SMAR3TS

Staff Mobility to Action Resilient, Restorative, and Regenerative Transitions & Societies

Funded by
the European Union

I3X – Guiding Principles

SMAR3TS

- Innovate3X-Igniting Impactful Initiatives, or I3X, should aim to accelerate the understanding/scoping of a challenge (technological, market, societal etc), and the emergence/development of possible solutions. This can be interpreted as e.g. increased technological or societal readiness, once the I3X is completed.
- I3X should have a sufficient scale and scope (i.e. not being too narrowly-defined), and should require multi/cross/inter/trans disciplinary capabilities.
- I3X should align to the core concepts of SMAR3TS – Resilience, Restoration, Regeneration (either R or all Rs).
- I3X should align to (at least) one WP – WPs are the main coordination mechanism of the project, hence I3X should be connected to WPs.
- Any partner can initiate an I3X. Yet, shaping the I3X should be done collectively, and in collaboration with WP leader and SMAR3TS Team.
- At this stage, we are looking for initial I3X, which will be further defined during the Kick Off Meeting – and where engagement across the consortium will be assessed.
- Overall, it is expected that each I3X will lead and enable about 10 person-months of secondment, across the consortium (i.e. not only between the initiator of the I3X and possible contributors), possibly more.
- I3X will serve as guiding instruments for secondments, as well as for events (i.e. hackathons, workshops, showcase)

I3X – About the initiator

Name of Organization: University of Siena (UNISI)
Research Group/Department: Department of Information Engineering and Mathematics, Department of Business and Law, Department of Social, Political and Cognitive Sciences
Country: Italy

1. Background info

Short description of your organization: UNISI is one of European oldest Universities (founded in 1240) and has been involved in more than 150 research projects financed within the 7th Framework Program, Horizon 2020, Horizon Europe, and others with both roles of coordinator and partner. UNISI is also experienced, among 8 MSCA Individual/Post-doctoral Fellowships, 12 MSCA ITN/DN, 6 MSCA RISE/SE and 5 MSCA NIGHT/CITIZENS projects. UNISI achieved the "Human Resources Strategy for Researchers-HRS4R" EC label
Website: https://en.unisi.it/

3. Expertise and available technologies within SMAR3TS project

*1. **Expertise** of your research group/department and available technologies:*

- Open and Social innovation
- Digital transformation and digital technologies adoption
- Sustainability and resilience

*2. **Current status** of available technologies (incl. TRL) / problematization/solution development (SRL) and expected TRL/SRL to reach:* All TRLs, SLR 1 – 6

*3. Examples of engagement in **Research, Development & Innovation (RDI) partnerships and industry partnerships***
R&I projects and training with local companies, business associations, citizens and policy actors
Examples of partnerships: National Recovery and Resilience Plan (PNRR) Innovation Ecosystems Tuscany Health Ecosystem; PATHS 4.0; Citizen Science for Siena; Advancing AI literacy in healthcare logistics

2. Research Group/Company Department

Short description: We carry on teaching, R&I projects and interdisciplinary work at the intersection of organizational management, collaborative and social innovation and twin transition from multiple perspectives: companies and value chains, citizens and society, ecosystems
Link to the website: https://research.unisi.it/projects/
Contact info: Elena Pessot, Associate Professor, elena.pessot@unisi.it

4. Examples of strategically relevant Innovate-3X Initiatives

1. Innovating towards Restorative and Regenerative Urban Mobility and Logistics
2. Identity and sense of belonging: building resilient housing systems through communities and neighborhoods (see I3X-16)

I3X – Alignment to R3 and to WPs

SMAR3TS domains:

1) Specify here: WP Mobility

2) Specify here: Alignment to resilience, Restoration, and Regeneration

Resilience: increasing cities' capacity to adapt urban mobility and logistics systems to climate, technological and societal disruptions.

Restoration: reducing the environmental and social impacts of freight transport and mobility in cities while rehabilitating public spaces for people and walkability.

Regeneration: envisioning the synergy between urban logistics (goods) and mobility (people) as a catalyst for healthier, more inclusive, more sustainable and more livable neighborhoods that integrate mobility services and community well-being.

I3X Description

Note: *there can be several Innovate-3X descriptions, just duplicate this template slide*

Innovate-3X: "Innovating towards Restorative and Regenerative Urban Mobility and Logistics"

1. Description of Current Stage

Specify here: *What is your research group/department currently working on? Which initiatives/projects are underway under Innovate-3X? How does this work contribute to resilience, restoration, and regeneration?*

The University of Siena research group merges different expertise (geography, sociology, management, engineering) at the intersection of open and social innovation, urban mobility, logistics and supply chain management, sustainability, digital transformation and digital technology adoption. Current projects include research on walkability assessment, sustainable mobility planning, smart logistics, collaborative innovation ecosystems, digital technologies and sustainable practices for both mobility and logistics. These activities are complemented by collaborations with municipalities, citizens, companies and innovation networks to co-design more inclusive, smart, regenerative and restorative solutions.

X Idea / Conceptualization
X Pilot / Proof of Concept
X Early Implementation

2. Necessary skills and capabilities, across disciplines:

Specify here: *What gaps or barriers need to be addressed to move forward? Which new skills, knowledge, expertise, interdisciplinary approaches or collaborations are required?*

Cities are currently undergoing profound transformations driven by climate change, digitalization, changing mobility behaviors and the rapid expansion of e-commerce, on-demand services and urban deliveries. While considerable progress has been made in promoting active mobility, low-emission transport and Sustainable Urban Mobility Plans (SUMPs), the increasing demand for last-mile deliveries often competes with the objectives of creating walkable, liveable and climate-resilient urban environments. Achieving the twin – i.e. digital and green – transition of urban mobility and logistics requires competences in logistics optimization, urban planning and design, data science and GIS, environmental modelling, business model innovation and public-private partnerships, with a stronger collaboration among municipalities, logistics providers, mobility operators, technology developers, researchers, citizens and policy-makers to co-create integrated socio-technical approaches capable of balancing environmental sustainability and social value.

3. Examples of challenges that need to be addressed

Specify here: *Please outline which challenges remain unresolved. You may answer in bullet points.*

Future cities require a fundamental rethinking of how urban mobility and logistics can evolve from parallel systems into mutually reinforcing components of regenerative urban ecosystems. Key research challenges include:

- Integrating urban mobility and city logistics into common (dual-purpose) planning and governance frameworks
- Improving methods for collecting and analyzing integrated spatial data on pedestrian mobility and freight transports considering accessibility, walkability and safety
- Developing AI-enabled Digital Twins capable of simulating the dynamic interactions among passenger mobility, freight transport, environmental conditions, public space use and urban infrastructure to support evidence-based decision-making
- Defining new business models and new performance indicators measuring not only transport efficiency but also resilience, restoration, regeneration, public health, environmental quality, social inclusion, accessibility and overall urban liveability.
- Rethinking existing solutions in mobility and logistics and elaborate future scenarios for climate adaptation, restoration and regeneration
- Building participatory, multi-stakeholders' studies and open innovation labs (e.g. living labs) to study impacts on the overall value chain, from manufacturers to final users and policy