



MSCA Doctoral Networks in Practice

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Managing Director, **PRISME** Research Unit

Project Coordinator, MSCA DN **SPRING** 2026-2030

Webpage: spring-project.eu



EU projects coordination

- EU projects office
 - Monitor call for proposals
 - Assist on proposal writing
- Coordination of MSCA projects
 - 3 MSCA RISE 2017, 2018, 2020
 - 1 MSCA DN 2024
- Participation to MSCA projects
 - 1 MSCA DN 2024



Funded by
the European Union

Doctoral Network for reSilience exPeRts IN future larGe-scale critical infrastructures.

Horizon Europe MSCA DN 2024

Scored 97.6% Panel ENG (cut off score for funding 96.6)

Project: 101227080 — SPRING — HORIZON-MSCA-2024-DN-01

Coordinator: Prof. Nacim Ramdani, Univ. Orleans, France

GA signed June 2025.

Official starting date: March 2026

Critical entities



- Systems of Cyber-physical Systems
- Geographically distributed
- Highly network / digitized environments
- Water management, energy supplies, transportation ...
- Water - transport, energy - transport, energy - water nexus

Vulnerabilities of Critical Entities



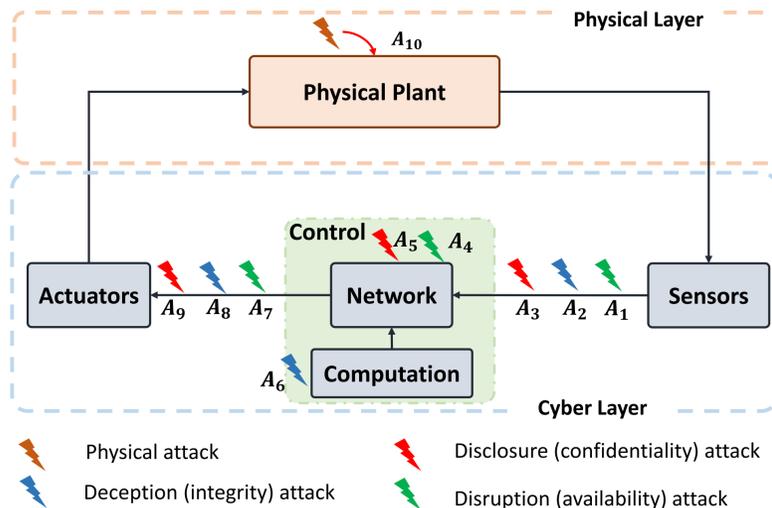
Safety and Performance ?

Natural/Accidental Hazards

- Climate change
- Rare but extreme events

Man-made Hazards

- Cyber and physical attacks
- Hardware trojans in chips



(Dibaji et al, An. Rev. Cont. (47) 2019)

Resilience



**« *Resiliency is the ability to spring back from
and successfully adapt to adversity* »**

Nan Henderson, Practical Ideas for Overcoming Risks and Building Strengths in Youth, Families, and Communities, Resiliency in Action (Jan. 1 2007)

Resilience of Critical Entities



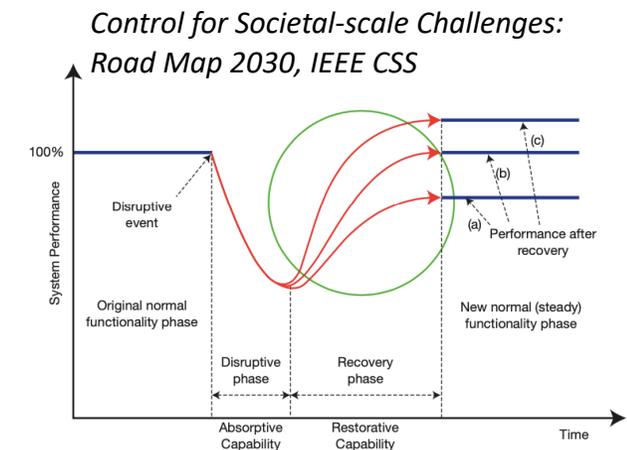
- **EU resilience:** Council adopts Directive EU 2022/2557 on the Resilience of Critical Entities, to strengthen the resilience of critical entities: enters in force on 16 Jan 2023.
- National strategy to carry out regular risk assessments to identify entities that are considered critical or vital for society and the economy.
- Critical entities will need to carry out **risk assessments** of their own and take technical, security and organisational measures to **enhance their resilience and notify incidents**.
- The Directive covers eleven sectors: **Energy, Transport**, Banking, Financial market infrastructure, Health, **Drinking water**, Wastewater, Digital infrastructure, Public administration, Space, Production, processing and distribution of food

Current limitations



- Robust designs cannot mitigate extreme rare events
- IT security alone not viable solution
- Complexity systems / cascading effects

- Current response depends on human operators is slow and unreliable
- No reliable decision-support makes operators decision unpredictable wrt safety/optimality

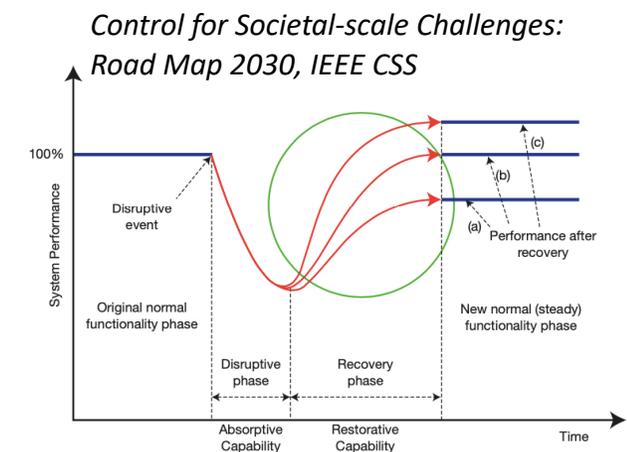


Progress needed

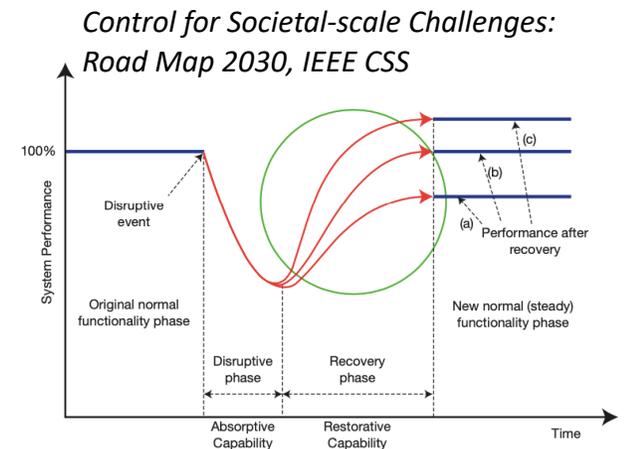


- Agility & adaptability
- Quick, correct, efficient, & risk-aware response
- Always guaranteeing safety & stability
- Decision-support with provable & human-interpretable decisions

- **Skill gap**: lack of resilience experts
- Multi-faceted & multidisciplinary expertise needed



Concept

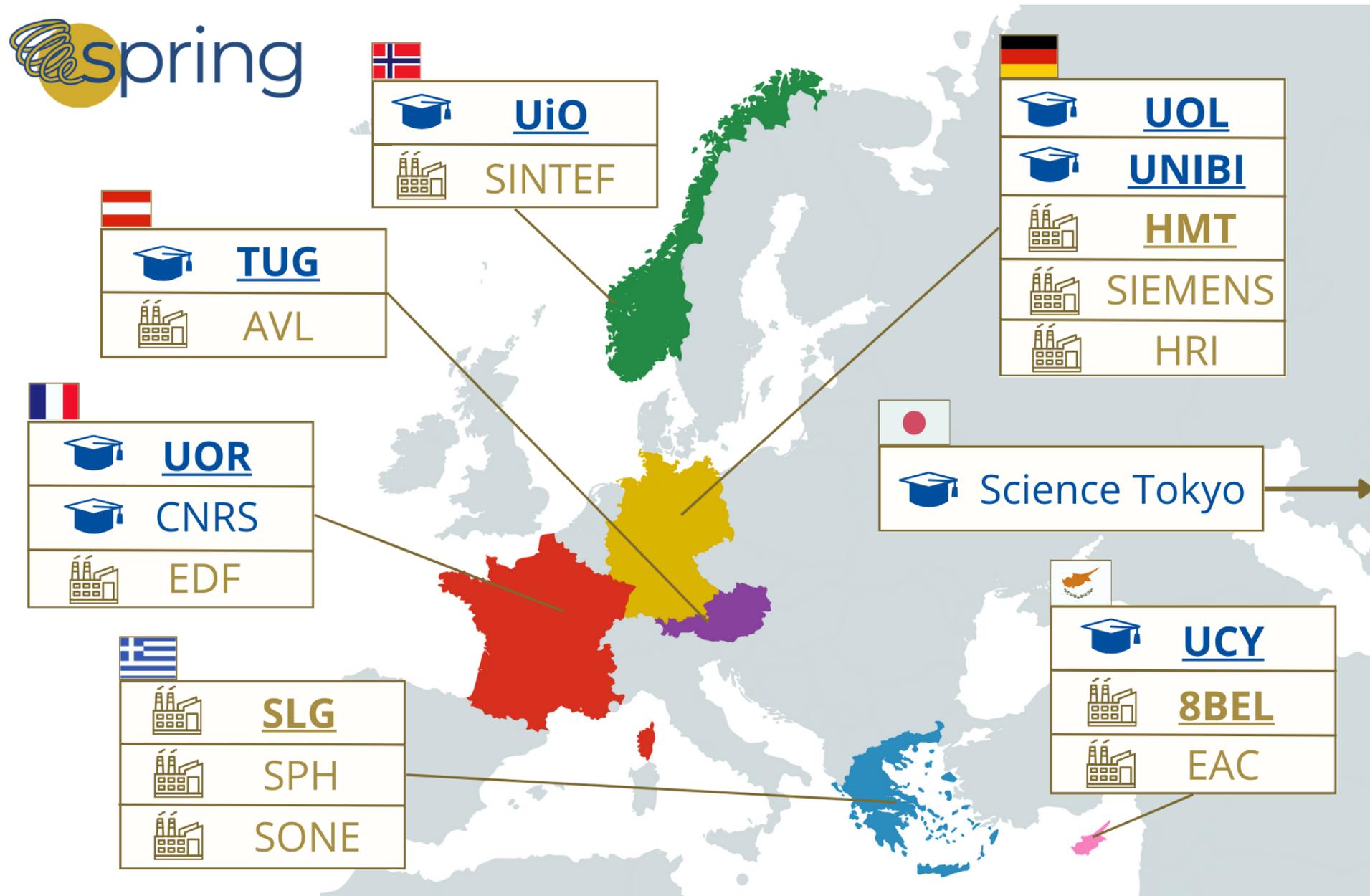


Doctoral Network



- **Research programme**
 - **15 Doctoral Candidates** (36 months funding)
 - Individual Research Projects
 - Secondment within the network 2-6 months.
- **Network-wide activities**
 - 3 Schools
 - 3 Applied seminars
 - 6 Workshops + transferable skills training
 - 1 Final Workshop/Final Conference
- **Dissemination, Communication & Exploitation**

Consortium



Academic and Industrial Beneficiaries / Associated Partners

Advices and feedback

- Understand the selection process.
 - Think about the reviewer: they have 4 hours to analyze the document and write a report.
 - Reviewers cannot be experts in all disciplines: write in scientific language but in a way that is accessible to a general audience.
 - Conduct self-assessment: The review form is available.
- Use handbooks and read guide for applicants carefully.
 - MSCA Doctoral Network Handbook.
- Think “Doctoral Training.”
 - All facets of the subject, academic and non-academic disciplines.
- Proposals should target disruptive innovation.

Advices and feedback

- Start well in advance.
- Organize meetings with the consortium.
- Do not hesitate to hire proposal writing experts
 - Proofreading by consultance may be sufficient.
- Read successful proposals.
- Have people who are not involved read the project.
- Spare no effort.



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We are hiring for 15 PhD positions!

Application deadline: 1st April 2026