

SEMINAR ON PRODUCTIVITY AND INNOVATION IN MARINE AND OFFSHORE INDUSTRY

ASMI collaborated with Centre of Innovation for Marine and Offshore Technology (COI-MOT), Ngee Ann Polytechnic to hold the Seminar on Productivity and Innovation in Marine and Offshore Industry on 11 February. Mr Royce Lim, Chairman of ASMI Productivity and Innovation Committee, welcomed participants to the half-day seminar. He commented that the objectives of the seminar was to help companies understand, appreciate and adopt productivity tools and promote a wider awareness and a deeper understanding of productivity incentives, ideas and application examples in marine industry.

Ms Jasmine Pang, Manager (Marine & Offshore) from SPRING Singapore, kicked off the series of presentations focusing on government financing schemes for "Enhancing Competitiveness of Enterprises through Productivity and Capability Building". SPRING's mission is to groom local champions and grow the base of globally competitive local enterprises in the marine & offshore cluster.

Next to speak was Mr Chang Phuan Heng, Lead Consultant at Singapore Innovation and Productivity Institute (SiPi). Mr Chang explained the definition of productivity and presented the preliminary findings on a "Benchmarking Study on Innovation and Productivity of SMEs in the Singapore Manufacturing Sector". He invited the audience to assess their company's productivity performance using the online portal 'Toolkit for Benchmarking' developed by SiPi.

Mr Subrata Chanda, Director of COI-MOT shared his ideas on Technology Innovation and how COI-MOT can contribute to companies' productivity improvement efforts. He highlighted four technology development thrusts of COI-MOT which were marine automation control & production optimisation, underwater robotics ROV/AUV, marine environment, and computational fluid dynamics. To date, COI-MOT has completed some 150 productivity improvement projects with companies.

Mr Toh Ming Hon, Senior Consultant, Singapore Institute of Manufacturing Technology, came on after tea break to speak about operational improvement and transformation using OMNIMethodology™ and OMNIPlus. He shared success stories on projects implemented with marine companies in the Operations MaNagement Innovation for Marine Industry or OMNI@Marine programme.

Besides speakers from government agencies and productivity service providers, there were also speakers from the industry. Mr Boo Chin Tuan, General Manager for Operational Excellence and Talent Management in Keppel Shipyard, gave an insightful presentation on "Partnering SMEs to Build Capabilities". He shared Keppel's experience in working with its contractors and SPRING Singapore on grit blasting system to boost operational productivity.

Mr Ng Pitt Cheong, Assistant General Manager for Engineering Office & Procurement in Jurong SML, shared on several projects they have partnered with COI-MOT. These included the development of an E-Planner or computerised planning system for ship berthing and docking, Wi-Fi Metering to transmit shipside meter readings to main office, and a dock block management system. Mr Ng reported productivity gains and significant cost savings in manpower and time from these projects.

Mr Jason Qian, General Manager of Divetech Marine Services highlighted how his company had benefited from development of an underwater machine to remove marine growth from ocean-going vessels. This project with COI-MOT has helped his company reduce reliance on divers for hull cleaning and increase productivity.

A Question-and-Answer session held after the presentations helped to clarify participants' queries. The panel was chaired by Mr Royce Lim with Mr Subrata Chanda, Mr Toh Ming Hon and Mr Ho Chi Bao, Director for Manufacturing & Engineering in SPRING Singapore, as panel members. A total of 92 participants from 47 shipyards and marine companies attended the Seminar held in the polytechnic's lecture theatre.



Participants at the Seminar on Productivity and Innovation in Marine and Offshore Industry.

SEMINAR ON CONFINED SPACE SAFETY IN MARINE INDUSTRY

ASMI organised a half-day Seminar on Confined Space Safety in Marine Industry on 17 March. Mr Yong Chee Min, Chairman of ASMI WSH Committee, welcomed the 160 participants from shipyards and marine companies to the seminar.

Ms Kalthoum Kang, Manager with Ministry of Manpower (MOM)'s Occupational Safety and Health (OSH) Division, kicked off the presentations with her delivery on Workplace Safety and Health (WSH) legal requirements for working safely in confined spaces. This was followed by a presentation on accident cases involving working in confined space by Mr Salleh Bin Waren, Principal WSH Inspector from the OSH Inspectorate Department.

The third presentation was delivered by Mr Chin Sze Kiong, HSE Manager from Keppel Shipyard. He focused on the management of safety and health when working in confined spaces, highlighting the types of confined spaces and common hazards in these spaces. He shared on safe work practices

carried out in Keppel Shipyard when working in confined spaces.

The final speaker was Mr Muhamed Nurelfi, HSE officer from Keppel FELS. He spoke on the different confined space emergency responses and rescue operation in the industry. The seminar rounded off with a short question and answer session chaired by Mr Yong.



Seminar on Confined Space Safety in Marine Industry.

MARINE & OFFSHORE TECHNOLOGY CENTRE OF INNOVATION ASSISTS COMPANIES TO INNOVATE WORK PROCESS AND IMPROVE PRODUCTIVITY

The Marine & Offshore Technology Centre of Innovation (MOTCOI) was set up in 2006 by SPRING Singapore and Ngee Ann Polytechnic to assist local small and medium enterprises (SMEs) grow their businesses through adopting or developing technology, and creating high value products to compete effectively in the global marketplace.

The MOTCOI has completed more than 150 projects with companies achieving positive results in productivity and capability growth.

Its main activities include consultancy services, applied research and development, and manpower development through technical courses, workshops, seminars and lectures. Its consultancy services range from feasibility studies, testing and experimentation, to design and analysis, development or improvement of products, and providing of solutions to problems with an emphasis on productivity.

The Centre's capabilities include:

- Automation, Control and Production Optimisation
Development of system and process automation by deploying various technologies in the field of mechatronics, pneumatics, hydraulics, robotics, remote monitoring, sensing and control.

- Mechanical Design
Using computer-aided design and modelling tools, complex and innovative engineering ideas can be turned into reality, right from concept to final design.
- Underwater Technology
Development of unmanned underwater vehicles (ROVs and AUVs) to provide reliable and effective solutions for applications in underwater environments.
- Structural Analysis and Optimisation
Analysis of structures under various forms of stresses, including optimisation of structural design to improve its performance, stability and durability.
- Laser Technology
Development and application of laser technology in cleaning, welding, cutting, material processing, alignment measurement and spectroscopy analysis in marine & offshore industry.
- Environment and Safety
Application of various technologies with a particular focus on environment impact in marine & offshore industry, and improving work environment safety.
- Computational Fluid Dynamics
Computational flow analysis for marine & offshore structures with a focus on hydrodynamics, multi-phase flow and fluid-structure interaction.

SHOWCASE OF PRODUCTIVITY IMPROVEMENT PROJECTS

The Marine & Offshore Technology Centre of Innovation (MOTCOI) has collaborated with shipyards and marine companies on projects to improve work processes and increase productivity and efficiency. Some of the innovative

projects designed and developed by MOTCOI which have been successfully implemented by the companies are showcased below:

Scaffold Coupler Servicing Machine

Developed in collaboration with Hoo Huat Engineering Pte Ltd

The Scaffold Coupler Servicing Machine is an automated machine for servicing of old, used and rusted scaffold couplers using impact wrench.

The thread and nut of a scaffold coupler have to be serviced periodically so that the coupler can be reused. Such servicing was previously done manually using an impact wrench. The process is labour intensive and time consuming. The Scaffold Coupler Servicing machine re-designs the workflow and automates the process for servicing the couplers. The automated system helps improve productivity and process efficiency servicing about three couplers every minute. It reduces manpower cost by 50% and promotes workplace safety.

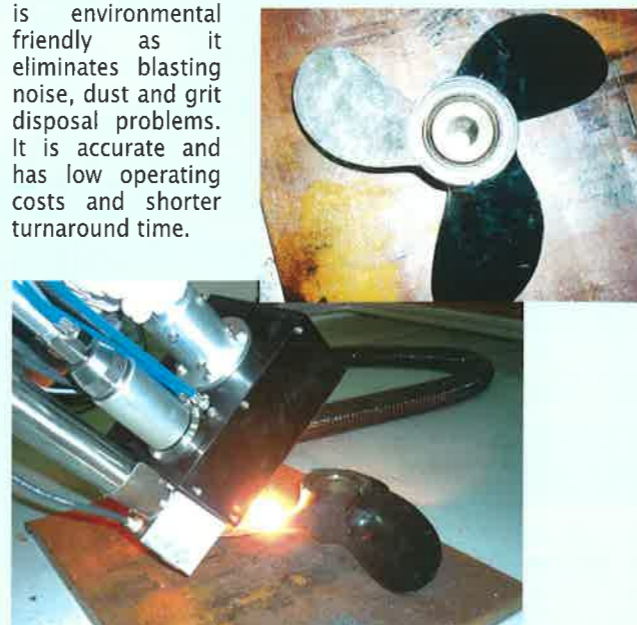


Laser Cleaning System

Developed in collaboration with Precision Laser Solutions Pte Ltd

The Laser Cleaning System is an advanced surface preparation technique for industrial application.

Laser cleaning technology can be applied to remove rust, paint, surface contaminants and production residue. The compact system can be used for precise and selective cleaning. It reduces waste volume, eliminates other post processes and controls surface finish. With the laser cleaning system, surface preparation process is environmental friendly as it eliminates blasting noise, dust and grit disposal problems. It is accurate and has low operating costs and shorter turnaround time.

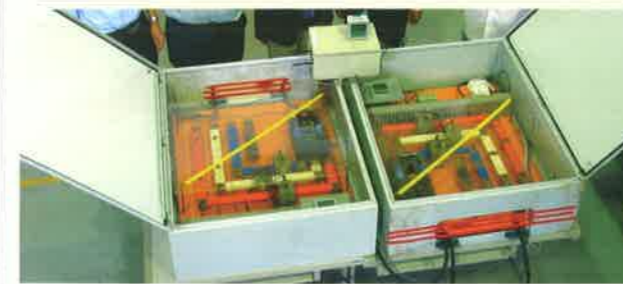
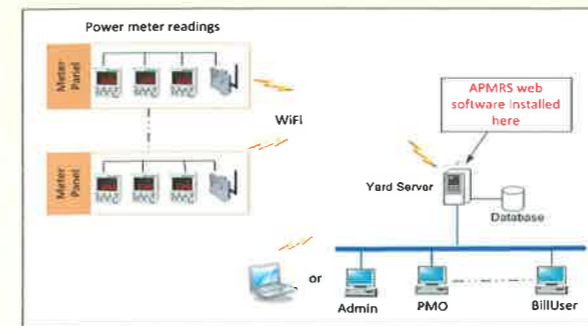


Automatic Power Meter Reading System

Developed in collaboration with Jurong SML Pte Ltd

The Automatic Power Meter Reading System facilitates remote reading of power meters in shipyards. The system provides an economical solution for shore-to-ship power supply usage monitoring.

With real-time readings available in computers in the main office, unproductive walking time to or from location of local meters is eliminated, resulting in manpower savings. With better and more efficient data management and availability, customers are assured of the reliability/accuracy of power consumption billing system. Other kinds of meters such as gas and pressure meters, etc., can also be added into the system.

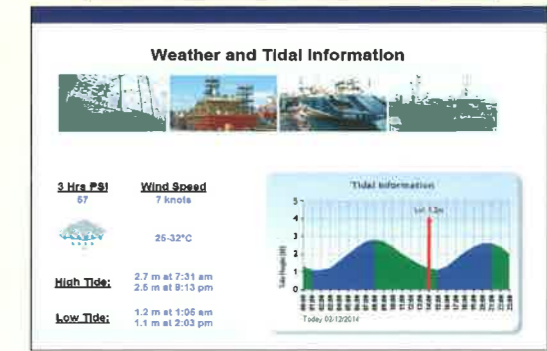
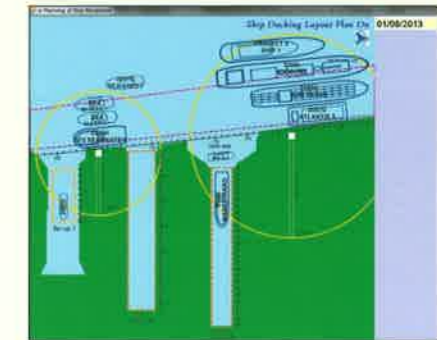


ePlanner Vessel Layout in Yard

Developed in collaboration with Jurong SML Pte Ltd

The ePlanner Vessel Layout in Yard is a computer-based tool that facilitates planning of docking and berthing of ships and vessels in shipyards.

The key features of this innovative tool include accessibility to a common database for current and future layout plans, digital layout available via internet, current and up-to-date weather and tide information provided, and accessibility via any computer online. It is user-friendly, interactive and replaces the manual system.



ASMI AND PwC HELD BREAKFAST TALK ON CORPORATE GOVERNANCE AND WORKING CAPITAL MANAGEMENT

ASMI partnered PricewaterhouseCoopers LLP (PwC) to hold a CEO Breakfast Talk for industry members on 30 January at the Grand Copthorne Waterfront Hotel. The session, sponsored by PwC, focused on corporate governance, risk and compliance, cash flow and working capital management.

Mr Alex Choe, Chairman of ASMI Supporting Industry Committee, welcomed members to the event before handing the session over to Mr Ng Siew Quan, Entrepreneurial and Private Clients Leader from PwC for his talk on 'Corporate Governance, Risk and Compliance'. Mr Ng spoke on the challenges faced by businesses in facing new governance requirements, higher compliance standards and ever increasing stakeholder expectations. He shared on the types and elements of risks as well as the countermeasures.

The topic on 'Cash Flow and Working Capital Management' was delivered by Mr James Hurrell, Associate Director (Advisory) of PwC. He highlighted the importance of identifying and addressing gaps in working capital and cash flow management to strengthen the financial capability of a company. He spoke on financial drivers, development of cash flow budget and restructuring of processes to manage profitability.

Officers from International Enterprise Singapore and SPRING Singapore were also at the Breakfast Talk to engage with the 31 members present.



CEO Breakfast Talk for the Marine and Offshore Industry organised by ASMI and PwC.

ASMI RETURNED TO AUSTRALASIAN OIL & GAS 2015 WITH LARGER PAVILION

ASMI participated in the Australasian Oil & Gas (AOG) 2015 held in Perth for the second consecutive year. The 156-sqm Singapore Pavilion featuring 13 companies was supported by International Enterprise Singapore. AOG 2015 was held from 11 to 13 March at Perth Convention Exhibition Centre.

This annual exhibition, organised by Diversified Exhibitions Australia, is supported by several organisations including City of Perth, Government of Western Australia's Department of Commerce and Australian Government Department of Industry. AOG is Australia's largest oil and gas industry event.

More than 150 speakers presented at the 2-day AOG conference covering a wide range of topics affecting the oil & gas industry. There were 13 comprehensive conference streams, including the dedicated Floating Liquefied Natural Gas and subsea development streams.

There were 620 exhibitors from 20 countries in AOG 2015, almost 20% more than in 2014. There were nine country representations including Singapore. The other national groups were from Belgium, Canada, France, Italy, Norway, Scotland, United Kingdom and United States of America. AOG 2015 recorded a total attendance of 11,988 visitors over its 3-day duration.

The national Pavilion showcased capabilities and products of Singapore-based manufacturers and suppliers of equipment and components for installation and use onboard vessels, offshore platforms and floating structures. These included pumps, valves, sealing systems, lightings, fans, hydraulic cylinders, bolts & nuts, gas detectors, winches and wire ropes.

There were also companies providing engineering services and fabrication, underwater surveys, inspection services as well as water & environment treatment systems in the pavilion.



Singapore Pavilion at AOG 2015.

SINGAPORE'S PARTICIPATION IN INMEX VIETNAM 2015

With the support of International Enterprise Singapore, ASMI led a delegation of 26 companies to participate in the INMEX Vietnam trade show held in Ho Chi Minh City, Vietnam. The 3-day exhibition was held from 18 to 20 March at the Tan Binh Exhibition & Convention Centre.

INMEX Vietnam 2015 was organised by Informa Exhibitions and supported by the Ministries of Transport, and Industry and Trade, as well as the Vietnam Chamber of Commerce and Industry. This year's event, its fifth edition, was officially opened by Ms Ho Thi Kim Thoa, Vice Minister, Ministry of Industry and Trade, Vietnam. Ms Thoa called at the Singapore Pavilion after the opening ceremony, and was received by Ms Winnie Low, Executive Director of ASMI.



Singapore Pavilion at INMEX Vietnam 2015.

The 384-sqm Singapore Pavilion housed 26 Singapore-based companies offering a diverse range of products and services ranging from ventilation systems, marine accommodation and outfitting solutions, piping systems to electrical and mechanical systems, marine monitoring, navigation and communication systems. There were also shipyards specialising in the construction of steel and aluminium vessels, and specialists in automation, instrumentation and control systems, marine engines, propellers, and satellite network and radar surveillance solutions. Also exhibiting in the Singapore Pavilion were companies supplying valves, fans, deck machineries, power generators, aluminium alloy products and marine logistics solutions.

INMEX Vietnam 2015 occupied a total exhibition space of 6,000 sqm, 20% more than the previous edition in 2013. There were 620 exhibitors from 20 countries compared to 550 exhibitors from 16 countries in 2013. According to Informa Exhibitions, INMEX Vietnam 2015 recorded a total attendance of 7,122 visitors, an increase of 18% from the last show. There were nine national pavilions set up by China, Holland, Korea, Norway, Russia, Singapore, Taiwan, United Kingdom and Vietnam.



Ms Ho Thi Kim Thoa, (third from left) Vice Minister, Ministry of Industry and Trade of Vietnam, was received by Ms Winnie Low (extreme left), Executive Director, ASMI at the Singapore Pavilion.