SUNRISE

Strengthening critical infrastructures through collaboration, strategy and technology

SUNRISE aims to ensure greater availability, reliability, and continuity of critical infrastructures including transport, energy, water, and healthcare to safeguard Europe's lifeline services in pandemics and other major threats.

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SUNRISE Project

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SUNRISE Project

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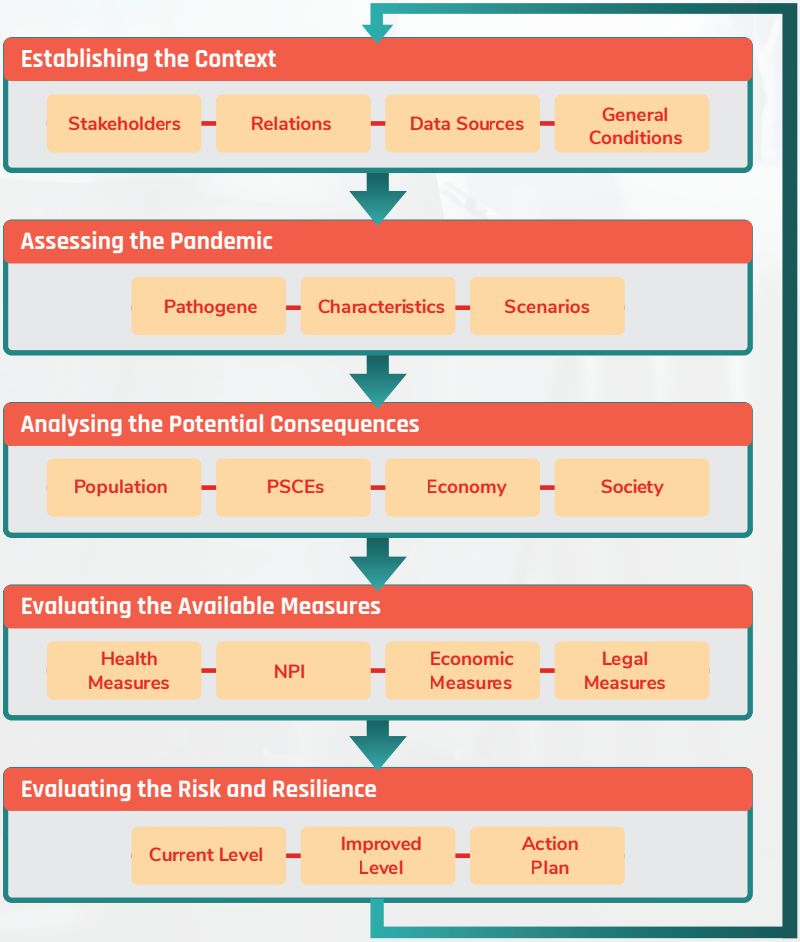
Strategy for Awareness and Resilience of CIs

About the Solution

The SUNRISE Strategy is a framework for Critical Infrastructure (CI) operators to enhance their awareness and resilience against future pandemics and extreme events. The Strategy is a five-step evaluation process based on current risk and resilience management standards.

It helps CI operators identify the characteristics of pandemics/extreme events, analyze their impacts on population, critical entities, the economy and society, and assess effective countermeasures. This framework not only addresses pandemic preparedness but also integrates considerations for climate change and extreme weather events, ensuring a multi-dimensional risk assessment and mitigation analysis.



Who will benefit from it?

The SUNRISE Strategy will assist European Critical Infrastructure Operators in sectors including energy, water, transportation, telecommunications and healthcare, as well as government agencies at national and regional levels, and international organizations such as the WHO and the UN.

Benefits

- Enhanced preparedness during pandemics and extreme events to ensure operational continuity
- Actionable insights for informed decision making at regional and national levels
- Indirect reduction in CIs' downtime and financial losses

Use cases tested

The SUNRISE Strategy was validated with CI authorities in Slovenia, Italy and Spain, focusing on climate and disease spread modeling, pandemic-specific risk assessment, and economic impact evaluation.

Testimonial

"Thanks to SUNRISE Strategy for Awareness and Resilience of CIs, we had the availability of a structured process for evaluating the consequences of pandemic risks, as well as for gauging the effectiveness of the possible countermeasures (e.g., non-pharmaceutical interventions such as social distancing)."
- Giuseppe D'Avenio, Senior Researcher, ISS

How to access it

- The SUNRISE Strategy will be offered for free as a blueprint, and will be available to EU Critical Infrastructure operators, private sector businesses and any other relevant stakeholders.
- Consulting services will be available to stakeholders on how to effectively integrate and implement the strategy in their day-to-day operations.

Organisations leading the result: AIT, HB, HZI, ICS, IHS

Risk-Based Access Control (RiBAC) Solution

About the Solution

The RiBAC Solution is a hardware and software solution designed for adaptable access control, especially during pandemics. It provides versatile and scalable access control for diverse user needs.

It features a modular design with three key components: an IDM server for anonymous credential management, a mobile app for quick authentication, and hardware readers such as cameras, QR code scanners, RFID readers, and touch screens. The RiBAC Solution can adjust access conditions based on dynamic factors such as temperature and vaccination status; this ensures privacy and security. It also includes a European Digital COVID Certificate verification module.

Who will benefit from it?

The RiBAC Solution will benefit any organization that requires secure and adaptable access control for people within its premises, including critical infrastructures, healthcare facilities, large enterprises and educational institutions.

Benefits

- Swift adaptation to changing access control needs
- Operational continuity with minimal disruptions
- Cost-effective access management

Use cases tested

The RiBAC Solution was tested in health, digital and transport sectors in Italy, Slovenia and the Czech Republic, ensuring secure and efficient access control.

Testimonial

"We've enhanced safety and compliance at key access points thanks to SUNRISE RiBAC, which integrates temperature checks, mask detection, vaccination passport verification, and employee identification into an advanced entry and exit management system." - Dejana Javoršek, Consultant, UKC

How to access it

The RiBAC Solution will be for sale directly; both individual hardware and a hardware and software bundle will be available. For more information on the available models, contact IMA.

Organisations leading the result: IMA, AIT

Demand Prediction and Management (DPM) Solution

About the Solution

The DPM Solution is a software that leverages advanced AI/ML models to provide demand forecasts for the key resources of Critical Infrastructures in the water, energy, transportation and health sectors. The software specializes in making predictions during turbulent times, such as pandemics; the DPM identifies patterns, bottlenecks and root causes to optimize resource allocation. The solution features the following four independent modules, each of which is tailored with its own dashboard for specific use cases:

- Module for prediction of critical resources in health use cases (e.g. hospitals)
- Module for prediction of critical resources in water utilities use cases
- Module for prediction of critical resources in transport use cases
- Module for prediction of critical resources in energy use cases

Its customizable and flexible approach ensures that each sector receives precise, actionable insights to enhance operational efficiency and responsiveness.

Who will benefit from it?

The DPM Solution can be tailored to the specific needs of water supply operators, energy providers, transportation operators, and hospitals (both private and public).

Benefits

- Improved demand forecasting during crises, including extreme events
- Enhanced resource allocation and operational efficiency, leading to cost savings

Use cases tested

The DPM Solution was piloted in health, energy, water and transport sectors in Spain, Italy, Slovenia and Serbia, to train a model that optimizes resource management during crises.

Testimonials

"The Demand Prediction and Management (DPM) Solution provides us with accurate consumption forecasts for extreme conditions and events which help us to dimension power system needs." - Radoš Čabarkapa, Senior Consultant (Energy Markets), Electricity Coordinating Center Ltd (EKC)

"The information obtained with the DPM solution is very useful for our institution because we can adjust staffing levels or purchase consumables in advance to be prepared for patient care. Even partial prediction, the information obtained with this SUNRISE tool helps us to make better decisions, rather than simply reacting after the fact. In pandemic situations, having a tool like this will allow us to act with precision and in advance to provide service and care to our patients. " - Isabel García Merino, Corporate Subdirector of Research and Innovation of Quironsalud & Carolina Gutiérrez Montero, Research Coordinator of Quironsalud

How to access it

The DPM Solution could be offered as an umbrella service bundle, with each of its four modules available independently and featuring customized dashboards and models. The solution will be supported by an IT consultancy model for commercialization and integration.

Organisations leading the result: SQD, XLAB, UPM

Cyber-Physical Resilience (CPR) Solution

About the Solution

The CPR Solution is an advanced cybersecurity solution for Critical Infrastructures, integrating four key modules: Anomaly Detection (AD), Cybersecurity Risk Assessment (CRA), Threat Intelligence Management (TIM), and Incident Response Management (IRM). The CPR Solution enables early detection, real-time risk assessment, intelligence-driven threat analysis, and quick incident response aligned with NIS2 regulations.

Who will benefit from it?

The CPR Solution will benefit large organizations that need to adapt cybersecurity operational activities during temporary conditions, such as pandemics or other hazards.

Benefits

- Increased awareness about dynamic changes in risk landscape and temporary operational conditions of cybersecurity workforce
- Enhancements of risk assessment by having more risk indicators (including real time events) and performing more frequent impact and probability updates which results in reduced time detecting cybersecurity threats
- Informed decision-making to allocate scarce resources and adapt mitigation more effectively during temporary conditions
- Compliance with EU cybersecurity regulations (i.e. NIS2 Directive)

Use cases tested

The CPR Solution was implemented in health, digital, energy, transport and water sectors in Italy and Slovenia, enhancing cybersecurity resilience.

Testimonial

"It is a basic environment model for security incidents, several environments are connected. Such an environment could be useful in Security Operations Centers (SOC)." - Igor Kleva, Head of Information Security, IT Department, Slovenian Railways (SZ)

How to access it

The CPR Solution will be customized and integrated with pre-existing cybersecurity frameworks. It can also be integrated into a larger cybersecurity solution.

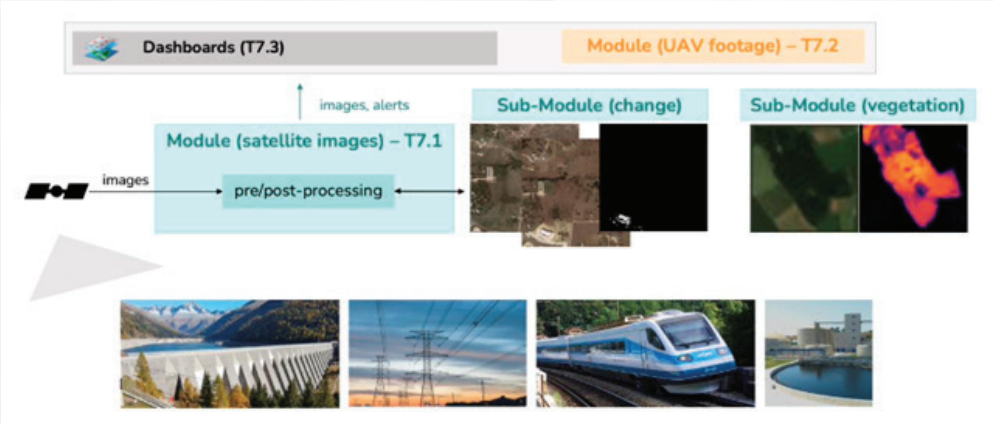
Organisations leading the result: ATS, XLAB

Remote Infrastructure Inspection (RII) Solution

About the Solution

The RII Solution is an AI-powered solution designed for remote inspection of physical infrastructures, making it ideal for examining remote or high-risk areas while minimizing reliance on manual checks.

The tool integrates satellite imagery, UAV sensors, and machine learning to ensure precise anomaly detection. By leveraging tailored AI and ML algorithms specifically for inspections, we go beyond conventional methods by incorporating Visual Large Language Models (V-LLMs), enhancing our capabilities significantly. This advanced approach allows us to process various inspection cases efficiently, ensuring timely identification of anomalies and potential risks in infrastructure.



Who will benefit from it?

The RII Solution is a valuable tool for critical infrastructure operators managing remote, hard-to reach assets such as power plants, pipelines, transportation networks, and industrial sites that require continuous visual monitoring.

Benefits

- Cost-effective inspections which allow an increase in inspections frequency without significant cost increases
- Reduced human exposure to hazards that results in improved safety during inspections
- Timely detection of infrastructure issues that enables quick resolution of potential problems.
- Informed maintenance strategies based on Data-driven analytics that optimizes asset performance.

Use cases tested

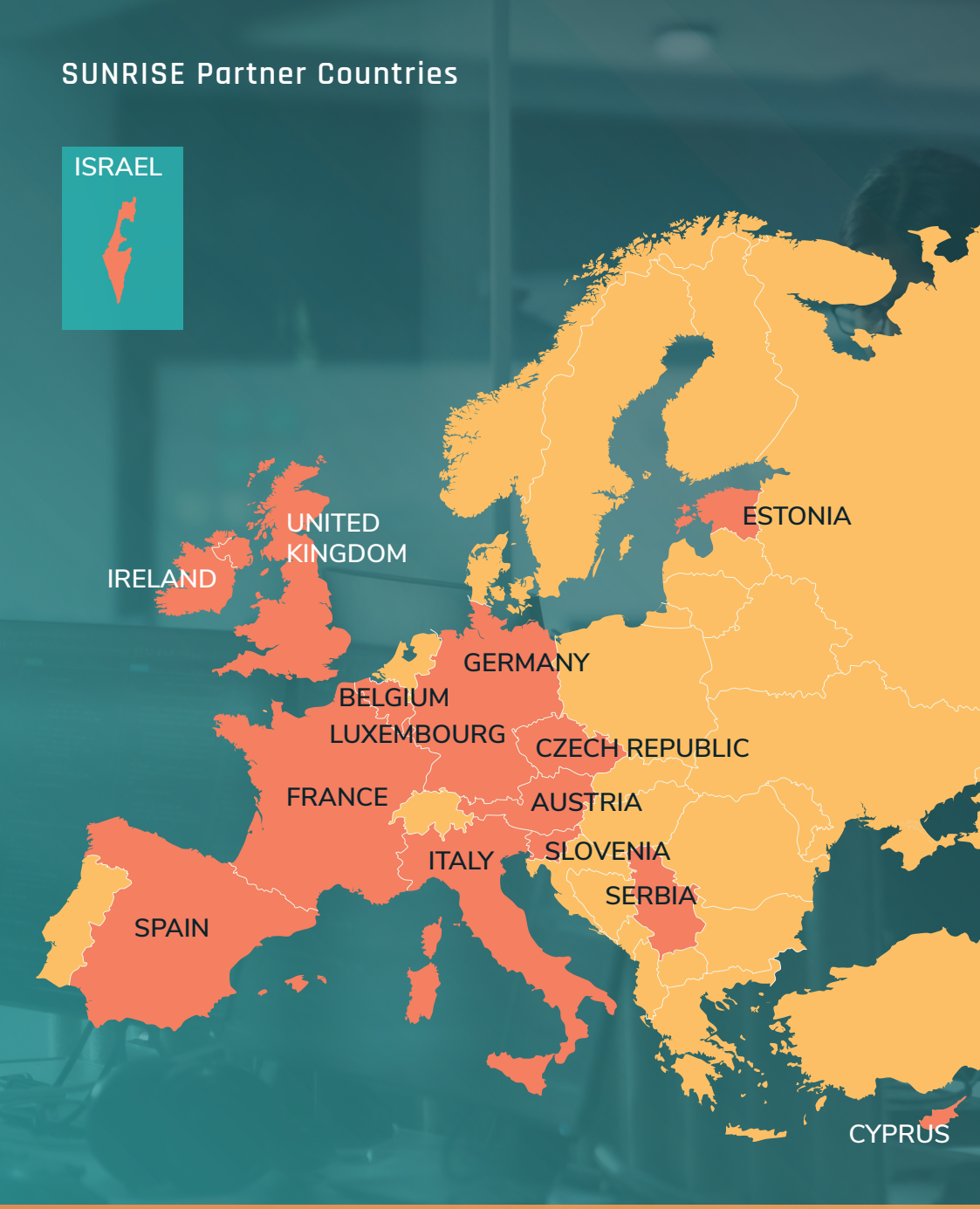
The RII Solution was deployed in energy, transport and water sector operators in Italy, Slovenia and Spain, enabling remote infrastructure inspections across those sectors.

How to access it

The delivery model depends on the underlying costs implied by the acquisition of satellite images. The RII Solution can be offered directly to customers via a service contract.

Organisations leading the result: ATS, XLAB, SKYLD

SUNRISE Partner Countries



03
Years Project Duration

41
partners across Europe

€10m
EU-funded Horizon Europe Project