Welcome!

CIVITAS
Sustainable and smart mobility for all

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URBANE

GREEN LAST-MILE LOGISTICS CITY PLATFORM

Transferring Last-mile Logistics Innovations and Models from one City to Another

1 October | 9:30-12:00

CIVITAS FORUM 2024 | SIDE EVENTS

Transferring Last-mile Logistics Innovations and Models form one City to Another

Our programme

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Introduction
3 Presentations (Bologna, Hamburg, Thessaloniki)
Break
Round table 1 (40 min)
Break
Round table 2 (40 min)
Key takeways by rapporteurs

Welcome and Introduction

Leading the Way: Transferring Last-Mile Logistics Innovations and Models from one European City to Another

Tuesday 1 October 2024, Parma

Yannick BOUSSE, Project Adviser

European Climate, Infrastructure and Environment Executive Agency

Unit C3 - Horizon Europe Transport

IMPLEMENTING URBAN FREIGHT AND LOGISTICS RESEARCH AND INNOVATION

Net EU Contribution	Total Cost	Signed Grants	Participation	Unique Participants
47,88M 0,04% of Programme (All)	54,2M 0,04% of Programme (All)	8 0,02% of Programme (All)	214 0,08% of Programme (All)	185 0,31% of Programme (All)

Average EU Contribution	Average Total Cost
Per project	Per project
5,99M	6,77M

SME participation	SME Net EU Contribution
51 23,83% of Programme (All)	13,32M 27,82% of Programme (All)

European Commission

CF2024 URBAN FREIGHT AND LOGISTICS SESSIONS

European Commission

Thank you

Yannick BOUSSE

yannick.bousse@ec.europa.eu

cinea.ec.europa

@CINEA_EU

CINEA - European Climate, Infrastructure and Environment Executive Agency

CINEATube

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European Commission

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Parma

Comune di Parma

The URBANE Green Last-Mile Logistics Platform

Transferring Last-Mile Logistics Innovations and Models from one European City to Another

URBANE

Alonso Davila Graf & Juliette Thijs

Green Last Mile Logistics City Platform

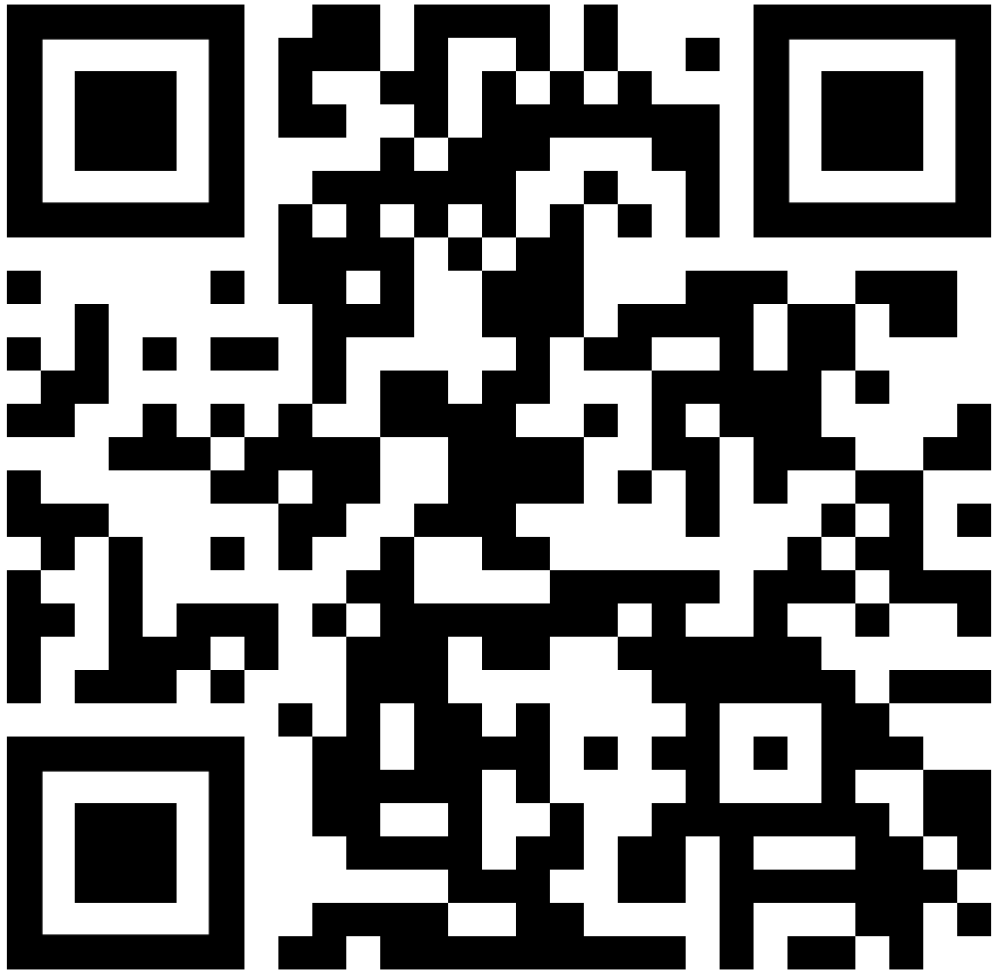
Working group of cities and regions on green last-mile logistics coordinated by URBANE

Connect Local Authorities:

- Peer-to-Peer Exchanges
- Share Best Practices, Challenges, Solutions, Policy Recommendations
- Capacity Building and Learning Opportunities

Arad, Antwerp, Barcelona Metropolitan Area, Bologna, City of Mechelen, Emilia-Romagna Region, City of Hamburg, Getafe, Helsinki, Istanbul, Leuven, Madrid, Prague, Riga, Sarajevo

2 – 3 meetings per year
1 in-person meeting every year



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Urban Freight and Logistics Cluster

Transferring Last-Mile Logistics Innovations and Models from one European City to Another

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Anne-Charlotte Trapp, Eurocities

The CIVITAS Urban Freight and Logistics Cluster

CIVITAS clusters objectives

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Strong thematic links

Cross-pollination of ideas and expertise among CIVITAS projects and beyond, with the involvement of external experts or non-CIVITAS projects.

Knowledge sharing

Create a dynamic platform for projects to share findings, results, and innovative solutions as well as identifying common challenges in the implementation of their projects.

Synergies and cooperation

Explore avenues for cooperative efforts, leading to joint activities, events, outputs and publications to avoid duplication of efforts.

Dissemination of your results

Support projects in disseminating results and make the most out of the CIVITAS Initiative.

The CIVITAS Urban Freight and Logistics Cluster

Overview of clusters

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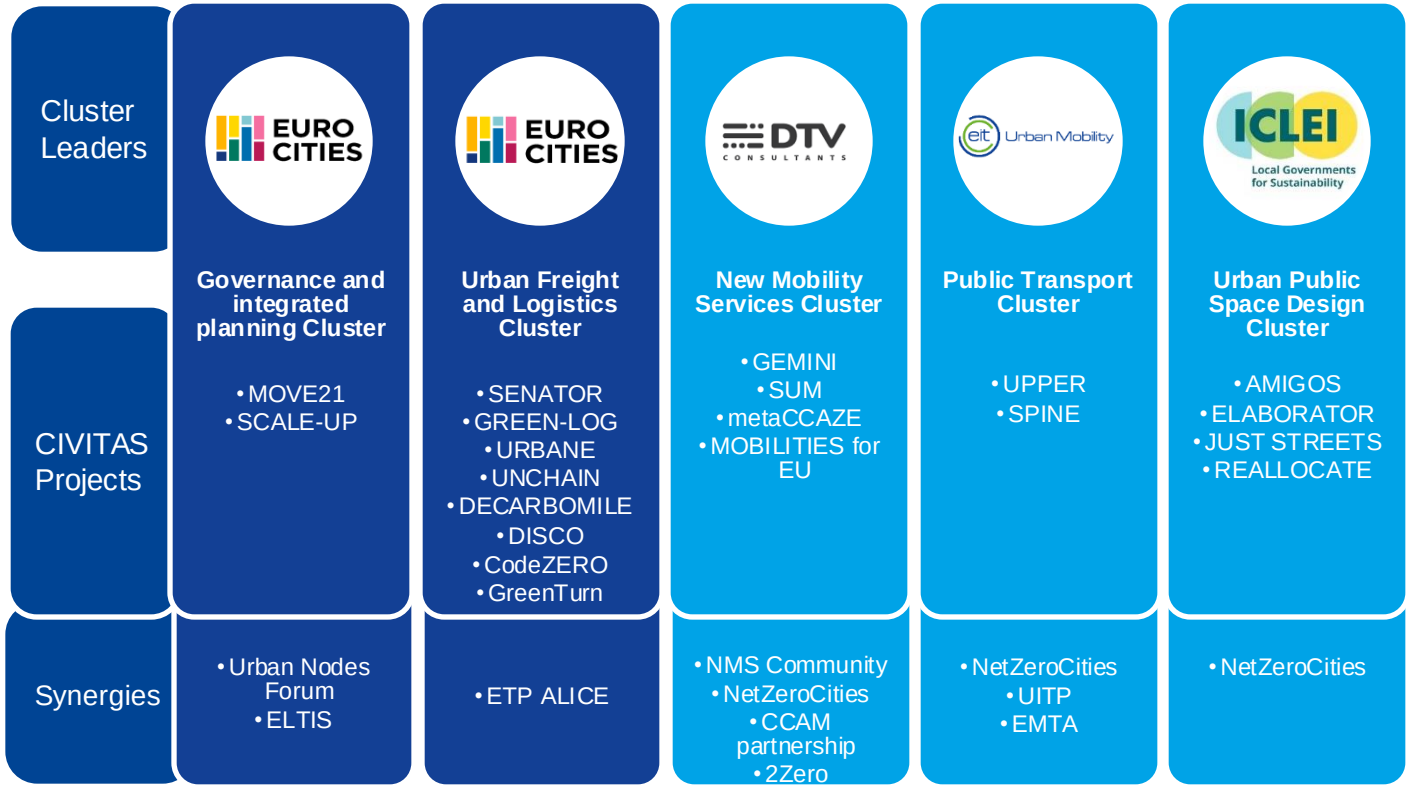
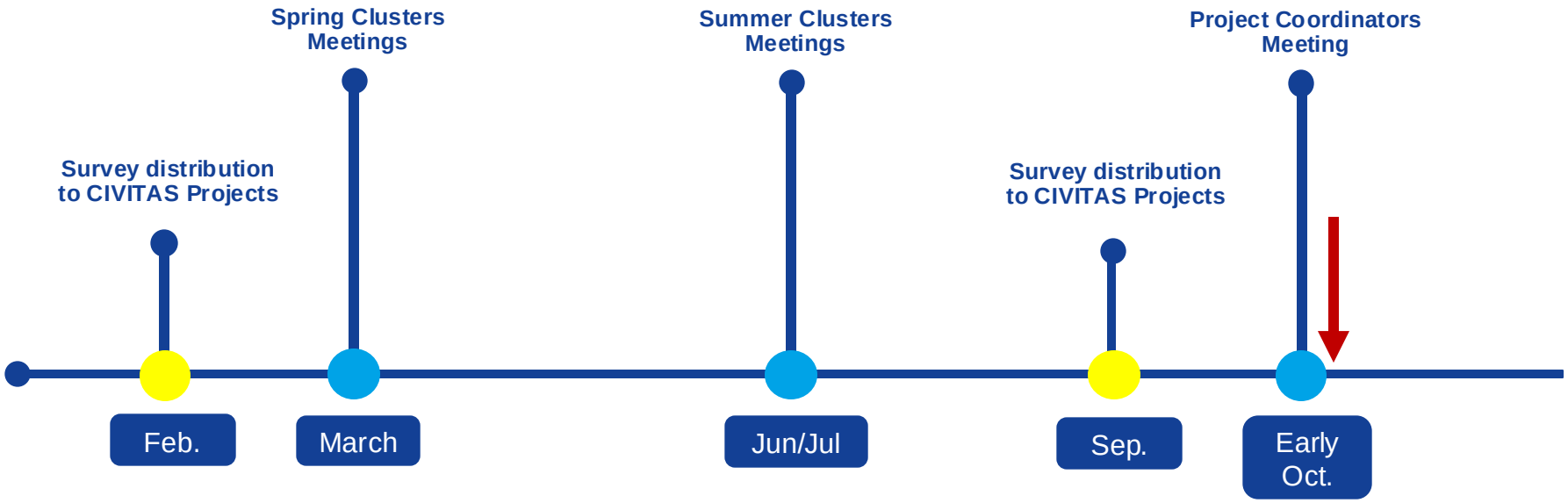


The CIVITAS Urban Freight and Logistics Cluster

Overview of clusters – yearly cycle



The CIVITAS Urban Freight and Logistics Cluster

Involved projects

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Horizon 2020				Horizon Europe			
2019		2021		2022		2023	
Shared-connected and low-emission logistics operations in urban areas		New delivery methods to green the last mile		Urban logistics and planning - digitalisation		Zero-emission e-commerce and freight delivery and return choices	
SENATOR		DECARBOMILE		DISCO		CodeZERO	
LEAD		URBANE		UNCHAIN		GreenTurn	
ULaaDS		GREEN-LOG					

The CIVITAS Urban Freight and Logistics Cluster

Joint actions & Objectives

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- **Collaboration and synergies with** ongoing projects and initiatives
- Focus on **outcomes and impacts** of the work programme
- **Exploitation and market uptake** of the project results
- Appropriate **involvement of logistics providers and 'end users'**
- **Exchange** challenges and solutions (based on survey responses i.e data management)
- Joint **Knowledge Exchange** i.e. *Logistics data spaces, and ITS for logistics June 2024*
- Joint **Communication and Dissemination outputs**, i.e. *TRA 2024*
- Joint **Urban Logistics Recommendations**

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Parma

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GREEN LAST-MILE LOGISTICS CITY PLATFORM

Anne-Charlotte Trapp
annecharlotte.trapp@eurocities.eu

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CIVITAS FORUM 2024 | SIDE EVENTS

Logistics Solutions in Low Traffic Zones - Example of a Micro-Hub Network

Transferring Last-Mile Logistics Innovations and Models from one European City to Another

Luca Bellinato

URBANE - Upscaling Innovative Green Urban Logistics Solutions Through Multi-Actor Collaboration and PI-inspired Last Mile Deliveries

Quick info

- Horizon Europe project
- Started in September 2022
- Will run until February 2026
- Bologna received a budget of 400.000 €

Key facts about the logistics measure
URBANE

OBJECTIVES

- Develop new **collaborative business model** for setup and operation of sustainable micro-logistics hubs network (Nearby Delivery Areas as in the SULP), combined with innovative delivery methods
- Replace conventional vans with **light Electric Delivery Vehicles**
- Introduction of **Physical Internet** models in urban freight deliveries
- Develop a **Digital Twin** of the micro-logistics hubs network, fed with real time data, used for planning and implementing urban freight-related measures

Key facts about the logistics measure
URBANE

LIVING LAB PARTNERS AND SYNERGIES

Partners

Institutions

Comune di Bologna

Research

ITL Istituto sui Trasporti e la Logistica

IT Provider

gel Proximity

Transport Operators

typ

DUE TORRI Logistics Partner

Observers

Regione Emilia-Romagna

Interreg Central Europe – Co-funded by the European Union

Comune di Ravenna

Comune di Reggio nell'Emilia

Comune di Piacenza

ubm urban bike messengers

GRETA

URBICO Urban Bike Courier

AICAI Associazione Italiana Corrieri aerei Internazionali

Last miler (contracted)

Salerno Trasporti

Micro-Hub (contracted)

RICOH imagine. change.

Synergies

Institutions

Città Metropolitana di Bologna

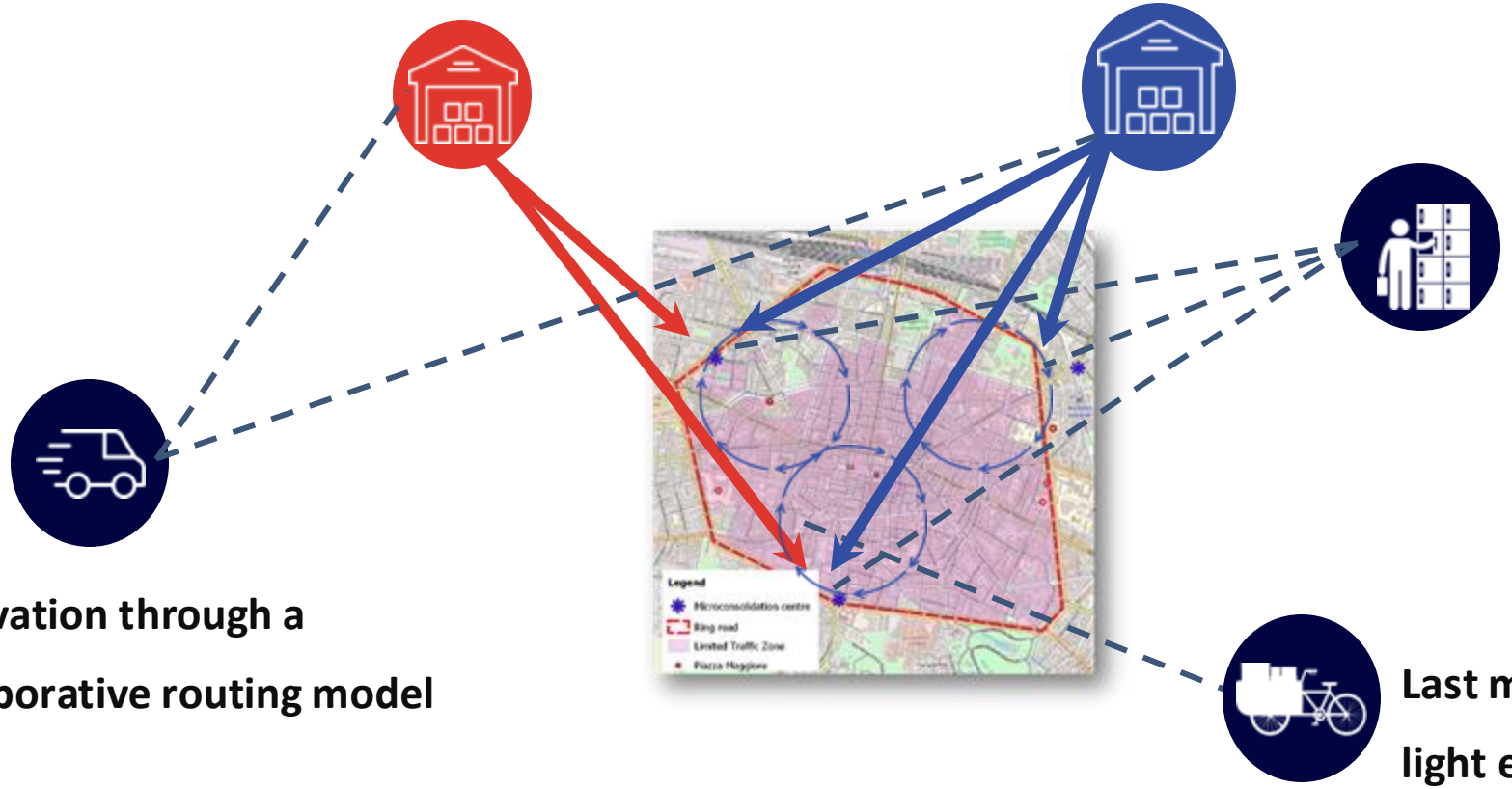
Projects

MOVE 21

URBANE

Key facts about the logistics measure

URBANE



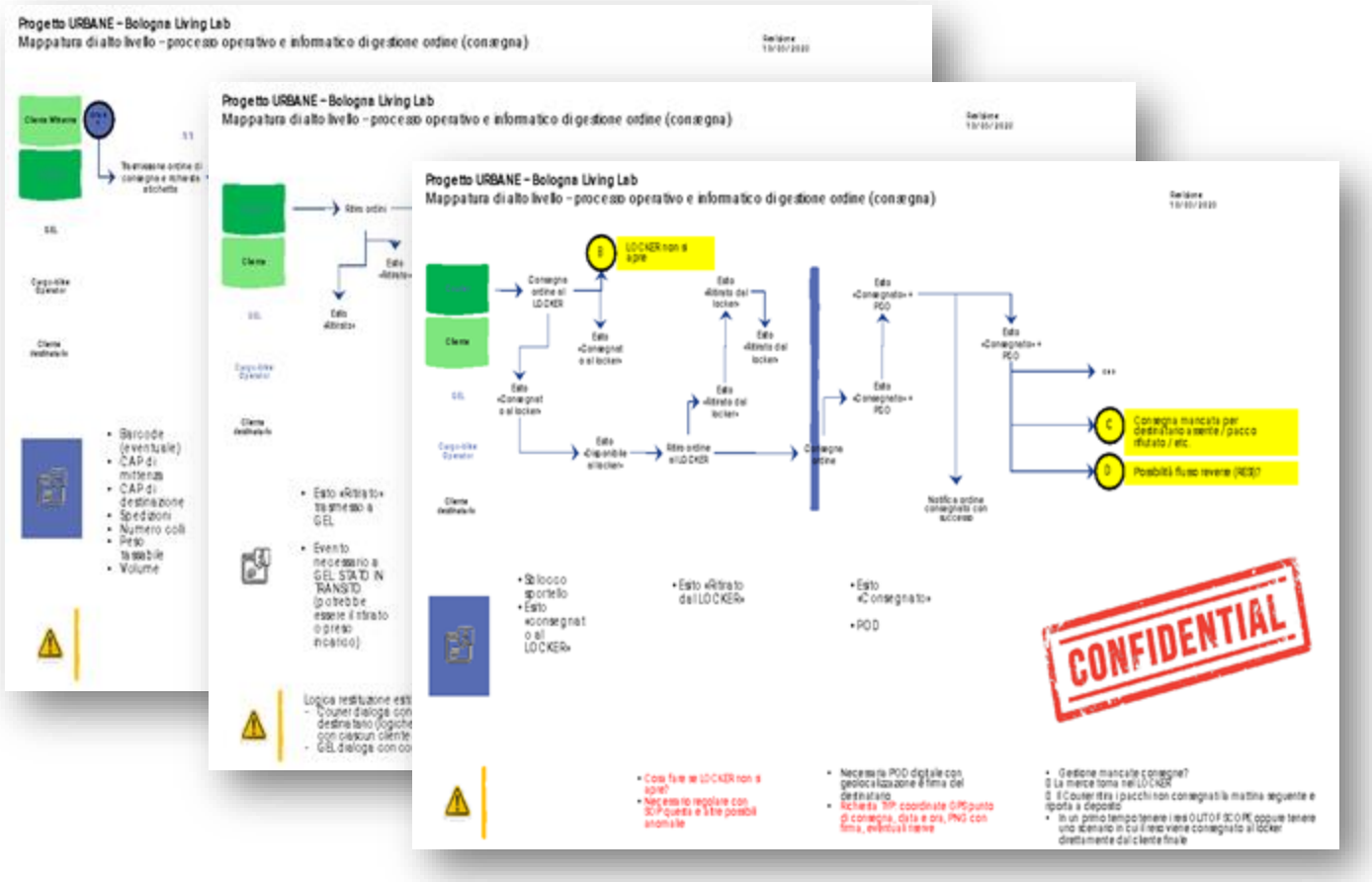
3 automated Micro Hubs as a transshipment point

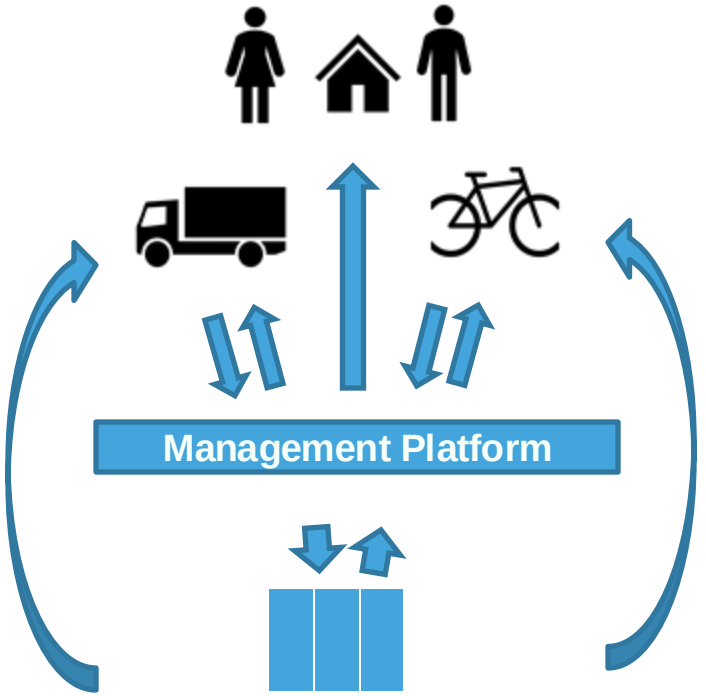
Innovation through a collaborative routing model

Last mile delivery with light electric vehicles

Key facts about the logistics measure

URBANE





Robust **management platform** needed to orchestrate such a **complex workflow.**

Key facts about the logistics measure

URBANE

01	Promoting the shared use of public space	In a smart, flexible and interoperable way avoiding the proliferation of siloed, privately branded micro-hubs
02	Seeking a sustainable business model	Flexible and scalable, transferable solution
03	Improving the governance of urban logistics	Very little data is currently available from operators

Key lessons learned about the logistics measure

URBANE

Results achieved in the first 3 months of operation

- 30% **CO2 emissions savings** compared with their conventional door-to-door deliveries;
- The **quality of the deliveries increased** as most of the parcels were delivered on the first attempt.
- Integration of blockchain and smart contracts for the **Proof of Delivery**;
- Increased **delivery speed** compared to traditional methods.

Key lessons learned about the logistics measure

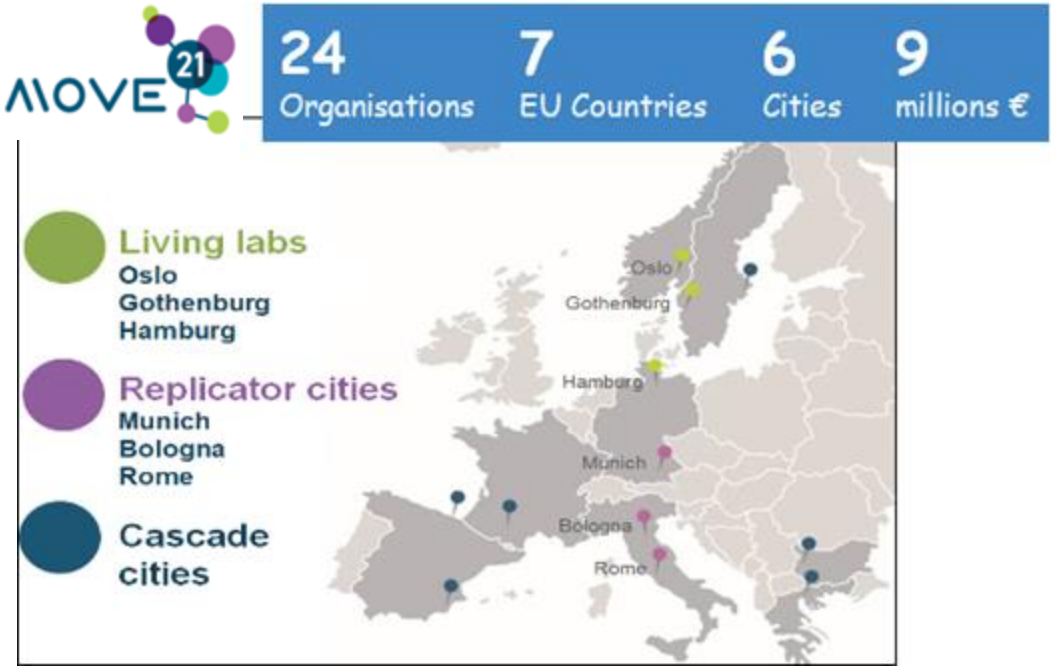
URBANE

Lessons learnt in the first 6 months of operation

- Difficulty in the involvement of other transport operators except for the 2 project partners;
- Express couriers prioritize their own staff and branded services. They are not inclined to use a third-party transport operator;
- Start with low volumes to consolidate the relationships between LL stakeholders and optimize the flow.

Key facts about the logistics measure
MOVE21

MOVE21 - Multimodal and interconnected hubs for freight and passenger transport contributing to a zero emission 21st century
Vision - Develop solutions for connected, smart and clean mobility and logistics in European cities.
Transform European cities and functional urban areas, and accelerate the pace of decarbonisation of the transport sector and the green transition in Europe.
Helps cities to transform into climate neutral and connected multimodal urban nodes for mobility and logistics.



Leading cities - Living Labs

Oslo

Gothenburg

Hamburg

Replicator cities: Bologna, Roma, Munich

To further discuss

Questions and topics for the roundtable

- How to involve more operators?
  - We are already addressing it through some dissemination activities and ad hoc questionnaires
- Is focusing on "traditional transport operators" rather than express couriers the only option? How to involve express courier?
- How to scale the model?
  - economic sustainability, number of hubs, type of parcels processed, public vs private space

To further read

Resources and links

More resources

- https://www.comune.bologna.it/servizi-informazioni/progetto-europeo-urbane
- http://www.comune.bologna.it/relazioniinternazionali/notizie/159:50717/
- https://www.urbane-horizoneurope.eu/
- https://move21.eu/city/bolo/

Thank you!

Luca Bellinato
luca.bellinato@comune.bologna.it

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Transferring Last-mile Logistics Innovations and Models from one City to Another

1 October | 9:30-12:00

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Parma

Parma

Innovative Last-Mile Logistics, Mobility and Hub concepts – Mobility for People and Goods

GREEN LAST-MILE LOGISTICS CITY PLATFORM

Transferring Last-Mile Logistics Innovations and Models from one European City to Another

URBANE

Sophronius Schalies

Introduction

DECARBOMILE & MOVE21: key facts about the projects

- Five pillars to DECARBOnize the last MILE logistics
- main goals:
  - **decarbonize the last mile**
  - **develop interoperable and multimodal logistics solutions**
  - **reduce congestion and noise pollution**
- project duration: September 2022 – August 2026
- HORIZON2020 Project

- Multimodal and Interconnected Hubs for Freight and Passenger Transport Contributing to a Zero Emission 21st Century
- main goals:
  - **test innovative integrated solutions for the transport of persons and goods**
  - **reduce emissions**
  - **increase resilience of transport systems**
- project duration: May 2021 – April 2025
- HORIZON2020 Project

URBANE

GREEN LAST-MILE LOGISTICS CITY PLATFORM

Key facts
DECARBOMILE: river logistics

second last mile: electric boat

Pictures: © AVATAR, DECARBOMILE

unloading site city

- pilot testing period: approx. **4 months in summer 2025**
- shared use of the boat with the **InnoWaTr-project**

last mile: e-cargo-bikes

Key lessons learned

DECARBOMILE: river logistics

Lessons learned

- integrating urban river transport into existing logistical delivery chains is possible
- very limited public space for the installment of hubs
  ⟶use of mobile hubs
- a lot of different permits from different authorities are necessary and a lot of regulations have to be considered (but support from the authorities is very good)

Challenges

- predicting the tide, the current, the weather and the travel time correctly and on time so the logistics service provider is able to reallocate its resources if necessary

Opportunities

- increased use of the waterways in Hamburg for logistics purposes in order to reduce emissions and congestion
- develop concepts for scalability and replicability
- assessment of different use cases (e.g. other goods / services) based on the experience gathered

Pictures: © RYTLE, Hamburg Port Authority

Key facts and key lessons learned

MOVE21: multifunctional neighborhood hub Holstenstraße

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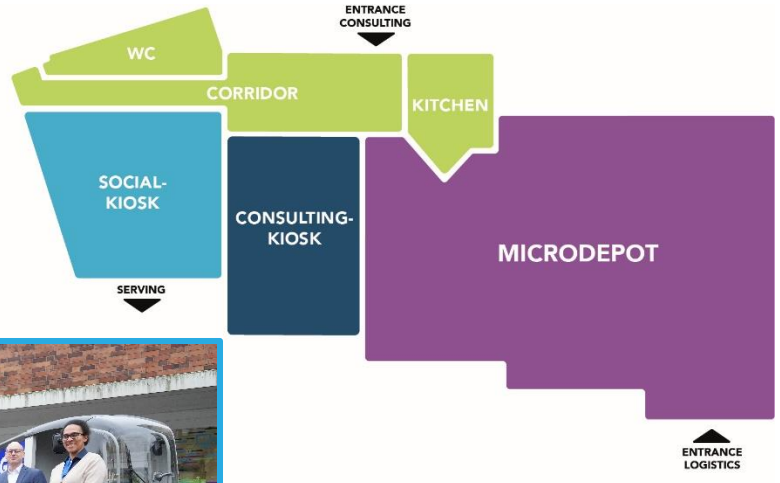
Multi-functional use of the hub

- Micro depot for last mile logistics
- Distribution point for food and clothing for people in need
- Social counselling and support



Lessons learned

- Combination of logistics and social uses possible within one business model
- The degree of professionalism of the users is more decisive in terms of the support and monitoring required than their field of operation.

Challenges

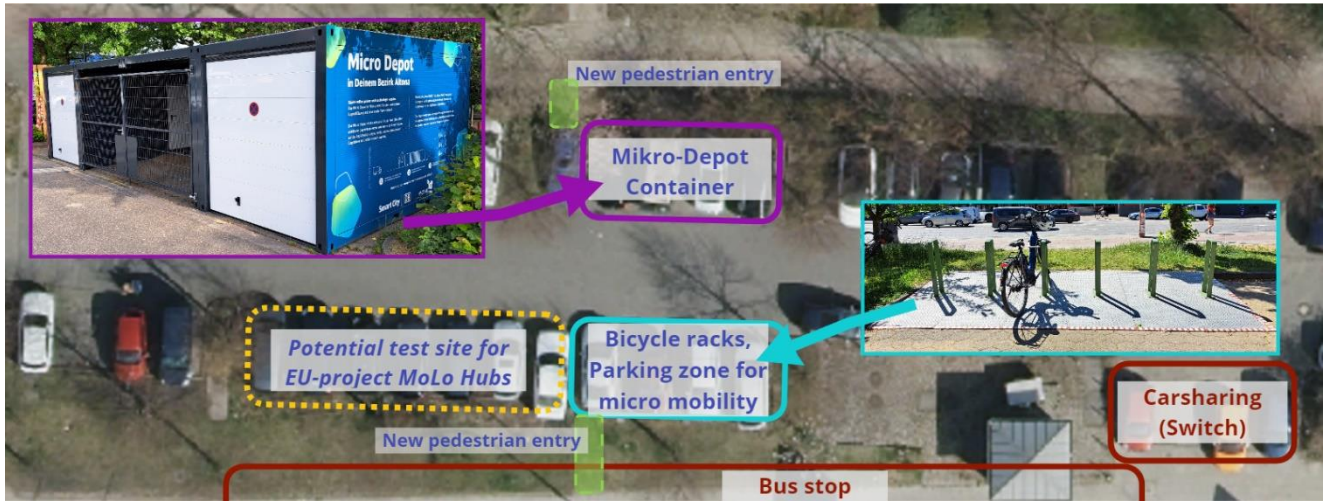
- Duration of administrative processes (change of use application)

Opportunities

- Interim use of building for sustainable urban logistics
- Combination of logistic and social services

Key facts and key lessons learned

MOVE21: multifunctional neighborhood hub Kaltenkircher Platz



Logistics

micro-depot "new parking space design" used by a local logistic start-up

Mobility

- Carsharing & charging Infrastructure ('switch point')
- Parking zone for micro-mobility
- Bicycle racks

Circular economy

Collection of recyclable goods (cooperation with **MoLo Hubs project**)

(planned end of 2024)

Lessons learned

- Living Lab processes do not always follow a linear approach

Challenges

- Power supply expansion for different measures requesting electricity

Opportunities

- Combined use of parking space, infrastructure for last mile logistics, mobility and potentially recycling/circular economy
- Conversion of parking space that was previously used only by cars
- Additional locally linked mobility services and improved transfer options strengthen and facilitate the use of eco-mobility
- Increased quality of stay and perception of safety due to added uses and improved visibility of area

Key facts and key lessons learned

MOVE21: Combined transport of people and goods using the on-demand shuttle of MOIA

Goals

- Transportation of people and goods in the same electric powered vehicle
  designed for mobility (on-demand shuttle)
- Improving services for social aid organizations
- Use existing resources and capacities more efficiently
- Reduce climate and traffic pollution
- Developing new mobility and logistics concepts by getting in dialogue with local couriers

Lessons learned

- Combined transport works with an accompanying person for goods.
- Sufficient time for advertisement to be factored in

Challenges

- Ensuring a relevant volume of real shipments

Opportunities

- Addition of re-driven real courier shipments from the previous month
- Particular integration of public transport and taxi-systems

Other use case "combined transport of people and goods using using a regular bus in sub-urban Rissen" (Rissen bringt's) can be discussed during the round-table session.

To further discuss

Questions and topics for the roundtable

- What concepts do you want to have discussed in more depths? Is there anything that needs to be clarified?
- Where do you see room for improvement regarding the concepts presented? Any suggestions or experiences you want to share?
- Could the concepts presented be replicated in your city? Where do you see potentials / obstacles?
- There is very limited space for people, transport and logistics in urban areas. What modes of transportation could be beneficial for the future? Could multifunctional urban spaces be part of the solution?

To further read

Resources and links

project websites:

- https://decarbomile.eu/
- https://move21.eu/

websites of other projects mentioned:

- https://www.interregnorthsea.eu/innowatr
- https://www.interregnorthsea.eu/molo-hubs

For regular updates you might also consider following the projects on LinkedIn.

Thank you!

Sophronius Schalies
ssc@hamburg-logistik.net
https://www.hamburg-logistik.net/en/

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URBANE – Thessaloniki Living Lab act towards green last-mile delivery for e-commerce

Transferring Last-Mile Logistics Innovations and Models from one European City to Another

Zisis Maleas| CERTH-HIT

Introduction

URBANE | Thessaloniki LL

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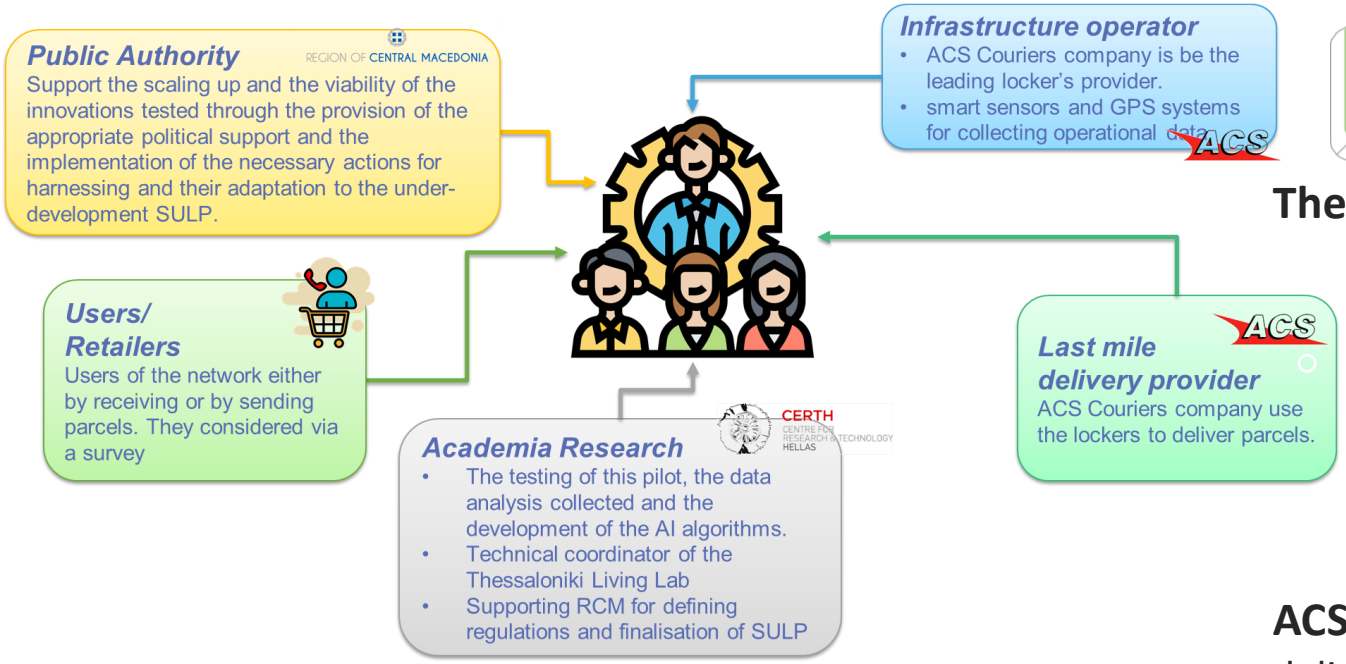
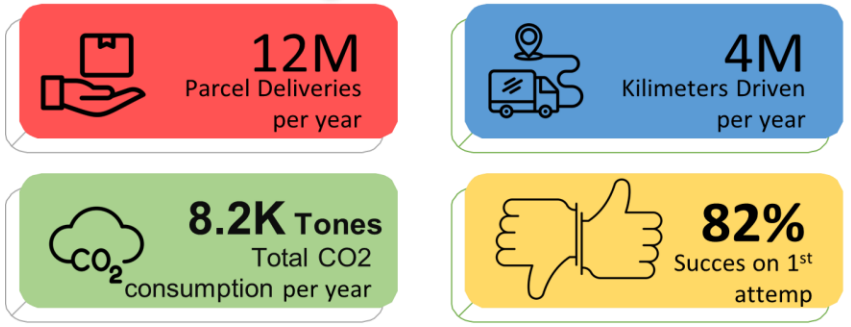
Stakeholders involved



Challenges in Numbers



Thessaloniki Agglomeration Authority :

Holistic SULP for the Agglomeration & Thessaloniki Municipality

Optimization of City logistic facility location & strategy for urban space use for e-commerce activities decarbonization

Data driven collaboration with industry for lockers development in urban space

ACS courier: Decarbonization and efficiency optimization of delivery process & examination of collaboration BMs & large-scale installation of parcel

Key facts about the logistics measure

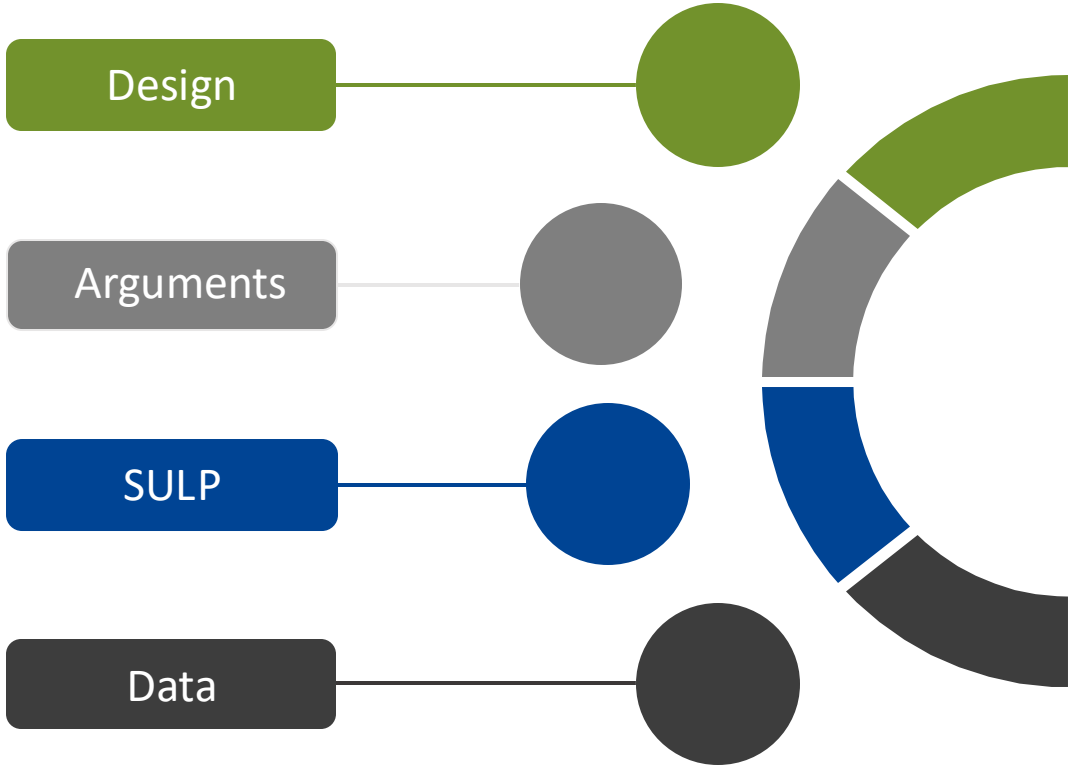
Locker Alliance network

Support companies to design their parcel locker network in order to optimize their green last mile operations

Provide argument for city authorities to guide LSPs to mitigate on collaborative business models with shared assets

Support city authorities to design SULP by considering new urban space allocation policies

Fusion of different data sources for feasibility checking



Key facts about the logistics measure

Locker Alliance network

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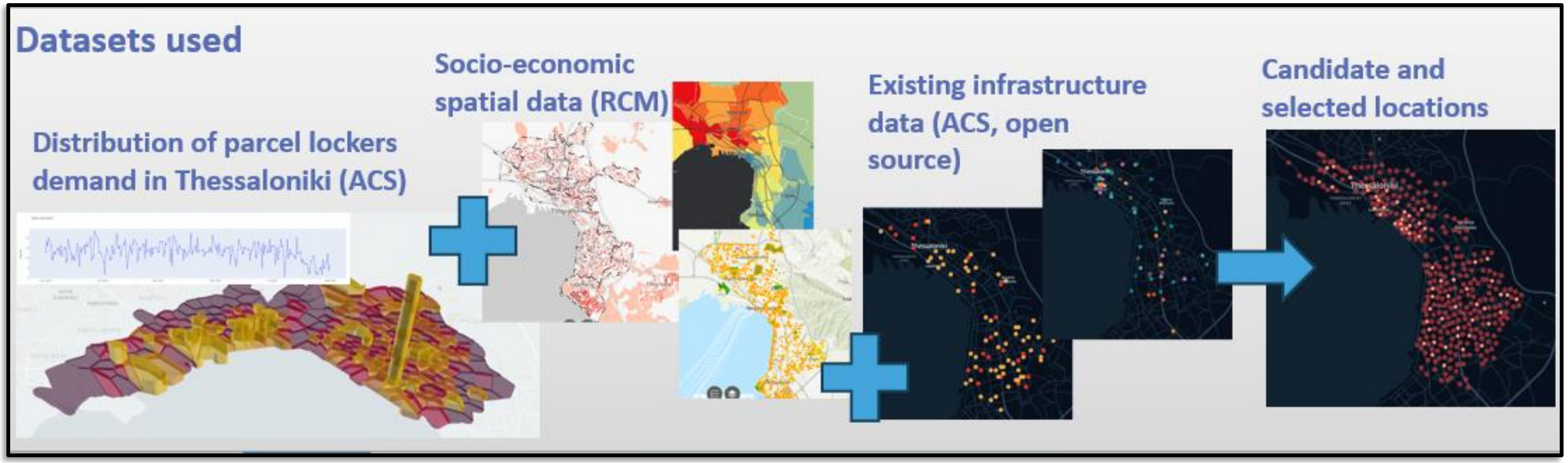

Key facts about the logistics measure

UCC as a PI green last-mile solution

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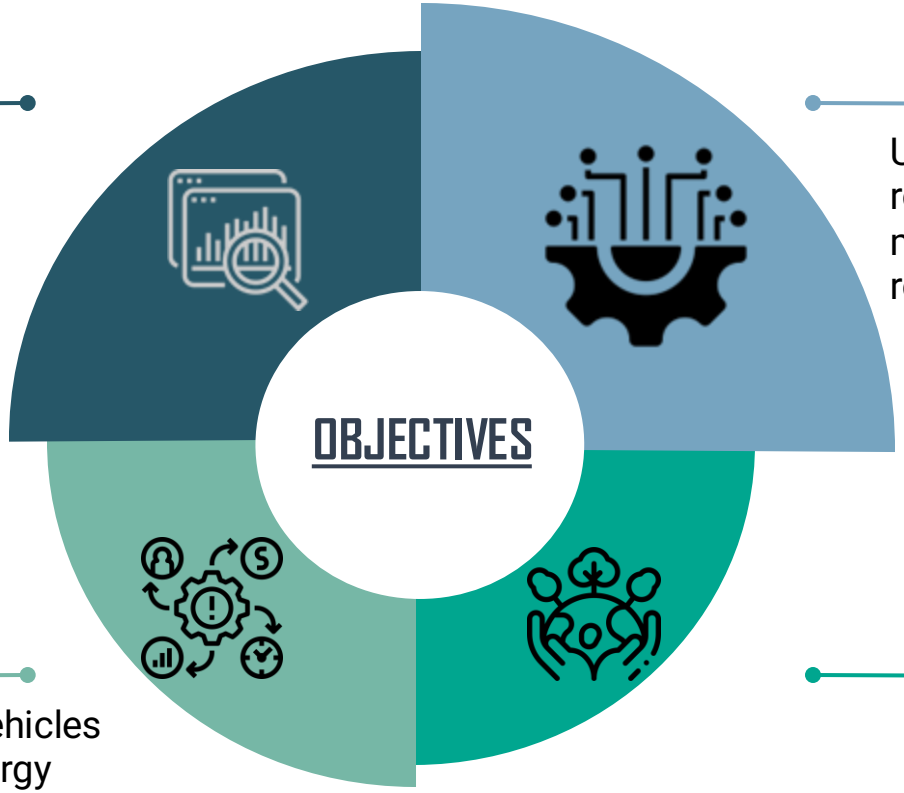
Data Layer

Collection of Business & Traffic Data Sets & Model development



Digital Twin Layer

Use Digital Twin to refine strategies for vehicle routing, loading, and unloading to enhance last-mile delivery efficiency through dynamic routing algorithms.

Impact Assesment Layer

Feasibility analysis of electric vehicles (EVs) for their performance, energy efficiency, and environmental impact in urban logistics.

Environmental Layer

Test New business model in CO2 reduction

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Key facts about the logistics measure

UCC as a PI green last-mile solution

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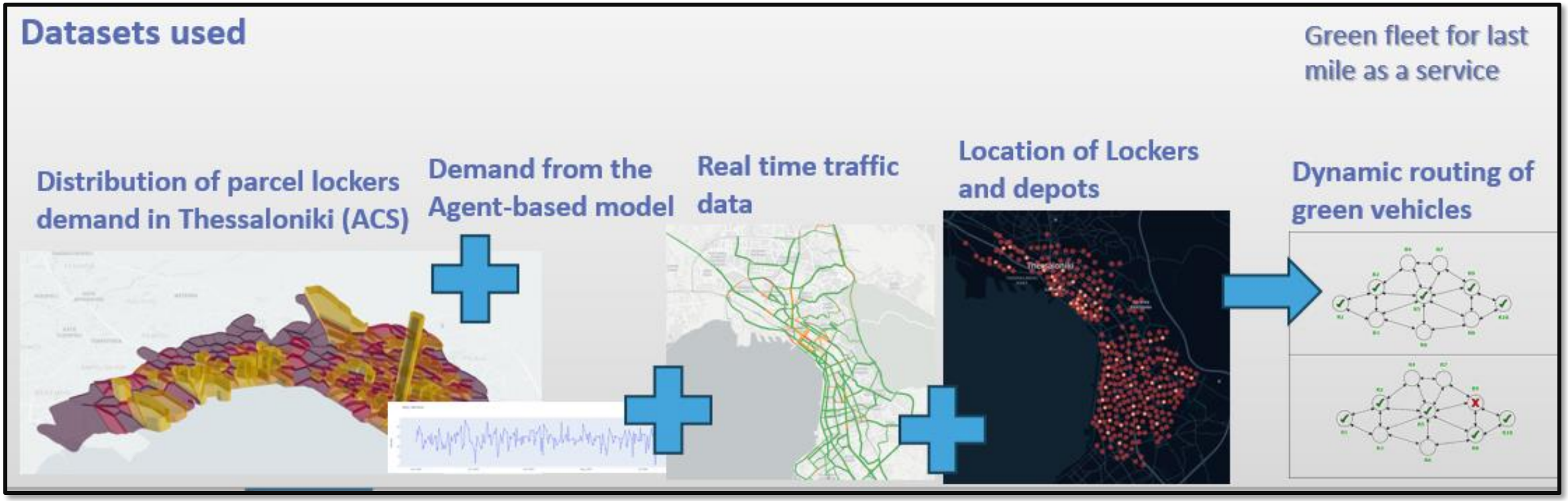

Key facts about the logistics measure

Models Deployed

01 Facility Location

Optimal sizing and configuration of the network

02 Blockchain

Transparent, reliable, and resilient transaction on shared locker operations

03 Agent-based behavior analysis

In-depth understanding of customer behavior

04 Green delivery DT

Zero emissions and sustainable delivery with green vehicles with Dynamic Routing

Key lessons learned about the logistics measure

Locker Alliance network

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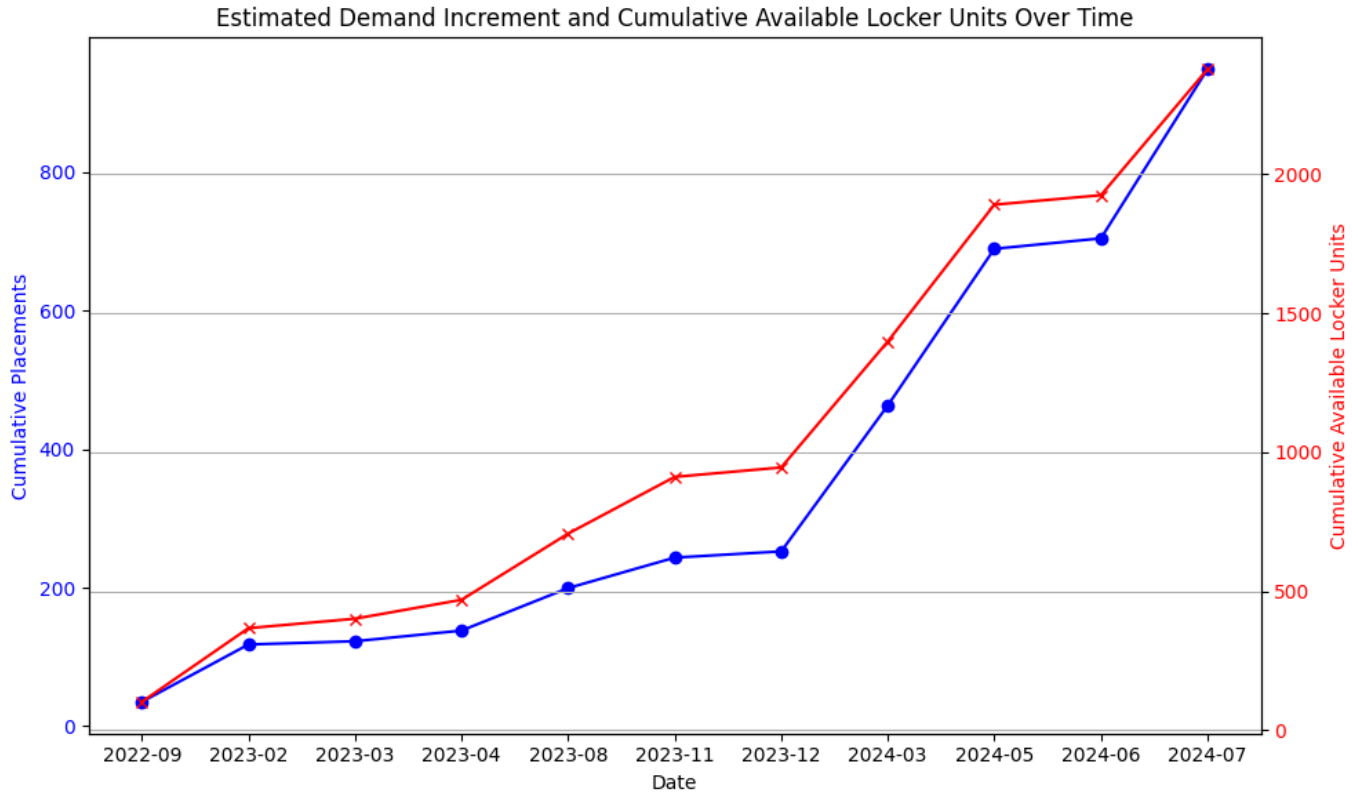
10.2%

Parcel Lockers Pickup Rate
improvement due to optimal locker expansion

4.5% → 29%

Parcel Lockers Fill Rate
increment to better demand induction



Key lessons learned about the logistics measure

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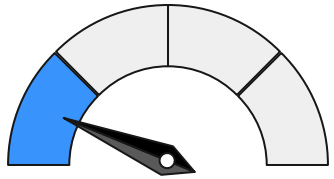
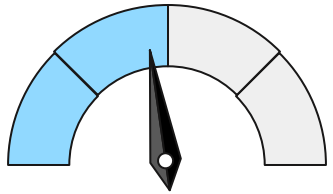
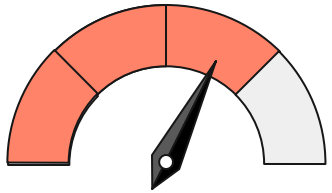
	Baseline	ILN	ALN	UCCLN
CO2 Emissions Reduction	-	- 49.6%	-61.7%	-89.6%
Kilometers per Delivery	-	-52.3%	-63.5%	-82%
Deliveries per Trip	-	+13.5%	+21.6%	+43.2%
First-Attempt Deliveries	-	+3.7%	+10.5%	+16.1%
Freight Vehicles	-	-42.4%	-60.3%	-73.8%



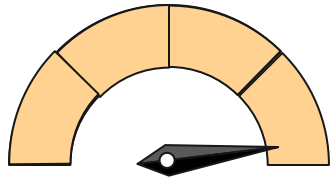
Baseline Scenario Describes the current situation



Individual Locker Network outperforms baseline scenario



Alliance Locker Network shows significant improvements



Full collaborative model under UCC can reduce emmisions by up to 90%!

Key lessons learned about the logistics measure

- **Stakeholder Engagement and Adaptation:** Although initially hesitant, ACS ultimately agreed to participate in the locker alliance network after recognizing the potential for increased delivery efficiency demonstrated by the project's promising results.

- **Validation of Blockchain as a Trustworthy Technology Does Not Require Groundbreaking Restructuring of IT infrastructure:** The adoption of blockchain solutions during the pilot tests demonstrated the technology's capability in enhancing logistics transparency and security

- **Strategic Placement of Lockers Should Incorporate Multiple Data Sources and Stakeholder Needs:** The analysis of locker locations led to ACS adopting at least 11 of the proposed locker sites out of a hundred identified to date.

- **Incremental Implementation Yields Manageable Insights:** By evaluating the impact of each stage separately, the project was able to identify the specific benefits and challenges associated with each innovation.

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To further discuss

Questions and topics for the roundtable

- How should we convince governmental authorities and business entities on participating on collaborative (PI) schemes as a measure to mitigate emissions and greening the operations?
- At which way public authorities can nudge and activate this process?
- Which are the critical steps need to be followed to deliver successful innovations for greening urban logistics into real operations?
- Do companies willing to swift and change their business models according to local and regional goals of sustainability ? And which are the greater barriers ?

To further read

Resources and links

- ✓ **Impact Assessment Radar**: https://ia-radar.imet.gr/
- ✓ **Urbane Transferability Platform** : https://urbane.inlecom.eu/#/auth/login
- ✓ **URBANE homepage**: https://www.urbane-horizoneurope.eu/
- ✓ **URBANE Newsletter** : https://www.urbane-horizoneurope.eu/resources/
- ✓ **LinkedIn** : https://www.linkedin.com/company/urbane-project/

Thank you!

ZISIS MALEAS
zisismaleas@certh.gr

5 min break

Round table 1

5 min break

Round table 2

Key takeaways from the table rapporteurs

Maria Kampa, URBANE Coordinator
Giuseppe Luppino, ALICE
Paola Astegiano, DISCO Coordinator

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Thank you!

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