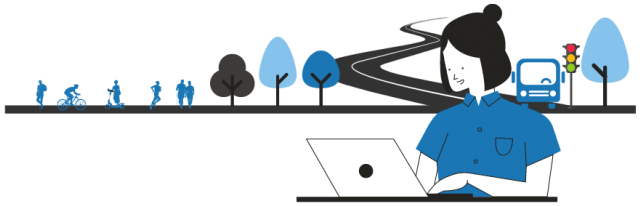
Mobilising Mobility

TURNING **EUROPEAN TRANSPORT INNOVATION** INTO **LOCAL ACTION**



A WEBINAR SERIES BY POLIS

CITIES AND REGIONS FOR TRANSPORT INNOVATION

LEAD: Low-Emission Adaptive last mile logistics supporting on demand economy through Digital Twins

Like two peas in a pod: Digital Twins for urban planning

MOBILISING MOBILITY – POLIS WEBINAR SERIES

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 861598

2020 CiViTAS Cleaner and better transport in cities

THE CIVITAS INITIATIVE IS CO-FINANCED BY THE EUROPEAN UNION

Context

- Rise on-demand logistics (accelerated by COVID-19 new online purchasing habits) → stress last mile delivery systems
- Customer: responsive system for customised products
- Industry: instant delivery
- Cities: possible negative consequences.

  Urban planner + city authorities + stakeholder =

  prediction, evaluation, new business models
- **LEAD**: develop logistic solutions ↔Low emission operations, adaptive model & Digital Twins models

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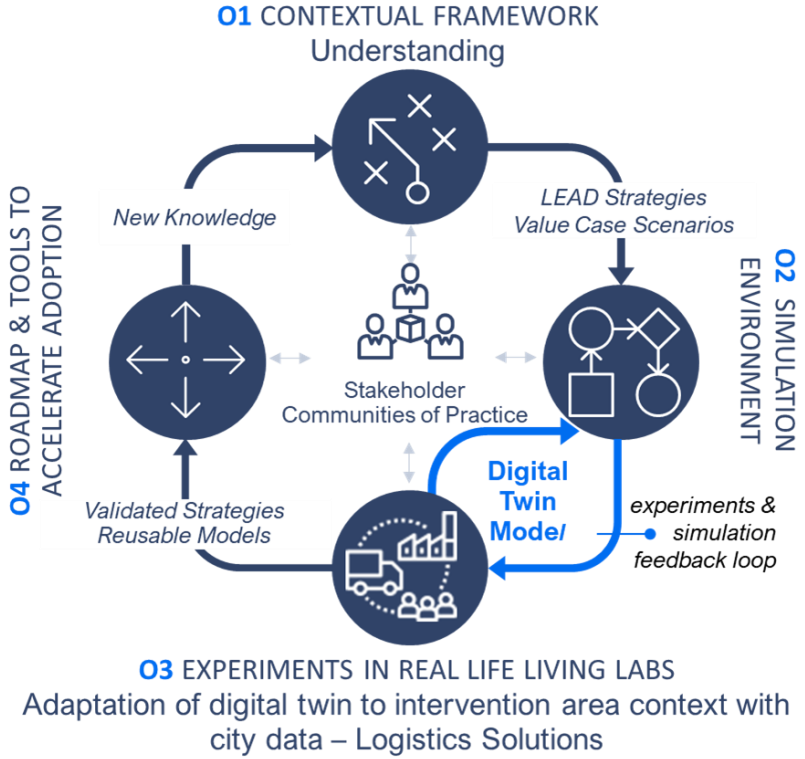
What is LEAD?

- LEAD – Digital Twins creation in 6 cities (TEN-T urban nodes)
- Solutions → case scenarios



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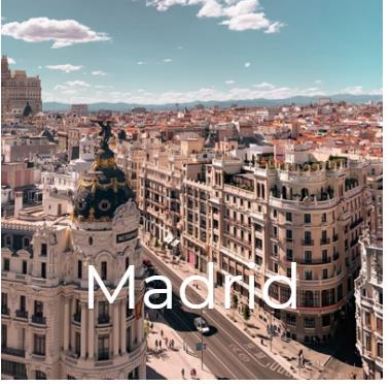

Living Lab

Transforming a Parking Lot to an Urban Consolidation Centre

Description

- Madrid is an important logistics hub (between the Atlantic and the Mediterranean TEN-T corridors),
- Occasional air quality and congestion challenges,
- Madrid LEZ and current regulations (Madrid360),
- Rise of e-commerce and home delivery (even more due to COVID19 and post-COVID19 challenges),
- Affected by COVID19 crisis.

Ambition

The following elements will be explored:

- Demonstrate the **better efficiencies** in using a UCC connected to the TEN-T to deliver to the city center;
- Assess flows and congestion. **Route optimization engine** in many-to-many and many-to-one scenarios, combining vehicles of different fleets. Improving of environmental indicators;
- Explore **alternative (and sustainable) business models;**
- **Public-private cooperation mechanisms**, identifying new ideas for cooperation and evaluating the costs and benefits of implementation;
- The economic **efficiency and reliability** for courier companies, and henceforth for clients, of using the LEAD strategies compared to conventional freight delivery approaches;
- Explore potential **economic incentives**, e.g. dynamic pricing for parking spaces?. **Data management.**

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LEAD

Living Lab

Integrated last-mile logistics with demand-supply matching platforms

Description

- Context: Central Innovation District (CID), with the re-development of nearby area with new housing, high value industry & services, in a densely used location.
- Vision for new mobility for CID
  - Mobility hub as guiding physical object
  - Multi-user, multi-facility point for all
  - Use is guided by digital platforms
- Mission: to connect **shared freight** movements around mobility hubs via a digital freight fulfillment **platform.**

Ambition

The following elements will be explored:

- The potential of integrating crowdsourcing in last mile urban deliveries;
- Whether crowdsourced delivery is an answer to the growing expectations of customers for a faster, more personalised and cost-efficient delivery service;
- Business models, challenges and success factors for new players in the industry;
- New digital service platforms with algorithms that allow the interconnection of crowdsourcing services.

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LEAD

Living Lab

Turning Retail stores to electric vehicles charging stations

Description

- The capillarity and convenience of retail stores networks (in Portugal Sonae MC operates +700 stores), provides a possibility of using them as B2B and B2C electric charging docks. This creates an advantage in the expansion of such grids and sustains a business case that mixes energy distribution, retail, logistics and transportation, leveraging & integrating synergies from all markets.

Ambition

The following elements will be explored:

- The optimisation of delivery routes for EDV's, taking into consideration the potential grid of EDV charging stations;
- EDV's take-up projections if the grid enables mass adoption;
- The development of new business models (e.g. dynamic pricing, incentives research, cost optimisation, demand forecast, emissions and supply planning);
- Leveraging Sonae's digital platform to capture additional e-commerce growth, with new services to consumers;
- Last Mile optimisation for e-commerce deliveries based on PI principles.

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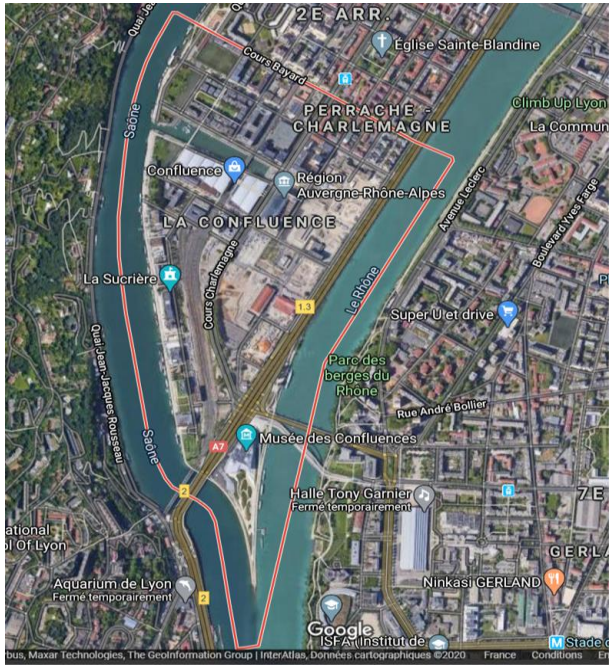
LEAD

Living Lab

Validation of last mile distribution models

Description

- Exploration of last mile distribution models based on soft modes and/or autonomous vehicles.
- Definition of framework conditions to deploy an urban logistic platform in an underground parking.
- Freight traffic flow qualification: detection of freight vehicles through video cameras.
- Digital twin approach: synchronisation of onsite experimentations and modelling.



Ambition

The following elements will be explored:

- Equip the urban planning team with a decision support framework to better evaluate the implementation of various logistics;
- Reduce motorised traffic;
- Implement a robust and flexible logistic infrastructure to support innovative solutions;
- Foster sustainable and economically balanced approaches;
- Leverage public policies to cope with socio-environmental objectives;
- Promote partnership governance.

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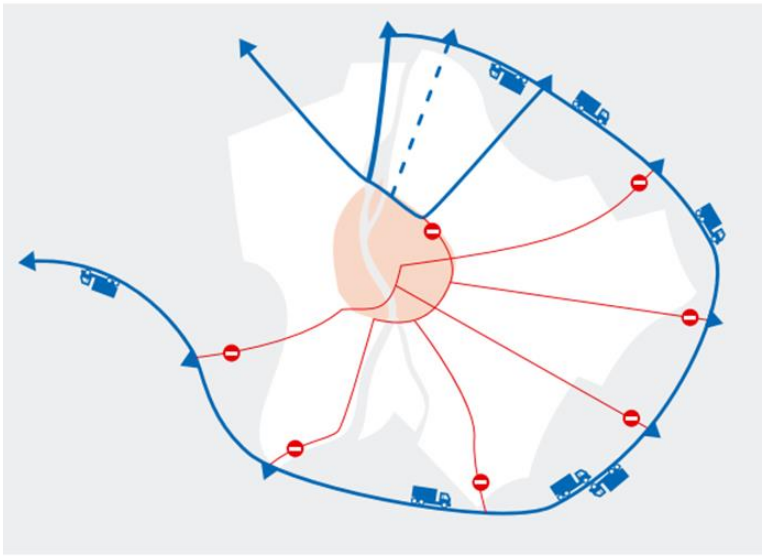
LEAD

Living Lab

Spatial Planning of Inner-City Loading Areas

Description

- Context
  - important logistics area,
  - concentrated population,
  - increased street level air pollution,
  - curfew season: the spring of home delivery,
  - free parking during COVID curfew,
  - timing of scheduled freight deliveries to city centre,
- Objectives:
  - LL observations and framework to provide solutions and to quantify the different effects of the e-mobility to transportation scenarios.



Ambition

The following elements will be explored:

- advantages of UCCs, optimal distance from endpoint,
- Digital Twin with existing macroscopic transport model,
- impacts of UCCs on air quality,
- ways to refine and develop policies,
- impacts of freight vehicles from UCCs on the environment,

- Exploring additional means to emphasize and promote e-mobility.

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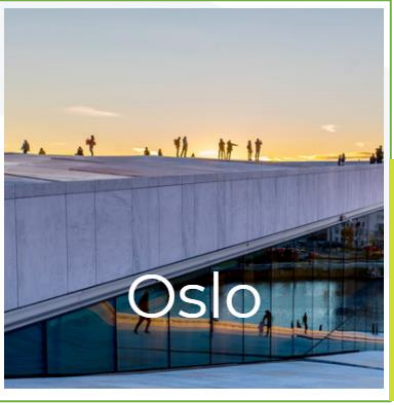

Living Lab

Green Crowdshipping through the mass transit network

Description

- The Oslo value case concentrates on B2C and home-deliveries representing the most preferred option from a consumer's perspective.
- It considers, at least, two locations: Oslo Central Station (end point of TEN-T corridor 1) and Økern Metro Station.
- The flexible service envisaged involves a pre-determined sequence of operators, namely: commuters, Nimber community members and regular logistics operators (trade-offs between costs and reliability issues).

Ambition

The following elements will be explored

- Business models financially viable and beneficial from a social/environmental perspective;
- Senders'/bringers'/receivers' preferences for alternative delivery service concepts.;
- The interplay between demand and relevant supply design of crowdshipping services;
- The role for parcel lockers to enhance delivery/pick-up flexibility;
- The economic, financial and environmental potential for a green crowdshipping service;
- The Integration of data modeling (Discrete Choice Modeling & Agent-Based Modeling) with real-market data to support a Digital Twin approach.

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Partners

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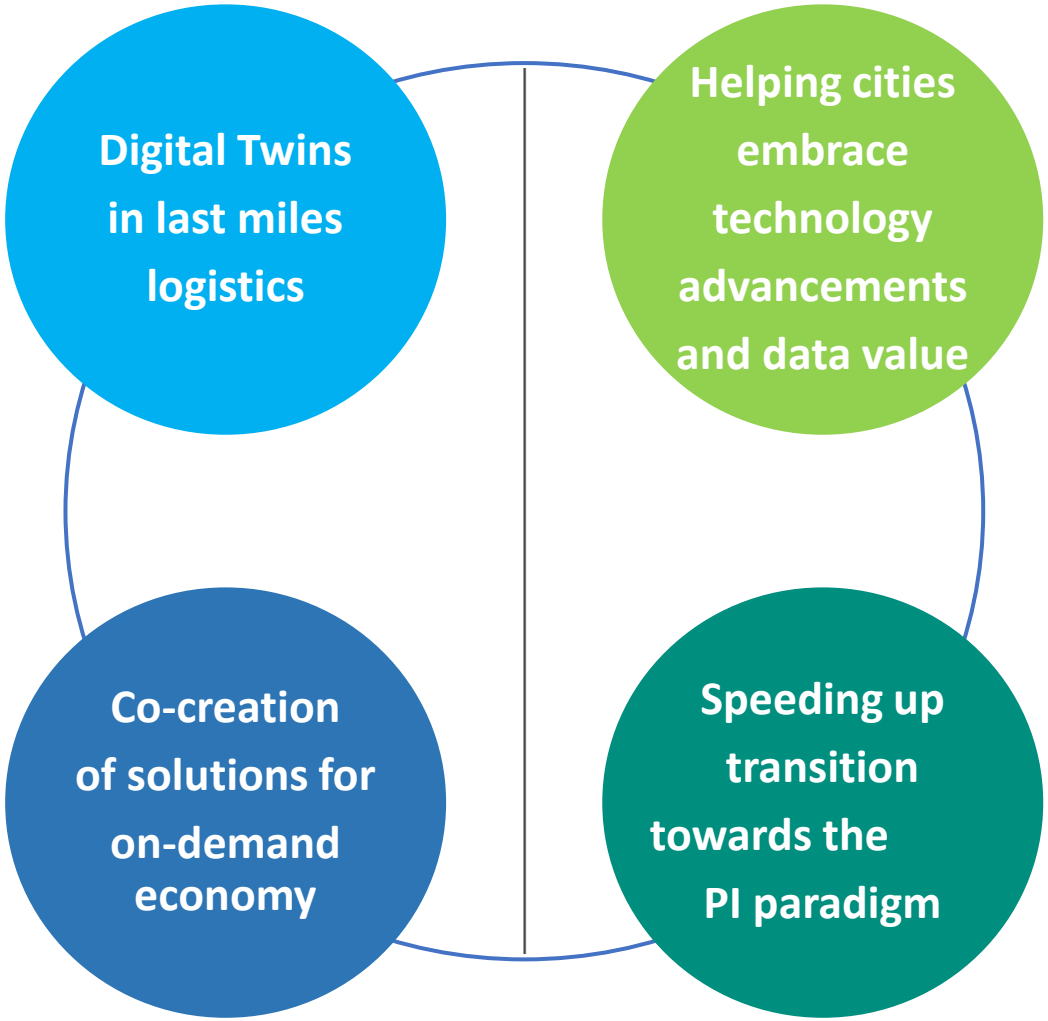
LEAD Innovations



Living Lab (LL) is a stakeholder-centered ecosystem, operating in an urban node context, for the systematic evaluation of innovative ideas and technological solutions in real life use cases.

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Expected Impacts

Impact 1

- Clear understanding of cost-effective strategies, measures and tools to achieve essentially zero emission city logistics in major European urban centres by 2030.

Impact 2

- New tested, demonstrated practices and solutions for better cooperation between suppliers, shippers and urban/ regions policy makers (planners)

Impact 3

- Clearly provide inputs for the preparation and implementation of SULPs, SUMPs and other planning tools (big data and real-time traffic management)

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Six external local authorities will join our Transferability Platform and benefit from a tailored transferability programme building upon LEAD's results, including capacity-building, training, technical visits, interactive workshops and customised feedback.

What is in it for you?

- Interviews and surveys for the identification and analysis of the requirements and necessities of cities, and your expectations towards the LEAD solutions.
- Capacity building activities: webinars, e-training and bilateral meetings/discussions with the partners responsible for the LEAD LL and specific solutions of their interest.
- Direct access to the project's key reports and events, while your will receive tailor-made and hands-on advice on the knowledge and tools developed in LEAD.

Find out more on the call & how to apply on our website:
https://www.leadproject.eu/

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Contact us!

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Join our Transferability Platform!

- Website: https://www.leadproject.eu/
- LinkedIn: lead-h2020

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