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# The Maritime SIMULATOR newsletter

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**Meet us at the UC of the Americas, 28 Nov.-1 Dec. 2009!**

[www.viaregi.com/UserConferenceoftheAmericas2009](http://www.viaregi.com/UserConferenceoftheAmericas2009)



## Major Contract for Offshore Simulators Signed With EMAS



A new contract was newly signed with EMAS Offshore in Singapore for a delivery including a state-of-the-art Offshore Vessel Simulator. The contract is a milestone in Kongsberg's expansion into the Asian offshore training market.

*continues on page 2*

## New Polaris Release Successful UC2009!



With the new Polaris Bridge Simulator 5.6 release, Kongsberg is among the first to introduce new advanced training elements like; fighting piracy in conflict waters and advanced navigation in cold ocean environment.

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More than 120 delegates attended the Simulator User Conference themed "Explored the Simulation Possibilities." The three day event took place in Lisbon, October 2009 and was co-hosted by the Portuguese Navy.

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Singapore, ASIA

# Major Contract for Offshore Simulators Signed With EMAS Offshore

ANNE VOITH, MARKETING COORDINATOR, KM



Picture showing training on an Anchor Handling Simulator

**Kongsberg Maritime's simulation division has signed a new contract to supply an extensive offshore simulator to EMAS Offshore in Singapore.**

The contract, which was signed on 29th October 2009, is for delivery of a state-of-the-art Offshore Vessel Simulator with FWD and AFT bridge configuration. The order includes a fully integrated Anchor Handling and Dynamic Positioning functionality, in addition to two Anchor Handling Simulators for assisting vessels, a forward Navigation Bridge Simulator, Kongsberg K-Pos DP Simulator and an Engine Room Simulator. The contract also covers instructor training and support services.

EMAS is an integrated offshore solutions provider for the oil and gas industry, operating a large fleet of young, sophisticated vessels in critical applications. Kongsberg Maritime's offshore simulator at

the EMAS Academy will support the EMAS crews to achieve safe and efficient operation through the use of realistic simulation training, especially in the complex, inherently hazardous areas of DP and Anchor Handling operations.

The comprehensive offshore simulator will be delivered in 2010 and will form the foundation for the EMAS Academy, which is part of EMAS Offshore, a subsidiary of EZRA Holdings Limited, a Singaporean offshore shipping company listed on the Singapore stock exchange. The EMAS Academy was established out of recognition that offshore industry demands on maritime operators, as well as the competency required to operate the newer offshore vessels, have become more complex. The vision of EMAS through the Academy is to fill gaps across industry and set new performance and competency standards among offshore maritime operators.

“To develop training amongst our operators is EMAS' proactive response to ensure that the safety and environmental interests of our employees, clients and stakeholders are safeguarded,” comments Robin Kirkpatrick, Chief Operating Officer, EMAS Offshore. “The use of simulators will allow us to test, develop, prepare and train our sea staff, while at the same time to meet clients' increasing expectations in terms of performance. The partnership with Kongsberg Maritime is built on its track record in providing realistic simulators for competency training and the company's local presence was a major factor in awarding them the contract amidst very tough competition.”



Picture: Anchor Handling Simulator with AFT bridge view

“The contract with EMAS is an important milestone for us, as it further proves the acceptance in the market for simulators to train maritime crew in advanced offshore vessel operations and in particular DP and Anchor Handling,” comments Mark Stuart Treen, Sales & Marketing Manager for KM Simulation.

## New Certifications

# Polaris DP Simulator First to Achieve DNV Class A Approval



Kongsberg is proud to announce that our Polaris Dynamic Positioning Simulator is the first to achieve DNV approval to the stringent Class A standard. We have also achieved DNV approval to Class A standards for our Polaris Ship's Bridge Simulator including class notification for DP, Ice Navigation, High speed Craft and Tug simulation.

The new DNV certification for the Polaris DP Simulator and the Polaris Ship's Bridge Simulator is according to new standards laid out in DNV Class A – Standard for Certification of Maritime Simulators No. 2.14 October 2007, which

is based on the requirements of STCW Convention, Regulation I/12.

“The Class A standard was developed as the pinnacle in simulation realism and quality,” explains Capt. Aksel D. Nordholm, Manager - Simulator Certification, DNV SeaSkill™. “Kongsberg Maritime is a key participant in the scheme as the company recognises the importance of providing its customers and indeed the shipping and offshore industry with the best possible training tools. The new Class A approvals reflect the high levels of simulator realism and pedagogical value in the Polaris Simulator.”

The latest approvals, which were awarded on 8th October 2009, come in addition to existing DNV Class A approvals for the Polaris Ship Simulator and the large portfolio of cutting edge Neptune Engine Room Simulators, which became the first to achieve DNV approval to Class A standard, in January 2008.

“The Polaris Dynamic Positioning Simulator plays an important role in the recognised and certified DP training programs used by training institutes and offshore companies around the world. Our Polaris Ship's Bridge Simulator, now with DNV classification for Ice Navigation, is used by many to train on navigation in extreme conditions such as the Arctic waters,” comments Terje Heierstad, Product and Technology Manager, Simulation, Kongsberg Maritime. “For that reason we are constantly improving our simulators to harness the latest technology, in order to add training opportunities and value by providing the most realistic simulation possible.”

## RUSSIA

# New Full Mission ERS for Volga Region Academy of Water Communications

ANDREY KOZHEVNIKOV, KM

Volga Region Academy of Water Communications, a huge institution situated in the city of Nizhniy Novgorod, Russia, recently awarded Kongsberg a contract to deliver a full mission Neptune Engine Room Simulator.

Being fully satisfied with the rich functionality and high reliability

of their existing Kongsberg engine room simulator, and having studied the current simulation systems and providers in the market, the Academy selection felt in Kongsberg's advantage.

The Senior Lecturer of the Academy, Mr. Konstantin Markov commented: “We state with satisfac-

tion that Kongsberg has not only retained its well-known state-of-the-art simulators, but has also included a state-of-art Instructor system, which provides enhanced functionality and all modern facilities for efficient simulator training as well as an automatic objective assessment of the trainee's performance.”

## Product News, SBS

# Many New Features in the 5.6 Release for the Polaris Ship's Bridge Simulator

PAUL SNELLINGEN, PRODUCT ADVISER, KM

**The new Polaris Ship's Bridge Simulator 5.6 release comprises many new features, making the advanced simulator to an excellent tool for maritime training.**

## Ice Navigation - The Full Picture

The requirement for special navigation skills in terms of ensuring safety and selecting the best route depending on the properties of the ice is crucial. Ice navigation is influenced by a number of components like ice field size, thickness, direction and speed of the wind and ice age.



*Illustration: Ice Navigation on the Polaris Ship's Bridge Simulator*

According to the Det Norske Veritas (DNV), relevant conditional crew training is one of the major preventative actions to reduce accidents in the marine sector. To meet these new high standards for ice navigation and ice management training, Kongsberg has launched a set of new ice-navigation tools and components as an upgrade to Polaris Ship's Bridge Simulator.

Based on the latest DNV Type Approval 2.14 2007 for Bridge Simulator, the Polaris now fulfills all ice class requirements for system fidelity. Features such as ice breaking, twin breaking/convoy,

channel compacting, ice accretion (over-icing), weather reporting with ice warnings (ice charts, wind and pressure data) and high class model fidelity towards ice impacting and breaking is now included into the Polaris. In addition we have extended our ship model library with a full set of "ice"-enhanced models like; ice-breakers, merchant cargo and tankers ships, trawlers, etc.

## Fighting modern piracy – the Anti-Terror Trainer (ATT)

Ninety percent of the world's trade is still transported by sea and the enhanced piracy has become a considerable threat to the industry with a peak of 445 attacks in 2003. Although it has been a slight decrease the last years, the attacks have continued to increase outside the cost of Somalia where patrol vessels from Belgium, France, Germany, Italy, Greece, the Netherlands, Portugal, Spain and UK now secure the area as a part of a joint agreement between the countries (Operation Atlanta).



*Illustration: Anti-Piracy training at the Polaris Ship's Bridge Simulator*

In order to support training operations in this area, a set of tools are made ready for the Polaris Ship's Bridge Simulator such as piracy objects for identification (visual

and radar) and a fully integrated Anti-Terror Trainer (ATT) containing joystick operated view/binocular channel, an alert and weapon directing panel as well as a weapon engaging system. Together with our excellent visual system, our exercises and a set of operational tools for observation (i.e. radar- and binocular systems), the bridge simulator now has almost unlimited capability in awareness training.

Note: The ATT system requires optional tools and a visual channel on each bridge.



*Illustration: The binocular channel*

## Wave and wind shadowing

To improve the realism in our visual system even further, we have included wave and wind shadows. Each ship generates a shadow area where the wave height will be reduced. The wave shadows shape and size area will depend on the ship's dimension and orientation relative to the wave direction and the visual system.

When it comes to the wind, the ship generates a shadow area where the wind strength will be reduced. The wind shadows shape and size area depends on ship dimensions (hull and superstructure) and orientation relative to the wind direction. Both wave and wind shadows are now calculated and shown in our visual system, Seaview, as if it was real.

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### Night image control

In order to perform training on night navigation and extreme darkness, the Polaris simulator is now fitted with an automatic blending control to a range of projector solutions. This feature can be added to your system as an extension. Please contact us for further details.

### IRIS Control

For some of the high end projectors, we have added a projector message for “night” control of iris open/close - linked to the darkness level in the simulation exercise.

### Current and Tide

A new import capability for external tide and current data is now available as well as a better resolution and update rate of real data. Further, the floating dock objects are now following the tide settings.

### New fender

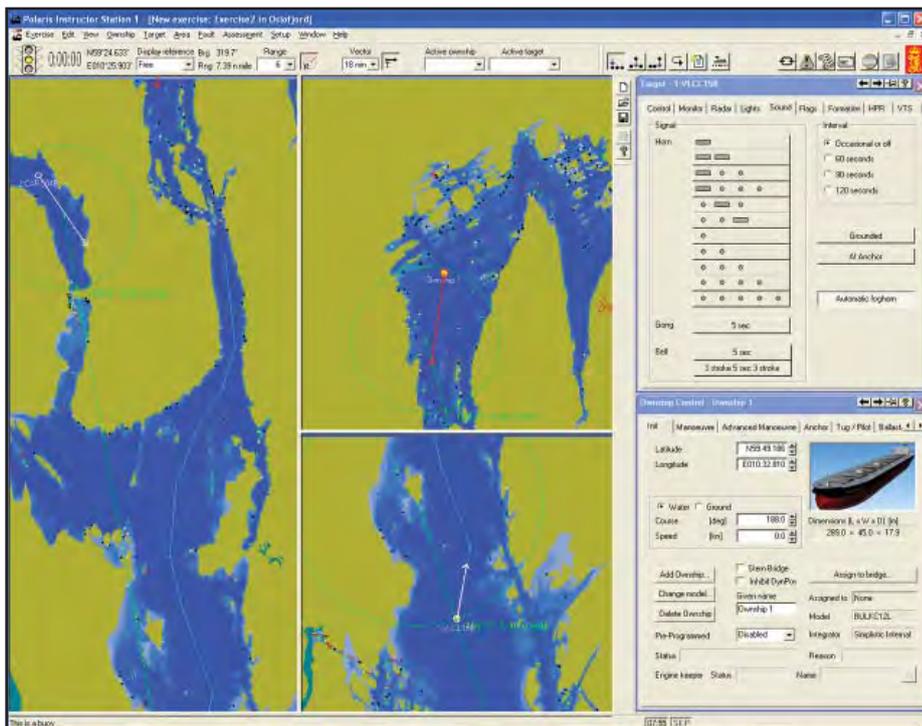
The ownship can use the fender in four different height levels. This gives a better understanding of the hull and fender interaction. A new rubber fender sound is also added for tug operations.

### GPS system

With the 5.6 release, the instructor is now able to set a number of satellites available for the receiver. This is a part of the DP enhanced system, which can be used in connection with a dual redundant DP station.

### Conning display

The conning is now showing the actual steering control position and steering mode for the vessel. With presentation of route data from ECDIS, the conning can be configured to show next waypoint and destination with ETA data. The conning can also display stern bridge operations.



Picture: Bird's eye view chart at the Instructor Station.

### Instructor EBL/VRM

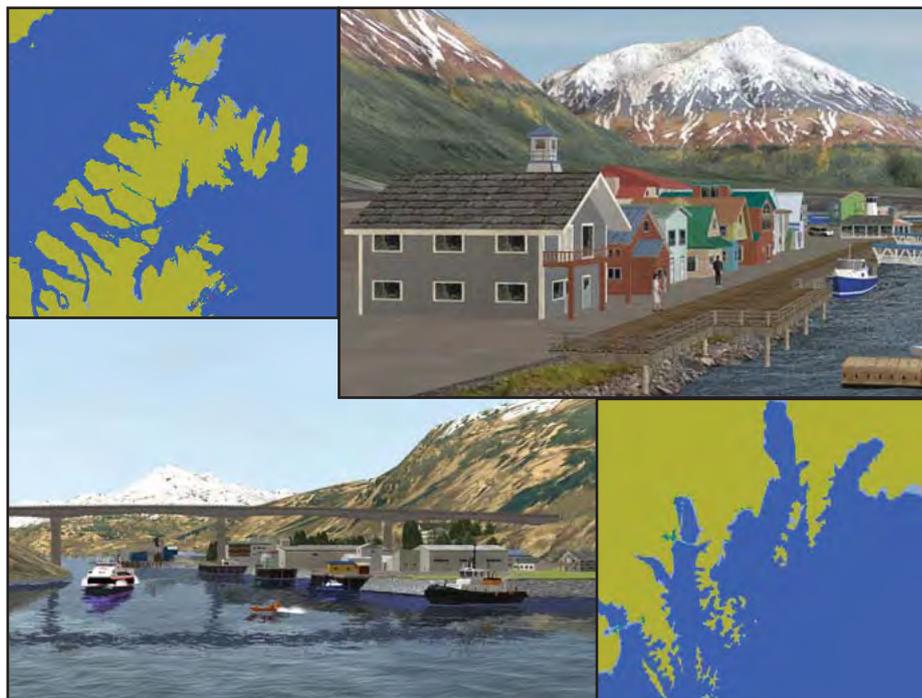
Functionality is added to the instructor station for use in the Bird's eye view chart. Just assign reference to the Own Ship or as “Free” and you may access an instant EBL and VRM on any or all of the three chart views. Just toggle on/off with right click and you will have instant and flexible control from the mouse with clear readout.

### New Exercise Areas

There are several new training areas added to the library e.g. the spectacular Seward and Kodiak Island Archipelago in Alaska.

### Operating System

The Polaris software release 5.6 has been tested on the Windows®XP Professional operating system and the Windows®Vista operating system.



## MALAYSIA

# Significant Malaysian Contract Strengthens Our Business in Asia

ANNE VOITH, MARKETING COORDINATOR, KM

## Milestone delivery for first centre of excellence for marine training in the region

Kongsberg Maritime (KM) Simulation has been awarded a contract by HJS Maritime SDN. BHD, Malaysia to deliver two sophisticated Polaris Ship's Bridge Simulators for use in a new centre of excellence being built for the Malaysian Marine Department. Along with the previous contract with MAAP, Philippines, it reflects our leading marine simulation position in Asia.

The contract win is a result of a competitive tender involving ten Malaysian companies and five major international simulator suppliers. Captain Dato Ahmad Othman, Director General, Malaysian Marine Department, elaborates: "Kongsberg Maritime has very good worldwide references and was awarded the contract based on the technical proposal, where they scored the highest. Local company HJS Maritime SDN. BHD is the main supplier for the delivery whilst Kongsberg Maritime in cooperation with their local sales representative, Kelana Stabil (M) SDN. BHD., are a major sub-contractor."

The scope of supply comprises two full mission Polaris simulators, with integrated GMDSS and a tailor-made training package with different simulation exercises, designed by a team comprising Willem Barentsz Maritiem Instituut (Netherlands), Lantec Marine Inc. (Canada) and Pelorus Intelligence



Front Row: Hamzah Bin Abdul Wahab, Director, HJS Maritime SDN BHD (left) and Erik Hovland, Deputy Sales and Marketing Manager, Kongsberg Maritime AS, Simulation & Training Department. Back Row (from left to right): Kristian D. Brath, Project Manager, Kongsberg Maritime AS, Simulation & Training Department, Hisham A Rahman, Executive Chairman, Kelana Stabil (M) SDN. BHD, Arild Braastad, Ambassador of Norway, situated in Malaysia, Ewe Tuan Hai, Director Innovation Norway, situated in Malaysia and Commander Nasaruddin Dato Mohd Hashim, Executive Director – Defence, Kalana Stabil (M) SDN. BHD

& Technology Academy (Malaysia). Additionally, Kongsberg Maritime has contributed its decades of marine simulation experience to support the building of a brand new building for the Malaysian Marine Department, which is specially designed to house the Polaris simulators and other rooms dedicated to improving the marine training capabilities in Malaysia.

The pre-delivery training of six of the Malaysian Marine Department's instructors will be conducted at the Willem Barentsz Maritiem Instituut before the final installation of the simulators in June 2010. "This project brings together several key players in the world of marine simulation," continues Captain Dato Ahmad Othman. "Through

Kongsberg Maritime we will be able to supply high quality simulation training in addition to having access to the research and development work at a number of key marine training organisations around the world, which will enable us to ensure our course offering is of the highest standards."

"Our Asian simulator activity continues to expand and we see even more potential in this important market. With a simulator range from simple, user-friendly desktop simulators to advanced full mission simulators, we are able to provide internationally proven solutions that are adaptable for every customer's needs," adds Erik Hovland, Deputy Sales and Marketing Manager, KM, Simulation.

## UC 2009, Lisbon

# New Simulation Possibilities Explored at the User Conference in Lisbon!

ANNE VOITH, MARKETING COORDINATOR, KM

**More than 120 delegates from Europe, Asia and Oceania attended Kongsberg Maritime's Simulator User Conference 2009, which took place 14th – 15th October in Lisbon, Portugal.**

The theme for this year's conference was 'Explore the Simulation Possibilities', which traced a line from the curiosity of the early Portuguese Explorers right to the curiosity of today's maritime simulator users to find new ways of harnessing the power of simulation and extending the way in which they deliver courses.



The Norwegian Ambassador to Portugal, Inga Magistad officially opened the conference together with Vice Admiral in the Portuguese Navy, Fernando Manuel de Macedo Pires da Cunha and Kongsberg Maritime Simulation's Managing Director, Lars Erik Hilsen, who encouraged the delegates to get most out of the conference by networking, learning and adapting new ideas through the many presentations, discussions and demonstrations.

## The importance of exchanging experience

During the three day conference, customers and partners explored the simulation possibilities through exchange of experience and through workshops diving deeper into top-



ics of interest. In the plenary sessions, the delegates were introduced to customer's usage of simulators for research in ship design and port layout, and the focus on teamwork training by interconnect the ship's bridge and the engine room simulator. Ian Rodrigues (AMC) put emphasis on the usage of web-enabled simulator training to meet the requirements from the new generation of students, while José Diaz (Centro Jovellanos) stressed the importance of incorporating maritime English and SMCP teaching into courses focusing on VTS, SAR and pilotage. Aksel Nordholm from DNV Seaskill, presented 84 new competence areas, of which many new will be mandatory with the use of simulators.

## Simulator training for specialized operations

Some of the presentations were held by representatives from training centres of shipping companies, each specialized in different operations. Representing a pioneer in the use of anchor handling simulation, Tonny

Moeller, Chief Instructor in Maersk Training Centre, introduced the audience to the role of simulators in an offshore training environment. "By taking the lessons learned from accidents/incidents and incorporating those into the courses, Maersk put emphasis in safe working practices," he said, This was backed up by figures illustrating the contribution of simulator training to the company's finances. Also Captain Ivar Thomasli from Thome Ship Management, stressed the importance of optimizing the human capital in his speech, while Johan Rafstedt, Operation Manager in TransAtlantic IceAcademy spoke about the importance of bridging the theory with reality using the ship's bridge simulator's ice-navigation feature in their training programme.



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## Successful Workshops



In addition to presenting the anchor handling and the engine room simulator integrated with K-Chief, the conference also had an open demo-room fully equipped with different simulators.



The conference also featured a total of eight different workshops/product demonstrations, with topics ranging from new engine room simulator features, hydrodynamic modelling and ice-navigation to anti-terror and anti piracy training. These sessions encouraged interesting discussions with feedback after the UC, highlighting the importance of such workshops with delegates expressing how much they have learnt and asked for even more workshops at the next UC. "We have put a lot of effort into this part of the conference and are glad that we can facilitate an area where our customers can share their valuable experience with each other to maximize the utilisation. For us, this discussions and product feedback is of major importance to further develop and keep our simulators at the cutting edge," says Terje Heierstad, Product and Technical Manager, KM Simulation

## Exiting visit to the Portuguese Navy

The conference also included a tour

into the inner sanctum of the Portuguese Navy for a better understanding of how simulators play an everyday role in their competence training. 1st Lt. Mario Miguel Cortes Sanches, responsible for the Portuguese Navy's simulation centre, SIMNAV, told the delegates about the importance of simulation in the navy's training of cadets. This was followed by a guided tour at the facilities. The delegates were shown around SIMNAV, where they had an interesting simulator voyage on the Tejo river in all kinds of daylight and weather conditions, before they 'sailed' into the navy's port for anchoring. Following this, the delegation was taken on a tour of the navy's engine room simulation centre, NAUTUS.



The tour also comprised a visit to the Frigate 'Corte Real' where they were shown around by officers explaining how a typical mission is planned and performed. The participants were also shown a video from the frigate's last mission escorting merchant vessels through the Gulf of Aden, arresting Somali pirates when they attached a vessel.



## Creative cooperation drives our industry!

Mark Treen rounded off the con-

ference with a summing up of the fascinating days and concluded, "The possibilities are much broader than we thought and the economy effect is minimal in the education sector. Regulation is forming a strong backbone to the requirement for training, particularly with simulators. Together we are creative co-operators, who take this sophisticated tool and are finding more ways to help crew gain competence!"

## Customers feedback

In total, 75% of the delegates reported that they got new ideas for their business when answering the evaluation questionnaire sent out to the delegates after the UC. Most delegates also expressed the importance of networking and sharing experience as one of the main incentives to join the conference and felt that they had achieved this through the conference days.



## Next UCs

User Conference - Americas  
Orlando, US,  
Nov. 28th - Dec. 1st. 2009.  
See: [www.viaregi.com/User-ConferenceoftheAmericas2009](http://www.viaregi.com/User-ConferenceoftheAmericas2009)

User Conference - Asia/Oceania,  
Launceston, Tasmania, (Australia)  
March 7th - 10th 2010.  
co-hosted by the Australian  
Maritime College (AMC)  
See: [www.viaregi.com/uc2010L](http://www.viaregi.com/uc2010L)

User Conference - Europe  
Bergen, Norway  
September 2010  
co-hosted by the Royal Norwegian  
Navy

## CANADA

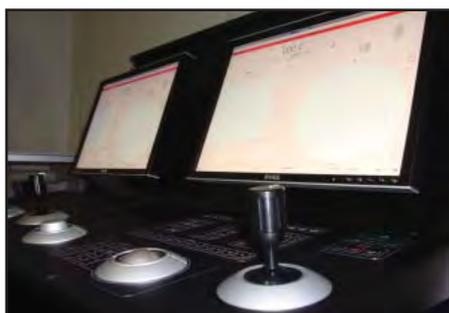
# Advanced Flexible DP Training System Delivered to Canada!

CLAYTON BURRY, ASM, KM CANADA

The Centre for Marine Simulation (CMS) at the Fisheries and Marine Institute of Memorial University of Newfoundland, Canada took delivery in September of an Advanced K-Pos DP system comprising an instructor station and a dual-redundant DP trainer. The delivery also included a new eight-station ECDIS training system and a second hydrodynamic modeling tool (HDMT) software license.

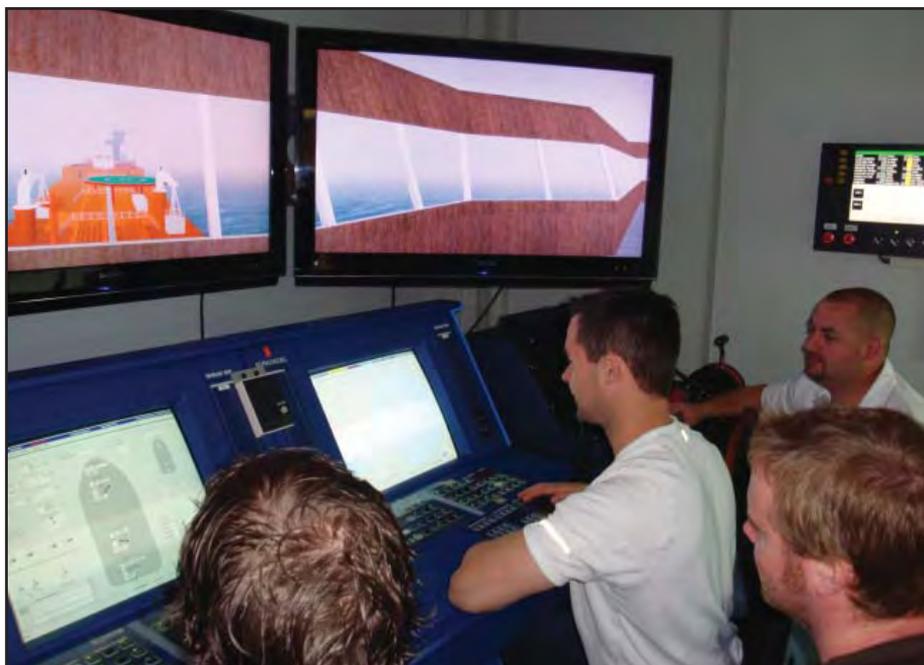
## Flexibility and increased value

The Advanced K-Pos trainer, has been configured to operate in the Polaris environment on the CMS full mission bridge, a six-degrees-of-freedom motion base originally installed in 1992. The full mission bridge, which received a significant upgrade in early 2007, will now be capable of providing a full range of DP operational training, including tandem loading, an area of particular interest to the offshore oil industry worldwide.



*The K-Pos DP system delivered to CMS has been configured to work as a dual redundant DP trainer on the CMS ship bridge simulator, or as two separate K-Pos Basic trainers in a classroom setting. Photo Credit: C. Burry.*

To provide flexibility and increased value, the system was designed as a portable DP trainer. Whilst on the CMS main bridge, it can be configured as a DP-2 (dual-redundant) trainer, but also as two stand-alone



*Workers from offshore Newfoundland participate in a DP training course at CMS on an SDP trainer - one of three DP systems the Centre has purchased from Kongsberg. CMS has developed its own inhouse visualization system (pictured here) capable of displaying the DP ownship and the operating field, which is used on a regular basis for offshore training.*

Basic DP trainers in a classroom setting. When connected to Polaris, training operators will be able to use the change over control to switch the ownship from DP to manual maneuvering mode in full view of the target loading vessel or platform, making for a very realistic DP training experience. This will be the third Kongsberg DP system installed at CMS, confirming this as one of its key target markets for simulation training.

## New 8-Station ECDIS System

CMS has also taken possession of a new eight-station Kongsberg ECDIS training system that has been networked with its full mission bridge. The ECDIS training system included all hardware and software required for IMO and Transport Canada compliant ECDIS training, and also included world coverage C-MAP electronic

charts, enabling the Centre to tailor courses for its customers operating anywhere around the globe. Built on the same Polaris software platform as the full mission bridge, the new radar /ECDIS desktops support future expansion, such as the potential addition of visual channels or hardware based controls.

In response to increased demand for developing in-house hydrodynamic models, CMS has also added a second Hydrodynamic Modeling Tool (HDMT) license as it ramps up for increased numerical modeling projects. CMS Director Capt. Christopher Hearn commented, "By dealing with the leading provider of quality simulation software and services, CMS looks to continue building its capability and reputation for providing advanced training, operations analysis and research."

ICERS'09, USA

# Engine Room Simulation Front Row and Center at ICERS 9 in NYC

CLAYTON BURRY, ASM, KM CANADA



*Photo Credit: GMATS / USMMA.*

The 9th annual International Conference on Engine Room Simulators (ICERS 9) was held at King's Point, New York from November 2-5, bringing together an international group of engine room simulation users and vendors. An initiative of the International Maritime Lecturers Association, this year's event was held in cooperation with The United States Merchant Marine Academy and The Global Maritime and Transportation School at its King's Point campus on Long Island, New York.

This year's theme was "Assessment and Research in Engine Room Simulation." Keynote Speaker for the event was RDML Michael J. Browne, USN, the Deputy Chief Engineer (SEA 05A) and Director, Strategic Planning for Naval Sea Systems Command and a technology consultant for IBM. Of notable mention, were presentations by Robert Jackson, Maritime Vocational Instructor at California Maritime Academy, who spoke on the topic of electronic coaching and assessment software in engine simulation laboratories. A user of

Kongsberg's e-Coach, Mr. Jackson concluded that the most important aspect of electronic assessment is the increase in instructor effectiveness and facility utilization. He also concluded that electronic coaching was found to enhance the learning process in engineering students.

Dr. Ivan Tam of the Singapore Maritime Academy, Singapore Polytechnic, spoke on the use of mathematical modeling to enhance ERS training and assessment. SMA had developed a mathematical model of brake specific fuel consumption based on ISO standards, programmed with use of a spreadsheet. The model, which takes into consideration operating conditions from 25% to 110% fuel quality and ambient factors, proved to be a simple but effective tool in engine process simulation and has been shown to enhance the engine room simulator experience for students. The SMA models showed a remarkable correlation to the numerical results found with both textbook formulae as well as data found in the engine room simulator.

Gerado Ramon (Dandy) Galang of the Maritime Academy of Asia and the Pacific spoke on integrated ship simulation for full crew training. A key topic at the event was the integration of bridge and engine room. Mr. Galang stressed the importance of this integration for cadet training on both bridge and engine room. MAAP is developing a series of courses built around the integration capability designed to teach cadets how to deal and react with on board emergencies, and for familiarization with specific company's safety management systems prior to joining their assigned vessels. A practical application of the integrated training courses will be as an assessment tool for manning companies to better determine the chemistry, interaction, communication and team work of officers and crew.

During the vendor session, Kongsberg Product Adviser for Engine Room Simulation, Leif Pentti Halvorsen presented on how a real life integrated automation system can be connected to a standard engine room simulator model. This proved to be topic of considerable interest at the event, and the Kongsberg demonstration area was very busy with both the AutoChief® C20 propulsion control the K-Chief 500 engine control systems integrated with the Neptune ERS on display. Kongsberg Maritime has been a proud sponsor of this event since the first ICERS was held at Nantes, France in 1993. ICERS has become recognized as a global forum for the exchange of knowledge, experience and research on the use of engine room simulators.

## CANADA

# Nautical Institute Orders Multiple Upgrades at Port Hawkesbury

CLAYTON BURRY, ASM, KM CANADA

Kongsberg Maritime has completed several deliveries to the Nova Scotia Community College's (NSCC) Nautical Institute at Port Hawkesbury, ranging from upgrades to the engine room and Polaris bridges, to the addition of new web-enabled simulation for both engine and bridge operations. The Institute has also invested in an LTSSP, which will ensure the simulators are regularly inspected and updated by qualified Kongsberg service engineers over the next five years.

The engine room upgrade was implemented as two full mission engine models: a low-speed VLCC engine model (L11 MAN B&W 5L90MC-VLCC-V) and a medium speed Ferry engine model (M22 Pielstick 10PC4-IV-Ferry). The upgrade also included Kongsberg Maritime's BigView, which is displayed on four 65-inch plasmas and Kongsberg's MultiTouch, a touchscreen technology used as replacement for multiple hardware panels.



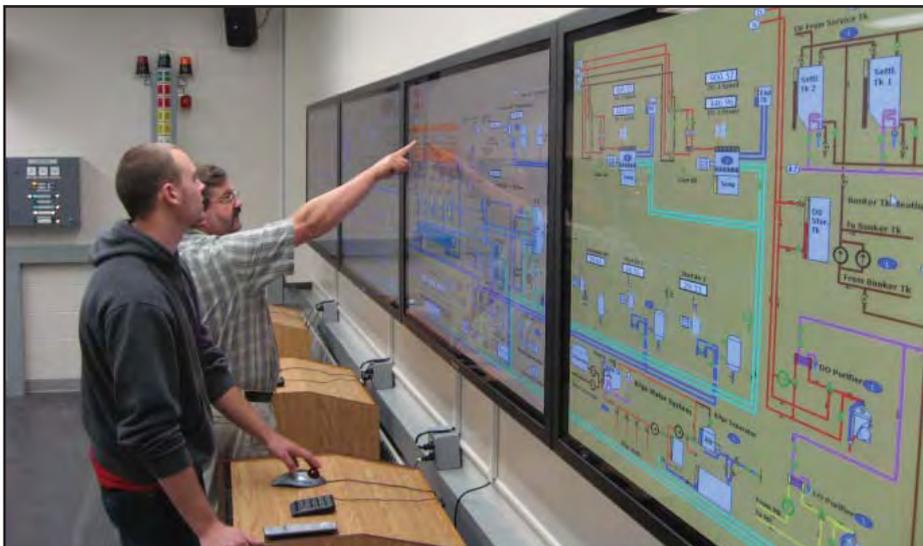
*The use of MultiTouch technology in the engine control room has resulted in cost savings and flexibility for customers and represents an excellent cultural match with the gaming generation that has moved into the maritime training market. Photo Credit: Clayton Burry.*

In addition, NSCC took delivery of eight student desktop ERS trainers, each fitted with the same models found on the full mission simulator, plus the slow-speed turbo Sulzer 12RTA84 L11, commonly found on container ships, and the diesel-electric model, DE22 AC/AC cruise vessel.

On the bridge side, NSCC received the latest version of Polaris together

with an upgrade to its visual system to SeaView R5. Ownship tugging capability was added to two bridges together with new tug-enabled models. The portable tug consoles provide NSCC with the flexibility to quickly convert bridges for tugging operations. The newly installed web-enabled learning software will further enable NSCC to deliver a range of bridge and engine room training courses to its customers in different locations. This added flexibility is expected to open new market opportunities for NSCC and, over the longer term, may change the way maritime simulation training is both viewed and conducted.

Kevin Henderson, Academic Chair, Oceans for the School of Fisheries and Nautical Institute, commented on the project, "These simulator upgrades are integral to our long term vision for domestic and international training and applied research. They will give us increased capabilities to deliver the level of training that industry demands."



*Chief Engineering Instructor, Clint Muise (R), demonstrates BigView process diagrams to an engineering cadet in the upgraded engine room following site acceptance testing at the Nautical Institute. Photo Credit: Hakon Dyrvik.*

## Research, EUROPE

# Kongsberg Simulators Central in Research Project On Seafarers Fatigue

**Research into the effects of fatigue on the cognitive performance of maritime watch-keepers under different watch patterns, using ship's bridge, engine and liquid cargo handling simulators.**

SOURCE: HORIZON PROJECT, CHALMERS, SWEDEN

A major multi-partner European research project aiming to tackle the problems posed by seafarer fatigue has been launched with a two-day inaugural meeting at Warsash, in the UK.

The European Commission-funded Project Horizon brings together 11 academic institutions and organisations with a broad range of interests from the shipping industry in a 30-month research programme to examine the way in which fatigue affects the cognitive performance of ships' watchkeepers.

The €3.78m project will make extensive use of bridge, engine and liquid cargo handling simulators in Sweden and the UK to produce real-time, realistic scenarios in which the impact of fatigue on decision-making and performance can be assessed.

### Partners in the project

- Southampton Solent University (Warsash Maritime Academy)
- Chalmers Tekniska Högskola, Department of Shipping and Marine Technology
- Stockholm University, Stress Research Institute
- Bureau Veritas - Marine Division, Research Department
- European Transport Workers Federation - Nautilus
- European Community Shipowners Associations
- International Association of Independent Tanker Owners
- European Harbour Masters Committee
- Marine Accident Investigation Branch
- Maritime and Coastguard Agency
- Charles Taylor & Co. - P&I Club

Launched in response to concern over aspects that lead to seafarer fatigue, the project seeks to improve safety at sea by developing a fatigue management toolkit for the industry, as well as recommendations for improving work patterns at sea.

'Whilst we now have evidence to show the scale of the problem associated with fatigue amongst seafarers, this project will take the understanding to a new level based on robust and reliable empirical data that can be used to make concrete fact-based recommendations for avoiding or mitigating the dangers,' said project manager Graham Clarke.

The project brings together academics from Southampton Solent University in the UK, Chalmers University of Technology in Sweden, the Stress Research Institute from Stockholm University and Bureau Veritas Marine Division,

along with representatives from the European Community Shipowners' Associations, the European Transport Workers' Federation, the European Harbour Masters Committee, the International Association of Independent Tanker Owners, the Standard P&I Club, the Marine Accident Investigation Branch, and the Maritime & Coastguard Agency.

Sixty deck and engineer officers will be taking part in the project, with their performance being measured by researchers as they undertake typical watchkeeping duties on simulators over a succession of seven-day periods.

Experts will use a variety of scientific methods to measure the fatigue levels experienced by the officers and any resulting degradation in performance during a wide range of regular onboard operating conditions.



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