

SEABOT XR

E-LEARNING SERVICES AND EDUCATIONAL CONSULTANCY IN MARITIME TRAINING AND ASSESSMENT, CREW ONBOARDING, AND EMERGENCY RESPONSE.

www.seabotxr.com



BETTER LEARNING



UNTETHERED DEVICES

AR for Training and Operations ?

- Just in Time Training (JITT)
- Electronic procedures and AR authoring tools for training and performance support
- AR technology combined with electronic procedures;
- Distributed AR training
- Automation and Robotics Interactive control of virtual and real objects with gesture, voice and haptic devices
- Wearable computing and sensor fusion technology for Automation.





THE IMAREST MASS SIG

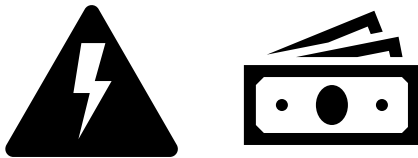
MARITIME AUTONOMOUS SURFACE SHIPS SPECIAL INTEREST GROUP

**Incorporating Human Capability - Artificial intelligence to
understand the needs of the workforce of the future.**



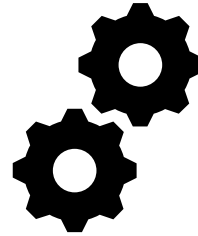
MASS SIG

- To inform how future seafaring functions/responsibilities/roles will migrate;
- To identify the ongoing expertise requirements in the operation of commercial vessels enhanced by remote and autonomous technology;
- To clarify succession planning requirements, workforce skills breaches and future training techniques.



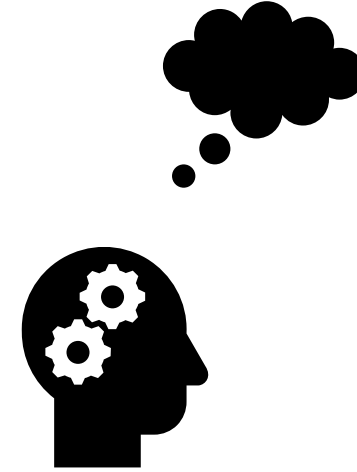
HYPE

Separate hype from the real drivers of a technology's commercial promise. Hype does however help us to prepare for what's coming.



AUTOMATION is A TOOL NOT, THE GOAL

We must use automation as a tool in achieving the goal, not as the goal itself. It's simply the medium.



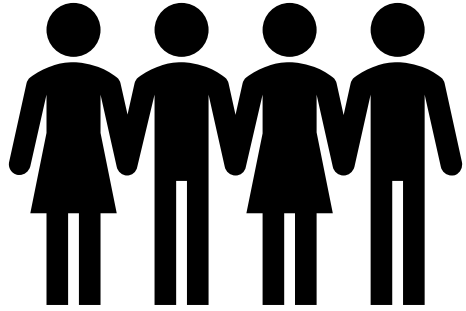
MANAGE CHANGE THROUGH EDUCATION AND FORWARD PLANNING

Long-term thinking is imperative given the rapidity and complexity of change today.

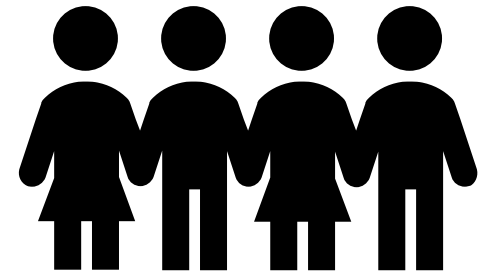
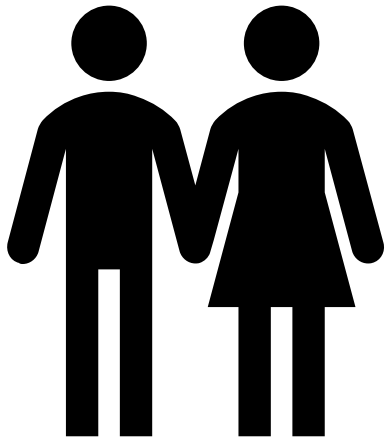
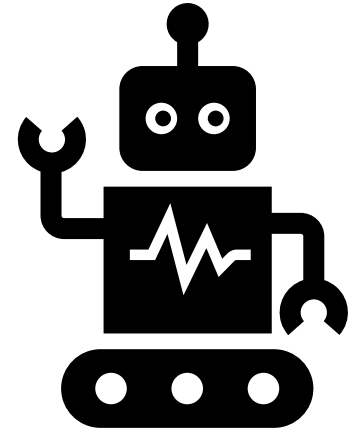
To prepare the youth of today to meet the challenges face tomorrow

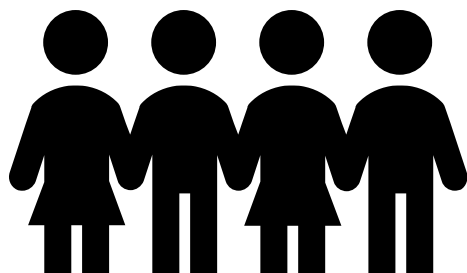
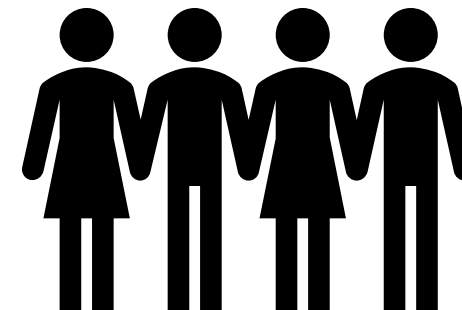
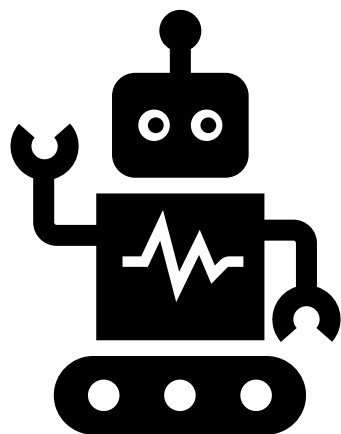




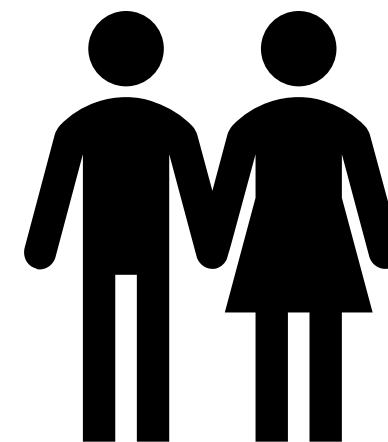


VS





timeless wisdom or outdated bias?



How about seafaring?



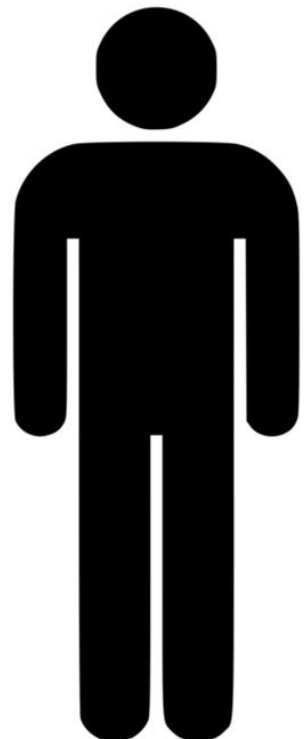


2018

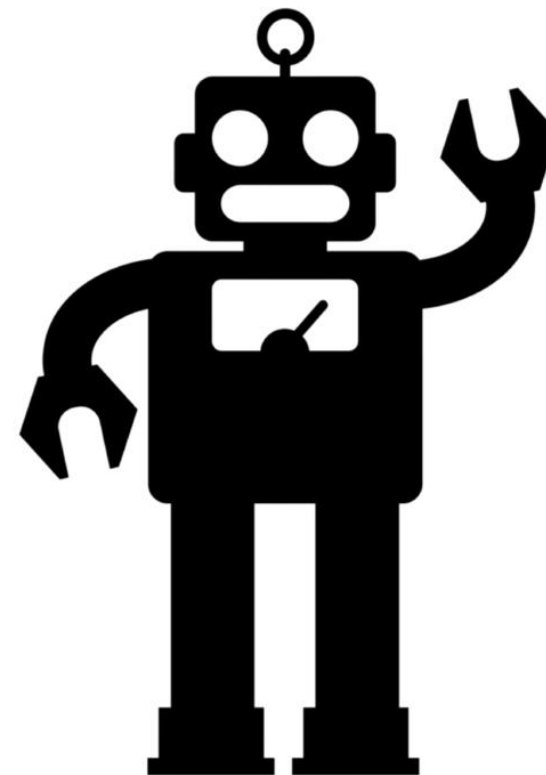
World Economic Forum report on the future of jobs

3 key managerial challenges lie ahead

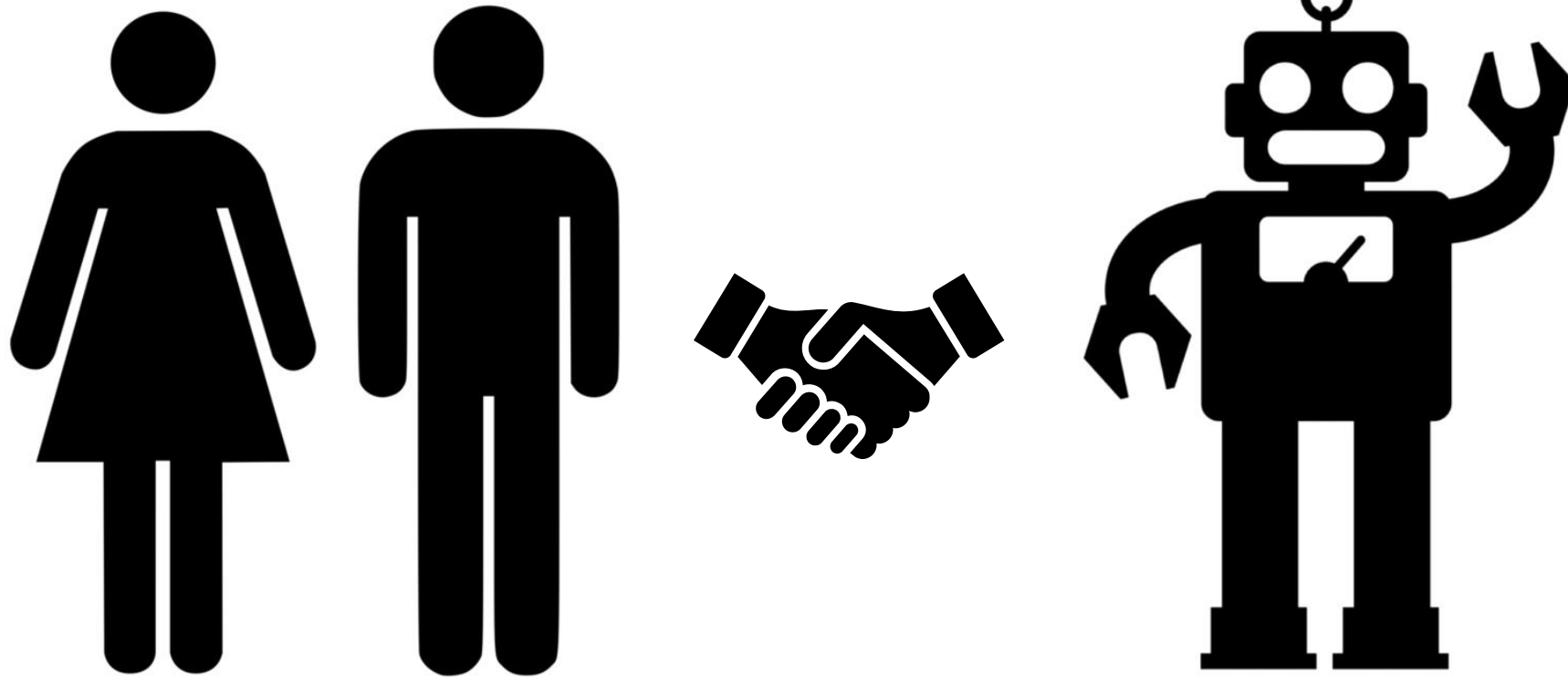
- First, shifting the training of workers from prediction-related to judgment-related skills.
- Second, assessing the rate and direction of the adoption of AI technologies in order to properly time the shifting of workforce training (not too early, not too late).
- And third, developing management processes that build the most effective teams of judgment-focused humans and prediction focused artificial intelligence agents.



VS



Incorporation human performance/capability





Remote, Autonomous or Unmanned Ships?



Smart ships, with partial remote
crewing/management or full remote
crewing/management

Q?



Currently, who might be better suited ashore?

Which functions could and should be replaced with machine human mimicking – artificial intelligence?

And for what purpose?



Strategic Objectives

Capture the organisational context and strategic objectives, short and long term goals; and the 'why' we are behind in capabilities and learning?

- **Operational outcomes including regulatory issues and compliance**

What needs to be able to achieved, to meet our strategic objectives for July 2020? What about July 2025?

- **Employee Behaviours**

What do crew need to be able to do, and how will current roles/operations change/differ?

- **Learnable Capabilities**

What are the capabilities that people need, so they will be able to do what is required?

- **Gap Assessment**

What are the current levels of capability, and what do we need to train, to get them to the desired capability level?

- **Prioritise Learning and Training Needs**

Based on the gap assessment, now what do we need people to learn?

- **Learning Approaches**

How will we transmit the knowledge, and secure the learning, to ensure people gain the right levels of capability, now and in the future?

- **Roll-out Plan**

How will the learning be delivered?

- **Evaluation Criteria**

How will we evaluate the work we do to train and educate your people? How will we review training needs and map performance and change requirements for ongoing success.

- **Cost Benefit Analysis**

How much will the learning programme cost, and how does that compare with its projected benefits



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2018

Autonomous Shipping – Putting the human back in the headlines

Singapore, April 2018

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Held in conjunction with the Singapore Maritime Week 2018 (SMW). SMW is the leading maritime event in Singapore driven by the Maritime and Port Authority of Singapore. SMW gathers the international maritime community in Singapore for a week of conferences, dialogues, exhibitions and social events in celebration of all things maritime. These events reflect the vibrancy and diversity of Singapore as a major international maritime centre.

Authors:

Gordon Meadow, Associate Professor (Solent University, Southampton)

Daniel Ridgwell, Combat System Surface Ship Design and Autonomous Systems Lead (BMT Defence and Security Ltd)

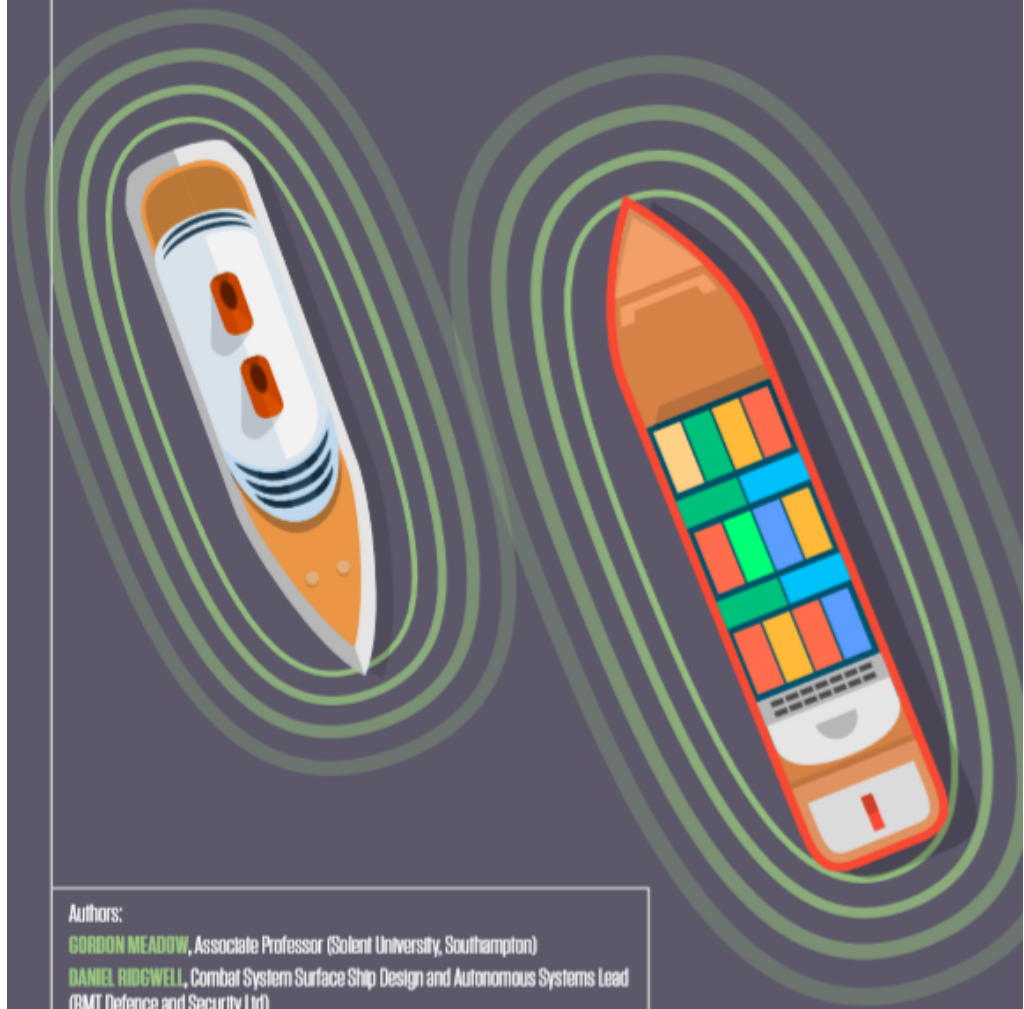
David Kelly, Director Asia Pacific (Institute of Marine Engineering, Science and Technology)



AUTONOMOUS SHIPPING

Putting the human back in the headlines

SINGAPORE, APRIL 2018



Authors:

GORDON MEADOW, Associate Professor (Solent University, Southampton)

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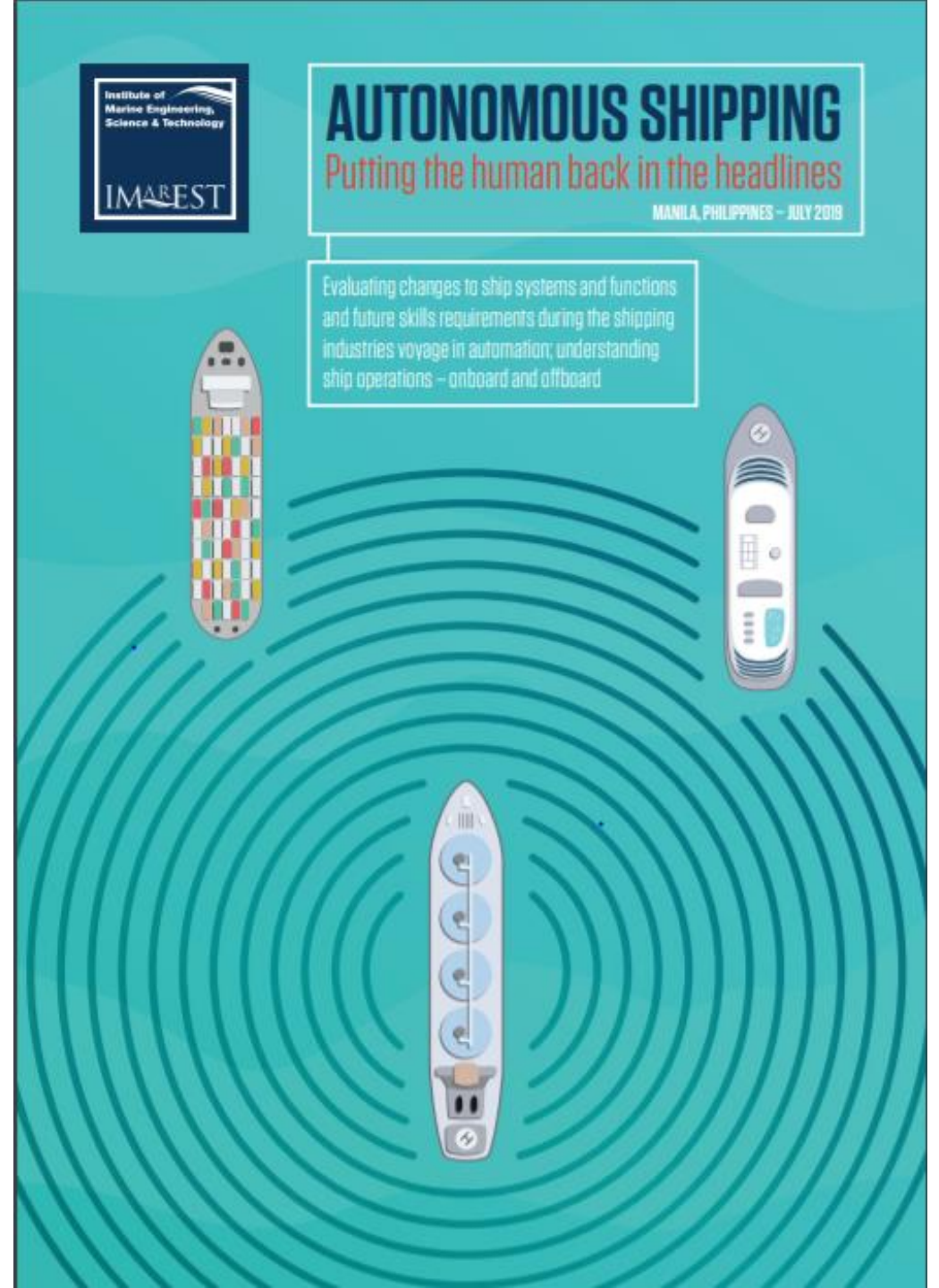
DAVID KELLY, Director Asia Pacific (Institute of Marine Engineering, Science and Technology)



2019

Focus: Evaluating changes to ship systems and functions and future skills requirements during the shipping industries voyage in automation;

The goal was to capture, track and evaluate future changes to seafaring roles, measuring the impact to the specific functional requirements currently performed by personnel during the shipping industries voyage in automation to 2030 and 2050.



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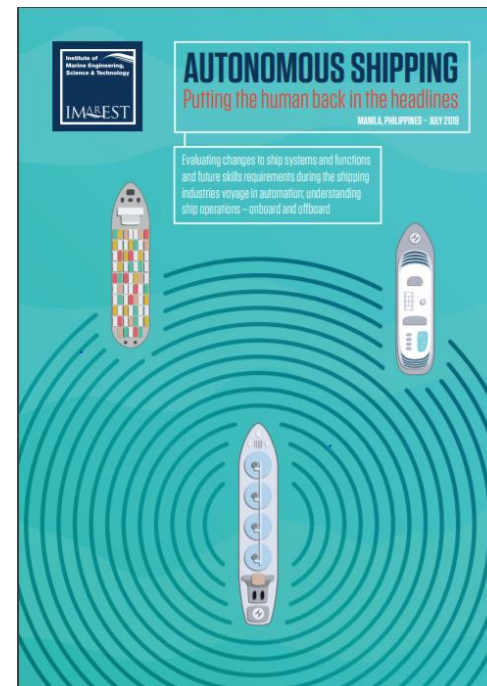
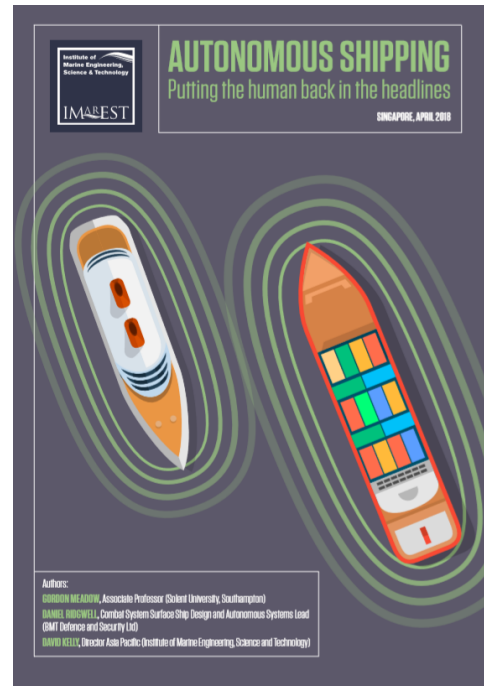
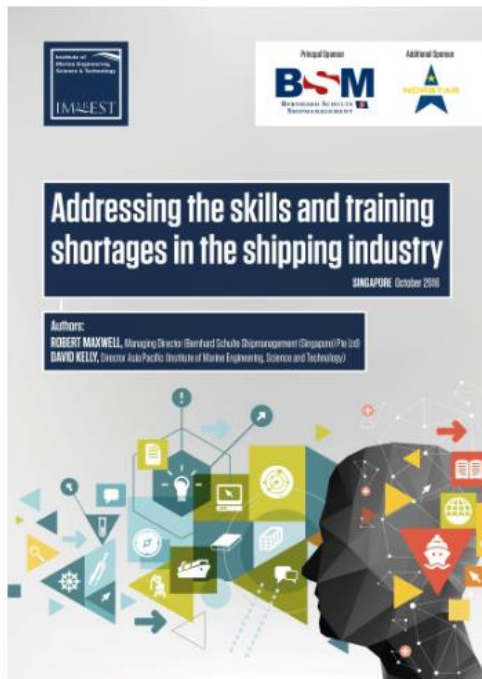


2016

2018

2019

2020



The roundtable event will set the foundation for a skills roadmap developed using Singapore as a use case. MPA and various stakeholders and will further clarify the changing nature of the maritime operational workforce and how to achieve the required skills migration.

Where are we now?

Where are we now?

The current concept of USV operator command and control is simplistically based on the remotely placed operator as a controller of the vehicle's motion through the USV Interface.

Remote operators will transform into mission managers providing primarily operational information to the vehicle, including data concerning mission planning, potential target object avoidance ie man on the loop target avoidance, risk assessment of missions, deployment planning and it is likely to require a single operator to control and manage several of USVs simultaneously.

The goal ultimately is to reduce the number the number of dedicated personnel afloat, the ability for a single operator to simultaneously control and manage more than one of these vehicles is paramount going forward. The structure of command and control going forward therefore also needs to be considered.



UK MASWRG Working Group

People, Skills and Training

Sub Group Work Package 1 – Capturing, defining and tracking RO experience

Produce further recommendations for a logbook (electronic digital diary) as to the guidance, format, data and ingredients that should be recorded and maintained by the operator.

This will provide evidence of training operational experience (Particularly in the absent of standardised and recognised training at present).

Implementation - Engage with MCA/stakeholders to understand how this logbook can be made an 'official' operators log book.

The digital diary used initially by UK based companies will contain records of operational experience and training. This will include investigation into the use of type rating as in the case of aviation.

Progress:

If you're keen, come and talk to us.



UK MASWRG Working Group

People, Skills and Training

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Provide recommendations as to how we might go about setting up (or utilising existing) an industry wide reporting system for the trending of incidents/system failure/human error and to celebrate the knowledge that can be gleaned from the near miss.

Progress:

Currently investigating the possibility of adopting the use of a new searchable database being developed through transport Canada.





That's all folks!