



SINGAPORE
MARITIME
INSTITUTE

FORUM
2019

MARITIME TRANSFORMATION: RISKS, CHALLENGES AND REWARDS

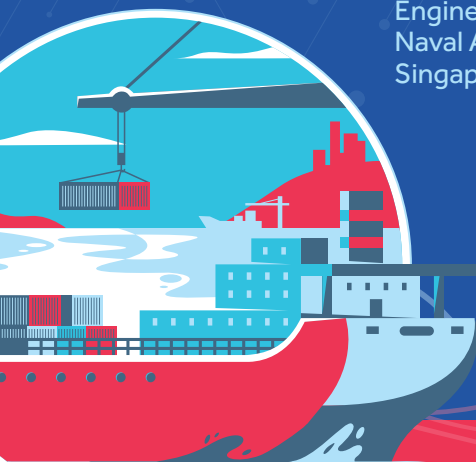
9 OCTOBER 2019

Leo and Capricorn Room
Marina Mandarin Singapore



PROGRAMME

0800 - 0900	Registration
0900 - 0910	Welcome Address Dr Sanjay Kuttan Executive Director, Singapore Maritime Institute
0910 - 0920	Signing Ceremony between Singapore Maritime Institute and Technology Centre for Offshore and Marine, Singapore Witnessed by Dr Lam Pin Min Senior Minister of State, Ministry of Transport & Ministry of Health
0920 - 0925	Video Singapore R&D Roadmap 2030: Maritime Transformation
0925 - 0945	Keynote Address Mr Frederick Chew Chief Executive Officer, A*STAR
0945 - 1005	Presentation on the joint project by NTU and NUS: "The Impact of Disruptive Technologies on Maritime Trade and Maritime Industry" Associate Professor Goh Puay Guan Analytics and Operations, NUS Business School
1005 - 1025	Presentation by SIT on "Smart Ships – Paradigm Shift with IoT and Data Analytics" Associate Professor Dimitrios Konovessis Engineering Cluster and Deputy Programme Director for the Marine Engineering, Naval Architecture and Offshore Engineering Undergraduate Programmes, Singapore Institute of Technology
1025 – 1045	Coffee / Tea Break
1045 - 1130	Panel Discussion on Decarbonisation Moderator: Professor Jasmine Lam Director, Maritime Energy and Sustainable Development Centre of Excellence, Nanyang Technological University Panellists: Mr Shahrin Osman Regional Head of Maritime Advisory, South East Asia, Pacific & India, DNV GL Maritime Dr Amit Gupta Chief of Rolls-Royce Electrical – Asia, Rolls-Royce Singapore Associate Professor Dimitrios Konovessis Engineering Cluster and Deputy Programme Director for the Marine Engineering, Naval Architecture and Offshore Engineering Undergraduate Programmes, Singapore Institute of Technology



PROGRAMME

1130 - 1215

Panel Discussion on Next Generation Communication

Moderator:

Dr Lim Keng Hui

Executive Director, Institute of High Performance Computing

Panellists:

Mr David Morrison

Director, Chief Transformation Office, Carrier Business Group, Huawei

Mr Nathan Bell

Chief Digital Officer, M1 Limited

Dr Oh Ser Wah

Founder and CEO, Whizpace Pte Ltd

1215 - 1300

Panel Discussion on Autonomous Vessels

Moderator:

Professor Lui Pao Chuen

Advisor, National Research Foundation

Panellists:

Mr Andrew Yue

Vice President, Unmanned Maritime Systems, Electronics, ST Engineering

Mr Chris Chung

Director, Digital Innovation and Strategic Projects, Open Innovation, Wärtsilä Corporation

Mr James Soon

President, Zycraft

1300 - 1400

Networking Lunch

1400

End of Event



KEYNOTE SPEAKER



MR FREDERICK CHEW
CHIEF EXECUTIVE OFFICER
AGENCY FOR SCIENCE, TECHNOLOGY AND RESEARCH

Mr Frederick Chew is the Chief Executive Officer of A*STAR, Singapore's lead public sector agency that spearheads economic oriented research to advance science and develop innovative technology to further economic growth and improve lives.

Helming the science and technology agency of over 4,100 research staff, Mr Chew drives the implementation of A*STAR's strategies, initiatives, and programmes, and the building of A*STAR's organisational capabilities. He works to share A*STAR's mission and vision with public and private sector stakeholders, and to strengthen collaboration with partners across the research, innovation and enterprise ecosystem.

Mr Chew was previously the Deputy Secretary (Technology) at the Ministry of Defence (MINDEF). In this role, he was instrumental in optimising the Defence Technology ecosystem, in particular strengthening MINDEF's partnership with industry.

Mr Chew also held various key positions in MINDEF and the Singapore Armed Forces (SAF), including Director of Joint Operations, Commander of Maritime Security Task Force/Maritime Security Command and Head of Naval Plans.

Mr Chew graduated with a Masters of Engineering (First Class Honours) from the Imperial College of Science, Technology and Medicine. He also holds a Master of Science in Management from Stanford University. Mr Chew is an SAF Overseas Scholar. He is also a recipient of the Lee Kuan Yew Scholarship and Fulbright Award.

SPEAKERS



ASSOCIATE PROFESSOR GOH PUAY GUAN
ANALYTICS AND OPERATIONS
NUS BUSINESS SCHOOL

Goh Puay Guan is an Associate Professor at NUS SCALE, and NUS Business School, where he teaches supply chain management, operations and technology innovation, and Academic Director of the mutli-disciplinary Masters of Science in Industry 4.0. He also serves on the Advisory Board of Switzerland-based Log-hub AG.

Prior to NUS, he was in corporate management, running P&L in the Asian region. As Vice President of Business and Commercial at Sembcorp Development, he set up a new business unit Sembcorp Infra Services to develop and own warehouse assets, bringing strategic co-investors, and serving concurrently as General Director of its wholly owned subsidiary in Vietnam. He managed and led Batamindo Shipping and Warehousing Pte Ltd to win the ASEAN Business Award for Growth (SME) by the ASEAN Business Advisory Council in 2013. In 2012, he was awarded the Top Outstanding Young Persons (TOYP) Merit Award for Business and Entrepreneurship, by Junior Chamber International. He is the author of Supply Chain Management: A Concise Guide, published by Pearson (1st Ed. 2005, 2nd Ed. 2015).

SPEAKERS



PROFESSOR JASMINE LAM
DIRECTOR, MARITIME ENERGY AND SUSTAINABLE DEVELOPMENT
CENTRE OF EXCELLENCE
NANYANG TECHNOLOGICAL UNIVERSITY

Prof Jasmine Lam is Centre Director of Maritime Energy and Sustainable Development (MESD) Centre of Excellence @ NTU. She is also Director of Maritime Studies Programme in NTU. Her major research areas are maritime and port sustainable development. She has been invited by various organisations, port authorities, companies and universities as a key speaker at international conferences.

Leading a R&D team and working closely with the industry and government agencies, Jasmine has completed over 40 projects and has more than 200 scientific publications including about 100 top-tier refereed journal papers. She serves as the editor/board member of 10 international journals, including Maritime Policy & Management as Associate Editor. She is an Elected Council Member of the International Association of Maritime Economists and also a member of BNP Paribas Chair international scientific committee.

Furthermore, Jasmine is the recipient of many awards, including Best Paper Awards, Erasmus Mundus Faculty Scholar Award awarded by the European Commission, and National Day Award from the Prime Minister's Office in Singapore.



MR SHAHRIN OSMAN
REGIONAL HEAD OF MARITIME ADVISORY, SOUTH EAST ASIA, PACIFIC & INDIA
DNV GL MARITIME

M Shahrin Osman joined DNV GL Maritime Advisory Asia-Pacific unit in 2008 after more than 15 years working in Maersk and P&O Nedlloyd with regional line management responsibility covering procurement, operations, efficiency improvements, IT implementation and change management for Asia-Pacific countries based in Singapore. His interest in Collaborative Leadership, Industry Cluster analysis, Strategy, Maritime Sustainability, Digitalisation and International Benchmarking have guided his work at DNV GL to serving internal and external clients within the maritime industry in South East Asia, Indian Sub-continent, Middle East and Europe.

Shahrin has been a frequent guest speaker at industry conferences focussing on the topic of Maritime Cluster, Digitalisation and Sustainability in the maritime sector. He is the co-author for the third edition of the influential "Leading Maritime Capitals of the World" 2017 and 2019 reports which benchmarks the world's top maritime hub cities using nearly 50 objective and subjective indicators, working together with Menon Economics of Oslo. Last year, he co-authored the research on "Leading Maritime Nations of the World 2018".

In his current role, he is responsible for the maritime consulting business, R&D and innovation within the areas on decarbonisation in Shipping, as well as digitalisation initiatives for maritime eco-system in Singapore, including working with start-ups. He has a Bachelor in Management from University of London, MSc in Maritime Studies from NTU Singapore and currently completing his Doctorate degree with research on maritime cluster strategy and innovative eco-system.

SPEAKERS



DR AMIT GUPTA
CHIEF OF ROLLS-ROYCE ELECTRICAL – ASIA
ROLLS-ROYCE SINGAPORE

Amit Gupta holds a Bachelor Degree in Electrical Engineering from the Indian Institute of Technology (IIT)-Roorkee and a Ph.D. in Electrical Engineering from National University of Singapore (NUS). During 2000-12, he worked for Bechtel Corporation, Samsung Heavy Industries, Delphi Automotive Systems and Vestas Wind Systems. Since August 2012, he has been Chief of Rolls-Royce Electrical (RRE) at Rolls-Royce Singapore Pte Ltd. He is Director of the Electrical Programme at Rolls-Royce@NTU Corporate lab and Director of Electrical Power System Integration Lab (EPSIL@N).

To date he has been granted 28 patents and filed another 22 patents. He has also published more than 125 papers in international conferences and journals. He is an Adjunct Professor with ECE, NUS and EEE, NTU. He holds a six sigma Green Belt Certificate from Delphi Automotive Systems and trained in six sigma Black Belt techniques through Vestas Wind Systems.

He received 2016 IEEE R10 Industry-Academia collaboration award for developing world class electrical R&T lab EPSIL@N. He was runner up in 2015 Rolls-Royce Engineering & Technology (E&T) Technical Awards and winner of 2018 Central E&T Sir Henry Royce Award for Engineering Excellence. He is a recipient of Vestas Innovation excellence award 2009 for being top 5 innovators of Vestas Global Research. He is a recipient of the Prize paper from the IEEE Industrial Applications Society's (IAS) - Industrial Power Converter Committee (IPCC) for 2005.

He is an Associate Editor for IEEE Transitions on Power Electronics and plays an active role in organizing electrical power engineering conferences in Asia. He is Fellow of the IET and a Chartered Engineer from Engineering Council UK, and a Senior Member of IEEE and Institution of Engineers - Singapore.



ASSOCIATE PROFESSOR DIMITRIOS KONOVESSIS,
ENGINEERING CLUSTER AND DEPUTY PROGRAMME DIRECTOR FOR THE MARINE
ENGINEERING, NAVAL ARCHITECTURE AND OFFSHORE ENGINEERING
UNDERGRADUATE PROGRAMMES
SINGAPORE INSTITUTE OF TECHNOLOGY

Dimitrios Konovessis is Associate Professor, Engineering Cluster and Deputy Programme Director for the Marine Engineering, Naval Architecture and Offshore Engineering (MNO) undergraduate programmes at the Singapore Institute of Technology (SIT). He graduated with an MEng in Naval Architecture and Marine Engineering from the National Technical University of Athens and holds a PhD in Ship and Marine Technology from the University of Strathclyde.

Dr Konovessis has extensive expertise in the area ship design and design methods for ship safety, first-principles and performance-based approaches for risk-based ship design, human factors effects, operation and regulation, marine systems modelling, reliability and maintainability, maritime energy efficiency and environmental protection. He is Chartered Engineer (CEng) and Fellow of the Royal Institution of Naval Architects (RINA) and of the Institute of Marine Engineering, Science and Technology (IMarEST).

SPEAKERS



DR LIM KENG HUI
EXECUTIVE DIRECTOR
INSTITUTE OF HIGH PERFORMANCE COMPUTING

Dr Lim Keng Hui is the Executive Director of the Institute of High Performance Computing (IHPC) in A*STAR. He leads the research institute to advance scientific knowledge, and deliver impact to the industry and society through research in computational modelling and simulation, visualisation and artificial intelligence.

Prior to his current role, Keng Hui was the Director of the Singapore University of Technology and Design (SUTD)'s Digital Manufacturing & Design Centre (DManD), where he co-led the research centre to develop leading edge capabilities in digital manufacturing and computational design. Concurrently, he was also the Director of the National Additive Manufacturing Innovation Cluster (NAMIC@SUTD), where he set up and led the translational research centre which focuses on additive manufacturing (AM) R&D with companies, standards development, and industry outreach.

Before SUTD, Keng Hui had held several key appointments in A*STAR. He was the Deputy Executive Director of the National Metrology Centre (NMC), where he managed research capability development, resource planning and talent development. He was also the Director of the SERC Engineering Cluster, where he established and managed large scale strategic initiatives, including pioneering programmes in the Future of Manufacturing (e.g. AM, robotics, remanufacturing, optical engineering, logistics & supply chain management), the national Marine & Offshore (M&O) programme, as well as the A*STAR Urban Systems and MedTech programmes. He also supported the establishment of the National Robotics Programme (NRP), A*STAR Technology Adoption Programme (TAP) and Technology Centre for Offshore & Marine Singapore (TCOMS).

Keng Hui was formerly the Head of Product Development at a manufacturing company; CTO and co-founder of a medical image diagnostics startup based on his invention with NUS and the National Skin Centre; CTO and co-founder of a medical imaging and robotics startup in Boston based on his invention at MIT and the Massachusetts General Hospital; and research scientist at the National University Hospital.

Keng Hui is currently an adjunct professor in SUTD. He has served on national-level R&D committees in advanced manufacturing, robotics and urban solutions, as well as standards committee in AM. He holds several patents, and was a recipient of the Innovator's Award from the Prime Minister's Office for his MedTech work. He received his degrees from Imperial College, MIT and NUS.



MR DAVID MORRISON
DIRECTOR, CHIEF TRANSFORMATION OFFICE, CARRIER BUSINESS GROUP
HUAWEI

David Morrison is Director, Huawei Carrier Business Group Chief Transformation Office and is based out of Singapore. He has over 30 years' experience in the ICT sector with a focus on digital transformation and technology enablement programs to transform the way IT and telecommunications is delivered to countries and business ecosystems.

David has extensive experience working with global operators, industry leaders and governments, developing industry plans, go-to-market strategies, providing transformation & modernization roadmaps and delivering whole-of-ICT outsourcing solutions to both enterprise & telecommunications customers.

Recent achievements include:

- Member of the Singapore Steering Group for the Revision of Singapore's 2025 National ICT roadmap (This include developing policy/legislation recommendations to the Singapore government. Also member of the 5G & IOT working group + Cloud Native development committee).
- Advising the Omani Government on their National ICT strategy, including development of their roadmap to implement the strategy.
- Board Member for Zigbee Alliance – working to provide common standards and protocols across the IOT industry.

SPEAKERS



MR NATHAN BELL
CHIEF DIGITAL OFFICER
M1 LIMITED

Nathan Bell is the Chief Digital Officer for M1, where he is responsible for leading the Telco's Product Management, IT and broader Digital Transformation of the business. The Digital Transformation will seek to ensure best in class customer experiences, empowering our people to deliver customer centered value and ease of co-creation for our business and technology partners across Singapore and beyond.

With more than 20 years of experience in the telecommunication industry, Nathan has held a number of senior leadership and sales positions in Europe and Asia Pacific at companies including AT&T, KPNQwest, BT, TelkomTelstra and Telstra. In Nathan's most recent role with Telstra, he led their B2B Digital Transformation, leading Telstra's shift to being Digital centric in the way it serves its customers and partners across Business and Enterprise as well as supporting its internal customers, 10,000 Telstra employees, on an end to end Customer Journey. He has gained worldwide recognition for his expertise in developing new capabilities and revenue streams across Asia Pacific and Europe.



DR OH SER WAH
FOUNDER AND CEO
WHIZPACE PTE LTD

Dr Oh Ser Wah is the Founder and CEO of Whizpace Pte Ltd, an A*STAR spinoff focusing on long-range wireless communication termed as TV White Space (TVWS), a.k.a. Super Wi-Fi. He is also a co-founder of another start-up, Network Genetics Pte Ltd. Before founding Whizpace, he held various positions with the Institute for Infocomm Research (I²R) such as Head White Space Communications Department, Advisor and Head Smart Grid Department, Co-Director I²R-Singapore Power Joint Lab and Deputy Director Strategic Planning Office. He was also in charge of coordinating Smart Nation activities within the institute. Ser Wah is a pioneer in TVWS where he played an instrumental role in enabling FCC and IMDA's TVWS regulations. He is also the author of the Wiley-IEEE Press book on TVWS.

Ser Wah also sat in various committees including Member of Infocomm Media Masterplan 2025 Working Committee, Chair of Wireless Systems Standards, Co-Chair of IMDA Task Force on TVWS, Member of IMDA Telecommunication Standards Advisory Committee, and Co-Founder and Co-Chair of Singapore White Spaces Pilot Group.

Ser Wah holds a Ph.D. in Electrical and Electronics Engineering from Nanyang Technological University and is the top Nanyang MBA Graduate 2009/2010.

SPEAKERS



PROFESSOR LUI PAO CHUEN
ADVISOR
NATIONAL RESEARCH FOUNDATION

Prof Lui is currently Advisor to the National Research Foundation, Prime Minister's Office and to six Ministries and Agencies.

He graduated from the University of Singapore in 1965 with a B.Sc. (Hons) in Physics. A year later, Prof Lui enlisted as Captain in the Logistics Division of Ministry of Interior and Defence. In 1971, he was awarded the first Ministry of Defence (MINDEF) postgraduate fellowship. He elected to go to the Naval Postgraduate School run by the United States Navy, where he graduated with a Master's degree in Operations Research and Systems Analysis.

Prof Lui has served as Adjunct Professor at the NUS Faculty of Engineering since 1990. In recognition of his contributions to NUS, Prof Lui received the Teaching Excellence Award by the NUS Faculty of Engineering (2002); the NUS Distinguished Science Alumni Award (2005); and the NUS Outstanding Service Award (2007).

In 2009, Prof Lui received the rare Pioneer Award of International Council on Systems Engineering (INCOSE), in recognition of his significant contributions to systems engineering. He was also conferred an Honorary Fellow of the ASEAN Federation of Engineering Organisation in 2011. He is a Fellow of the Singapore National Academy of Sciences, and a Fellow of the Singapore Academy of Engineering.

Prof Lui received the SAF Good Service Medal (1975); the Public Administration Silver Medal (Silver) (1979); the Public Administration Gold Medal (1992); the Long Service Award (1997) and the National Science and Technology Medal (2002). In 2015, Prof Lui received the inaugural Defence Technology Medal (Outstanding Service) from the Minister for Defence.

Prof Lui retired in 2008 after serving 41 years in MINDEF in different appointments and as Chief Defence Strategist in his last 22 years' service. He continues to contribute his expertise professionally as member on the board of directors of various government agencies, universities and corporations. He is a Member of the Board of Trustees of SUTD and a member of the Senate of MDIS. He is also a member of the management board of the Tropical Marine Science Institute and the Centre for Remote Imaging, Sensing and Processing (CRISP) in NUS. He sits on the NUS High School Board of Governors and as a member of Governing Board, Centre of Quantum Technologies. He is also a member of the Lloyd's Register Foundation Advisory Council and Vice President of the Scout Council of Singapore.



MR ANDREW YUE
VICE PRESIDENT, UNMANNED MARITIME SYSTEMS, ELECTRONICS
ST ENGINEERING

Mr Andrew Yue Kwok Wai has close to a decade of experience in developing autonomous capability of unmanned surface vehicles (USV). His primary area of expertise includes vision and radar systems, perception, tracking, data fusion, control system development and the implementation of these concepts in the real-world surface platforms.

Andrew holds key responsibility in spearheading the autonomous capability development in ST Engineering Electronics as Vice-President of Unmanned Maritime Systems.

Andrew graduated from Nanyang Technological University with a Masters Degree in Electrical and Electronics Engineering. He started his career as an avionics engineer, specializing in airborne radar systems.

SPEAKERS



MR CHRIS CHUNG
DIRECTOR, DIGITAL INNOVATION AND STRATEGIC PROJECTS, OPEN INNOVATION
WÄRTSILÄ CORPORATION

Chris Chung is the Director of Digital Innovation & Strategic Projects with Wartsila. Based in Singapore, Chris oversees ecosystem development that identify and develop solutions to pressing client and societal challenges where smart technology and innovation can have a transformative role.

A strong believer in partnerships and open innovation, Chris' team brings together technologists, entrepreneurs, business leaders, policy makers, researchers, and other change agents to uncover and implement solutions to specific, actionable challenges. Focus areas include intelligent vessels, connected smart ports, cybersecurity and data analytics.

Before joining Wartsila, Chris held a number of leadership roles in Lloyd's Register, British Gas and Telstra. He is currently serving in the Technology Advisory Panel of Singapore Maritime Institute.

Nomadic by nature, Chris has lived and worked in the United Kingdom, Australia, China, Malaysia and Singapore, and fascinated by different cultures and diversity.



MR JAMES SOON
PRESIDENT
ZYCRAFT

James Soon retired from the Singapore Navy in 2007 after 28 years of service as a Colonel. His last naval appointment was the Fleet Commander and he has held other senior jobs as Head of Naval Plans and Commander of Naval Diving Unit. After a spell heading the Advanced Solutions Group in ST Marine and also concurrently as President of Hovertrans Solutions, a heavylift hovercraft company he put together with UK partners, he became President of Zycraft in 2011, starting Singapore's first company dedicated to the development of Unmanned Surface Vessels (USV). In 2011, the company's USV called Longrunner was the world's largest functioning USV.

As the Head of Naval Plans, he initiated the USV program in the Singapore Navy in 2000. This provided the foundation for the bilateral USV program with the USN called Project Spartan which was effectively the genesis of today's USV developments.

James received basic naval training at the UK's Britannia Royal Naval College (BRNC) and has a Masters in Military Studies from the US Marine Corps University. He has a degree in Electrical Engineering from the National University of Singapore, and a Masters in International Relations from the Fletcher School of Law and Diplomacy (USA).