Demo Webinar

July 12, 2023

CYSMET

Integrated, Dynamic & Collaborative Risk Management System
for Maritime Transport & Supply Chains

Project code: T2EDK-03488

Welcome & Introduction

Ευρωπαϊκή Ένωση
Ευρωπαϊκά Διαρθρωτικά
και Επενδυτικά Ταμεία

ΕΛΛΗΝΙΚΗ ΔΗΜΟΚΡΑΤΙΑ
ΥΠΟΥΡΓΕΙΟ
ΑΝΑΠΤΥΞΗΣ ΚΑΙ ΕΠΕΝΔΥΣΕΩΝ
ΕΙΔΙΚΗ ΓΡΑΜΜΑΤΕΙΑ ΔΙΑΧΕΙΡΙΣΗΣ
ΠΡΟΓΡΑΜΜΑΤΩΝ ΕΤΠΑ & ΤΣ
ΕΥΔ ΠΡΟΓΡΑΜΜΑΤΟΣ «ΑΝΤΑΓΩΝΙΣΤΙΚΟΤΗΤΑ»

ΕΠΑνΕΚ 2014-2020
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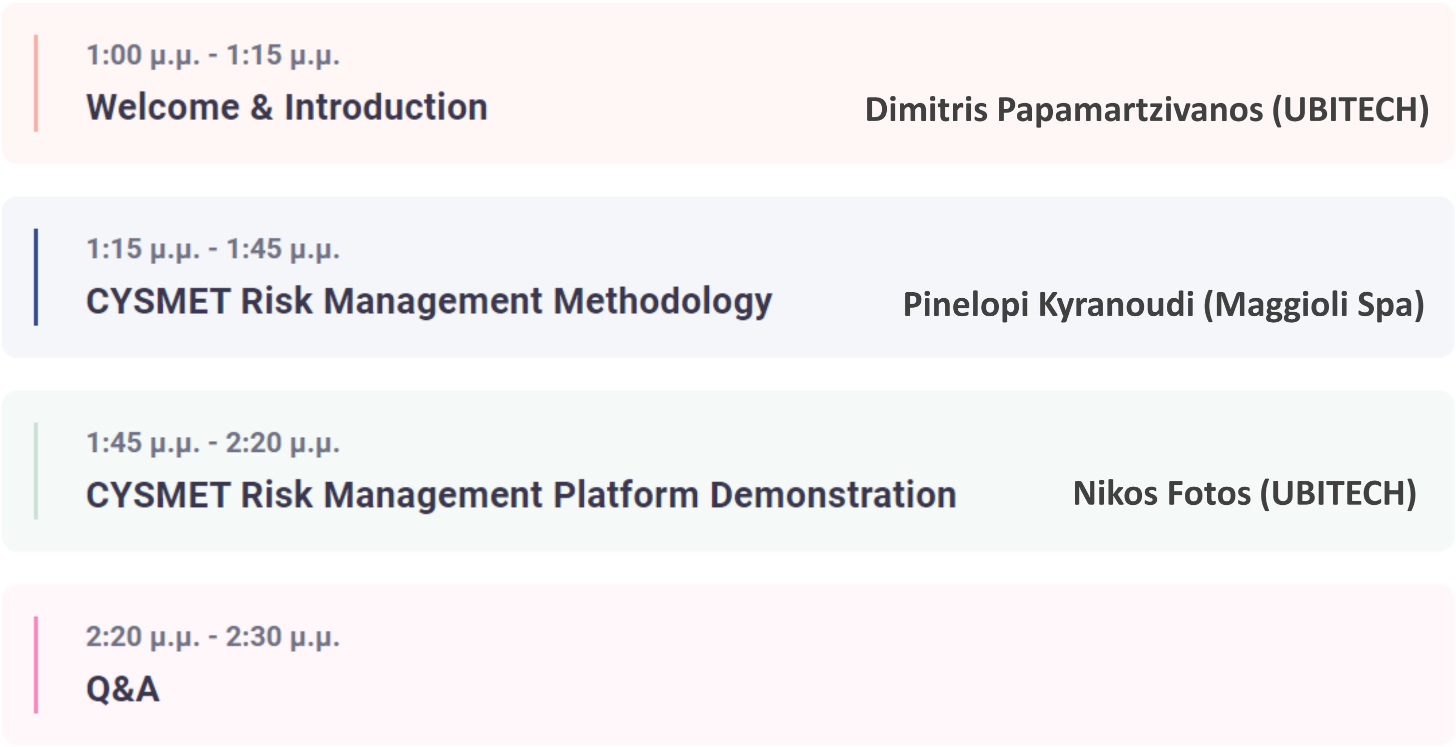
ΚΑΙΝΟΤΟΜΙΑ

ΕΣΠΑ
2014-2020
ανάπτυξη - εργασία - αλληλεγγύη

Με τη συγχρηματοδότηση της Ελλάδας και της Ευρωπαϊκής Ένωσης

Demo Webinar Agenda & Scope



1:00 μ.μ. - 1:15 μ.μ.
Welcome & Introduction — Dimitris Papamartzivanos (UBITECH)

1:15 μ.μ. - 1:45 μ.μ.
CYSMET Risk Management Methodology — Pinelopi Kyranoudi (Maggioli Spa)

1:45 μ.μ. - 2:20 μ.μ.
CYSMET Risk Management Platform Demonstration — Nikos Fotos (UBITECH)

2:20 μ.μ. - 2:30 μ.μ.
Q&A

CYSMET Project

Motivation:

- Global supply chains are becoming more **complex and integrated**
- The organizations operating within the supply chains are heavily **dependent on ICT** and they are exchanging large amounts of data
- There is a pressing **need for methodologies and tools for the efficient evaluation and management of security threats and vulnerabilities** throughout the interconnected infrastructures of the stakeholders of the supply chain services.

CYSMET Project

Goals:

- **Foster collaboration and communication among the stakeholders** and the critical infrastructures of maritime supply chains to assess and manage cyber-physical risks

- **Enhance the intelligence and knowledge background** of supply chain stakeholders for new vulnerabilities and threats utilizing open-source intelligence

- **Improved methods for assessing and managing risks** in maritime supply chains based on an innovative methodology tailored to the needs and the **dynamic nature** of the supply chain ecosystem

- Development and evaluation of a **collaborative risk management platform** which will be validated based on real-world use case scenarios

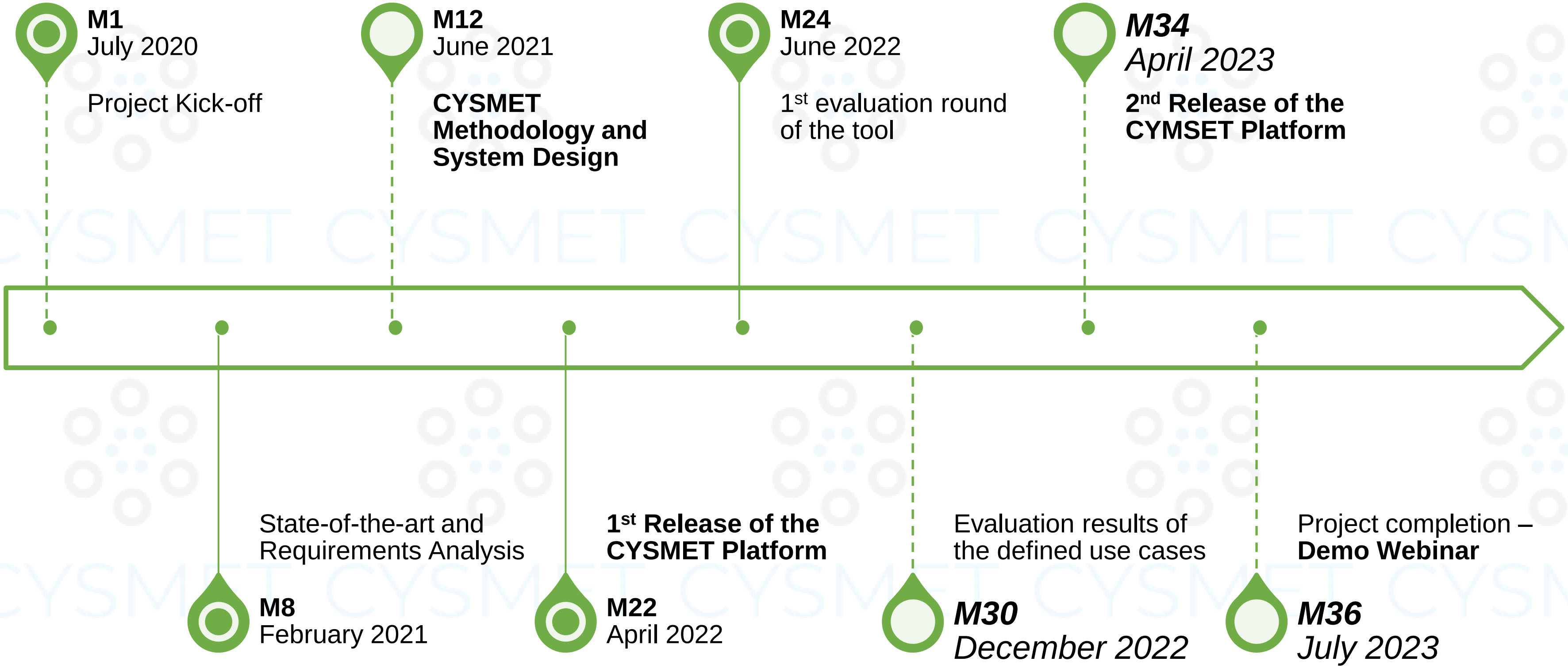
CYSMET Consortium

UBITECH is a leading, highly innovative software house, systems integrator and technology provider, established to provide leading edge intelligent technical solutions and consulting services to businesses, organizations and government in order to allow the efficient and effective secure access and communication with various heterogeneous information resources and services, anytime and anywhere. UBITECH has acquired several EC and national grants for novel R&D initiatives. Currently, UBITECH has extended its operations with targeted international activities through its subsidiaries in Limassol (Cyprus), Madrid (Spain), Buenos Aires (Argentina) and Guayaquil (Ecuador)

Maggioli SpA, a leading provider of integrated of IT solutions in Italy, has a wide range of integrated software and business solutions consulting services in the field of ICT and extensive experience in developing digital government solutions which are based on state-of-the-art technologies and more modern design principles.

Port of Volos is one of the largest commercial ports in Greece. Its important role is due to the geographical and its strategic location in the middle of the Pagasitic Gulf, being the port of the great and rich Thessaly inland. Its strategic position in the Mediterranean and European area, was the reason for its rapid development. Various types of cargoes are currently being transported through the commercial port of Volos. The port of Volos applies the ISPS code and implements means for surveillance and access control to port facilities. The commercial sector is supported by four in total piers.

CYSMET Status & Milestones



M1
July 2020

Project Kick-off

M8
February 2021

State-of-the-art and Requirements Analysis

M12
June 2021

CYSMET Methodology and System Design

M22
April 2022

1st Release of the CYSMET Platform

M24
June 2022

1st evaluation round of the tool

M30
December 2022

Evaluation results of the defined use cases

M34
April 2023

2nd Release of the CYMSET Platform

M36
July 2023

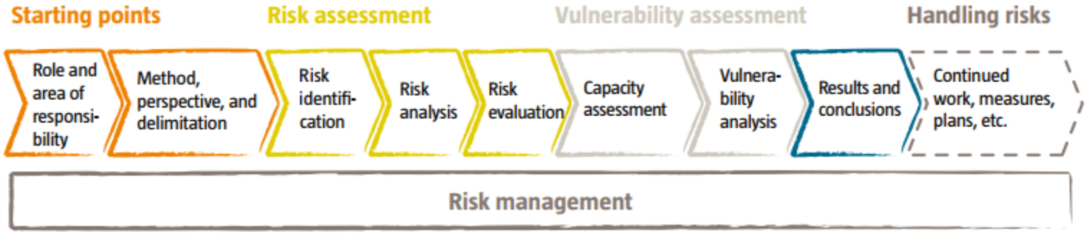
Project completion – **Demo Webinar**

Risk Management & Risk Assessment

Every organization is continuously exposed to an endless number of new or changing threats and vulnerabilities that may affect its operation or the fulfillment of its objectives.

- ***Risk management (RM)** – a process aiming at an efficient balance between realizing opportunities for gains while minimizing vulnerabilities and losses [ENISA]*
  - *Identifying, analyzing, prioritizing, and making a strategy for mitigating threats and managing risks*
  - *Endlessly recurring process*
  - *Focuses on everything that needs to be done after risks are identified*
  - *Goal → to reach an acceptable level of security at an acceptable cost*

- ***Risk Assessment (RA)** – an analysis involving processes and technologies that help identify, evaluate and report on any risk-related concern.*
  - *Sub-process of Risk management: focus on the identification and analysis phases*



Risk Management in Supply Chain Services

Definitions:

- *A systematic process for managing supply chain risk by identifying susceptibilities, vulnerabilities, and threats* ***throughout the supply chain and developing mitigation strategies*** *to combat those threats whether presented by the supplier, the supplies product and its subcomponents, or the supply chain (e.g., initial production, packaging, handling, storage, transport, mission operation, and disposal).* [CNSSI 4009-2015]

- *The process of identifying, assessing, and mitigating* ***the risks associated with the global and distributed nature of information and communications technology*** *product and service supply chains.* [NIST SP 800-37 Rev. 2]

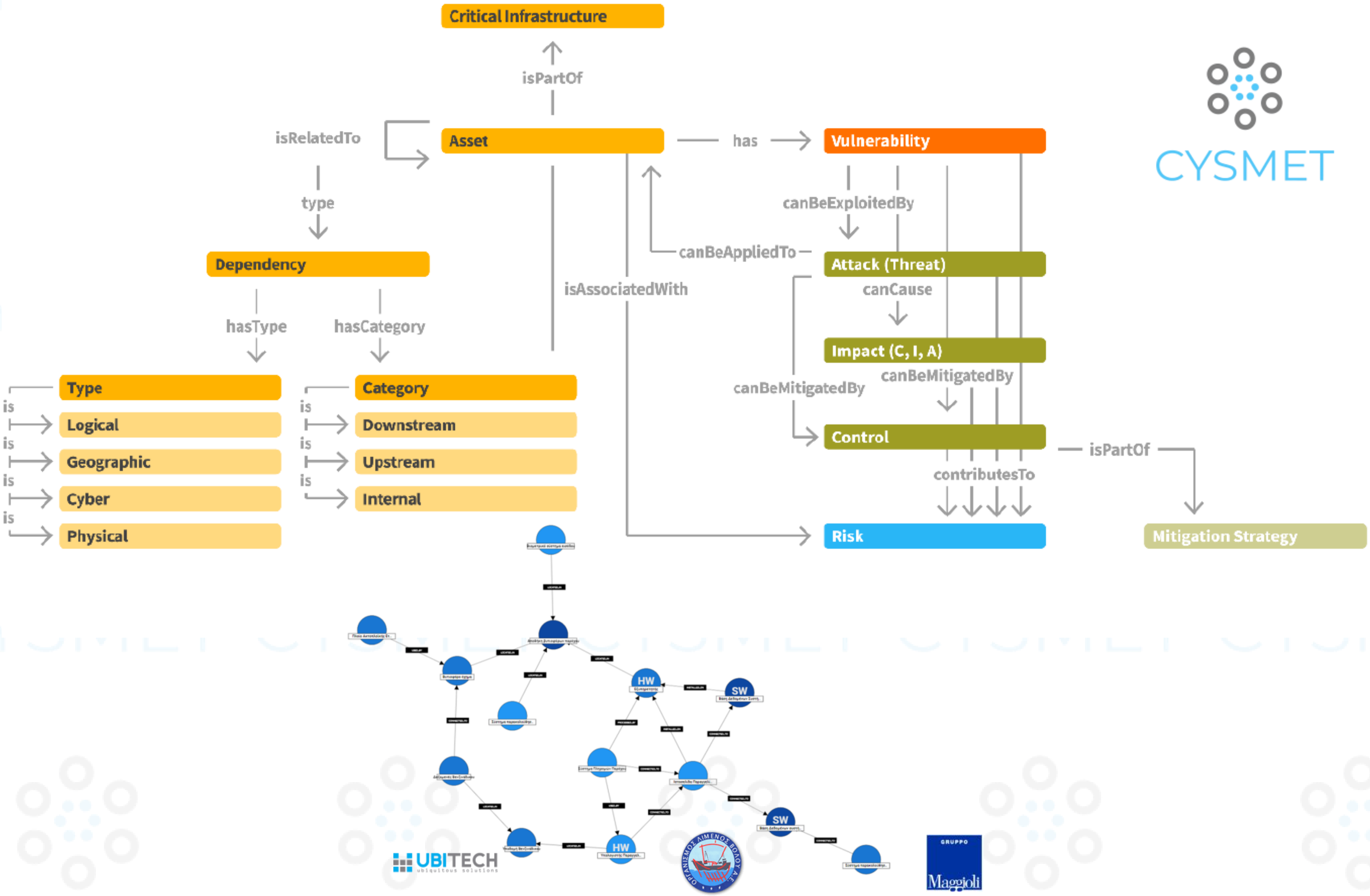
- *A systematic process for managing cyber supply chain risk exposures, threats, and vulnerabilities* ***throughout the supply chain and developing risk response strategies*** *to the risks presented by the supplier, the supplied products and services, or the supply chain.* [NIST SP 800-53A Rev. 5]

Need:

- Supply chain risk management requires the execution of the **assessment processes beyond the limited scope of individual stakeholders**

- Need for methodologies and tools for the **efficient evaluation and management** of security threats and vulnerabilities **throughout the interconnected infrastructures** **<u>in a collaborative manner</u>**

CYSMET Risk Assessment Metamodel



Critical Infrastructure

isPartOf

isRelatedTo

Asset

has

Vulnerability

type

canBeExploitedBy

canBeAppliedTo

Dependency

Attack (Threat)

isAssociatedWith

canCause

hasType

hasCategory

Impact (C, I, A)

canBeMitigatedBy

canBeMitigatedBy

Type

Category

is

Logical

Downstream

is

Geographic

Upstream

is

Cyber

Internal

is

Physical

Control

isPartOf

contributesTo

Risk

Mitigation Strategy

CYSMET

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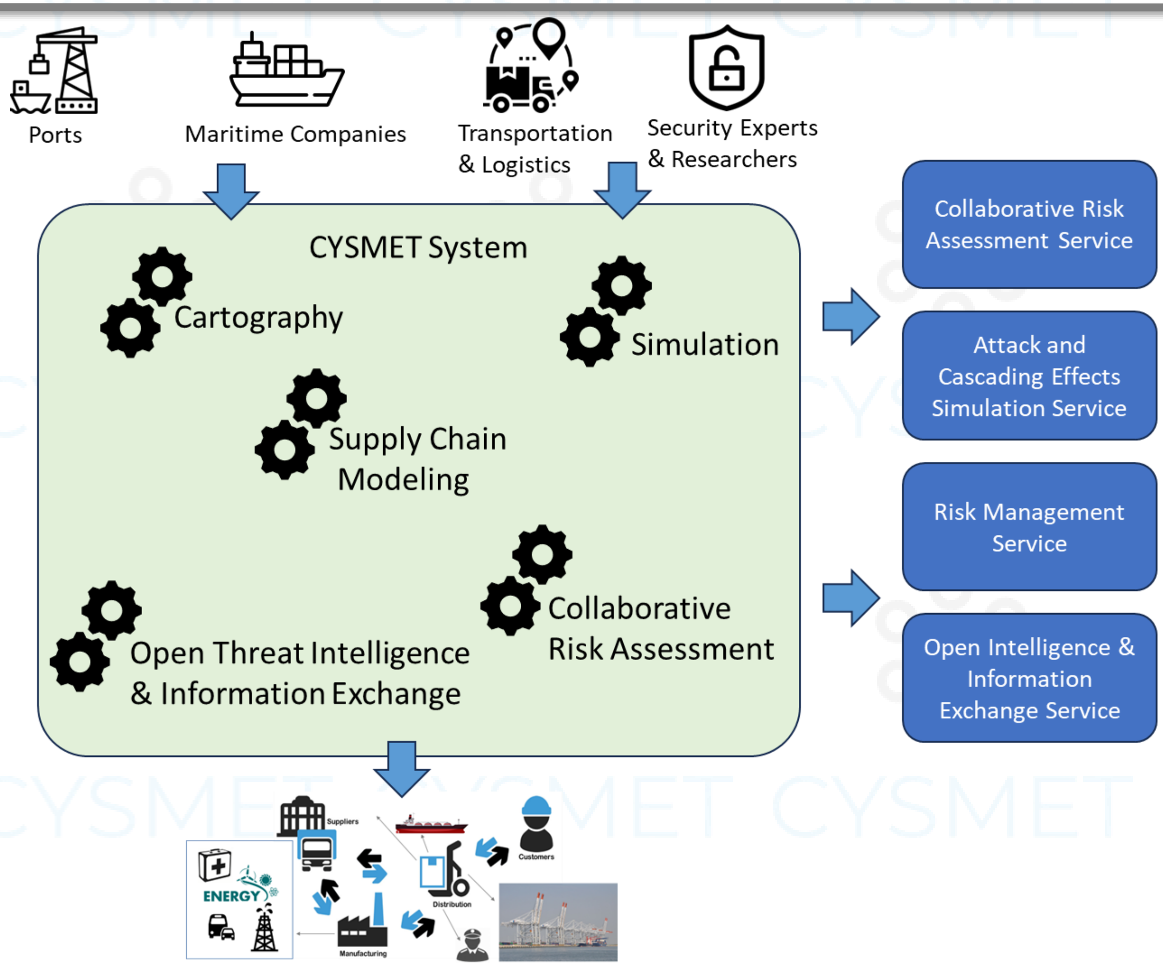
CYSMET System Architecture & Services



Ports

Maritime Companies

Transportation & Logistics

Security Experts & Researchers

CYSMET System

Cartography

Simulation

Supply Chain Modeling

Open Threat Intelligence & Information Exchange

Collaborative Risk Assessment

Collaborative Risk Assessment Service

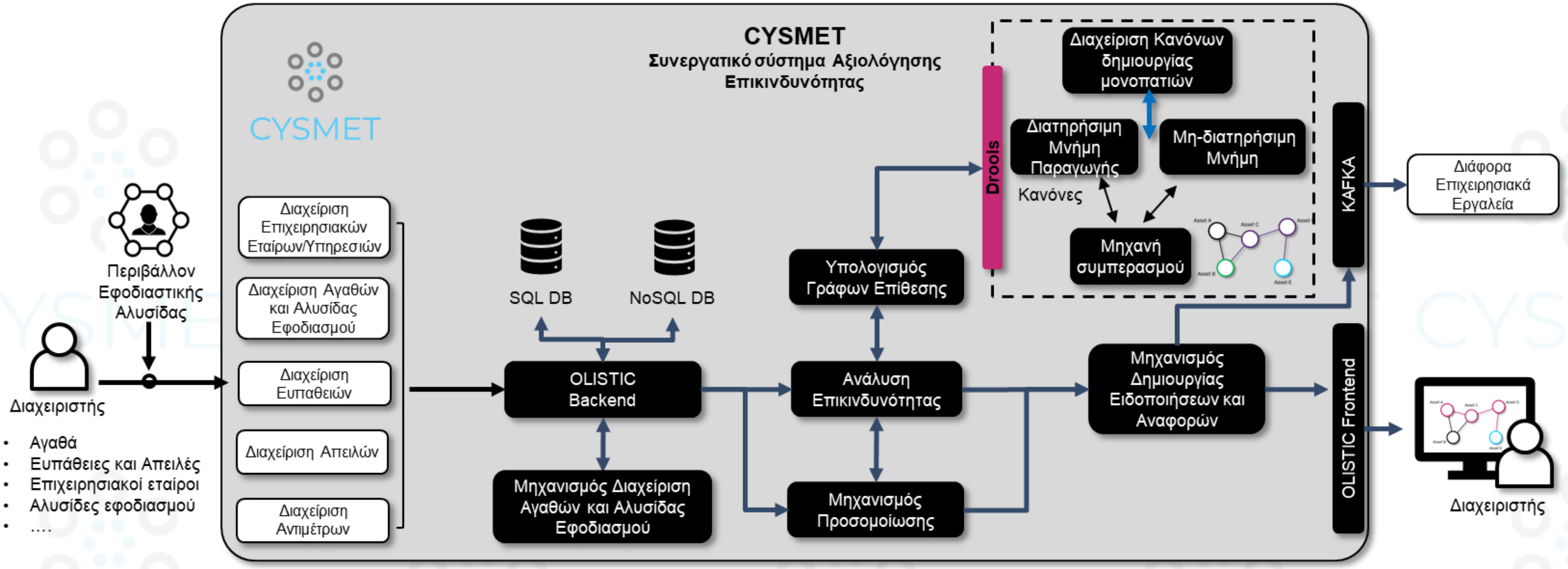
Attack and Cascading Effects Simulation Service

Risk Management Service

Open Intelligence & Information Exchange Service

Supply Chain Services

CYSMET System Architecture & Services



CYSMET

Συνεργατικό σύστημα Αξιολόγησης Επικινδυνότητας

CYSMET

Περιβάλλον Εφοδιαστικής Αλυσίδας

Διαχειριστής

- Αγαθά
- Ευπάθειες και Απειλές
- Επιχειρησιακοί εταίροι
- Αλυσίδες εφοδιασμού
- ….

Διαχείριση Επιχειρησιακών Εταίρων/Υπηρεσιών

Διαχείριση Αγαθών και Αλυσίδας Εφοδιασμού

Διαχείριση Ευπαθειών

Διαχείριση Απειλών

Διαχείριση Αντιμέτρων

SQL DB

NoSQL DB

OLISTIC Backend

Μηχανισμός Διαχείριση Αγαθών και Αλυσίδας Εφοδιασμού

Υπολογισμός Γράφων Επίθεσης

Ανάλυση Επικινδυνότητας

Μηχανισμός Προσομοίωσης

Drools

Διαχείριση Κανόνων δημιουργίας μονοπατιών

Διατηρήσιμη Μνήμη Παραγωγής

Μη-διατηρήσιμη Μνήμη

Κανόνες

Μηχανή συμπερασμού

Μηχανισμός Δημιουργίας Ειδοποιήσεων και Αναφορών

KAFKA

OLISTIC Frontend

Διάφορα Επιχειρησιακά Εργαλεία

Διαχειριστής

Technology used

QUARKUS

PostgreSQL

Drools

KEYCLOAK

Vue.js

mongoDB

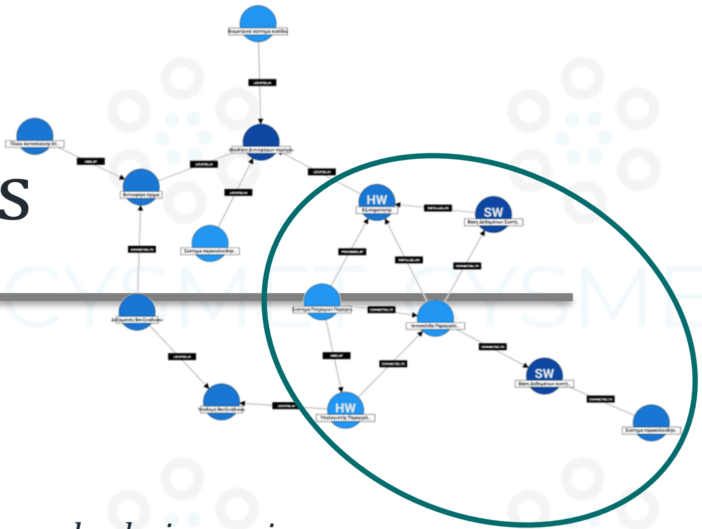
neo4j

APACHE kafka

UBITECH

GRUPPO Maggioli

CYSMET System Users & Roles



Super admin:

- *Has access and **manages the entire supply chain** service and graph*
- *Has the right **to see all assets of other stakeholders** participating in a supply chain service*
- *Has the right to **edit the dependencies among the assets of the entire supply chain** service and graph*
- *Has the right to **see the existing vulnerabilities or applied controls** to all assets*
- *A super admin can manage more than one supply chain services*

Stakeholder:

- *Has the right to **manage only the asset that belong to its organization***
- *Has the right to **execute all the provided CYSMET functionalities** but those are applied **only to sub-graph belonging to its organization***
- *Has the right to **identify risks that can be triggered by other** vulnerabilities/threats existing in the premises of other **stakeholders**.*

We need your feedback!

CYSMET

Fill out our questionnaire:

https://forms.gle/p349scnSECbX5dXh7

Thank you!

CYSMET Project

CYSMET

https://cysmet.ubitech.eu/

CYSMET Project

Acknowledgment:

This research has been co-financed by the European Regional Development Fund of the European Union and Greek national funds through the Operational Program Competitiveness, Entrepreneurship and Innovation, under the call RESEARCH – CREATE -INNOVATE (project code:T2EDK-03488)

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UBITECH ubiquitous solutions

ΟΡΓΑΝΙΣΜΟΣ ΛΙΜΕΝΟΣ ΒΟΛΟΥ Α.Ε.

GRUPPO Maggioli