Welcome!


Cyber-MAR project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 833389.
Cyber-MAR Valencia Pilot Event
Cyber MAR
Date: 16 December 2020
Time: 10.00-13.00 CET

Meeting rules

- The event will be recorded
- Your microphones and cameras will be kept off
- Please write your questions in the chat and will be answered during Q&A

Many thanks for your cooperation

Agenda

Session time slot	Session title
10.00 - 10.05	Welcome and opening
10.05 - 10.30	Cyber-MAR overview Benefits of using Cyber-MAR
10.30 – 10.45	Cyber-MAR Architecture and technical modules
10.45 – 11.00	Pilot description
11.00 – 11.15	Cyber-range infrastructure
11.15 – 12.15	Pilot execution
12.15 – 13.00	Questions and feedback
End of meeting	

Cyber-MAR Overview

About | Project Facts

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

Topic: SU-DS-2018: Cybersecurity preparedness-cyber range, simulation and economics

Contracting Authority: European Commission H2020

Project ID: 833389

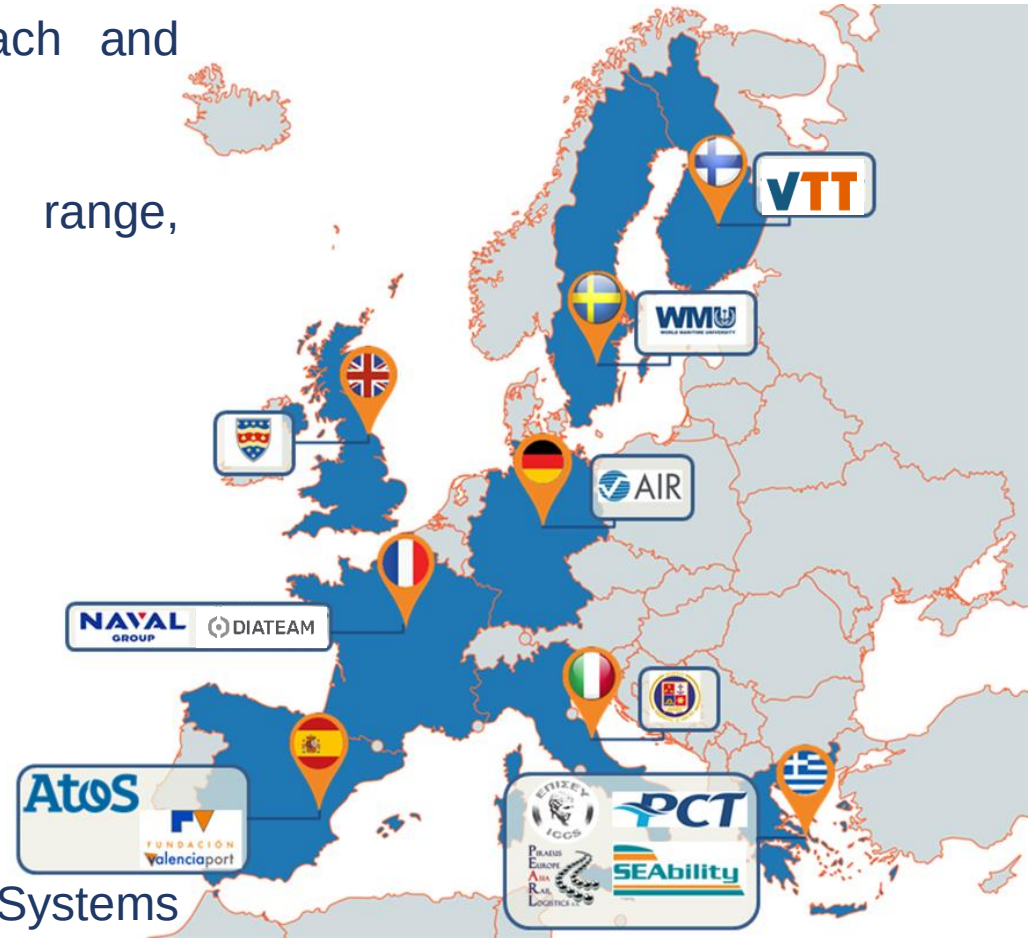
Funded scheme: IA – Innovation Action

Duration: From 2019-09-01 to 2022-08-31

Total cost: EUR 7 154 505.00

EU contribution: EUR 6 018 367.507

Coordinator: Institute of Communication and Computer Systems (ICCS), Greece



Challenges & Goal

- **Maritime information systems** in many cases designed without accounting for the **cyber risk**
- **Digital infrastructure** has become essential & critical to the **safety** and **security** of shipping and ports
- Importance of **handling cyber preparedness** as a highly prioritized aspect is paramount
- Estimation of accurately cybersecurity investments based on valid risk and econometric models

Cyber-MAR ultimate goal unfolds in **two main directions**:

Establishing a "**cyber ecosystem for preparing of cyber attacks**"

Estimating the **impact of cyber-attack** from a financial perspective and supporting the **undertaking of prompt decisions**

Cyber-MAR Key Objectives (1/2)

O1. Enhance the **capabilities** of cybersecurity professionals and **raise awareness** on cyber-risks

Deploy Cyber-MAR Range, training modules through LMS, improvement in response times in specific resilience metrics

O2. Assess cyber-risks for operational technologies (OT)

Maritime Cyber-Risk Assessment deployment and integration in Cyber-MAR platform

O3. Quantify the **economic impact** of cyber-attacks across different industries with focus on **port disruption**

Quantify economic risk in terms of Time-to-Recover or Product Value at Risk, integration in Cyber-MAR platform

Cyber-MAR Key Objectives (2/2)

O4. Promote **cyber-insurance market maturity** in the maritime logistics sector (adaptable to other transport sectors as well)

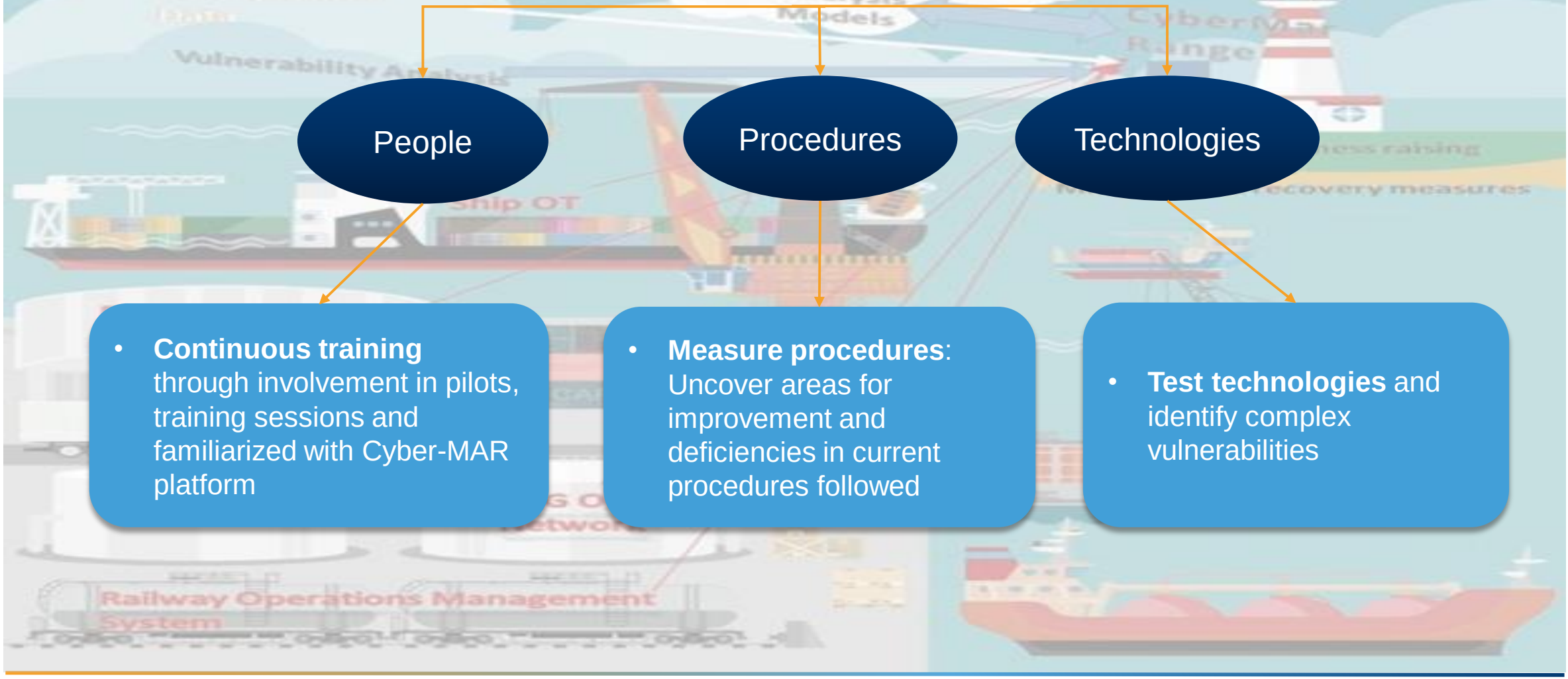
Develop recommendations based on findings and outcomes from Cyber-MAR pilots and simulations

O5. Establish and **extend** CERT/CSIRTs, competent authorities and relevant actors **collaboration** and **engagement**

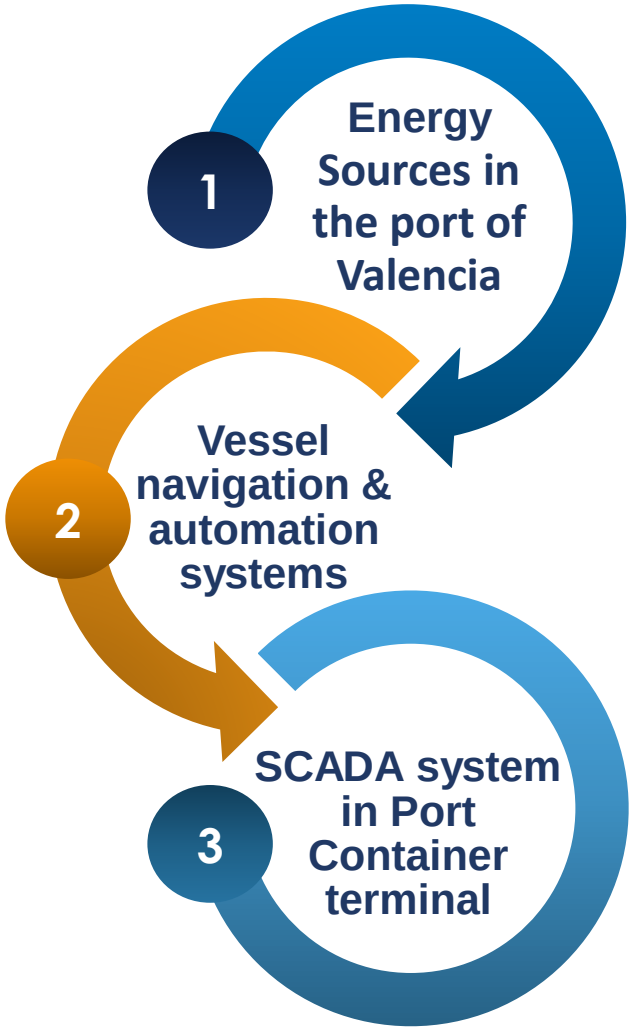
Create a maritime Malware Information Sharing Platform (MISP) community, engage at least 2 CERT/CSIRTs in pilot activities

Cyber-MAR Concept & Methodology

Cyber-MAR takes advantage of cyber range environment and adopts a three-tiered approach in:



Pilot Scenarios



The Cyber-MAR platform will be applied to simulate **the port electrical grid of the port of Valencia**, including protocols for protecting the grid and crisis management after attack.

The Cyber-MAR platform will be applied to simulate **a ship bridge cyber-attack**, including potential attacks to navigation, communication and control systems.

The Cyber-MAR platform will be applied to simulate **a SCADA attack to the Port Container Terminal of Piraeus Port**. In particular, the consequences of a cascade effect extending the attack to the railway operator network.

Approach and methodology of Cyber-MAR demonstration activities

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The demonstration programme is incrementally implemented in 3 distinct phases (15 months total duration):

- **Phase 1: Interconnection of legacy infrastructure with Cyber-MAR CR**
  - **1st Pilot on December 2020 – Valencia Port topology - Virtual OT**

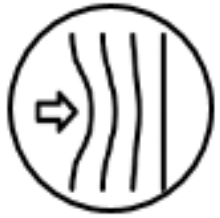
- **Phase 2: Addition of high-TRL Cyber-MAR CR, Cyber-MAR LMS, MaCRA framework and preliminary Cyber-MAR EM components and interconnected capability with other cyber ranges**

- **Phase 3: Full integration of all Cyber-MAR platform components.**

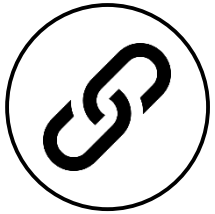
Expected Impacts

Impact on Resilience to Cyber-Threats & Data Privacy Breaches

Enhancement of 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.



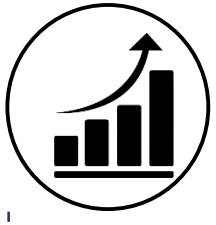
Impact on Supply Chain Efficiency



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.

Impact on Appropriate Investments for Cyber-Security

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) **IT components**.



Societal Impact

Cyber-MAR overemphasizes the importance of **accessible training infrastructures for cyber-defense**, in OT, transport and logistics domains and at the same time aims to contribute to the **standardization efforts** to make such issues prominent in the society.

Cyber-MAR Target Audience

- Decision Makers, Public Authorities and International Organizations
- Academia
- Port authorities, operators and associations
- Freight transport and Logistics actors
- CERT/CSIRTs network
- Insurance, Shipping and Cybersecurity companies/enterprises
- European and International organizations & networks for cybersecurity

Benefits of using Cyber-MAR

- Adopting a platform like Cyber-MAR can have multiple benefits for an organization, at multiple levels of operation and for different categories of members.

- **Employees**:
  - Experiencing real-world threats in a safe environment
  - Learn how to recognize threats
  - Develop and expand cybersecurity skills

- **Security Operator**:
  - Transfer information from the cyber range for immediate use
  - Measure knowledge and capabilities of internal or external cyber security teams
  - Raise awareness (technical/high level)
  - Penetration Testing exercises
  - Simulate real threat actor TTPs and learn from them

- **Management**:
  - Keep your employees trained
  - Improve overall cybersecurity education
  - Security Assessments in general
  - Test processes and technologies
  - Evaluate Cyber-Risk based also on its economic impact and take cost-effective decisions

- **Research and Development**:
  - Design and Build Prototypes, Testbeds technologies and experimental environments (e.g. IoT, ICS, robotics, smart grids, BigData, VR/AR etc.) and test them against cyber-attacks
  - Design, Develop and Test new tools and methods for Cyber-Security

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THANK YOU FOR YOUR ATTENTION

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