

Securing Maritime Infrastructure

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Maritime Cyber Attacks in the Real World



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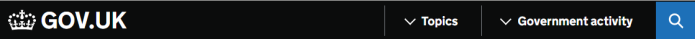
Maritime Cyber Attacks Increase By 900% In Three Years

By MI News Network | In: [Shipping News](#) | Last Updated on July 20, 2020



Cyber-attacks on the maritime industry's operational technology (OT) systems have increased by 900% over the last three years with the number of reported incidents set to reach record volumes by year end.

<https://www.marineinsight.com/shipping-news/maritime-cyber-attacks-increase-by-900-in-three-years/>



[Home](#) > [Government](#) > [Cyber security](#) > [Cyber security breaches survey 2022](#)



Official Statistics Cyber Security Breaches Survey 2022

Published 30 March 2022

<https://www.gov.uk/government/statistics/cyber-security-breaches-survey-2022/cyber-security-breaches-survey-2022>



Cyber attack hits Cosco's operations in US

by The Editorial Team — July 25, 2018 in [Cyber Security](#)



Above image is used for illustration purposes only



Cosco's operations in the US were hit by a cyber-attack on Tuesday, July 24. As a result its daily operations in the US were affected. The company's operations outside the US are not affected, according to reports, while terminal operations are continuing unaffected.

<https://safety4sea.com/cyber-attack-hits-coscops-operations-in-us/>

Maritime Cybersecurity Roadmap

Proposed SUTD roadmap for R&D capability development	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
1. A Cyber Risk Management Study in Shipboard Systems [Phase I; delivered in Q1 2022]															
2. A Testbed of Shipboard OT Systems for Cybersecurity Research, Training, Exercise and Education [Phase II; initial deliverable in Q4 2023, TRL: 4]															
3. A Digital Twin of Shipboard OT Systems and Security Testing															
4. Vulnerability Discovery and Security Assessment of Shipboard OT Systems [Targeted TRL: 5 (2026), 8 (2029)] *															
5. New Security Solutions for Shipboard OT Systems															

Cyber Attack Simulation (Shipboard) (Cyber Range / Lab)

Risk Profiling & Assessment of Vessels

Protection of Maritime Information Infrastructure (CII)

Protection of Maritime Information Infrastructure (Non-CII)

Secure Offline Backup

* Defined in National Satellite of Excellence (NSoE) Phase II proposal in submission to Cyber Security Agency of Singapore (CSA) for funding from NRF.

Key thrusts under SMI R&D 2030 roadmap for Maritime Cybersecurity

Phase 1: Cyber Risk Management

State-of-the-Art

- Many regulations and industry guidelines on maritime cyber risk mitigation strategies from various sources (e.g., IMO, BIMCO, ENISA, DNV, ABS etc.).
- The target audience of the existing guidelines are those at the **management/decision-making** level and **operator** level.
- Singapore **lacks its own guideline** that can be easily referred to and adopted by maritime authorities and ship owners.

Phase 1: Cyber Risk Management

Guidelines for Cyber Risk Management in Shipboard Operational Technology Systems



1st Edition
Published 22 Feb 2022

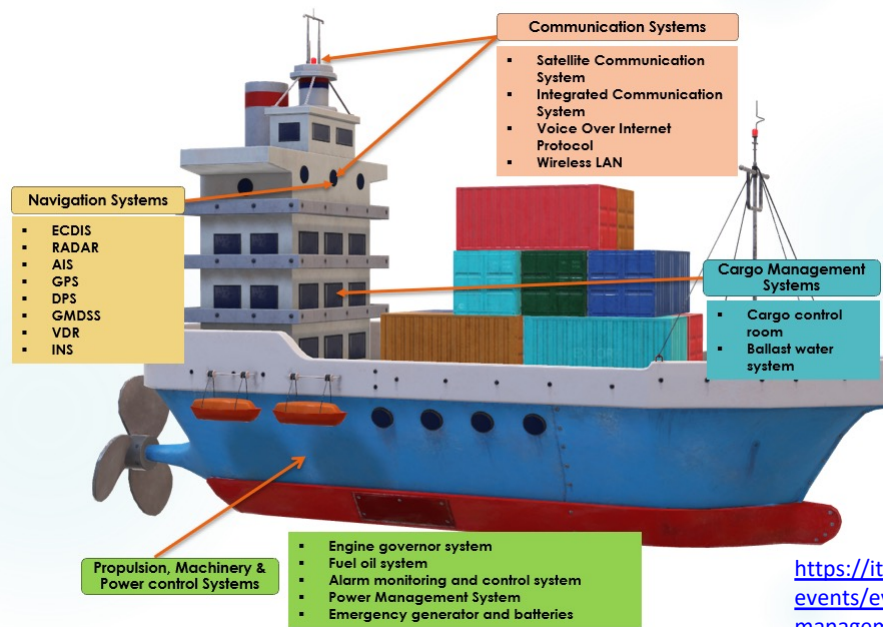


<https://itrust.sutd.edu.sg/news-events/news/guidelines-for-cyber-risk-management-for-shipboard-ot-systems/>

Study on Cyber Risks of Shipboard OT Systems

- ❑ New guideline on cyber risk management to **support** MPA's efforts in **developing cyber notation for SRS**
- ❑ **Checklist** for authorities and shipowners to conduct **cyber risk assessment**

- MPA's Cyber Notation (Nov 21)
- Info paper in the 105th IMO/MSC meeting, Apr 2022



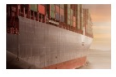
iTrust Webinar: A Cyber Risk Management Study in Shipboard OT Systems
18th December, 2020



iTrust Webinar II: A Cyber Risk Management Study in Shipboard OT Systems
1st April, 2021



iTrust Webinar III: Cyber Risk Assessment and Checklist in Shipboard OT Systems
27th August, 2021



iTrust Webinar IV: Guidelines and Testbed for Maritime Cybersecurity
25th February, 2022

<https://itrust.sutd.edu.sg/news-events/events/itrust-webinar-a-cyber-risk-management-study-in-shipboard-ot-systems/>

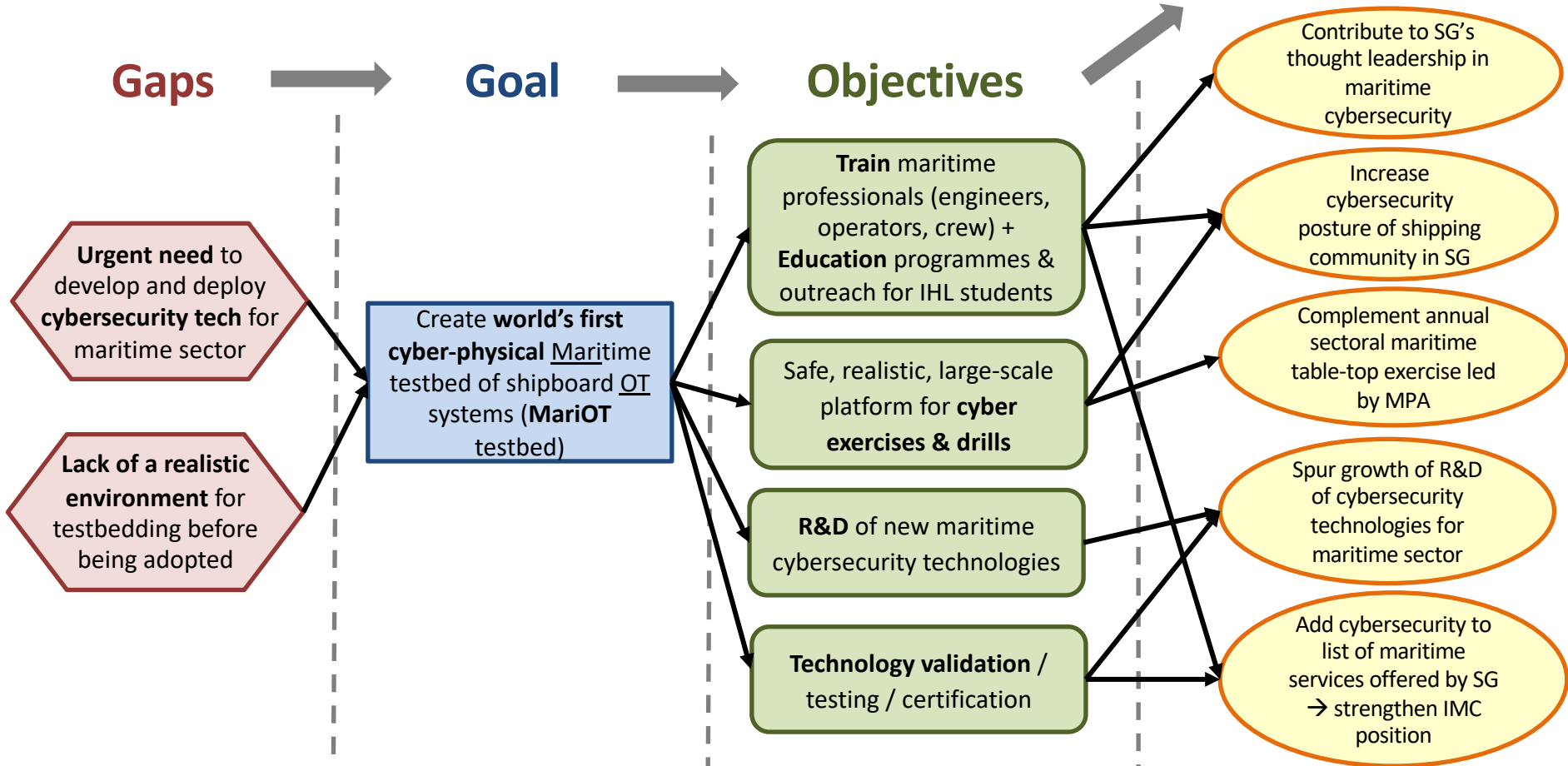
Phase 2: MariOT Testbed

State-of-the-Art

- No comprehensive testbed for evaluating cyber security technologies and training maritime professionals.
- The target audience of the testbed are cybersecurity professionals, maritime professionals and researchers.
- Starting 2022, initial deliverable by the end of 2023, launch by end of 2024.

Phase 2: MariOT Testbed

Benefits to SG



Thank You