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NEWSLETTER

KONGSBERG NORCONTROL IT

MarNIS Project Comes To a Close

Kongsberg Norcontrol IT has played a key role in the MarNIS project, which came to a close with final demonstrations in Genoa, Italy and Lisbon, Portugal in September and October 2008. MarNIS (Maritime Navigation and Information Services) is a 20 million Euro, EU-funded, four-year project with over 50 European partners, which was started in November 2004 to further the use of advanced and future technology within E-Navigation.

Kongsberg Norcontrol IT's C-Scope operator client has been an integral element to MarNIS, providing the basis for the VTS operator interface for both research and development and during live demos. The goal of the project is to integrate current and new technologies into one operator facing system and C-Scope has been used as the platform for which to build upon. The technology focus of MarNIS includes:

- AIS (Automatic Identification System)
- LRIT (Long Range Identification and Tracking)
- WMS (Web Map Service)
- Synthetic Aperture Radar (satellite based)/Side-looking Airborne Radar/Space AIS.

Welcome...

...to the first 2009 edition of the Kongsberg Norcontrol IT newsletter.

The e-navigation research project 'MarNIS' was concluded in October with a final technology demonstration in Lisbon, Portugal. Although the project is finished, the advances made during the four year project could benefit the maritime world for decades to come.

We are delighted to have played such a key role throughout the project, dedicating our resources and our expertise in collaboration with other innovators to help progress safety through the use of new technology and processes.

You can read more about the conclusion of MarNIS opposite. Other items include a special focus on South Africa, a detailed look at port security and news about communication and radar upgrades for PEMEX in the Bay of Campeche.

I hope you enjoy reading our latest news...

Inge Flaten, President, Kongsberg Norcontrol IT

MarNIS demo in Lisbon

"MarNIS has enabled Kongsberg Norcontrol IT to develop some really exciting new technologies and functions," states Kongsberg Norcontrol IT's Einar Lihovd. "We can now provide shored based radar video in an internationally standard format so that Pilots, Tugs and Allied Services can visualise the same radar video provided to VTS Operators."

Kongsberg Norcontrol IT presented two different areas of development during the two final MarNIS demonstrations. In Genoa, the focus was on 'MOS - Maritime Operational Services', a new concept proposed by MarNIS where services like coastal Vessel Traffic Services, Search and Rescue and Pollution Prevention are combined under one roof and by using one information system. A MOS system integrates information from numerous other systems that can be located internal or external to the MOS organisation.

Examples of such information are:

- Dynamical risk values per vessel, based on type of ship, cargo, age and flag of ship, weather and sea state info, traffic info, distance from shore, etc
- Satellite based or aircraft based images of oil spills
- Oil spill information from oil retention/recovery vessels using onboard radar for day and night surveillance of a detected oil spill
- Results from object drift simulations, where object may be person in water, container vessel or oil spill
- Long Range Identification and Tracking (LRIT) and space AIS (Automatic Identification System).

The focus for the final MarNIS demonstration in Lisbon moved to Vessel Traffic Management in the port environment and one of the primary concepts demonstrated was Sharing VTS Information Using Standards. This included:

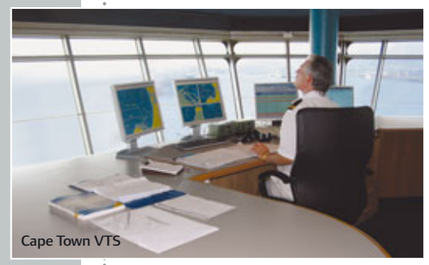
- Sharing traditionally shielded/closed VTS information with external systems and organisations such as pilots, police and customs
- Sharing AIS data from the AIS Base Stations or AIS Network that are used by the VTS
- Sharing radar video from the VTS radar stations and radar tracks from the VTS radar trackers
- Sharing information that the VTS operators enter into the system such as:
- Special temporary attention areas: regattas, search and rescue activities, oil spill, dredging/diving, etc.
- Indication of an aids to navigation (AtoN) that is malfunctioning
- Proposed approach routes for different types of vessels
- Port terminal facilities, like location, bollard types, cranes, etc.

"The end of the MarNIS project signals the beginning of a new era for VTS. Some of the benefits in technology development gained from MarNIS are already in use, such as at our C-Scope installation in Vardø, Northern Norway, which is the first in the world to feature full integration with GIS," says Inge Flaten, President, Kongsberg Norcontrol IT. "With Vardø as the forerunner, proving the performance of C-Scope, we are ready to implement this new functionality in other VTS installations in Europe and around the world, whether they are already running C-Scope or are ready to make the change to the cutting edge of VTS."

For further information on MarNIS visit **www.marnis.org**

KONGSBERG

Focus On VTS in South Africa


Cape Town VTS

With seven, soon to be eight busy national ports, South Africa is a major hub for shipping from all over the world. This creates a strong requirement for as controlled an environment as possible, and VTS is the tool used to ensure safety, efficiency and the smooth running of the country's busy ports.

Using its offices in Cape Town and Durban as a base, and collaborating with development teams in Norway and India, Kongsberg Norcontrol IT is meeting the demand for continuous improvements coming from South Africa's ports, and has over the past few years installed VTMIS 5060 at six of the countries national ports.

South Africa's ports are run by the state-owned Transnet National Ports Authority (TNPA), whom, in 2003 signed an extensive maintenance agreement with Marine Data Solutions, based in Cape Town. A core part of the agreement was that Marine Data Solutions would be responsible for the VTS upgrade path at all of South Africa's national ports. This started with the Cape Town VTS in 2005.

"Cape Town was the proving ground for our VTMIS 5060 technology in South Africa," explains Steve Nell, Managing Director of Marine Data Solutions. "At the time it wasn't confirmed that Transnet's other ports would use VTMIS 5060 but following the commissioning of the system in 2006, the improvements in system availability and the efficiency the port gained from having a much more detailed picture of its domain persuaded Transnet that the solution was right for all of its ports."

With the upgrade project confirmed, Kongsberg Norcontrol IT's next installation would be Saldanha. It was here that the company's engineers highlighted the need for improvements in vessel tracking at South Africa's ports.

"The anchorage area in Saldanha Port was not covered by the existing VTS at all so ensuring that the anchorage was presented on the VTS was one of the main goals of the upgrade installation that we started in 2006. We achieved this by installing the VTMIS 5060 integrated into AIS, which made an immediate impact on the marine operations in the port." said Nell.

The last few years have been a busy time for Transnet's VTS management and Marine Data Solutions. After Saldanha, the installation team installed VTMIS 5060 in quick succession at Port Elizabeth, East London (in progress), Durban and Richards Bay (in progress), meaning that the majority of South Africa's major ports are now using the same VTS technology.

"The fact that so many of Transnet's ports are now running the same system brings with it a number of advantages," comments Nell. "They are all using the same VTS operator interface, which from the staffing angle is very beneficial. Staff and managers may move between ports and be instantly familiar with the systems in place there whilst at the same time Transnet can streamline its VTS operator training."

One of the most important aspects for any organisation using the same VTS solution across several ports is that of information exchange. With Transnet's ports all running the same system, they can easily pass data between each other. Knowing when, for instance, one vessel has passed Richards Bay can help VTS operators to schedule anchorage in Cape Town even before said vessel appears in the receiving port's VTS area. With advance knowledge of a vessel's movements, efficiency between ports can and has been greatly improved in South Africa.

The most recent development is the installation of VTMIS 5060 at South Africa's newest national port, Ngqura, which is currently under construction. The installation started in December and is due for completion in February 2009. Once complete, Ngqura will be integrated into the South African VTS network making for a total of seven busy ports all running the same VTS solution.

VTMIS and Radar Performance Upgrade for Bintulu Port

Kongsberg Norcontrol IT has been chosen to upgrade the existing VTMIS (Vessel Traffic Management and Information Service) at Bintulu Port, Sarawak, East Malaysia. The contract was won by Kongsberg Norcontrol IT Singapore in July 2008 and is for the delivery and commissioning of new VOC5060 computer hardware and software, extensive user training, and maintenance until 2013.

The upgrade package also includes three sophisticated C-Scope Radar Extractors and Trackers, which are able to improve the port's radar performance without upgrading radar hardware. This is achieved through the use of advanced signal processing techniques to extrapolate an even clearer image from the raw radar signal and is the most effective method of ensuring all targets in the domain can be clearly defined.

VOC5060 is a VTS operator workstation and is used as the primary interface to a VTMIS. In addition to providing VTS operators with access to all the information available in the system, together with the ability to control system functions, it also allows for sharing of VTS related data with other applications such as a PMIS (Port Management Information System). This helps to meet the requirement to share VTMIS data as the focus on port security continues to grow around the world.

Bintulu Port first chose Kongsberg Norcontrol IT systems over twenty five years ago with the delivery of a VOC80 package in 1982/83. This was followed up by a VOC5000 solution in 1994 with the latest contract awarded to upgrade the existing system from another manufacturer that was installed in 2003.

"The VOC5060 solution with C-Scope Extractor and Tracker represents superb value for the Bintulu VTMIS upgrade as it offers a wealth of extra operator functionality in addition to improving radar performance without the expense of replacing radar hardware," says Inge Flaten, President, Kongsberg Norcontrol IT. "We are particularly pleased to be back as the main VTMIS supplier at Bintulu, considering the long history we have with supplying domain awareness solutions to this, one of the busiest ports in South East Asia."

Events & Exhibitions

Kongsberg Norcontrol IT will be attending the following events in 2009.

- Global Security Asia, Singapore, March 17-19
- INMEX 2009, Mumbai, September 24-26
- MAST 2009, Stockholm, October 21-23

If you would like to organize a meeting to discuss specific issues, please contact your local Kongsberg Norcontrol IT office or KONGSBERG company prior to the event.

First Frequency Diversity Radar and New Communication Systems for PEMEX

Kongsberg Norcontrol IT's work with Petroleos Mexicanos (PEMEX) continues apace with the fall 2008 installation of the first Frequency Diversity System on the American Continent, at the Dos Bocas station located in Tabasco, Mexico in addition to two extensive new contracts.

The new Frequency Diversity System is the continuation of Kongsberg Norcontrol IT's vessel traffic monitoring at the Bay of Campeche, the largest oilfield in Mexico and the world's largest offshore oil development project, which started with the installation of the company's VOC 80 solution in 1981. The VTS is now based on VTMIS 5060 architecture and is responsible for monitoring 200-300 vessels per day in a high-risk maritime domain. PEMEX has previously signed a long term maintenance contract with Kongsberg Norcontrol IT, reflecting the high requirement to ensure the ability of the VTS to efficiently monitor and track all vessels in the domain.

There are a number of challenges to ensuring safety in the Bay of Campeche. It is only 40-50m deep in most areas so there is a real danger to underwater infrastructure from fishing activity. Additionally, the numerous supply and personnel vessels in the field are generally fast moving targets, so PEMEX requires a solution capable of tracking these in an already crowded area.


A long working relationship with PEMEX in the Gulf of Mexico

Kongsberg Norcontrol IT has developed a total of seven radar sites and eight AIS base station sites to monitor traffic in the bay. Because it is so large, with so many small vessels, two control centres were required, one shore-based (with three VTS workstations and a supervisor station) and another on a platform with two VTS workstations. The two control centres are approx. 100 nautical miles apart and responsible for monitoring the traffic in distinct areas. Both control centres share VTS information and are connected by microwave link.

The new Frequency Diversity System at the Dos Bocas station is based on Kongsberg Norcontrol IT's new C-Scope Extractor and Tracker technology. This sophisticated solution uses advanced signal processing techniques to extrapolate an even clearer image from the raw radar signal without the need for expensive new hardware. It enables high-resolution real-time vessel tracking for the VTS, higher performance out of existing radar sites and improvements to the already high performance of sites with the best antennas and transceivers.

"By installing C-Scope Extractor and Tracker, PEMEX is again leading the way in VTS technology," comments Pedro J. Cruz Gonzalez, Project Manager, Kongsberg Norcontrol IT. "After the installation at Dos Bocas station and the following good performance of the system, PEMEX has also signed a contract with us to extend the technology onto six oil platforms. This represents a whole upgrade of the VTMIS in the Bay of Campeche and all of PEMEX's remote sites should be using the Frequency Diversity System based on C-Scope technology by summer 2009."

In addition to the developments in Frequency Diversity Systems, in November 2008 Kongsberg Norcontrol IT and PEMEX signed a new contract to upgrade and extend the VHF communication systems for logistics and marine use for the Bay of Campeche oilfield.

"The appointment of Kongsberg Norcontrol IT to supply the communications upgrades and extension is the latest development in our relationship with PEMEX, which has lasted over a quarter of a century," says Fred Fredriksen, Key Account Manager, Kongsberg Norcontrol IT.

KONGSBERG NORCONTROL IT

Committed to Collaboration

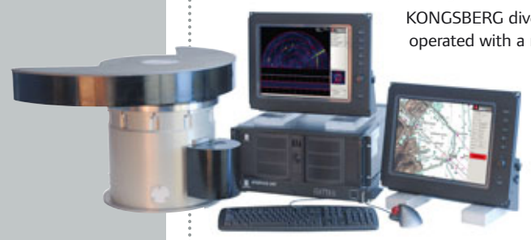
Port Security

Hull inspection systems can be integrated

Through collaboration with other KONGSBERG companies, Kongsberg Norcontrol IT is able to provide a fully integrated Port Security system that addresses underwater, surface and airborne threats. Vessel Traffic Management Information Systems (VTMIS) can be integrated into this system utilizing C-Scope, and data from the widest possible choice of sensors, including live satellite feeds can provide a high-fidelity picture of the maritime domain to ensure improved security at all levels.

Underwater Security addresses the protection of land facilities and valuable assets that are vulnerable to attack from the waterside. Attacks may take the form of armed combat divers or the use of explosives against target vessels or facilities. A complete Underwater Security program also includes examining ships for contraband containers fixed to the hull. Techniques commonly used are underwater video cameras and acoustics (sonar).

Scanning sonar can be used to sweep or "clear" areas to ensure they are clear of foreign objects such as mines, Improvised Explosive Device - IEDs, or contraband. Multibeam sonar can be used to detect the presence of divers, whether in a secure area within a defined perimeter or an underwater area under surveillance for law enforcement purposes. Sonar altimeters may be used to create an "acoustic fence", providing an alert for further investigation.



KONGSBERG DDS 9000

KONGSBERG diver detection sonar systems are presently operated with a number of different automated detection and tracking software programs. These include CATA™ (Computer Aided Target Acquisition), MSI™ (Multi Sensor Integration), plus several software packages developed by defence industry integrators in cooperation with KONGSBERG. New versions of Defender II, KONGSBERG's own automated detection and tracking software for the KONGSBERG DDS 9000 diver detection sonar system, and the development of Defender X™ software for multi-node systems has added even greater functionality during 2008.

Version 1.3 of Defender II now offers the ability to mark the position of High Value Assets and establish a warning perimeter at a distance pre-selected by the operator, whilst the Defender X™ software module enables the networked output from up to ten sonar nodes to be displayed on a single display, simplifying and reducing the number of displays required for operation in multi-node systems.

The Kongsberg Norcontrol IT C-Scope system is able to present this information in a straightforward user interface. The system's ability to handle large amounts of data ensures that other sensors, such as radar to detect surface and air threats and information from Geographical Information Systems (GIS) can be combined to provide a complete and coherent picture of a ports current security situation, and this has been achieved through collaboration with several KONGSBERG companies.

CONTACT US...

Norway

Kongsberg Norcontrol IT AS
(Main Office) Bromsveien 17
PO Box 1024
N-3194, Horten
Tel: +47 33 08 48 00

China

Control IT Xiamen
C1 Unit, 21 Floor
Yuanyang building Lujiangdao #268
Xiamen City 361 001
P.R. China
Tel: +86 592 5031095

India

Atash Norcontrol Ltd.
C14, Vishal Tower
Ramdevnagar Road
Satellite
Ahmedabad - 380051
Tel. +91 99099 03749

Korea

Chang San IT
9th Floor Busan Sangrok B/D
#828-9 Beomil-dong, Dong-gu
Busan
Tel. + 82 51 637 8932

Singapore

Kongsberg Norcontrol IT Pte. Ltd.
3 Loyang Way, Singapore 508719
Tel: +656 545 7375

South Africa

Kongsberg Norcontrol IT Pty., Ltd.
P.O. Box 1519
Hillcrest, 3650
Tel. +27 31 767 8150

South Africa

Marine Data Solutions (Pty) Ltd
P.O. Box 51680
Waterfront 8002
Cape Town
Tel. +27 21 386 8517

UAE

Kongsberg Middle East
P.O. Box 5250, Abu Dhabi
Tel. +971 2 4451-956

UK

Kongsberg Norcontrol IT Ltd.
12 High Street
Winterbourne,
Bristol BS36 1JN
Tel: +44 1454 774466

KONGSBERG