UT-LABS STRUCTURE, ROADMAP AND NEEDS IDENTIFIED

WP1, TASK 1.1

DATE OF DOCUMENT

30/09/2024 (M 09)

DELIVERABLE VERSION:
D1.1, V1.0

DISSEMINATION LEVEL:
PU (fully open)

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Document history

PROJECT ACRONYM	MOBILITIES FOR EU
Project Title	New MOBility solutions for clImate neutraLity in EU cITIES
Grant Agreement Nº	101139666
Project Coordinator	CARTIF
Project Duration	01/01/2024 – 31/12/2028 (60 Months)
Deliverable No.	D1.1 UT-Labs structure, roadmap and needs identified
Diss. Level	Public (PU)
Deliverable Lead	RC
Status	Working
	Verified by other WPs/Partners
	x Final version
Due date	30/09/2024
Submission date	30/09/2024
Work Package	WP 1 – UT-Labs citizen and stakeholders mutual engagement
Work Package Lead	RC
Contributing beneficiary(ies)	CARTIF, MADRID, PZGR, DRESDEN, SAENA, ESPOO, TRENCIN, SARAJEVO, GDANSK, IOANNINA, STEINBEIS, AEDIVE, IRF
DoA	This deliverable contains the Structure, Vision and Needs identified for the Urban Transport Labs and as a result the Roadmap for implementation.

DATE	VERSION	AUTHOR	COMMENT
11/03/2024	v0.1	RC	Contents definition and structure
22/07/2024	v0.2	RC, all	Activities launching and data insertion from the exercises
02/09/2024	v0.3	RC	Definitive ToC and initial formatted contents
23/09/2024	v0.4	RC	Consolidated version of deliverable circulated for review

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25/09/2024	v0.5	CARTIF, PZGR, SAENA	Document review, correction of inconsistencies and formatting
30/09/2024	v1.0	RC	Final version for submission

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MOBILITIES FOR EU is a Horizon Europe project supported by the European Commission under grant agreement No 101123538.

Please note that this deliverable has been inspired by deliverable D5.1, the "D&C and Exploitation Plan" of the project MULTICLIMACT (GA number 101123538), which has been authored by STEINBEIS as well.

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List of abbreviations

ACRONYM	DESCRIPTION
AV	Autonomous vehicles
CCAM	Connected, Cooperative and Automated Mobility
CCC	Climate City Contracts
DGT	Direccion General Trafico
ENOLL	European Network of Living Labs
ITS	Intelligent Transport Systems
LH	Lighthouse
SULP	Sustainable Urban Logistics Plan
SUMP	Sustainable Urban Mobility Plan
UT	Urban Transport
UT-Lab	Urban Transport Lab
VRU	Vulnerable Road Users
WHO	World Health Organisation
WP	Work Package

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Publishable summary

This report summarizes the process to set up the Urban Transport Labs (UT-Labs) in the MOBILITIES FOR EU project. The UT-labs have been conceived as living labs with two main objectives 1) to engage with local stakeholders and citizens to co-design the mobility and logistics solutions and to overcome the barriers that might arise during the process; and 2) to learn from other cities and share knowledge through the process.

Living labs are understood in the project as the most adapted instrument for creating user-centered environments that enable innovation, co-creation, and start-up development. It offers the perfect solution to engage with real users, co-create with them and test the new solutions in real life and controlled environments, before launching these technologies and services to the market. As services are co-created, they are perfectly in line with user needs and priorities, and they provide the right value to the exact user.

More than 50% of road accidents involve vulnerable road users: pedestrians, cyclists and motorcycles according to the World Health Organization (WHO) so one of the objectives of the Labs is to address this problem providing a safer city for them.

During the project, they will act as experimentation and innovation hubs to support the whole participatory process in collaboration with the Mission Platform. There are two different types of Labs in the project, the labs in the lighthouse cities (Madrid and Dresden) for which the mobility and logistic solutions will be designed, implemented, and monitored through the project and the labs of the fellow cities: The labs in Espoo, Sarajevo, Trenčín, Gdansk, and Ioannina, for which the mobility and logistic solutions will be identified through the project. As they are in different co-creation phases the involvement with stakeholders will be different and its experiences will enrich one another.

All the project partners have been involved in setting up the labs, the seven municipalities in the project, the local partners for the cities of Madrid, Dresden and Trenčín and the transversal partners supporting the setting up in each city: AEDIVE, STEINBEIS, CARTIF, IRF and RC.

The creation of the Labs in the seven cities have followed the same approach: stakeholder mapping, governance structure, benchmark of labs, interviews implementation, mission and vision and roadmap of actions in the lab. The results of this process are presented in this report with visual representations of the different exercises undertaken.

The results of this deliverable will be interesting for other cities in the setting up of living labs in different sectors, as the co-creation process is detailed, including methodologies and different types of exercises. Best practices are also provided in the conclusions, which could be beneficial for other municipalities and similar projects.

This report is addressed to urban municipalities and stakeholders that are willing to launch innovative solutions together with local stakeholders and citizens. Setting up living labs is one the most adapted approaches to do so and this report provides inputs and details the process the MOBILITIES FOR EU project has followed.

The results of this work will be living documents all along the project and will be updated periodically to become working documents for the living labs.

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1. Introduction

1.1. Purpose and target group

The MOBILITIES FOR EU project aims at demonstrating that innovative passenger mobility and freight transport concepts designed and implemented following participate and user-centred principles are cost-effective and feasible solutions to contribute significantly to the cities' transformation towards climate-neutrality, allowing to speed up the process to reach SCOPE 2 emissions reduction in 2030.

The participatory focus of the project is coordinated through work package 1 (WP1). The work package coordinates and facilitates the co-creation process in the UT-Labs by engaging citizens, researchers, policymakers, businesses, and investors to enhance the stakeholders' and citizens' ownership of the mobility and logistics solutions and all MOBILITIES FOR EU results.

This report is the first deliverable of WP1, linked to the T1.1 focused on the creation of the UT-Labs. Task 1.1 organizes all the activities to set up the UT-Labs in each of the 7 cities of the project. There are two different types of Labs in the project:

- Lighthouses (LH): The Labs in Madrid and Dresden, for which the mobility and logistic solutions will be designed, implemented, and monitored through the project. They will act as front-runners of this process with deeper interaction with stakeholders in the process of implementation and validation.
- Fellows: The labs in Espoo, Sarajevo, Trenčín, Gdansk, and Ioannina, for which the mobility and logistic solutions will be identified through the project. They will have stronger interaction with stakeholders later in the project, in the design of the mobility and logistic solutions, as they are not defined, yet. Moreover, the knowledge generated in the lighthouses will be used to improve the process of implementation and validation.

They are represented in the Figure below.

Figure 1: Seven UT-Labs in the MOBILITIES FOR EU project

The UT-labs have been conceived as living labs with two main objectives 1) to engage with local stakeholders and citizens to co-design the mobility and logistics solutions and to overcome the barriers that might arise during the

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process; and 2) to learn from other cities and share knowledge through the process. During the project, they will act as experimentation and innovation hubs to support the whole participatory process in collaboration with the Mission Platform.

1.2. Contribution from partners

Table 1 depicts the main contributions from project partners in the development of this deliverable.

Table 1 Contributions of MOBILITIES for EU partners to D1.1

PARTNER SHORT NAME	CONTRIBUTIONS
RC	Establishing the T1.1 methodology, coordinating the activities in all the Labs and particularly coordinating the creation of the UT-Labs of Dresden, Madrid and Espoo, carrying out interviews and facilitating workshops. Final drafting of deliverable
CARTIF	Coordinating the creation of the UT-Lab in Gdansk, carrying out interviews and drafting and review of deliverable.
MADRID	Creating the UT-Lab in Madrid, carrying out all T1.1 related exercises, workshops and activities.
PZGR	Deliverable review.
DRESDEN	Creating the UT-Lab in Dresden, carrying out all T1.1 related exercises, workshops, interviews and activities.
SAENA	Deliverable review.
ESPOO	Creating the UT-Lab in Espoo, carrying out all T1.1 related exercises, workshops, interviews and activities.
TRENCIN	Creating the UT-Lab in Trençin, carrying out all T1.1 related exercises, workshops, interviews and activities.
SARAJEVO	Creating the UT-Lab in Sarajevo, carrying out all T1.1 related exercises, workshops, interviews and activities.
GDANSK	Creating the UT-Lab in Gdansk, carrying out all T1.1 related exercises, workshops, interviews and activities.
IOANNINA	Creating the UT-Lab in Ioannina, carrying out all T1.1 related exercises, workshops, interviews and activities.

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STEINBEIS	Coordinating the creation of the UT-Lab in Ioannina, carrying out interviews and drafting of deliverable
AEDIVE	Coordinating the creation of the UT-Lab in Trençin, carrying out interviews and drafting of deliverable
IRF	Coordinating the creation of the UT-Lab in Sarajevo, carrying out interviews and drafting of deliverable

2. Objectives and expected impact

2.1. Objectives

The report is linked to the WP1 which sets the ground for the Labs. The overall objective of the WP is to set a solid framework in the urban mobility labs to allow and enhance cooperation. It aims at making different stakeholders work together, researchers, investors, logistic operators, municipalities… in different priorities for the city as innovative governance models, capacity building activities and updating sustainable urban mobility plan (SUMP), sustainable urban logistic plans (SULPs) and climate city contracts (CCC). The task 1.1 is the first step of the process, setting up the Labs in the 7 cities of the project.

2.2. Expected impact

This report sets the rules and framework of the work in the UT-Labs in the MOBILITIES FOR EU project, and thus its impact will be the correct implementation of the different co-creation activities in the project. It will allow to take decisions together and to better integrate the priorities and opinions of different technical stakeholders but also giving voice to citizens. It will also have a special focus on vulnerable road users. The different actions deployed in each of the labs will be monitored to identify best practices and share successful initiatives to cluster efforts in the 7 labs of the project.

3. The co-creation process of the UT-Labs

The Joint Research Centre (JRC) defines living labs as a modern way of creating user-centered environments that enable innovation, co-creation, and start-up development (Joint Research Centre, 2023). A living lab offers the perfect solution to test technologies in real life and controlled environments, before launching these technologies and services to the market. According to European Network of Living Labs (ENOLL), living labs are open innovation ecosystems in real-life environments using iterative feedback processes throughout a lifecycle approach of an innovation to create sustainable impact (ENOLL, 2023).

The UT-Labs of MOBILITIES FOR EU address collectively local issues related to climate neutrality and positive energy buildings. Co-design is group creativity that is applied across the whole span of a design process. In this creation process, every contributor act as an expert of their experience and is considered a co-author. Co-design is a specific instance of co-creation (Sanders, E.B.N. and Stappers, P.J., 2008). Indeed, co-creation has been at the core of the UT-Labs. They have been created with a mix of representatives from business, society, and academia, having all different expertise and perceptions, bringing in a rich set of ideas to address real life issues. The variety of ideas and expertise has been key to consider all the aspects and externalities of the actions proposed.

To effectively create the labs and offer the cities a proper support, a team of supporting partners was created. The role of supporting partners is to offer methodological and practical support on the Labs creation, its activities implementation and its engagement. The supporting partners have periodic meetings with the cities to monitor

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its progress, share best practices and identify potential problems or requirements. There are monthly meetings among the supporting partners to share the status of each lab, identify synergies and solve problems. The supporting partners for each Lab are RC for Madrid, Dresden and Espoo; CARTIF for Gdansk; AEDIVE for Trençin; STEINBEIS for Ioannina; IRF for Sarajevo.

The creation process of the UT-Labs has undertaken the following exercises:

1. **Stakeholder mapping & Governance structure**. Two activities early in the project to map the main local stakeholders including public authorities, urban planners, scientific community, logistic operators, investors, manufacturing organizations, urban services providers, technology providers and citizens. The mapping also defined the envisaged stakeholder roles in the participatory process. As the Labs have been conceived to co-create new mobility and logistic solutions in cities with stakeholders and citizens, there should be a governance structure settled, to define the decision-making processes and to design how the Lab will be managed.
2. **Benchmark of Labs, experts mapping and background.** Before setting up the labs, it was important to understand the current picture in each city. Thus, focused desktop research was launched to map the existing labs that could be linked in a certain manner to MOBILITIES FOR EU, to identify some experts with whom it will be interesting to discuss with and to set the background on the current trends and priorities for the city and the pilots.
3. **Mission, Vision & Roadmap.** Very important step to set the why we are creating the labs, what the main objectives are and where we are heading with it. Besides, another activity was focused on the planning of the different events, actions and initiatives that will be organized around the Lab. Activities to generate engagement, to contribute to the design of the new mobility and logistics solutions and to design new capacity building materials were conceived and integrated in an overall roadmap for each lab.
4. **Interviews.** Before setting up the labs, interviews with local experts were carried out to have local insights on the main mobility and logistics problems and what the role of the lab could be.
5. **Location of the Lab.** Final step of the creation process to set the prerequisites and location of the Lab.

These five steps were completed through a series of exercises and workshops involving the incipient members of the UT-Labs in each city:

- Madrid: Municipality of Madrid, UPM, Mercamadrid and transport service providers as ALSA, EMT, Prezero, Plexigrid, T-systems and Ferrovial. Also, wholesalers in Mercamadrid and citizens.
- Dresden: Municipality of Dresden, TU Dresden, companies like Volkswagen, Fraunhofer, SAP, Carnet, Saena.
- Espoo: Municipality of Espoo.
- Trençin: Municipality of Trenčín.
- Sarajevo: Municipality of Sarajevo
- Gdansk: Municipality of Gdansk
- Ioannina: Municipality of Ioannina.

The creation of the UT-Labs in all the seven cities has followed the same process, as the Labs will not only be used to define the mobility and logistic solutions in a specific area of the cities, but they will also contribute to the cities' other climate neutrality efforts, such as innovative governance models, capacity building materials, business models, etc. In fact, having cities at different stages of innovative transport solutions development, including decarbonization or autonomy, will enrich the process of engagement with the Labs and the knowledge gained through the process.

The different steps of the process are detailed in the subsequent sections.

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3.1. Stakeholder mapping and governance structure

The first exercise was carried out in the kick-off meeting to set the ground of the labs since the very beginning of the project. Three templates were designed for the exercise: 1) a stakeholder map to start identifying the stakeholders that might be interesting to involve in the Lab. The MOBILITIES FOR EU partners had to start filling the blanks with names of organisations that should have a certain interest for the Lab. 2) the governance structure with different layers to be filled if necessary and working groups. It had a similar structure than the first one, partners filled the blank spaces. 3) the role of the stakeholders identified in step 1 in the participatory process. It is key to know when to involve them and for what type of activity. The different possibilities were co-management, co-design, consulting or informing. Stakeholders' relevance and importance for the lab decreased as they are positioned further from the core of the circle. This exercise was initiated as a workshop during the project kick-off. The different involvement in the Lab's co-creation process is described hereafter:

- Co-management: this role will entail taking part in the decision-making process. Stakeholders with this role have a very close relationship with the project and are very engaged. They are expected to allocate sufficient time and effort to fulfil this endeavor.
- Co-design: this role entails the active participation in the design of the results of the Lab. Stakeholders are expected to hold with sufficient knowledge to provide expert inputs to the process.
- Consulting or informing: this role is reserved for the stakeholders with less engagement. They will not participate actively on the co-creation process, but they can provide feedback or specific inputs. They must be kept informed of the whole process.

The three exercises handouts and pictures from the workshop implementation are presented here below.

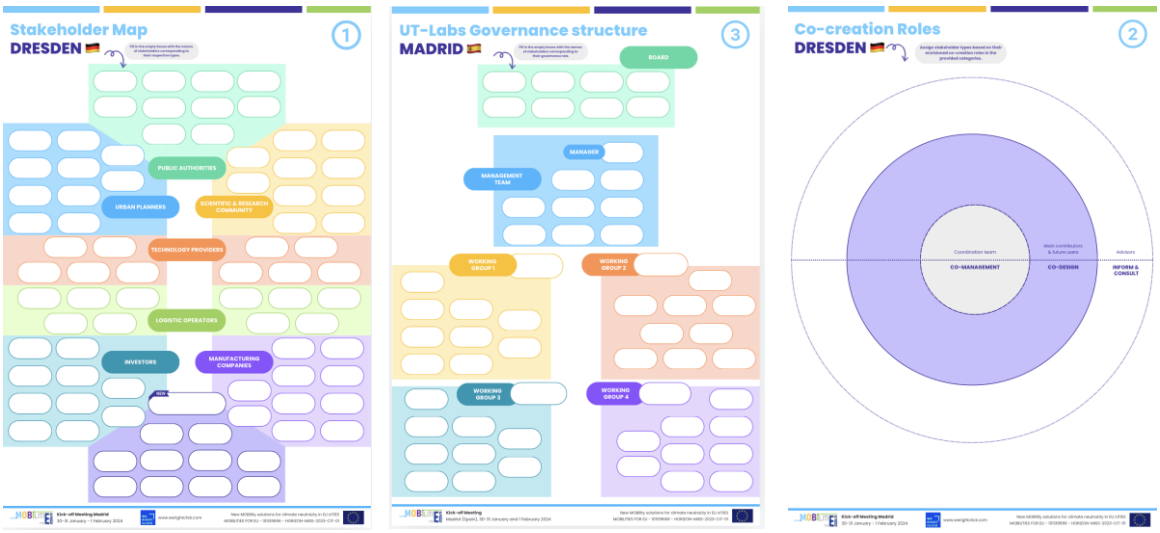

Figure 2: Handouts provided in the kick-off meeting for the 1st exercise of the WP1

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Figure 3: Pictures of workshops carried out during the kick-off meeting

Results from the kick-off were digitalised by RC and sent to partners for completition with local stakeholders and final validation.

3.2. Benchmark of labs, experts mapping and background

The second exercise included three main activities:

1) **The benchmark of the Labs.** It consisted in the identification of similar labs and best practices that can support the Lab creation in MOBILITIES FOR EU. Municipalities with the support of local partners were asked to identify at list four labs in the region/city that are good at something. The Labs ideally had to be linked to mobility and logistics decarbonisation and have a link with citizens. These labs could be managed by public or private entities. The table to be filled by each UT-lab is provided in the following Figure.

Lab Name	Description	Main stakeholders involved	Creation Date	What would you like to do with this Lab (common events, interview them, join them...)?	Best practices identified. What are they good at? Why?
Lab 1					
Lab 2					
Lab 3					
Lab 4					
Lab 5					

Figure 4: Table integrating Exercise 2 of the Labs creation process

2) **Experts mapping**. Each city carried out 5 interviews with local experts to gather information on the local context of each lab in terms of mobility and logistics. Interviews were planned to be carried out by Lab Managers in local language, this process was supported by the Lab supporting partners. At this stage, the exercise only consisted of identifying a list of 7+ experts in mobility, logistics, urban planning strategy and/or citizen engagement processes. The interviews will include questions about the main local mobility and logistic problems, main priorities for the city, needs, recommendations for the Lab to focus on… the objective was to hear different voices from different backgrounds, so a mix of backgrounds was recommended: public, private, research, industry, city...
3) **Background of the city**. Each Lab had to provide information about their views on the main mobility and logistics problems and barriers that the city aims to tackle in the upcoming years. The main mobility and logistics existing solutions. What innovative solutions exist already? A short description of the city's strategy regarding Mobility and Logistics. Main strategy documents and goals. Why is it interesting for

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the city to develop a UT-Lab? What will you do with it after the project? Have you identified other citizen and stakeholder engagement initiatives that have worked in your city? And why? This information has been summarised and introduced in this deliverable in the profile of each lab.

3.3. Mission, vision and roadmap of the UT-Lab

Third exercise was carried out in the second general assembly meeting in May 2024. With all partners gathered, the two workshops this time were focused on two different outcomes:

- Vision and mission of the Lab. The first activity consisted in agreeing on a vision and mission for the Lab. First a brainstorming of ideas was carried out with post-its. Then a prioritisation followed to select the most interesting ideas in a democratic way and finally a sentence was expected from each lab on their final proposal for the vision and mission. The handouts for the workshop and pictures are presented in Figure 5 and 6.

- Roadmap of actions. The second activity was to fill the roadmap with ideas of events or actions linked to the lab that involved collaboration with different stakeholders: workshop, interviews, open days, exhibitions, conferences, etc. different types of actions were identified and positioned in the timeline of the project. The handouts for the workshop and pictures are presented in Figure 5 and 6.

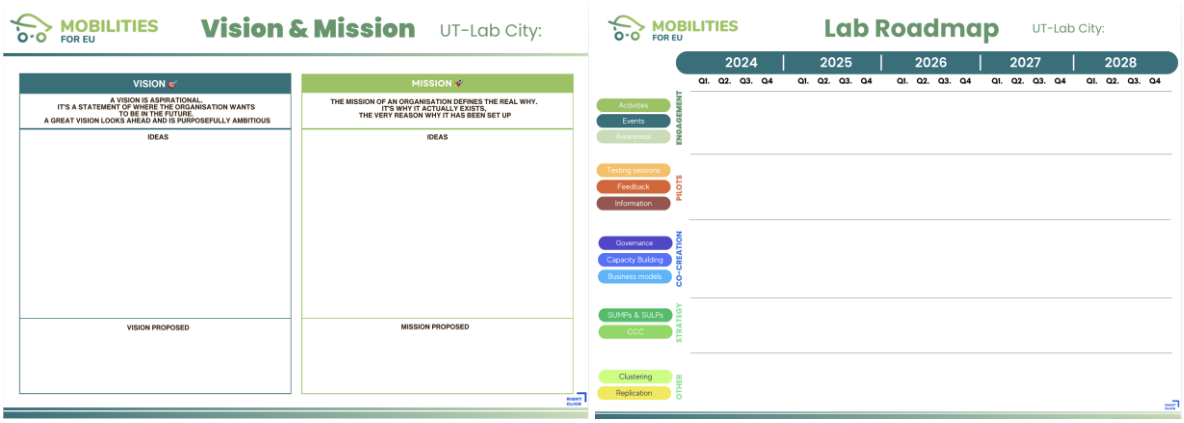

Figure 5: Handout for workshop carried out in the Dresden consortium meeting in May 2024

Figure 6: Pictures from the Dresden consortium meeting in May 2024

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Results from this workshop were digitalised by RC, with recommendations of actions for the roadmap and sent to partners for completition with local stakeholders and final validation.

3.4. Interviews

To complement the desktop research, a total of 35 interviews were carried out with experts in the different labs. Their profiles were diverse, covering different backgrounds transport, logistics, stakeholder engagement, public authorities' mechanisms, scientific and training, citizen engagement, pilot users, etc. The anonymised list of experts consulted is provided in Annex 1.

Interviews were conducted in the local language of each city with the support of municipalities. A training session plus a set of instruction to carry out the interviews was provided to cities. Interview summaries were provided to RC who then analysed all data and introduced it in each city profile. The instructions are depicted here below.

MOBILITIES FOR EU

Description of the project:
MOBILITIES intends to set up UT-Labs in 7 European cities as innovation spaces for co-design Pilots and Mobility Urban Plans through extensive participative processes, design and demonstration of a set of innovative solutions for mobility of people and freight to exploit the combined potential of electrification, automation and connectivity and deliver training activities as local governance workshops, capacity building/training workshops, webinars and to establish good practice innovative governance to accelerate climate neutrality transition.

	Instructions
1	The objective of these interviews is identify special needs, priorities and expectations of citizens & stakeholders related to the new mobility and logistic trends in the 7 cities of the project, including electrification and automation of transport. The scale for all questions is the city level
2	An introductory pitch about MOBILITIES is recommended, please do it shortly (not more than 5 min) to allow you go through all the questions
3	Each UT Lab has to interview at least 5 experts
4	We do not need transcriptions of the interviews, a summary of what has been said should be enough (please do not put only a sentence 😉)
5	The deadline for this activity is 23th August.
6	Feel free to translate the questionnaire to your local language
7	Please return it back in English as ChatGTP is good with translation but still not perfect
8	You can share the questionnaire template with the interviewee to introduce the questions and topics of the discussion
9	If you are experiencing some problems with specific questions, please let us know. We can work together to rephrase some of them
10	If you are experiencing delays, please let us know. We'll try to find a solution.

Figure 7: Instructions for interviews carried out in T1.1

3.5. Location of the Lab

Final exercise to design the location of the Lab. Each city is at a different stage of development of decarbonisation and automatization of mobility and logistic solutions, and thus, the real implementation of the labs can take different forms, as a real place open every day to solve citizen and stakeholder questions, a room in a coworking space receiving people every day, a room in a stadium open for big events, etc. Each city was free to choose its own strategy to set the Lab.

3.6. The UT-Labs FAQ

A frequent asked questions (FAQ) was produced during the labs creation process to ensure that all partners and stakeholders were on the same page regarding the most common questions.

What is a UT-Lab?

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The Labs have been conceived as open innovation ecosystems in real-life environments using iterative feedback processes with different stakeholders and users. It is not compulsory to have a physical address, but for better engagement is better to have a physical place. Different activities can be foreseen:

- A testing session of an autonomous bus to gather feedback on usability, performance, design…
- A co-creation session to design the new service for electric buses in the pilot.
- Interviews gathering information on the mobility patterns for citizens in the pilot area.
- A Family Day showing the different mobility and logistics solutions to be put in place and tested in the pilots.

What is the aim of the Labs?

The UT-labs will act as living labs with two main objectives 1) to engage with local stakeholders and citizens - with a specific focus on vulnerable road users (VRU) - to co-design the mobility and logistics solutions and to overcome the barriers that might arise during the process; and 2) to learn from other cities and share knowledge through the process. During the project, they will act as experimentation and innovation hubs to support the whole participatory process in collaboration with the Mission Platform.

Who are considered Vulnerable Road Users (VRU)?

Vulnerable Road Users (VRU) are defined in the Intelligent Transport Systems (ITS) Directive of the European Commission as "non-motorised road users, such as pedestrians and cyclists as well as motorcyclists and persons with disabilities or reduced mobility and orientation" (EC Mobility and transport, 2014). The World Health Organisation (WHO) states that more than half of all road traffic deaths are among vulnerable road users: pedestrians, cyclists and motorcyclists (WHO, 2024). That is why they will have a specific focus in the UT-Labs of the MOBILITIES FOR EU project.

How are the UT-Labs going to consider VRU?

The UT-Labs will have a specific focus on VRU in different ways. These are: 1) interviews & surveys: user research has considered VRU with specific questions on VRU and with users VRU; 2) events in UT-Labs: the roadmap integrates specific events/activities with a focus on VRU, as information activities and campaigns; 3) the capacity building activities developed in task 1.3 will include specific training activities on VRU.

What will be the activities in the UT- Labs?

The UT-Labs will support three different activities in the MOBILITIES FOR EU project: co-creation, user research and local engagement activities. These are:

1. Co-creation with local stakeholders of different results of the project. A non-exhaustive list of activities that will receive support from the UT-Labs is:
    - Creation of capacity building materials (linked to task T1.3)
    - Design of the business models and financial strategies (linked to task T5.3)
    - Creation of innovative governance models (linked to task T1.2)
    - Clustering (linked to task T4.2) to share and integrate best practices in the Labs from other projects.
    - Design of the mobility and logistics solutions in pilots through replicability (linked to task T5.4)
    - Final design of mobility and logistics solutions (linked to T2.1) initiated in the proposal including details on the solutions to be put in place, testing, gathering of feedback, etc.
2. User research to gather knowledge on the current mobility and logistics patterns, needs and priorities. Different methods will be used:
    - **Surveys**: targeting citizens and stakeholders in the pilot area.

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- **Interviews**: Interviews will be conceived as semi-structured interviews, trying to create an informal conversation with the user. There is a target of 5-8 interviews with stakeholders per UT-Lab. The partners participating in the interview process will be the UT-Lab leaders, the WP1 support partners and the WP1 leader.
- **Focus groups, world cafés or similar in-person events**: the open discussions organised in this type of groups and sessions will allow to complete the information from the interviews and surveys.

3. Communication and awareness activities as
   - Local engagement campaigns through social media and physical posters
   - Open Family Days
   - Workshops
   - Local Joint Events

What is the role of the UT-Lab Manager?

They are the corner stone of the UT-Labs. They will manage the operational work in the Labs, the type of activities they will have to implement:

- Organize local awareness events linked with the already existing events and activities of the city
- Organize co-creation workshops with local stakeholders supported by the WP1 team
- Carry out interviews with local stakeholders to gather information and knowledge
- Make the link with other city departments to align the UT-Lab with the aims and objectives of the city and its main strategic documents
- Ensure the UT-Lab progress with the different activities set in the roadmap

What will be the timing of this activity?

The different phases foreseen in the UT-Labs are as follows:

1. **UT-Labs creation phase (**M1-M9): This phase aims at setting up the labs, mapping the stakeholders, setting the governance structure at local level and establishing the rules, vision and mission of the local labs. This phase will also be used to gather information from citizens on their main needs, concerns and challenges related to mobility and logistics solutions in their cities.
2. **UT-Labs co-creation phase** (M9 to M54): It will consist in local events, specific communication campaigns, co-creation workshops with different stakeholders to carry out the different activities of the project. Recruitment of stakeholders will be built on a voluntary basis. The MOBILITIES FOR EU will giveaway incentives to participants, if deemed necessary, to ensure sufficient participation in all UT-Labs co-creation process. It is a usual practice in this type of events as participants are not reimbursed for the time spent in the Labs. The engagement process (WP1) will target a mix of users (different gender, age, social status, etc.) to include a large variety of user profiles considering different needs and priorities.
3. **Final data analysis** (M54-M60) This final phase aims at analysing and integrating the research data and the data gathered through the co-creation process received from the UT-Labs.

What is the desired outcome?

It depends on the aims of the different Labs and its stakeholders, but ideally a long-lasting UT-Lab used by different stakeholders and citizens to co-create the mobility and logistics solutions of the city to achieve climate neutrality.

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4. The MOBILITIES for EU UT-Labs

4.1. UT-Lab Madrid

4.1.1. BACKGROUND, CHALLENGES & PRIORITIES

Madrid is the capital and most populous city of Spain. The city has almost 3.4 million inhabitants and a metropolitan area population of approximately 7 million. It is the second largest city in the European Union (EU), and its monocentric metropolitan area is also the second largest in the EU. The capital city of both Spain and the surrounding autonomous community of Madrid (since 1983), it is also the political, economic, and cultural centre of the country.

The Madrid urban agglomeration has the second largest GDP in the European Union and its influence in politics, education, entertainment, environment, media, fashion, science, culture, and the arts all contribute to its status as one of the world's major global cities. Due to its economic output, high standard of living, and market size, Madrid is considered the major financial centre and the leading economic hub of the Iberian Peninsula and of Southern Europe. The city has an excellent public transport, and it is a walkable city. The modal distribution in the city centre is very balanced, whereas it is very unbalanced towards vehicle use both in the cross-cutting mobility of suburbs, and in the incoming traffic from the metropolitan area. The most ambitious goal would be improving the sustainability of suburbs mobility, aiming to reduce vehicle travel from 30% to 22% and improving public transport in suburbs. There is an intensive use of digital solutions and new technologies for mobility in the city: mobility information systems, mobility apps, electric city shared bikes system, multimodal apps, unified transport ticketing (bus, metro, interurban bus and train), etc. In 2019, the city launched Madrid 360 with a strategy to reduce emissions and created different low emissions zones, which has improved air quality in the city. Interviews reflected that one of the main challenges for Madrid is the management of urban space with cars, bikes, lockers, chargers, mobility hubs and plenty of new mobility solutions etc.

The city's strategy regarding Mobility and Logistics includes 1) the transfer of journeys from private vehicles to other shared means of transport; 2) the penetration of new, less emitting technologies like electric mobility; 3) the renewal of the vehicle fleet: Municipal Transport Company is 100% Clean fleet: with 87% of Natural gas 87.39% and 13% electric vehicles. In 2024, there will be 10 new buses with Green Hydrogen. The city has set the target of 100% zero emission vehicles in 2033; 4) Low emission protected areas banned to old polluting vehicles. 5) Excellent city public transport and walkable city; 6) Improved shared bicycle service & lanes network.

The mobility and logistic innovative solutions to be put in place in Madrid are going to be focused in Mercamadrid, which is the is the main wholesale market of fresh products in Spain. It started in 1982 with the creation of the fish market and then the next year the fruits and vegetables market was inaugurated. It covers an area of 2.22 km2, serving an area of influence within a 500 km radius, it feeds roughly 12 million people. It has more than 9,000 employees operating through more than 800 companies working in the area. There are more than 20,000 persons entering Mercamadrid every day, so it can be considered a small city by itself.

Regarding the co-creation approach of the UT-Lab, interviews with several experts explained that the collaboration spirit in these cases is stronger than competitivity and that generating areas of discussion to share problems from users and putting together new ideas was very much needed.

The interviews carried out in Madrid showed the main mobility and logistic challenges in Mercamadrid: lack of sufficient electric chargers for all vehicles in rush hours; lack of train station for mobility of people and logistics similarly to other wholesale markets in Europe as Rungis in Paris, this could reduce the number of trucks in the area; lack of fiscal incentives to invest in new electric vehicles; reduced visibility as the peak of activity is during the night; lack of public transport during the night and thus impossibility for workers to come with public transport; the mix of vehicles with forklifts, pallet trucks, electric rider trucks, motorbikes and cars with bigger

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trucks makes it difficult to manoeuvre during specific hours; lack of internal mobility solutions inside the more than two km2, leaving as only option for internal mobility the car.

The possibility of putting together the main mobility and logistic challenges in Mercamadrid was well received by all interviewees, reinforcing the need for the UT-Lab in the area.

4.1.2. LOCATION

The Lab will be in the Innovation Hub of Mercamadrid, which is situated in its commercial area.

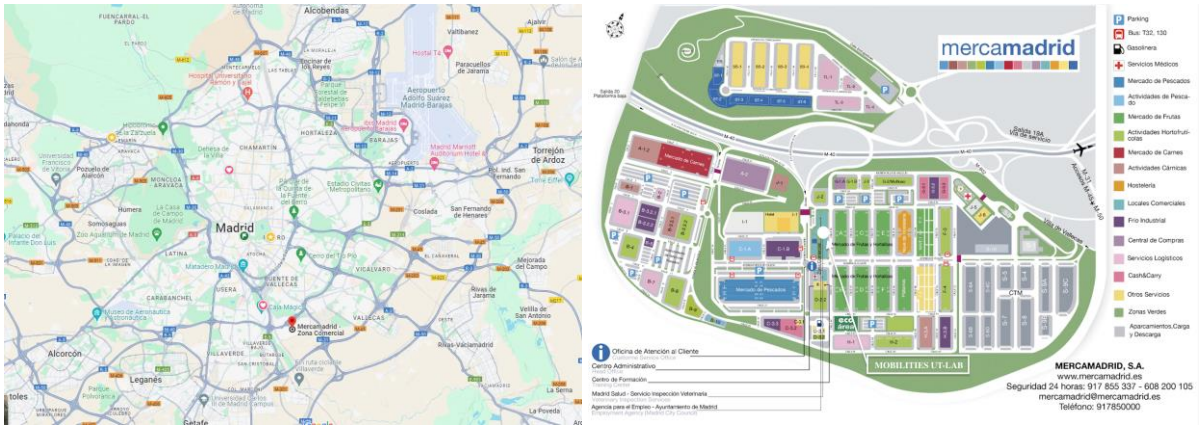

Figure 8: Location of the Madrid UT-Lab

The Innovation Hub was established as part of the company's objective to make Mercamadrid an innovative ecosystem that adds value to the entire food sector, with the aspiration of becoming a stable platform for real collaboration among companies, startups, and professionals in the search for innovative solutions to agri-food challenges.

Figure 9: Pictures of the Madrid UT-Lab

The hub features a coworking area where projects can be developed, presentations made, and collaboration can take place in the search for innovative solutions. Currently, the Madrid delegation of the CNTA (National Centre for Food Technology and Safety) is located there, and Mercamadrid is finalizing the onboarding of the Food Cluster as well as other companies in the coworking area. For the UT-Lab of MOBILITIES FOR EU, there will be two workstations in the Innovation Area, with an A3 vinyl on the exterior, as well as roll-ups inside the premises.

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4.1.3. POSITIONING

To set the positioning of the Madrid UT-Lab a benchmark of pre-existing labs was carried out. Their activity will be monitored during the project to identify best practices in different areas: lab management, citizen engagement, clustering, collaboration, social innovation, etc. The Labs considered relevant for the MOBILITIES FOR EU project are briefly described here below:

Table 2 Benchmark of existing Labs in Madrid linked to MOBILITIES FOR EU

LAB NAME	FOCUS	RELEVANT PARTNERS	CREATION DATE	INTERACTION WITH THE PROJECT
Madrid Green Urban Mobility Lab	To make Madrid an international benchmark in urban mobility by integrating ideas, projects and solutions shared by the main public and private entities in the sector.	51 entities (some of them belong to the Mobilities for EU consortium (EMT, ALSA, FERROVIAL)	2021	Collaboration, common events, interview
IoTMADLab	A space for public-private collaboration open to technology companies, device manufacturers, research personnel and municipal service concessionaires	Madrid City Council and Universidad Politécnica de Madrid	2022	Collaboration, common events, interview
Madrid Innovation Lab	A pioneering initiative by the Madrid City Council to catalyse technological advancement (AI and deeptech) in the city and position it as a leader in the European innovation landscape	Madrid City Council	2022	Collaboration
Medialab Matadero	It is a community laboratory that acts as a meeting place to produce open cultural projects. It was launched by the Madrid City Council's Department of Culture, Tourism and Sport, located in the contemporary creation centre Matadero Madrid	Madrid City Council	2002	Collaboration on social technology

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La Nave	It is Madrid City Council's innovation centre. A meeting point open to everybody. It includes training and acceleration services.	Madrid City Council	2017	Collaboration
Centro de Innovacion en Economía Circular	It aims to promote and support the transformation of companies from a linear to a circular model. They aim to attract strategic companies to the circular ecosystem and design effective collaboration pathways between the private sector and CIEC Madrid.	Madrid City Council	2023	Collaboration
CITET-Innovation Centre for Logistics and Freight Transport	It promotes and facilitates technological innovation for logistics and transport.	Madrid City Council and 73 other partners including AEDIVE and MERCASA	2018	Business cluster
CONNECTED MOBILITY HUB	Articulate a change model by relying on a comprehensive community of startups, corporates and cities, executing mobility innovative projects that boosts the transformation of the industry.	140 startups	2015	Collaboration, best practices

The Labs have been represented regarding their focus and the creation date in the following figure:

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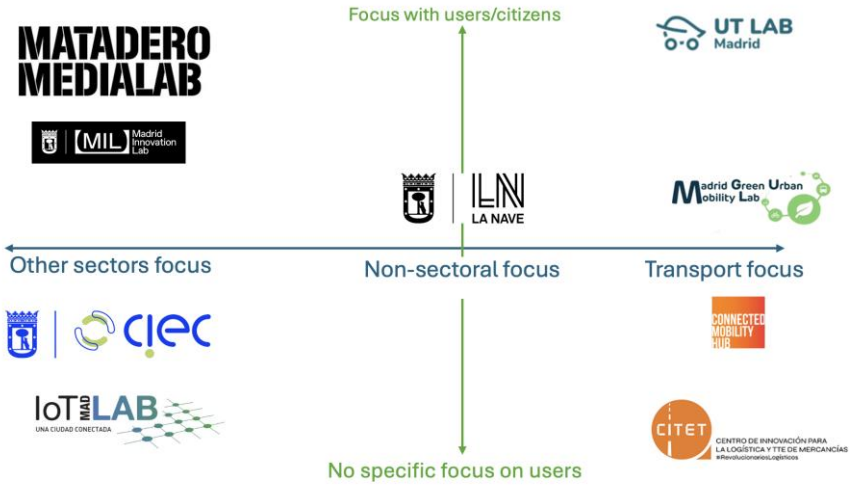

Figure 10: Positioning of the Madrid UT-Lab in MOBILITIES FOR EU

The Matadero Medialab was a pioneer in Madrid regarding the citizen innovation, created in the 2000s. Then, some years later, other labs were created with different focus La Nave, IOT Lab, CIEC and Madrid Innovation Lab. Regarding transport and mobility, three other labs were created between 2015 and 2022:

- Connected Mobility Hub, it focuses on the creation of a community with startups, corporates and cities. Creating events, Networking spaces and Active positioning.
- Madrid Green Urban Mobility Lab, it focuses on the launching of new ideas and projects with the collaboration of public and private actors.
- CITET, not specifically a lab for citizens but more a technological innovation center to push forward new technologies on transport.

However, any of them has the focus on citizens and testing technologies and innovative services with users, as the UT-Lab is targeting in Madrid. Besides, there was no lab or previous similar initiative in Mercamadrid. Thus, the positioning of the lab connecting innovative solutions with citizens, co-creating with local stakeholders, generating discussions and identifying new problems and challenges to solve is considered to be the right target for the Madrid UT-Lab.

4.1.4. STAKEHOLDER MAP

The different types of stakeholders considered for the analysis were: public authorities, urban planners, technology providers, scientific community, logistic operators, investors, manufacturing companies, urban services providers and users. They were identified for the UT-Lab in Madrid as important stakeholders to consider. Their role in the co-creation process established in MOBILITIES FOR EU is represented in the following figure with four main roles:

- Co-management: these are the stakeholders that are key in the decision-making process of the Lab.
- Co-development: stakeholders involved directly in the implementation of the actions, with a more important role.
- Co-design: Stakeholders that should participate in the co-design of the different actions in MOBILITIES for EU, as capacity building, governance models and the pilot design.
- Informing & consulting: a less important role in the co-creation process. Stakeholders that must keep updated of the progress of the pilot in Madrid.

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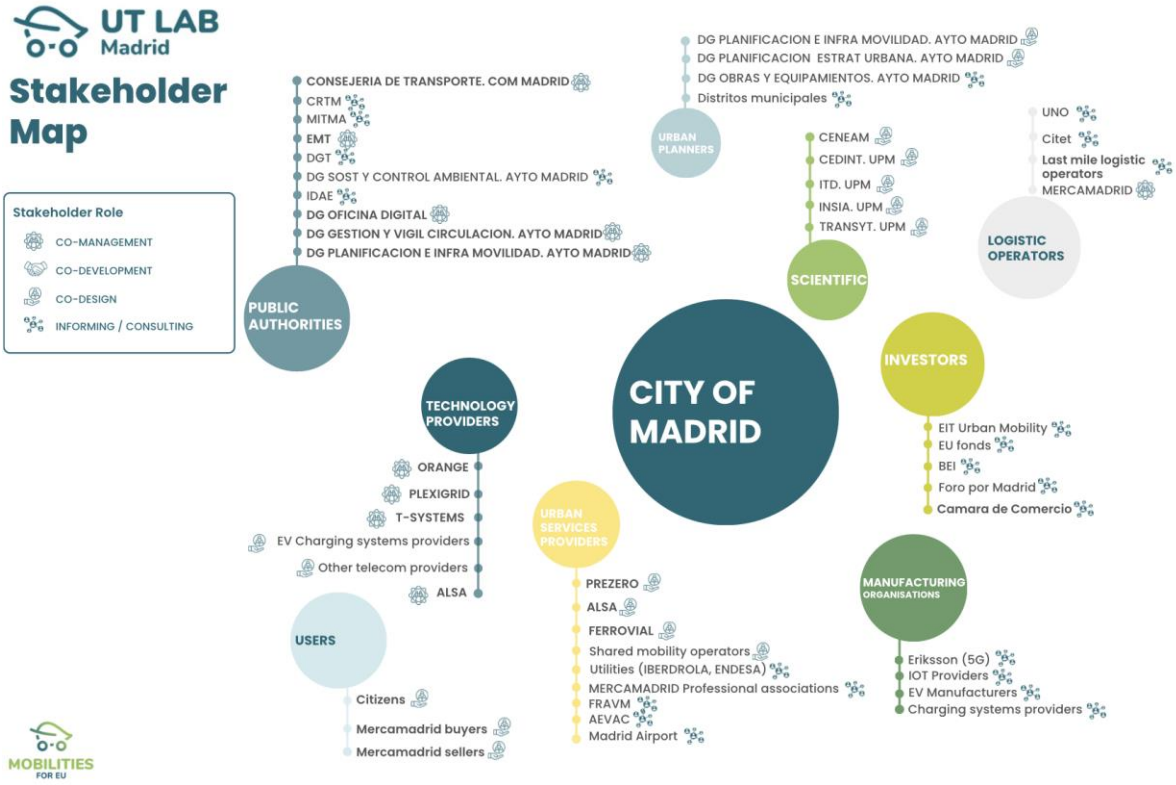

Figure 11: Stakeholders in the UT-Lab in Madrid organised by type of stakeholder

A specific focus in the co-creation process, reflected the importance of four specific stakeholders:

- The Dirección General de Tráfico (DGT), for all the certification, legal permits and authorizations to test the vehicles.
- AEDIVE, as the Spanish association of electric vehicle, for inputs, best practices and support in the area.
- Madrid Green Urban Mobility Lab, as a recently created lab putting together more than 50 stakeholders in the transport sector to boost public-private collaboration, it will be interesting to involve them in the co-design process of the pilot and gather feedback from previous initiatives.
- Connected Mobility Hub, as a meeting point of startups, investors and corporates for mobility innovation, it will be interesting to involve them in the co-design and consultation process.

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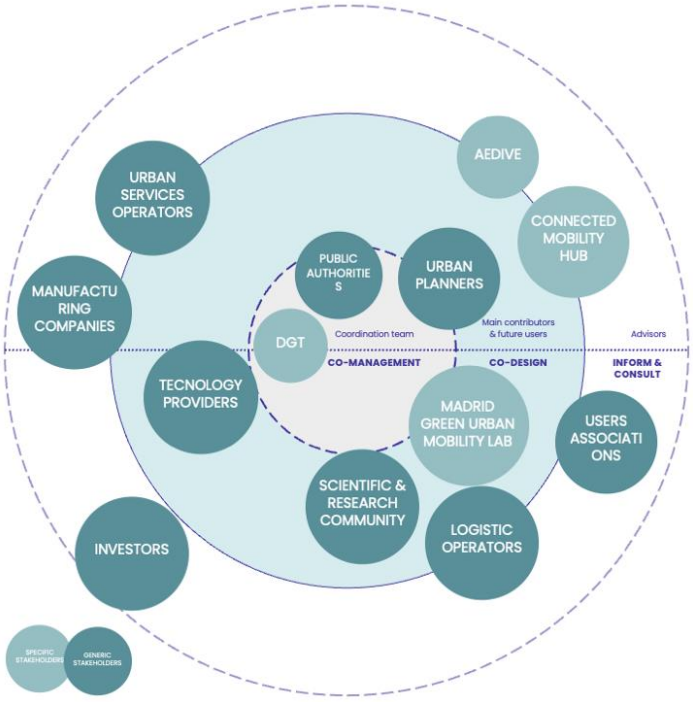

Figure 12: Stakeholders involved in the co-creation process in the UT-Lab in Madrid

4.1.5. GOVERNANCE STRUCTURE

The Madrid UT-Lab has set a structure including a public-private board with all the MOBILITIES FOR EU partners as a democratic approach for decision making. The Management team has been set with a UT-Lab manager of the Madrid City Council and supported by AEDIVE, a transversal partner in the project.

Four working groups have been set structured per sectoral domains in the transport sector: vehicles, included in pilot A1, A3, A4 of the project; energy management, included in pilot A2 of the project; communication & IOT, included in pilot A5, and data analysis, integrated also in pilot A5.

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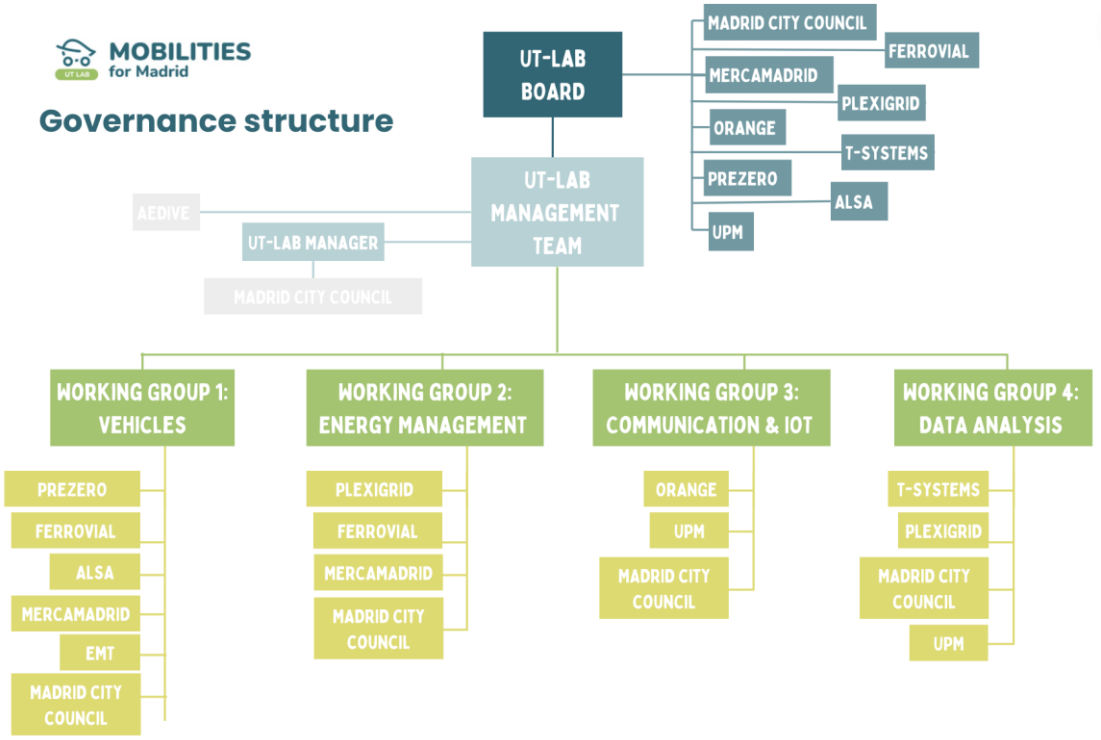

Figure 13: Governance structure of the UT-Lab in Madrid

4.1.6. VISION & MISSION

The Madrid UT-Lab has the particularity of being in Mercamadrid, in the outskirts of the city. This is a first phase for the deployment of the UT-Lab all over the city. The mission of the Lab is:

> *"To create an ecosystem fostering public-private collaboration so that it is possible to design, implement and evaluate new solutions for sustainable mobility for goods and people in urban environments in Madrid".*

The long-term vision is:

> *"To become a world referent in new sustainable and connected mobility solutions in urban environments".*

4.1.7. ROADMAP OF ACTIONS

The Madrid UT-Lab developed a first Roadmap of actions as shown in the Figure below. This first planning is a preliminary one that will be developed along the project, over the 5 years. The roadmap for Madrid UT-Lab, as for the other cities consists of 4 different axes: management of the lab, pilots, cocreation and engagement. This

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ensures the organisation of 11 themes in total: Set up of the Lab, Governance, Management, Pilot Planning, Implementation, Clustering, Capacity Building, Finance & BM, SUMP SULP & CCC, Feedback and gathering, Local engagement.

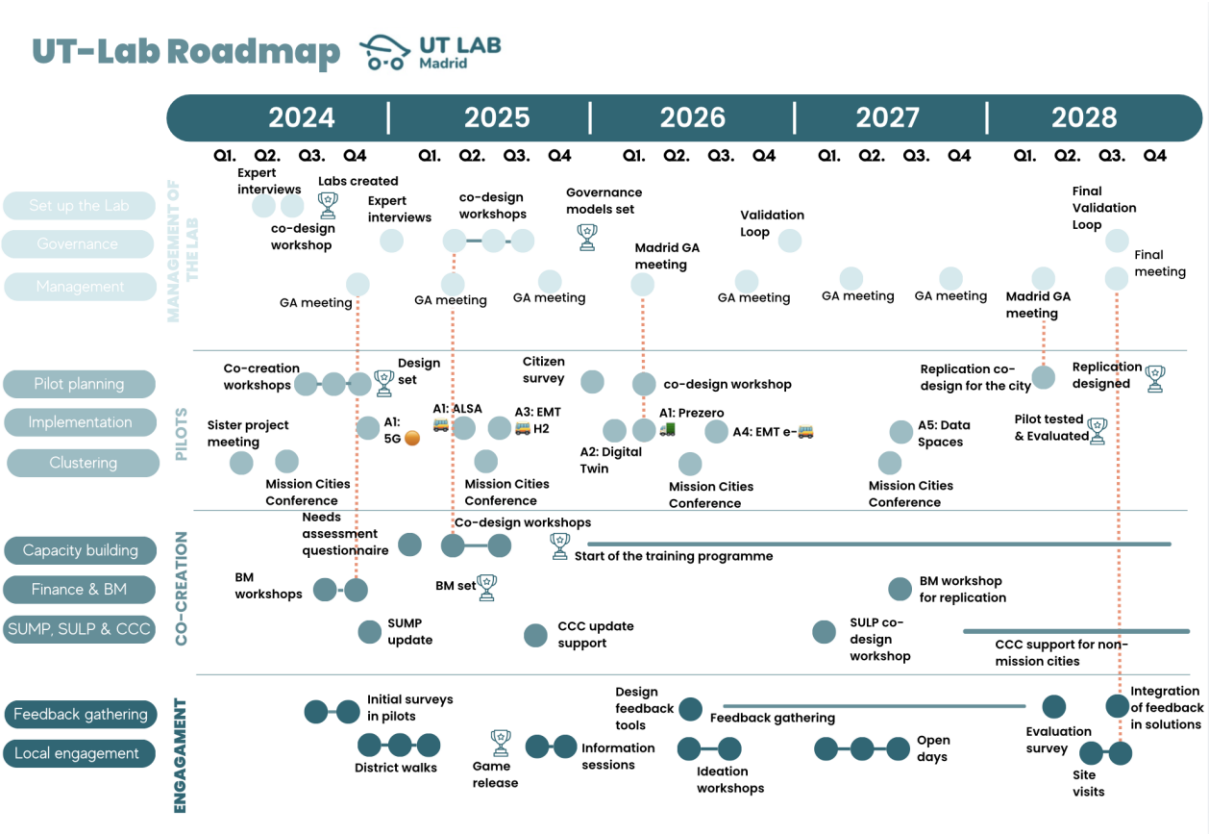

Figure 14: Roadmap of the UT-Lab in Madrid

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4.2. UT-Lab Dresden

4.2.1. BACKGROUND, CHALLENGES & PRIORITIES

Dresden, one of the nine German cities selected by the EU Cities' Mission, is also a Horizon Europe Lighthouse City through the MAtchUP[1] and NEUTRALPATH projects. The city is recognized for its expertise in addressing climate challenges and implementing smart city solutions, with a strong focus on transforming mobility. The Dresden Mobility Plan 2035+ was approved in December 2022, featuring 14 key goals aimed at increasing the share of walking, cycling, and public transport to 75% of the total traffic volume. This aligns with Dresden's ambition to reduce CO2 emissions and contribute to its objective of becoming a "Climate Neutral and Smart City" by 2030. The city's Integrated Energy and Climate Protection Concept (updated in 2020) seeks to achieve climate neutrality well before 2050. Citizens play a significant role in this transformation, with initiatives like the "Cleema" citizen-app promoting participation. Public companies and private firms such as NVIDIA and Vodafone are also contributing to this transformation.

Dresden faces significant mobility challenges, particularly with vehicle congestion in the Ostra District, a peninsula within the city that suffers from traffic jams on workdays and during events. The congestion on major bridges and the federal highway intensifies during sporting and business events, highlighting the need for better parking management and public transport options. The city's plans include reducing vehicle traffic in the inner-city ring by 5%, increasing bicycle traffic, and reducing the annual mileage of private cars. Efforts also target reducing NO2 levels, traffic noise pollution, and improving road safety, aiming for "Vision Zero" by 2035. Parking space satisfaction is another key focus area. Dresden will implement a cycling concept, expand the tram system, and introduce car-sharing locations on public roads in the coming years.

The city already benefits from several innovative mobility solutions, including Mobi-Hubs, an extensive tram system, and advanced charging infrastructure for electric vehicles. On the logistics front, Dresden has developed key hubs like the Logistics Hub GVZ, integrated harbour and rail systems, and a Strategic Truck Routing Concept. These solutions form the backbone of Dresden's commitment to creating a more sustainable and efficient transport system.

Dresden's strategic approach to mobility is guided by its Sustainable Urban Mobility Plan (SUMP), first adopted in 2014 and continuously evaluated. The city has set a range of ambitious goals, including CO2 reduction, improved accessibility, barrier-free transport, enhanced road safety, and a strong emphasis on reducing traffic noise and pollution. By 2035, Dresden aims to ensure that walking, cycling, and public transport account for at least 75% of urban mobility. Other strategic goals include short travel distances, urban greening, better regional connections, crisis-proof transport, energy efficiency, and the use of innovative technologies for digitalized and automated mobility solutions. According to the experts interviewed in Dresden, the decarbonization of transport is a relevant issue in the city, but opinions vary among political parties. While many support improvements to public transport and cycling infrastructure, climate protection is not the primary focus of the administration; instead, road safety and equitable traffic access are prioritized. There is a gap between theoretical resolutions, like the mobility plan, and their implementation, with increasing car usage despite some positive developments in public transport. Barriers to decarbonization include political disagreements, economic factors, and a general lack of public awareness about the issues at stake. The city faces scepticism towards new technologies and entrenched habits that hinder progress. Although there is a recognition that motorized traffic is a major pollutant, making public transport more attractive is a challenge, especially with existing networks. Overall, the community struggles to envision a CO2-neutral future, complicating efforts for change.

[1] https://www.matchup-project.eu

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Dresden joined MOBILITIES to support its path to climate neutrality and implement Connected, Cooperative and Automated Mobility (CCAM) solutions. The city is interested in developing a UT-Lab as part of its existing citizen participation projects, which will support alternative mobility solutions. The future use of the UT-Lab as a platform for mobility innovation will depend on its success by 2027. Stakeholder and citizen engagement are already integral to Dresden's daily operations, with several successful initiatives implemented across the city. As per the experts interviewed Engaging stakeholders in mobility and logistics requires informal gatherings to exchange ideas among residents, businesses, and city officials. Location-based mobility concepts should be supported by funding opportunities from the public sector, while participation processes at the district level can enhance collaboration. Networking with existing organizations can help identify issues and bring stakeholders together for constructive dialogue. To ensure new mobility solutions meet citizens' needs and align with EU decarbonization targets, stakeholders should be involved throughout the process, with transparent decision-making and targeted subsidies. Strengthening public transport is crucial to provide a viable alternative to private car use. Engaging citizens in public spaces and addressing fairness in new mobility options will foster acceptance and inclusion. For urban transport labs, experts think that employing a "we go there" approach is recommended, bringing activities directly to citizens rather than requiring them to come to a lab. Digital tools can facilitate communication and participation, while interactive events and clear, accessible information will keep the community informed and involved in decision-making.

4.2.2. LOCATION

The Lab is located a multi-purpose room in the new Heinz-Steyer stadium in the Ostra-Area

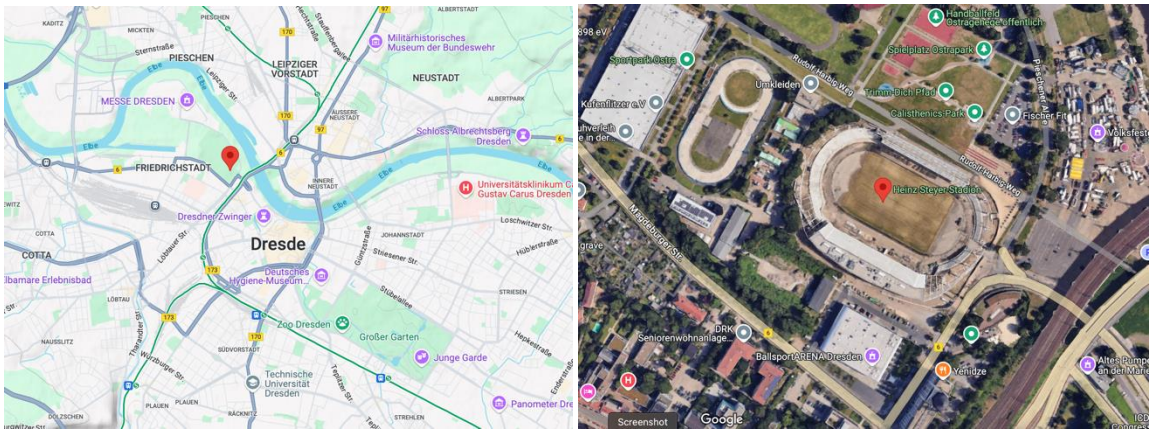

Figure 15: Location of the Dresden UT-Lab

The UT Lab in Dresden is imagined as a space for information and exchange over the period of the project and beyond. It will act as a communication space on events related to the project such as presentations and demonstrations of the pilots or workshops with stakeholders and interested citizens. In addition to that, the space will be used for awareness-raising activities during pilot tests. It will provide onsite physical offers in addition to virtual online ones. The UT Lab aims to integrate other initiatives and Urban Labs from the mobility sector in Dresden by collaborating with them in the mobility information and exchange center and possibly other events.

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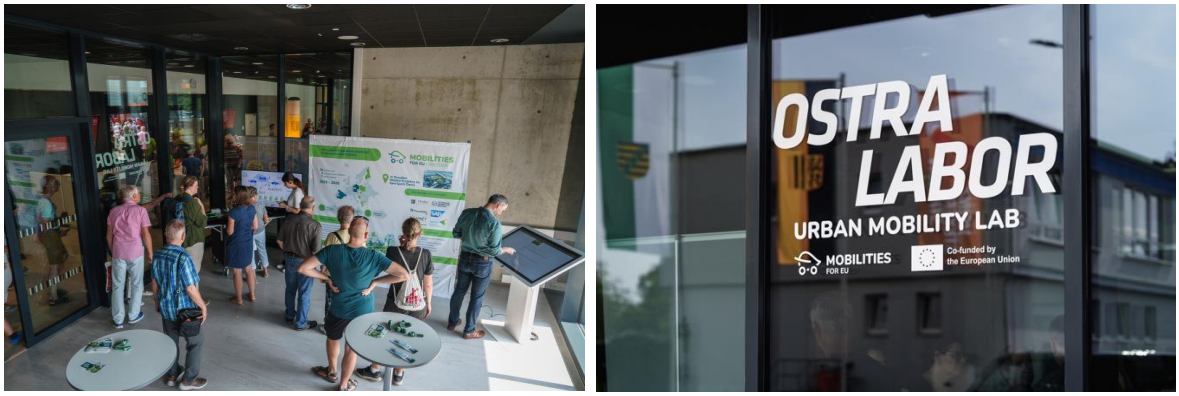

Figure 16: Pictures of the Dresden UT-Lab (c) Michael Schmidt/LHD

The UT Lab room's space is 48.14 m^2, it will be fully equipped to host local events: exhibition wall with interactive elements, meeting tables, citizen participation terminals, wall mounted monitor and other relevant tools. The Lab is located in the stadium that is part of the pilot and will be opened during large events so that visitors can see the different mobility solutions to be implemented in the stadium. The Dresden UT-Lab has decided to name it Ostra Labor, as per the name of the neighborhood, and in German to better connect with local residents and visitors. The Lab was kicked off end of August 2024 and the launching date had a successful audience of +500 visitors.

4.2.3. POSITIONING

A benchmarking study of existing labs was conducted to establish the positioning of the Dresden UT-Lab. Throughout the project, these labs will be monitored to identify best practices in various fields, such as lab management, citizen involvement, clustering, collaboration, and social innovation. The labs relevant to the MOBILITIES FOR EU project are briefly outlined below:

Table 3: Benchmark of existing Labs in Dresden linked to MOBILITIES FOR EU

LAB NAME	FOCUS	RELEVANT PARTNERS	CREATION DATE	INTERACTION WITH THE PROJECT
CN-Lab "Climate Neutral Lab" (NEUTRALPATH)	A European project funded under the European Climate Neutral and Smart Cities Mission; partners will work to design positive and clean energy districts within five cities and implement measures in two lighthouse cities; improve governance processes and ensure scalability and replicability	City of Dresden Office for Economic Development; SachsenEnergie AG; EA Systems Dresden GmbH; DVB - Dresdner Verkehrsbetriebe AG; TU Dresden; Vonovia SE; WiD Wohnen in Dresden GmbH & Co. KG	Jan-23	Exchange on mobility topics such as bidirectional charging; exchange on experiences concerning stakeholder and VRU involvement; sharing of contacts; common events like presentations or workshops on climate neutrality and the actions planned in both projects

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Urban LAB "Visions for the Ostra area"	An urban and open space design studio following an action-packed, joint workshop week on site in October 2023, the ideas were developed at the three participating universities on urban development and open space planning	TU Dresden; Cracow University of Technology; Czech Technical University in Prague	Oct-23	Exchange on mobility and urban development topics; exchange in data sources and availability; shared use of exhibition space in the UT-Lab room and on roll ups to show the current measures and activities in the field of mobility in Dresden and the Ostragege
Complex Urban Dynamics Lab	The following questions that the lab is pursuing: How to achieve economic and ecological efficiency in mobility systems? What demands are made on these flexible transport systems by the local population? What are the recommendations for policy? How to efficiently embed a DRT system into an existing transport network?	TU Dresden (School of Civil and Environmental Engineering)	2019	Exchange concerning the efficiency of innovations and technologies in transport, how to develop policy recommendations and the introduction of incentive structures (e.g. nudging) to improve the implemented measures
Wegebund	The Wegebund is the working group of Saxon municipalities for the promotion of cycling and walking. Their office is a service provider, mediates, brings stakeholder together and is the contact point for the member municipalities and the institutions of the Free State of Saxony.	Wegebund head office; several member municipalities; scientific advisory board	Jan-21	Exchange on how to involve VRU (like pedestrian, cyclists, children, families and elderly) in the Mobilities for EU measures; shared use of exhibition space in the UT-Lab room and on roll ups to show the current measures and activities in the field of mobility in Dresden; exchange of contacts in the field of urban mobility
FLASH (driverless	FLASH is an automated transport service	District of North Saxony;	2022	Exchange in the field of autonomous driving and

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automated shuttle)	integrated into the district's regular service	Nordsachsen Mobil GmbH; IAV GmbH; Fraunhofer Institut für Verkehrs- und Infrastruktursysteme (IVI); TS Fahrzeugtechnik GmbH; AMCON		their implementation in regular service; stakeholder and policy involvement
Bürgerlabor Dresden (Citizens' Lab Dresden)	The "Bürgerlabor Dresden" is a "city project". With the current implementation in the Smart City measure "Smart Participation", digital tools are also being tested here in order to create a smart coordination center and an interactive transfer space in Dresden in the long term.	Office for Urban Strategy, International Affairs and Citizenship / Citizens' Affairs Department	2021	Use the room for presenting the Mobilities for EU project (presentations, workshops, exhibitions); exchange/interview them concerning their experiences with mobility measures to reach climate neutrality and acceptance by the citizens
Dresden Zero	Dresden Zero is an initiative of citizens from all areas of the city. In the context of climate change, they work together to create a sustainable Dresden.	A team of volunteer, political independent residents from all over Dresden	Jun-21	Exchange/interview them concerning their experiences with measures to reach climate neutrality and acceptance by the citizens
VCD Ortsgruppe Dresden	The local group of the non-profit organization VCD e.V. is committed to a turnaround in transport policy in Dresden and sustainable, safe and affordable mobility for all people in Dresden.	About 50.000 members in whole Germany who can donate money or play an active role to achieve the goals of the organization. They also send delegates to the annual Federal Delegates' Assembly, which elects the Federal Executive Board, sets the long-term goals and monitors	Jul-86	Exchange/interview them concerning their experiences with measures in the field of transport and mobility and their acceptance by the citizens; exchange of contacts in the field of urban mobility

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	the association's finances; about 10 active members in the local group in Dresden

The Labs have been represented here below with two main features compared, the sectoral focus vs. the focus on users/citizens of the Labs. The more citizen engagement and exchange the upper the Lab will be. Most of the labs mapped in Dresden are very recent, with just one created in 1986 by the non-profit organization VCD focused on transport policy in Dresden. Flash is not necessary a lab or network but an automated shuttle in Saxony, with which it will be useful to exchange for the autonomous vehicles side of the pilot. The Complex Urban Dynamics Lab, created by TU Dresden is focused on technology and innovation, but there is not specific focus on users. Finally, Wegebund, is a working group of public municipalities focused on active mobility. Thus, the creation of the Dresden UT-Lab makes sense, as there was no transport lab with a focus on citizen engagement and co-creation of new solutions. On the other hand, there is the Dresden CN-Lab from NEUTRALPATH and Dresden Zero, with a stronger focus on citizens, and with which it will be interesting to exchange and gather best practices for the well-functioning of the Dresden UT-Lab.

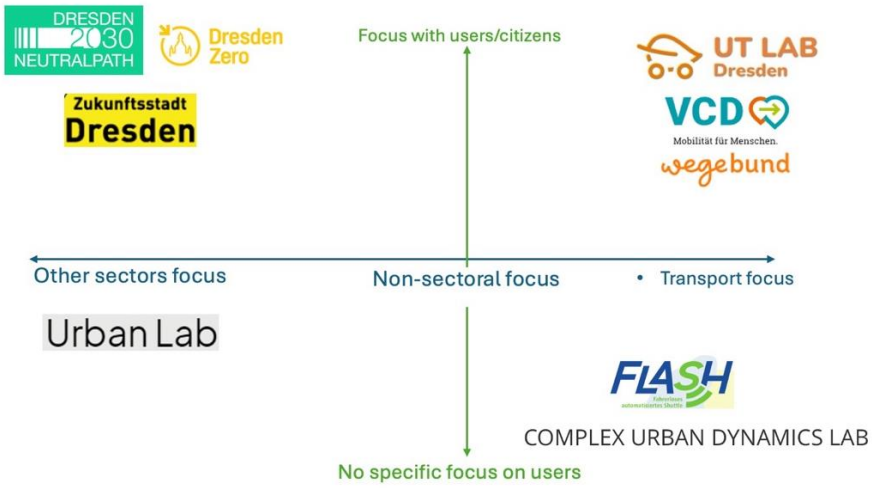

Figure 17: Positioning of the Dresden UT-Lab in MOBILITIES FOR EU

4.2.4. STAKEHOLDER MAP

Several stakeholder groups were identified as critical to the reflection conducted for the UT-Lab in Dresden. These groups, as for the other cities, include public authorities, urban planners, technology providers, the scientific community, logistics operators, investors, manufacturers, urban services providers, and users. Each group holds a specific role in the co-creation framework established under the MOBILITIES FOR EU initiative. The key roles are as follows:

- Co-management: These stakeholders are essential in guiding decisions within the Lab, holding significant influence over the project's direction.

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- Co-development: Stakeholders with a pivotal role in action implementation, directly contributing to the success of specific tasks.
- Co-design: Participants who contribute to shaping the project's structure, including capacity building, governance models, and pilot initiatives.
- Informing & consulting: Stakeholders with a more passive role, who remain updated on the project's progress but do not heavily influence the outcomes.

This mapping might be updated as the project develops over the 5 years and might potentially involve different entities in each of these sections or in additional ones.

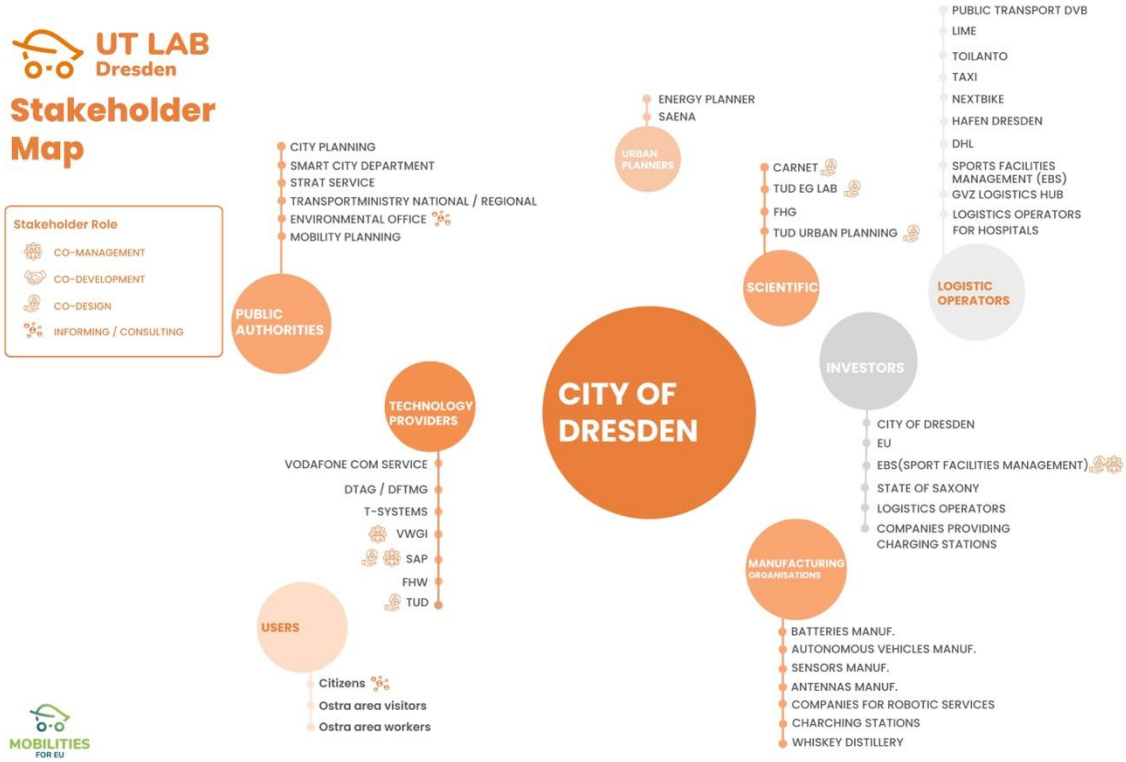

Figure 18: Stakeholders in the UT-Lab in Dresden organised by type of stakeholder

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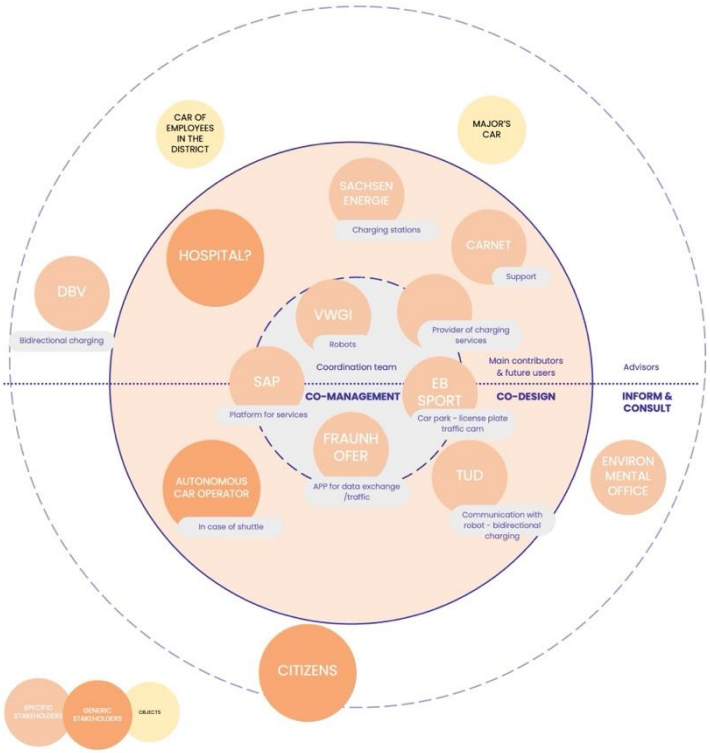

Figure 19: Stakeholders involved in the co-creation process in the UT-Lab in Dresden

Regarding co-creation process, the different stakeholders were positioned in the previous Figure, the closer to the inner circle the more importance the stakeholder will have in the co-creation process. The Dresden UT-Lab added more insights in this exercise, relating the exercise with the technology the stakeholder provided to the pilot and added specific infrastructure or vehicles to take them into account in the process.

4.2.5. GOVERNANCE STRUCTURE

The Dresden UT-Lab has set a first structure for the management of the UT Lab that involves both the public and the private sector. This structure is still under construction and will involve all concerned entities, each one with a defined role. For the moment, there are no working groups that have been identified in the governance structure.

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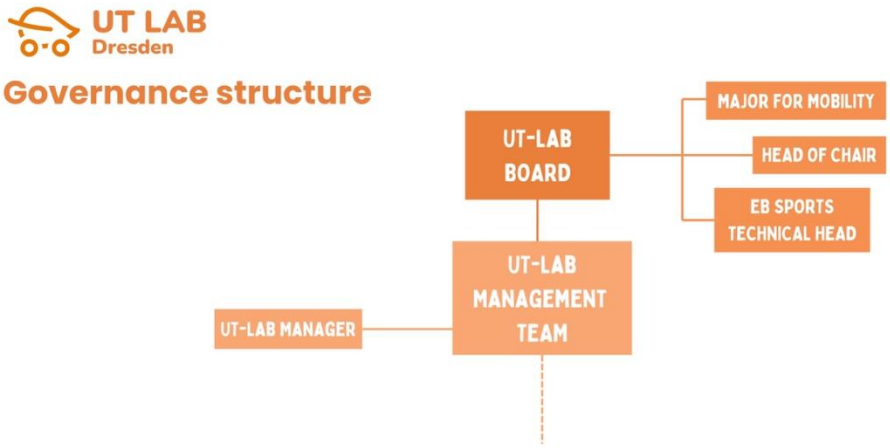

Figure 20: Governance structure of the UT-Lab in Dresden

4.2.6. VISION & MISSION

The Dresden UT-Lab is the UT-Lab of the second main city in the MOBILITIES FOR EU project. The mission of the Lab, as formulated by the partners, holds three main focuses:

> *"1-To be the place to test new mobility ideas with citizens and stakeholders, then showcasing and getting feedback.*
>
> *2-To co-create the most adapted solutions based on users' needs.*
>
> *3-To exchange best practices & most adapted solutions among local stakeholders."*

The long-term vision is:

> *"To be the network of stakeholders that everybody can come to develop the most adapted mobility solutions."*

4.2.7. ROADMAP OF ACTIONS

The Dresden UT-Lab has developed an initial roadmap of actions, shown in the figure below. While this is a preliminary plan, it will continue to evolve throughout the 5-year duration of the project. The roadmap is structured around four major pillars: lab management, pilot projects, co-creation processes, and engagement efforts. These four areas help organize the 11 key themes crucial to the lab's success:

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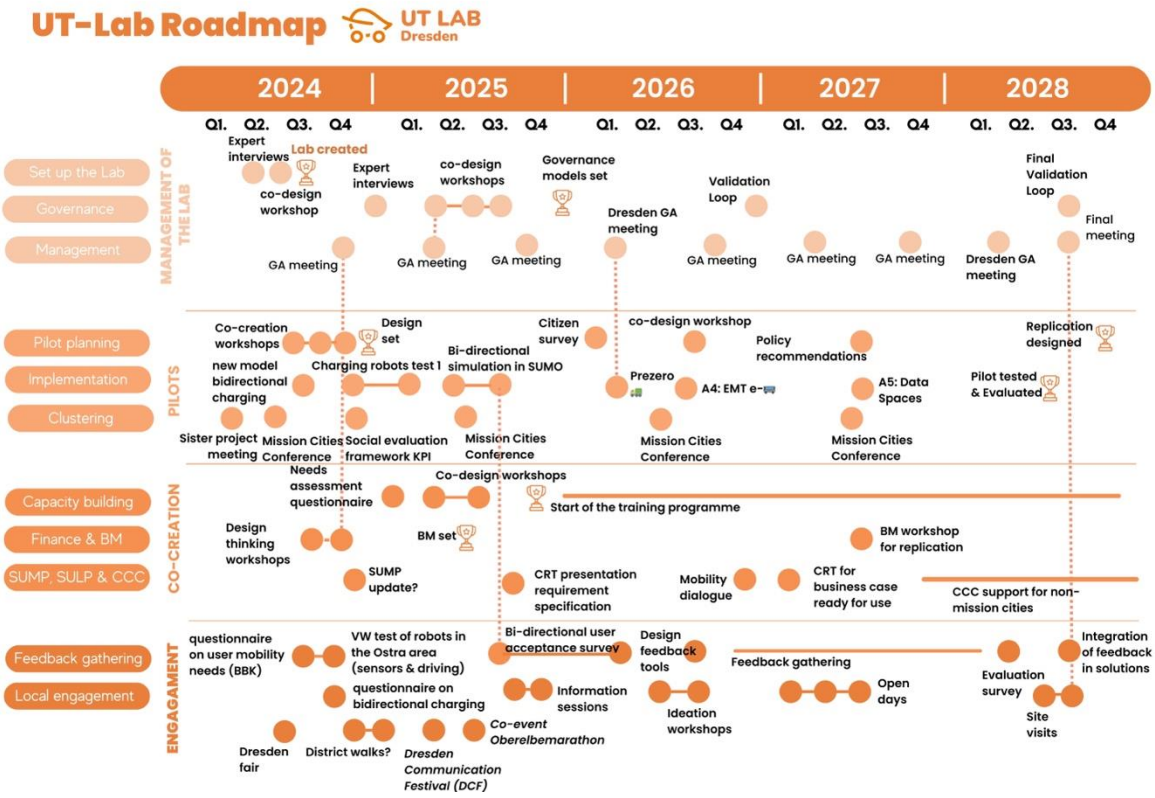

Figure 21: Roadmap of the UT-Lab in Dresden

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4.3. UT-Lab Espoo

4.3.1. BACKGROUND, CHALLENGES & PRIORITIES

Espoo, Finland's fastest-growing city, has over 300,000 residents spread across 300 square kilometres. With a nearly 3% annual population increase, largely due to immigration, Espoo is built around five centres connected by rail (train, tram, and subway) and has historically relied on private cars.

The city's rapid growth brings challenges such as increased traffic and logistics-related emissions. While rail connections are modern, Espoo faces gaps in first and last-mile transport, making it harder to link neighbourhoods smoothly to the rail system. Additionally, the transport network is better suited for travel to nearby Helsinki than for cross-city trips within Espoo itself.

Espoo has introduced several innovative mobility solutions, including an interoperable city bike system with Helsinki, shared vehicle options, e-scooter services, and autonomous robot deliveries for groceries in many areas of the city.

Espoo's main strategic document, the "Espoo Story", outlines its goals to work with residents and businesses to improve services and achieve climate neutrality by 2030. Supporting programs, like the Sustainable Espoo initiative, aim to develop electric vehicle charging infrastructure, promote sustainable transportation options (walking, cycling, public transport), and create branded transport hubs for smooth travel. Other priorities include advancing automated traffic, promoting sustainable mobility in workplaces, and supporting biofuel use. The experts interviewed in the city of Espoo shared that the decarbonization of transport is seen as highly relevant, with ambitious targets set, but practical implementation often falters due to political approval challenges. Prioritizing sustainable transport modes across all planning is essential, yet there's a disconnect between goals and actions, compounded by the carbon footprint of new construction. While transport is the worst-performing sector, structural and behavioural changes are needed, supported by regulations like reduced free parking.

Main barriers include misalignment of political decisions and actionable goals, high infrastructure costs, and a cultural preference for private vehicles. Historical land use complicates this shift, as many residents rely on cars. Although there's a lack of political will to discourage car use, the economic benefits of electrifying public transport are starting to drive progress.

Espoo joined the MOBILITIES project to develop a cooperative model for sustainable mobility planning and to pilot new mobility services, as well as to explore future mobility solutions like hydrogen. The city sees the UT-Lab as an opportunity to coordinate its various mobility initiatives more effectively. It aims to streamline cooperation between departments and with neighbouring Helsinki, as both cities share transport systems and co-own the public transport company.

Espoo also emphasizes citizen engagement, with district-level initiatives and a climate neutrality program that involve the entire community in sustainable development efforts. According to the experts interviewed in Espoo, engaging stakeholders in mobility and logistics requires the city to act as an enabler, fostering open dialogue with operators like e-scooter companies to address issues collaboratively. While the city has processes for citizen involvement, they often fail to represent the diverse population of Espoo, particularly younger voices. Improving participation methods is crucial, ensuring that engagement happens early in the planning stages. The city could also offer public spaces for experimentation and co-creation. To ensure new mobility solutions meet citizens' needs and align with EU decarbonization targets, a more walkable city is essential, allowing easier access to services without reliance on cars. Collaboration with organizations representing vulnerable groups during planning is important, as is appointing dedicated personnel to focus on accessibility and equity. Understanding citizens' behaviours and involving various groups in service design will help address real needs. For urban transport labs, maintaining ongoing dialogue with citizens is vital, although there can be reluctance to engage.

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Providing opportunities for immediate feedback during pilot projects and using diverse outreach strategies will enhance participation and ensure meaningful contributions from the community.

4.3.2. LOCATION

The Espoo UT-Lab location is still under discussion at the submission of this document. The preliminary location identified for the Lab is represented in the following Figure in red. There are also other labs or hubs identified in the map, as the VTT future hub (in green) or the Zero Emission Lab of the city (in brown). As the location of the pilot has not been established yet in the fellow cities, the location of the lab is still to be determined in most of them.

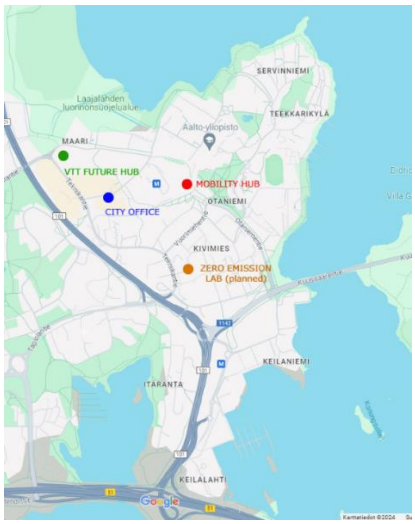

Figure 22: Location of the Espoo UT-Lab

4.3.3. POSITIONING

To establish the role of the Espoo UT-Lab, a comparison with existing labs was conducted. These labs will be continuously monitored throughout the project to identify best practices in key areas. The labs relevant to the MOBILITIES FOR EU project are briefly presented below:

Table 4: Benchmark of existing Labs in Espoo linked to MOBILITIES FOR EU

LAB NAME	DESCRIPTION	RELEVANT PARTNERS	CREATION DATE	INTERACTION WITH THE PROJECT
Mobility Lab Helsinki	"We assist companies and researchers in testing and developing smart and digital mobility solutions on the streets of Helsinki, with real users. Our undivided attention is on smooth, safe and sustainable mobility."	City of Helsinki, Forum Virium (Helsinki-owned development company)	2019	Close co-operation on multiple levels as they are our counterpart on Helsinki side and our cities, and their traffic are seamlessly connected
VTT Living Labs	The national research centre VTT runs or participates in several mobility-related living lab activities. E.g. at & near their own premises in	VTT, Aalto University Campus & Real Estate (ACRE), City of Tampere,	2020	Common events (just had one about sustainable commuting), co-operation and support

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	Otaniemi there are electric charging related ones, and in Tampere they are part of a tram living lab consortium.	Tampere University, Skoda	especially on the technical side.

Two labs have been identified for the city of Espoo: The Mobility Lab Helsinki, with a similar focus of the Espoo UT-lab and the VTT Living Lab with other living lab in the city and a focus on mobility. The two labs are very interesting for Espoo and current exchanges are being made at the time of the submission of this deliverable on the potential synergies with them. The focus of the Espoo UT-Lab will be fine-tuned during the project as the different mobility and logistic measures will be further defined.

4.3.4. STAKEHOLDER MAP

The UT-Lab in Espoo mapped here below the variety of stakeholders to be involved in the Lab. These stakeholders play specific roles in the MOBILITIES FOR EU co-creation process, and are organised as follow:

- Co-management: Key decision-makers in the Lab.
- Co-development: Directly involved in implementing actions.
- Co-design: Contribute to designing strategies, governance models, and pilot actions.
- Informing & consulting: A smaller role, primarily focused on staying informed about the project's developments.

The exact role for each of the stakeholders' is under selection and might evolve over the project's timeline. The figure below illustrates the actual mapping and the assigned roles as per today's reflections:

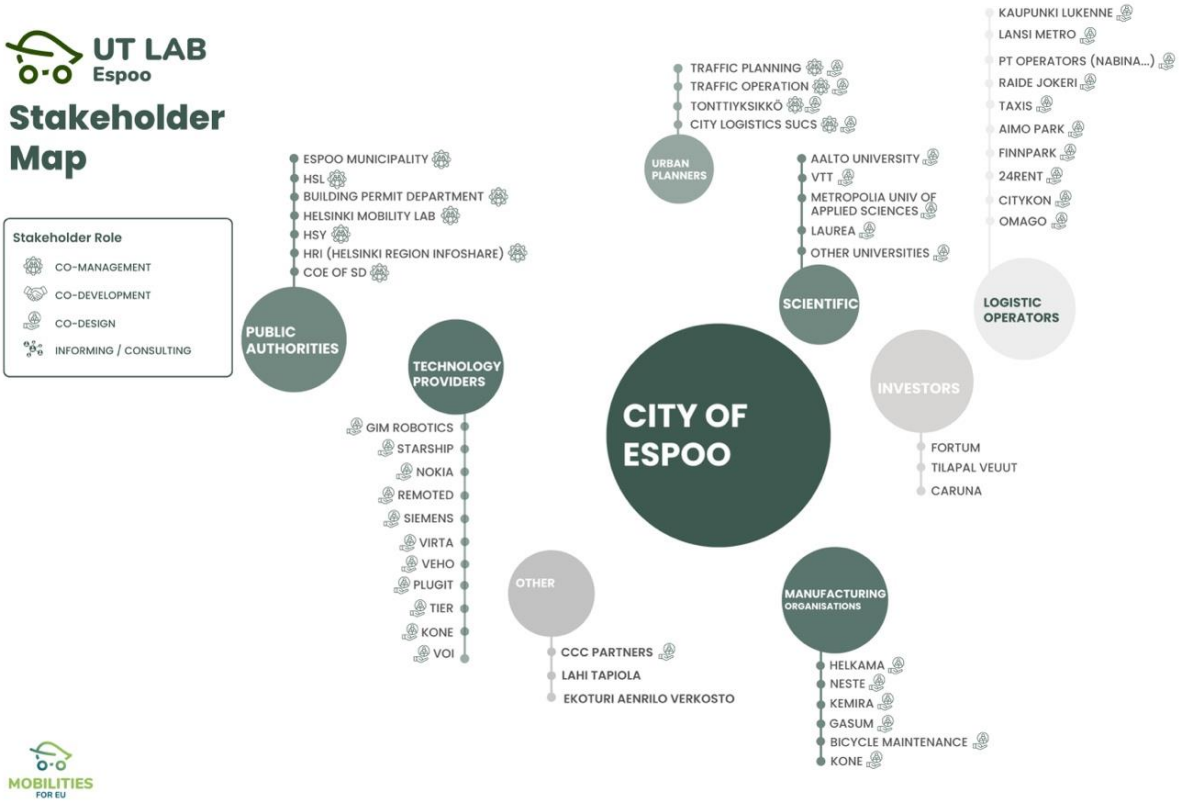

Figure 23: Stakeholders in the UT-Lab in Espoo organised by type of stakeholder

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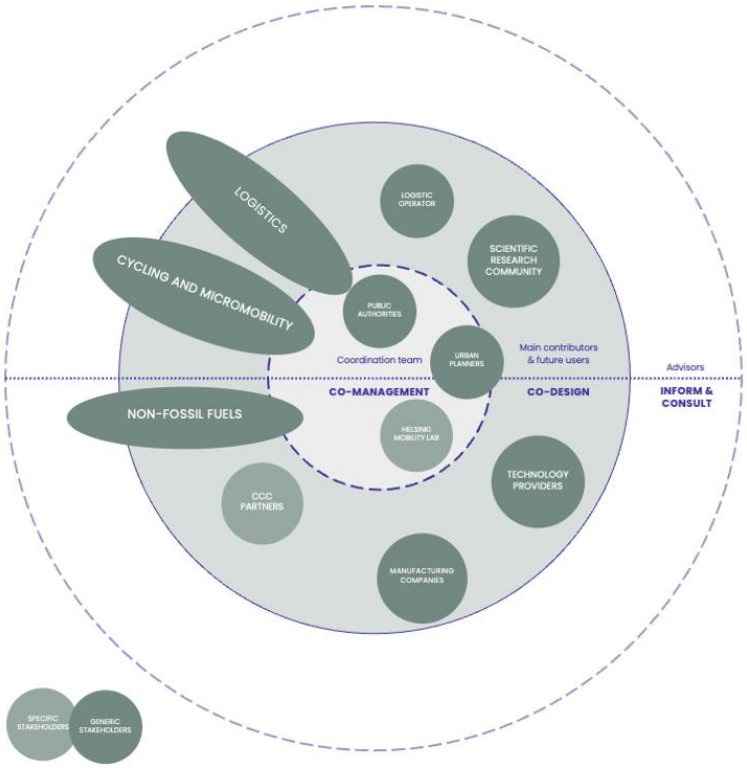

Figure 24: Stakeholders involved in the co-creation process in the UT-Lab in Espoo

4.3.5. GOVERNANCE STRUCTURE

The UT-Lab in Espoo has set a governance structure represented by the Figure below. The Management team is composed by a UT-Lab manager, a UT-Lab board with 7 members, and 4 working groups. The working groups will address the following topics: Accessibility and VRU, Electric Vehicles, Logistics, Bicycles & Micromobility. The participants in each working group are still being defined for the moment:

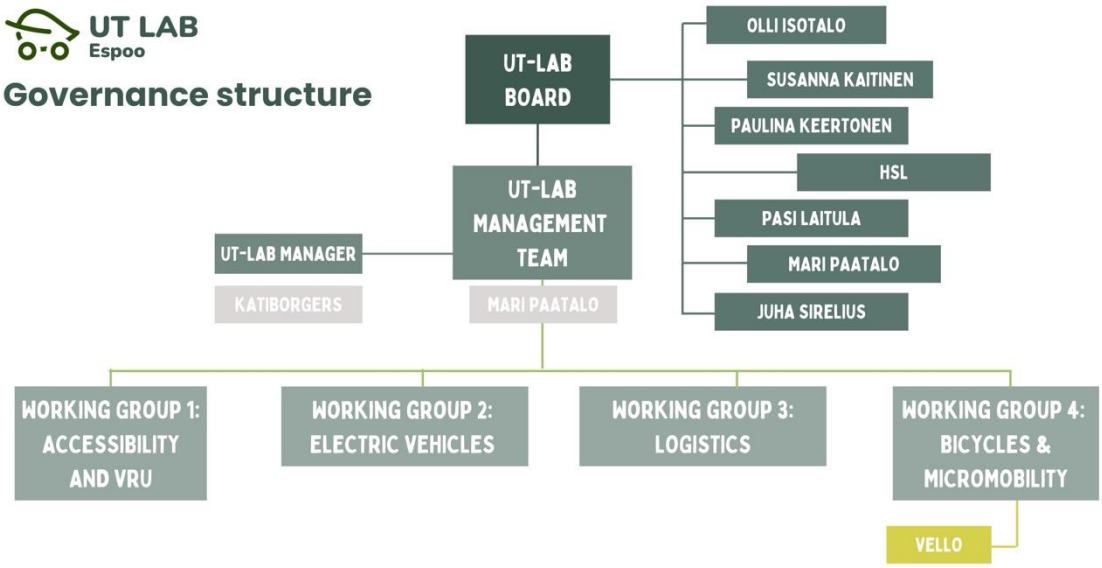

Figure 25: Governance structure of the UT-Lab in Espoo

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4.3.6. VISION & MISSION

The Espoo UT-Lab has defined the mission of the Lab. It will be developing over the next 5 years in order:

> *"To bring together all parties (citizens, city departments, companies, research, capital region partners) to promote sustainable mobility."*

The long-term vision is:

> *"To establish Espoo + the regional UT-Lab as the leading example on innovation in sustainable mobility."*

4.3.7. ROADMAP OF ACTIONS

The Espoo UT-Lab has created an initial roadmap to organise the Lab's activities. The first imagined timeline is represented by the figure below:

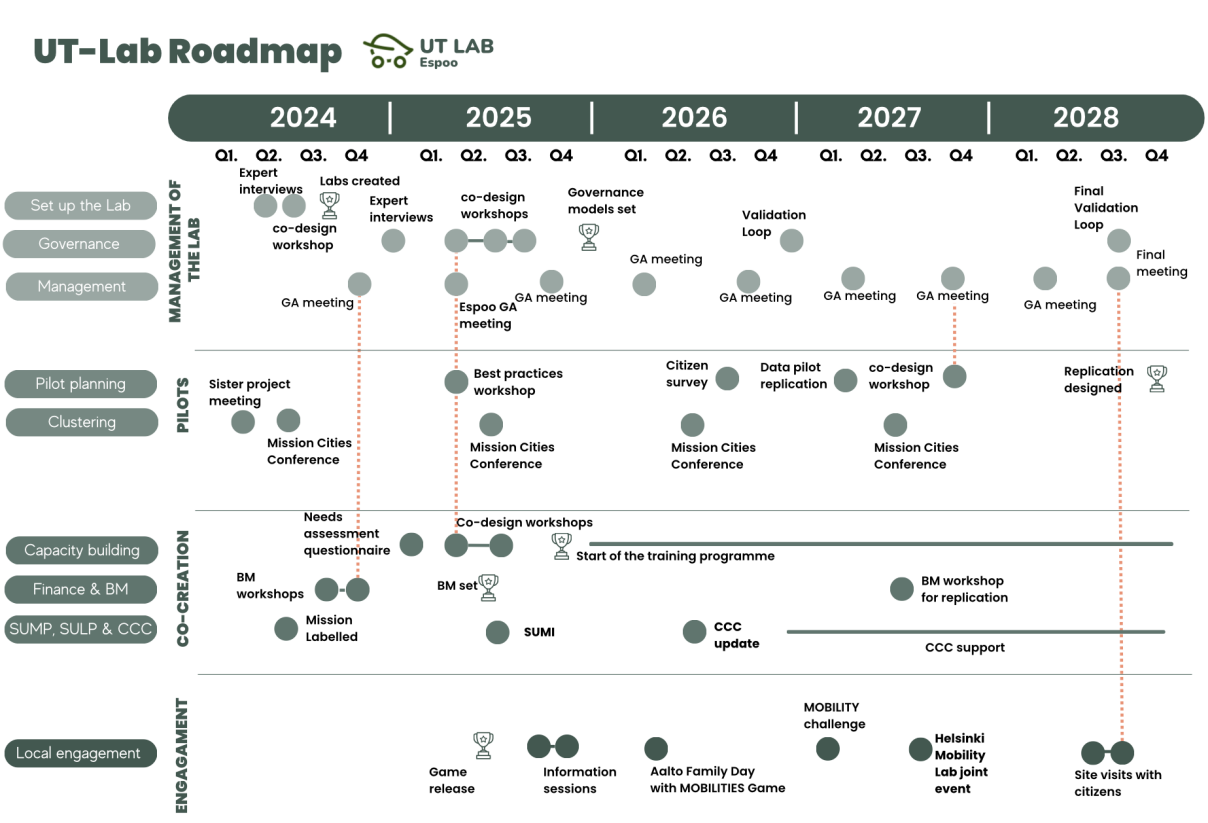

Figure 26: Roadmap of the UT-Lab in Espoo

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4.4. UT-Lab Trenčin

4.4.1. BACKGROUND, CHALLENGES & PRIORITIES

Trenčín, a city shaped by a classic industrial urban model, faces challenges related to its physical layout, with its traffic infrastructure organized around central hubs. The city's geographical features, including a river and rock mass in its centre, present additional barriers to mobility development. Traditional approaches to expanding road capacity have led to the "iron law of traffic congestion," where increased capacity attracts more traffic, reducing quality of life and further encouraging urban sprawl.

The city's mobility challenges include state-controlled infrastructure, limited human and financial resources, incomplete cycling networks, and the need for more efficient data collection on traffic flows. Trenčín also struggles with a lack of internal ring roads and insufficient connections to its surrounding areas.

Existing solutions include a parking regulation policy and planning efforts to reroute the main traffic route in the city centre.

Trenčín's “Sustainable Urban Mobility Plan” (SUMP) outlines key strategies focused on developing pedestrian and cycling infrastructure, enhancing public transport, reducing car dependency, and improving safety. Goals include faster and greener transport, better accessibility, and calmer traffic, achieved through initiatives like public transport modernization, building new sidewalks and bike paths, and implementing car-free and speed-limit zones. As per the experts interviewed, the decarbonization of transport is viewed as highly relevant to help address Trenčín's mobility challenges, often linked to broader sustainability goals. It is seen as essential for improving urban life and enhancing the overall quality of life for citizens. There is a consensus that reducing emissions, especially in high-traffic areas, should be a priority, with a focus on promoting public transport, cycling, and reducing individual car use. They have identified some challenges for these actions, framed here as needs, such as: the need to develop comprehensive energy plans that incorporate renewable sources and smart grids is essential. Engaging in energy management and building local energy communities are also highlighted as crucial steps for a sustainable energy future.

By joining MOBILITIES, Trenčín aims to share knowledge, build capacities, and update its SUMP with best practices from across Europe. The city also sees the project to improve its institutional framework by establishing a UT-Lab, which will partner with Slovak Technical University and local experts to support sustainable mobility planning. While local engagement on mobility has been limited, Trenčín plans to involve environmental and social groups like the Centre of Environmental Activities in future discussions about the city's mobility needs. The experts interviewed in Trenčín believe that collaboration among stakeholders, including local governments, transport companies, and civic organizations, is vital for creating effective mobility solutions. They shared a strong emphasis on aligning these solutions with the real needs of citizens, ensuring accessibility and convenience. They also highlighted that the understanding of the long-term impacts of new technologies and gathering mobility data related to demographics are crucial for informed decision-making and maximizing the benefits for the community.

4.4.2. LOCATION

The location of UT Lab Trenčin is not specified up until now. The concerned entities are currently discussing the best options to locate the lab.

4.4.3. POSITIONING

To define the positioning of the Trenčín UT-Lab, an analysis of pre-existing labs was undertaken. Their activities will be observed over the course of the project to uncover best practices across different areas. Below is a summary of the labs considered significant for the MOBILITIES FOR EU initiative:

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Table 5: Benchmark of existing Labs in Trenčín linked to MOBILITIES FOR EU

LAB NAME	FOCUS	RELEVANT PARTNERS	CREATION DATE	INTERACTION WITH THE PROJECT
Slovak Smart City Cluster	Smart city solutions, strategical framework, potentials for networking	Business, academia, municipalities	2017	Common events, capacity building programme, common projects
Smart Cities Klub	Best practice in green mobility, international mobility projects	Business and municipalities	2018	Networking, knowledge sharing, common events
Centre of Environmental Activities - CEA	Activities in zero emissions mobility within Trenčín	NGO	2010	Expert interviews with local active community
Trenčin Foundation	Engaging and capacity building activities with local communities within the city	NGO	1998	Expert interviews with the local active community, participatory approach support

The Labs have been represented here below with two main features compared, the sectoral focus vs. the focus on users/citizens of the Labs. The more citizen engagement and exchange the upper the Lab will be. Most of the organizations/networks mapped in Trenčín are not necessary labs, but clusters, hubs, foundations or centers of activities. The organizations identified are not focused especially on transport, but in smart cities or environment. Thus, the creation of the Trenčín UT-Lab makes sense, as there was no transport lab with a focus on citizen engagement and co-creation of new solutions.

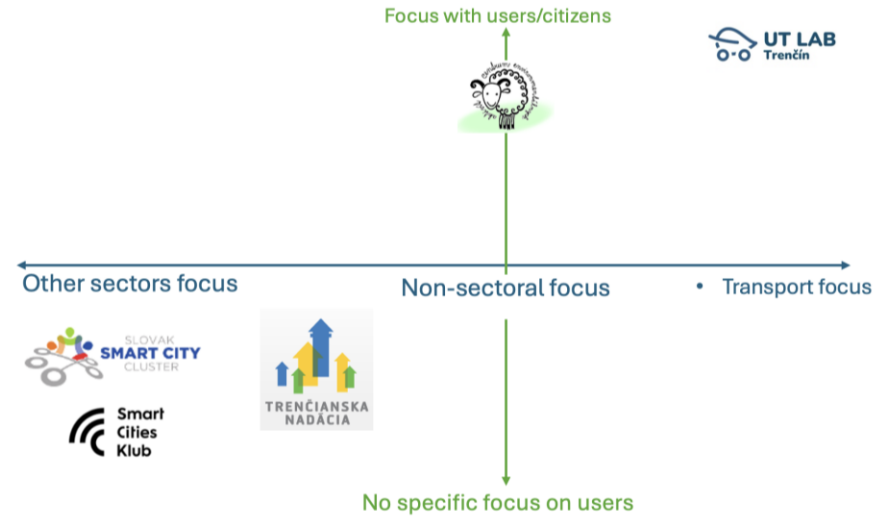

Figure 27: Positioning of the Trenčin UT-Lab in MOBILITIES FOR EU

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4.4.4. STAKEHOLDER MAP

The UT-Lab in Trenčín identified key stakeholders such as public authorities, urban planners, and technology providers for analysis. Their roles in MOBILITIES FOR EU's co-creation process are divided into co-management (decision-making), co-development (action implementation), co-design (planning), and informing & consulting (low involvement, updated on progress). A total of 21 stakeholders have been identified at this stage for the UT-Lab. This lab has not identified a specific category for users, but the NGO could represent their point of view. Different alternatives will be envisaged to engage with citizens for the lab and it will be updated regularly during the project. The following roles have been imagined for each of the stakeholders at this stage as shown in the figures below:

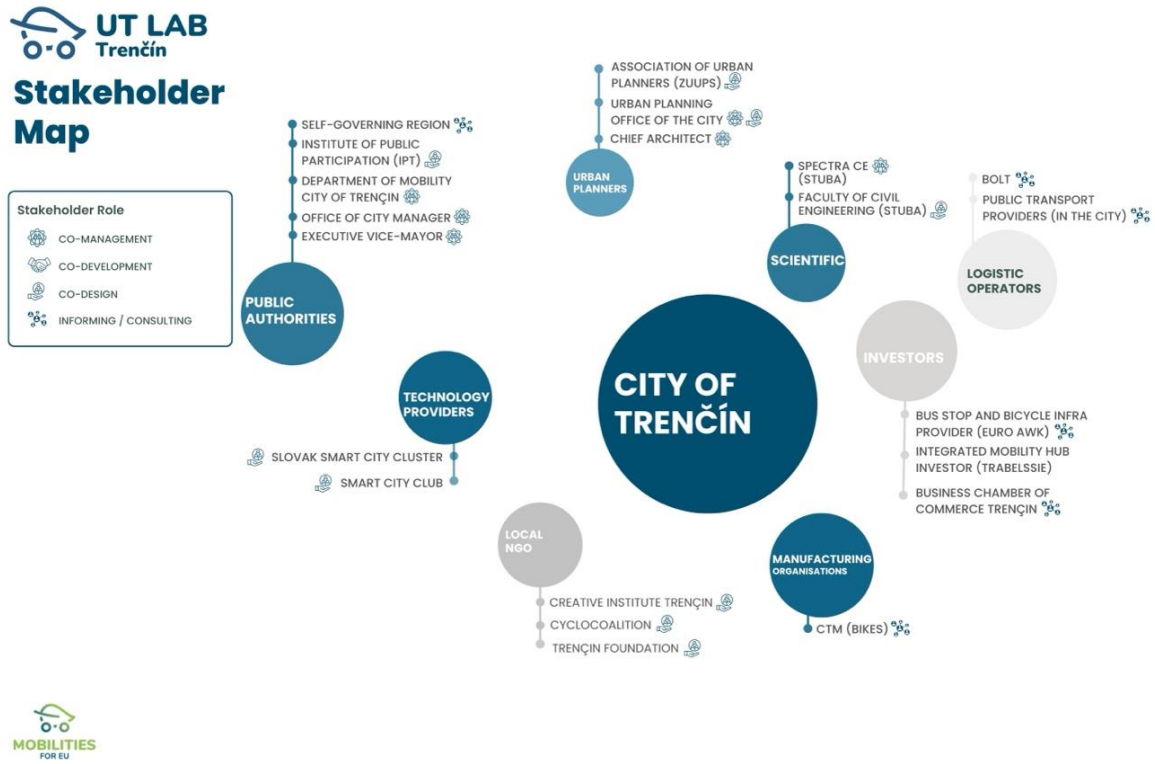

Figure 28: Stakeholders in the UT-Lab in Trenčin organised by type of stakeholder

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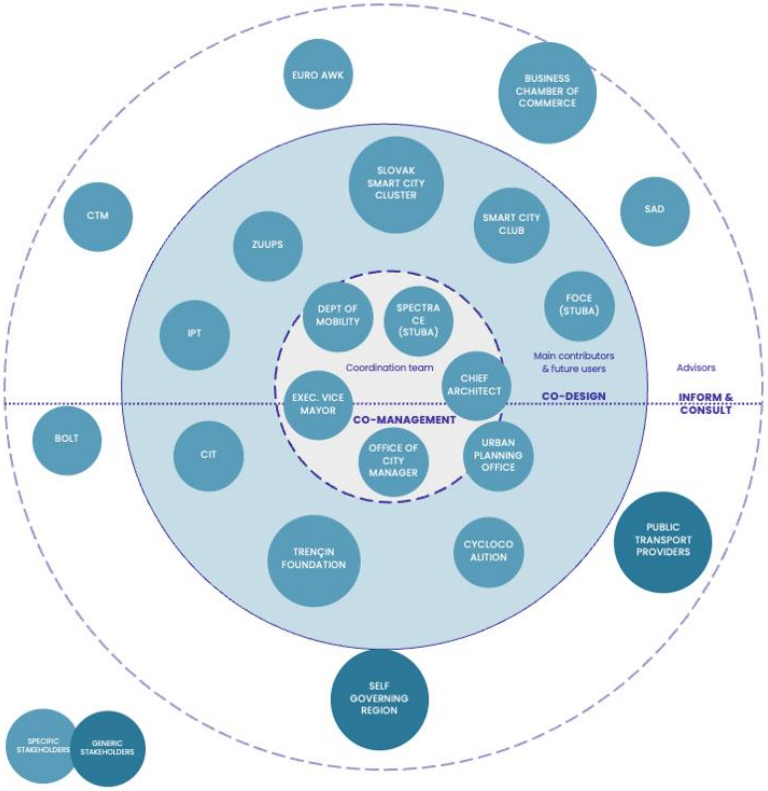

Figure 29: Stakeholders involved in the co-creation process in the UT-Lab in Trenčin

The 21 stakeholders mapped were positioned according to its roles in the co-creation process. There is a clear set of 5-6 stakeholders with the co-management role, being part of the coordination team. Then a group of main contributors and future users with the co-design role and final a group of advisors with a less important role for the Lab with the inform and consult role.

4.4.5. GOVERNANCE STRUCTURE

The Trenčín UT-Lab has put a structure including a public-private board. The Management team has been set as a UT-Lab manager, the Head of Department of Mobility of the Trenčín City Council, supported by 6 roles from the city in addition to the UT-Lab Board. The Governance structure includes 4 working groups including the private sector and associations. The four working groups will address the following topics: Electromobility, Social Innovation & Capacity Building, Two Wheel Mobility & Walkability, School Mobility & Safety. The Governance is organised as per the scheme below:

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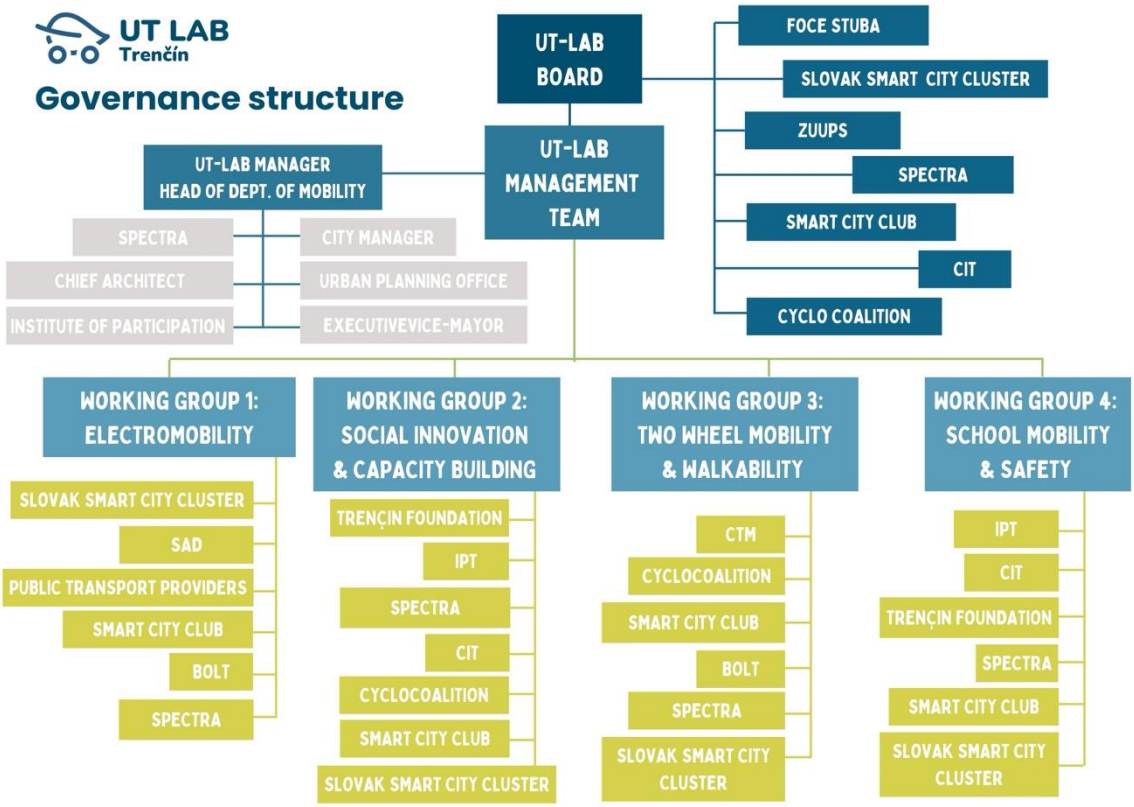

Figure 30: Governance structure of the UT-Lab in Trenčin

4.4.6. VISION & MISSION

The Trenčín UT-Lab has set the mission of the Lab as follow:

> *"To provide innovative, integrative, local specific solutions for moving Trenčín towards safety, zero emission, smooth and ecological mobilities following EU and CCC targets."*

The long-term vision is:

> *"To serve as platform for reaching green, safety and smooth mobility for active communities in Trenčín."*

4.4.7. ROADMAP OF ACTIONS

The Trenčín UT-Lab has outlined an initial roadmap, as shown in the figure below. It centres on four main axes: lab management, pilot projects, co-creation, and stakeholder engagement. These core areas structure the 11 essential themes considered for the UT-Lab's organisation:

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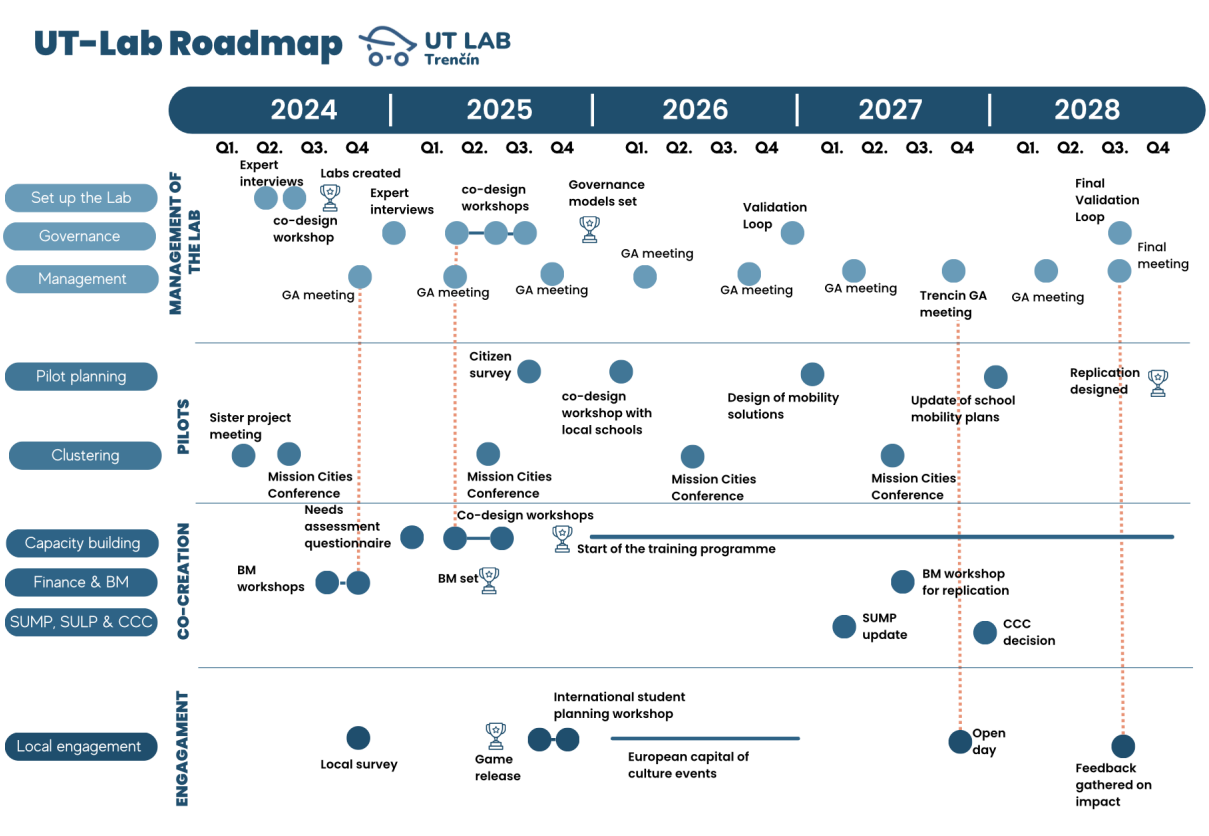

Figure 31: Roadmap of the UT-Lab in Trenčin

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4.5. UT-Lab Sarajevo

4.5.1. BACKGROUND, CHALLENGES & PRIORITIES

Sarajevo, the capital of Bosnia and Herzegovina, serves as its administrative, cultural, and educational hub, situated in the Sarajevo Field. Surrounded by mountains like Bjelašnica, Igman, and Trebević, the city is home to 275,524 people, with a wider population of 413,593 in the Sarajevo Canton. The city's geography and size make it a unique location for addressing urban mobility challenges.

Sarajevo faces several key mobility issues, including traffic congestion due to increased motorization, the need for public transport improvements, parking problems in the central city area, and limited use of pedestrian and bicycle infrastructure. Additionally, air quality concerns play a significant role in the city's focus on improving mobility and logistics systems. To tackle these issues, the city has introduced several innovative solutions, such as the public bicycle-sharing system Nextbike, charging stations for electric vehicles, and e-Go CarSharing.

The city's Sustainable Urban Mobility Plan (SUMP) focuses on promoting cleaner, more sustainable transportation options. The strategy encourages walking, cycling, public transport, and the adoption of new technologies for a smarter approach to urban mobility. It also aims to reduce the reliance on private cars and implement sustainable logistics solutions to enhance the quality of life in Sarajevo. The experts interviewed in Sarajevo think that the decarbonization of transport in Sarajevo is a crucial issue due to severe air pollution and greenhouse gas emissions, yet several barriers hinder progress. Experts point out that the city's reliance on fossil fuels for electricity production means that electric vehicles can generate more emissions than modern diesel buses. Key challenges include inadequate infrastructure for electric vehicles, high costs of adoption, and insufficient political will to provide incentives. The public transport system suffers from irregular services, while advocacy for public transport and micromobility options, such as bicycles and e-scooters, remains weak. Additionally, limited financial resources and outdated technology further impede the development of a sustainable transport framework. Addressing these issues is essential for improving air quality and enhancing public health in the city.

Sarajevo joined the MOBILITIES project to support its commitment to improving urban life and to adopt innovative solutions for sustainable mobility. The city views the creation of a UT-Lab as an opportunity to promote and support mobility activities. Its long-term use will depend on the success of these initiatives after the project concludes.

Sarajevo has already seen success with citizen and stakeholder engagement initiatives like the "Smart City" project launched in 2018 by UNDP in collaboration with local authorities. This initiative fostered urban cooperation and implemented technology-driven public services, leading to the creation of the City Mind Lab, a multidisciplinary group dedicated to urban development. Through this initiative, projects such as SMART NEXTBIKE 2.0, a bus tracking system, and smart parking solutions have been implemented, contributing to the city's ongoing mobility improvements. As per the experts interviewed, in order to maximize user acceptance of advanced technologies like bidirectional charging and autonomous charging robots, experts suggest prioritizing public education about their benefits through campaigns and demonstration projects. Pilot initiatives should gather user feedback, while clear regulations and strong customer support are essential for successful adoption. For engaging citizens in urban transport labs, strategies include collaborating with key local institutions and hosting regular public consultations to gather input can be adequate. Transparent communication through social media and partnerships with NGOs will ensure that projects meet community needs. They also recommend organising educational campaigns and feedback mechanisms like surveys will foster participation, emphasizing a participatory approach that involves all demographics for effective engagement.

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4.5.2. LOCATION

The geographical location of UT Lab Sarajevo is to be determined among these two potential locations:

- Education, Sports and Recreation Centre ''Safet Zajko''
- Bentbaša

As the location of the pilot has not been established yet in the fellow cities, the location of the lab is still to be determined in most of them.

4.5.3. POSITIONING

Table 6: Benchmark of existing Labs in Sarajevo linked to MOBILITIES FOR EU

LAB NAME	DESCRIPTION	RELEVANT PARTNERS	CREATION DATE	INTERACTION WITH THE PROJECT
Laboratory for E-mobility and promotion of electric mobility in Bosnia and Herzegovina	The Laboratory for E-mobility and the promotion of electric mobility in Bosnia and Herzegovina was opened at the Faculty of Traffic and Communications within the PELMOB project, which aims to modernize study programs at higher education institutions in the countries of the Western Balkans, through the introduction of courses related to electric vehicles at basic, master's and specialist study levels. An academic network for electromobility was formed within the laboratory, which will bring together relevant actors such as schools, colleges, public and private companies, of local self-governments and citizens, which aims to promote electromobility, research of new technologies and integration of acquired knowledge into teaching programs. Also, the laboratory will be used to provide practical lectures and related experiences with electromobility.	According to the data available to the public, the project involved members of the academic community, individual companies from the field of the automotive industry, carriers operating public transport in the canton, operators of telecommunication services and other interested stakeholders.	January 25, 2024	Get to know their practices, share knowledge, cooperate

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There is just one lab that has been identified in Sarajevo focused on e-mobility. The focus of the lab is focus on engaging with the academic network. Thus, the creation of the Sarajevo UT-Lab with the focus on citizen engagement and co-creation of new solutions in transport will be beneficial for the city. Exchanges will be foreseen with this laboratory of e-mobility to ensure knowledge transfer.

The UT Lab for Sarajevo has been envisaged as a traffic training ground where children and adults can learn how to cycle and how to participate in traffic as cyclists. Sarajevo is already working on the promotion of cycling as a climate-neutral mean of transport, so it fits into our existing policies, while at the same time, innovative solutions can be installed in the Lab during replication.

4.5.4. STAKEHOLDER MAP

The UT-Lab in Sarajevo identified stakeholders such as public authorities, urban planners, and technology providers. In MOBILITIES FOR EU, they fulfil four roles: co-managers lead decision-making, co-developers implement actions, co-designers help shape plans, and some are kept informed with minimal involvement. The following figures identify the entities involved in the UT-Lab in Sarajevo and each one's role:

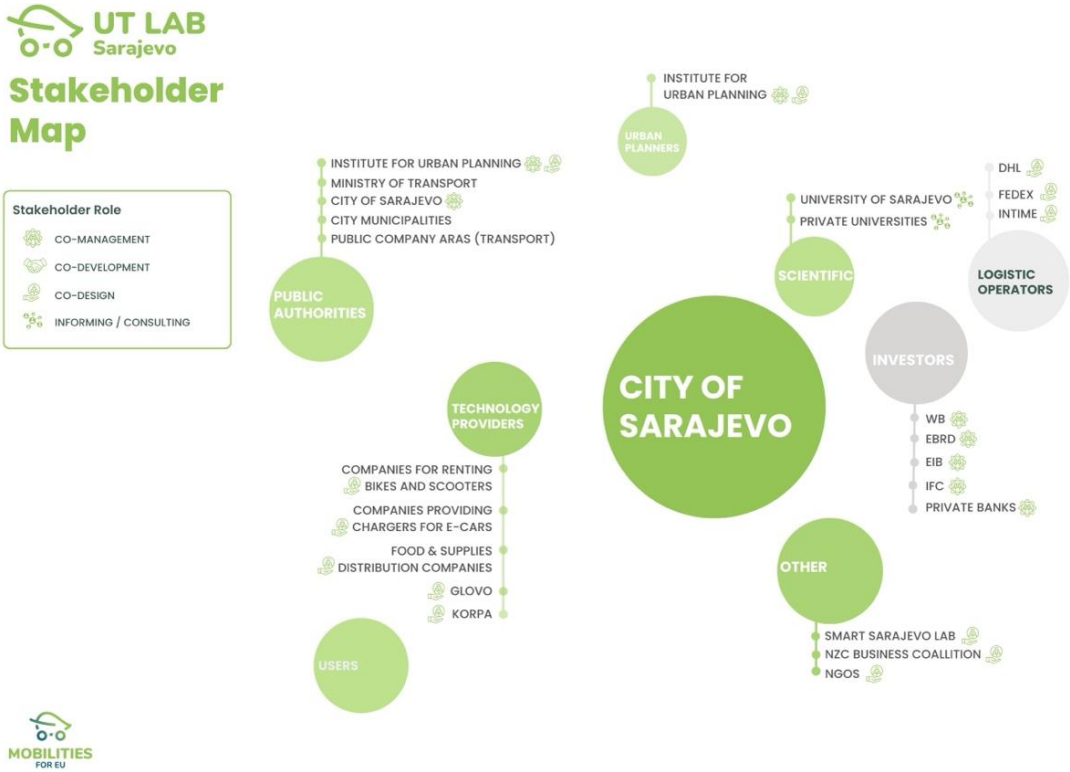

Figure 32: Stakeholders in the UT-Lab in Sarajevo organised by type of stakeholder

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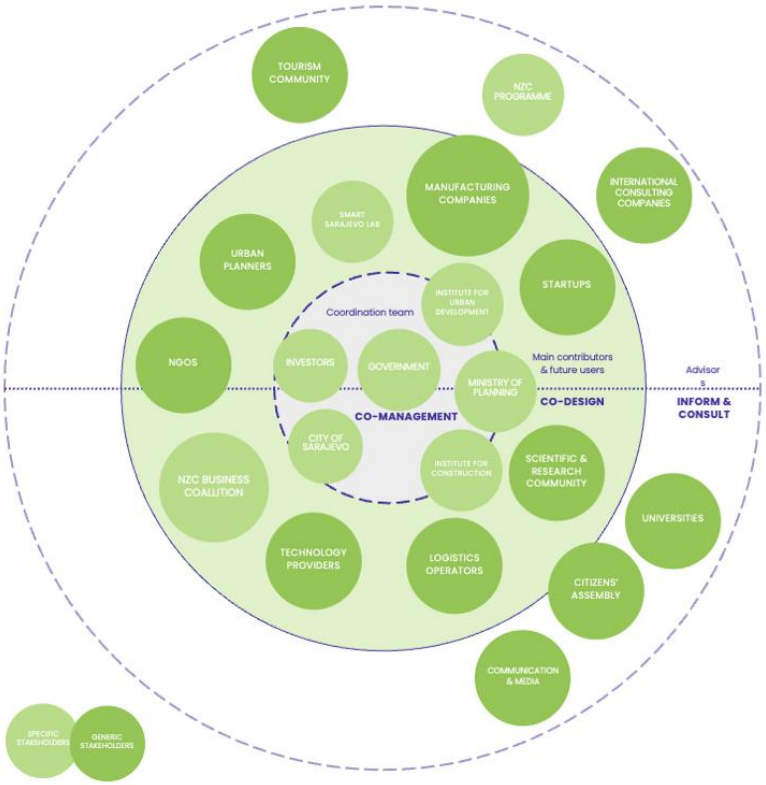

Figure 33: Stakeholders involved in the co-creation process in the UT-Lab in Sarajevo

There is a total of 24 stakeholders identified in the Sarajevo UT-Lab. The category of users has not been identified yet as the pilot is not yet defined. Stakeholders ranging different categories, public/private, research/industry, mobility/logistics, etc. have been identified. They have been positioned in the co-creation roles Figure stating specific stakeholders but also more generic ones. This will be fine-tuned during the project, as long as the pilot and the different measures will be defined.

4.5.5. GOVERNANCE STRUCTURE

Sarajevo UT-Lab has set a structure for its Governance, formed by a UT-Lab Board, with public and private representation, and a UT-Lab Management Team. It includes 2 working groups involving a wide variety of stakeholders. The first working group is pre-existing and includes technical and public entities. The second working group focuses on citizens as members including: Startups, Citizens, Research Centres and Universities. The following figure illustrates the organisation of the above-described governance:

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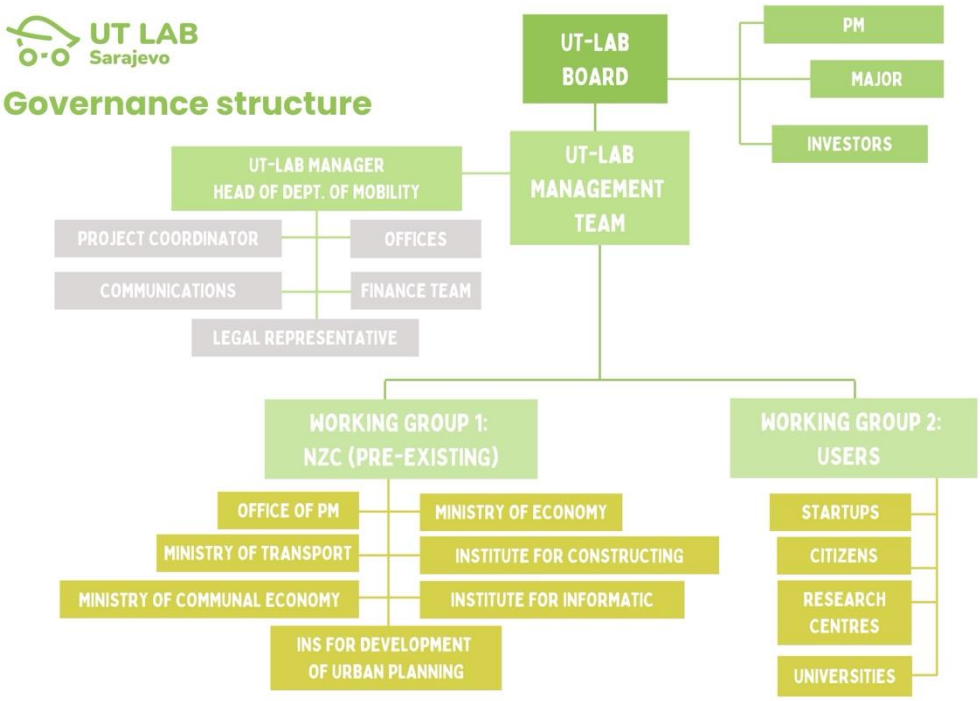

Figure 34: Governance structure of the UT-Lab in Sarajevo

4.5.6. VISION & MISSION

The Sarajevo UT-Lab has defined its mission as follow:

> *"To be the environment that will foster the implementation of electric and active mobility solutions in the city."*

The long-term vision is:

> *"To become a leader in urban sustainable mobility for other cities in Bosnia and the region."*

4.5.7. ROADMAP OF ACTIONS

As for the other cities, Sarajevo developed its initial Roadmap to organise the project's activities over the 5 years planning. The Sarajevo UT-Lab covers the 11 themes in its preliminary planning and is represented by the figure below:

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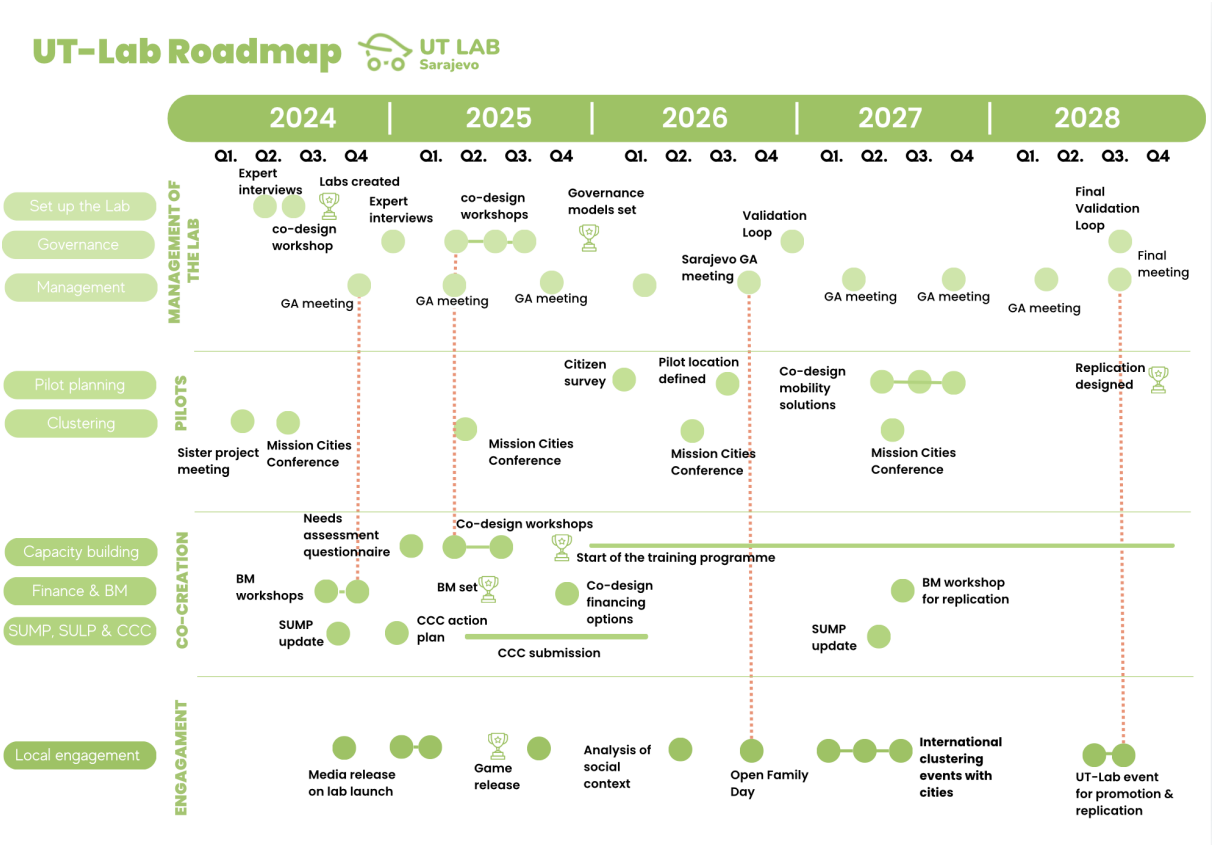

Figure 35: Roadmap of the UT-Lab in Sarajevo

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4.6. UT-Lab Gdansk

4.6.1. BACKGROUND, CHALLENGES & PRIORITIES

Gdańsk, a city with a population of 485,500 and part of a metropolitan area of over 1.2 million, faces unique mobility challenges due to its location between the Baltic Sea and upland forests, resulting in linear transport corridors. With a growing population and increasing transport needs, the city also faces issues such as a lack of transverse connections, growing port traffic, and road congestion.

To address these challenges, Gdańsk has implemented several innovative mobility solutions, including the “Tristar” traffic management system and the “SIP” passenger information system.

The city’s main strategic document, “Gdańsk 2030 Plus”, sets ambitious goals focused on sustainability, safety, and accessibility. Key objectives include reducing CO2 emissions by 30%, increasing the share of walking, cycling, and public transport to 65%, and reducing the number of road fatalities to zero. The strategy promotes sustainable mobility, energy transition, digitalization of services, and improving the city's road system. This energy transition, as per the experts interviewed, includes broader action than changing the technical aspects like the mode of propulsion to electricity or hydrogen. Changing transport habits, promoting public transport instead of individual transport, extending the tram network, improving interchanges and information systems are all measures that help decarbonise transport in a city and achieve a more sustainable mobility. Several obstacles to the introduction of a more sustainable mobility are already mapped out in the city of Gdansk: people's mentality and their need to manifest social status by owning a car, mostly not an electric one given the cost of purchasing and operating electric cars; the unreliability, lack of comfort, of interchange coordination, and provision of accompanying spaces on public transport.

By joining MOBILITIES, Gdańsk aims to learn about innovative urban mobility solutions that can be implemented locally. The city is also interested in developing a UT-Lab to support the creation of new mobility projects, preparing a “Sustainable Urban Logistics Plan” (SULP), and working toward the goal of reducing car traffic. The UT-Lab will play the role of a tool to animate and engage broad groups of stakeholders in open problem debates. This method was proven effective developing consensus, co-design, involvement in decision-making and shared responsibility for transformational outcomes.

Citizen engagement initiatives in Gdańsk, such as greenery protection groups, cycling initiatives, and the "Old Oliwa" Association, have played a role in shaping the city’s mobility strategies and will continue to be involved in future plans. Experts interviewed in Gdansk city recommend face-to-face meetings between stakeholders as an effective method of cooperation, tailored in theme and structure to the problem and context. They also highlight values to be respected like openness, respect, egalitarianism, honesty and conciliatory attitudes to ensure successful cooperation. Experiences in participatory processes show that it is especially important to match the problem to the stakeholder group and to professionally animate the conversations.

4.6.2. LOCATION

The location of UT Lab Gdansk is not specified for the moment. This geographical implementation will be specified in the upcoming phases of the project, based on the decision of the local actors. As the location of the pilot has not been established yet in the fellow cities, the location of the lab is still to be determined in most of them.

4.6.3. POSITIONING

A benchmark analysis of existing labs was conducted to set the positioning of the Gdansk UT-Lab. Below is a brief description of the labs considered important for the MOBILITIES FOR EU project:

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Table 7: Benchmark of existing Labs in Gdansk linked to MOBILITIES FOR EU

LAB NAME	FOCUS	RELEVANT PARTNERS	CREATION DATE	INTERACTION WITH THE PROJECT
URBACT "PUMA" SUMP for Oliwa District	Develop and update City SUMP	Citizens, district council, entrepreneurs, drivers, cyclists, pedestrians, public transport users	01.06.2023	Join them
URBACT "ARCHETICS" dissonant heritage Grunwald Living District as an example of socrealismus style	Participatory processes, equal involvement	Citizens, district council, art and architecture historians, property managers	01.06.2023	Common events
Gdańsk Lab - Agents of co-existance (URBACT)	Improvement of communication between officials and citizens	Seniors' council, clerks, NGOs, psychologists, disableds' assistant	01.06.2023	Interview them
STEP-UP LAB Interreg Europe - Strengthening - The Effectiveness of Policies for European Pedestrians	Participatory processes, equal involvement	Citizens, district council, Metropolitan Area Association, public transport authority, city roads authority, city traffic engineer, NGOs, pedestrians' proxy, City development Office	01.02.2024	Join them
SECAP sustainable energy and climate action plans - operational program for the city's development strategy	Integrated planning, indicators, meters, assumptions for the climate action plans	City's energy office, environment department, Heating Company, Power Plant, Gas Company, Renewable energy companies	30.08.2023	Interview them
Studium PAG - transit and services main corridor	GWP Gdansk's project workshops, participatory	Citizens, many district councils, entrepreneurs,	27.04.2022	Join them

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	processes, equal involvement	property manager, City Development Office, City Architect Office, NGOs, infrastructure managers, media

The Labs mapped in the Gdansk UT-Lab are very much related to other projects or initiatives, as Urbact or Interreg. The STEP UP lab is focus on pedestrian safety, so there will be interesting exchanges with them on the VRUs matter. The Studium PAG with workshops and participatory processes on transit and services main corridor will also be interesting to follow. In any case, the mapping in Gdansk has revealed that there is no lab in the city with the focus on co-creation of transport and logistic solutions and citizen engagement as foreseen with the project.

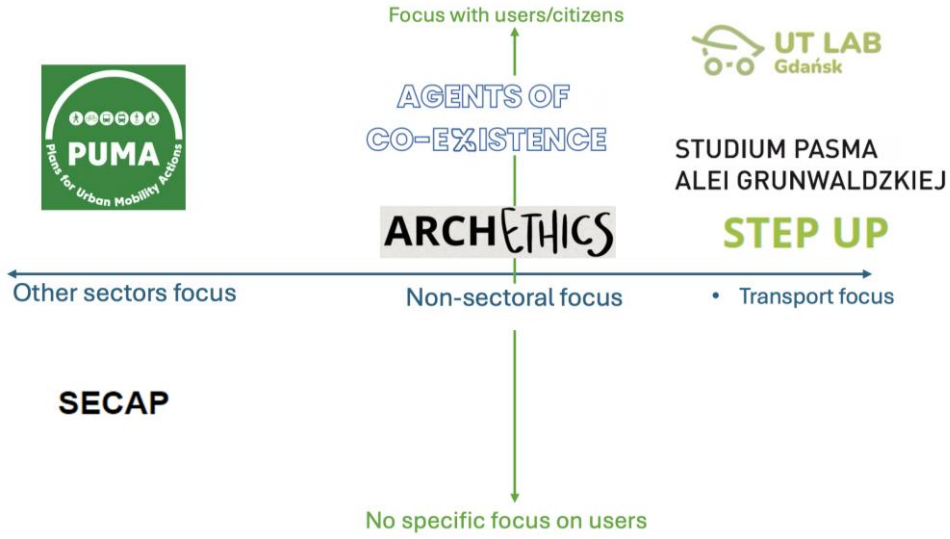

Figure 36: Positioning of the Gdansk UT-Lab in MOBILITIES FOR EU

4.6.4. STAKEHOLDER MAP

Key stakeholders like public authorities and urban planners were identified for Gdansk's UT-Lab. In MOBILITIES FOR EU, they play various roles: co-managers guide decisions, co-developers execute actions, co-designers help plan, and some stakeholders are simply informed and consulted. There are no specific stakeholders identified in the users or manufacturing organisations. The mapping and engagement of stakeholders will continue all along the project and will be further fine-tuned as the pilot areas and mobility and logistic measures will be defined in the city. The mapping as organised by the UT-Lab in Gdansk is shown in the figures below:

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Figure 37: Stakeholders in the UT-Lab in Gdansk organised by type of stakeholder

The co-creation process has been structured with two main public stakeholders in the co-management area but including three other stakeholders with a role in co-management and co-design, PKP, SKA PKP, GZADIZ. Four other actors involved in the co-design process and finally scientific organisations in the inform and consult area.

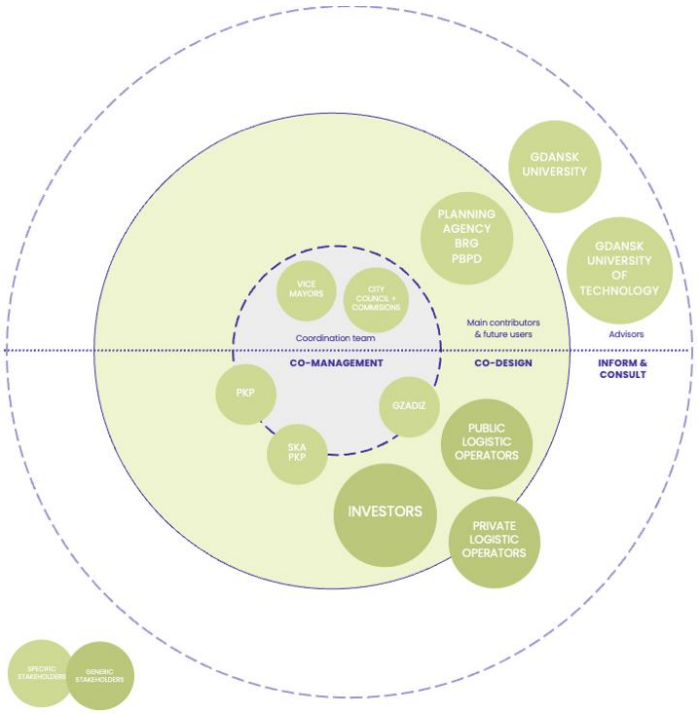

Figure 38: Stakeholders involved in the co-creation process in the UT-Lab in Gdansk

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4.6.5. GOVERNANCE STRUCTURE

The Governance structure of the Gdansk UT-Lab is organised as shown in the following Figure. The core team is formed by a UT-Lab Board, a Manager, a Financial Coordinator, Chief accountant, Substantive and Executive Director, in addition of 3 Executive Partners and Steering Committee members. There are no specific thematic working groups identified for the moment:

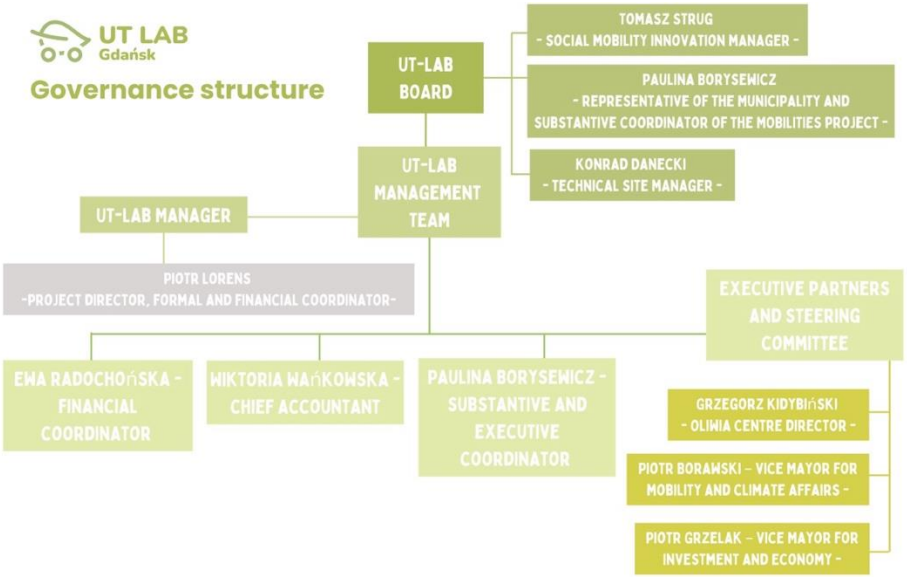

Figure 39: Governance structure of the UT-Lab in Gdansk

4.6.6. VISION & MISSION

The Gdansk UT-Lab has defined the mission of the Lab as follow:

> *"To make social agreement to established code through covering social needs and to work for noise pollution reduction and more greenery."*

The long-term vision was also set by the partners:

> *"To become a referent for other twin cities to implement CNZs. Ioannina aims to showcase climate neutral zones and best practices by starting small and scale up."*

4.6.7. ROADMAP OF ACTIONS

The Gdansk UT-Lab has outlined its initial roadmap, which will be refined over the next five years. The roadmap includes the key events and key meetings already set by the MOBILITIES FOR EU project but also includes local activities and focused events related to the Gdansk UT-Lab:

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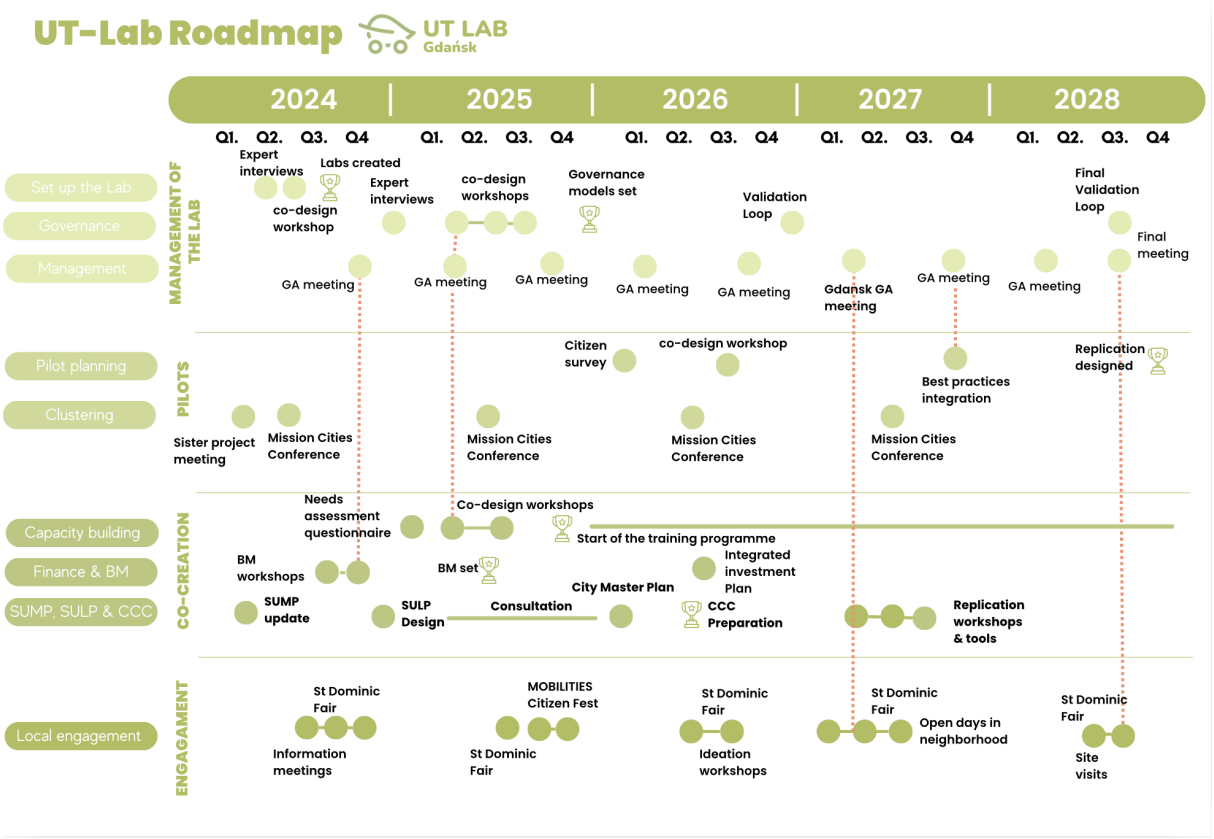

Figure 40: Roadmap of the UT-Lab in Gdansk

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4.7. UT-Lab Ioannina

4.7.1. BACKGROUND, CHALLENGES & PRIORITIES

Ioannina, the capital of the Epirus region in north-western Greece, is a city that beautifully intertwines rich history, vibrant culture, and stunning natural beauty. With a population of approximately 65,000 residents, making it the largest city in the Epirus region, it serves as a central hub for both locals and visitors alike. The city's origins trace back to Byzantine times, and over the centuries, it has been shaped by various influences, including the Ottoman Empire and Greek Orthodox traditions. This unique cultural tapestry is reflected in the city's architecture, art, and local customs.

As an educational and research hub, Ioannina is home to the University of Ioannina, one of Greece's leading academic institutions. This university attracts a vibrant student population, contributing significantly to the local economy and cultural life. Fields such as medicine, physics, and environmental studies are particularly prominent, fostering a spirit of innovation and inquiry. The interaction between students and the local community enriches the city's atmosphere, creating a dynamic blend of youthful energy and historical reverence.

Economically, Ioannina thrives on a diverse mix of sectors, including tourism, commerce, and agriculture. The city is strategically working to modernize its infrastructure, aiming to enhance public services and attract business investments. The scenic beauty of Lake Pamvotis not only offers recreational opportunities but also positions Ioannina as a gateway for eco-tourism, drawing visitors interested in exploring the nearby national parks and natural reserves.

Despite its many strengths, Ioannina grapples with challenges common to urban areas, particularly regarding mobility and logistics. Traffic congestion is increasingly problematic, especially in densely populated central areas where narrow streets complicate vehicular movement. To address these issues, the city is actively promoting alternative modes of transport such as public transportation, cycling, and walking. Plans are underway to enhance the public transport network by improving bus routes and increasing service frequency, alongside introducing environmentally friendly electric buses.

The city's commitment to sustainability is evident in its participation in European initiatives aimed at improving urban mobility. Through projects like MOBILITIES for EU, Ioannina is exploring innovative solutions to reduce carbon emissions and enhance urban transport systems. The integration of smart technologies into urban planning is also a priority, with plans to implement real-time traffic monitoring and mobile apps for public transport.

Furthermore, Ioannina is placing significant emphasis on the natural environment. The Mediterranean climate, characterized by warm summers and cool, rainy winters, supports a rich biodiversity in the surrounding areas. The city's focus on sustainability includes energy efficiency measures and the promotion of green spaces, ensuring that urban development harmonizes with the natural landscape.

Looking ahead, Ioannina envisions becoming a leader in sustainable urban development, blending modern mobility solutions with its rich cultural heritage. The city is actively engaging citizens and stakeholders in the decision-making process, fostering collaboration to create practical solutions that reflect the community's needs. As Ioannina continues to evolve, it remains committed to preserving its historical essence while embracing innovative strategies that pave the way for a greener, more connected future. Through these efforts, Ioannina wants to enhance the quality of life for its residents and position itself as an attractive destination for tourists and business ventures alike.

As the city is committed to address its mobility challenges, Ioannina is one of the replication cities in the MOBILITIES for EU project. The UT-Lab's structure and organisation have a particular pace as the city is currently reorganising their internal team. Some of the following sections will be developed and structured in the following steps.

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4.7.2. LOCATION

The location of the Ioannina UT Lab is not yet specified for the moment. The local entities are still discussing the best geographical location to host this function. As the location of the pilot has not been established yet in the fellow cities, the location of the lab is still to be determined in most of them.

4.7.3. POSITIONING

The UT-Lab in Ioannina is currently mapping out the relevant local Labs in the city. The developed benchmark will be presented in future steps for Ioannina.

4.7.4. STAKEHOLDER MAP

Key stakeholders have been identified for the UT-Lab in Ioannina. These include public authorities, urban planners, technology providers, the scientific community, logistics operators, investors, manufacturers, urban services providers, and users. Their roles in the MOBILITIES FOR EU co-creation process fall into four categories: co-management (key decision-makers), co-development (direct implementers), co-design (involved in planning), and informing & consulting (kept updated but less involved). The key stakeholders were identified for the lab in Ioannina, but the roles are still under identification. The users are still to be defined. The figure below represents the listed entities:

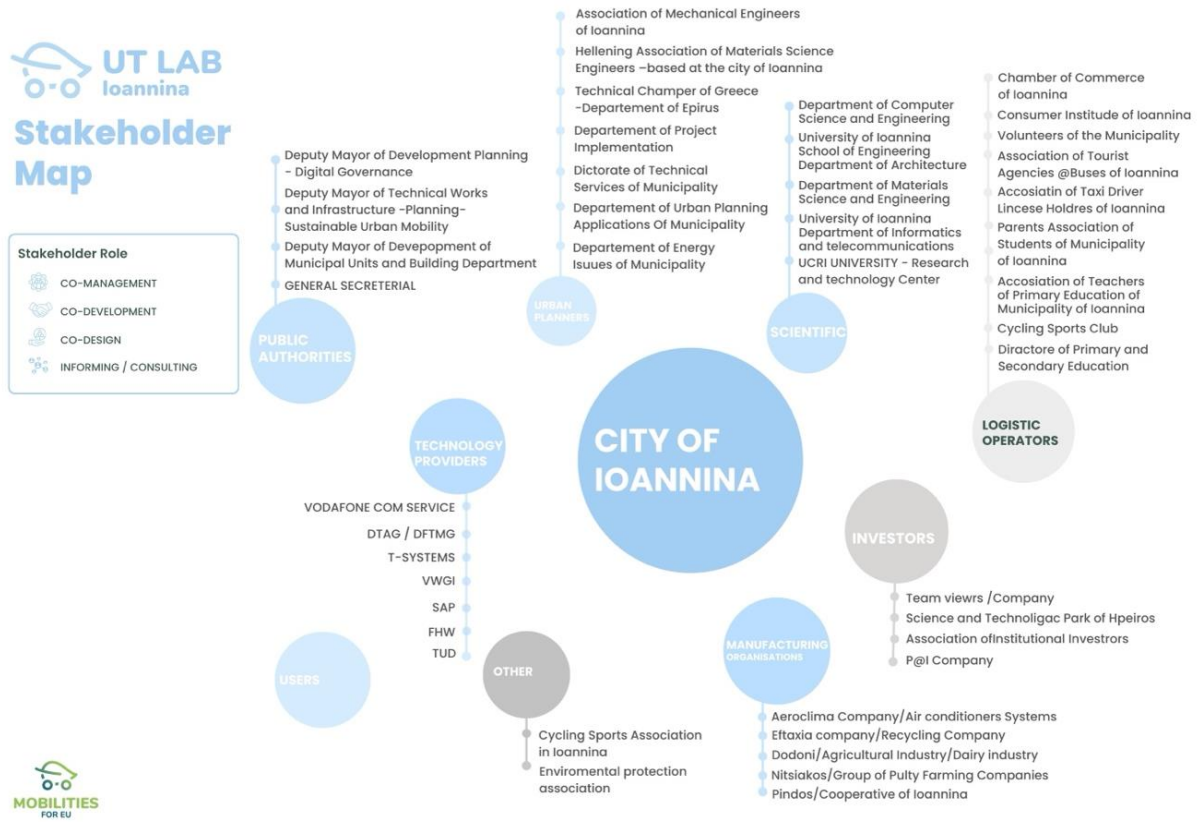

Figure 41: Stakeholders in the UT-Lab in Ioannina organised by type of stakeholder

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To identify the role in the co-creation process of the different stakeholder mapped the approach followed by the Ioannina UT-Lab was to identify the specific persons to be involved in the whole process. Specific positions in the municipality were identified together with different consultants to support the whole co-creation process. As the Ioannina transport pilot is still under definition, the map will be further completed during the project with the different stakeholders to be involved.

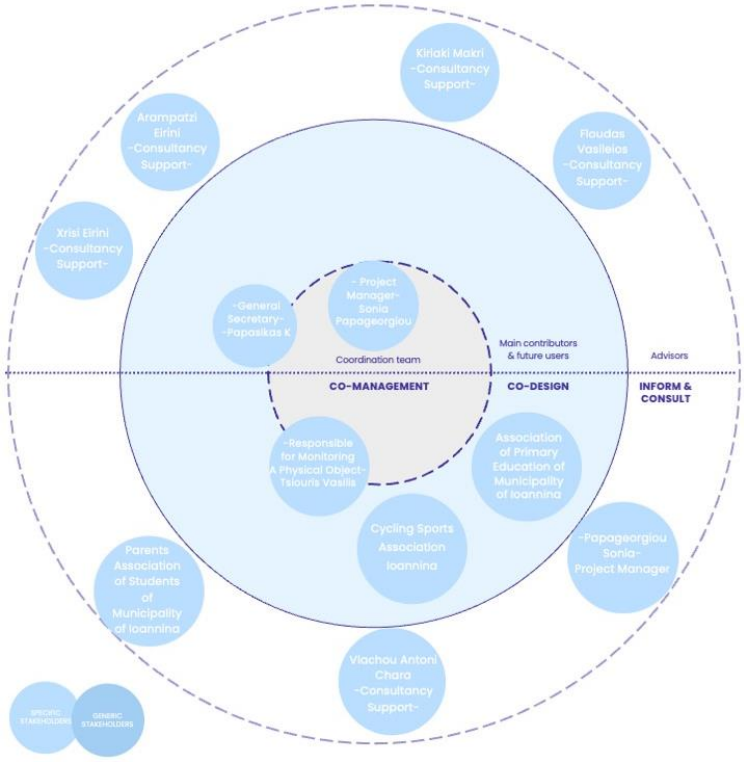

Figure 42: Stakeholders involved in the co-creation process in the UT-Lab in Ioannina

4.7.5. GOVERNANCE STRUCTURE

The same stakeholders identified in the co-creation process, were positioned in the governance structure for the Lab. There is a 3-person board with public authorities and the UT-Lab management team made of 8 persons plus the UT-Lab manager already identified. Similarly to the previous exercise, the specific persons have been already identified. There is no working groups identified yet in Ioannina, and this will be updated during the project.

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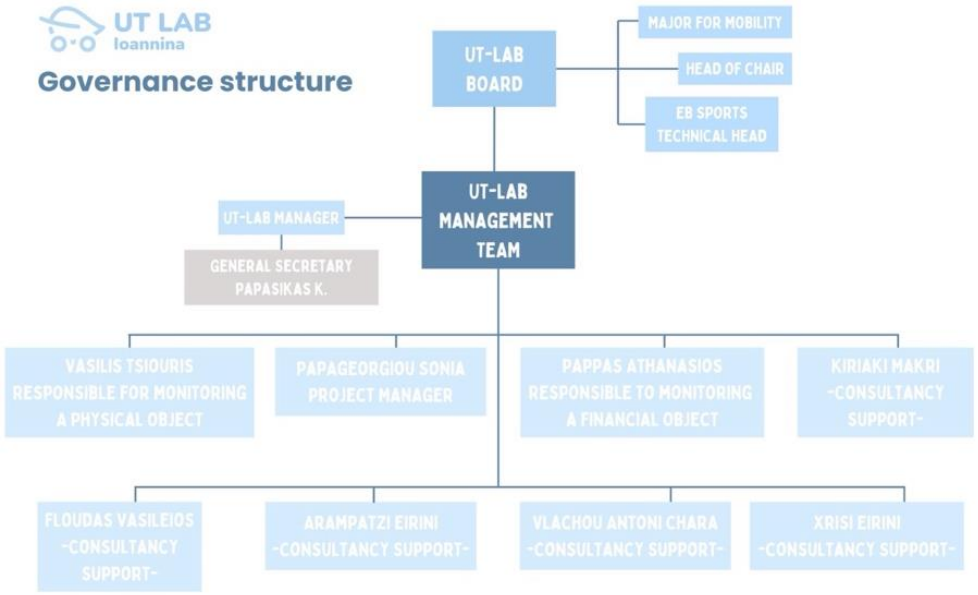

Figure 43: Governance structure of the UT-Lab in Ioannina

4.7.6. VISION & MISSION

The Ioannina UT-Lab has defined the mission of the Lab as follow:

> *"To bring together its diverse stakeholders through the UT-Lab and replicate solutions from other CCC members."*

The long-term vision is:

> *"To become a referent for other twin cities to implement CNZs. Ioannina aims to showcase climate neutral zones and best practices by starting small and scale up."*

4.7.7. ROADMAP OF ACTIONS

The Ioannina UT-Lab has drafted an initial roadmap of actions, which will evolve over the 5-year project. This roadmap focuses on four key areas: lab management, pilots, co-creation, and engagement. These elements guide the organization of 11 themes, that are organised over the 5 years as follow:

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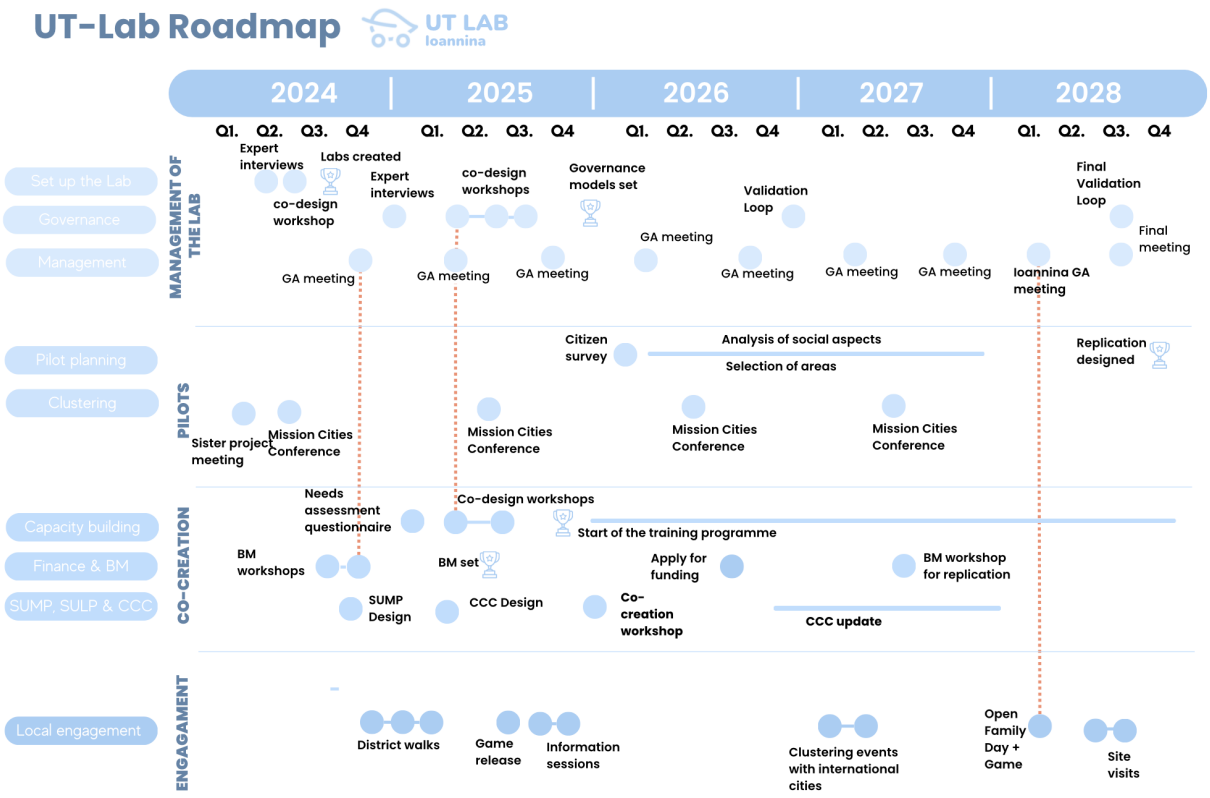

Figure 44: Roadmap of the UT-Lab in Ioannina

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5. Deviations from the plan

There are two minor deviations that can be mentioned from the initial plan designed for this process that have been brought forward: a survey and a world café were envisaged in this task to gather priorities and needs of citizens in terms of climate neutrality and transport and logistic decarbonization measures. However, they will be undertaken a bit later in the project when the Lab will be already set, generating more value for the Lab and the citizens themselves. Regarding the survey foreseen in this task, it will be undertaken later in the project to support the design and implementation of mobility and logistics measures and the innovative governance models (T1.2). The world café or similar event will use the GA trips to each of the cities to organize local events with the cities and generate more engagement at local level.

6. Links with other WPs

The UT-Labs created in WP1 will support the co-creation process in the different tasks of the project. They will ensure appropriate stakeholder engagement and methodologies to co-create, together with local stakeholders, the desired results of the project. A non-exhaustive list of MOBILITIES FOR EU activities that will receive support from the UT-Labs is provided below:

- Creation of capacity building materials (linked to task T1.3)
- Design of the business models and financial strategies (linked to task T5.3)
- Creation of innovative governance models (linked to task T1.2)
- Clustering (linked to task T4.2) to share and integrate best practices in the Labs from other projects.
- Design of the new mobility and logistics measures in the replicable cities (linked to task T5.4)
- Finalize design of measures in pilots (linked to WP2)

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7. Conclusions and recommendations

The creation of seven urban transport labs dedicated to co-creating mobility and logistics solutions represents a bold and strategic initiative towards transforming urban transport systems. These labs, spread across seven cities, will have an instrumental role in addressing two critical challenges of the 21st century: the electrification of transport and the integration of autonomous vehicles (AVs).

The overarching goal of this initiative is to create sustainable, efficient, and future-proof transport solutions that can be adapted and scaled in different urban contexts. Through collaboration between local governments, private sector stakeholders, researchers, and communities, these labs will function as hubs of innovation. They will enable the testing and implementation of cutting-edge technologies and business models designed to reduce greenhouse gas emissions, improve the efficiency of urban logistics, and enhance the overall mobility experience for residents.

A major focus of these labs will be the reduction of carbon emissions in urban transport. By shifting away from fossil fuel dependency and toward electric and hydrogen-powered vehicles, cities are taking meaningful steps towards meeting their climate commitments. The labs will play a pivotal role in identifying local challenges related to the electrification of public and private transport, including the deployment of charging infrastructure, energy grid integration, and incentivizing the adoption of zero-emission vehicles.

In addition to promoting cleaner vehicle technologies, these labs will also explore other decarbonization strategies with citizens and local stakeholders such as enhancing public transport systems, promoting active modes of transport like cycling and walking, and developing shared mobility solutions.

The integration of AVs is another core pillar of the UT-labs, with a focus on testing the AVs of the MOBILITIES FOR EU project and co-creating the service with citizens and local stakeholders. The labs will test autonomous shuttles, delivery robots, and self-driving logistics solutions within urban environments. By piloting these technologies in real-world settings, the labs will gather critical insights into the technical, regulatory, and societal challenges that must be addressed to scale automation effectively.

This deliverable summarizes the process of setting up the UT-Labs in the seven cities of the project, two lighthouse cities, Madrid, and Dresden, and five fellow cities, Espoo, Trenčín, Sarajevo, Gdansk, and Ioannina. The MOBILITIES FOR EU cities have demonstrated a strong commitment to launch the UT-Labs at local level, engaging with local stakeholders, defining the governance structure, the role of the Lab and the roadmap of actions that will be implemented in the next five years. It will be very interesting and enriching to see the different evolution of the Labs in the seven cities with different stages of development of the transport decarbonization and automatization strategies. The lighthouse cities have already defined the pilot area and the preliminary technological solutions, and the fellow cities are in an earlier stage, starting to design them. The share of experiences and best practices will be fundamental in these stages and will be ensured by the clustering, knowledge sharing and engagement activities between the five cities.

One of the key strengths of the UT-Labs of MOBILITIES FOR EU is the emphasis on co-creation. Rather than imposing top-down solutions, these labs will facilitate collaborative engagement between a diverse set of stakeholders, including policymakers, technology developers, transport companies, local businesses, and residents. This collaborative approach will ensure that the solutions developed are tailored to the specific needs of each city while also fostering public trust and acceptance of new technologies.

The role of citizens has been put at the center of the approach, to allow them to have a say on the solutions that will improve the quality of life in their own city, increasing at the same time the acceptance of the implemented solutions. Their role will be reinforced during the project, with innovative governance strategies where citizens will be able to have roles in the decision-making process.

The different governance structures chosen by the UT-Labs and the different working groups created reflect the different stages of development available in each city, different aims and objectives with the project, the

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existence of co-funding projects and different habits and working practices in the different countries. Furthermore, the roadmaps created in this deliverable will be a useful tool to organize the work at local level, clustering events in an efficient way and having in mind the different objectives of each Lab.

All the tools produced in this task aim to be living documents, with periodic updates to provide real support to the management of the Labs and create fruitful engagement at local level with the different stakeholders.

In conclusion, the establishment of these seven urban transport labs marks a significant milestone in the global effort to create more sustainable and automated urban transport systems. The innovative solutions co-created within these labs hold the potential to transform not only how people move within cities but also how goods are transported, ultimately contributing to the broader goals of climate action, economic efficiency, and enhanced quality of life for urban residents.

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9. Annex 1: Interviews with experts. Questions and list of experts.

The set of questions to the experts is provided below:

1. "How relevant is the decarbonization of transport in your city from your expert opinion? Is it an important matter for the city administration?
2. What would you identify as the top priorities for your city in this regard?"
3. "OPTIONAL for non-technical stakeholder. From your perspective, how can we ensure that the grid will manage the increased demand if both public transport and private vehicles electrification is deployed on a large scale?"
4. "OPTIONAL for non-technical stakeholder. From your perspective, what do you think are the main barriers to the decarbonization of transport in the city?"
5. How relevant would the introduction of autonomous vehicles be in your city?
6. "OPTIONAL for non-technical stakeholder. Which do you think are the main barriers for the introduction of autonomous vehicles in your city? "
7. In your experience, what are the best practices for the decarbonization of transport and the introduction of autonomous vehicles? Can you provide an example of a city that has successfully implemented these solutions?
8. Mobility and logistics involve many stakeholders. How would you recommend engaging with them to co-create new solutions?
9. "From your point of view, how can we ensure that new mobility solutions address real needs of citizens and align with the EU's decarbonization targets? i.e. forbidding the entrance in the city centre to old high emission vehicles from low-income families.
   How to ensure that new mobility solutions leave no one behind? "
10. Given the introduction of advanced technologies such as bidirectional charging and autonomous charging robots in our project, what strategies or approaches do you recommend maximizing user acceptance and adoption of these innovations?
11. As we test various innovative mobility solutions within the project, what specific types of information or insights would be most valuable to you?
12. We are creating urban transport labs within the project; how do you think it is the best way to engage with citizens at local level? What are your experiences from former projects and measures?
13. Would you be interested in participating in co-creating sessions or other events that we will carry out with the project? If yes, What kind of co-creation event would be suitable for you? If not, why aren't you interested?
14. Any other thing you wanted to add …

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A list of experts was identified in each of the Labs to provide local insights on the main problems and barriers regarding transport, the main needs and opportunities, information about the local context of the city and the background and previous work related to transport or citizen engagement in the city. Experts have been anonymized and interviews were carried out between June and September 2024.

Table 8: UT-Labs interviewees

	STAKEHOLDER CODE	CN-LAB	ORGANISATION	DATE
Stakeholder 1	MA1	Madrid	Vendor in Mercamadrid	July 2024
Stakeholder 2	MA2	Madrid	Vendor in Mercamadrid	July 2024
Stakeholder 3	MA3	Madrid	Buyer in Mercamadrid	July 2024
Stakeholder 4	MA4	Madrid	Madrid Lab manager	July 2024
Stakeholder 5	MA5	Madrid	University	July 2024
Stakeholder 6	DR1	Dresden	Project coordinator EU project NeutralPath City of Dresden Office for Economic Development;	June 2024
Stakeholder 7	DR2	Dresden	Head of the professorship TU Dresden, Professorship for Urban Planning	June 2024
Stakeholder 8	DR3	Dresden	Managing director Wegebund	June 2024
Stakeholder 9	DR4	Dresden	Head of the North Saxon Road Traffic Office North Saxon Road Traffic Office	June 2024
Stakeholder 10	DR5	Dresden	Coordinator Citizen Lab and Community City of Dresden	June 2024
Stakeholder 11	DR6	Dresden	CEO Sedenius Engineering Sedenius Engineering	June 2024
Stakeholder 12	DR7	Dresden	Speaker of the local group of the VCD VCD Ortsgruppe Dresden	July 2024
Stakeholder 13	DR8	Dresden	Children's and youth representative City of Dresden	July 2024

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Stakeholder 14	ES1	Espoo	Traffic planning manager City of Espoo	July 2024
Stakeholder 15	ES2	Espoo	City transport manager City of Espoo	August 2024
Stakeholder 16	ES3	Espoo	- City of Espoo	August 2024
Stakeholder 17	ES4	Espoo	Project Manager City of Espoo	July 2024
Stakeholder 18	ES5	Espoo	Project manager Mobility Lab Helsinki	July 2024
Stakeholder 19	ES6	Espoo	Associate Professor Aalto University	July 2024
Stakeholder 20	ES7	Espoo	Senior researcher VTT	July 2024
Stakeholder 21	GD1	Gdansk	PhD scientist University of Gdansk	July 2024
Stakeholder 22	GD2	Gdansk	Chairman District Council	July 2024
Stakeholder 23	GD3	Gdansk	former president of Poland retired politician	July 2024
Stakeholder 24	GD4	Gdansk	President Olivia Centre	July 2024
Stakeholder 25	GD5	Gdansk	Director municipal construction design office	July 2024
Stakeholder 26	GD6	Gdansk	PhD scientist University of Gdansk	July 2024
Stakeholder 27	GD7	Gdansk	rail transport manager City Transit Company	July 2024
Stakeholder 28	GD8	Gdansk	traffic forecast officer Technical University of Gdansk	July 2024
Stakeholder 29	GD9	Gdansk	PhD scientist Technical University of Gdansk	July 2024
Stakeholder 30	GD10	Gdansk	Chancellor University of Gdansk	July 2024
Stakeholder 31	GD11	Gdansk	President Torus/Alchemia	August 2024
Stakeholder 32	GD12	Gdansk	President PKM - railway infrastructure company	July 2024

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Stakeholder 33	GD13	Gdansk	Alderman City Council	July 2024
Stakeholder 34	GD14	Gdansk	Director Provincial Infrastructure Department	July 2024
Stakeholder 35	GD15	Gdansk	Director Provincial Infrastructrure Department	July 2024
Stakeholder 36	GD16	Gdansk	pedestrian officer pedestrians' proxy	July 2024
Stakeholder 37	GD17	Gdansk	Activist urban movements	July 2024
Stakeholder 38	GD18	Gdansk	planning team manager City Development Office	July 2024
Stakeholder 39	GD19	Gdansk	road maintenance manager City Road Authority	July 2024
Stakeholder 40	GD20	Gdansk	Alderman city council	July 2024
Stakeholder 41	TR1	Trenčín	Vice-mayor City of Trenčín	July 2024
Stakeholder 42	TR2	Trenčín	Head of mobility department City of Trenčín	July 2024
Stakeholder 43	TR3	Trenčín	Professor Slovak University of Technology in Bratislava	July 2024
Stakeholder 44	TR4	Trenčín	Professor, senior researcher SPECTRA Centre of Excellence EU	July 2024
Stakeholder 45	TR5	Trenčín	Researcher Slovak University of Technology in Bratislava	July 2024
Stakeholder 46	TR6	Trenčín	Researcher, policy maker ISOCARP International Society of City and Regional Planners	July 2024
Stakeholder 47	IS1	Sarajevo	Dean	July 2024

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			Faculty of Traffic and Communications of University of Sarajevo	
Stakeholder 48	IS2	Sarajevo	Docent Faculty of Traffic and Communications of University of Sarajevo	July 2024
Stakeholder 49	IS3	Sarajevo	Assistant Faculty of Traffic and Communications of University of Sarajevo	July 2024
Stakeholder 50	IS4	Sarajevo	Docent Faculty of Traffic and Communications of University of Sarajevo	July 2024
Stakeholder 51	IS5	Sarajevo	Assistant Faculty of Traffic and Communications of University of Sarajevo	July 2024
Stakeholder 52	IS6	Sarajevo	Docent Faculty of Traffic and Communications of University of Sarajevo	July 2024
Stakeholder 53	IS7	Sarajevo	Docent Faculty of Traffic and Communications of University of Sarajevo	July 2024
Stakeholder 54	IS8	Sarajevo	Assistant minister Ministry of Traffic of Canton Sarajevo	July 2024
Stakeholder 55	IS9	Sarajevo	Assistant minister Ministry of Traffic of Canton Sarajevo	July 2024
Stakeholder 56	IS10	Sarajevo	Member Association ''Giro di Sarajevo''	August 2024

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10. Annex 2: UT-Labs roadmaps. Extended views.

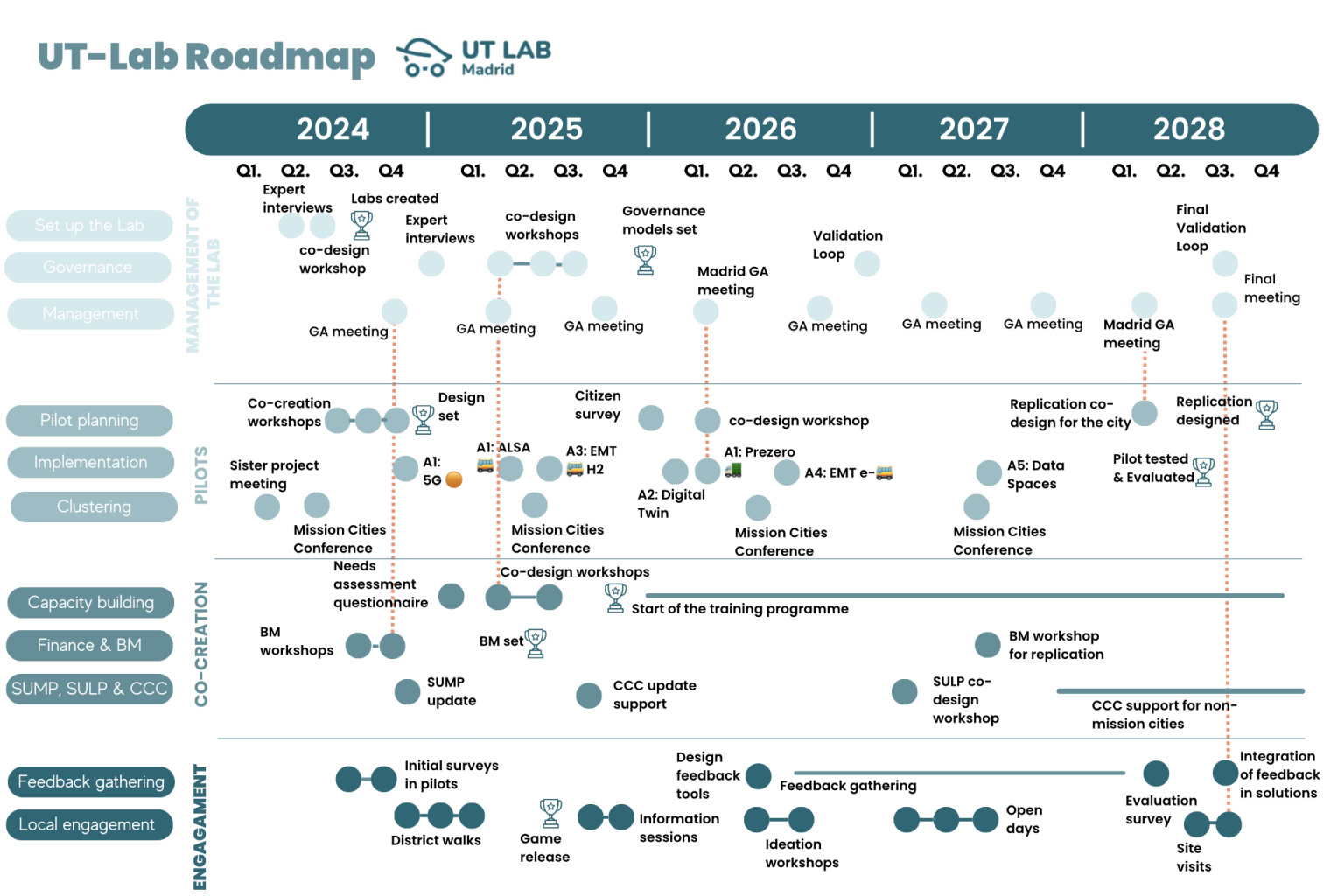

Figure 45: Roadmap of the UT-Lab in Madrid - Extended view

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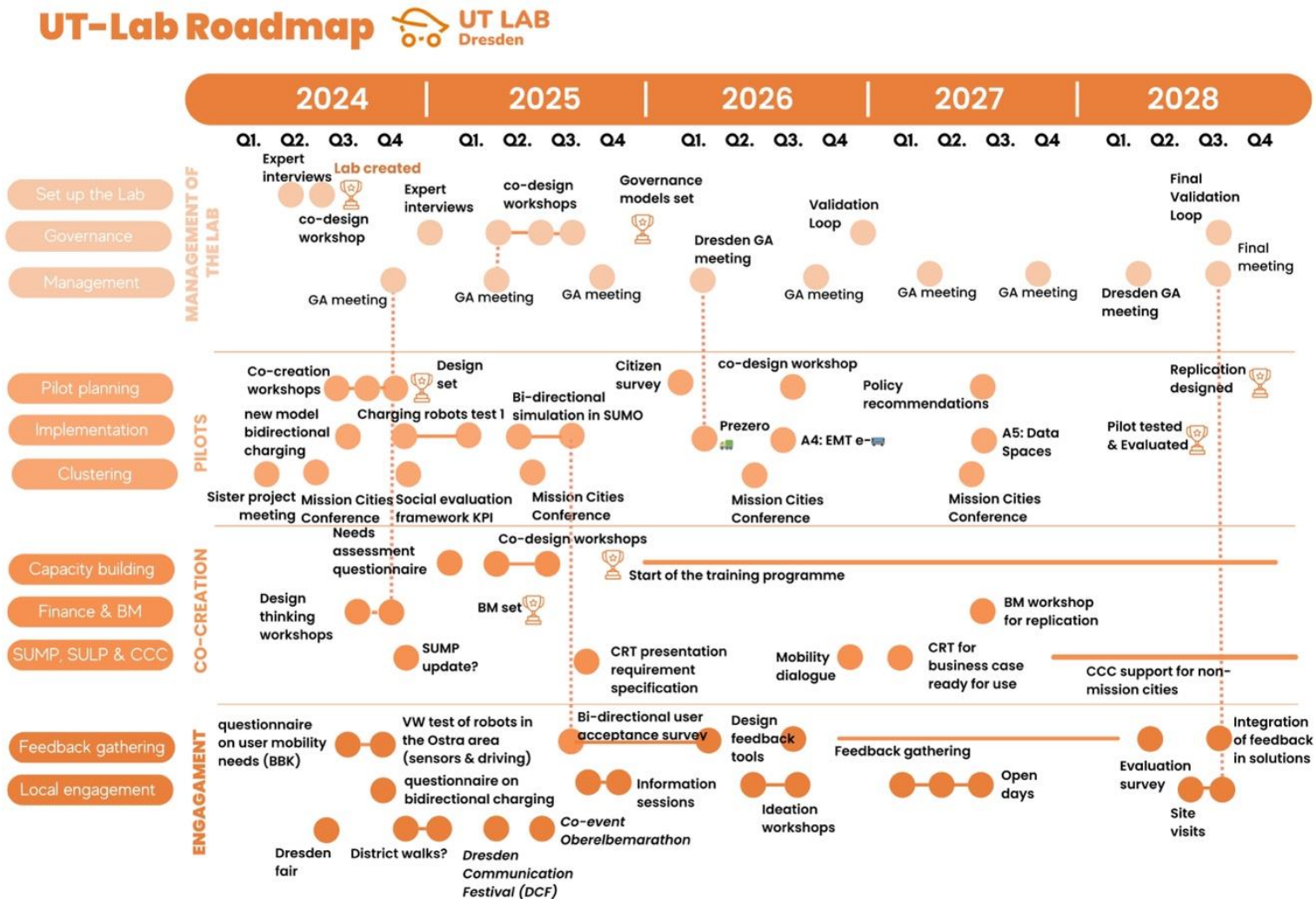

Figure 46: Roadmap of the UT-Lab in Dresden - Extended view

Co-funded by the European Union

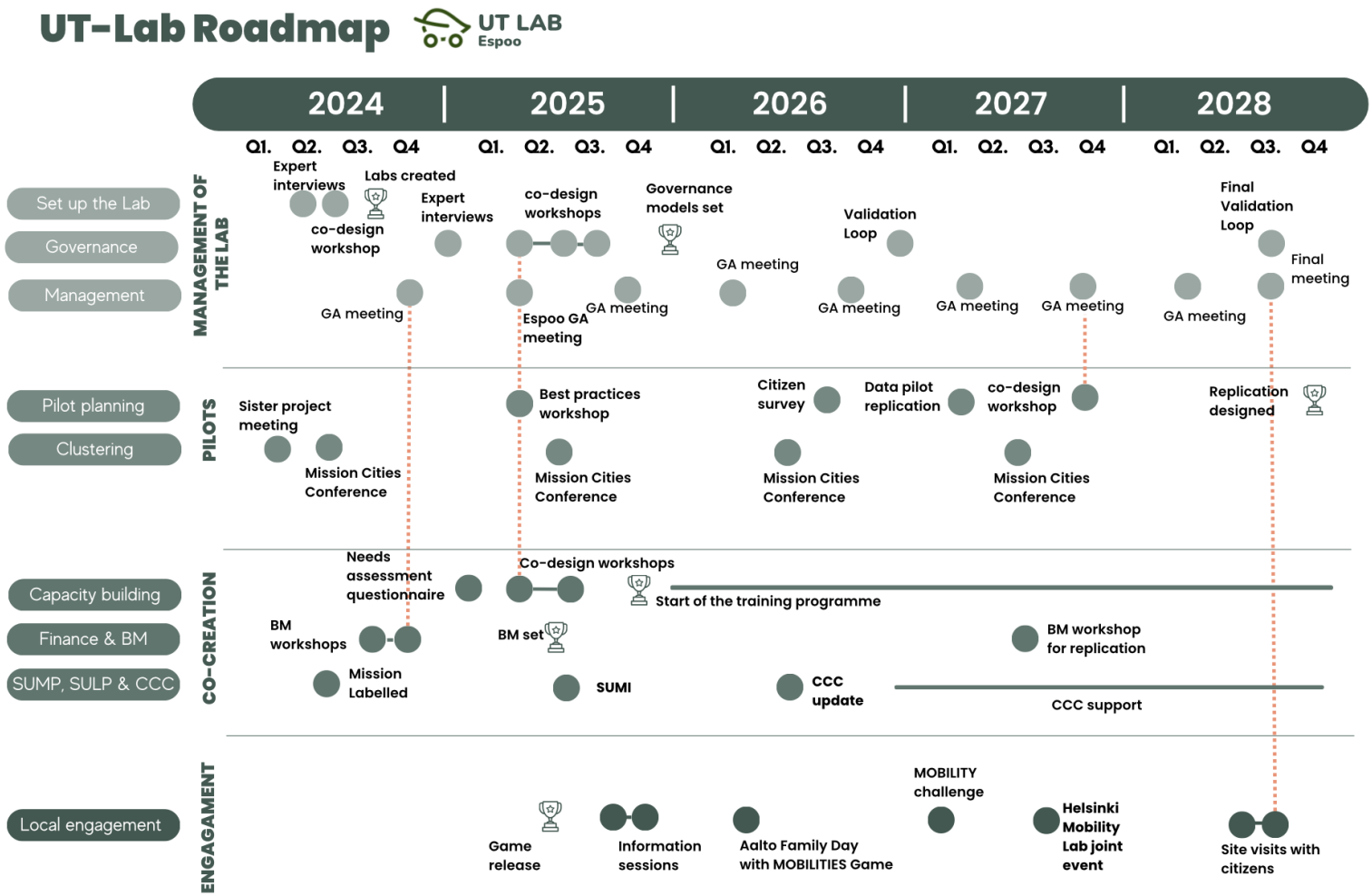

Figure 47: Roadmap of the UT-Lab in Espoo - Extended view

Co-funded by the European Union

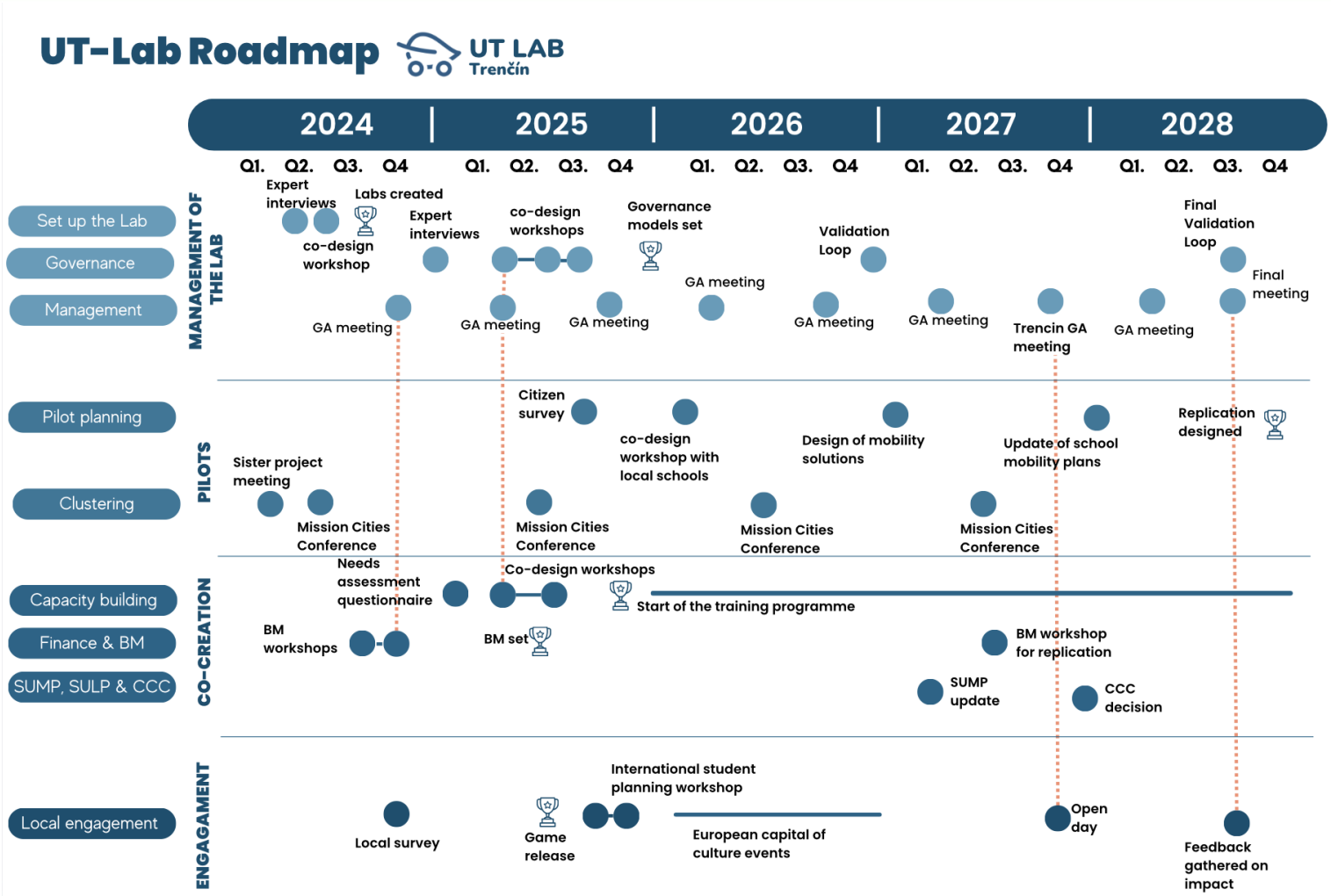

Figure 48: Roadmap of the UT-Lab in Trenčin - Extended view

Co-funded by the European Union

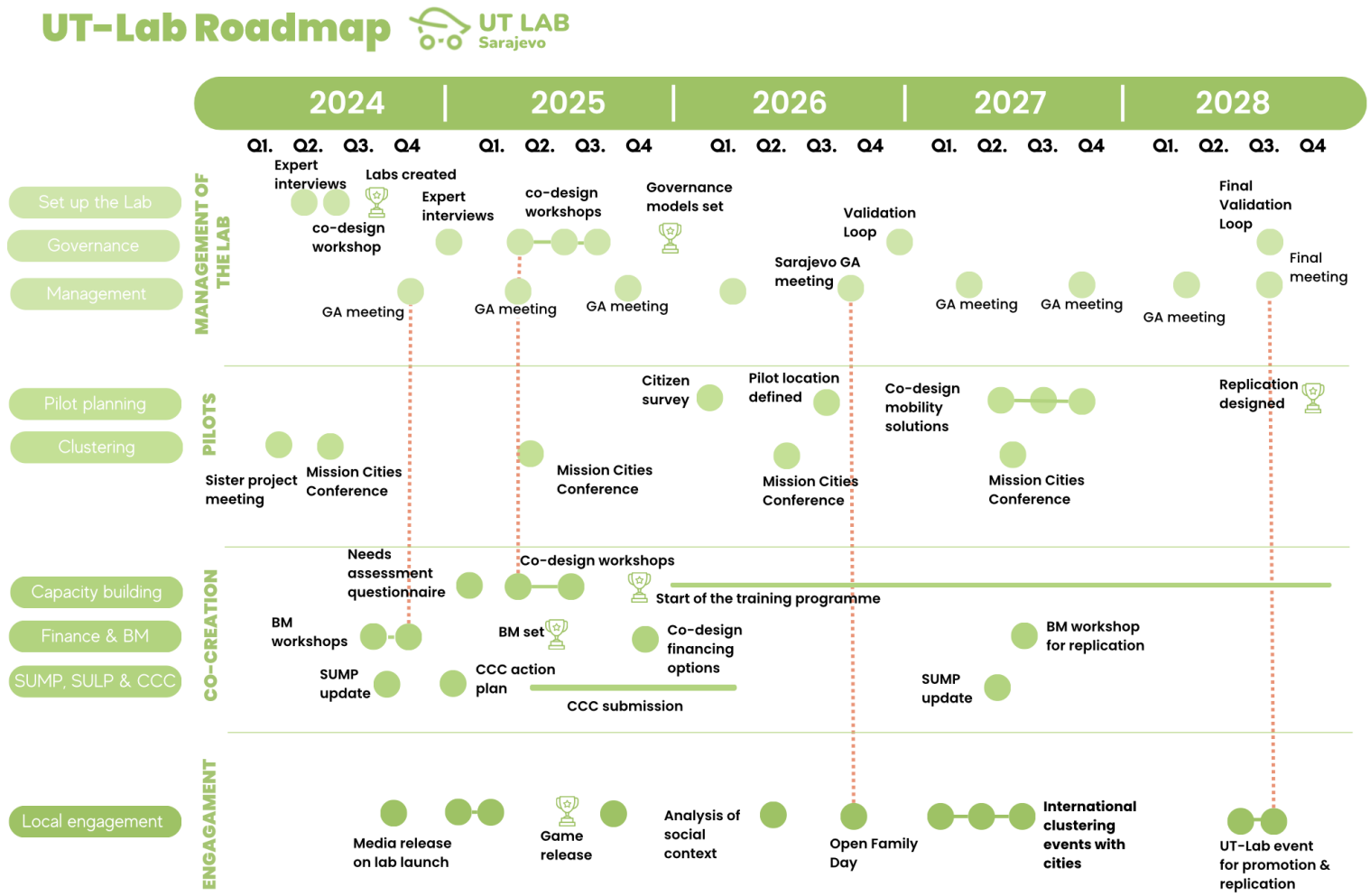

Figure 49: Roadmap of the UT-Lab in Sarajevo - Extended view

Co-funded by the European Union

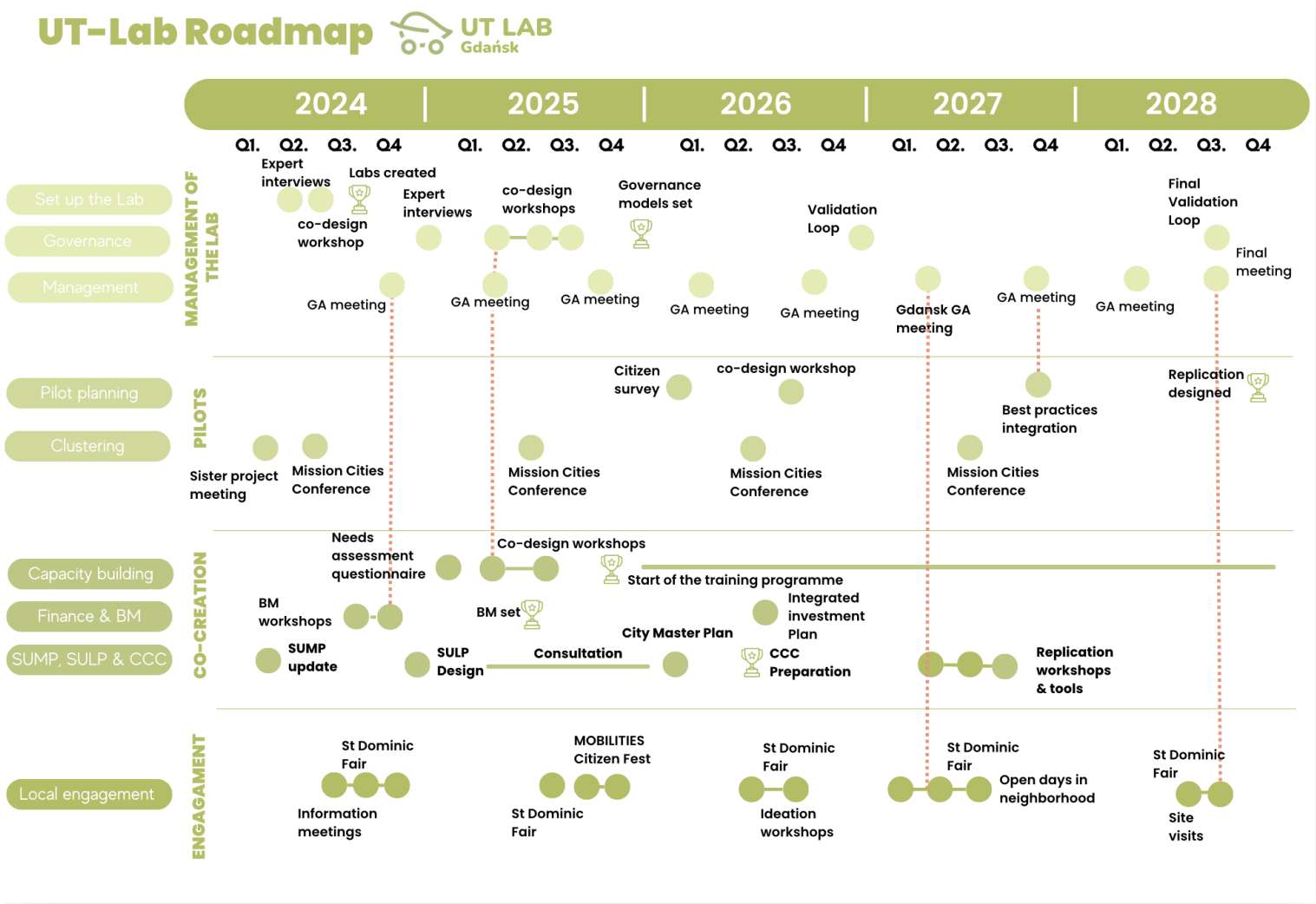

Figure 50: Roadmap of the UT-Lab in Gdansk - Extended view

Co-funded by the European Union

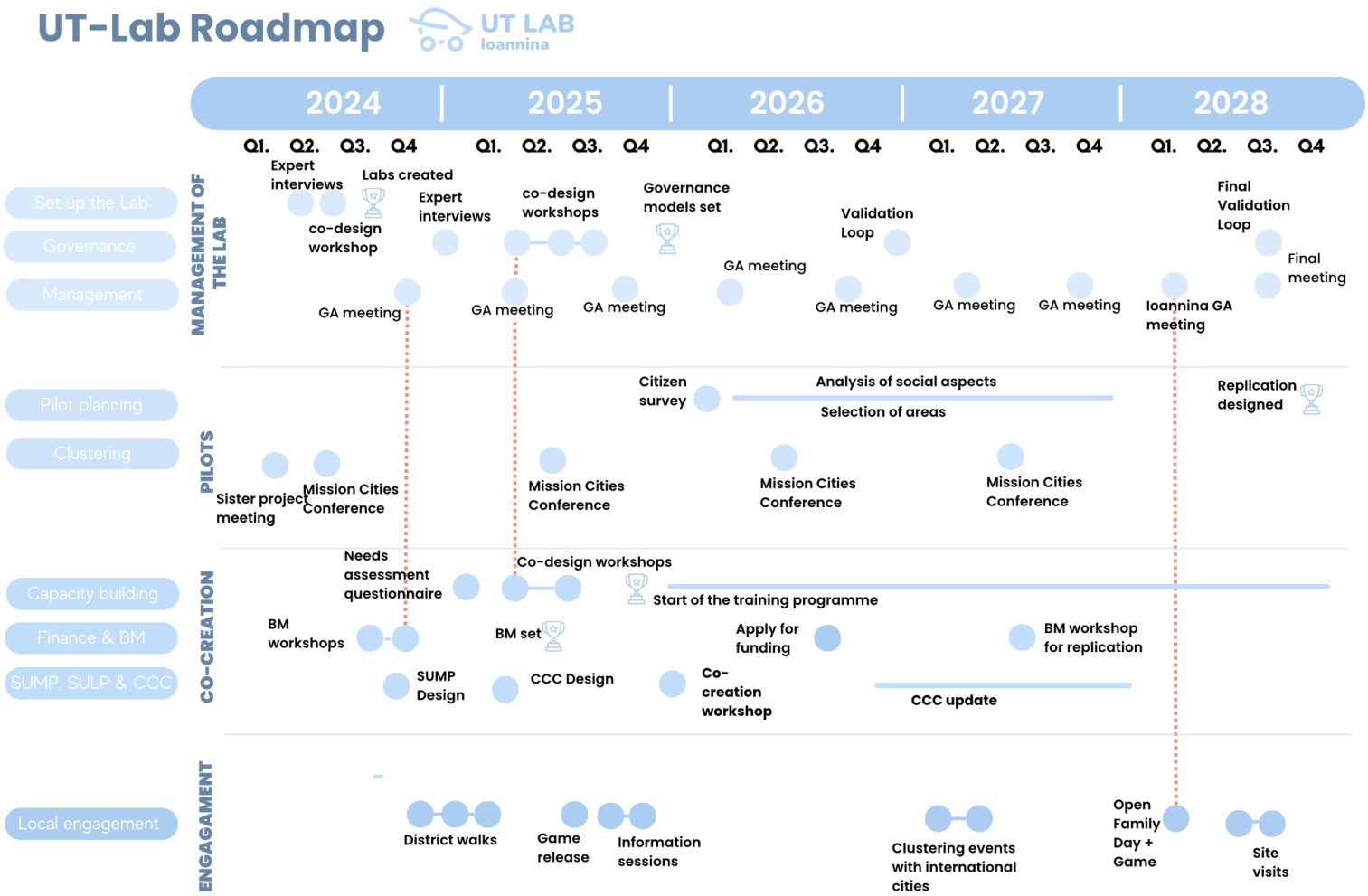

Figure 51: Roadmap of the UT-Lab in Ioannina - Extended view

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