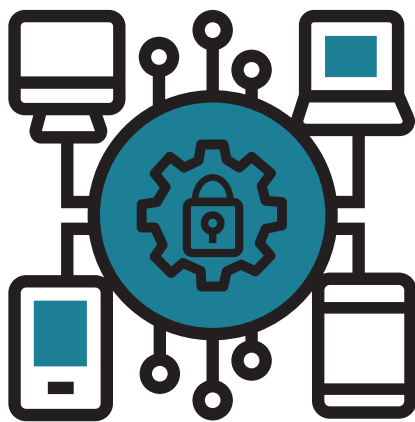




[www.testudo-project.eu](http://www.testudo-project.eu)



**TESTUDO**

AUTONOMOUS SWARM OF HETEROGENEOUS RESOURCES  
IN INFRASTRUCTURE PROTECTION VIA THREAT PREDICTION AND PREVENTION



Funded by the  
European Union

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**TESTUDO** will deliver a novel data-driven and process-oriented surveillance and intelligence platform for increased autonomy and improved situation awareness, incorporating:

- 🔧 **innovative autonomous platforms** comprised by a set of **unmanned vehicles** and individual **fixed sensors**,
- 🔧 effective transmission of **heterogeneous multimodal data streams** to improve the critical issue for smooth operations and the integrity of CIs,
- 🔧 **advanced detection, monitoring and prediction tools** delivering pertinent information to the operator,
- 🔧 **virtual decision-making tool.**

**TESTUDO** aims to equip CI operators and other relevant agencies with innovative technologies reinforced with research tools for **optimal response and prediction/prevention**, by employing:

#### 🔧 **Autonomous Response and Cognitive Intelligence**

- 🔧 Optimal resource allocation
- 🔧 Threat identification by processing optronics data
- 🔧 Edge computing for limited connected unmanned vehicles
- 🔧 CBRN materials identification
- 🔧 Autonomous response on cyber-attack identifications

#### 🔧 **Improved HMI for critical infrastructure surveillance**

- 🔧 Optimized 3D terrain and infrastructure mapping
- 🔧 Fusion schemes of numerous modalities for improved data representation
- 🔧 Threat assessment via XAI technologies
- 🔧 Predictive intelligence and improved HMI via Digital Twins

#### 🔧 **Short and long-term deployment for large-scale and cross-sectorial trials**



**Use Case #1:**  
Disruptive online events  
in water reservoirs



**Use Case #2:**  
Chemical fire in tunnel provoked  
by an electric vehicle

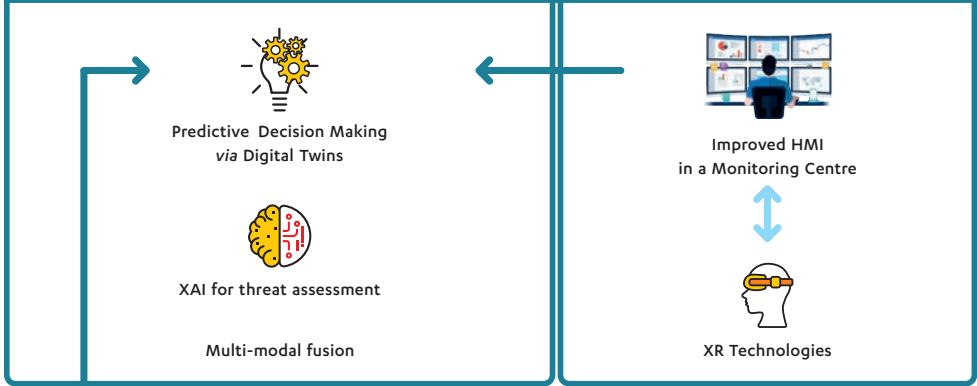


**Use Case #3:**  
Synchronized attack  
on water treatment facilities

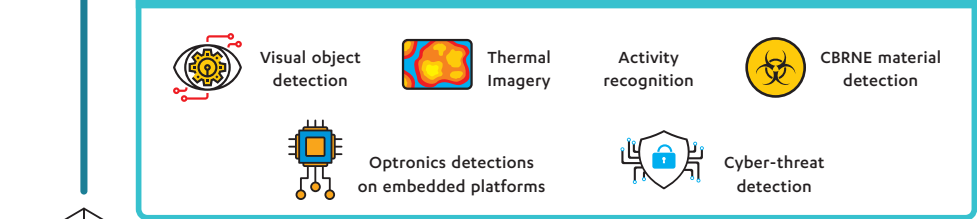
# TESTUDO ARCHITECTURE



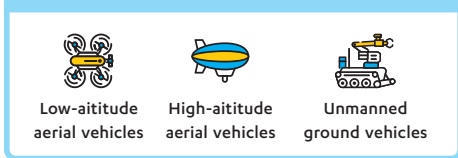
## Predictive intelligence and decision support



## Cognitive intelligence for threat identification

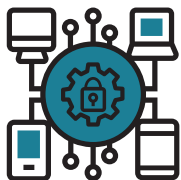


## Autonomous Vehicle Navigation



## Sensor for Autonomous Surveillance





# TESTUDO

<b>Start date</b>	01/10/2023
<b>End date</b>	30/09/2026
<b>Call</b>	HORIZON-CL3-2022-INFRA-01-02
<b>Partners</b>	20
<b>Countries</b>	11
<b>Project Coordinator</b>	Centre for Research & Technology Hellas (CERTH)

## TESTUDO PARTNERS



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