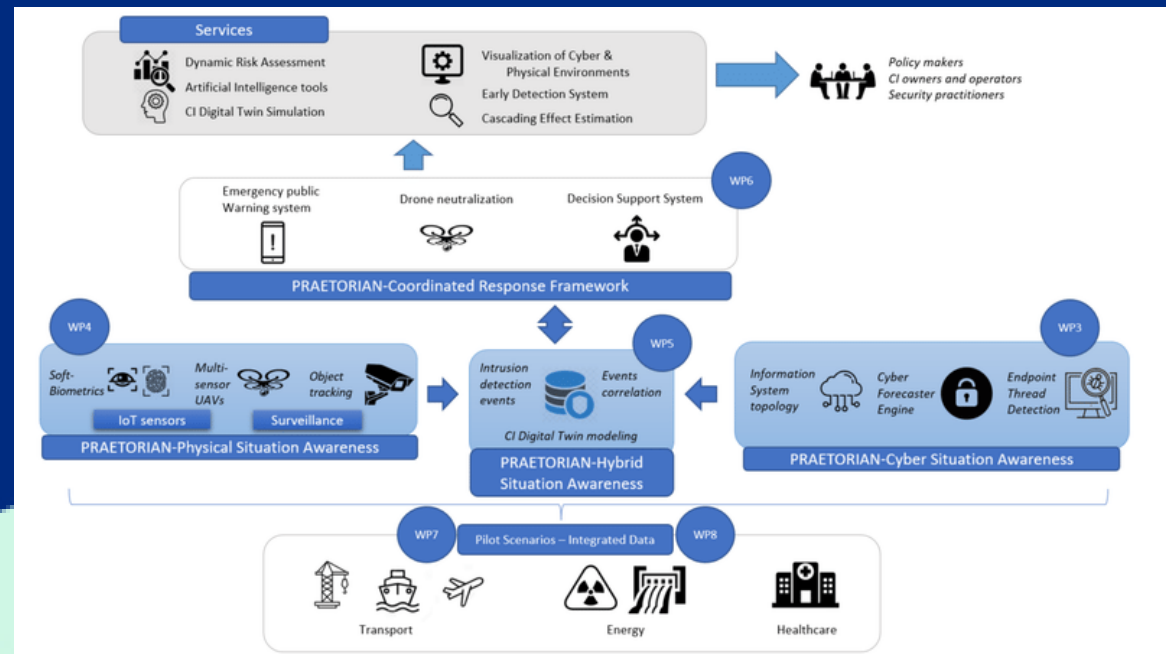


PRAETORIAN

Protection of Critical Infrastructures from advanced combined cyber and physical threats



The normal operation of the proposed PRAETORIAN solution includes four significant products:

- a Cyber Situation Awareness system (CSA),
- a Physical Situation Awareness system (PSA),
- a Hybrid Situation Awareness system (HSA) and
- a Coordinated Response system (CR).

First, CSA and PSA gathers huge amounts of heterogeneous data from the different sectorial CIs (airports, ports, power plants, and hospitals) involved in the pilot demonstrations. CSA explores the network and CI's Information system to identify malicious patterns. At the same time, PSA analyses information received from different kind of physical sensors such as the images received from the CCTV system or drones and other biometric or presence signals with the objective to generate intrusion detection events. The alarms raised by CSA and PSA is then processed by HSA and, thanks to the precise implementation of the digital twins of the CIs, will estimate the cascading effects in the related CIs. This estimation is used in CR to support the decision-making process in the affected CIs allowing a unified response to the situation and warn the emergency teams and population.



Starting date: 01/06/2021
Duration in months: 24



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<https://praetorian-h2020.eu/>



AIM & FEATURES

PRAETORIAN strategic goal is to increase the security and resilience of European CIs, facilitating the coordinated protection of interrelated CI against combined **physical and cyber threats**. To that end, the project will provide a multidimensional (economical, technological, policy, societal) yet installation-specific toolset comprising:

- (i) a *Physical Situation Awareness system*,
- (ii) a *Cyber Situation Awareness system*;
- (iii) a *Hybrid Situation Awareness system*, which will include digital twins of the infrastructure under protection; and
- (iv) a *Coordinated Response system*.

The PRAETORIAN toolset will support the security managers of **Critical Infrastructures (CI)** in their decision making to anticipate and withstand potential cyber, physical or combined security threats to their own infrastructures and other interrelated CIs that could have a severe impact on their performance and/or the security of the population in their vicinity.



Physical Situation Awareness System



Hybrid Situation Awareness system



Cyber Situation Awareness system



Coordinated Response system

APPLICATIONS



The project specifically tackles (i.e. prevent, detect, response and, in case of a declared attack, mitigate) humanmade cyber and physical attacks or natural disasters affecting CIs. It also addresses how an attack or incident in a specific CI can jeopardise the normal operation of other neighbouring/interrelated CIs, and how to make all of them more resilient, by predicting cascading effects and proposing a unified response among CIs and assisting First Responder teams. PRAETORIAN is a CI-led, user-driven project, which will demonstrate its results in three international pilot clusters – some of them cross border – involving 9 outstanding critical infrastructures: 2 international airports, 2 ports, 3 hospitals and 2 power plants.



European Commission

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IMPACT

- **Economical Impact**; PRAETORIAN will contribute to face current security challenges and threats that hinder the normal operation of CIs of different nature in a cost-efficient way. Also, PRAETORIAN will contribute to the reduction of the capital investment in controlling and solving security threats for CIs.
- **Environmental and Social Impact**; The outcomes of PRAETORIAN will benefit all sectors of society aiming to improve the security and the resilience of the EU CIs, people and FRs against physical, cyber and/or combined threats.
 - *Working Condition & Safety*
 - *Quality of Life*
 - *Employment*
 - *Environment*

