



02/08

# The SUBSEA newsletter

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## Port Secure 08



Kongsberg Mesotech Ltd. (KML) attended Port Secure 08 on May 22 and 23 in conjunction with a sister company, Kongsberg Norcontrol IT. This was an important occasion for KML as the conference was held in its 'Home Port' of Vancouver, where KML is based. The Port Secure 08 conference also proved to be an excellent opportunity for Kongsberg Norcontrol IT to work with Canadian customers.

The booth was set up to demonstrate operator stations for the Defender II Diver Detection System and Kongsberg Norcontrol IT Vessel Traffic Manage-

ment Information Systems (VTMIS). The Defender II operator display utilized a graphic overlay depicting Vancouver harbor prepared by Colin Smith, Product Manager for Multibeam Sonar at KML. Reidar Olsen of NorControl IT presented a real time display of an approach to Oslo harbor, which was well received. The booth was manned by Reidar Olsen, Colin Smith and Phil Andrew.

Kongsberg's integrated approach to port security was well received by Canadian customers and served to strengthen our presence in this market.

## FEMME 2009

Kongsberg Maritime is pleased to announce that the FEMME 2009 Multi-beam User Conference will be take place in Lisbon, 21 - 24 April 2009. Invitations will be sent out in August and September 2008, and a web page for information and online registration will follow. As before, presentations by users of the Kongsberg Maritime multi-beam echo sounders will constitute a very central part of the conference, and

we invite users to send suggestions, topics and abstracts to the paper committee: helge.uhlen@kongsberg.com.

If you have any questions regarding the conference, please contact jan.haug.kristensen@kongsberg.com or nina.hovland@kongsberg.com.



## During two days in April, Kongsberg Simrad in Spain arranged a seminar for the Hydrographic Institute of the Navy in Cadiz



The official opening was done the 22nd by the admiral of the Southern Marine Zone and the Director of the Institute, Commander Francisco J. Perez Carrillo. Kongsberg Maritime, with representatives from Kongsberg Seatex and the Subsea department, held various presentations and papers about technology and applications for the Geodesy and Hydrography area. Special inter-

est was given to the presentation from Gard Ueland in Kongsberg Seatex about the projects within the future European Galileo system. From the Subsea department, lectures were given about Synthetic Aperture Sonar and Acoustic Positioning Systems. Also the Helideck Monitoring System from Kongsberg Seatex was very well presented. Since Hespérides was built in 1991, The Hydrographic Institute has

been working together with Kongsberg Maritime / SIMRAD Spain. Today, all the hydrographic vessels are equipped with KM Multibeam and various reference systems. The collaboration has been very positive and interesting, and Simrad Spain looks forward to keeping up the good relationship in the future.

More than 40 people attended the event, mainly from different organizations within the Navy. People from the Royal Observatory of the Navy in San Fernando, Aircraft Vessel Commander, Search and Rescue Organisation, Cádiz University, Guardia Civil (Marine and Air services), Archeological Institute, Cartographic Institute and Geodesy Institute have been present during these days. In addition representatives from the Portuguese Hydrographic Service attended. The closing of the seminar was arranged by the Navy in The Feria of Puerto de Santa Maria where flamingo classes and nice food were enjoyed.

## EM 3002 Multibeam Echo Sounder addition for Fugro's M/V Geo Prospector



Fugro Survey Limited recently purchased an EM 3002 high performance shallow water multibeam echo sounding system to fit alongside the existing deep water EM 300 multibeam system on its survey vessel, the M/V Geo Prospector.

The vessel is operated by Fugro Survey Limited of Aberdeen, UK. Specifically equipped as a multi purpose survey vessel, the Geo Prospector is permanently mobilised and is readily deployed to survey locations worldwide. Recently the vessel has been active in South East

Asia, India, the Mediterranean, West Africa and South America.

The EM 3002, operating at a frequency of 300 kHz provides a high performance shallow water bathymetric survey capability for the vessel to complement the existing EM 300 deep water system, which operates at 30 kHz. Both systems will utilise the SIS (Seafloor Information System) Kongsberg real-time operator software to provide a common operator and processing interface.



## Sunday 11th of May at 3.54 pm, HUGIN 1000 HUS reached its deepest level so far at 2962,7 metres.

The event took place in the Norwegian Sea, more accurately at 69°N 10°E with a depth of 2997 metres. After a voyage of 6 hours, and a problem free recovery in seastate 5, HUGIN is now placed at its regular spot at the afterdeck of HU Sverdrup II.

As the first project of its kind, HUGIN 1000 was delivered with a depth rating of 3000 metres and is a part of FFI/KM/HI's effort to enter the Marine Research market. HUGIN was delivered to FFI (Norwegian Defence Research Establishment) with Kongsberg Maritime's EM 2000 multibeam and Edgetech 2200 SSS/SBP (sidescan sonar and sub-bottom profiler) as its main sensors.

The Acoustic links and HiPAP installed in the hull functioned satisfactorily during the deep sea dive, proving that HU Sverdrup II is well suited for these types of operations. This delivery/run-up was completed in record time with only 2 sea trials before Pre-FAT.



**FROM LEFT:** *Petter Lågstad, Project Manager, Norwegian Defence Research Establishment (FFI), Stig Solem, Engineer R&D, Kongsberg Maritime, Thomas Christoffersen, Group Manager AUV Assembly*

The first sea trial took place on 22nd of April, while the Pre-FAT took place on the 25th of April and the FAT the 29th of April, all of which were completed at

Breiangen. The final CAT was signed on the 12th of May after a successful deep dive at approximately 120 nautical miles west of Andøya.

## Kongsberg Symposium in Poland



On 23rd of April 2008, Kongsberg Maritime and Kongsberg Seatex together with their Polish representative Escort Ltd. organized a specialized symposium in Gdansk.

On the whole, forty-four guests attended the symposium. They came from many different institutions: Polish Navy, Maritime Offices, universities and research

institutions as well as shipyards and marine related industries.

The symposium was focused on the following subject matter:

1. The latest generation of multibeam echo sounders. Wide band width (Kongsberg Maritime)
2. Principles of MBES operations

3. The HiPAP family, the under-water navigational systems
  - How to increase your underwater position accuracy with the use of HiPAP systems
  - Portable and stationary HiPAP systems
  - The family of underwater transponders
  - The HAIN concept. (Hydro Acoustic Aided Inertial Navigation.)
4. Hugin AUV
5. Presentation of newly released motion sensors
  - Improved testing and calibration capacity and facilities
6. Presentation of Seapath precise navigational systems
7. HMS100 helicopter landing monitoring system
8. Scanning sonar in underwater applications
9. Underwater surveillance systems



# Seminar & demonstration in Cartagena de Indias, Colombia



Kongsberg Underwater Technology, Inc., of Lynnwood, Washington conducted a very successful three day seminar and demonstration 'Multibeam and Single Beam Echo Sounders - Theoretical & Practical Workshop' on March 4-6 in Cartagena, Colombia.

There were 50 participants from differ-



ent government, academic and commercial organizations from Colombia and Panama, including the Colombian Navy's Centro de Investigaciones Oceanograficas and Hidrograficas (CIOH). The at-sea demonstration was conducted aboard the ARC Gorgona

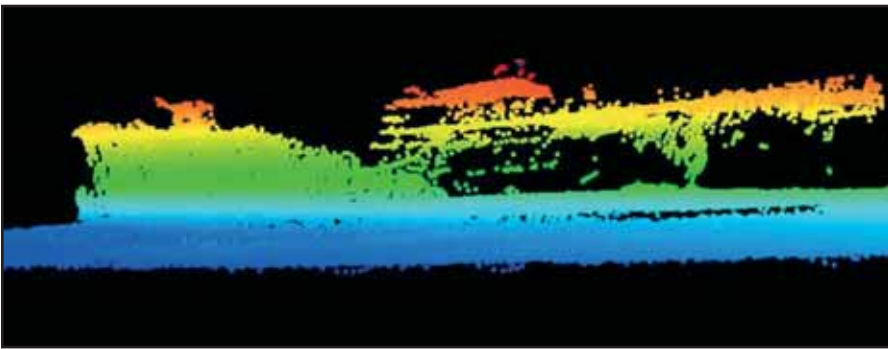
The demo equipment package included: EA 400 w/ sidescan, EM 3002 and the Seapath 200.

For purposes of this demonstration all of the transducers were mounted on a single fixture together with the Motion Reference Unit (MRU-5) and the Surface Sound Velocity Sensor.

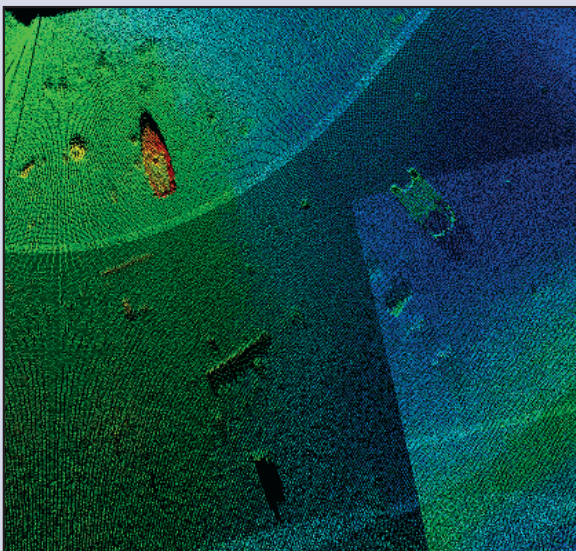
Note: Because of potential acoustic interference, this transducer arrangement would not be recommended for a real survey application requiring simultaneous operation of the sonars.

Kongsberg contracted Cotecmar shipyard to construct an over-the-side mount 'tangan' for attaching the transducers to the ship.

One of the more interesting targets found outside Cartagena Bay is the wreck of the ARC Pedro de Heredia, intentionally sunk off the shore of Isla de Tierra Bomba to form an artificial reef.



## Oceanology 2008 - Demonstration Vessel



During Oceanology International 08 Kongsberg Maritime operated the S.V. Xplorer, which ran live demonstrations on an advanced suite of Kongsberg Maritime survey systems, which included multibeam and single beam echo sounders and cutting-edge positioning equipment.

The equipment included: EM 3002D Multibeam Echo Sounder, EA 400 Single Beam Echo Sounder, EA Single Beam Side Scan, Sub Bottom Profiling and

Seabed Classification Options, Seapath 200 Precise Heading, Attitude and positioning Sensor, RADIUS relative positioning system and SIS (Seafloor Information System) Real-Time Software.

During the demonstrations the EM 3002 multibeam located many items of debris on the dock floor. The image here shows tyres, a dingy and an ex-inflatable boat that were located in one of the corners of the docks.

## Another HUGIN for Fugro



The new smaller size HUGIN 1000 will be delivered with a custom designed transportable container and rechargeable, maintenance free Lithium Polymer batteries. The container includes work space for maintenance and an advanced two stage hinged stinger for launch and recovery of the vehicle over the stern of a vessel, with stern height up to 5 meters.

HUGIN is widely recognised as the most advanced and reliable AUV on the market. It was originally developed through collaboration between the Norwegian Defence Research Establishment, the Royal Norwegian Navy, Statoil and Kongsberg Maritime. Cooperation began in 1995, and the first HUGIN was put into commercial use in the North Sea in 1997.

“We’re delighted that Fugro has ordered its third HUGIN vehicle,” said Morten Berntsen, Manager, Sales and Marketing – Underwater navigation, Kongsberg Maritime. “The HUGIN 1000 order book continues to grow following an excellent year in 2007 that saw a number of significant orders taken.”

Fugro has placed an order for a cutting-edge Kongsberg Maritime HUGIN 1000 Autonomous Underwater Vehicle (AUV). To be delivered Q4 2008, the third HUGIN in Fugro’s AUV arsenal will be based at the company’s Far East facilities in Singapore, in order to address the growing deep water market in the Asia Pacific region.

HUGIN 1000 is a smaller version of Kongsberg Maritime’s HUGIN 3000, of which Fugro already operates two. Rated for 3000m water depth, HUGIN 1000 can carry an extensive payload of scientific instruments in order to provide high resolution geological and geophysical information, for use in the design of subsea structures and subsequent development of oil and gas fields.

## Marin Mätteknik AB



*Courtesy of Marin Mätteknik AB - Survey Vessel Franklin*

One of the new EM 3002Ds, will be installed on a 16 meter vessel, called “Seabeam”.

Total Marin Mätteknik AB has six EM multibeam systems from KM:

- 4 x EM 3002D
- 1 x EM 710
- 1 x EM 1002

Marin Mätteknik AB was initially established in 1976. It is a survey company specialized in high resolution marine survey and sub bottom mapping, to supply the industry and authorities with detailed information for seafloor constructions, installations and environmental investigations (<http://www.mmtab.se/>)

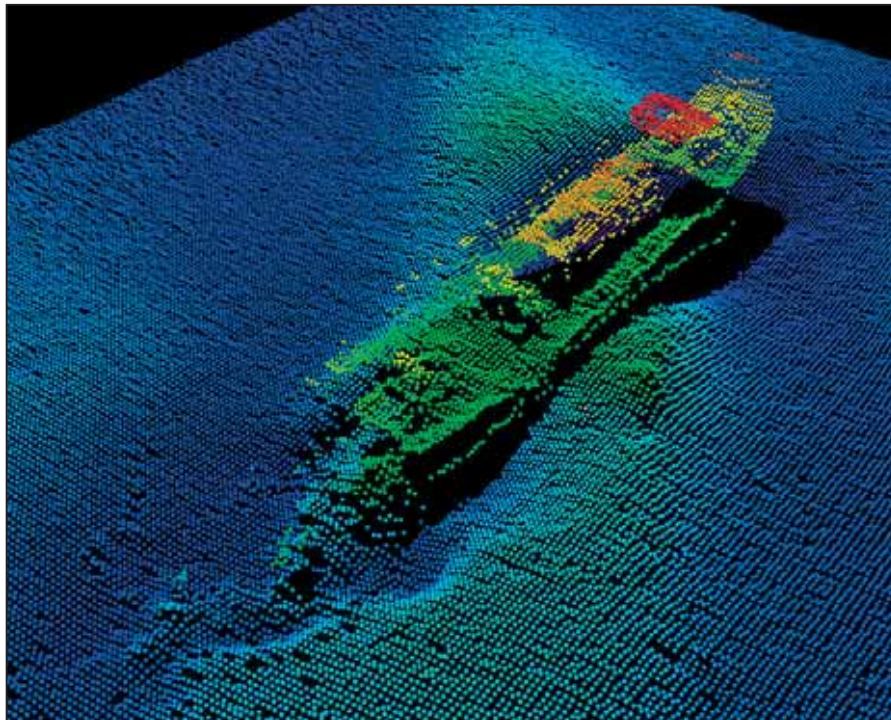
Once again Marin Mätteknik AB of Sweden, has decided to go with Kongsberg Maritime, by purchasing two new (the third and the fourth systems) EM 3002 dual high resolution multibeam

echo sounder for use for shallow water seabed mapping.

The first system was delivered at the end of May 2008 and the second will be delivered at the end of August 2008.



## EM 3002 & Seapath 200 for the Agri-Food & Biosciences Institute



Wreck gathered during the commissioning on the RV Corystes

Kongsberg Maritime have recently delivered and commissioned an EM 3002 high performance dual head multibeam system and Seapath 200 precise heading, attitude and positioning sensor for the Agri-Food & Biosciences Institute to conducting benthic habitat mapping of the sea floor.

The Agri-Food & Biosciences Institute (AFBI) was created on 1st April 2006 as an amalgamation of the Department of Agriculture and Rural Development

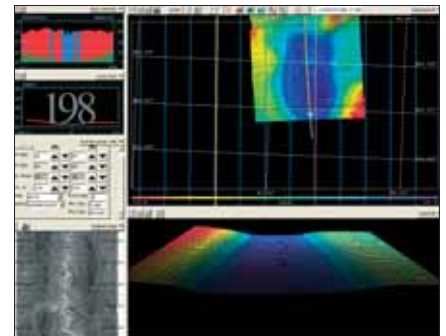
(DARD) Science Service and the Agricultural Research Institute of Northern Ireland (ARINI). AFBI is a DARD Non-Departmental Public Body (NDPB).

AFBI carries out high technology research and development, statutory, analytical, and diagnostic testing functions for DARD and other Government departments, public bodies and commercial companies.

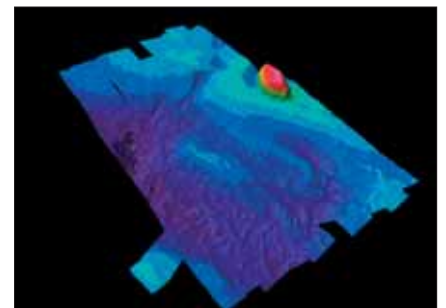
AFBI undertakes marine fisheries and

environmental research and monitoring in the Irish Sea and adjacent sea areas to acquire scientific information to support the Department's statutory and policy responsibilities for fisheries, marine environmental management and aquaculture.

The EM 3002 & Seapath 200 have completed commissioning trials on the AFBI vessel RV Corystes, during the trials the system logged water depths down to 200m with reasonable swath coverage. The system was supplied to allow mobilisation on other vessels of opportunity as well as the RV Corystes in the future.



Seabed at 198m



Maidens rock

## Norwegian Mapping Authority, Hydrographic Service



The Norwegian Mapping Authority has decided to go with Kongsberg Maritime, by purchasing a 0.5° x 1° high resolution EM 710 multibeam echo sounder

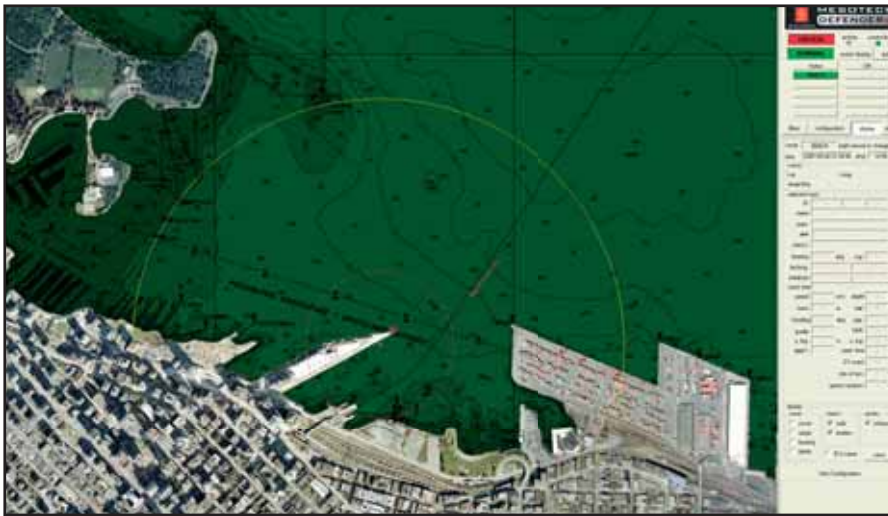
for use within the Norwegian EEZ and along the Norwegian coast. The EM 710 system has been fitted to the vessel 'Hydrograf'. The system was delivered in February 2008 and the installation of the transducer modules and topside units were done at Solund Yards during March 2008.

The EM 710 system had the Sea Acceptance Test end March 2008 and has already done survey jobs in the Mareano Program ([www.mareano.no](http://www.mareano.no)).

The Norwegian Hydrographic Service is responsible for surveying the Norwegian coast, including polar (Arctic and Antarctic) waters and for preparing and updating nautical charts and descriptions of these waters. Its activities also include studies of tides and currents and publishing tide tables. The Norwegian Hydrographic Service has the operational responsibility for the international electronic nautical chart centre Primar Stavanger

## News Release

### New Developments for Diver Detection and Port Security



*Vancouver Harbour Defender II Display*

#### Defender II Release 1.3

- Defender X package for integration of up to ten sonar nodes
- Multiple Upgrade Paths
- C-Scope Integration

Vancouver, B.C. – May 23, 2008 – Kongsberg Mesotech Ltd., a world leader in underwater diver detection technology, is pleased to announce the release of version 1.3 of Defender II, the company's 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.

"The importance of protecting our ports, waterways, ships and bridges from underwater security threats has never been greater, and these advances in technology will address this need — providing powerful, user-friendly software that will continue to be upgraded for operation on our world-leading system technology," said Phil Andrew, manager of underwater security for Kongsberg Mesotech, based in Port Coquitlam, BC.

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 defense industry integra-

tors in cooperation with Kongsberg.

Release 1.3 includes the ability to mark the position of High Value Assets and establish a warning perimeter at a distance pre-selected by the operator. The Closest Point of Approach (CPA) can be calculated using information provided by the tracking function.

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. Previous Defender installations have displayed a maximum of four nodes, with the capability to expand to eight.

In conjunction with Kongsberg Defense and Aerospace, the company is able to provide a fully integrated Port Security system that addresses underwater, surface and airborne threats. Vessel Traffic Management Information Systems (VT-MIS) can be integrated into this system utilizing the C-Scope software suite of Kongsberg NorControl IT. Data can be integrated from the widest possible choice of sensors, including live satellite feeds, to provide "The Full Picture."

#### DOF Subsea Norway



Once again DOF Subsea Norway has decided to go with Kongsberg Maritime AS, by purchasing a third 0.5° x 1° high resolution EM 710 multibeam echo sounder for use in the North Sea. The EM 710 system will be fitted to the multipurpose support vessel – DP II 'Skandi Bergen'.

The system will be delivered during May 2008 and the transducers will be fitted into the hull during summer 2008.

The first two deliveries of EM 710 systems are installed on vessels 'Geosund' and 'Geograf'.

DOF Subsea Norway is a well known and highly skilled survey company located on the western-coast of Norway, outside Bergen.

#### Upgrading of Norway's Ula Class submarines



Kongsberg Maritime has signed a contract with the Armed Forces' Logistics Organisation for the delivery of active navigation and mine avoidance Sonar as well as multi-beam echo sounder systems for the upgrading of Norway's six Ula Class submarines. The contract was won in an open international competition.



## Canada loves EM 710!



The Canadian Hydrographic Service (CHS) has taken delivery of two new EM 710 Multibeam Echo sounders from Kongsberg Maritime in Halifax. The first, a new 0.5 x 1 degree system replaces the Kongsberg EM 1002 on the Canadian Coast Guard Ship VECTOR in Sidney, British Columbia, the second, a 2x2 degree system, will be installed on a CHS survey launch in St. John's, Newfoundland and Labrador.

The new EM 710 on CCGS VECTOR is the second 0.5 x 1 degree system in Canada and follows on the success of the 0.5 x 1 degree EM 710 delivered to Halifax's CCGS MATTHEW in March of 2005.

Newfoundland and Labrador's 2x2 degree EM 710 will be the first EM 710 designed specifically for use on launches. This system's features include a special compact transceiver now available with 2 x2 degree EM 710 systems. This compact EM 710 will give CHS Hydrographers and Scientists from the Department of Fisheries and Oceans (DFO) the capability to study and chart depths of less than 1 meter to more than 2000 meters in coastal areas that are inaccessible to larger vessels. Extreme changes in depth are common around the rugged coast of Newfoundland and Labrador. The EM 710 launch will be able to access the steep shoreline and chart the slopes and fjords to the ocean floor.

## New Area Sales Manager appointed



Roar Hansen has been appointed as Area Sales Manager for Underwater Instrumentation (UI) Products.

Roar has been working with Kongsberg Maritime since 1982 and started as service engineer for the Offshore division (today called UI, Underwater Instrumentation department). After 8 years he moved on to the Engineering department where he spent 7 years as a project engineer and worked with many of the larger installations / platforms in the North Sea. The last 10 years he has been working in the AUV department as project and product responsible.

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