

At a glance

Cyber-MAR is an effort to **fully unlock** the value of the use of cyber range in the maritime logistics value chain via the development of an innovative **simulation environment** adapting in the peculiarities of the maritime sector but being at the same time easily applicable in other transport subsectors. A combination of innovative technologies are the technology enablers of the proposed Cyber-MAR platform which is not only a **knowledge-based platform** but more importantly a **decision support tool** to cybersecurity measures, by deploying novel risk analysis and econometric models. CSIRTs/CERTs data collected will be analysed and feed the knowledge-based platform with new-targeted scenarios and exercises. Through Cyber-MAR, the maritime logistics value chain actors will **increase their cyber-awareness level**; they will validate their

business continuity management **minimizing business disruption potential**. Cyber-MAR will act as a **cost-efficient training solution** covering the maritime logistics value chain.

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Cyber-MAR: Cyber preparedness actions for a holistic approach and awareness raising in the MARitime logistics supply chain

Building cyber-resilience within maritime





The Objectives

IN ORDER to be well prepared for emerging and future cyber-attacks, efficiently mitigate risks and follow an as much as accurate and cost-efficient cyber-defense investment plan, maritime logistics actors need to base their cyber defense strategy on palette of innovations, novel combinations of them and changes of mindset, reflected in the following Cyber-MAR high-level objectives:

 Enhance the capabilities of cybersecurity professionals and raise awareness on cyber-risks

 Assess cyber-risks for operational technologies (OT)

 Quantify the economic impact of cyber-attacks across different industries focusing on the maritime logistics value chain

 Promote cyber-insurance market maturity in the maritime logistics sector (adaptable to other transport sectors as well)

 Establish and extend CERT/CSIRTs, competent authorities and relevant actors collaboration and engagement

Impacts

Enhanced Resilience to Cyber-Threats & Data Privacy Breaches

The prediction of cyber-attacks and their impact and mitigation constitutes a great challenge for the organizations. Cyber-MAR aims to enhance the **resilience of target organizations** to new and emerging threats through the **identification of recurring or emerging patterns of cyber-attacks** and **privacy breaches** with a decent degree of accuracy. Also Cyber-MAR platform offers complete **integration among virtual and real OT components** of each organization.

Increased appropriate Investments for Cyber-Security

For SME's cybersecurity products are considered as a luxury, while OT experts face the cumbersome task of cybersecurity tools integration.

Cyber-MAR focuses on the provision of a fully customizable and tailored view on the trade-offs, aims to **increase the available open tools** in number and variety, while offering an **intuitive integration to all** (physical and virtual) **OT components**.

Augmented Supply Chain Efficiency

The supply chain as an ideal environment for cyber-attacks and cascading effects are inevitable, causing detrimental effects to cargo delivery times and resources.

Cyber-MAR aims to offer the potential to **big players of logistics domain to join forces on estimating cyber-risk and mitigate**

such **threats**, while **fostering open tools** that will improve the internal processes within each organization.

Societal Impact

Despite cyber-security measures, large utility infrastructures and transport hubs are primary targets and still prone to unforeseen attacks.

Cyber-MAR overemphasizes the importance of **accessible training infrastructures for cyber-security**, both in IT transport and logistics domains, while aiming to contribute to the **standardization efforts** to make such issues prominent in the society.

Scenarios

1 Energy sources in the port of Valencia

The attack scenario is focused on a local or remote access attack on **energy management system**, simulating the normal operation of the electrical grid, while onsite manual intervention is altering the process. The main objective of this attack is to **cut off the power supply** to the port and avoid the emergency power supply systems from automatically starting up.

2 SCADA system in Port Container terminal

This scenario focuses on the **movement of containers within the terminal**. In particular, the simulation will cover a local access attack on gantry control systems through **wireless maintenance network** and potential disruptions ranging from operational efficiency degradation to life-threatening safety issues due to loss of control of gantry cranes. A risk analysis will be conducted for assessing a cascading effect in the railway provider's network.

3 Vessel navigation and automation systems

This scenario will **simulate and validate cyber-attacks** affecting to different vessel systems.

Facts

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