mOdelling And Simulation for safer urban InfraStructures

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Stam S.r.l. (www.stamtech.com)

- High-tech Italian engineering SME
- 25 years of experience in R&D
- 70 successful EU R&D and ISF projects since FP4
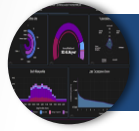- 15 EU security projects (several as coordinator)

Role: Possible coordinator, Technology provider

Proposal activity: HORIZON-CL3-2022-INFRA-01-01 "Nature-based Solutions integrated to protect local infrastructure"

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Background of Organization

- **Simulation models** and **digital twins** of **complex infrastructures**, systems and networks

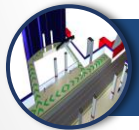- Decision-support tools for **risk and asset management**

- Modelling and simulation of **crisis** (e.g., terrorist attacks, crises, disruptions, etc.) and **what-if scenarios**
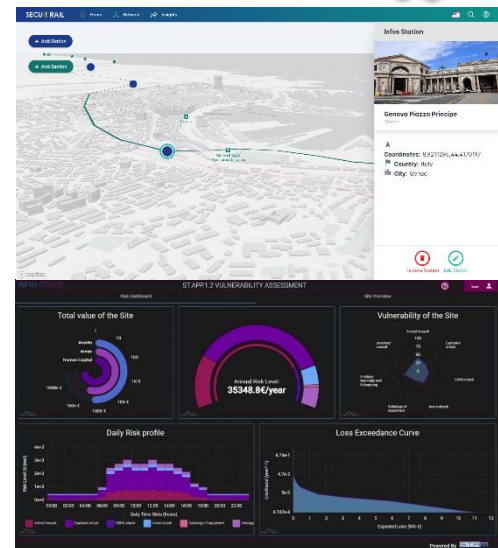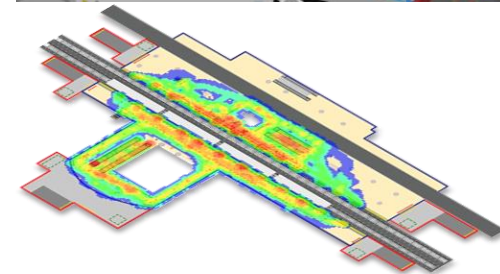
- Agent-based **modelling of populations** and crowds

- **Optimization** of systems and processes based on **CBA** and **LCA**

- **Virtual assessment** of **solutions** and **procedures**

- Decision-support tools for **environmental and territorial protection** based on GIS and EO data

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Proposal Idea

- Development of a **decision-support framework** integrating **modelling and simulation** with **risk management**, enabling:
  - Modelling of crisis and disaster **scenarios**
  - Inclusion of **interconnections** and cascading effects
  - Assessment of **multi-hazard** impacts and risks
  - Simulation of **social environment**
  - Simulation and analysis of **what-if scenarios**
  - **Development** of **protection** solutions and concepts
  - **Virtual test** and assessment of effectiveness of security-by-design **solutions** and crisis management **procedures**

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Project Participants

- **Coordinator (possible): Stam**

- **Partners:**
  - Municipality (Italy)
  - Transport use-case (Spain)
  - Urban designers (Italy, Hungary)
  - Citizens and community-based organisation (Italy)
  - Natural hazards experts (Italy)
  - Civil Engineering (Spain)

- **Looking for:**
  - Nature-based solutions RTOs (alternative coordinator)
  - Climate change experts
  - Governments and public authorities
  - Technology providers
  - Additional use-cases

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