

# FUTURE OF PORT AND SHIPPING

THURSDAY 22 OCTOBER 2020



# SESSION ONE FUTURE OF PORT

#### TIME

PROGRAMME

10.00am - 10.10am

**Welcome Address** 

Mr Wong Weng Sun, Chairman, Singapore Maritime Institute (SMI)

10.10am - 10.20am

**Opening Address by Guest-of-Honour** 

Mr Chee Hong Tat Senior Minister of State Ministry of Transport and Ministry of Foreign Affairs

Presentation by Centre of Excellence in Modelling and

Simulation for Next Generation Ports (C4NGP)

Dr Li Haobin, Chief Technology Officer, C4NGP

Professor Chew Ek Peng, Centre Director, C4NGP

10.20am - 10.35am

**Signing Ceremony** 

Launch of R&D Initiatives

10.35am – 10.50am

10.50am – 11.10am

**Keynote Presentation** 

"Tuas: Port of the Future"

Mr Nelson Quek, Head of Tuas Development, PSA Singapore

- Professor Chew Ek Peng, Centre Director, C4NGP [Moderator]
- 1.10am n. 12.00m Closing Re. Dr Sanjay C. Kutu End of Session 1 Mr Tan Wee Meng, Chief Technical Officer and Chief Sustainability Officer, Jurong Port
  - Mr Nelson Quek, Head of Tuas Development, PSA Singapore
  - Mr Tan Puay Hin, Chief Executive, Singapore Logistics Association

Dr Sanjay C. Kuttan, Executive Director, SMI

# **SESSION TWO** FUTURE OF SHIPPING

TIME	PROGRAMME
4.00pm – 4.05pm	Session 2 commences
4.05pm – 4.20pm	Presentation by Technology Centre for Offshore and Marine, Singapore (TCOMS) and Centre of Excellence for Autonomous & Remotely Operated Vessels (CEAOPS)
	Professor Allan Magee, Director (Operations), TCOMS; and Principal Investigator, CEAOPS
	Dr Chua Kie Hian, Centre Director, CEAOPS
4.20pm – 4.40pm	Keynote Presentation
	"The 2020s – A Decade of Technology Revolution in the Marine Industry"
	<b>SMI Distinguished Visitor</b> Mr Kevin Daffey Director of Marine Systems and Automation, MTU, Rolls Royce Power Systems; and President, Institute of Marine Engineering, Science & Technology (IMarEST)
4.40pm – 5.25pm	Panel Discussion
	<ul> <li>"R&amp;D Priorities for Future of Shipping"</li> <li>Mr Jeremy Nixon, Chief Executive Officer, Ocean Network Express (ONE) [Moderator]</li> <li>Mr Howard Fireman, Senior Vice President, American Bureau of Shipping</li> <li>Mr Kevin Daffey, Director of Marine Systems and Automation, MTU, Rolls Royce Power Systems; and President, Institute of Marine Engineering, Science &amp; Technology (IMarEST)</li> <li>Mr Simon Kuik, Vice President and Head Research &amp; Development, Sembcorp Marine Ltd</li> <li>Dr Khorshed Alam, Managing Director, The Viswa Group of Companies</li> </ul>
5.25pm – 5.30pm	Closing Remarks
XI//	Dr Sanjay C. Kuttan, Executive Director, SMI
5.30pm	End of SMI Forum



### Mr Nelson Quek

Head of Tuas Development PSA Singapore

Nelson Quek is currently the Head of Tuas Development in PSA Singapore. He is responsible for the overall development of the future Tuas Port which includes planning the future businesses, ensuring that Tuas is built as part of the entire Port Ecosystem. He is responsible for the detailed planning and design of the terminal layout, the operations processes, equipment and systems to be implemented. He also leads in terminal and technological development for implementation at both current and the future Tuas terminal.

His professional career began in PSA in 1993 where he started as a mechanical engineer working on the equipment development projects. He was later responsible for managing the running, repair and maintenance of container handling equipment. He helped PSA pilot, then introduce the overhead bridge cranes – a first in the world in terminal operations, a complex project because of the integration with civil structures and systems to allow remote controlled operations. This breakthrough container handling technology helped PSA improve the productivity of its crane operators by four-to five-fold.

All in all, he has over 20 years of working experience in the Port engineering industry, where he strategises the technological directions of container terminals' equipment and engineering systems to strengthen Singapore's position as the world's busiest transhipment hub.



#### **Professor Chew Ek Peng**

Centre Director Centre of Excellence in Modelling and Simulation for Next Generation Ports

Professor Chew Ek Peng received his Ph.D. in Industrial Engineering from the Georgia Institute of Technology, USA. He is currently Professor in the Department of Industrial Systems Engineering and Management at the National University of Singapore. He also holds positions as the Deputy Head (Undergraduate Studies), Director for the Centre of Excellence in Modelling and Simulation for Next Generation Ports, Co-Director for the Centre for Next Generation Logistics and Deputy Director for Centre of Maritime Studies. He was a Visiting Scholar and a Visiting Professor, respectively, at the Georgia Institute of Technology and University of British Columbia in 2006.

His current research areas are in port logistics and maritime transportation, simulation optimisation and inventory management. Some of his research works are published in journals such as Transportation Science, Transportation Research Part B, IISE Transactions, European Journal of Operational Research, and Naval Research Logistics. He is serving as Editor-in-Chief of the Asia Pacific Journal of Operational Research, member of the Editorial Board Editors of the Transportation Research Part B, member in the Editorial of Flexible Services and Manufacturing Journal. He has also co-edited a book in "Advances in Maritime Logistics and Supply Chain Systems", a special issue for OR Spectrum on "IT-based planning and control of seaport container terminals and freight transportation systems" and three special issues for Flexible Services and Manufacturing Journal no "Maritime Container Logistics and Onshore Transportation Systems (Part 1, Part 2 and Part 3)". He and Professor Lee Loo Hay have recently led a team of multidisciplinary researchers and experienced practitioners to win the Next Generation Container Port Challenge with a grand prize of US\$1 mil by proposing a revolutionary double-storey container terminal, called the SINGA port.



Mr Tan Puay Hin

Chief Executive Singapore Logistics Association

Tan Puay Hin joined Singapore Logistics Association as Chief Executive on 18 January 2018 after his retirement from PSA International Pte Ltd. His last vocation was Senior Advisor (Group Port Design & Connectivity). Prior to that, he was PSA Regional CEO for South East Asia where he was responsible for the overall responsibility and accountability for the port's operating terminals in ASEAN region including PSA Singapore Container Terminals, the flagship terminal of PSA Group.

Puay Hin is a Governing Council Member of the Singapore Maritime Institute and Member of the Maritime Industry Advisory Committee of Singapore Maritime Academy. He is also a Council Member of the Workplace Safety and Health Council and chairs its Logistics & Transport Committee.



Mr Tan Wee Meng

Chief Technical Officer and Chief Sustainability Officer Jurong Port

Tan Wee Meng was appointed as Chief Technical Officer of Jurong Port (JP) on July 2015 and Chief Sustainability Officer in April 2020 to head the development of strategies to ensure that JP operates in more environmentally friendly and sustainable ways.

Wee Meng has been with Jurong Port since September 2005. Upon graduation, he started his career with PSA in the Container Terminal Engineering department. Over the next 14 years, he has worked in almost all aspects of the port equipment engineering, inclusive of fleet management and procurement of quay cranes, rubber-tyred gantry cranes, and he was also part of the pioneer team for the PSA AGV pilot project.

He started as Senior Manager of Equipment Engineering in Jurong Port in September 2005, and was involved in various aspects of the port equipment fleet management projects. He subsequently took on wider responsibilities inclusive of infrastructural development and planning. His engineering expertise ensures that JP's green initiatives will effectively reduce the port's carbon footprint.

Wee Meng holds a Bachelor Degree of Engineering (Electrical Engineering) from the National University of Singapore. He also completed the General Management Program at Harvard Business School.



Dr Li Haobin

Chief Technology Officer Centre of Excellence in Modelling and Simulation for Next Generation Ports

Dr Li Haobin is Chief Technology Officer at the Centre of Excellence in Modelling and Simulation for Next Generation Ports (C4NGP) and also Senior Lecturer with the Department of Industrial Systems Engineering and Management (ISEM), at the National University of Singapore (NUS). He holds a Ph.D. and B.Eng. (1st Class Honours) from the same department and a minor in computer science. Dr Li's research focuses on discrete-event simulation modelling and simulation-based optimisation, with application on maritime and logistic industries. His expertise lies in operations research methodologies; computational development; and he has successfully implemented several important application projects in collaboration with various government agencies and industrial partners.



#### **Mr Kevin Daffey**

Director of Marine Systems and Automation, MTU, Rolls Royce Power Systems; and President, Institute of Marine Engineering, Science & Technology (IMarEST)

Kevin Daffey is Director of Marine Systems and Automation at Rolls-Royce Power Systems AG based in Friedrichshafen, Germany. Kevin's engineering team designs and supplies MTU power and propulsion systems for all types of Naval vessels, yachts, tugboats, ferries and workboats.

Prior to joining Rolls-Royce Power Systems AG in June 2019, Kevin came from Rolls-Royce's Commercial Marine business, where he was Director of Ship Intelligence, Engineering & Technology. In this wide-ranging role, he led the Ship Intelligence team who pioneered autonomous ship technology. Kevin had functional accountability for over 1,200 engineers across several countries and oversaw an R&D Portfolio which invested over £100million in three years into innovative propulsion, deck machinery, electrical and automation products.

From 2012 until 2016, Kevin was Head of Electrical Power and Control Systems at Rolls-Royce based in Derby, where he led teams in UK, USA and Singapore developing electrical technologies for exploitation across all Rolls-Royce businesses. He also was chair of five Rolls-Royce University Technology Centres (UTC) at Sheffield, Strathclyde, Manchester and NTU Singapore.

In the late 2000's, Kevin spent three years seconded to the UK Ministry of Defence as the DE&S Chief Marine Engineer (Electrical) and a Naval Authority Officer for Power and Propulsion Systems.

Before joining Rolls-Royce in 2003, Kevin was at Alstom Power Conversion leading teams in supplying electric propulsion systems for naval and commercial vessels. Kevin graduated in 1990 from University of Birmingham after studying Electrical and Electronic Engineering. Kevin is a member of Lloyds Register of Ships Naval Technical Committee and Commercial Ships Technical Committee involved with advising Lloyds Register on rule development. In April 2020, Kevin became the 118th President of Institute of Marine Engineering Science & Technology (IMarEST) representing 19,000 Marine Engineers and Scientists.



Mr Jeremy Nixon Chief Executive Officer Ocean Network Express (ONE)

Jeremy Nixon is the Global CEO of Ocean Network Express (ONE), one of the largest liner shipping company in the world, which is headquartered in Singapore, and commenced its operation from April 2018.

His career originally started at sea as a navigating officer, followed by a BSc (Hons) in Maritime Commerce at Cardiff University (UK), and then four years at the Port of Felixstowe. In 1990, he completed an MBA at the University of Warwick (UK).

He has been actively engaged in the container shipping industry for the last thirty years and has held senior management positions with P&O Nedlloyd, Maersk Line and NYK Line, in Europe, North America and Asia. From April 2008 he joined the NYK Group as Managing Director of NYK Line Europe Ltd, based in London. Then in 2010 he transferred to Singapore to become COO of NYK Line's new Global Liner Management Division, based in Singapore. In 2012 he was promoted to CEO and went on to become a Corporate Officer of the NYK Group. In July 2017 he resigned from NYK to head up Ocean Network Express, which was a new joint venture company founded by the K Line, MOL and NYK Group companies.



#### Mr Howard Fireman

Senior Vice President American Bureau of Shipping

Howard Fireman is a Senior Vice President and Senior Executive Advisor to the ABS Chief Executive Officer.

Since joining ABS in 2013, Fireman has served as President of ABS Nautical Systems software overseeing significant advancements and achieved growth in every sector. He served as Chief Technology Officer responsible for leveraging the latest technology advancements to drive the development of innovative products and services promoting safety and improving the delivery of class services in the marine and offshore industries. Most recently, he was ABS's first Chief Digital Officer leading a global team of experts across the organisation, comprising data analytics, innovative inspection technologies, mobile technologies and cybersecurity, as well as continuing to drive the development of industry-leading software, including ABS Nautical Systems<sup>®</sup> solutions.

Fireman came to ABS from the U.S. Navy, where, for more than 35 years, he was recognised as a distinguished leader in naval ship design, hull form optimisation, total ownership cost, total ship systems engineering, design integration, research and development and fleet operational support.

Fireman is recipient of multiple industry awards, including the Society of Naval Architects and Marine Engineers Admiral Taylor Medal, American Society of Naval Engineers Gold Medal and University of Michigan College of Engineering Distinguished Alumni Award for Naval Architecture and Marine Engineering. Fireman also received US Government Senior Executive Presidential Rank award for Meritorious Achievement.

Fireman holds a bachelor's and master's degree in naval architecture and marine engineering from the University of Michigan. He also received a master's degree in technical management from Johns Hopkins University.



#### **Mr Simon Kuik**

Vice President and Head Research & Development Sembcorp Marine Ltd

Simon Kuik oversees the research and development division and is responsible for developing new technology, product innovation and solutions. He is the Chairman of LMG Marin AS, Gravifloat AS and Sevan SSP AS in Norway, Sembmarine SSP Inc. in USA and Semb-Eco Pte Ltd based in Singapore. Simon is also the Secretariat of Sustainability Council, where he is responsible for the Group's sustainability strategy and policies. Prior to this, he was the General Manager (Technology Development and Solutions) in charge of the development of green technology. His other positions previously held included Yard Manager of overseas shipyard in China, Assistant GM (Engineering) and GM (Operations).

Simon is currently the President of the Association of Singapore Marine Industries (ASMI). He also served as a member of various major industrial councils, research institutions and educational institution committees including the Singapore Maritime Foundation (SMF), Workplace Safety and Health (WSH) Council, Agency for Science Technology and Research (A\*STAR), Singapore Institute of Technology, University of Glasgow of Singapore and Ngee Ann Polytechnic.

Simon holds a Bachelor of Engineering (First Class Honours) in Naval Architecture Marine Technology from the University of Newcastle-Upon-Tyne, England and an MBA from Sloan School of Management at Massachusetts Institute of Technology, USA.



#### **Dr Khorshed Alam**

Managing Director The Viswa Group of Companies

Dr Khorshed Alam is the Managing Director of The Viswa Group. Prior to this, Dr Khorshed served as the Vice President and Regional Manager of Maritime Advisory of DNV GL and as the Managing Director of FutureShip, Singapore between 2012 to 2018. He served as the Director of Engineering, Energy management, Environment and Research development in APL (NOL group) from 2006 to 2012.

Dr Khorshed is a chartered engineer and a fellow of IMarEST and RINA. He acquired his Bachelor of Science in Marine Engineering from Australia. Subsequently he received his MSc and PhD in Marine Technology from University of Newcastle upon Tyne, U.K. He also received his second PhD in Environmental Science and Engineering from the National University of Singapore.



#### **Professor Allan Magee**

Director of Operations Technology Centre for Offshore and Marine, Singapore; and Principal Investigator Centre of Excellence for Autonomous and Remotely Operated Vessels

Professor Allan R. Magee, is currently Director of Operations at Technology Centre for Offshore and Marine, Singapore (TCOMS), Principal Investigator for the Centre of Excellence for Autonomous and Remotely Operated Vessels (CEAOPS), and Adjunct Professor in Civil and Environmental Engineering at National University of Singapore (NUS). He holds an MSc and PhD in Naval Architecture and Marine Engineering from University of Michigan, USA and a BSE from University of Arizona in Engineering Physics.

He has nearly 30 years' experience in Marine and Offshore industry and R&D including over 15 years with offshore oil and gas contractor Technip. He is a recognised expert in offshore platform design, hydrodynamics, and model testing and has over 75 publications. His recent research involves the development of the Deepwater Ocean Basin for TCOMS, and development of hydrodynamic and structural digital twins for autonomous navigation. He helps organise international conferences like OTC Asia and OMAE and hosted the FPSO JIP week in Singapore in 2019. He is a Fellow of SNAME and Chairman of the Port and Marine Engineering Technical Committee of IES and Council Member of the Society of Floating Solutions, Singapore and has won several awards.



#### Dr Chua Kie Hian

Centre Director Centre of Excellence for Autonomous and Remotely Operated Vessels

Dr Chua Kie Hian is a scientist at TCOMS, and the Centre Director for the Centre of Excellence for Autonomous and Remotely Operated Vessels (CEAOPS). He is a naval architect with experience covering concept design of floating platforms, vessel conversions, offshore hydrodynamics, regulatory development, marine incident investigations, and R&D into new technologies.

Across this period, he has worked with research facilities, on-site, as well as offshore, collaborating with colleagues across a wide spectrum of the industry, from academics, industry partners, government agencies both local and international, as well as vessel and offshore crew.

He is currently working in the areas of autonomous and remotely-operated vessel developments, as well as hydrodynamics of offshore floating systems.