

T4R

Resilient Territorial Planning with Local Digital Twins

Interreg



Co-funded by
the European Union

North-West Europe

Twin4Resilience

Inspiration

In the green and digital transition, local and regional public authorities face increasingly complex decision-making environment in territorial planning. To achieve resilience and good livelihood, local and regional public authorities need systemic innovation in decision-making processes. Local Digital Twins (LDTs) can be an important building block in this systemic innovation. LDTs are virtual 2D/3D representations of a territory, e.g. a city, created by modelling and simulation technology, based on datasets and -models. LDTs can visualize, analyse and simulate territories in a way that could not be done before, integrating datasets of different stakeholders simultaneously in 2D/3D.

Today, LDT technology and high-value data sets are available even for communities with smaller budgets. Many cities experiment already with LDTs. But characteristics and maturity of experiments differ widely. Development and deployment is hindered by lack of understanding of what a LDT is, and how it can help in territorial planning; resulting in lack of proof of impact, hence lack of local political support, and of opportunities to increase innovation capacity, notably among public authorities.

Innovation

The Twin4Resilience (T4R) project is not about developing technology, but about increasing people's capacity (hence also policies and governments) to deal with change. T4R will dramatically enhance the capacities of organizations to better deal with complex challenges in territorial planning using LDT as data-driven decision support tools - ethically, inclusively, democratically, affordably, effectively, and sustainably - through joint action on technical design, governance, ethics, and skilling.

To achieve this, T4R brings together 14 partners from 6 countries, working together on 1 resilience strategy piloting LDTs in 8 resilience pilot actions, along the lines of 4 transformation Frameworks (technical design, governance, ethics and inclusion and democracy, and education), eventually training 300 people on the resilient use of LDTs in territorial planning. LIST, as Innovation Partner, plays 2 roles in T4R:

- Transversal: LIST (i) provides independent technical and methodological advice on the implementation of digital twins and development of the frameworks (architecture, data sources, integration, standards, compliance to regulations, etc.) and the adoption of data-driven decision making in the context of smart cities and communities; (ii) assesses the technical feasibility and ecosystem readiness of the planned pilots, (iii) collects the lessons learned and best practices; (iv) facilitates transnational cooperation and (v) contributes to European and international dissemination of the project results.
- Local/national: as a core stakeholder in the Luxembourg innovation ecosystem, LIST works with Schuttrange municipality, to co-design a digital twin and strengthen the (triple/quadruple helix) national data innovation ecosystem.

Impact

T4R is working towards:

- A Joint Strategy and Action Plan: A collaborative roadmap for implementing LDTs effectively, covering technical design, governance, ethics and democracy, and training and education.
- Eight Pilot Actions: Eight initiatives developed jointly by different authorities and thematic clusters to test innovative solutions. The Pilot Actions will be implemented by City of Utrecht, City of Amsterdam, Rennes Métropole, Dublin City Council, Flanders Environment Agency, Brussels City, Intermunicipal association Leiedal and Municipality of Schuttrange.
- Collective Training: A training program for 300 participants to share knowledge, foster innovation, and achieve sovereignty in setting up and dealing with Local Digital Twins.

T4R brings together stakeholders from across North-West Europe to ensure its impact goes beyond borders. By working together and engaging with external partners, T4R aims to make a difference beyond its immediate reach.

Rather than just developing technology, T4R focuses on building capacity and empowering individuals and governments to navigate change effectively and sustainably in territorial planning. Let's work together to reshape territorial planning, promoting resilience, inclusivity, and sustainability across North-West Europe and beyond.

Partenaires

City of Utrecht (NL) , Municipality of Amsterdam / Gemeente Amsterdam / NL , Dublin City Council (IE) , Rennes Métropole / Rennes Métropole / FR , Citydev.brussels (BE) , Intermunicipal association Leiedal / Intercommunale Leiedal (BE) , Municipality of Schuttrange / Gemeng Schetter (LU) , Flanders Environment Agency (BE) , K8 / K8 Institut fuer strategische aestetik (DE) , Digital Flanders / Digitaal Vlaanderen (BE) , HKU / Hogeschool voor de Kunsten (NL) , Data Competence Centre for Cities and Regions / Daten-Kompetenzzentrum Staedte und Regionen (DE) , ALL DIGITAL / ALL DIGITAL (BE) , (Associated partner) Democratic Society (BE)

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Contact

5, avenue des Hauts-Fourneaux
L-4362 Esch-sur-Alzette
tél : +352 275 888 - 1 | LIST.lu

Dr Slim TURKI (slim.turki@list.lu)
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AND TECHNOLOGY

