Nowadays **Electrical Power and Energy Systems (EPES)** have many **vulnerabilities** due to technical factors (faults, voltage and frequency fluctuations, intermittent generation, etc.) or human factors (operational errors, accidental events, or malicious behaviours). But also, due to extreme weather events or a wide range of new risks related to cybersecurity.

Through the demonstration and integration of the innovative solutions provided by **R²D²**, it will be possible to **achieve a more secure, reliable, and resilient energy system in Europe**, making a positive and tangible impact throughout the European EPES value chain. Project's scope includes the security of power system operation embracing the whole chain from the regional coordination between TSOs, to privacy of Low-Voltage customers.

The project is built on top of strong energy coordination actions in Southern Europe, following EU legislation and in alignment with the recent activities promoted by ENTSO-E about cyber-security in transmission systems.

🌐 r2d2project.eu

✉ info@r2d2project.eu

🐦 @R2D2EU

in @R2D2project

▶ @r2d2EU

R2D2

RELIABILITY, RESILIENCE AND DEFENSE TECHNOLOGY FOR THE GRID

C3PO

Full name: Multi-risk assessment framework for power system.

Goal: To contribute to a systematic, disciplined, and repeatable approach for evaluating an energy system security strategy.

Beneficiaries: System Operators.

IRIS

Full name: Resilience suite for TSO & DSO.

Goal: to intervene when coordination between system operators is needed for security reasons, including possible adoption of distributed resources for emergency situations.

Beneficiaries: System Operators and Regional Security and Coordination Centres.

PRECOG

Full name: Prevention Systems for Energy Infrastructures Security.

Goal: To provide a cybersecurity framework to OT and IT, through advanced techniques for threats detection and event management.

Beneficiaries: System Operators, IT consultants, electric industries, and manufacturers.

EMMA

Full name: Enhanced Assets Maintenance and Management Toolkit.

Goal: To contributes to the reliability of the physical assets and to a fast grid recovery through robotic and automated technologies.

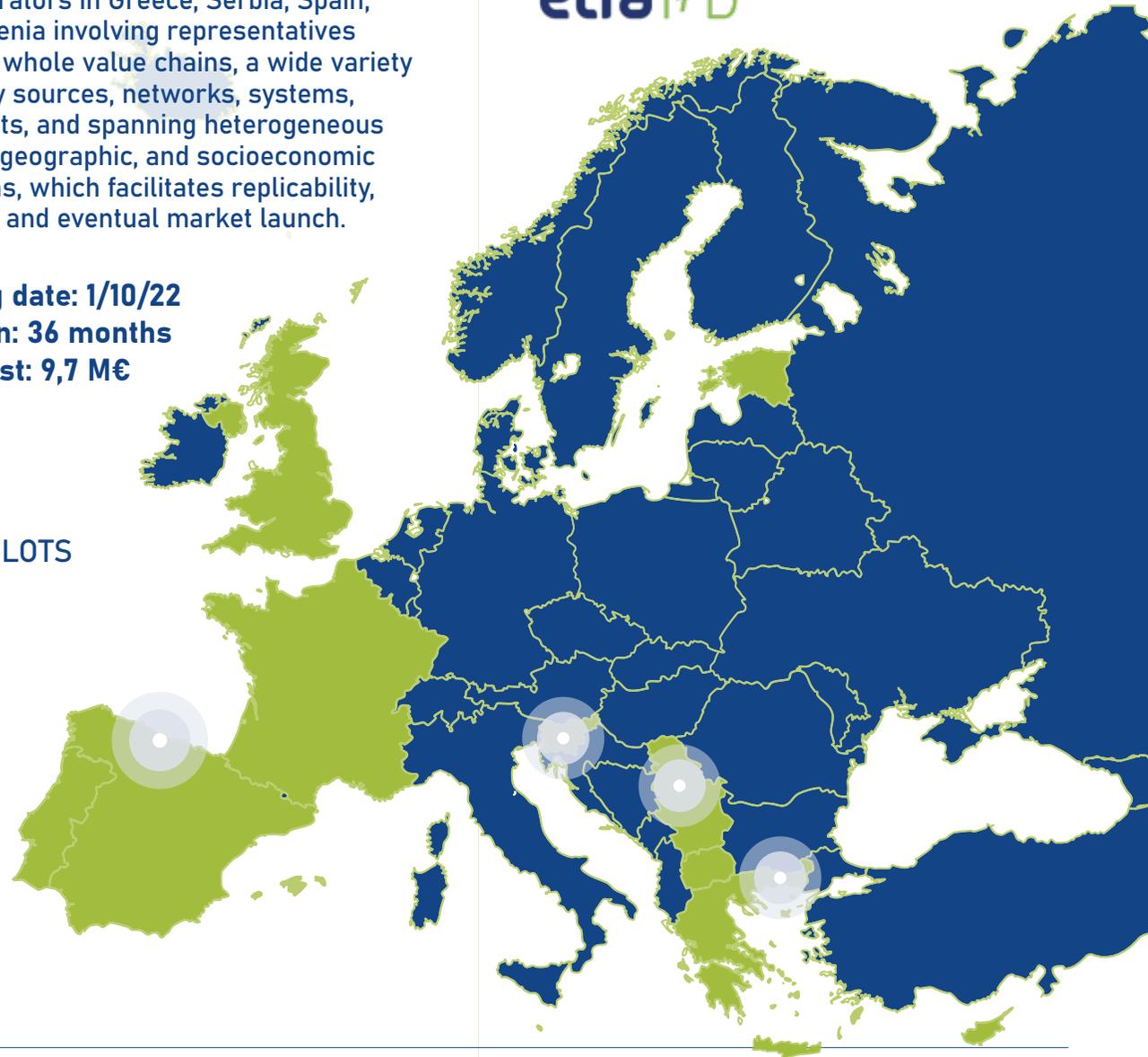**Beneficiaries:** System operators, contractors, electric industries, and manufacturers.

R²D² results are tested and validated in 4 large-scale complementary demonstrators in Greece, Serbia, Spain, and Slovenia involving representatives from the whole value chains, a wide variety of energy sources, networks, systems, and assets, and spanning heterogeneous climatic, geographic, and socioeconomic conditions, which facilitates replicability, scale-up and eventual market launch.

Starting date: 1/10/22
Duration: 36 months
Total cost: 9,7 M€

PILOTS

Project coordinator:

etra I+D