2014, giving at least 10 years of life, which should be enough to make it worthwhile investing in Iridium terminals. The company hopes to be able to launch replenishment satellites when the current ones expire.

The Sailor Iridium terminal

The company is currently claiming a 99.6 per cent uptime and a 99 per cent call completion rate defined as the percentage of phone calls which are finished when the user wants them to, rather than cut off due to problems with the system.

The company is also keen to expand its data products and improve the perception of Iridium as providing a data service.

There is a low cost SMS text messaging service, for taking messages from one Iridium phone to another. The company is gradually interfacing with GSM networks enabling messages to be transmitted between GSM and Iridium phones.

It also has an Iridium ship security alert system, produced by partner company MVS.

Nauticast

Fledgling automatic identification system (AIS) manufacturer Nauticast claims that it has conquered around 15 per cent of the total world market for AIS equipment so far.

Executive director Peter Martin notes that the estimation of the market are still not clear.

Nauticast executive director Peter Martin

Personally he believes that the market share is close to 20 per cent, but to say that it is over 10 per cent is certainly correct.

The company has already installed over 1000 units, it says, and has an order backlog. It is currently building up its distribution network. It also produces units for maritime electronics giant Raytheon as an original equipment manufacturer (OEM).

"People get more and more attracted by our unit," he comments. "Its easy to install and operate, and very competitive."

The company has been selling AIS systems for around a year now, he says, which has given it time to fix all of the bugs.

The company will shortly produce an AIS system with a graphical display, showing the AIS targets clearly with the position relative to the vessel, rather than just listing them.

However he notes that AIS is absolute-

ly a commodity market, similar to cellphones. Shipping companies are turning to the supplier that can provide a type approved AIS system and install it for the cheapest price.

In the future, he says, the price for AIS

The Nauticast AIS system

will fall further, but "not significantly." Maybe shipping companies can save $200 if they wait 5 or 6 months. But there might be no-one there to install it, as the installation deadline looms.

The company was recently acquired by Chelton, which is an aviation electronics specialist, which also owns ACR Electronics and SeaTel in the maritime field. The original investors in Nauticast, a venture capital fund, saw the prices of AIS falling and wanted to get out of the business.

Mr Martin notes that he is happy with the new company ownership, which retained the original Nauticast management. "The least complaints you will have from us," he says.

Conrac

Maritime flat screen manufacturer CONRAC reports a growing business as flat panels come more into use onboard ships.

Virtually every ship built in the last two years uses flat panel displays in the bridge, which are lighter, more reliable, easier to maintain, last longer and have a lower power consumption. A further advantage for the bridge manufacturers is, that due to their shape, the flat panel displays offer considerably more design options.

The Conrac 18.1 inch shipboard display screen

Although the purchase price of flat screens is in most cases still slightly higher than that of traditional cathode ray tube (CRT) displays, the greater anticipated lifetime indicates a lower cost of ownership. It is expected that in the very near future, the price of TFT displays, especially of the larger screen sizes, will even drop below that of 29 inch CRT monitors.

The industry is gradually coming round to the idea of flat panels; many bridge system manufacturers are starting to display them at trade shows, notably the Manta bridge used on the Queen Mary II, developed by Kelvin Hughes and which uses CONRAC flat panels.

Except for those cases where long term contracts are concerned, CONRAC terminated the manufacture of CRT monitors for maritime applications. These monitors are mainly used for replacement in existing consoles. However, some ships equipped with CRT displays are beginning to replace them with flat panels. "Of course, this retrofit business is a very interesting 2nd market," says Conrac's Petra Ollhoff.

For the moment though CONRAC is keen to develop more conversations with bridge system manufacturers. "We are looking for the bridge manufacturers to discuss their current and future requirements," she says.

SES Vardarkis

Greek maritime software company SES Vardakis has developed "SMART", a software package which enables shipping companies to get going with maintenance and procurement system in just a few hours, at a fixed cost of $2,000 per vessel, including support, which, SES believes, is the "most competitive price on the market."

The software includes a training CD, which shows, for example, how requisitions can be generated.

The ship shore communications is made automatically, with communications hourly, daily or weekly, sent as e-mail attachments.

A special feature is how the backup is organised. A master software system runs in the shipping company office, which can produce CDs of software which can then be installed on the shipboard computers.

The continuous communications with the ship, synchronising the shipboard database with the shore, can be made whenever the company likes (hourly, daily or weekly), sending the data as an e-mail attachment. The communication is to send 4kilobytes a day, costing around 13¢ on Inmarsat Fleet MPDS ($4 a megabit).

The software is delivered with a database of 5,000 spare descriptions, 750 planned maintenance jobs with full instructions. This data can be adjusted to meet the shipping company's specific needs.

SES has been producing shipmanagement software for 16 years, with the software originally being developed for use of its owner, Achilles Vardakis, on his own ship. There are over 100 companies using it, running on over 800 vessels. It is ISO9001-2 certified.

EMS SATCOM

EMS Satcom, the new entrant to the maritime satcoms field with its $15,000 Fleet 55 terminal, reports that it has shifted 160 to 170 terminals by November 2003, which it believes is a third of the market share of all activated Fleet 55 terminals.

"We are going to fight very hard to maintain that position," says Nils Helle, managing director of EMS Satcom.

"The yacht market has been our first main success," he says. "A lot of systems have gone to Florida."

"We expected to see a bit more activity in the commercial market. The ramp up in the commercial sector is going to take a bit longer."

EMS Satcom believes that one of the driving factors for the SOLAS fleet to start using Inmarsat Fleet is the increasing maintenance costs of their old Inmarsat -A terminals and expensive service calls.

EMS is appointing a distributor in Spain, to sell the terminals to the fishing markets, he says. "Fishing might turn out to be a bit more serious than we thought."

Another interesting market has been the newbuild market for high speed ferries in Australia, he says.

The Fleet 55 service is of special interest to maritime sectors which don't need global coverage, such as workboats and patrol boats. It provides voice and data communications whilst under the mini-M spot beams, which covers most areas of the world's maritime economic activity, but not all areas of the world.

The system was trialled on 2 V.Ships vessels, and V.Ships decided to keep the system.

This is the bulk carrier "China Pride", which typically sends around 4 Mb a month, and the Ocean Cruise Liner "Saga Pearl" which has a much higher data requirement. The China Pride used the MPDS almost exclusively throughout the trials. Whilst the Saga Pearl made good use of the high speed data service over ISDN.

The WaveCall Model 3000

The "China Pride" is now the "cheapest ship in the fleet as far as data communications are concerned" said Neil Sayce of V.Ships.

EMS Satcom notes that several shipping companies have fitted mini-M terminals for voice calls but are increasingly using them for data, for which mini-M is actually extremely expensive. Data over Fleet 55, using the MPDS service, is extremely cheap by comparison.

"If you are using data on mini-M, you should really consider going to Fleet," says Gregor Ross, Maritime Business Manager with EMS Satcom.

Users of fleet terminals have been very slow to appreciate the enormous cost savings which can be achieved by using MPDS,

"Your typical shipmanagement company sends 10s of kilobytes of data a day from ship to shore - mainly via Email," says Mr Ross. "Sending small amounts of data by MPDS can be up to 10 times cheaper than using dialup. It is now proven in practise."

"You don't need an "always on" connection. Bring up a MDPS connection, do your downloads, take it down again."

"We need people to know more about MPDS," he says.

Marlink

Ship shore satellite communications company Marlink has developed Marlink online, www.www.marlinkonline.com, a tool shipping companies and even individual seafarers can use to analyse their satellite phone calls, manage costs, analyse who is making the most calls and review invoices.

They can unbar crew scratchcards and also order more scratchcards.

SeaTel

Maritime satcoms company SeaTel has launched Wave Call, a new satellite communications service which uses Globalstar and Eutelsat satellite services satellites.

The WaveCall Model 3000 has a 10 inch antenna, priced at $2,695 without remote display and $2,995 with remote display, which can carry up to 56 kbps data speeds. Also Wavecall model MCM3, which has a low profile radome, priced at $10,295 and offers data transfer speeds up to 144 kbps. Both use the Globalstar satellite system and works in the Globalstar coverage area.

The 4203 Model terminal costs approximately $40,000 depending upon configuration; there are various pricing plans available. Pay as you go services start at 1 euro per minute voice and 3 euro per minute for 64 kbps data. Or you can pay from Eur 1,000 per month for unlimited voice and Eur 3,000 per month for unlimited voice or data.

The service is for satellite bandwidth t and, not per ship; you can share the data communications between a number of ships if you like. The service is offered in European waters.

The Wave Call 4003 service is multi-regional , and works around American (North and South) and European waters. The terminal costs $36,995.

There are a number of service: plans i.e Euro 2,500 per month for unlimited data communications at speeds 512 kbps to 1 mbps to ships, 128 kbps to 256 kbps from ships.

Alternatively Euro 1,250.00 per month plus Euro 1 per every megabyte over 1 gigabyte per month.

Then Euro 5,000 per month for 1 mbps to 2 mbps to ships, 256 kbps to 512 kbps per second from ships, alternatively $ Euro 2,500 per month plus Euro 2 per megabyte over 1 gigabyte per month.

Sigma radar processing board

Rutter Technologies of St Johns, Canada, has launched the Sigma radar processing board which can analyse radar information so that it can be more useful.

The board separates "clutter" from waves and make it easier to see pirate boats, fishing boats, ice, land and other ships.

The technology, the company says, can work with the signal from any SOLAS radar system (although it recommends a revolution speed of 120 rpm).

The system has already been used in Valdez, Alaska and the Prince William Sound,

To avoid radar blackspots caused by the ship funnel, Rutter recommends that the radar should be fitted higher than the ship funnel.

Germanischer Lloyd

German class society Germanischer Lloyd has some interesting information technology tools for ship operators.

It has an Environmental Passport system which builds up an electronic database of all dangerous materials onboard the ship.

The company has developed Fleet Online, a tool to help shipowners manage their surveys, which is currently used by 200 shipping companies every day. 87 per cent of all GL clients are using the Fleet Online system altogether.

They can see if they have surveys overdue, the last time surveyors came onboard, the period the class certificate is valid for. The can look at the different surveys.

You can book a surveyor to visit the ship and make a survey.

If a survey is overdue for 7 days, GL will inform IACS (The International Association of Class Societies), the flag state and the shipowner. Class then becomes suspended and the vessel is not allowed to trade. This is also shown on the Equasis online system which the public can access.

Many banks and insurers are starting to make demands on shipowners that they can have a Fleet Online password, the company says. The shipowners control access to the information, but banks and insurers can say that they will only finance or insure the ship if they can make sure all the surveys are being made on time.

Germanischer Lloyd has put systems together enabling a bank or insurer can check all the survey status of all the vessels he is involved with on a single screen, if they are classed by GL and if the respective shipowners have given permission.

Totem Plus

Maritime electronics company Totem Plus of Israel is building its business to supply shipboard automation systems, recently building automation systems on 10 car carriers built in Gdynia, Poland, each with a 6,500 car capacity.

The system enables all aspects of the vessel to be controlled from the ship's bridge. It also includes full engine remote control and a voyage data recorder.

Another project is with Samsung in South Korea, building automation systems and two projects in Greece.

Totem Plus is also selling voyage data recorders; it developed its own hardened data capsule which is DNV type approved.

KVH

Maritime satellite equipment company KVH has launched TracVision G8, a maritime satellite TV antenna, which, it claims, is over 35 per cent smaller than other satellite TV antennas on the market of similar reception strength.

The antenna is 82cm and works with Astra, Arabsat, Hispasat, Hotbird, Nilesat, Sirius, Thor, Turksat, Optus, DIRECTV, DISH Network, Express VU, DIRECTV Latin America, picking up both TV and radio.

It has also launched TracNet 2.0, an internet by satellite service, available over Europe, the Mediterranean and parts of the North Sea, Black Sea and Northern Africa. Internet download speeds of up to 512 kbps are possible.

KVH is supplying the whole range of Inmarsat Fleet products and recently won tenders for the Greek, Portuguese, Dutch and Spanish Navy. DS

WEBSITE ADDRESSES

Sperry Marine www.sperry-marine.com
Kelvin Hughes www.kelvinhughes.com
Transas www.transas.com
Iridium www.iridium.com
Nauticast www.nauticast.com
Conrac www.conrac.de
SES Vardakis www.vardakis.com
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