metaCCAZE

Flexibly adapted MetaInnovations, use cases, collaborative business and governance models to accelerate shared Zero Emission mobility for passengers and freight

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**Artificial Intelligence
for Road Safety and Mobility Workshop**

8th UN Global Road Safety Week

Athens, 15 May 2025

Streets for Life
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The metaCCAZE project

➤ **metaCCAZE**:

"Flexibly adapted MetaInnovations, use cases, collaborative business and governance models to accelerate shared Zero Emission mobility for passengers and freight".
metaccaze-project.eu/

➤ **Partners**:

44 partners from 12 EU countries involving National Technical University of Athens

➤ **Duration of the project**:

48 months (January 2024 - December 2027)

➤ **Framework Program**:

This project has received funding from the Horizon Europe programme under grant agreement No 101139678.

Background

- **Over 70%** of EU citizens live in cities which generate **23%** of all transport greenhouse gas emissions. Europe wants to become the world's **first climate-neutral** continent by 2050.

- metaCCAZE is on a mission to revolutionise **mobility in European cities**, serving both **passengers and freight**, with innovative **electric, automated, and connected solutions** designed to make transportation **smarter, net zero, and more efficient for all**.

- But this is something we cannot do alone! That's why we collaborate, inspire and are inspired by the following initiatives.

Objectives

1

Engage professionals and citizens to co-design zero emission shared mobility

2

Develop scalable, resilient technological solutions combining electrification, automation, and connectivity

3

Demonstrate zero emission shared mobility in four trailblazer cities, assessing seasonality effects

4

Transfer solutions to six follower cities, establishing a replicable method

5

Equip markets and stakeholders with skills to **adopt** zero emission mobility

6

Disseminate results to accelerate metaCCAZE solutions deployment

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metaCCAZE Approach

6 metaInnovations...

...that enable combined electrification, automation and connectivity:

2 Harmonise:
AI Data Warehouse for multi-sectorial and sensor data

1 Align:
Decentralised AI to align grid-fleet-demand

3 Charge:
Inductive and mobile charging infrastructure

4 Automate & Connect:
Remote control centers for AVs & ADAS for parking and docking

6 Digital Twin:
Planning & optimisation

5 Manage:
AI-driven (re-) scheduling tools & supply demand matching for on demand shared e-services

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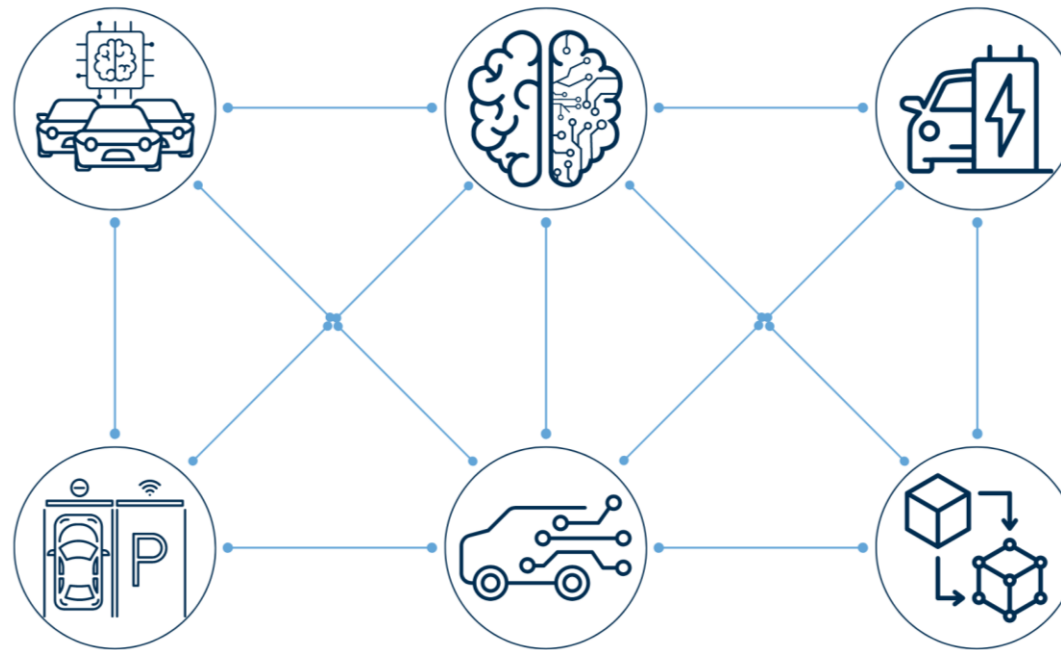
metaCCAZE Approach

... are infused to 10 cities´services and infrastructure...

Infrastructure: Charging infrastructure, multimodal hubs for passengers and logistics, connectivity infrastructure, parking & traffic management

Services: Public transport, on-demand minibuses (electric or eAV), e-bike & e-scooter sharing, logistics: city deliveries, garbage collection
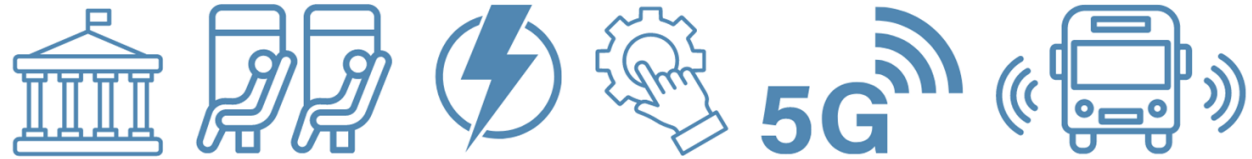
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metaCCAZE Approach

...through metaDesign activities...

Actors engaged in metaDesign activities & demonstration...

...design, test and use the metaServices.

Authorities, passenger & freight transport operators, energy providers, vehicle manufacturers, infrastructure providers, telecommunications

Citizens, visitors, commuters – diverse population groups

social embracement & behavioural change monitoring

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Expected Results

➢ **AI-powered tools:** Including decentralized AI for grid-fleet-demand alignment, AI-enhanced decision support systems, and dynamic rescheduling tools for on-demand mobility.

➢ **MetaInnovations toolkit:** A modular set of interoperable solutions to support urban mobility transitions.

➢ **AI Data Warehouse:** Real-time, interoperable data integration hub that supports energy, mobility, and city systems collaboration.

➢ **Standardized impact assessment** framework (~200 KPIs) and cross-city transferability frameworks.

➢ *MetaPolicy package:* Guidelines and policy recommendations for future Sustainable Urban Mobility Plans (SUMP/SULP)
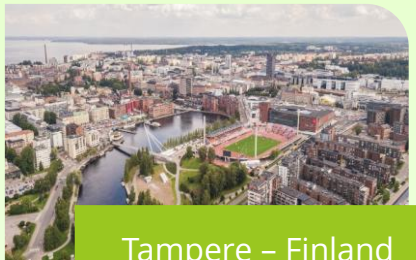
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Trailblazer Cities

Amsterdam – the Netherlands

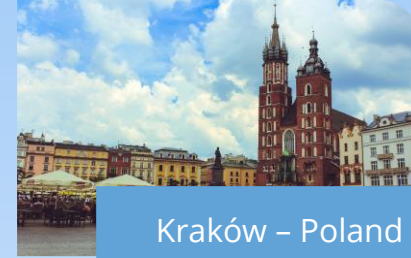
Munich – Germany

Tampere – Finland

Limassol – Cyprus

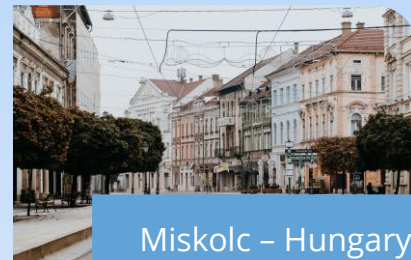## Follower Cities

Athens – Greece

Kraków – Poland

Gozo – Malta

Milan – Italy

Miskolc – Hungary

Paris region – France

metaCCAZE reimagines mobility not just through technology, but through a deep commitment to people and place. By transforming our streets into dynamic, zero-emission spaces, the project brings to life the vision of 'Streets for Life' - where safety, inclusivity, and sustainability are not ambitions, but everyday realities.

Streets for Life

City	Use Case Code	Use Case Title
Amsterdam	AM-UC01	Autonomous electric waterborne vessels for logistics
	AM-UC02	Adaptive Speed Governance of connected e-bikes
	AM-UC03	Optimizing intermodality of waste collection in the urban systems
	AM-UC04	Tradable Mobility Credits (TMC) scheme
Munich	MU-UC01	Dynamic Curbside Management (DCM)
	MU-UC02	Establishment and operation of multimodal logistics hubs
Limassol	LI-UC01	On-demand mini-buses service
	LI-UC02	Shared e-bikes
	LI-UC03	Multimodal passenger hub
	LI-UC04	Transport and Energy Platform
Tampere	TA-UC01	Autonomous e-shuttles with an advanced remote-control centre and inductive charging
	TA-UC02	Tram feeder service with advanced remote-control centre and inductive charging

Scientific and Social Impact

➤ Development of AI-powered mobility solutions, including real-time planning and decentralized optimization of automated fleets.

➤ Introduction of the MetaInnovate toolkit, fostering integration of IoT, remote sensing, machine learning, and cloud services to monitor and optimize urban infrastructure.

➤ Inclusive co-design and evaluation of mobility services that prioritize the needs of vulnerable groups (elderly, women, disabled, rural residents).

➤ Enhancement of urban governance through training, capacity-building, and stakeholder engagement to foster widespread adoption of sustainable mobility.

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Future Challenges

➢ **Institutional complexity:** Need to align various public authorities and stakeholders with new governance models and business frameworks.

➢ **User acceptance:** Potential reluctance from citizens and stakeholders in adopting new mobility paradigms.

➢ **Technical integration:** Ensuring interoperability between diverse systems (e.g., AI models, data warehouses, and digital twins).

➢ **Procurement and rollout delays:** Risk of delays in acquiring and deploying technology in Living Labs.

➢ **Data availability:** Ensuring complete, timely, and usable data for feeding planning tools and AI systems

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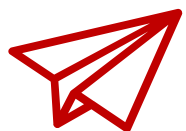
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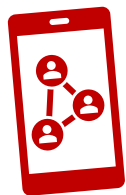
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