



## **Deliverable 6.3: Data Management plan & Ethics- first interim WP6**

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<b>Project Coordinator</b>	ERTICO – ITS Europe
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<b>Deliverable Lead</b>	MaaSLab (MLab)
<b>Lead Authors</b>	Maria Kamargianni, Theodora Betsidou, Anne Patricio (MLab)
<b>Main Contributor</b>	
<b>Authors</b>	
<b>Other Contributors</b>	AMS, TUD, Townmaking, TUM, TAU, Remoted, NTUA, UM, MPT, AMAT, UNINA, BME, VEDECOM, GMK
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<b>Reviewer</b>	Lamprini Papafoti (FACTUAL)

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## Abbreviations and Acronyms

ACRONYM	Description
AIRE	Access Infrastructure for Research in Europe
APCs	Article Processing Charges
BIGMs	Business Innovation and Governance Models
CCBY	Creative Commons Attribution
CERIF	Common European Research Information Format
CINEA	European Climate, Infrastructure and Environment Executive Agency
D	Deliverable
DMP	Data Management Plan
DoA	Description of Action
DOI	Digital Object Identifier
DPA	Data Protection Act
DPO	Data Protection Officer
EC	European Commission
EU	European Union
FAIR	Findable, Accessible, Interoperable and Re-usable
F-LLs	Follower Living Labs
GDPR	General Data Protection Regulation
IPR	Intellectual Property Rights
GHG	Greenhouse Gas Emissions
IPR	Intellectual Property Rights
KPIs	Key Performance Indicators
LL	Living Lab
OpenAIRE	Open Access Infrastructure for Research in Europe
OSI	Open-Source Initiative
PPI	Personally Identifiable Information
SIEF	Standardized Impact Evaluation Framework
T-LLs	Trailblazer Living Labs
UCs	Use Cases
WP	Work Package

## Background: About the metaCCAZE project

Transport is the second largest source of greenhouse gas emissions (GHG) and accounts for more than 30% of the total energy consumption. A series of global crises highlight the need for a significant shift from conventional vehicles to well-integrated, energy efficient, connected and automated passenger and freight services that meet the ambitious EU goals. To do so, a paradigm shift is required in the operations of electric vehicles that tackles their inherent vulnerabilities, including: the electric fleet-grid supply mismatch, the slow charging times, and the vehicle delays at charging stations. This requires automated charging processes, intelligent scheduling operations and matching to the grid, interconnectivity and automation of transport operations, and a shift from private cars to shared modes.

metaCCAZE is a Horizon Europe MISSION project co-funded by the 2Zero, CCAM–and Cities' Mission partnerships. It participates in the CIVITAS Initiative, an EU-funded programme working to make sustainable and smart mobility a reality for all and contributes to the goals of the EU Mission Climate-Neutral and Smart Cities.

The metaCCAZE project aims to revolutionise mobility in European cities, serving both passengers and freight, with innovative electric, automated, and connected solutions designed to make transportation smarter, net zero, and more efficient for all. It builds on the expertise of 44 partners from 12 different European countries and contributes to the green metamobility era that the Green Deal, 2ZERO, CCAM, Cities Mission, CIVITAS and other EU initiatives aim to reach by 2030. In the vibrant streets of four trailblazer cities – Amsterdam, Munich, Limassol, and Tampere – metaCCAZE implements, tests and demonstrates cutting-edge technologies and services that support shared zero emission mobility solutions for people and goods, contributing to climate neutrality. Successful technologies and activities are transferred and implemented to six Follower Cities – Athens, Krakow, Gozo, Milan, Miskolc, and Poissy, Paris.

metaCCAZE organises a series of metaDesign activities and develops a toolkit called metaInnovations. This toolkit is pioneered in passenger and freight services (public transport, on-demand minibuses, bike and scooter sharing, deliveries) and related infrastructure (mobility and logistics hubs, traffic management centres, charging infrastructure, transport and energy integration) and widely demonstrated in our four trailblazer cities for a whole year. Successful metaInnovations and metaServices are transferred, implemented and demonstrated in the 6 follower cities for up to 8 months, to ensure their transferability and resilience potentials.

## Executive Summary

The Data Management Plan (DMP) outlines the proposed actions for the overall management and control of metaCCAZEs' data and publications. It serves as a living document that will be continuously updated throughout the project. This deliverable represents the second version of the DMP and Ethics (D6.3 — Data Management Plan and Ethics, first interim). The first version (D6.2 — Data Management Plan and Ethics, initial) was submitted in M6. Two additional versions are scheduled: the second interim (D6.4 Data Management Plan and Ethics, M36) and the final version (D6.5 — Data Management Plan and Ethics, final) which will be delivered in M48.

To identify and document the data sources generated and used within the project, a collaborative methodology has been adopted, involving all partners handling data. Templates for recording both existing and new datasets were developed and shared with the relevant partners. These templates, completed by partners leading each corresponding activity, include details on dataset description, purpose and utility, reference and name, storage, partners involved, data format, related metadata and standards, relation to project objectives, and whether the dataset is new or existing, along with its expected size.

An initial inventory of dataset descriptions provided by the metaCCAZE partners has been compiled and is presented in Annexes I, II, III, and IV of this Data Management Plan (DMP). The information covers activities conducted within both the Trailblazer and Follower Living Labs under Work Package 1 and 2 as well as activities carried out under Work Package 3 for the Trailblazer Living Labs. This version of the DMP provides an interim overview of datasets that will be used, accessed, and generated in accordance with the project's Grant Agreement.

The initial Data Management Plan (D6.2), submitted at Month 6, defined the key principles, procedures, and governance mechanisms related to GDPR compliance, ethical considerations, and Open Science practices. At that stage, data collection activities within metaCCAZE had not yet commenced, and the data templates developed under Task 6.6 were therefore not populated. In the current version of the DMP, partners have provided detailed data management information for datasets that have already been generated or collected during the ongoing implementation of the project. To ensure the DMP remains accurate and up to date, partners will continue to revise and complete the data templates with relevant and recent information as the project progresses.

## 1 Introduction

Task 6.6 is responsible for developing the Data Management Plan (DMP) for both primary and secondary data collected and used within the metaCCAZE project. The DMP will outline the roles and responsibilities of all parties involved in data management to ensure an efficient, transparent, and secure process. It will provide detailed guidelines on data collection, storage, and transfer among different entities (e.g., consortium members, academic partners), as well as identify the designated data controllers and data processors. Furthermore, the DMP will establish procedures for making the collected data publicly accessible for analysis and future use, in line with open science principles.

### 1.1 Objectives of the Deliverable

The objective of this deliverable is to provide the second (first interim) version of the metaCCAZE Data Management Plan (DMP) and Ethics, offering an updated overview of datasets already collected, as well as those expected to be accessed, processed, generated, or acquired in subsequent project phases. It outlines data-sharing agreements and procedures to ensure full compliance with the General Data Protection Regulation (GDPR) for all primary and secondary data collected across the four Trailblazer Living Labs (T-LLs) and six Follower Cities (F-LLs). By applying FAIR principles (Findable, Accessible, Interoperable, and Reusable), the deliverable ensures that research data supports current objectives and remains reusable for future research and innovation.

This deliverable 6.3 is intended for all metaCCAZE partners involved in data collection, processing, management, and sharing. It provides practical guidance to ensure that all data-related activities comply with applicable legal and ethical frameworks, including GDPR and the European Data Protection Act. The document is particularly relevant for research, technical, and administrative teams implementing data handling procedures across work packages. It may also be consulted by external reviewers, ethics experts, and European Commission representatives to verify compliance with Horizon Europe standards for data management, protection, and open science.

### 1.2 Structure of the Document

The present deliverable outlines the approach adopted by the metaCCAZE project for the management of data generated and used throughout its implementation. It follows a collaborative methodology involving all partners engaged in data-related activities, ensuring consistency and transparency in the definition, collection, and processing of datasets.

To support this process, standardised templates have been developed and distributed to the relevant partners. These templates are designed to capture information on both existing and newly generated datasets. The data collected through these templates have been consolidated and are presented in Annexes I, II, III, and IV of this deliverable. These annexes provide an up-to-date overview of datasets gathered within the project up to Month 24 (M24).

The deliverable is structured into eight key sections:

- Objective of this Deliverable (Section 1): This section provides a general overview of the deliverable and its objectives, setting the context for the subsequent sections.

- Data summary (Section 2): This section describes the types of data collected and generated in the metaCCAZE project. It details the purpose of data collection and its relevance to the project's objectives. The data sources, including primary and secondary data, associated with demonstration sites are also discussed.
- FAIR Data Standards & Approaches (Section 3): This section outlines the project's approach to making data Findable, Accessible, Interoperable, and Reusable (FAIR). The provisions for metadata, data accessibility, and interoperability are discussed.
- Allocation of Resources (Section 4): This section explains the allocation of resources for data management within the project. It shows the connection to other tasks within the project, particularly those concerned with learning from Living Labs and identifying barriers to innovation.
- Data Security and Protection (Section 5): This section focuses on the mechanisms in place for data protection, including the storage of sensitive data, provisions for data sharing, and adherence to the General Data Protection Regulation (GDPR).
- Ethical Aspects (Section 6): This section covers ethical considerations related to data management, including informed consent, guidelines for participation in Living Labs both Trailblazer and Followers, data anonymisation, and the appointment of Data Protection Officers.
- Open Science (Section 7): This section briefly describes the project's commitment to open science by promoting transparent and accessible sharing of research outputs related to zero-emission transport, shared mobility, electromobility and autonomous mobility, in line with applicable ethical and legal requirements.
- Conclusion (Section 8): This section concludes the DMP and outlines the next steps.

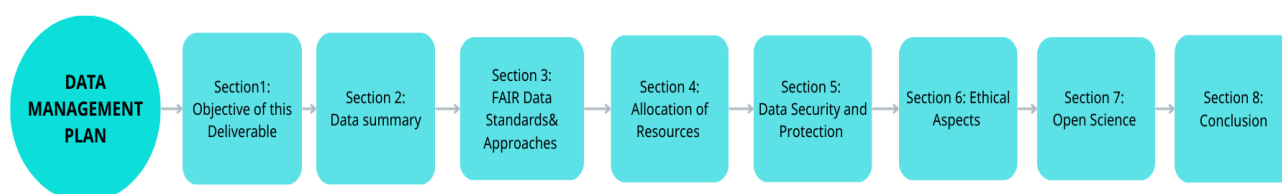


Figure 1: Structure of the metaCCAZE Data Management Plan

### 1.3 Relation to Project Documents

This document constitutes the second deliverable produced under Task 6.6 within Work Package 6 (WP6). It closely aligns with Deliverable D6.1 – Project Handbook (Inception, Quality, and Risk Management), particularly regarding the project's management structures and risk management procedures.

It also provides an updated and expanded description of the data collection processes implemented across the metaCCAZE project. This update builds on the initial methodologies introduced in the first version of the *Data Management Plan and Ethics* (Deliverable D6.2), submitted in Month 6 (M6).

By Month 24 (M24), data collection has been conducted primarily within the Trailblazer Living Labs in the context of the metaDesign activities (WP1), which have been completed for these sites, as well as during the testing and demonstration phase, which has already been initiated in a subset of the Trailblazer cities under Work Package 3 (WP3). The corresponding data management information is detailed and analysed in Annexes of this deliverable.

In addition, data was collected through the Social Embracement Surveys implemented under Task 1.5, “Social Embracement, Incentivisation, and Behavioural Change Exploration Tools.” These surveys were conducted exclusively within the Trailblazer Living Labs during the pre-implementation phase, with the aim of establishing baseline values to support subsequent monitoring and impact assessment activities in line with Horizon Europe requirements. The related data management templates are provided in Annex III of this Deliverable.

For the Follower Cities, metaDesign activities remain in progress. Consequently, only the data gathered during LL1: Mini-Dialogues, conducted as part of the ongoing metaDesign phase, are included in Annex II. The remaining activities, together with the Social Embracement surveys and the data to be collected during the demonstration phases, will be documented in upcoming deliverables (D6.4 – M36 and D6.5 – M48) once completed.

All metaDesign activities under Work Package 1 (WP1) have been completed for the four Trailblazer Living Labs, while activities for the Follower Cities are progressing toward completion. Accordingly, the dataset templates submitted by the Trailblazer Living Labs correspond to the metaDesign activities and Social Embracement surveys, detailed in the following deliverables:

- D1.1 – *Trailblazer LLS: Status Quo Map, Prototype ZESM Use Cases for Passengers and Freight*
- D1.3 – *Follower Cities: Status Quo Map and Prototype ZESM Use Cases*
- D1.4 – *metaDesigned ZESM Use Cases for the Trailblazer LLS and the SIEF*

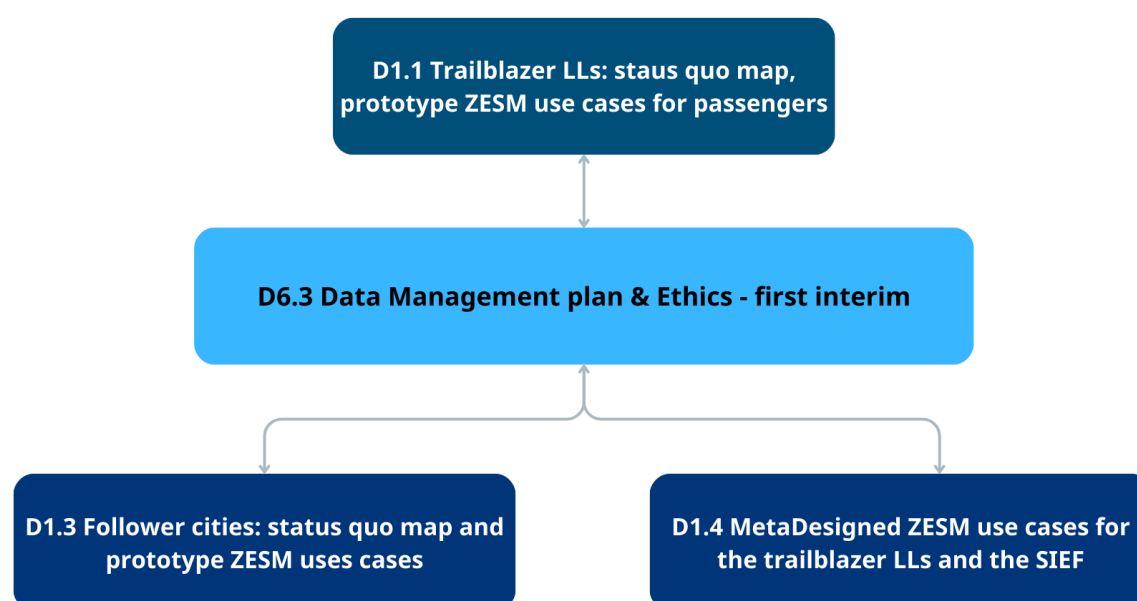


Figure 2: metaCCAZE Deliverables contributing to the DMP up to M24

These datasets collectively form the basis for the project's first interim data inventory, as presented in Annex I, II and Annex III, and support the ongoing implementation of the metaCCAZE Data Management Plan (DMP).

Regarding the datasets already generated through the wide-scale demonstrations conducted in three out of the four Trailblazer Living Labs (Munich, Limassol and Tampere Living Labs), these are not yet associated with a specific project deliverable. The assessment of demonstration impacts at Living Lab level, as well as the cross-Living Lab comparative analysis, will be documented in Deliverable D3.3, "Trailblazer Living Labs: Impact Evaluation" (M36).

## 1.4 Overall Approach

This deliverable has been developed through close collaboration among the supporting partners of both the Trailblazer and Follower Living Labs. The supporting partners in each city are responsible for data collection during the surveys established under the metaCCAZE project framework. The overall coordination and integration of inputs are managed by MaaS Lab, the partner leading Task 6.6.

To identify the data sources generated and used within the metaCCAZE project, a collaborative methodology is followed, involving all partners involved in data. Templates to record existing and new datasets are created and provided to relevant partners. The templates are filled in by partners and include information regarding the dataset's description, purpose and utility, reference and name, storage, partners involved, format, related metadata and standards, related to the project's objectives, whether it is a new or an existing dataset with expected size. A list of dataset descriptions provided by the metaCCAZE project partners has been compiled up to Month 24 (M24) of the project and is included in Annex I, Annex II, Annex III, and Annex IV of this first interim version of the Data Management Plan.

The present version of the Data Management Plan (DMP) provides an interim overview of the datasets that have already been used, accessed, and produced, as well as those expected to be collected, in accordance with the Description of Action (DoA) of the metaCCAZE project. Therefore, to reach the updated view of the metaCCAZE datasets, partners have been asked to revise the data templates based on recent and relevant information. Moreover, this deliverable reports on the data-sharing agreements that will be put in place over the course of the project to comply with the GDPR regulations for primary data emerging from the metaCCAZE surveys.

In preparing this document, the authors also consulted key project references, including the Grant Agreement and Deliverable D6.1 – Project Handbook (Inception, Quality, and Risk Management), to ensure that all descriptions, methodologies, and processes presented herein are fully consistent with the project's overarching management and quality assurance framework.

Table 1: List of DMP Deliverables of metaCCAZE

DELIVERABLE No	Deliverable Name	Work Package	Lead Beneficiary	Type	Dissemination Level	Due Date (Month)
<b>D6.2</b>	<b>Initial Data management plan</b>	<b>WP6</b>	<b>M Lab</b>	<b>DMP – Data Manage</b>	<b>PU</b>	<b>M6</b>

	<b>&amp; Ethics</b>			<b>ment Plan</b>		
<b>D6.3</b>	<b>First interim Data management plan &amp; Ethics</b>	<b>WP6</b>	<b>MLab</b>	<b>DMP – Data Management Plan</b>	<b>PU</b>	<b>M24</b>
<b>D6.4</b>	<b>Second interim Data management plan &amp; Ethics</b>	<b>WP6</b>	<b>MLab</b>	<b>DMP – Data Management Plan</b>	<b>PU</b>	<b>M36</b>
<b>D6.5</b>	<b>Final Data management plan &amp; Ethics</b>	<b>WP6</b>	<b>MLab</b>	<b>DMP – Data Management Plan</b>	<b>PU</b>	<b>M48</b>

## 2 Data Summary

### 2.1 Purpose of Data Collection

Within WP6, the T6.6 is specifically dedicated to the management of data coming from the metaCCAIZE project. This will include the management of different types of data and results/output generated during the project (numeric/quantitative, text/qualitative and personal/confidential data). Such data will be managed in compliance with the FAIR data principles, while respecting the conditions outlined in the Consortium Agreement regarding Intellectual Property Rights (IPR), access rights and confidentiality. DMP deliverables will describe in detail what data metaCCAIZE will generate and/or use, and what measures will be taken to ensure that data are FAIR and that their management is compliant with the GDPR and Ethical policies relevant to different types of data and organizations, following the guidelines as well as template provided on the Funding and Tender portal:

**Findability (F):** To ensure that others can find the metaCCAIZE data and the other outcomes (i.e. project deliverables), the data and reports will be hosted on a stable and recognized open repository (i.e. Zenodo) to be assigned a globally unique persistent identifier (i.e. DOI). The data will be accompanied by dictionaries describing the data and any other appropriate metadata. Using such a repository and identifier ensures that the metaCCAIZE data warehouse will remain available to both humans and machines in a usable form after the project's completion. Academic papers that will be outputs of this project and will be submitted to journals will be assigned with a DOI upon their publication.

**Accessible (A):** The published research data will be provided with the Intellectual Property Rights (IPR) and Open Access licenses. Common access control policies will be applied to ensure accessibility of the target and beneficiary groups. Datasets, APIs and application code will be published both on GitHub and on the project website to ensure wide accessibility and for at least 5 years after the conclusion of the project.

**Interoperable (I):** The data produced in the project will use the standard data and file formats (as CSV or JSON), standard and community accepted metadata vocabularies which should also be supported by available software tools, applications, and repositories; this should ensure the intended project interdisciplinary outreach and exploitation.

**Reusable (R):** Data produced in the project will be supplied with the licenses allowing the widest reuse possible. In case of constraints incurred for some data an “embargo period” or restricted use policy will be explicitly attached to specific data sets. The primary objective is to support the reproducibility of scientific research and the validation of publications. Curation and storage/preservation costs: MaaSLab is responsible for developing the Data Management Plan (DMP) and maintaining the metaCCAIZE data warehouse. MaaSLab leads Task T2.2: Harmonise – AI Data Warehouse and APIs (M4–M40), as well as Task T6.6: Data Management, Ethics, and Open Science (M1–M48).

### 2.2 Relation of Data to the project’s objective

The following table summarizes the relation of the different data categories to the project objectives, as described in Chapter 1.1.1. Note that O1, O2 are related to the

development of the metaCCAIZE tools and innovations (use cases, models, metalInnovations), whereas O3, O4, O5, O6 are related to the implementation and demonstration of the tools and to the dissemination of results.

Table 2: Data Required through the metaCCAIZE project

Data required to build the metaCCAIZE tools and models	Data required for the metaCCAIZE Living Labs
<b>O1:</b> Establish the metaDesign process to involve the cross –sectorial actors and citizens required for ZESM and design use cases, cross-sector collaborative business innovation and governance models (BIGMs)	<b>O3:</b> Demonstrate widely the metaDesigned Zero Emission Shared Mobility (ZESM) Use Cases (UCs)
<b>O2:</b> Develop the metalInnovations toolkit	<b>O4:</b> Validate that the metaCCAIZE UCs, BIGMs, and metalInnovations are transferable, resilient and flexibility adjustable
	<b>O5:</b> Boost and influence the metaCCAIZE and any European city and the market
	<b>O6:</b> Organise dissemination, communication, liaison and exploitation

*Objective 1 (O1):* Data have been gathered through the metaDesign activities conducted for the four Trailblazer Living Labs. These activities involved the participation of stakeholders, citizens, and key representatives responsible for each city’s Sustainable Urban Mobility Plan (SUMP). This objective is directly aligned with Work Package 1 (WP1), specifically Tasks T1.1, T1.2, T1.3, and T1.4, as described within those tasks.

In addition, data are being collected under Task T1.5 through the Social Embracement Surveys, which include both stakeholder and citizen surveys. These surveys are implemented in two phases:

- the first phase takes place before the demonstration activities, and
- the second phase is conducted during or after the implementation of the Use Cases within each Living Lab.

For the six Follower Living Labs, the metaDesign process has not yet been finalised, as it is still ongoing according to the Gantt Chart of the metaCCAIZE project.

*Objective 2 (O2):* Data collection plays a crucial role in the development of the metalInnovation tools. Within the framework of Work Package 2 (WP2), these tools have been designed and are being developed based on the collected data, addressing all essential components required for flexible, adaptive, and open smart systems that support zero-emission and self-driving shared mobility solutions for both passengers and freight. All tools related to electrification, automation, zero-emission shared mobility, and connectivity technologies are grounded in the outcomes of the metaDesign activities, ensuring that they are user-centric and tailored to the real needs of

end users and stakeholders. However, certain metalInnovations require additional datasets from the Living Labs to support the development of specific functionalities. At this stage of the project, Objective 2 therefore focuses on the data that have been collected specifically for the design, development and testing and integration of these tools. Additional datasets will be incorporated at a later stage, as further data are gathered during the ongoing development, wide-scale implementation, and validation of the metalInnovations toolkit.

*Objective 3 (O3):* This objective relates to Work Package 3, which encompasses the large-scale demonstration of the metalInnovations and the implementation of all Use Cases across the four Trailblazer Living Labs within the metaCCAZE project. Under this objective, the developed tools and services will facilitate the collection of data to evaluate their usability, effectiveness, and the extent of user adoption achieved during the demonstration activities. The resulting datasets will provide valuable insights into the performance, scalability, and acceptance of the metalInnovations under real-world conditions.

*Objective 4 (O4):* Data collection is essential for this objective, as it enables the evidence-based assessment of cross-fertilisation and transferability activities between the Trailblazer and Follower Living Labs. Through systematic monitoring of the demonstrated Use Cases, metalInnovations, and BIGMs, the collected data allow the project to evaluate how effectively solutions are replicated, adapted, and scaled across diverse contexts. These datasets provide the basis for measuring transferability, adjustability, and resilience through dedicated KPIs, while also capturing feedback on operational performance, user acceptance, and local constraints. By grounding the cross-fertilisation and transferability framework in real-world evidence, the project ensures that the solutions selected and implemented by the F-LLs are both suitable and validated, ultimately supporting the successful replication and long-term sustainability of the demonstrated innovations.

*Objective 5 (O5):* Data collection is fundamental to this objective, as it provides the evidence base required to generate robust insights, comparative analyses, and long-term projections that will shape the knowledge, guidance, and policy outputs of the project. By systematically gathering data from the 10 Living Labs on the demonstrated Use Cases, BIMs, and metalInnovations—as well as their impacts, costs, benefits, and operational conditions—the project can extract lessons learned, identify transferable practices, and assess the replicability and scalability of the solutions. These datasets underpin the development of implementation roadmaps, support personalised advisory activities, and inform the interactive training resources delivered through the MetaSkills Hub. Moreover, the collected evidence enables the project to contribute new requirements, recommendations, and strategic directions to European initiatives such as SUMP/SULP guidelines and the SRIAs of the 2ZERO and CCAM partnerships. In this way, data collection ensures that the knowledge produced is both credible and actionable, empowering cities and markets across Europe to adopt, adapt, and deploy the metaCCAZE innovations effectively.

*Objective 6 (O6):* Data collection and effective data management are essential to support the dissemination, communication, liaison, and exploitation activities under this objective. The evidence generated throughout the project—ranging from performance outcomes and user

feedback to transferability findings and impact assessments—forms the foundation of all communication materials, stakeholder engagement actions, and liaison activities with European partnerships such as CCAM, 2ZERO, Mission Cities, and CIVITAS. Structured data management ensures that results are accurate, traceable, and accessible, enabling the project to communicate credible achievements, highlight innovation potential, and demonstrate real-world benefits to cities, industry, and policymakers. Moreover, well-organised datasets facilitate the preparation of the exploitation plan by providing a clear understanding of the maturity, market relevance, and long-term sustainability of the metaCCAZE solutions. Through robust data collection and management, the project ensures that its outreach activities are evidence-based, influential, and capable of accelerating the uptake of smart, shared, and zero-emission mobility solutions across Europe.

## 2.3 Data sources in relation to metaDesign activities

As per the Grant Agreement, there are two groups of metaDesign activities that generate data:

### 1. The LLs' metadesign activities:

Table 3: Living Lab's metaDesign Activities

LIVING LAB'S METADESIGN ACTIVITIES	
LL1	mini-dialogues
LL2	metadesign use cases + BIGMS
LL3	metadesign the metaServices with citizens
LL4	Validate metadesigned use cases +BIGMS
LL5	Define the KPIs and Impact Evaluation framework

### 2. The LL's metadesign activities: Social embracement & behavioural change surveys

Table 4: Living Lab's metaDesign Activities: Social Embracement & Behavioural

LIVING LAB'S METADESIGN ACTIVITIES: SOCIAL EMBRACEMENT & BEHAVIOURAL CHANGE SURVEYS	
SS1	Travel behaviour & UC's preference exploration
SS2	Travel behaviour changes and preferences monitoring

The data of these activities are used for the development of the tools/metaInnovations, as well as the impact evaluation of the implemented metaCCAZE UCs in the 10 LLs.

For each activity the objective of data collection, the anticipated time that data will be collected, the format and tools that will be used for data collection, as well as the related tasks and the partners responsible to collect the data are described. It should be noted that the datasets will be updated as the project advances and further information will be added to this document. For the purposes of the present version of this Deliverable, metaCCAZE project partners have completed the relevant templates detailing the data to be accessed and/or generated within the project. These templates are provided in Annex I and Annex III for metaDesign activities in the Trailblazer Living Labs, and in Annex II for the Follower Living Labs, of this document. A brief description of

the seven (7) foreseen activities, which will be implemented or have already been conducted within the Trailblazer Living Labs, is presented in the following sections.

In general, for each activity **the LL Supporter is responsible for monitoring the Ethics, the Data Protection Protocols and the FAIR guidelines that are provided by MaaSLab, the Data Management Leader of the metaCCAIZE project.** The LL Supporters clean and anonymise the datasets and apply the FAIR standards; in turn they deliver the datasets to the partner who leads each activity or task that this data is related to; this partner checks the validity of the datasets; and finally, this partner delivers the datasets to MaaSLab. This process is depicted in Figure 3 below.

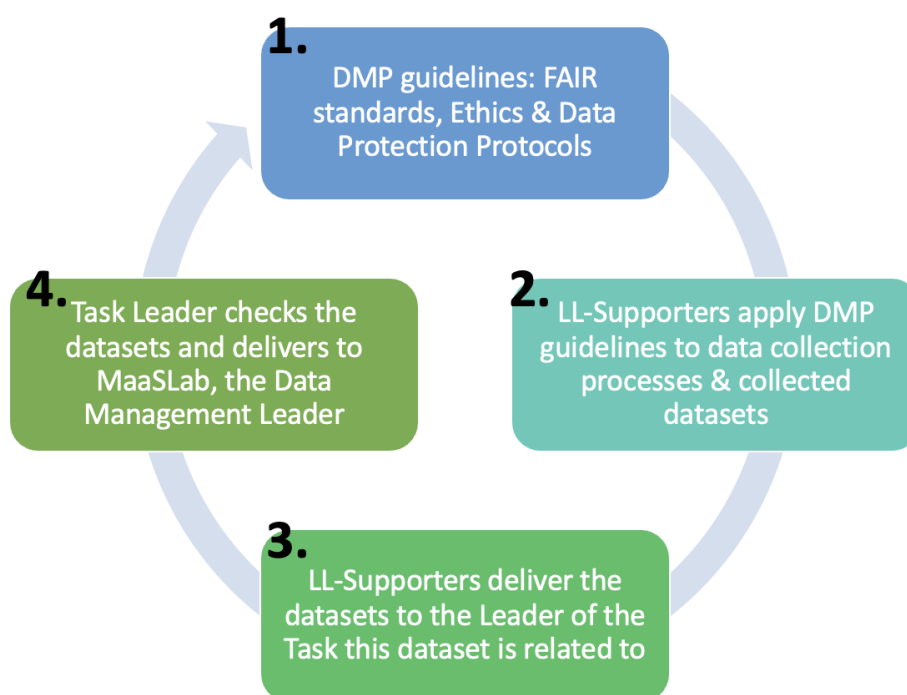


Figure 3: Application of data management plan & datasets collection

The following sections, describe the various activities that have currently been identified within the metaCCAIZE project and generate primary data.

### 2.3.1 LL1: mini- dialogues

Table 5: Living Lab metaDesign activity 1

LL1: mini-dialogues (M4-M8: T-LLs + M10-M13: F-LLs; related to WP1) – Related to D1.1 for T-LLs and D1.3 for F-LLs	
Objective	Each LL organizes an event with selected stakeholders who are involved in the LL’s SUMP to discuss and specify their needs in terms of smart systems and services with an ultimate goal to derive the Empathy Map of the LL.
When	M4-M8 for T-LLs M10-M13 for F-LLs

Format	1 physical or hybrid workshop: 1 in each Living Lab (1 X 10 Living Labs = 10 activities)
Participants	Stakeholders who are related to the measures and policies in the LLs' SUMP
Related to	WP1 – T1.1 - ST1.1.2
Method	mini-dialogues
Data	Text
Leader in designing the activity	TRT + BABLE + NTUA
Leader in delivering the activity	The Leader of each task related to LL
Leader for the data collection and analysis	The supporter of each LL

### 2.3.2 LL2: metaDesign use cases and business innovation and governance models and LL3: metaDesign the metaServices with citizens

Table 6: Living Lab metaDesign Activity 2 and Activity 3

**LL2: metaDesign use cases + BIGMS (M7-M8: T-LLs +M19- M25: F-LLs; related to WP1)- Related to D1.1 for T-LLs**

**LL3: metaDesign the metaServices with citizens (M7-M8: T-LLs +M19- M25: F-LLs; related to WP1) - Related to D1.1 for T-LLs**

Objective	LL2: To discuss the prototype Use Cases (UCs) with citizens and stakeholders to prepare the metaDesigned UCs that will be demonstrated in each LL. It is also discussed the business model and the governance structure of each Use Case. LL3: Given the UC that each LL has proposed, workshops are organized with citizens to discuss with them the characteristics that the UCs and metaServices would like to have in order to secure the maximum uptake of the metaServices and also take insights about the topics the marketing campaigns should target.
When	M7-M8 for T-LLs M19 – M25 for F-LLs
Format	1 physical or hybrid workshop + online questionnaires (if it is needed/ in case the workshop's duration is too long, we may collect some info through questionnaires): 1 in each Living Lab (1 X 10 Living Labs = 10 activities). These two activities, LL2 and LL3, took place concurrently in each Living Lab, including both the Trailblazer and Follower cities.
Participants	Citizens and stakeholders who are related to the UCs that the LLs have proposed for metaCCAZE
Related to	WP1: T1.2 –ST1.2.1 + T1.3 – ST1.3.1.
Data	Text
Leader in designing the activity	BABLE + ERTICO

Leader in delivering the activity	The Leader of each task related to LL (as part of WP3 or WP4)
Leader for the data collection and analysis	The supporter of each LL (as part of WP3 or WP4)

### 2.3.3 LL4: Validate metaDesigned use cases and Business Innovation and Governance Models

Table 7: Living Lab metaDesign Activity 4

<b>LL4: Validate metaDesign Use Cases + BIGMS (M12- M15: T-LLS + M22 -M25: F-LLS)- Related to D1.4 for T-LLs</b>	
Objective	Discuss and verify the final metaDesigned UCs and their BIGMS in order stakeholders to be informed about what UCs will be demonstrated and the role that each actor should have to enable and support the demonstration of the UCs.
When	M12- M15 for T-LLs M22-M25 for F-LLs
Format	Physical or hybrid workshop + online questionnaires (if it is needed/ in case the workshop's duration is too long, we will select to collect some info through questionnaires) :1 in each Living Lab (1 X 10 Living Labs = 10 activities)
Participants	Citizens and stakeholders that are related to the UCs that the LLs have proposed for the metaCCAZE
Related to	WP1: T1.2 -ST1.2.1 + T1.3 - ST1.3.1
Data	Text, numeric
Leader in designing the activity	BABLE+ ERTICO
Leader in delivering the activity	The Leader of each task related to LL
Leader for the data collection and analysis	The supporter of each LL

### 2.3.4 LL5: Define the Key Performance Indicators and impact evaluation framework

Table 8: Living Lab metaDesign Activity 5

<b>LL5: Define the KPIs and Impact Evaluation framework (M12- M15 : T-LLs; M23 - M25: F-LLs)- Related to D1.4 for T-LLs</b>	
Objective	Define the Key Performance Indicators (KPIs) that will be measured in each LL based on the UCs that will be demonstrated and the climate neutrality objectives of each LL. The units of the KPIs and the methods that these KPIs will be measured, will also be discussed.

When	M12- M15 for T-LLs M23- M25 for F-LLs
Format	Workshop + online questionnaires (if it is needed/ in case the workshop's duration is too long, we will select to collect some info through questionnaires): 1 in each Living Lab (1 X 10 Living Labs = 10 activities)
Participants	Stakeholders that are related to the UCs, the LL's SUMP and the Mission Initiative
Related to	WP1: T1.4
Data	Text
Leader in designing the activity	TRT
Leader in delivering the activity	The Leader of each task related to LL
Leader for the data collection and analysis	The supporter of each LL

### 2.3.5 SS1: Travel behaviour & use cases' preference exploration

Table 9: Social Embrace and behavioural change Survey 1

<b>SS1: TRAVEL BEHAVIOUR &amp; UC'S PREFERENCE EXPLORATION (M13-M15: T-LLS +M27-M28: F-LLS - ATHENS +KRAKOW)</b>	
Objective	Explore the travel behaviour of citizens before the implementation of the UCs and metaServices (to act as a basis for comparison), and their preferences, ideas and embracement for the metaDesigned UCs and metaServices.
When	M13-M15 for T-LLs M27-M28 for F-LLs
Format	Semi-structured interviews, online questionnaires, focus groups and travel diaries
Participants	The surveys are categorised into stakeholder and citizen surveys, aligned with the specific use cases of each Living Lab.
Related to	T1.5 +T3.2 – T3.5 + T4.1 + T4.2
Data	Text, numeric
Leader in designing the activity	MLab
Leader in delivering the activity	The supporters of each LL
Leader for the data collection and analysis	The supporters of each LL

## 2.3.6 SS2: Travel behaviour change and preferences monitoring

Table 10: Social Embrace and behavioural change Survey 2

<b>SS2: TRAVEL BEHAVIOUR CHANGE AND PREFERENCES MONITORING (M25-M32: T-LLS +M33-M40: F-LLS – ATHENS +KRAKOW)</b>	
Objective	Explore the travel behaviour of citizens while the UCs and metaServices are demonstrated and compare it to SS1 Data to assess travel behaviour changes + explore citizens/ “users” preferences, ideas and embrace for the demonstrated UCs and metaServices.
When	M25-M32 for T-LLs M33-M40 for F-LLs
Format	Semi-structured interviews, online questionnaires, focus groups and travel diaries
Participants	The surveys are categorised into stakeholder and citizen surveys, aligned with the specific use cases of each Living Lab.
Related to	T1.5 +T3.2 – T3.5 + T4.1 + T4.2
Data	Text, numeric
Leader in designing the activity	MLab
Leader in delivering the activity	The supporters of each LL
Leader for the data collection and analysis	The supporters of each LL

## 2.4 Types of the project’s data

In the following sections, the primary and secondary data which have currently been identified within the metaCCAIZE project are being discussed, along with steps taken for their handling among partners. Note that the datasets will be updated as the project advances and further information will be added to this document.

### 2.4.1 Primary data from metaDesign activities and Living Labs

As part of the metaCCAIZE metaDesign activities and especially the social surveys in the LLs, the personal data of survey participants will be collected by metaCCAIZE project partners. Following the GDPR regulations, the metaCCAIZE consortium has established a set of data sharing and processing agreements between project partners to facilitate data exchange and processing.

To ensure the secure storage of data produced by all project partners, a Data Processing Agreement will be signed between ERTICO (the project coordinator) and MaaSLab (the partner managing metaCCAIZE’s Data Warehouse) for the potential storage of primary data in metaCCAIZE’s data warehouse (T2.2).

The metaCCAZE data warehouse has already been developed and is ready to store all data that have been produced to date, as well as data expected to be collected and generated throughout the duration of the project. The final version of the AI-enabled data warehouse will be completed and formally documented under Deliverable D2.3, “metaInnovations – Final” (M40).

Notwithstanding this, MaaSLab has already implemented the data warehouse, and, in the meantime, operational guidelines will be provided to project partners to support the upload and management of data produced and collected within the metaCCAZE project.

Data sharing agreements between other partners have not been signed at this point as they will have access to anonymized, aggregated, and processed data from the primary surveys. In case a need for data sharing emerges separate agreements between the project coordinator and the partners will be put in place.

The following table 11 provides an overview of the available datasets listed by the pilot partners as of M24 of the project. Note that this list is continuously updated and revised. An updated list will be provided in the next version of D6.4 (M36).

Table 11: metaCCAZE Data Categories during metaDesign Activities and Social Embrace ment & Behavioural Change Surveys

DATA	DATA TYPE	FORMAT
Social Embrace ment Surveys	Images	.jpg, .png, .svg
	List of participants	.xlsx, .csv
	Presentations	.ppt, .pdf
	Minutes (from Interviews)	.docx, .odt, .pdf
	Minutes (workshops)	.docx, .odt, .pdf
	Survey data	.xlsx, .csv
	Geolocations	.xlsx
metaDesign activities	Images	.jpg, .png, .svg
	List of participants	.xlsx, .csv
	Presentations	.ppt, .pdf
	Minutes (from Interviews)	.docx, .odt, .pdf
	Minutes (workshops)	.docx, .odt, .pdf
	Survey data	.xlsx, .csv
	Video recordings	.mp4
	Reports	.docx, .odt, .pdf
Audio recordings	.mp3	

metaCCAZE will demonstrate activities in ten (10) Mission Cities across 10 different European countries. The metaInnovation Toolkit is going to be applied to all ten (10) Mission Cities and is expected models will generate evidence which will allow the identification of mobility solutions, measures, policies, and business models to address current and future challenges of implementing smart shared and zero-emission mobility systems, so the way to climate neutral will become easier and quicker.

## 2.4.2 Secondary data from the Living Labs

Secondary data are provided by the Living Labs and are used as inputs for the metaInnovations technologies and for the development of the Standardised Impact Evaluation Framework (SIEF). The SIEF defines a harmonised set of KPIs to assess the post-deployment impacts of the Use Cases across all Living Labs, including both Trailblazers and Followers. At this stage, the consortium has either already collected, or is in the process of collecting, information on the availability of secondary data, including details related to access procedures and access rights.

While several KPIs at Living Lab level are calculated and monitored through surveys and operational data generated by the wide-scale demonstrations, the impact monitoring and evaluation framework also relies on indicators that already exist within the local ecosystems of the Living Labs. Within the metaCCAZE project, these ecosystem-level indicators are monitored and collected from a variety of internal and external data sources and constitute the secondary data addressed in this section.

All Living Labs will document the secondary data used for the SIEF through a dedicated template developed within the project. This template captures key data management aspects, including data formats, variables, data sources, and access conditions, and supports the systematic monitoring of indicators required to assess the impacts of the implemented services and metaInnovations. The SIEF templates are included in Annex V of this Deliverable and will be completed as part of the second interim Data Management Plan, in which all Living Labs will identify and define the data formats and data sources to be monitored throughout the project for impact evaluation purposes.

The metaInnovation toolkit has already been integrated into the Use Cases of the Trailblazer Living Labs and is being prepared for large-scale demonstration across the Trailblazer sites. For the Follower Cities, the integration phase of the metaInnovation toolkit has not yet begun and is scheduled to commence in Month 27 of the project, based on the metaCCAZE's project Gantt Chart. The next step involves an evaluation regarding their fit-for-purpose for the metaInnovations and UCs.

To date, secondary data supporting the development of the metaInnovations have been provided by two Trailblazer Living Labs, Munich and Limassol, in line with the metaInnovations implemented in their respective Use Cases. These data reflect the project status at Month 24 (M24), at which point the integration and testing phases of the Use Cases had been completed. Additional secondary data to be collected throughout the project by all Trailblazer and Follower Living Labs will be incorporated into the next version of the Data Management Plan, to be delivered at Month 36 (M36).

Table 12: Secondary Data collected at the Munich Living Lab

DATA	DATA TYPE	FORMAT
Floating Car Data	Street – level positioning	.csv,.xlsx, .json, .xml
	Vehicle type	.csv,.xlsx, .json, .xml
	Stop duration	.csv,.xlsx, .json, .xml
Delivery parking areas occupancy data	ID of each parking area	.xlsx, .csv

	Begin and End time of each parking process	.xlsx, .csv
Loop Detector Data	ID of the sensor	.xlsx, .csv, .json
	Coordinates of the sensor	.xlsx, .csv, .json
	Period of observation	.xlsx, .csv, .json
	Number of vehicles for nine vehicle classes	.xlsx, .csv, .json

Table 13: Secondary Data collected at the Limassol Living Lab

DATA	DATA TYPE	FORMAT
Static datasets	Public Transport	GTFS
	EV charging Infrastructure	.xlsx, .csv
	EV pricing	.xlsx, .csv
	Land - use	.cpg, .pdf, .shp, .dwg, .dbf, .prj, .shx
	Socio-demographic structures	.xlsx
	Traffic accidents	.csv, .xlsx
	Bike-lane networks	.pdf, .shp
	Parking Spaces	.csv, .xlsx, .shp
	3D building layers	.gml, .gpkg, .shp, .pdf
	Air Quality	.xlsx, .csv
	Noise report	.pdf
	Weather	.xlsx, .csv
	Real-time	Traffic conditions

### 2.4.3 Data generated by metaCCAZE and potentially published as open data

metaCCAZE will generate a substantial amount of primary data in each Living Lab. Primary data and datasets have already been produced through the metaDesign activities and the Social Embracement Surveys conducted during the “before implementation” phase for the four Trailblazer Living Labs. For the Follower Living Labs, the metaDesign activities and Social Embracement Surveys are still ongoing. Additional primary data has been generated during the demonstration phase of the metaInnovations and Use Cases in some Trailblazer Living Labs. The complete dataset from all demonstrations will be updated in the second interim version of the Data Management Plan (DMP) and again at the end of the project, supporting the monitoring of their impacts. In accordance with the Grant Agreement, all datasets will be anonymised and published by the project.

## 3 Fair Data

### 3.1 Making data findable, including provisions for metadata

To make the project data findable, a Digital Object Identifier (DOI) will be requested for each artefact. In more detail, DOIs from Crossref will be used for research publications, while DOIs from DataCite will be pursued for labelling each public dataset of the project. In addition, a metadata record for each output of the project will be created and stored in the data directory. In addition to other fields, each metadata record will include a set of keywords to make searches easier for external parties.

#### 3.1.1 Naming Convention Strategy

In metaCCAZE, each data source will be provided with a specific name that is composed of different parts/elements, containing information about the pilot country, data type or format and naming structure as follows:

**ORIGIN\_ORG\_TOD\_FORMAT\_Info\_VERSION**

**ORIGIN:** A prefix denoting if the dataset is pre-existing or new, followed by the first letters (three max) of the pilot's country or GEN if the data artefact is pilot agnostic

**TOD:** The type of data

**FORMAT:** The data format/extension

**Info:** Additional (abbreviated) information about the dataset. For example, the year when the dataset was published.

**VERSION:** The version of the dataset.

Project partners have applied a consistent data-naming convention to all datasets collected within the metaCCAZE project, including meta-design activities, feedback from tool-testing phases, and operational data generated during demonstrations, mainly within the T-LLs.

Each dataset is assigned a unique identification code to ensure traceability and consistency. The first element of the code indicates the pilot country (e.g., CY for Cyprus), the second identifies the data type (e.g., historical, real-time), the third specifies the data format (e.g., Excel, JPG, MP3), followed by additional dataset information (such as the year of data production), and finally the version number for that year.

For example, historical trip-duration data produced under Use Case 2 in the Limassol Living Lab, where shared e-bikes were deployed, is assigned the code **CY\_HI\_EX\_2025\_V1**.

All datasets are stored securely, with access restricted to authorised project partners, in compliance with GDPR principles (Articles 5(1)(c) and 5(1)(e)) and the project's Data Management Plan.

#### 3.1.2 Version Numbering Strategy

In metaCCAZE, a data versioning strategy similar to software versioning is followed, applying a two-part numbering rule: Major or Minor. Major data revision indicates a change in the formation and/or content of a dataset that may bring changes in scope, context or intended use. For example, a major revision may increase or decrease the statistical power of a collection, require

change of data access interfaces, or enable or disable answering of more or less research questions. A Major revision may incorporate:

- substantial new data items added to /deleted from a collection
- data values changed because temporal and/or spatial baseline changes
- additional data attributes introduced
- changes in a data generation model
- format of data items changed
- major changes in upstream datasets

Minor revisions often involve quality improvement over existing data items. These changes may not affect the scope or intended use of initial collection. A Minor revision may include:

- renaming of data attribute
- correction of errors in existing data

### 3.1.3 Metadata & Search keywords

All datasets that will be openly available will be accompanied with metadata information which will render them findable by interested third parties. Search keywords will be defined and will be part of the related metadata for each dataset.

At this point, the CERIF<sup>1</sup> metadata format will be used and in the course of the project, additional applicable formats may be identified and used.

## 3.2 Making data openly accessible

Some of these datasets are already publicly available, while others are proprietary and highly sensitive to commercial interests. In cases where private data are processed and aggregated (e.g. as part of a model, or functionality of a component) permission will be requested by the provider prior to making the altered data publicly available.

Given the nature of the user data involved, some results generated by each project phase will be restricted to authorised users, while others will be publicly available. As per the consortium's Ethics commitment during the negotiation phase of the project, data access and sharing activities will be rigorously implemented, in compliance with the privacy and data collection rules and regulations, as they are applied nationally and in the EU.

Since the DMP is expected to mature during the project, the subsequent releases of the deliverable will specify the repositories where the data will be stored and go into more detail on how this data can be accessed by the wider research community.

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<sup>1</sup> <https://www.eurocris.org/cerif/main-features-cerif>

### 3.2.1 Datasets

Datasets characterised as “openly accessible” will be published in open repositories in OpenAire<sup>2</sup>. Following the completion of T2.2 Harmonise: AI-Data Warehouse and APIs, all partners will have access to the Data Warehouse to upload and securely store the primary and secondary data collected during the metaCCAZE project.

### 3.2.2 Scientific Publications

As required by the Grant Agreement, research publications will be made available through Green Open Access, where each publication needs to be made available at the metaCCAZE and Institutional portals. If applicable, Gold Open Access may be necessary, where the publication will be openly available through the publisher’s website. The publications generated within the project will be disseminated through the project’s dissemination and exploitation channels and follow the process described in the relevant project strategies.

### 3.2.3 Source code

It will be at the discretion of individual consortium members to decide whether the source code of their developed software is openly accessible. In such cases, different free and open-source software licenses will be investigated, and the appropriate ones will be selected. Open-source code from the metaCCAZE project will be made available through a common GitHub Repository.

## 3.3 Making data interoperable

Since the first version of the Data Management Plan, significant progress has been made to ensure that metaCCAZE data are interoperable and can be used consistently across partners. All datasets collected so far, are stored in standardised, machine-readable formats, as they described in paragraphs 2.4.1 and 2.4.2. Standardised schemas have been applied, ensuring consistency in field names, units, and coding of key variables.

For instance, mobility usage data collected from shared e-bike services across the Living Labs (LLs) will be stored in standardised, machine-readable formats (CSV and XLSX), using a common data schema agreed among project partners. Core variables—such as trip identifiers, start and end timestamps, trip duration, and distance travelled—are defined using harmonised field names and consistent measurement units (e.g., minutes for duration and kilometres for distance). Pilot- and country-specific identifiers are applied uniformly to enable cross-pilot comparison and aggregation.

In addition, data collected through user surveys and co-creation activities during the meta-design phase will be stored in structured tabular formats, applying standardised coding for response scales, demographic attributes, and feedback categories. This approach ensures interoperability of datasets across work packages and supports joint analysis and reuse by all project partners.

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<sup>2</sup> <https://www.openaire.eu>

### 3.4 Making data reusable

The metaCCAZE Data Warehouse serves as a central repository for data collection, storage, and sharing within the metaCCAZE project. The design is tailored to meet the project's unique data management needs, ensuring efficient handling, security, and accessibility of data. The primary purpose of the Data Warehouse is to provide a scalable, and secure platform for storing a wide variety of data collected from various sources, including primary and secondary data. The scope of this platform extends to ensuring data integrity, facilitating easy access for authorized partners, and supporting the project's overall objectives. metaCCAZE partners will use tags within the Data Warehouse, when possible, to facilitate a quick and seamless operation.

#### 3.4.1 Documentation

Documentation starts at the stage where a survey/data collection is designed within the project and concludes before data is actually collected. The partner who is responsible for each survey design that will be used for primary data collection should make sure to write down everything someone would need to know to understand how the data was collected and how they would analyse the data to obtain the same results. There are many types of documentation that could be useful for the metaCCAZE project, as they are presented below. Before a data collection starts the responsible partner of the survey/data collection should submit the documentation of the survey to the Data Management Plan Leader (MaaSLab) and to the project coordinator (Ertico) for approval.

##### **README Files**

Writing a README file is an excellent way to document the data in a human-readable format that is flexible enough to accommodate any dataset. A README file should contain all the information someone needs to get started understanding the metaCCAZE project and the scope of each specific dataset. README files provide a clear and concise description of all relevant details about data collection, processing, and analysis. This will help others interpret and reanalyse your dataset.

It is best practice for each project partner who designs surveys to create a README file for each dataset. Things to put in your README include:

- A description of the project and the dataset's objectives in general terms; think of this as an abstract.
- An outline of the overall structure of the dataset.
- Documentation of file naming convention.
- A simplified data inventory that does not list every file but gives the general scope of what is there or what it is expected to collect.
- Any other information that someone who is familiar with this field would need to understand the scope of the dataset.

##### **Codebooks or Dictionaries for Tabular Data**

Raw tabular data generally consists of tables with rows that hold individual observations and columns that contain a variable or one type of data about each observation. A codebook or dictionary describes:

- what each variable is and (how the question has been asked),
- what type of data is contained in that variable (e.g., numeric or text),

- what the acceptable range of values is, and
- a description of any codes for missing values for each variable.

Each supporting partner of the Trailblazer Living Labs has already submitted a data dictionary corresponding to the social Embracement surveys they conducted. The surveys completed by Month 24 of the project were associated with:

- **WP1:** metaDesign activities at both Trailblazer and Follower Living Labs
- **WP1:** Social Embracement surveys for the 'before the demonstration' phase for the T-LLs.
- **WP2:** Testing and integration phases of metaInnovation tools
- **WP3:** Demonstration and wide-scale implementation in the Trailblazer Living Labs

During the testing and implementation activities (WP2, WP3 and WP4), several metaInnovations integrated into the Trailblazer LLs have already begun generating data. Supporting partners in each pilot city have started identifying and compiling the collected data from the wide-scale implementation phase. This information is being used to populate the Data Dictionary template for each Use Case that has already been demonstrated or is scheduled for implementation in 2026, according to the metaCCAZE Gantt Chart.

The template for the metaCCAZE project has been uploaded to the project's shared space under the folder titled "Dictionary\_template", and each partner who has conducted a survey has already populated it to ensure the reusability of the datasets.

Question category	Variable name(s)	Question in Local Language: Greek	Question in English	Question in Russian	Shown If	Mandatory (*)	Response type/format	Response code in dataset (if applicable)	Response options in the considered languages (if applicable) & in English & in Russian	Question account for SIEF KP1? If yes, which one?
Description		GR: Η έρευνα αυτή αφορά το σχεδιασμό μιας υπηρεσίας μεταφοράς εφήβων στις εξωσχολικές τους δραστηριότητες. Η πρώτη φάση της έρευνας αποτελείται από 2 στάδια: 1. τη συμπλήρωση του ερωτηματολογίου, και 2. την συμμετοχή στην Ομάδα Συζήτησης. Η δεύτερη φάση θα λάβει χώρα τον Φεβρουάριο/Μάρτιο και θα αφορά συζήτηση ως προς τα χαρακτηριστικά της υπηρεσίας και της εφαρμογής κινητού τηλεφώνου. Η τρίτη φάση θα πραγματοποιηθεί τον Ιούνιο/Ιούλιο του 2025 και θα αφορά την πειραματική χρήση αυτής της υπηρεσίας σε πραγματικό περιβάλλον. Για κάθε φάση που θα ολοκληρώνετε, θα ανταμείβετε για το χρόνο σας και τη συμμετοχή σας με κούπονια που θα μπορείτε να εξαργυρώσετε για αγορές. EN : This survey is about the design of a mobility service dedicated to transfer adolescents to after-school activities. The 1st phase of this survey consists of two steps: 1. answering the questionnaire, and 2. participating in the Focus Groups. The 2nd phase will take place in February/March 2025 and will be about the experience of using the app and its features. The 3rd phase will take place in summer 2025 and will be about testing the service in real-life conditions. For each survey phase that you complete, you will be reimbursed for your time with a voucher that could be redeemed for shopping. RU: Данный опрос посвящен разработке службы перевозки подростков на внешкольные мероприятия. Первая стадия этого опроса состоит из двух этапов: 1. заполнение анкеты 2. участие в группе обсуждения. Вторая стадия состоится в Феврале/Марте 2025 года и будет посвящена опыту использования мобильного приложения и его функций. Третья стадия состоится в Июне/Июле 2025 года и будет посвящена экспериментальному использованию этой услуги в реальной среде. По завершению каждого этапа вы будете вознаграждены за ва время и участие купонами, которые можно использовать для покупок. Заполнение анкеты может занять до 30 минут, в зависимости от количества подростков в семье и их внеклассных занятий.								
Welcome message		GR: Καλώς ήρθατε στην πρώτη φάση της έρευνάς μας! Πριν ξεκινήσουμε την Ομάδα Συζήτησης, θα θέλαμε να σας κάνουμε μερικές ερωτήσεις σχετικά με τα χαρακτηριστικά του νοικοκυριού σας. Με αυτόν τον τρόπο, θα έχουμε περισσότερο δημιουργικό χρόνο κατά τη διάρκεια της Ομάδας Συζήτησης. Παρακαλώ απαντήστε στις ερωτήσεις είτε στα ελληνικά με ελληνικούς χαρακτήρες, είτε στα αγγλικά με λατινικούς χαρακτήρες. Μην χρησιμοποιήσετε greeklish. EN: Welcome to the 1st phase of our survey! Before we start the Focus Group, we would like you to answer this questionnaire and provide information about the profile of your household. In this way, we will have more creative time for discussion during the Focus Group. Please, answer text questions using either english and latin characters or Greek and greek characters. Do not use greeklish. RU: Добро пожаловать на первую стадию нашего опроса! Прежде чем начать группу обсуждения, мы хотели бы задать вам несколько вопросов о составе вашей семьи. Это позволит нам более продуктивно использовать время во время группового обсуждения. Пожалуйста ответьте на вопросы либо на греческом языке греческими буквами, либо на английском языке латинскими буквами. Не печатайте греческие слова английскими буквами.								
	EMAIL	οσ ηλεκτρονικό ταχυδρομίο. (θα χρησιμοποιηθεί για να σας καλέσουμε στην Ομάδα Συζήτησης για τη νέα υπηρεσία που αναπτύσσεται για τη	address. (It will be used to invite you to the Focus Group about the new service being developed	почты. (Он будет использован для приглашения вас в группу обсуждения для новой службы,		*	open ended (text)			

Figure 4: Example of a Data Dictionary for the Limassol Living Lab- Social Embracement Survey "before the demonstration" phase

## 4 Allocation of resources

This section details how resources are allocated for data management in the project. Managing data effectively is a critical part of the project, ensuring that the data collected is reliable, accessible, and can contribute to metaCCAZEs' objectives.

### 4.1 Budget for data management and data collection

metaCCAZE has allocated a specific part of the budget for data management as part of T6.6, as well as part of WP1, WP3 and WP4, work packages that collect and analyse data. This covers the costs of data collection, storage, processing, analysis, and dissemination. It also includes the resources necessary for the secure and ethical management of data. This is drafted for each partner and foreseen in the GA for data collection purposes.

### 4.2 Human resources

Data management tasks are assigned to dedicated members of the project team who have the necessary skills and expertise and apply to all WPs and tasks where data is collected or generated (WP1 to WP6). All consortium partners shall take into account the DMP in the tasks they contribute to or lead. Dedicated members for data management include the data management officer from each partner, the leaders of each WP, the leaders of each task, and the project coordinator of the metaCCAZE project. These tasks encompass data collection, data processing, data analysis, and data dissemination. The partners of the project are responsible for informing dissemination managers when new open data is available to be shared on the website, social media, and via newsletters, and they are also responsible for sending the datasets to the DMP (MaaSLab) for depositing the data into the internal repository. The data management leader in the metaCCAZE project is MaaSLab, which is responsible for all the progress of the Data Management Plan throughout the duration of the project, as well as for monitoring that the partners apply the guidelines provided in the DMP.

The following table summarises the roles, responsible entities, and key responsibilities for data management within the metaCCAZE project, ensuring clear allocation of tasks across the consortium. It highlights how data management, GDPR and ethical compliance, and Open Science principles are implemented and monitored throughout all project activities.

Table 14: Roles and responsibilities of project partners in DMP

ROLE	RESPONSIBLE ENTITY	KEY RESPONSIBILITIES
Data Management Leader	MaaSLab	<ul style="list-style-type: none"> <li>Leads and coordinates the implementation, monitoring, and updating of the Data Management Plan (DMP).</li> <li>Manages the internal data repository.</li> <li>Ensures consistent application of data management procedures across all Work Packages.</li> <li>Monitors compliance with GDPR, ethical</li> </ul>

		<p>requirements, and Open Science principles.</p> <ul style="list-style-type: none"> <li>• Supports partners in addressing data-related risks.</li> </ul>
Data Management Officers	One designated member per consortium partner	<ul style="list-style-type: none"> <li>• Implements DMP requirements at partner level.</li> <li>• Documents datasets and metadata.</li> <li>• Ensures secure data storage and access control.</li> <li>• Ensures compliance with GDPR and ethical requirements, including consent management and data protection measures.</li> <li>• Supports preparation of datasets for sharing in line with Open Science principles.</li> </ul>
Work Package Leaders	WP leaders (WP1–WP6)	<ul style="list-style-type: none"> <li>• Ensures application of DMP principles within their respective Work Packages.</li> <li>• Supervises data collection, processing, analysis, and dissemination activities.</li> <li>• Verifies compliance with GDPR, ethical standards, and Open Science obligations at WP level.</li> </ul>
Task Leaders	Task leaders within each Work Package	<ul style="list-style-type: none"> <li>• Applies data management procedures at task level.</li> <li>• Ensures accurate documentation of datasets produced or collected.</li> <li>• Ensures lawful and ethical data collection and processing.</li> <li>• Identifies datasets suitable for dissemination and reuse.</li> </ul>
Project Coordinator	metaCCAZE Project Coordinator	<ul style="list-style-type: none"> <li>• Provides overall governance and oversight of data management activities.</li> <li>• Ensures alignment with the Grant Agreement and project objectives.</li> <li>• Oversees compliance with GDPR, ethical requirements, and Open Science commitments across the consortium.</li> </ul>
Dissemination Managers	Designated dissemination partners	<ul style="list-style-type: none"> <li>• Coordinates communication and dissemination of project datasets and data-related outputs.</li> <li>• Ensures that only GDPR-compliant and ethically approved datasets are made publicly available.</li> <li>• Promotes Open Science and data reuse through project communication channels.</li> </ul>
Consortium Partners	All consortium partners	<ul style="list-style-type: none"> <li>• Apply the DMP in all relevant activities.</li> <li>• Generate, manage, and submit datasets and metadata to the internal repository.</li> <li>• Ensure compliance with GDPR and ethical standards; notify dissemination managers of new datasets suitable for open access in line with Open Science principles.</li> </ul>

### 4.3 Infrastructure resources

The project has allocated resources for the necessary infrastructure to support data storage, processing, and analysis throughout the duration of the metaCCAZE project. This includes both physical infrastructure (like servers) and digital infrastructure (like cloud storage and processing services) which dedicated members of the metaCCAZE are used for data storage, processing, and analysis. Finally, the official website of the metaccaze project could be added as an infrastructure resource, considering that public project deliverables and datasets are published on it.

### 4.4 Continuous monitoring and updating

The allocation of resources for data management is continuously monitored and updated throughout the project's lifecycle. This ensures that the resources are efficiently used and that the project's data management needs are met effectively.

Regarding the resources related to data management activities, the project includes:

1. WP1 were data collection tools and ethics forms regarding designing use cases, business innovation and governance models, social embracement and travel behavior change are designed and the collected data is analysed.
2. WP3 and WP4 that host the actual activities needed to collect the data described in WP1. The data generated in WP3 and WP4 are directed to WP1 for analysis. WP3 and WP4 also generate data that are used for impact evaluation within T3.6 and T4.8.
3. WP6 has a dedicated task, T6.6, dedicated to creating and updating the data management plan. The data management plan task is led by MaaSLab that, together with all the partners, will handle the management of data relative to the technological aspects of the platform.

## 5 Data Security and Protection

The metaCCAZE project will provide all required measures for secure data access with the usage of the latest encryption tools and protocols as well as data access control practices to prevent data misuse or manipulation. The data security mechanisms will be defined and implemented during the design and implementation of the metaCCAZE data warehouse (D2.2).

### 5.1 Storage of sensitive data

Data privacy and user data protection issues will strictly follow the "user decides" principle. End-users will always have the possibility (and only the user) to decide which personal or private data to be used, and all user referenced data will always be grouped and combined via anonymisation tools to avoid the possibility of breaking it down to one user. All personal data stored within the metaCCAZE project will be archived for the lifetime of the project only, and will be coded, stored and kept privately in a secure location. No information will be shared with any external to the metaCCAZE consortium party without the prior express permission of the user. Sensitive information will be stored in an encrypted form, and all data will be protected by password access.

### 5.2 Provision for sharing of data amongst partners

In terms of the collaboration among partners, a Consortium Agreement was signed by all partners of the Consortium at the beginning of the project. The purpose of this Consortium Agreement is to specify with respect to the Project the relationship among the Parties, concerning the organisation of the work between the Parties, the management of the Project and the rights and obligations of the Parties concerning reliability, access rights, and dispute resolution. Specifically for the sharing of sensitive/personal information, data, and code, special provisions are made within the Consortium Agreement that will ensure the secure handling of the above, and the protection of confidentiality by terms of non-disclosure to third parties. These provisions are complementary to the Data Sharing Agreement and Data Processing Agreement that are already described in Section 1.2.6. of metaCCAZE's Grant Agreement 101139678 in Part B.

### 5.3 Adherence to the General Data Protection Regulation

The General Data Protection Regulation (GDPR) (Regulation (EU) 2016/679)<sup>3</sup> concerns issues related to the protection of natural persons regarding the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation). It intends to strengthen and unify data protection for all individuals within the European Union (EU) and addresses issues related to the export of personal data outside the EU.

The GDPR aims primarily to give control to citizens and residents over their personal data and to simplify the regulatory environment for international business by unifying the regulation within the EU. GDPR was adopted on 27 April 2016, while it became enforceable from 25 May 2018,

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<sup>3</sup> <http://eur-lex.europa.eu/legal-content/en/TXT/?uri=CELEX%3A32016R0679>

allowing a two-year transition period for member states. It is important to note that GDPR does not require national governments to pass any enabling legislation and is thus directly binding and applicable. The metaCCAZE consortium is taking measures so that any person and related personal data gathered from the project strictly respect required consent management and related GDPR compliance process. More specifically, there are eleven main steps followed by the consortium, which have also been proposed by the ICO organization (Information Commissioner's Office) in the UK<sup>4</sup>.

**Step 1: Awareness.** All partner organizations, corresponding decision makers and key persons within the metaCCAZE consortium have been informed of the GDPR enforcement and have been provided with related material in order to understand the impact of GDPR in their work. Partners will be requested to identify areas that could cause GDPR compliance issues and proceed with resolution actions if needed.

**Step 2: Information held.** The consortium, starting from the Deliverable 6.2 (Data Management Plan and Ethics- initial), is documenting the personal data that will be stored along with information related to where these data came from and with whom they will be shared with. Records of data processing activities will be maintained. The aforementioned actions will allow the consortium to comply with the GDPR's accountability principle, which requires organisations to be able to show how they comply with the data protection principles, for example by having effective policies and procedures in place.

**Step 3: Communicating privacy information.** The metaCCAZE plan for providing privacy notices already considers the GDPR guidelines. Users who have already participated or will participate until the end of the project in the demonstration surveys, will be provided with all necessary information, including the project's identity and how the consortium intends to use the collected data through privacy notices. End-users will also be informed about the legal basis for processing their data, the data retention period, and their right to raise a complaint with metaCCAZE if they believe their data is being mishandled. All related information will be communicated to end-users in concise, clear, and easily understandable language.

**Step 4: Individuals' rights.** The metaCCAZE consortium will provide procedures to cover all the rights individuals have, including personal data deletion as well as making data electronically available in a commonly used format. More specifically, the following rights for individuals are considered:

- the right to be informed;
- the right to access;
- the right to rectification;
- the right to erase;
- the right to restrict processing;
- the right to data portability;
- the right to object;
- the right to refuse automated decision-making including profiling.

**Step 5: Subject access requests.** Handling data access requests in metaCCAZE considering the following points:

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<sup>4</sup> <https://ico.org.uk/for-organisations/guide-to-the-general-data-protection-regulation-gdpr>

- Access requests are free of charge.
- Data access requests will be handled within one-month maximum period.
- The project will reject requests that are proven to be manifestly unfounded or excessive.
- If a request is rejected, a clear justification will be provided, and the individual will be informed of the right to complain to the supervisory authority and to a judicial remedy. Any justification will be provided within a maximum period of one month.

**Step 6:** *Lawful basis for processing personal data.* A lawful basis for data processing activities has been established, and it relies on consent for information and privacy notices.

**Step 7:** *Consent.* The information consent forms which will be provided to end-users will comply with and meet the GDPR standards. The consent will be freely provided, specific, educated and unambiguous. Moreover, it will be separated from other terms and conditions and will provide simple ways for users to withdraw from consent.

**Step 8:** *Children.* Some Living Labs, like Limassol's Living Lab, promotes some mobility services for pupils between 11 and 18. The age of the users will be verified and parental or guardian consent for any data processing activity will have to be obtained for underage users.

**Step 9:** *Data breaches.* metaCCAZE establishes procedures to detect, report and investigate personal data breach. Where a breach is likely to result in a high risk to the rights and freedom of individuals, these individuals will be notified directly.

**Step 10:** *Data Protection by Design and Data Protection Impact Assessment* metaCCAZE implements a privacy-by-design approach. Both WP1 and WP6 are set out to handle all related aspects.

**Step 11:** *Data Protection Officers.* The responsibility for data protection compliance falls under the Data Protection Officers of the partners involved in sensitive data handling, who have the knowledge, support and authority to ensure that the project, its procedures and outcomes adhere to GDPR.

### 5.3.1 Implementing Ethical and GDPR requirements in the metaCCAIZE project

To ensure the metaCCAIZE project's compliance with ethical principles and GDPR requirements, several measures should be undertaken, including:

- Developing and implementing a Data Management Plan (DMP) that outlines the project's data collection, processing, storage, and sharing practices.
- Obtaining informed consent from participants and providing clear information about their rights and the project's objectives.
- Ensuring anonymity and confidentiality of participant data through the use of anonymization techniques and secure data storage and transmission methods.
- Conducting risk assessments and implementing measures to minimize potential risks or harm to participants.
- Adhering to GDPR principles, such as data minimization, purpose limitation, and transparency, throughout the project.
- Appointing a Data Protection Officer (DPO) to oversee data protection activities and ensure compliance with GDPR requirements.
- Regularly reviewing and updating the project's ethical and data protection practices to address emerging concerns or changes in the regulatory landscape.

### 5.3.2 Data anonymisation guidelines

Data anonymisation is an essential aspect of ensuring privacy and compliance with GDPR requirements within the metaCCAIZE project. Anonymising data involves removing Personally Identifiable Information (PII) from datasets so that individuals cannot be identified, either directly or indirectly, through the remaining data. This section outlines the guidelines for data anonymisation in metaCCAIZE.

1. *Identifying Personally Identifiable Information (PII)*: Project partners must identify all PII in their datasets. PII includes, but is not limited to, names, addresses, email addresses, phone numbers, identification numbers, and other unique identifiers. Partners should also consider indirect identifiers that could be used in combination with other data points to re-identify individuals.
2. *Selecting Anonymisation Techniques*: There are several anonymisation techniques available, such as data masking, pseudonymisation, generalisation, and aggregation. The choice of technique depends on the nature of the data, the intended use of the anonymised data, and the desired level of privacy protection. Project partners must evaluate and select the most appropriate anonymisation technique(s) for their datasets.
3. *Assessing Re-identification Risks*: After applying the chosen anonymisation techniques, project partners must assess the risk of re-identification. This involves evaluating the likelihood that individuals can be re-identified through the remaining data or by combining the anonymised data with other publicly available datasets. If the re-identification risk is deemed too high, additional anonymisation techniques should be applied to further protect privacy.
4. *Data Minimisation*: Project partners should adhere to the principle of data minimisation, which involves collecting and processing only the minimum amount of data necessary to achieve the project's objectives. This helps reduce the amount of PII in the datasets thereby simplifying the anonymisation process.

5. *Data Retention*: Anonymised data should be retained only for as long as necessary to fulfill the project's objectives. Project partners must establish clear data retention policies and ensure that anonymised data is deleted or securely archived when it is no longer required.
6. *Documentation*: All anonymisation processes, techniques, and decisions must be thoroughly documented. This documentation should be retained as part of the project's records and may be required for compliance audits or other regulatory purposes.
7. *Training and Awareness*: Project partners should ensure that all team members, who handle personal data are trained in data anonymisation techniques and understand the importance of data privacy and compliance with GDPR requirements.

Table 15: Data anonymisation process and guidelines

PROCESS	DATASET APPLICABLE TO	PROCESS EXPLANATION	KPI TO MEASURE
1. Identify PII		Identify all personally identifiable information in datasets, including direct and indirect identifiers	Number of PII data points identified
2. Select anonymisation techniques		Evaluate and select the most appropriate anonymisation techniques for the dataset based on data nature and its intended use	Anonymisation techniques applied
3. Assess re-identification risks		Evaluate the likelihood of re-identification after applying anonymisation techniques and adjust if necessary	Risk assessment conducted and documented
5 Data minimisation		Collect and process only the minimum amount of data necessary to achieve the project's objectives	Amount of data Collected and processed
6 Data Retention		Retain anonymised data only for as long as necessary and establish clear data retention policies	Maximum date of retention

## 6 Ethical Aspects

Given that metaCCAZE aims to engage citizens in metaDesign activities within both Trailblazer and Follower Living Labs, as well as in Social Embrace surveys under WP1, it is essential to embed a robust governance and ethics framework within the project.

Ethical aspects of project activities will be addressed under Task 6.6: “Data Management, Ethics, and Open Science.” This task ensures effective ethical management throughout the project, grounded in a sound understanding of both the underlying scientific methods and the associated ethical principles. It encompasses the management of ethical issues in user studies, ensuring compliance with relevant regulations. Furthermore, it provides for the preparation of consent forms, information sheets, and the assurance of participant anonymity across all surveys. The task also foresees monitoring data-sharing practices, privacy protection and compliance with information law to ensure that all ethical standards are consistently upheld.

In addition, supporter partners of the Living Labs are required to conduct ethics assessments in accordance with their respective institutional procedures. Responsibility for obtaining any necessary ethical approvals therefore remains with the corresponding supporter. Such ethics assessments must be aligned with the principles, requirements, and procedures defined in the project’s Data Management Plan (DMP), initiated through Deliverable D6.2 (M6), thereby ensuring a coherent and harmonised approach to ethics, data protection, and governance across all Living Labs.

### 6.1 Informed Consent

Participation of people will be entirely voluntary and metaCCAZE-related initiatives will need to obtain (and clearly document) informed consent from users in advance of their involvement in the metaCCAZE project. The informed consent form with information sheets will be in a language and in terms entirely understandable to participants, describing the aims, methods and implications of the research, the nature of the participation, the amount and nature of the data being stored, any benefits, risks or discomfort that might be involved and the nature of any resulting dissemination. Consent forms will explicitly state that participation is voluntary and that anyone has the right to refuse to participate and to withdraw their participation, samples or data at any time, without any consequences. The consortium will specify the procedures to be implemented in the event of unexpected or incidental findings and ensure that the potential participant has fully understood the information and does not feel pressured or forced to provide written consent. Templates of the informed consent/assent forms information sheets covering the voluntary participation and data protection issues (in language and terms intelligible to the participants, similar to the one submitted in the proposal), will be kept on file and will be submitted upon request.

### 6.2 Exchanging, archiving and preservation of data

The consortium, within its competencies and available infrastructure, will ensure secure storage, delivery and access of personal information, as well as managing the rights of the users. In this way, there is complete guarantee that the accessed, delivered, stored and transmitted content will be managed by the right people, with well-defined rights at the right time. State-of-the-art firewalls, network security, encryption and authentication will be used to protect collected data

(specific details will be developed in the course of the project, within WP2, WP3 and WP4, during the design and implementation of the data warehouse (T2.2) and the whole metaInnovations tools that are going to be built). Firewalls prevent the connection to open network ports, and the exchange of data will be through consortium-known ports, protected via IP filtering and a password. Where possible (depending on the facilities of each partner) the data will be stored in a secure server, and all identification data will be stored separately. Intrusion Detection systems will monitor anomalies in network traffic and activate restraint policy if needed. A metadata framework will be used to identify the data types, owners and allowable use.

This will be combined with a controlled access mechanism, and in the case of wireless data transmission, with efficient encoding and encryption mechanisms. Data security will be implemented across all the research sites, and will cover procedures for storage, encryption and transmission of personal data in addition to any national data protection jurisdiction.

The collected data will be stored on a secure server, accessible only within the research site network. Anonymous and identifiable data will be stored separately, and only the project-authorized person(s) will have access to the stored data. Anonymity will be guaranteed by separating identifiable data from anonymous data. Anonymous data will be available to researchers. If any identifiable data is required for research purposes, access and distribution to it will be granted only after explicit authorisation and after consent of the data holders (participants providing the data). Authentication will be required to access stored data on the research site.

Authorised researchers will have access to the recorded anonymous data after authentication with a centralized server and on a need-to-know basis. Researchers will have access rights to add data to the identity database. No editing or reading rights will be granted to them to prevent alteration/disclosure of private data, if a specific permission is not granted by the data holder.

Those researchers handling and processing personal and sensitive data within the project will be required to sign a statement that they are familiar with and abide by the contractual obligations of the consortium. If not included in this obligation, they will sign a statement that commits them to make sure project data are not provided to people outside the project consortium.

A Data Protection Officer (DPO) has been appointed by all partners involved in the handling of personal data. The contact details of the respective DPOs will be made available for all datasets involved in the surveys. The DPOs of each partner are listed in Annex VI of this Deliverable.

As part of follow-up activities and for the preparation of the next version of this initial DMP, long term data preservation mechanisms will be explored. The intention is to preserve non-sensitive data for a predetermined period after the completion of the project. Furthermore, the consortium will identify appropriate archiving institutions that might serve as long-term data preservation entities, so that the data produced as part of metaCCAZE are accessible by the research community in the long term.

### 6.3 Video footage data

Under GDPR, any video footage that identifies a person is considered personal data. In the case of video footage data, the project may involve people who have not given their explicit consent to participate in the project's data collection efforts. This means organisations that generate such data must ensure that any recorded or stored video complies with the law, ensuring that any identifiable individual has provided consent, or that another legal basis exists for the data processing (e.g., legitimate interest or legal obligation). Video redaction helps to anonymise this data to avoid potential GDPR violations.

There is a potential for metaCCAZE to produce primary video footage/ surveillance data. With the widespread use of video surveillance or body cameras, video redaction has become a significant area of concern for privacy protection. If such primary data is collected/generated, metaCCAZE will make sure that video redaction approaches are applied given the GDPR. However, some European countries have implemented extra privacy laws (on top of the GDPR) that govern how personal data, including video footage, is collected, processed and shared.

At this stage of the project, this special category of data has been identified and if it is needed, the partners who will collect such data will provide video redaction plans given the country(ies) where such data will be generated. Indicatively, if such data will be generated the partners who generate this data have to provide a detailed analysis of the ethics issues raised by their methodology, covering:

- an overview of all planned data collection and processing operations;
- identification and analysis of ethical issues that these operations raise; and
- an explanation of how they will mitigate these issues in practice.

In such cases, a data protection impact assessment (DPIA) in line with Article 35 GDPR may also be required and it will be assessed on a case-by-case basis. The data protection officer (DPO; see subsection 6.4 below) that the partner has appointed, should be involved in all stages of these data collection efforts and ensure that data privacy issues are addressed.

### 6.4 Appointment of Data Protection Officers

To oversee and manage data protection and privacy concerns, we appointed Data Protection Officers (DPOs) for the metaCCAZE project. DPOs are responsible for monitoring compliance with GDPR and other applicable data protection regulations (see Annex VI). They act as the point of contact between the project and relevant data protection authorities, ensuring compliance with the highest ethical standards and maintaining open communication with stakeholders.

## 7 Open Science

### 7.1 Open access publishing guidelines

The concept of open access publishing has gained significant importance in recent years, driven by the need to promote the dissemination of knowledge and enhance transparency in scientific research. Open access publishing enables free, unrestricted online access to scholarly literature, ensuring that research findings are widely available to both the scientific community and the general public. This section provides an overview of open access publishing guidelines relevant to metaCCAZE.

#### 7.1.1 Definition of Open Access Publishing

Open access publishing refers to the practice of making peer-reviewed scholarly research freely available online, without any financial, legal, or technical barriers to access. It allows readers to view, download, copy, distribute, print, search, or link to the full texts of published articles without requiring a subscription or payment. Open access publishing is crucial for fostering collaboration, accelerating innovation, and maximising the impact of research.

#### 7.1.2 Open Access Publishing Policies in the European Union and metaCCAZE

The European Union strongly supports open access publishing as a means of improving the visibility and accessibility of research outcomes. Under the Horizon Europe framework, all funded projects are required to ensure that any peer-reviewed publications resulting from the project are made openly accessible. This requirement applies to the metaCCAZE project and all consortium members.

To comply with this mandate, metaCCAZE is committed to ensuring that all peer-reviewed publications are made available through open access channels, either via the gold or green open access models. Gold open access involves publishing in fully open access journals, while green open access allows authors to deposit a version of their published work in an open access repository, in accordance with the Grant Agreement.

The Project Coordinator oversees compliance with Horizon Europe open access requirements at project level, while each beneficiary partner is responsible for ensuring that the peer-reviewed publications they author are made openly accessible in line with the Grant Agreement.

#### 7.1.3 Guidelines for Selecting Appropriate Open Access Journals and Repositories

To facilitate open access publishing, metaCCAZE partners should follow these guidelines when selecting appropriate open access journals and repositories:

- Ensure that the chosen journal or repository is reputable, indexed in relevant databases, and complies with the principles of the Directory of Open Access Journals (DOAJ).
- Verify that the journal or repository supports the Creative Commons Attribution (CC BY) license, which allows for the widest possible dissemination and re-use of the published content.
- Choose a journal or repository with a clear and transparent policy on publication fees, waivers, and embargo periods.

### 7.1.4 Embargo Periods, Licensing, and Copyright Considerations

Embargo periods refer to the time between the publication of an article in a subscription-based journal and its availability through an open-access repository. While metaCCAZE encourages immediate open access, some journals may impose an embargo period, typically ranging from 6 to 12 months.

Project partners should strive to negotiate the shortest possible embargo periods to ensure timely access to their research findings. Regarding licensing, metaCCAZE recommends adopting the Creative Commons Attribution (CC BY) license for all publications. This license allows others to freely distribute, adapt, and build upon the work, provided that the original authors are appropriately credited.

Project partners should also be aware of copyright considerations, including retaining the right to deposit their articles in open access repositories and ensuring compliance with the publisher's copyright and self-archiving policies.

### 7.1.5 Support for Publication Fees and Waivers

Publication fees, also known as Article Processing Charges (APCs), are often associated with open-access journals to cover the costs of peer review, editorial services, and online hosting. The metaCCAZE consortium acknowledges that these fees can be a barrier to open access publishing and is committed to supporting partners in securing funding for APCs, where possible. In cases where funding is not available, project partners are encouraged to negotiate fee waivers or discounts with publishers, or to consider alternative open-access options that do not incur APCs.

## 7.2 Monitoring open science compliance

To effectively monitor open science compliance, metaCCAZE has established a set of Key Performance Indicators (KPIs) to assess the level of adherence to open science principles. These KPIs include:

1. Number of open-access publications produced by the project partners.
2. Percentage of datasets made available through open access repositories.
3. Degree of compliance with FAIR (Findable, Accessible, Interoperable, and Reusable) data principles.
4. Number of collaborations and partnerships established with external stakeholders and researchers.

The metaCCAZE project will adopt a continuous monitoring approach, requiring partners to report on their progress in meeting the defined KPIs every three months. The supporting partners of each Living Lab—both Trailblazers and Followers—are responsible for collecting and validating the KPIs that will populate the SIEF for all pilot cities. This reporting process will be supported through regular steering meetings, during which partners will present updates on their open-science compliance efforts. Data collected through these meetings will be analysed and discussed to identify potential areas for improvement and to ensure that the project remains on track with respect to open-science compliance.

Overall, the monitoring of open science compliance in the metaCCAZE project is aimed at fostering a culture of openness and collaboration among project partners and ensuring that the

project's research outputs are widely accessible to the scientific community and other stakeholders. By establishing a robust monitoring process and engaging with both internal and external stakeholders, metaCCAIZE aims to achieve its open science objectives and maximise the impact of its research.

### 7.3 Ensuring access to datasets, databases, and repositories

To maximise the impact and reach of the metaCCAIZE project's research, it is crucial to ensure open access to the datasets, databases, and repositories generated or utilised throughout the project. This section outlines the strategies and procedures that will be put in place to guarantee the accessibility of these resources to the scientific community and other interested stakeholders.

1. *Identification of relevant resources:* The first step in ensuring access to datasets, databases, and repositories is to identify the resources that are generated or used within the metaCCAIZE project. This process will involve close collaboration between all project partners, who will provide information about the resources they are working with, their formats, and any associated metadata.
2. *Adherence to FAIR data principles:* To make the identified resources as accessible and reusable as possible, the metaCCAIZE project will adhere to the FAIR (Findable, Accessible, Interoperable, and Reusable) data principles. This includes using standard data formats, providing comprehensive metadata, and employing persistent identifiers for all resources.
3. *Selection of appropriate repositories:* To ensure that the project's datasets, databases, and repositories are accessible to the wider scientific community, they will be stored in established and recognized open access repositories. The choice of repositories will depend on the specific requirements of each resource, such as subject area, format, and licensing.
4. *Development of data sharing agreements:* To comply with ethical and legal requirements, particularly those related to the GDPR, data sharing agreements will be developed for all resources that involve personal or sensitive information. These agreements will outline the terms and conditions for accessing and using the data, as well as any measures taken to protect the privacy of participants.
5. *Documentation and training:* To facilitate access to the project's datasets, databases, and repositories, the metaCCAIZE project will develop comprehensive documentation, including user guides and tutorials. Additionally, training sessions will be organised for project partners and external stakeholders to help them navigate and use the resources effectively.

## 8 Conclusions

This is the first intermediate version of the Data Management Plan provides an updated overview of the identified datasets based on the foreseen data requirements for the execution of the project, and an overview of the data sharing agreements that have been put in effect over the course of the project in order to adhere to the GDPR regulations for primary data generated by the metaCCAZE surveys. This document will be updated at M36 by D6.4 “Data management plan & Ethics- second interim” and then finalised by the end of the project into a final version (D6.5) “Data management plan & Ethics –final” that will be produced at M48.

metaCCAZE remains committed to the FAIR usage of data collected by the research community in addition, the data security and ethical considerations, as well as the resources available for managing data as part of the project continue to apply.

## 9 Literature /References

FAIR Data Principles: Wilkinson, M. D., et al. (2016). The FAIR Guiding Principles for scientific data management and stewardship. *Scientific Data*, 3, 160018. <https://doi.org/10.1038/sdata.2016.18>

Data Management in EU Projects: European Commission (2021). Guidelines on FAIR Data Management in Horizon 2020.

General Data Protection Regulation (GDPR): Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation).

metaCCAZE (2024). D1.1. Trailblazer LLS: Status Quo Map, Prototype ZESM Use Cases for Passengers and Freight.

metaCCAZE (2025). D1.3. Follower Cities: Status Quo Map, Prototype ZESM Use Cases.

metaCCAZE (2025). D1.4. metaDesigned ZESM Use Cases for the Trailblazer and the SIEF.

## ANNEX I: Filled forms for Data management of the Trailblazer LL' s metaDesign activities

Table 16: Data Collection conducted as part of WP1: metaDesign activities in Munich's LL

<b>metaCCAZE Work Package and Month</b>	<b>M4-M8: T- LLS + M10 -M13: F-LLS; relates to WP1 - T1.1 - ST1.1.2 (Related to D1.1 - M9)</b>
metaCCAZE activity number (if data will be collected as part of activity) – please refer to the Activities plan in the Activities folder)	LL1: mini-dialogues
Activities involved	2 x Online Forms
Methods used for data generation	Online Form (Microsoft forms)
Data used/collected	Text (feedback and open questions), numeric, categorical
Brief description of the data	
Is the data primary or secondary?	Primary
(If secondary data is used/collected) Has consent for secondary use been obtained?	No
Who is the creator of the data?	Technical University of Munich
Who is the owner of the data?	Technical University of Munich
Time period of data collection	01.05.2024- 22.07.2024
Location of data collection	Online
Detailed description of variables or records	No
Where will the data be stored?	Data unavailable due to loss of access to the platform (migration to a different Microsoft license without conducting backup local copy)
Who is the responsible partner for managing the data (collection, processing, storage, backups, GDPR etc.)?	Technical University of Munich
Will the data be publicly available?	No

Describe the procedure(s) for safely storing and securing the data	--
Does the data include personal information? (e.g. name, email)?	--
Does the data include sensitive personal data (e.g. health, ethnicity, political opinion, sexuality, religion) ?	--
Does the data involve tracking, observation, or localisation of participants?	--
Does the data involve further processing of previously collected personal data ('secondary use')?	--
Will Informed Consent Forms be used?	--
How will the identity of participants be protected if required (e.g. via anonymization)?	--
Does a Data Protection Certificate exist (i.e. including rules for protection, retention, destruction etc.)?	--

Table 17: Data Collection conducted as part of WP1: metaDesign activities in Munich's LL

<b>metaCCAZE Work package and month</b>	<b>M12 - M15: T-LLs + M22 - M25: F-LLs; relates to WP1: T1.2 - ST1.2.2 + T1.3 - ST1.3.2 (Related to D1.4 - M16)</b>
metaCCAZE activity number (if data will be collected as part of activity) – please refer to the Activities plan in the Activities folder)	LL4: Validate metaDesigned use cases +BIGMS
Activities involved	6 physical or hybrid meetings with stakeholders
Methods used for data generation	Design thinking and discussion
Data used/collected	Text (proceedings of the meeting)

Brief description of the data	The metaCCAZE team gathered key insights and feedback from stakeholders, which were subsequently used to refine the descriptions of the use cases. A summary of these meetings is provided in Deliverable D1.4. No additional data beyond what is documented there is available.
Is the data primary or secondary?	Primary
(If secondary data is used/collected) Has consent for secondary use been obtained?	No
Who is the creator of the data?	Technical University of Munich (TUM) and City of Munich (LHM)
Who is the owner of the data?	Technical University of Munich (TUM) and City of Munich (LHM)
Time period of data collection	October 2024(M10) till February 2025 (M14)
Location of data collection	Online, Munich, Amsterdam
Detailed description of variables or records	NA
Where will the data be stored?	NA
Who is the responsible partner for managing the data (collection, processing, storage, backups, GDPR etc.)?	NA
Will the data be publicly available?	NA
Describe the procedure(s) for safely storing and securing the data	NA
Does the data include personal information? (e.g. name, email)?	No
Does the data include sensitive personal data (e.g. health, ethnicity, political opinion, sexuality, religion) ?	No
Does the data involve tracking, observation, or localisation of	No

participants?	
Does the data involve further processing of previously collected personal data ('secondary use')?	No
Will Informed Consent Forms be used?	No
How will the identity of participants be protected if required (e.g. via anonymization)?	NA
Does a Data Protection Certificate exist (i.e. including rules for protection, retention, destruction etc.)?	No

Table 18: Data Collection conducted as part of WP1: metaDesign activities in Munich's LL

<b>metaCCAZE Work package and month</b>	<b>M12 -M15: T-LLs + M23-M25: F-LLs; relates to WP1: T1.4 (Related to D1.4- M16)</b>
metaCCAZE activity number (if data will be collected as part of activity) – please refer to the Activities plan in the Activities folder)	LL5: Define the KPIs and Impact Evaluation framework
Activities involved	2 in-depth interviews.
Methods used for data generation	Design thinking and discussion
Data used/collected	Text (proceedings of the meeting)
Brief description of the data	The metaCCAZE team presented the draft KPIs and Impact evaluation framework (SIEF) to two experts (a senior mobility researcher and a mobility planner in the data team of the City of Munich). Their key insights and feedback were collected and subsequently used to improve the SIEF. A summary of these meetings is provided in Deliverable D1.4. No additional data beyond what is documented there is available.
Is the data primary or secondary?	Primary
(If secondary data is used/collected) Has consent for secondary use been obtained?	No
Who is the creator of the	Technical University of Munich (TUM) and City of Munich (LHM)

data?	
Who is the owner of the data?	Technical University of Munich (TUM) and City of Munich (LHM)
Time period of data collection	January 2025
Location of data collection	Online, Munich
Detailed description of variables or records	NA
Where will the data be stored?	NA
Who is the responsible partner for managing the data (collection, processing, storage, backups, GDPR etc.)?	NA
Will the data be publicly available?	NA
Describe the procedure(s) for safely storing and securing the data	NA
Does the data include personal information? (e.g. name, email)?	No
Does the data include sensitive personal data (e.g. health, ethnicity, political opinion, sexuality, religion)?	No
Does the data involve tracking, observation, or localisation of participants?	No
Does the data involve further processing of previously collected personal data ('secondary use')?	No
Will Informed Consent Forms be used?	NA
How will the identity of participants be protected if required (e.g. via anonymization)?	NA

Does a Data Protection Certificate exist (i.e. including rules for protection, retention, destruction etc.)?	No
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Table 19: Data Collection conducted as part of WP1: metaDesign activities in Limassol's LL

<b>meta CCAZE Work Package and Month</b>	<b>M4-M8: T- LLS + M10 -M13: F-LLS; relates to WP1 – T1.1 – ST1.1.2 (Related to D1.1 – M9)</b>
metaCCAZE activity number (if data will be collected as part of activity) – please refer to the Activities plan in the Activities folder)	LL1: mini-dialogues
Activities involved	1 physical event
Methods used for data generation	We have collected data from participants through a Mentimeter session with structured questions.
Data used/collected	text, numeric
Brief description of the data	<p>Collected variables cover:</p> <ul style="list-style-type: none"> <li>• Transport habits (most frequently used mode of transport).</li> <li>• Perceptions and experiences related to living, driving, and accessibility in Limassol.</li> <li>• Emotional responses associated with driving (word cloud format).</li> <li>• Ranking of proposed measures to reduce traffic congestion.</li> <li>• Attitudes and intentions toward the adoption of on-demand mobility services.</li> <li>• Open-ended reflections on the perceived impact of such services on urban life.</li> </ul> <p>The dataset combines numeric values, categorical choices, and free-text responses, offering a comprehensive view of participants' transport experiences and behavioural intentions. All data are system-anonymised and securely stored on MaaSLab's servers.</p>
Is the data primary or secondary?	Primary
(If secondary data is used/collected) Has consent for secondary use been obtained?	No
Who is the creator of the data?	MaaSLab

Who is the owner of the data?	MaaS Lab			
Time period of data collection	19 April 2024			
Location of data collection	Limassol			
Detailed description of variables or records	<b>Description</b>	<b>Type</b>	<b>Possible Values/ Format</b>	<b>Source (Question Prompt)</b>
	Time and date when the response was submitted	Date Time	YYYY-MM-DD HH:MM:SS	Automatically recorded by Mentimeter
	Anonymous identifier assigned to each participant	String	Voter xx	System anonymised
	Most frequently used transport	Choices	Private car, bus, bike/scooter, walking, public transport, taxi	Which transport mode do you use the most?
	Racing participants experience across three aspects: - Living in Limassol - Driving in Limassol - Accessibility in Limassol	Priorisation	Percentage (%)	Evaluate your experience in Limassol: - Living in Limassol - Driving in Limassol - Accessibility in Limassol
	Participant's self-reported emotional state or feelings when they drive.	Text - Worldcloud	Words or phrases	How do you usually feel when you drive?
	Ranking various transport modes to reduce traffic congestion	Ranking	A list of measures with an assigned rank per participant	Rank the measures that could contribute to alleviate traffic congestion

	Participant's level of agreement to use the on-demand mobility service	Choices	Integer value	The on-demand service we presented to you, will: 1. Strongly disagree/2. Disagree/3. Neutral/4. Agree/ 5. Strongly agree
	Participant's intention to use the presented on-demand mobility service	Choices	Integer value	Will you or your family use such a service?
	Participant's perception to how likely use the proposed on-demand mobility service to be commuted	Choices	Integer value	How likely it is for commuters to use such a service?
	Participant's open ended written about their feelings for the proposed service	Open	Text	Space to write thoughts about this service and how it will impact our streets.
Where will the data be stored?	Anonymised data is stored in encrypted folders on MaaSLab's internal servers, accessible only to authorised project members.			
Who is the responsible partner for managing the data (collection, processing, storage, backups, GDPR etc.)?	MaaSLab			
Will the data be publicly available?	No			
Describe the procedure(s) for safely storing and securing the data	<p>The Mentimeter session did not collect any personal data. Therefore, the following safety procedures have been applied:</p> <ul style="list-style-type: none"> <li>• Data Storage Location</li> <li>• Access Control</li> <li>• Data Anonymisation</li> <li>• Data Encryption</li> <li>• Retention and Disposal</li> </ul>			
Does the data include personal information?	No			

(e.g. name, email)?	
Does the data include sensitive personal data (e.g. health, ethnicity, political opinion, sexuality, religion)?	No
Does the data involve tracking, observation, or localisation of participants?	No
Does the data involve further processing of previously collected personal data ('secondary use')?	No
Will Informed Consent Forms be used?	No
How will the identity of participants be protected if required (e.g. via anonymisation)?	Anonymisation
Does a Data Protection Certificate exist (i.e. including rules for protection, retention, destruction etc.)?	MaaSlab is responsible for data collection, following the principles defined within the ISO 27001 framework, and has established both data protection and data retention policies.

Table 20: Data Collection conducted as part of WP1: metaDesign activities in Tampere's LL

<b>meta CCAZE Work Package and Month</b>	<b>M4-M8: T- LLS + M10 -M13: F-LLS; relates to WP1 - T1.1 - ST1.1.2 (Related to D1.1 - M9)</b>
metaCCAZE activity number (if data will be collected as part of activity) – please refer to the Activities plan in the Activities folder)	LL1: mini-dialogues
Activities involved	Online Webinar
Methods used for data generation	Online discussion
Data used/collected	Text (feedback and open questions)
Brief description of the data	Webinar examined the thoughts, hopes, and fears related to various components of a transport project, including remote control centres, automated charging, and automated feeder traffic.
Is the data primary or secondary?	Primary

(If secondary data is used/collected) Has consent for secondary use been obtained?	No
Who is the creator of the data?	City of Tampere and University of Tampere
Who is the owner of the data?	City of Tampere and University of Tampere
Time period of data collection	14/05/2024
Location of data collection	Online
Detailed description of variables or records	<p>The dataset captures user perspectives and stakeholder insights on Tampere tram's autonomous feeder traffic.</p> <p><b>User Experience &amp; Empathy Mapping</b> – perceptions of safety via remote operators, concerns over reliability (vehicle speed, weather resilience, seating), effectiveness of travel chains, accessibility, and social aspects (positive community interactions vs. unwanted encounters).</p> <p><b>Remote Control Centre</b> – expectations around operator-to-vehicle ratios, cost-effectiveness, perceived and actual safety, business potential, and risks related to data security and connectivity.</p> <p><b>Automated Charging</b> – views on investment vs. benefits, optimisation opportunities, alignment with charging/battery technologies, charging frequency and duration, and comparison between overnight vs. en-route business cases.</p> <p><b>Automated Feeder Traffic</b> – potential to expand public transport into unprofitable areas, reduce costs by removing drivers, reinforce trunk lines, adapt service concepts, vehicle sizing considerations, and the need for supporting infrastructure and technology innovations.</p>
Where will the data be stored?	University of Tampere secured machines
Who is the responsible partner for managing the data (collection, processing, storage, backups, GDPR etc.)?	City of Tampere and University of Tampere
Will the data be publicly available?	No
Describe the procedure(s) for safely storing and securing the data	NA
Does the data include personal information? (e.g. name, email)?	NA

Does the data include sensitive personal data (e.g. health, ethnicity, political opinion, sexuality, religion)?	NA
Does the data involve tracking, observation, or localisation of participants?	NA
Does the data involve further processing of previously collected personal data ('secondary use')?	NA
Will Informed Consent Forms be used?	NA
How will the identity of participants be protected if required (e.g. via anonymisation)?	NA
Does a Data Protection Certificate exist (i.e. including rules for protection, retention, destruction etc.)?	NA

Table 21: Data Collection conducted as part of WP1: metaDesign activities in Tampere's LL

<b>metaCCAZE Work package and month</b>	<b>M7-M8: T-LLS + M19 - M25: F-LLs; relates to WP1:T1.2 – ST1.2.1 +T1.3-ST1.3.1 (Related to D1.1 -M9)</b>
metaCCAZE activity number (if data will be collected as part of activity) – please refer to the Activities plan in the Activities folder)	LL2: metaDesign use cases + BIGMS and LL3: metaDesign the metaServices with citizens
Activities involved	Physical Workshop
Methods used for data generation	Focus Group Discussions, Physical forms
Data used/collected	Textual data – written responses, Categorical data
Brief description of the data	The data comprises qualitative workshop feedback from Tampere on autonomous e-shuttles, tram feeder services, remote operation centres, and autonomous charging. It includes text-based perceptions of benefits, challenges, pros/cons, concerns, and potential problems, focusing on user

	experience, accessibility, safety, and operational reliability
Is the data primary or secondary?	Primary
(If secondary data is used/collected) Has consent for secondary use been obtained?	NA
Who is the creator of the data?	TAU
Who is the owner of the data?	TAU
Time period of data collection	8/8/2024
Location of data collection	TAU
Detailed description of variables or records	<p>The dataset contains qualitative feedback on several themes related to autonomous transport services:</p> <p><b>Perceived Benefits</b> – ease of ticketing, accessibility, integration with public transport, door-to-door solutions, safety, and reliability.</p> <p><b>Challenges for User Groups</b> – concerns for elderly, children, people with disabilities, and passengers requiring driver assistance (e.g., boarding, payments).</p> <p><b>Pros and Cons of Remote Operation</b> – benefits such as predictive support and cost savings, versus drawbacks like lack of on-site help, safety concerns, vandalism, and cybersecurity risks.</p> <p><b>Pros and Cons of Autonomous Charging</b> – reliability, transparency, and efficiency gains, balanced against risks of failures, delays, and detours.</p> <p><b>Impacts on Use</b> – how themes like remote operation and charging influence ease (e.g., shorter headways, wireless charging) or create challenges (e.g., inconsistent interfaces, connection reliability).</p> <p><b>Concerns Across Systems</b> – winter operation, timetable predictability, emergency handling, infrastructure adequacy, parking space availability, and communication with passengers.</p> <p><b>Potential Problems and Communication Needs</b> – guidance in emergencies, contingency routing, and integration with journey-planner apps.</p>
Where will the data be stored?	University of Tampere secured machines
Who is the	TAU

responsible partner for managing the data (collection, processing, storage, backups, GDPR etc.)?	
Will the data be publicly available?	No
Describe the procedure(s) for safely storing and securing the data	NA
Does the data include personal information? (e.g. name, email)?	NA
Does the data include sensitive personal data (e.g. health, ethnicity, political opinion, sexuality, religion) ?	NA
Does the data involve tracking, observation, or localisation of participants?	NA
Does the data involve further processing of previously collected personal data ('secondary use')?	NA
Will Informed Consent Forms be used?	NA
How will the identity of participants be protected if required (e.g. via anonymisation)?	NA
Does a Data Protection Certificate exist (i.e. including rules for protection, retention, destruction etc.)?	NA

Table 22: Data Collection conducted as part of WP1: metaDesign activities in Tampere's LL

<b>metaCCAZE Work package and month</b>	<b>M12 - M15: T-LLs + M22 - M25: F-LLs; relates to WP1: T1.2 - ST1.2.2 + T1.3 - ST1.3.2 (Related to D1.4 - M16)</b>
metaCCAZE activity number (if data will be collected as part of activity) – please refer to the Activities plan in the Activities folder)	LL4: Validate metaDesigned use cases + BIGMS
Activities involved	Physical Survey
Methods used for data generation	Structured questionnaires, survey forms completed by participants.
Data used/collected	Text (open-ended responses), categorical data (multiple-choice, yes/no responses,
Brief description of the data	The survey aimed to gather feedback from Lintuhytti residents regarding their experiences and opinions on the robot bus service, that has been in the area under previous projects (such as SHOW-project) The survey covered various aspects such as usage, general opinions, communication preferences during disruptions, and suggestions for improvement.
Is the data primary or secondary?	Primary
(If secondary data is used/collected) Has consent for secondary use been obtained?	NA
Who is the creator of the data?	TAU
Who is the owner of the data?	TAU
Time period of data collection	1/12/2024-31/12/2024
Location of data collection	Lintuhytti area
Detailed description of variables or records	<p><b>Usage and General Opinion</b> – frequency of use and overall perceptions, mostly positive.</p> <p><b>Communication Preferences During Disruptions</b> – preferred information channels (e.g., Nysse app, stop displays) and user reactions to conditions like rain, snow, icy roads, darkness, or minor technical issues.</p> <p><b>Accessibility and Usability</b> – perceptions of accessibility and suggestions for improvements (e.g., larger buses, low floors, audio/visual signals).</p> <p><b>Information During the Journey</b> – demand for real-time updates (arrival times, next stops, safety notifications).</p> <p><b>Payment Methods</b> – preferred methods such as travel cards, contactless, and</p>

	<p>mobile app payments.</p> <p><b>Contacting the Remote Control Center</b> – expectations for simple emergency contact options (e.g., call button, direct guidance after incidents).</p> <p><b>General Feedback and Suggestions</b> – overall appreciation of the service, with recommendations for speed, scheduling alignment, and continued use for groups like school children and people with mobility needs.</p>
Where will the data be stored?	Online server
Who is the responsible partner for managing the data (collection, processing, storage, backups, GDPR etc.)?	TAU
Will the data be publicly available?	No
Describe the procedure(s) for safely storing and securing the data	NA
Does the data include personal information? (e.g. name, email)?	No
Does the data include sensitive personal data (e.g. health, ethnicity, political opinion, sexuality, religion) ?	No
Does the data involve tracking, observation, or localisation of participants?	No
Does the data involve further processing of previously collected personal data ('secondary use')?	No
Will Informed Consent Forms be used?	No
How will the identity of participants be protected if required	No

(e.g. via anonymization)?	
Does a Data Protection Certificate exist (i.e. including rules for protection, retention, destruction etc.)?	No

Table 23: Data Collection conducted as part of WP1: metaDesign activities in Tampere's LL

<b>metaCCAZE Work package and month</b>	<b>M12 -M15: T-LLs + M23-M25: F-LLs; relates to WP1: T1.4 (Related to D1.4-M16)</b>
metaCCAZE activity number (if data will be collected as part of activity) – please refer to the Activities plan in the Activities folder)	LL5: Define the KPIs and Impact Evaluation framework
Activities involved	Mini-dialogue session
Methods used for data generation	Online discussion
Data used/collected	text, numeric
Brief description of the data	Mini Dialogue Session was organised to discuss key performance indicators (KPIs) relevant to the project. The session aimed to gather insights from stakeholders, including Tampere University, the City of Tampere, and Remoted, to ensure alignment on measurable goals.
Is the data primary or secondary?	Primary
(If secondary data is used/collected) Has consent for secondary use been obtained?	-
Who is the creator of the data?	TAU
Who is the owner of the data?	TAU
Time period of data collection	30/1/2025
Location of data collection	Online
Detailed description of variables or	The session successfully finalised the list of KPIs, ensuring alignment among stakeholders. Key discussions revolved around defining measurable and

records	relevant indicators that reflect project objectives. Stakeholders provided valuable input on feasibility, data collection methods, and the impact of selected KPIs on decision-making.
Where will the data be stored?	NA
Who is the responsible partner for managing the data (collection, processing, storage, backups, GDPR etc.)?	TAU
Will the data be publicly available?	No
Describe the procedure(s) for safely storing and securing the data	NA
Does the data include personal information? (e.g. name, email)?	No
Does the data include sensitive personal data (e.g. health, ethnicity, political opinion, sexuality, religion) ?	No
Does the data involve tracking, observation, or localisation of participants?	No
Does the data involve further processing of previously collected personal data ('secondary use')?	No
Will Informed Consent Forms be used?	No
How will the identity of participants be protected if required (e.g. via anonymisation)?	NA
Does a Data	NA

Protection Certificate exist (i.e. including rules for protection, retention, destruction etc.)?	
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## ANNEX II: Filled forms for Data management of the Follower LL' s metaDesign activities

Table 24: Data Collection conducted as part of WP1: metaDesign activities in Malta's LL

<b>meta CCAZE Work Package and Month</b>	<b>M4-M8: T- Lls + M10 -M13: F-LLS ; relates to WP1 - T1.1 - ST1.1.2 (Related to D1.3 - M14)</b>
metaCCAZE activity number (if data will be collected as part of activity) – please refer to the Activities plan in the Activities folder)	LL1: mini-dialogues
Activities involved	Google Form Survey
Methods used for data generation	Mini dialogues
Data used/collected	text, numeric
Brief description of the data	We examined the expectations, thoughts, hopes and fears related to the autonomous e-bus use case in Malta (Gozo) using a Google Forms survey.
Is the data primary or secondary?	Primary
(If secondary data is used/collected) Has consent for secondary use been obtained?	No
Who is the creator of the data?	University of Malta
Who is the owner of the data?	University of Malta
Time period of data collection	November 2024 – February 2025
Location of data collection	In-person/Online
Detailed description of variables or records	The dataset captures stakeholder expectations towards an autonomous e-bus in Malta and Gozo. - Socio-demographic (age, gender, stakeholder type)

	- Reliability, Safety, Comfort/Convenience, Accessibility, Integration, Trust, Environmental benefits, Privacy, Performance.
Where will the data be stored?	University of Malta Google Drive
Who is the responsible partner for managing the data (collection, processing, storage, backups, GDPR etc.)?	University of Malta
Will the data be publicly available?	No
Describe the procedure(s) for safely storing and securing the data	Responses collected through Google Forms are automatically stored in the University of Malta Google Drive. Access to the form and the linked data (such as a connected Google Sheet) is restricted to authorised personnel only. A backup copy of the dataset may be downloaded as a CSV or Excel file and stored in a secure, password-protected UM managed laptop belonging to the UM researcher, a device with full-disk encryption. All team members with access use strong passwords and two-factor authentication (2FA) for their Google accounts.
Does the data include personal information? (e.g. name, email)?	No
Does the data include sensitive personal data (e.g. health, ethnicity, political opinion, sexuality, religion) ?	No
Does the data involve tracking, observation, or localisation of participants?	No
Does the data involve further processing of previously collected personal data ('secondary use')?	No
Will Informed Consent Forms be used?	Yes
How will the identity of participants be	Not Applicable

protected if required (e.g. via anonymization)?	
Does a Data Protection Certificate exist (i.e. including rules for protection, retention, destruction etc.)?	

Table 25: Data Collection conducted as part of WP1: metaDesign activities in Malta's LL

<b>metaCCAZE Work package and month</b>	<b>M4-M8: T- LLS + M10 -M13: F-LLS ; relates to WP1 - T1.3 - ST1.3.1 (Related to D1.3 - M14)</b>
metaCCAZE activity number (if data will be collected as part of activity) – please refer to the Activities plan in the Activities folder)	LL2: metaDesign use cases + BIGMS
Activities involved	Mentimeter survey – Physical event
Methods used for data generation	Discussions, systems thinking
Data used/collected	text, photos, numeric
Brief description of the data	The mentimeter activity aimed to refine the autonomous e-bus Use Case and adapt the BIGM framework (Business, Innovation, Governance & Mobility) to Malta's context. It brought together diverse stakeholders (authorities, public transport operators, NGOs, citizens, businesses, academia) to test assumptions and ensure the service aligns with local priorities and user needs.
Is the data primary or secondary?	Primary
(If secondary data is used/collected) Has consent for secondary use been obtained?	No
Who is the creator of the data?	University of Malta
Who is the owner of the data?	University of Malta
Time period of data collection	3rd July 2025
Location of data	In-person/Online

collection	
Detailed description of variables or records	<ul style="list-style-type: none"> <li>- safety, trust, and reliability</li> <li>- Booking system, integration</li> <li>- key roles</li> <li>- enablers</li> <li>- blockers</li> </ul>
Where will the data be stored?	University of Malta Google Drive
Who is the responsible partner for managing the data (collection, processing, storage, backups, GDPR etc.)?	University of Malta
Will the data be publicly available?	No
Describe the procedure(s) for safely storing and securing the data	Responses stored in the University of Malta Google Drive. Access is restricted to authorised personnel only. A backup copy of the dataset may be downloaded as a CSV or Excel file and stored in a secure, password-protected UM managed laptop belonging to the UM researcher, a device with full-disk encryption. All team members with access use strong passwords and two-factor authentication (2FA) for their Google accounts.
Does the data include personal information? (e.g. name, email)?	No
Does the data include sensitive personal data (e.g. health, ethnicity, political opinion, sexuality, religion) ?	No
Does the data involve tracking, observation, or localisation of participants?	No
Does the data involve further processing of previously collected personal data ('secondary use')?	No
Will Informed Consent Forms be used?	Yes

How will the identity of participants be protected if required (e.g. via anonymization)?	Not Applicable
Does a Data Protection Certificate exist (i.e. including rules for protection, retention, destruction etc.)?	

Table 26: Data Collection conducted as part of WP1: metaDesign activities in Malta's LL

<b>metaCCAZE Work package and month</b>	<b>M4-M8: T- LLS + M10 -M13: F-LLS ; relates to WP1 - T1.2 - ST1.1.2 (Related to D1.3 - M14)</b>
metaCCAZE activity number (if data will be collected as part of activity) – please refer to the Activities plan in the Activities folder)	LL3: metaDesign the metaServices with citizens
Activities involved	Google Forms
Methods used for data generation	Design thinking and discussions
Data used/collected	text, photo, numeric
Brief description of the data	The survey gathered citizens' input to maximise uptake of the autonomous e-bus and ensure the service design matched daily travel needs. It focused on user perceptions, adoption barriers and perceptions of on-demand public transport.
Is the data primary or secondary?	Primary
(If secondary data is used/collected) Has consent for secondary use been obtained?	No
Who is the creator of the data?	University of Malta
Who is the owner of the data?	University of Malta
Time period of data collection	3rd July 2025
Location of data collection	In-person/Online
Detailed description of	The dataset captures citizen input towards an on-demand autonomous e-bus in

variables or records	<p>Malta and Gozo.</p> <ul style="list-style-type: none"> <li>• Socio-demographic (age, gender, locality, level of education, employment status, household income)</li> <li>• Mobility variables (driving license, access to a car, modal share, public transport card, experience with autonomous buses).</li> <li>• Perceived Usefulness, Perceived Enjoyment, Perceived risk, Perceived fee, Trust, Perceived Value, Adoption Intention</li> <li>• Perception of on-demand service</li> </ul>
Where will the data be stored?	University of Malta Google Drive
Who is the responsible partner for managing the data (collection, processing, storage, backups, GDPR etc.)?	University of Malta
Will the data be publicly available?	No
Describe the procedure(s) for safely storing and securing the data	Responses collected through Google Forms are automatically stored in the University of Malta Google Drive. Access to the form and the linked data (such as a connected Google Sheet) is restricted to authorised personnel only. A backup copy of the dataset may be downloaded as a CSV or Excel file and stored in a secure, password-protected UM-managed laptop belonging to the UM researcher, a device with full-disk encryption. All team members with access use strong passwords and two-factor authentication (2FA) for their Google accounts.
Does the data include personal information? (e.g. name, email)?	No
Does the data include sensitive personal data (e.g. health, ethnicity, political opinion, sexuality, religion) ?	No
Does the data involve tracking, observation, or localisation of participants?	No
Does the data involve further processing of previously collected personal data ('secondary use')?	No
Will Informed Consent Forms be used?	Yes

How will the identity of participants be protected if required (e.g. via anonymisation)?	Not Applicable
Does a Data Protection Certificate exist (i.e. including rules for protection, retention, destruction etc.)?	

Table 27: Data Collection conducted as part of WP1: metaDesign activities in Malta's LL

<b>metaCCAZE Work package and month</b>	<b>M12- M15: T-LLs + M22 – M25: F-LLs; relates to WP1 – T1.3 – ST1.3.1</b>
metaCCAZE activity number (if data will be collected as part of activity) – please refer to the Activities plan in the Activities folder)	LL4: Validate metaDesign use cases +BIGMS
Activities involved	Physical workshop
Methods used for data generation	Design thinking and discussion,
Data used/collected	text, numeric
Brief description of the data	Notes from discussion with stakeholders during 2 in-person meetings.
Is the data primary or secondary?	Primary
(If secondary data is used/collected) Has consent for secondary use been obtained?	No
Who is the creator of the data?	University of Malta
Who is the owner of the data?	University of Malta
Time period of data collection	7 <sup>th</sup> of August 2025 30 <sup>th</sup> of October 2025
Location of data collection	Kalkara, Malta and San Lawrenz, Gozo
Detailed description of variables or records	<ul style="list-style-type: none"> <li>• Stakeholder name</li> <li>• Date</li> <li>• Description of activity</li> <li>• Number of people attending</li> </ul>

	<ul style="list-style-type: none"> <li>• Format</li> <li>• Key findings of comments during discussion</li> </ul>
Where will the data be stored?	University of Malta Google Drive
Who is the responsible partner for managing the data (collection, processing, storage, backups, GDPR etc.)?	University of Malta
Will the data be publicly available?	No
Describe the procedure(s) for safely storing and securing the data	Notes stored in the University of Malta Google Drive. Access is restricted to authorised personnel only. A backup copy of the dataset may be downloaded as a CSV or Excel file and stored in a secure, password-protected UM managed laptop belonging to the UM researcher, a device with full-disk encryption. All team members with access use strong passwords and two-factor authentication (2FA) for their Google accounts.
Does the data include personal information? (e.g. name, email)?	No
Does the data include sensitive personal data (e.g. health, ethnicity, political opinion, sexuality, religion) ?	No
Does the data involve tracking, observation, or localisation of participants?	No
Does the data involve further processing of previously collected personal data ('secondary use')?	No
Will Informed Consent Forms be used?	No
How will the identity of participants be protected if required (e.g. via anonymization)?	Not Applicable
Does a Data Protection Certificate exist (i.e. including rules for protection, retention,	

destruction etc.)?	
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## ANNEX III: Filled forms for Data management of the Trailblazer LL' s Social Embrace ment surveys (phase: Before the implementation)

Table 28: Data Collection conducted as Part of WP1: Social Embrace ment & Behavioural Change Surveys in Amsterdam's LL - UC01

<b>metaCCAZE Work Package and Month</b>	<b>M13- M15: T-LLs + M27- M28: F-LLs; relates to WP1: T1.5</b>
metaCCAZE activity number (if data will be collected as part of activity) – please refer to the Activities plan in the Activities folder)	SS1: Travel behaviour & UC's preference exploration –UC 01 Autonomous electric waterborne vessels for logistics
Activities involved	1 citizen survey, 1 stakeholder survey
Methods used for data generation	Online survey
Data used/collected	text, numeric
Brief description of the data	Data from a questionnaire filled out by participants before the implementation of barge
Is the data primary or secondary?	Survey data
(If secondary data is used/collected) Has consent for secondary use been obtained?	Not applicable
Who is the creator of the data?	TU Delft
Who is the owner of the data?	TU Delft
Time period of data collection	October 2025 – November 2025
Location of data collection	Online - Amsterdam
Detailed description of variables or records	Perception of citizens towards autonomous barge in Amsterdam, covering SIEF indicators as well.
Where will the data be stored?	Surf drive
Who is the responsible partner	TU Delft

for managing the data (collection, processing, storage, backups, GDPR etc.)?	
Will the data be publicly available?	No
Describe the procedure(s) for safely storing and securing the data	Data files secured with passwords in surf drive
Does the data include personal information? (e.g. name, email)?	No
Does the data include sensitive personal data (e.g. health, ethnicity, political opinion, sexuality, religion)	No
Does the data involve tracking, observation, or localisation of participants?	No
Does the data involve further processing of previously collected personal data ('secondary use')?	No
Will Informed Consent Forms be used?	Yes
How will the identity of participants be protected if required (e.g. via anonymisation)?	No personal information (such as your name, email address, or physical address) will be collected. All results will be analysed and presented in aggregated form only.
Does a Data Protection Certificate exist (i.e. including rules for protection, retention, destruction etc.)?	No

Table 29: Data Collection conducted as Part of WP1: Social Embracement & Behavioural Change Surveys in Amsterdam's LL - UC02

<b>metaCCAIZE Work Package and Month</b>	<b>M13- M15: T-LLs + M27- M28: F-LLs; relates to WP1: T1.5</b>			
metaCCAIZE activity number (if data will be collected as part of activity) – please refer to the Activities plan in the Activities folder)	SS1: Travel behaviour & UC's preference exploration (before the implementation)- UC 02 Adaptive Speed Governance of connected e-bikes			
Activities involved	Narrative Records, Knowledge Engineering, Patterning			
Methods used for data generation	Townmaking Methodology			
Data used/collected Brief description of the data	Narratives of Lived Experiences, usually interviews of 2000 to 5000 words, Complexity Models, and Descriptions of Proposed Resolutions.			
Is the data primary or secondary?	Primary			
(If secondary data is used/collected) Has consent for secondary use been obtained?	No			
Who is the creator of the data?	Townmaking Commons using NextCommons principles			
Who is the owner of the data?	Townmaking Commons using NextCommons principles			
Time period of data collection	Initiated in June 2024, will go on until June 2026			
Location of data collection	Municipal Premises, On-site at Park in Amsterdam			
Detailed description of variables or records	Name	Type	Data Type	Description
	Bounded Area	Entity	Set of Geolocations	A set of geo-locations that defines a polygon representing a spatial extent where the observation was made.
	Recurring Time Period	Entity	Start Recurring Time, End Recurring Time	The recurring time period during a day when the observation was made.
	Observation Description	Entity	Formatted String (Markdown)	A description of safety considerations made.For a bounded area during a recurring timeperiod.
	Observation Image	Image (PNG,	Image	Image to support the observation

		JPG)		
	Observation Time	Literal	Timestamp	Time and date when the observation was made
Where will the data be stored?	Commons-appointed Digital Infrastructure Operator			
Who is the responsible partner for managing the data (collection, processing, storage, backups, GDPR etc.)?	Townmaking until Digital Infrastructure Operator is appointed.			
Will the data be publicly available?	No			
Describe the procedure(s) for safely storing and securing the data	Multi-tenant environment with MFA access, with commons-appointed Digital Infrastructure Provider following Digital Society principles ( <a href="https://digitalsociety.townmaking.com">https://digitalsociety.townmaking.com</a> )			
Does the data include personal information? (e.g. name, email)?	Shared narratives include the name of the person but not used in any data-processing capability.			
Does the data include sensitive personal data (e.g. health, ethnicity, political opinion, sexuality, religion)	No			
Does the data involve tracking, observation, or localisation of participants?	No			
Does the data involve further processing of previously collected personal data ('secondary use')?	No			
Will Informed Consent Forms be used?	Yes, for the "after" survey			
How will the identity of participants be protected if required (e.g. via anonymisation)?	All results will be analysed and presented in anonymised and aggregated form only.			
Does a Data Protection Certificate	No			

exist (i.e. including rules for protection, retention, destruction etc.)?	
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Table 30: Data Collection conducted as Part of WP1: Social Embracement & Behavioural Change Surveys in Amsterdam's LL - UC03

<b>metaCCAZE Work Package and Month</b>	<b>M13- M15: T-LLs + M27- M28: F-LLs; relates to WP1: T1.5</b>
metaCCAZE activity number (if data will be collected as part of activity) – please refer to the Activities plan in the Activities folder)	SS1: Travel behaviour & UC's preference exploration (before the implementation) –UC03 Optimising intramodality of waste collection in the urban systems
Activities involved	Citizen survey (Before and after), Stakeholder survey
Methods used for data generation	Online survey (Citizens); Semi-structured interview (stakeholders)
Data used/collected	text, numeric
Brief description of the data	Data from a questionnaire filled out by citizens before and after the implementation of waste collection pilot.
Is the data primary or secondary?	Primary
(If secondary data is used/collected) Has consent for secondary use been obtained?	Not applicable
Who is the creator of the data?	Amsterdam city, TU Delft
Who is the owner of the data?	Amsterdam city, TU Delft
Time period of data collection	October 2025 – February 2026
Location of data collection	Amsterdam
Detailed description of variables or records	Satisfaction and perception of citizens about solid waste collection pilots.
Where will the data be stored?	TBD (most likely: Surf drive)
Who is the responsible partner for managing the data (collection, processing,	Amsterdam city (collection), TU Delft (Processing, backups, etc.)

storage, backups, GDPR etc.)?	
Will the data be publicly available?	No
Describe the procedure(s) for safely storing and securing the data	TBD: (Most likely, data will be stored in Surf drive with password to access the drive.)
Does the data include personal information? (e.g. name, email)?	TBD (Most likely: No.)
Does the data include sensitive personal data (e.g. health, ethnicity, political opinion, sexuality, religion)	TBD (Most likely: No.)
Does the data involve tracking, observation, or localisation of participants?	TBD (Most likely: No.)
Does the data involve further processing of previously collected personal data ('secondary use')?	No
Will Informed Consent Forms be used?	Yes
How will the identity of participants be protected if required (e.g. via anonymisation)?	All results will be analysed and presented in anonymised and aggregated form only.
Does a Data Protection Certificate exist (i.e. including rules for protection, retention, destruction etc.)?	No

Table 31: Data Collection conducted as Part of WP1: Social Embracement & Behavioural Change Surveys in Amsterdam's LL - UC04

<b>metaCCAZE Work Package and Month</b>	<b>M13- M15: T-LLs + M27- M28: F-LLs; relates to WP1: T1.5</b>
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metaCCAZE activity number (if data will be collected as part of activity) – please refer to the Activities plan in the Activities folder)	SS1: Travel behaviour & UC's preference exploration (before the implementation) – UC 04 Tradable Mobility Credits (TMC) scheme
Activities involved	1 user survey
Methods used for data generation	Online survey through Technolution platform
Data used/collected	text, numeric
Brief description of the data	Data from a questionnaire filled out by participants before implementation of TMC
Is the data primary or secondary?	Survey data
(If secondary data is used/collected) Has consent for secondary use been obtained?	Not applicable
Who is the creator of the data?	TU Delft
Who is the owner of the data?	TU Delft
Time period of data collection	December 2025 – January 2026
Location of data collection	Online
Detailed description of variables or records	Perception of participants towards TMC, covering SIEF indicators as well.
Where will the data be stored?	Surf drive
Who is the responsible partner for managing the data (collection, processing, storage, backups, GDPR etc.)?	TU Delft
Will the data be publicly available?	No
Describe the procedure(s) for safely storing and securing the data	Data files secured with passwords in surf drive
Does the data	No.

include personal information? (e.g. name, email)?	
Does the data include sensitive personal data (e.g. health, ethnicity, political opinion, sexuality, religion)	No
Does the data involve tracking, observation, or localisation of participants?	The socio embracement survey won't include tracking or observing behaviour. However, the pilot involves tracking the trip specific information of the individuals who agrees to participate in the pilot.
Does the data involve further processing of previously collected personal data ('secondary use')?	No
Will Informed Consent Forms be used?	Yes
How will the identity of participants be protected if required (e.g. via anonymisation)?	All results will be analysed and presented in anonymised and aggregated form only.
Does a Data Protection Certificate exist (i.e. including rules for protection, retention, destruction etc.)?	No

Table 32: Data Collection conducted as Part of WP1: Social Embracement & Behavioural Change Surveys in Munich's LL UC01 and UC02

<b>metaCCAZE Work Package and Month</b>	<b>M13- M15: T-LLs + M27- M28: F-LLs; relates to WP1: T1.5</b>
metaCCAZE activity number (if data will be collected as part of activity) – please refer to the Activities plan in the Activities folder)	SS1: Travel behaviour & UC's preference exploration -before the implementation (4 surveys; one social survey and one stakeholder per UC)
Activities involved	Online survey
Methods used for data	Individualized paper-based invitations with a unique invitation code. Survey

generation	conducted online on the SurveyEngine platform.
Data used/collected	Collected
Brief description of the data	The dataset contains the responses of participants to the four surveys (two social and two stakeholder surveys; one of each of the two use cases in the city of Munich). The surveys capture basic sociodemographic attributes of the participants, perception towards transport-related problems, and opinions regarding the proposed actions in the metaCCAZE project.
Is the data primary or secondary?	Primary
(If secondary data is used/collected) Has consent for secondary use been obtained?	No
Who is the creator of the data?	Technical University of Munich
Who is the owner of the data?	Technical University of Munich
Time period of data collection	September-December 2025
Location of data collection	Munich, Germany
Detailed description of variables or records	<p>The survey explored several key areas:</p> <ul style="list-style-type: none"> <li>• Respondent attributes: age, nationality, gender, occupation, n. of children in household, income level, student status, experience living in the district, household size, approximate home location.</li> <li>• Basic mobility attributes: availability of bike and car, availability of off-street parking, type of vehicle used for work, frequency of use of different transport modes.</li> <li>• Problem perception: self-reported impacts of double-parking and delivery vehicle activities, opinion on different mobility challenges, average time searching for parking, frequency of conducting double-parking.</li> <li>• Support of the UCs: previous knowledge of the UCs, opinion on the potential impacts and feasibility of the Ucs.</li> <li>• Instrumental questions for the survey: acceptance of participation, fulfillment of criteria for participation, willingness to participate in future surveys.</li> <li>• Data required for receiving voucher (optional): email address, physical address, birthday and TAX-ID .</li> </ul>
Where will the data be stored?	Server of the Technical University of Munich
Who is the responsible partner for managing the data (collection,	Technical University of Munich. The survey and data management program was approved by the Data Protection Manager of the Technical University of Munich.

processing, storage, backups, GDPR etc.)?	
Will the data be publicly available?	No
Describe the procedure(s) for safely storing and securing the data	Dataset stored in private server of the Technical University of Munich. Only employees of the Chair of Traffic Engineering and control have access to it. After the necessary analysis is done, responses will be anonymised, removing any possible attribute that can help match them with respondents.
Does the data include personal information? (e.g. name, email)?	Email, physical address, and other personal information attributes are preserved during the necessary analysis phase (to allow contacting participants who claimed a reward and fulfill TUM's tax reporting obligations). Afterwards, they will be removed from the database.
Does the data include sensitive personal data (e.g. health, ethnicity, political opinion, sexuality, religion)	Yes. It includes contact data, basic sociodemographic data, birthday, and home address.
Does the data involve tracking, observation, or localisation of participants?	No
Does the data involve further processing of previously collected personal data ('secondary use')?	No
Will Informed Consent Forms be used?	
How will the identity of participants be protected if required (e.g. via anonymisation)?	
Does a Data Protection Certificate exist (i.e. including rules for protection, retention, destruction etc.)?	

Table 33: Data Collection conducted as Part of WP1: Social Embracement & Behavioural Change Surveys in Limasol's LL - UC01

<b>metaCCAZE Work Package and Month</b>	<b>M13- M15: T-LLs + M27- M28: F-LLs; relates to WP1: T1.5</b>
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metaCCAZE activity number (if data will be collected as part of activity) – please refer to the Activities plan in the Activities folder)	SS1: Travel behaviour & UC’s preference exploration -before the implementation -before the implementation phase- UC01 – On-demand mini- buses service
Activities involved	4 physical focus groups, online questionnaires, semi –structured interviews in person
Audience size	108 parents with children aged between 11 and 18, 4 professional drivers
Methods used for data generation	Focus Groups Online questionnaires
Data used/collected Brief description of the data	The online questionnaires for parents, administered via Lime Survey, gathered information on parents’ daily transportation needs for their children, the locations requiring regular travel, perceptions of the on-demand minibus service, and views on traffic congestion and environmental impact. Images captured during the focus group sessions. Semi-structured interviews were conducted with professional drivers to collect data on their working hours, peak seasons of activity, customer profiles, vehicle maintenance practices, traffic conditions, and willingness to participate in the on-demand minibus service.
Is the data primary or secondary?	Primary data
(If secondary data is used/collected) Has consent for secondary use been obtained?	N/A
Who is the creator of the data?	MaaS Lab
Who is the owner of the data?	MaaS Lab
Time period of data collection	January 2025 – February 2025
Location of data collection	Limassol, Cyprus
Detailed description of variables or records	The survey with parents focuses on designing a mobility service dedicated to transporting adolescents to after-school activities. As part of the “before implementation” phase of the Social Survey, two activities for parents were conducted: focus groups and online questionnaires. The survey explored several key areas: <ul style="list-style-type: none"> <li>• Family profile: age, education, occupation, contract type, income range, housing type, home location, number of cars, parking availability, and work location.</li> <li>• Profile of minor family members: total number of children, children aged 11–18, age, gender, school, accompaniment to activities, transport modes used for activities, and details regarding extracurricular costs and participation.</li> </ul>

	<ul style="list-style-type: none"> <li>• Personal experiences in escorting children: time spent, waiting time, and overall enjoyment.</li> <li>• Perception of the proposed service: initial reactions, potential use for extracurricular or school trips, use for social activities, level of satisfaction, concerns, perceived impact on traffic and the environment, quality of life, willingness to pay, perceived benefits, and reasons for hesitation.</li> </ul> <p>The semi-structured interviews with professional drivers focused on the following topics:</p> <ul style="list-style-type: none"> <li>• Company profile: including year of employment, year of company registration, and company location.</li> <li>• Sociodemographic characteristics: such as age, family profile, gender, and education level.</li> <li>• Financial aspects: vehicle-related expenses and maintenance costs.</li> <li>• Working schedule: workload by season, typical working hours, and customer profiles.</li> <li>• Vehicle type: ownership status and occupancy.</li> <li>• Traffic conditions: experiences with congestion.</li> <li>• Willingness to participate in the on-demand minibus service: including willingness to transport children, seasonal involvement, and preferred working hours.</li> </ul>
Where will the data be stored?	Anonymised data is stored in encrypted folders on MaaSLab’s internal servers, accessible only to authorised project members
Who is the responsible partner for managing the data (collection, processing, storage, backups, GDPR etc.)?	<p>The management of data from Social Activity 1 consists of collect, process, store, backups and GDPR protection.</p> <p>Data management from Social Surveys falls in the partner responsible of the activity in each Living Lab. MaaSLab is responsible for the data from both focus groups and questionnaires. GDPR has been considered, in charge of data collection to protect the personal data that has been gathered.</p>
Will the data be publicly available?	No personal identifiable information will be publicly available
Describe the procedure(s) for safely storing and securing the data	<p>Two procedures have been implemented to secure personal data:</p> <ul style="list-style-type: none"> <li>• Pseudonymisation: Names and contact details of participants, such as email addresses, are replaced with unique IDs.</li> <li>• Authentication: Access to documents is restricted through secure authentication.</li> </ul> <p>A detailed description of the procedures established for each data flow is provided below:</p> <ul style="list-style-type: none"> <li>• Online questionnaire and semi-structured interview results (anonymised project data): Participants are assigned unique IDs in the questionnaire. All raw data are then transferred to an Excel file and securely stored on the MaasLab servers.</li> </ul>
Does the data include personal information? (e.g. name, email)?	Data collected by all partners includes personal information. However, this data is anonymised prior to feeding into reporting within the consortium.

Does the data include sensitive personal data (e.g. health, ethnicity, political opinion, sexuality, religion)	No
Does the data involve tracking, observation, or localisation of participants?	Yes, the questionnaire includes the home location of participants
Does the data involve further processing of previously collected personal data ('secondary use')?	No
Will Informed Consent Forms be used?	Yes, all participants in the surveys have signed a Consent Form. The consent form outlines the details of the research, the information we will ask for, and whether the research will be filmed or recorded. It is written in a concise, transparent, intelligible and easily accessible form, using clear and plain language. The consent form has been translated into local language, Greek and Russian. The signed consent forms are stored by MaaS Lab partner on its servers.
How will the identity of participants be protected if required (e.g. via anonymisation)?	All participants have been issued an ID number allowing them to be fully anonymised in analysis and reporting phases. No individual person will be identified in any of the research outputs.
Does a Data Protection Certificate exist (i.e. including rules for protection, retention, destruction etc.)?	MaaS Lab is responsible for data collection, following the principles defined within the ISO 27001 framework, and has established both data protection and data retention policies.

Table 34: Data Collection conducted as Part of WP1: Social Embracement & Behavioural Change Surveys in Limasol's LL - UC02

<b>metaCCAZE Work Package and Month</b>	<b>M13- M15: T-LLs + M27- M28: F-LLs; relates to WP1: T1.5</b>
metaCCAZE activity number (if data will be collected as part of activity) – please refer to the Activities plan in the Activities folder)	SS1: Travel behaviour & UC's preference exploration -before the implementation -UC02 Shared e-bikes
Activities involved	Online questionnaires –Spatial and behavioural analysis of bike trips, station activity and user perceptions.

Audience size	46 users of NextBike
Methods used for data generation	A structured questionnaire administered to NextBike users.
Data used/collected Brief description of the data	The online questionnaires were designed to capture users' perceptions regarding the use of e-bikes. The topics covered included user profile, payment methods, purpose of using the bike, satisfaction with the shared service, traffic congestion, personal environmental impact, accessibility, and willingness to use an e-bike.
Is the data primary or secondary?	Primary
(If secondary data is used/collected) Has consent for secondary use been obtained?	N/A
Who is the creator of the data?	MaaSLab
Who is the owner of the data?	MaaSLab and NextBike on behalf of the metaCCAZE project
Time period of data collection	January 2025 – March 2025
Location of data collection	Limassol, Cyprus
Detailed description of variables or records	The online questionnaire followed the structure below: <ul style="list-style-type: none"> <li>• User Profile: Frequency of conventional bike use, payment method, and purpose of riding.</li> <li>• Perceptions: Willingness to use an electric bike, satisfaction, preference between conventional and electric bikes, and accessibility.</li> <li>• Traffic, Safety, and Environment: Views on traffic congestion, road safety, and environmental impact.</li> <li>• Personal Information: Age, gender, education, and income.</li> </ul>
Where will the data be stored?	Data is stored in encrypted folders on MaaSLab's internal servers, accessible only to authorized project members and in the metaCCAZE internal repository with controlled permissions.
Who is the responsible partner for managing the data (collection, processing, storage, backups, GDPR etc.)?	The management of data from Social Activity 1 consists of collect, process, store, backups and GDPR protection. Data management from Social Surveys falls in the partner responsible of the activity in each Living Lab. MaaSLab is responsible for the data from both focus groups and questionnaires. GDPR has been considered, in charge of data collection to protect the personal data that has been gathered.
Will the data be publicly available?	No personal identifiable information will be publicly available
Describe the procedure(s) for safely storing and securing the data	Survey data collected anonymously through Lime Survey and stored without direct identifiers. Backups performed routinely.

Does the data include personal information? (e.g. name, email)?	No, the Lime Survey questionnaire does not request any direct personal identifiers. All responses are anonymous.
Does the data include sensitive personal data (e.g. health, ethnicity, political opinion, sexuality, religion)	Survey questions focus on mobility behaviour, perceptions and general sociodemographic characteristics such as age. Gender and income, which are non-sensitive under GDPR
Does the data involve tracking, observation, or localisation of participants?	No tracking is conducted. Participants voluntarily complete the questionnaire without any geolocation recording.
Does the data involve further processing of previously collected personal data ('secondary use')?	The survey collects new primary data directly for metaCCAZE. No secondary processing of personal data from external sources is performed.
Will Informed Consent Forms be used?	The Lime Survey interface includes an online informed consent statement at the beginning of the questionnaire. Participation is voluntary and anonymous, and respondents must agree before proceeding.
How will the identity of participants be protected if required (e.g. via anonymisation)?	Survey data is collected anonymously with no names, emails or IP addresses stored. Results are exported in anonymised format and analysed only in aggregate.
Does a Data Protection Certificate exist (i.e. including rules for protection, retention, destruction etc.)?	MaaSlab is responsible for data collection, following the principles defined within the ISO 27001 framework, and has established both data protection and data retention policies.

Table 35: Data Collection conducted as Part of WP1: Social Embracement & Behavioural Change Surveys in Tampere's LL - UC01

<b>metaCCAZE Work Package and Month</b>	<b>M13- M15: T-LLs + M27- M28: F-LLs; relates to WP1: T1.5</b>
metaCCAZE activity number (if data will be collected as part of activity) – please refer to the Activities plan in the Activities folder)	SS1: Travel behaviour & UC's preference exploration -before the implementation -UC01- Autonomous e-shuttles with advanced remote-control centre and inductive charging
Activities involved	Postal Survey, online questionnaires distributed to Lintuhyttti Residents
Audience size	1017 residents, above 15 years of age

Methods used for data generation	Online questionnaire and postal survey
Data used/collected Brief description of the data	<p>The pre-pilot resident survey collects quantitative and qualitative data from local residents living along or near the planned autonomous e-shuttle route in Tampere. The survey gathers information on current travel habits, mobility needs, expectations, and concerns related to the introduction of an autonomous public transport service. It also captures perceptions of safety, service reliability, accessibility, and the potential impact of autonomous mobility on neighbourhood livability.</p> <p>The data includes both multiple-choice responses and open-ended comments, providing numerical indicators of attitudes as well as descriptive feedback. A route map and project background are included to support participants' understanding of the pilot.</p>
Is the data primary or secondary?	Primary
(If secondary data is used/collected) Has consent for secondary use been obtained?	NA
Who is the creator of the data?	TAU
Who is the owner of the data?	TAU
Time period of data collection	10/11/2025-28/11/2025
Location of data collection	Lintuhytti
Detailed description of variables or records	<p>The survey includes variables across multiple thematic areas relevant to the planning and evaluation of the autonomous e-shuttle pilot. Key groups of variables include:</p> <ol style="list-style-type: none"> <li>1. Perceptions of autonomous transport           <ul style="list-style-type: none"> <li>• Comfort level with autonomous vehicles as a passenger or as a road user (driver, cyclist, pedestrian)</li> <li>• Perceived safety compared with traditional manually driven buses</li> <li>• Level of concern regarding autonomous operation under varying conditions (snowfall, rain, darkness, ice)</li> <li>• Confidence factors such as safe vehicle operation, privacy, and potential disruptive behaviour of other passengers</li> </ul> </li> <li>2. Service reliability and behavioural response           <ul style="list-style-type: none"> <li>• Acceptable delay tolerance for continuing to use the service</li> <li>• Thresholds for switching to alternative transport modes</li> <li>• Identification of preferred alternative modes</li> </ul> </li> <li>3. Current mobility behaviour           <ul style="list-style-type: none"> <li>• Frequency of public transportation usage</li> <li>• Primary mode of transport (walking, private car, bicycle, etc.)</li> </ul> </li> </ol>

	<ul style="list-style-type: none"> <li>• Dependency level on private vehicles, if applicable</li> </ul> <p>4. Potential use of the autonomous e-shuttle</p> <ul style="list-style-type: none"> <li>• Expected impact on usage of current transport modes</li> <li>• Main trip purpose if using the shuttle (e.g., work/school, shopping, leisure)</li> <li>• Expected effect on accessibility to other Nysse services</li> <li>• Expected effect on neighborhood livability</li> </ul> <p>5. Attitudes toward payment and accessibility</p> <ul style="list-style-type: none"> <li>• Willingness to pay an additional fee for the service</li> <li>• Preferred payment methods (mobile app, travel card, contactless, etc.)</li> <li>• Desired accessibility features (ramps, priority seating, multilingual announcements, AV announcements, etc.)</li> </ul> <p>6. Sociodemographic profile</p> <p>These variables support understanding of how different population groups perceive the service:</p> <ul style="list-style-type: none"> <li>• Age group</li> <li>• Gender identity</li> <li>• Household size</li> <li>• Employment status</li> <li>• Work/study arrangement (on-site, remote, hybrid)</li> <li>• Estimated annual household income</li> </ul> <p>7. Open-ended feedback</p> <p>A free-text section for comments, concerns, suggestions, or additional remarks related to the route, service design, safety, accessibility, or community impact.</p>
Where will the data be stored?	Pseudonymised data is kept in encrypted directories on TAU's internal servers and can be accessed only by authorised project personnel.
Who is the responsible partner for managing the data (collection, processing, storage, backups, GDPR etc.)?	TAU
Will the data be publicly available?	No personally identifiable information will be made publicly accessible.
Describe the procedure(s) for safely storing and securing the data	<p>The following measures have been applied to protect personal data:</p> <ul style="list-style-type: none"> <li>• <u>Pseudonymisation</u>: Each respondent's postal address has been substituted with a unique identifier.</li> <li>• <u>Survey results (anonymised project data)</u>: Participants are given unique IDs within the questionnaire, and all raw data is securely stored on TAU's internal servers.</li> </ul>
Does the data include personal information? (e.g. name, email)?	NA

Does the data include sensitive personal data (e.g. health, ethnicity, political opinion, sexuality, religion)	NA
Does the data involve tracking, observation, or localisation of participants?	Cross-referencing of data subjects is carried out using assigned codes, with no direct identifiers included.
Does the data involve further processing of previously collected personal data ('secondary use')?	NA
Will Informed Consent Forms be used?	Yes
How will the identity of participants be protected if required (e.g. via anonymisation)?	Each participant has been assigned an ID number, ensuring complete anonymity during data analysis and reporting. No individual will be identifiable in any research outputs.
Does a Data Protection Certificate exist (i.e. including rules for protection, retention, destruction etc.)?	NA

Table 36: Data Collection conducted as Part of WP1: Social Embracement & Behavioural Change Surveys in Tampere's LL - UC01

<b>metaCCAZE Work Package and Month</b>	<b>M25 –M32: T-LLs + M33 – M40: F-LLs; relates to WP1: T1.5</b>
metaCCAZE activity number (if data will be collected as part of activity) – please refer to the Activities plan in the Activities folder)	SS2: Travel behaviour change and preferences monitoring –during the implementation -UC01- Autonomous e-shuttles with advanced remote control centre and inductive charging
Activities involved	Survey forms are distributed inside the shuttle, and QR codes are displayed both onboard and at the bus stop.
Audience size	Passengers of the Shuttle
Methods used for data generation	Data is collected through self-administered questionnaires, provided to participants in two formats. Printed survey forms are distributed directly inside the shuttle for passengers to complete, while digital responses are enabled through QR codes displayed both onboard and at the bus stop, allowing participants to access the online survey using their mobile devices.

Data used/collected Brief description of the data	The passenger experience survey collects structured and unstructured data from individuals who used or interacted with the autonomous e-shuttle during the pilot phase in Tampere. The questionnaire gathers information on passengers' travel behaviour before and after the introduction of the service, their satisfaction with different aspects of the pilot, perceived safety, accessibility, route integration, and overall quality-of-life impacts. Sociodemographic information is also collected to support subgroup analysis. The survey is anonymous and includes both multiple-choice and open-ended responses, offering quantitative indicators as well as qualitative insights into user experiences and attitudes toward autonomous public transport.
Is the data primary or secondary?	Primary
(If secondary data is used/collected) Has consent for secondary use been obtained?	NA
Who is the creator of the data?	TAU
Who is the owner of the data?	TAU
Time period of data collection	24/11/2025-24/2/2026
Location of data collection	Lintuhytti area – Shuttle operating route
Detailed description of variables or records	<p>The survey contains variables across several thematic categories designed to evaluate the effectiveness, impact, usability, and integration of the autonomous e-shuttle pilot. Key groups of variables include:</p> <ol style="list-style-type: none"> <li>1. Travel behaviour before and after the pilot <ul style="list-style-type: none"> <li>• Frequency of public transport use before and after the e-shuttle introduction</li> <li>• Most frequently used bus or tram lines</li> <li>• Primary mode of travel before the pilot</li> <li>• Dependence on private vehicles</li> <li>• Travel timing (peak vs. off-peak use).</li> </ul> </li> <li>2. Sociodemographic profile of respondents <ul style="list-style-type: none"> <li>• Age group</li> <li>• Gender identity</li> <li>• Household size</li> <li>• Employment status</li> <li>• Work/study arrangement (on-site, remote, hybrid)</li> <li>• Estimated household income</li> </ul> </li> <li>3. Service satisfaction and user experience <ul style="list-style-type: none"> <li>• Service start and end times</li> <li>• Privacy inside the vehicle</li> <li>• Safety compared with traditional buses</li> </ul> </li> </ol>

	<ul style="list-style-type: none"> <li>• Overall travel experience</li> <li>• Key operational elements such as arrival consistency, travel time, service frequency, cleanliness, accessibility features, and perceived professionalism of safety operators</li> </ul> <p>4. Impact on mobility patterns and transport choices</p> <ul style="list-style-type: none"> <li>• Usage of the respondent’s primary transport mode</li> <li>• Commute time changes</li> <li>• Willingness to use other sustainable modes</li> <li>• Perceived sustainability relative to other public transport</li> <li>• Integration with the broader Nysse network (bus, tram, cycling facilities)</li> </ul> <p>5. Accessibility and service coverage</p> <ul style="list-style-type: none"> <li>• Ease of reaching shuttle stops</li> <li>• Comparative accessibility of e-shuttles vs. existing public transport</li> <li>• Accessibility features needed (e.g., ramps, announcements)</li> <li>• Barriers preventing use (coverage, schedules, safety concerns, accessibility issues)</li> </ul> <p>6. Perceived safety and confidence in the service</p> <ul style="list-style-type: none"> <li>• Comfort level with autonomous operation as a passenger and as a road user</li> <li>• Confidence in the safety operator’s supervision</li> <li>• Effect of environmental conditions (snow, rain, darkness, ice) on confidence</li> <li>• Experience with or observation of safety-related incidents</li> <li>• Effect of incidents on overall perception of safety</li> </ul> <p>7. Quality-of-life impacts and attitudes toward future adoption</p> <ul style="list-style-type: none"> <li>• Perceived quality-of-life changes resulting from using the e-shuttle</li> <li>• Likelihood of recommending the service to others (1–10 scale)</li> <li>• Agreement with statements regarding reliability, safety, accessibility, and service quality</li> <li>• Views on the potential long-term role of autonomous public transit in Tampere</li> </ul> <p>8. Open-ended feedback</p> <ul style="list-style-type: none"> <li>• Suggestions for service improvements</li> <li>• Comments on accessibility</li> <li>• Reflections on how the service affects their daily commute or lifestyle</li> <li>• Any additional remarks about the pilot</li> </ul>
Where will the data be stored?	Data is kept in encrypted directories on TAU’s internal servers and can be accessed only by authorised project personnel.
Who is the responsible partner for managing the data (collection, processing, storage, backups, GDPR etc.)?	TAU
Will the data be	NA

publicly available?	
Describe the procedure(s) for safely storing and securing the data	Data is stored securely on encrypted TAU internal servers, accessible only to authorised project members. All survey responses are anonymously collected, and no cross referencing is done.
Does the data include personal information? (e.g. name, email)?	NA
Does the data include sensitive personal data (e.g. health, ethnicity, political opinion, sexuality, religion)?	NA
Does the data involve tracking, observation, or localisation of participants?	NA
Does the data involve further processing of previously collected personal data ('secondary use')?	NA
Will Informed Consent Forms be used?	NA
How will the identity of participants be protected if required (e.g. via anonymisation)?	Data will be collected anonymously
Does a Data Protection Certificate exist (i.e. including rules for protection, retention, destruction etc.)?	NA

Table 37: Data Collection conducted as Part of WP1: Social Embracement & Behavioural Change Surveys in Tampere's LL - UC01

<b>metaCCAZE Work Package and Month</b>	<b>M25 -M32: T-LLs + M33 - M40: F-LLs; relates to WP1: T1.5</b>
metaCCAZE activity number (if data will be collected as part of activity) – please	SS2: Travel behaviour change and preferences monitoring –during the implementation -UC01- Autonomous e-shuttles with advanced remote-control centre and inductive charging

refer to the Activities plan in the Activities folder)	
Activities involved	Postal Survey, online questionnaires distributed to Lintuhytti Residents
Audience size	1017 residents, above 15 years of age
Methods used for data generation	Online questionnaire and postal survey
Data used/collected	The resident survey collects quantitative and qualitative data from individuals living in areas served by the autonomous e-shuttle pilot in Tampere. The questionnaire gathers insights into residents' awareness of the service, perceptions and acceptance of autonomous mobility technologies, willingness to shift from private vehicle use, views on safety and accessibility, and perceived impacts on travel behaviour and neighbourhood liveability. The data also includes responses related to daily mobility needs, environmental conditions affecting confidence, accessibility challenges, and preferred payment methods.
Brief description of the data	
Is the data primary or secondary?	Primary
(If secondary data is used/collected)	NA
Has consent for secondary use been obtained?	
Who is the creator of the data?	TAU
Who is the owner of the data?	TAU
Time period of data collection	15/12/2025-15/2/2026
Location of data collection	Lintuhytti area
Detailed description of variables or records	<p>The survey contains several groups of variables that evaluate resident perceptions, behavioural impacts, and user needs associated with the autonomous e-shuttle pilot. Key areas include:</p> <ol style="list-style-type: none"> <li>1. Awareness and Perception of Autonomous E-Shuttles. <ul style="list-style-type: none"> <li>• Awareness of the autonomous shuttle service.</li> <li>• Acceptability of autonomous vehicles operating without a safety operator.</li> <li>• Comfort levels when near an autonomous shuttle as a pedestrian, cyclist, or driver.</li> <li>• Perceived acceptability of project measures (e.g., remote control centre, inductive charging).</li> </ul> </li> <li>2. Car Dependency and Mobility Behaviour <ul style="list-style-type: none"> <li>• Degree of dependence on private vehicles.</li> <li>• Barriers to shifting from car use to autonomous shuttles (coverage, schedules, safety concerns, flexibility, awareness).</li> <li>• Willingness to reduce car usage if shuttle service improves.</li> <li>• Main reasons for continuing to use private cars.</li> </ul> </li> </ol>

	<p>3. Acceptance of Implemented Measures</p> <ul style="list-style-type: none"> <li>Residents’ views on the appropriateness of autonomous mobility solutions.</li> <li>Expected improvements in public transport from project measures.</li> <li>Perceived positive impacts on daily life.</li> <li>Willingness to use the autonomous shuttle regularly if improvements are made.</li> </ul> <p>4. Transport-Related Safety Perceptions</p> <ul style="list-style-type: none"> <li>The extent to which environmental conditions (snowfall, rain, darkness, icy roads) affect confidence.</li> <li>Comfort and safety perceptions when interacting with autonomous shuttles versus other vehicles.</li> <li>Overall changes in neighbourhood liveability after the introduction of e-shuttles.</li> </ul> <p>5. Accessibility to Public Transport</p> <ul style="list-style-type: none"> <li>Whether the service has improved accessibility to public transport.</li> <li>Distance to the nearest frequently used autonomous shuttle stop.</li> <li>Perceptions of the shuttle’s accessibility compared to existing transport services.</li> <li>Challenges encountered during boarding, exiting, or using the shuttle.</li> </ul> <p>6. Environmental Liveability and Quality-of-Life Indicators</p> <ul style="list-style-type: none"> <li>Perceived changes in environmental liveability after shuttle introduction</li> <li>Safety and comfort while walking or cycling near the vehicles.</li> <li>Overall acceptance and quality-of-life impacts resulting from autonomous mobility.</li> </ul> <p>7. Accessibility Features and User Needs</p> <ul style="list-style-type: none"> <li>Which accessibility features are important (ramps, priority seating, audio-visual announcements, etc.).</li> <li>Accessibility-related challenges experienced by residents.</li> <li>Additional suggestions to improve inclusiveness and ease of use.</li> </ul> <p>8. Payment Preferences and Willingness to Pay</p> <ul style="list-style-type: none"> <li>Willingness to pay a small additional fee for the service.</li> <li>Preferred payment methods (app, travel card, contactless, cash).</li> <li>Opinions on cost coverage and fairness of pricing.</li> </ul> <p>9. Open-ended Feedback</p> <p>Additional comments allow residents to suggest:</p> <ul style="list-style-type: none"> <li>Route improvements.</li> <li>Frequency changes.</li> <li>Accessibility enhancements.</li> <li>Safety and usability recommendations.</li> <li>Factors that would increase their interest or trust in the autonomous service.</li> </ul>
Where will the data be stored?	Pseudonymised data is kept in encrypted directories on TAU’s internal servers and can be accessed only by authorized project personnel.
Who is the responsible partner for managing the	TAU

data (collection, processing, storage, backups, GDPR etc.)?	
Will the data be publicly available?	No personally identifiable information will be made publicly accessible.
Describe the procedure(s) for safely storing and securing the data	The following measures have been applied to protect personal data: <ul style="list-style-type: none"> <li>• <u>Pseudonymisation:</u> Each respondent's postal address has been substituted with a unique identifier.</li> <li>• <u>Survey results (anonymised project data):</u> Participants are given unique IDs within the questionnaire, and all raw data is securely stored on TAU's internal servers.</li> </ul>
Does the data include personal information? (e.g. name, email)?	NA
Does the data include sensitive personal data (e.g. health, ethnicity, political opinion, sexuality, religion)?	NA
Does the data involve tracking, observation, or localisation of participants?	Cross-referencing of data subjects is carried out using assigned codes, with no direct identifiers included.
Does the data involve further processing of previously collected personal data ('secondary use')?	NA
Will Informed Consent Forms be used?	Yes
How will the identity of participants be protected if required (e.g. via anonymisation)?	Each participant has been assigned an ID number, ensuring complete anonymity during data analysis and reporting. No individual will be identifiable in any research outputs.
Does a Data Protection Certificate exist (i.e. including	NA

rules for protection, retention, destruction etc.)?	
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## ANNEX IV: Completed Data Management Forms for the Trailblazer Living Labs During the Demonstration Phase

Table 38: Data collection conducted as part of WP3: Implementations and Demonstrations in Munich

<b>metaCCAZE Work Package and Month</b>	<b>M4- M24: T- LLs relates to WP3 –T3.3</b>
metaCCAZE activity number (if data will be collected as part of activity) – please refer to the Activities plan in the Activities folder)	T3.3- Munich (DE) Implementations and demonstrations -UC 01 Dynamic Curbside management
Activities involved	On-site traffic data collection
Audience size	NA
Methods used for data generation	Manual counts and observations
Data used/collected	Number of driving vehicles (passenger cars and truck/buses) at selected locations per 15 min intervals in the (08:00-11:00 a.m. period). Number of parking trucks/vans per 15 min interval in the (08:00-11:00 a.m. period).
Brief description of the data	Traffic counts (both the number of driving vehicles and the number of parking delivery/service vehicles) were collected for a set of key locations in the Aldstadt-Lehel district of Munich, in the area where MUC-UC01 is to be implemented. The counts were gathered for 15-min intervals during the morning peak period (between 8 a.m. and 12 a.m.) across three consecutive Tuesdays of May 2025 (M17) and then aggregated to 1-hour intervals. The resulting data is a table with the number of vehicles for each street (location) and hour of the day.
Is the data primary or secondary?	Primary
(If secondary data is used/collected) Has consent for secondary use been obtained?	NA
Who is the creator of the data?	Technical University of Munich
Who is the owner of the data?	Technical University of Munich
Time period of data	13.05.2025-27.05.2025

collection	
Location of data collection	Altstadt-Lehel district, Munich, Germany
Detailed description of variables or records	Street name, Direction, Type of vehicle, time period, number of vehicles per time period
Where will the data be stored?	Server of the Technical University of Munich
Who is the responsible partner for managing the data (collection, processing, storage, backups, GDPR etc.)?	Technical University of Munich
Will the data be publicly available?	No
Describe the procedure(s) for safely storing and securing the data	Stored in a server only accessible to employees of the chair of Traffic Engineering and Control of the Technical University of Munich
Does the data include personal information? (e.g. name, email)?	No
Does the data include sensitive personal data (e.g. health, ethnicity, political opinion, sexuality, religion)?	No
Does the data involve tracking, observation, or localisation of participants?	No
Does the data involve further processing of previously collected personal data ('secondary use')?	No
Will Informed Consent Forms be used?	No

How will the identity of participants be protected if required (e.g. via anonymisation)?	NA
Does a Data Protection Certificate exist (i.e. including rules for protection, retention, destruction etc.)?	NA

Table 39: Data collection conducted as part of WP3: Implementations and Demonstrations in Munich

<b>metaCCAZE Work Package and Month</b>	<b>M4- M24: T- LLs relates to WP3 -T3.3</b>
metaCCAZE activity number (if data will be collected as part of activity) – please refer to the Activities plan in the Activities folder)	T3.3- Munich (DE) Implementations and demonstrations -UC 01 Dynamic Curbside management
Activities involved	Floating Car Data — Stop processes by trucks and delivery vehicles
Audience size	NA
Methods used for data generation	Automatic data collection by sensors on the vehicles.
Data used/collected	Approximate position and duration of vehicle stop in the city of Munich.
Brief description of the data	The City of Munich acquired data from a data broker on stop processes in the whole city. It covered the period from November 1, 2023, to October 31, 2024, and contained stop events for trucks and light cargo vehicles. The city granted the access and use of this data to the Technical University of Munich for activities related to the metaCCAZE project. The Technical University of Munich signed a non-disclosure agreement (NDA) to use this data.
Is the data primary or secondary?	Secondary
(If secondary data is used/collected) Has consent for secondary use been obtained?	Yes (the NDA allows TUM to use this data for the purpose of the metaCCAZE project).
Who is the creator of the data?	Unknown (not reported by data broker)

Who is the owner of the data?	City of Munich (LHM)
Time period of data collection	November 1, 2023, to October 31, 2024
Location of data collection	Munich, Germany
Detailed description of variables or records	Each record includes street-level positioning, vehicle type, and stop duration.
Where will the data be stored?	Server of the Technical University of Munich
Who is the responsible partner for managing the data (collection, processing, storage, backups, GDPR etc.)?	Technical University of Munich
Will the data be publicly available?	No. Use by Technical University of Munich is restricted by NDA.
Describe the procedure(s) for safely storing and securing the data	Stored in a server only accessible to employees of the chair of Traffic Engineering and Control of the Technical University of Munich
Does the data include personal information? (e.g. name, email)?	No
Does the data include sensitive personal data (e.g. health, ethnicity, political opinion, sexuality, religion)	No. The data was already anonymised by its creator.
Does the data involve tracking, observation, or localisation of participants?	Approximate location of the stop vehicles.
Does the data involve further processing of	No

previously collected personal data ('secondary use')?	
Will Informed Consent Forms be used?	No
How will the identity of participants be protected if required (e.g. via anonymisation)?	The vehicle IDs are anonymised.
Does a Data Protection Certificate exist (i.e. including rules for protection, retention, destruction etc.)?	NA

Table 40: Data Collection conducted as part of WP3: Implementations and Demonstrations in Munich

<b>metaCCAZE Work Package and Month</b>	<b>M4- M24: T- LLs relates to WP3 -T3.3</b>
metaCCAZE activity number (if data will be collected as part of activity) – please refer to the Activities plan in the Activities folder)	T3.3- Munich (DE) Implementations and demonstrations -UC 01 Dynamic Curbside management
Activities involved	Delivery parking areas occupancy data
Audience size	NA
Methods used for data generation	Automatic data collection by sensors installed on the pavement.
Data used/collected	Parking processes in the delivery areas.
Brief description of the data	The sensors installed on the pavement detect the arrival and departure of a vehicle, resulting from a change in the magnetic field around the sensor. This information is used to detect the start, end, and duration of each parking process for each of the delivery areas in the Altstadt-Lehel district of Munich.
Is the data primary or secondary?	Secondary
(If secondary data	Yes (the City of Munich and Technical University of Munich can use this data for the

is used/collected) Has consent for secondary use been obtained?	purpose of the metaCCAIZE project).
Who is the creator of the data?	SmartCitySystems (metaCCAIZE partner)
Who is the owner of the data?	SmartCitySystems
Time period of data collection	From December 2025 (M24) onwards.
Location of data collection	Altstadt-Lehel district, Munich, Germany
Detailed description of variables or records	Each record includes the ID of each parking area, the begin and end time of each parking process.
Where will the data be stored?	Server of SmartCitySystems. Local post-processing and analysis will be conducted by the Technical University of Munich.
Who is the responsible partner for managing the data (collection, processing, storage, backups, GDPR etc.)?	SmartCitySystems
Will the data be publicly available?	No.
Describe the procedure(s) for safely storing and securing the data	Stored in a server of SmartCitySystems. Accessible to selected users (invitation-only) through an online dashboard.
Does the data include personal information? (e.g. name, email)?	No
Does the data include sensitive personal data (e.g. health, ethnicity, political opinion, sexuality, religion)	No.

Does the data involve tracking, observation, or localisation of participants?	No
Does the data involve further processing of previously collected personal data ('secondary use')?	No
Will Informed Consent Forms be used?	No
How will the identity of participants be protected if required (e.g. via anonymisation)?	NA
Does a Data Protection Certificate exist (i.e. including rules for protection, retention, destruction etc.)?	NA

Table 41: Data collection conducted as part of WP3: Implementations and Demonstrations in Munich

<b>metaCCAZE Work Package and Month</b>	<b>M4- M24: T- LLs relates to WP3 -T3.3</b>
metaCCAZE activity number (if data will be collected as part of activity) – please refer to the Activities plan in the Activities folder)	T3.3- Munich (DE) Implementations and demonstrations -UC 02 Establishment and operation of multimodal logistic hubs
Activities involved	Traffic Counts City of Munich (Loop detector data)
Audience size	NA
Methods used for data generation	Loop detectors distributed across the city.

Data used/collected	Traffic counts per 15-min interval (n. of vehicles travelling across a certain link/street in the network on a representative day)
Brief description of the data	The City of Munich provides real-time traffic counts for a large number of sensors distributed across the city. The sensors are located either at the inbound links of intersections or at independent measurement points. The real-time information (aggregated at a 15-min or 1-h periods) is shared to interested partners via an API within the <a href="https://mobilithek.info/">https://mobilithek.info/</a> framework.
Is the data primary or secondary?	Secondary
(If secondary data is used/collected) Has consent for secondary use been obtained?	Yes (Contractual agreement between TUM and the city of Munich via mobilithek platform)
Who is the creator of the data?	Mobility Department of the City of Munich
Who is the owner of the data?	Mobility Department of the City of Munich
Time period of data collection	Continuous data collection (since 06.2023)
Location of data collection	City of Munich
Detailed description of variables or records	ID of the sensor, coordinates of the sensor, period of observation, number of vehicles for nine vehicle classes (motorcycle, car, car with trailer, vans, bus, trucks, trucks with trailers, articulated vehicle, all non-classified vehicles).
Where will the data be stored?	Mobility Department of the City of Munich
Who is the responsible partner for managing the data (collection, processing, storage, backups, GDPR etc.)?	Mobility Department of the City of Munich
Will the data be publicly available?	No. Available under certain conditions through <a href="https://mobilithek.info/">https://mobilithek.info/</a>
Describe the procedure(s) for safely storing and securing the data	NA
Does the data include personal	No

information? (e.g. name, email)?	
Does the data include sensitive personal data (e.g. health, ethnicity, political opinion, sexuality, religion)	No
Does the data involve tracking, observation, or localisation of participants?	No
Does the data involve further processing of previously collected personal data ('secondary use')?	No
Will Informed Consent Forms be used?	NA
How will the identity of participants be protected if required (e.g. via anonymisation)?	NA
Does a Data Protection Certificate exist (i.e. including rules for protection, retention, destruction etc.)?	NA

Table 42: Data collection conducted as part of WP3: Implementations and Demonstrations in Limassol.

<b>metaCCAZE Work Package and Month</b>	<b>M22- M24: T- LLs relates to WP3 -T3.4</b>
metaCCAZE activity number (if data will	T3.4 – Limassol (CY) Implementations and demonstrations – UC01 – On demand min-buses service

be collected as part of activity) – please refer to the Activities plan in the Activities folder)	
Activities involved	Collection and analysis of operational on-demand shared mobility data. Spatial and behavioral analysis of mini-bus on-demand trips from pick-up to drop-off.
Audience size	Local project partners and MaaS Lab technical team.
Methods used for data generation	Data collected from real-time operational data provided through the On-demand mini-buses service platform monitoring & tracking components, as well as data processing to extract usage indicators, demand patterns and driver & vehicle availabilities. Analysis of results at an aggregate level, using GDPR compliant data
Data used/collected Brief description of the data	<ul style="list-style-type: none"> <li>Route-level and stop-level operational data</li> <li>Stop attributes (location, type: pick-up/drop-off/break, times: prescribed arrival/departure time, tracked arrival/departure time, ).</li> </ul>
Is the data primary or secondary?	Operational data from the on-demand mini-buses platform is primary data.
(If secondary data is used/collected) Has consent for secondary use been obtained?	Not applicable. Data is primary and obtained through the monitoring and tracking components of the on-demand min-buses platform
Who is the creator of the data?	Operational data: MaaS Lab
Who is the owner of the data?	Operational data: MaaS Lab
Time period of data collection	Operational data: October 2025-present
Location of data collection	Limassol, Cyprus, covering the On-demand mini-buses service area
Detailed description of variables or records	<p><b>Real-time / Dataset Variables</b></p> <p>These fields are derived from the service platform's internal database structure. The following are standard operational variables for <b>tracked locations</b>.</p> <ul style="list-style-type: none"> <li><b>user</b>: Alphanumeric identifier for the driver</li> <li><b>time</b>: Time in ISO 8601 format during which information was sampled</li> <li><b>point.coordinates</b>: Geographical coordinates of each sampled location.</li> <li><b>meta.bat</b>: Device battery level</li> <li><b>meta.spd</b>: Vehicle speed</li> <li><b>meta.acc</b>: Vehicle acceleration</li> <li><b>meta.vhPI</b>: Vehicle license plate</li> <li><b>meta.vhId</b>: Alphanumeric identifier for the vehicle</li> <li><b>timestamp / last_updated</b>: System-generated time in ISO 8601 format when the database status was last refreshed.</li> </ul> <p>The following are standard operational variables for <b>tracked routes</b>.</p> <ul style="list-style-type: none"> <li><b>opId</b>: Alphanumeric identifier of the fleet provider</li> </ul>

	<ul style="list-style-type: none"> <li>• <b>user</b>: Alphanumeric identifier for the driver</li> <li>• <b>asId</b>: Alphanumeric identifier of shift assignment</li> <li>• <b>startAt</b>: Time in ISO 8601 format during which tracked route commences</li> <li>• <b>stops[].loc</b>: Geographical coordinates of each stop location</li> <li>• <b>stops[].book.bld.</b>: Alphanumeric identifier of booking</li> <li>• <b>stops[].stId</b>: Alphanumeric identifier of Stop</li> <li>• <b>stops[].arr</b>: Prescribed arrival time at Stop in ISO 8601 format</li> <li>• <b>stops[].lea</b>: Prescribed departure time from Stop in ISO 8601 format</li> <li>• <b>stops[].br</b>: flag about whether Stop includes legally mandated driver break.</li> </ul> <p>The following are standard operational variables for <b>tracked stop events</b>.</p> <ul style="list-style-type: none"> <li>• <b>user</b>: Alphanumeric identifier for the driver</li> <li>• <b>time</b>: Time in ISO 8601 format during which the stop event occurred</li> <li>• <b>opId</b>: Alphanumeric identifier of the fleet provider</li> <li>• <b>stId</b>: Alphanumeric identifier of Stop</li> <li>• <b>ev</b>: Type of stop event (arrival, departure)</li> </ul>
Where will the data be stored?	On MaaS Lab secure servers with restricted access.
Who is the responsible partner for managing the data (collection, processing, storage, backups, GDPR etc.)?	MaaS Lab is responsible for storing, processing, anonymising, backing up, and ensuring GDPR compliance.
Will the data be publicly available?	No. Raw datasets will remain restricted. Only anonymised, aggregated indicators may be published in reports and deliverables.
Describe the procedure(s) for safely storing and securing the data	Data stored on encrypted, access-controlled servers. Transfers conducted through secure channels. Backups performed routinely. Spatial and operational datasets processed and visualised in controlled environments.
Does the data include personal information? (e.g. name, email)?	Operational data: They contain anonymised identifiers which correspond to names and emails only accessible from MaaS Lab technical teams with restricted access for user and driver support purposes.
Does the data include sensitive personal data (e.g. health, ethnicity, political opinion, sexuality, religion)?	No, the operational datasets do not contain any sensitive categories of personal data.
Does the data involve tracking, observation, or localisation of participants?	Yes, the data does involve tracking, observation and localisation of participants, due to the specific nature of the service. Parent platform users are able to see the locations of their adolescent children’s users, as well as the events of when and where they on-/off-boarded from the minibuss, thus obtaining trust and safety guarantees from the service.

Does the data involve further processing of previously collected personal data ('secondary use')?	The data involves further processing of previously collected personal data ('secondary use') to enhance support for users and drivers.
Will Informed Consent Forms be used?	As part of the Terms and Conditions of using the platform, informed consent is taken into consideration.
How will the identity of participants be protected if required (e.g. via anonymisation)?	Anonymisation of participants is performed automatically upon joining the service.
Does a Data Protection Certificate exist (i.e. including rules for protection, retention, destruction etc.)?	Yes. MaaS Lab follows internal data protection procedures covering secure storage, access control, retention limits, and data destruction.

Table 43: Data collection conducted as part of WP3: Implementations and Demonstrations in Limassol

<b>metaCCAZE Work Package and Month</b>	<b>M13- M24: T- LLS relates to WP3 -T3.4</b>
metaCCAZE activity number (if data will be collected as part of activity) – please refer to the Activities plan in the Activities folder)	T3.4 – Limassol (CY) Implementations and demonstrations –UC 02 Shared e-bikes
Activities involved	Collection and analysis of operational shared e-bike data. Spatial and behavioural analysis of bike trips, station activity, and user perceptions. Integration of results into the Living Lab Digital Twin.
Audience size	Internal project partners, Limassol Municipality, MaaS Lab, and metaCCAZE technical teams. No data collected directly from citizens except for voluntary survey participation.
Methods used for data generation	<b>Nextbike operational data</b> <ul style="list-style-type: none"> <li>Historical static CSV files containing trip flows, station information, and bike availability snapshots.</li> <li>Real-time and near-real-time operational data provided through the Nextbike API.</li> <li>Data processed with Python to extract usage indicators, flows, demand</li> </ul>

	<p>patterns, and fleet status.</p> <ul style="list-style-type: none"> <li>• Spatial analysis and visualisation carried out in GIS to map stations, service coverage, hotspots, and trip movements.</li> </ul>
Data used/collected Brief description of the data	<ul style="list-style-type: none"> <li>• Trip-level and station-level operational data (historic CSVs, API feeds).</li> <li>• Station attributes (location, capacity).</li> <li>• Bike availability logs.</li> <li>• Aggregated flow matrices between stations.</li> <li>• Survey responses on behaviour, attitudes, and perceptions linked to e-bike and regular bike use.</li> <li>• Self-reported sociodemographic details (age, gender, education, income, residence).</li> </ul>
Is the data primary or secondary?	Operational data from Nextbike is primary provider data.
(If secondary data is used/collected) Has consent for secondary use been obtained?	Not applicable. Data is primary and obtained through direct cooperation with Nextbike Cyprus.
Who is the creator of the data?	Nextbike Cyprus
Who is the owner of the data?	MaaS Lab and NextBike on behalf of the metaCCAIZE project
Time period of data collection	January 2025 to October 2025, covering the entire period provided by Nextbike Cyprus, including both historical CSV exports and real-time data captured during the Living Lab phase.
Location of data collection	Limassol, Cyprus, covering the full Nextbike service area and all active stations.
Detailed description of variables or records	<p><b>Static CSV Dataset Variables (Historical Trips)</b></p> <ul style="list-style-type: none"> <li>• <b>Duration (minutes):</b> Trip duration expressed in minutes, derived from Nextbike's internal timestamp calculations.</li> <li>• <b>start_station_number:</b> Numeric ID of the station where the bicycle was unlocked.</li> <li>• <b>Start:</b> Human-readable station name at the trip origin.</li> <li>• <b>end_station_number:</b> Numeric ID of the station where the bicycle was returned.</li> <li>• <b>End:</b> Human-readable station name at the trip destination.</li> <li>• <b>bike number:</b> Unique asset ID assigned to each bicycle in the fleet.</li> <li>• <b>Start channel:</b> Digital channel through which the user initiated the trip (e.g., iOS App V4, Android App V4). Indicates application platform but not personal account details.</li> <li>• <b>Bike Type:</b> Classification of the bicycle used for the trip (conventional or electric).</li> </ul> <p><b>Real-time / API Dataset Variables</b></p> <p>These fields are taken from Nextbike's API structure and the typical JSON exported by the provider. They may vary, but the following are standard operational variables.</p>

	<ul style="list-style-type: none"> <li>• <b>station_id</b>: Numeric identifier for the station, consistent with the static dataset.</li> <li>• <b>station_name</b>: Label of the station as displayed in the system or mobile app.</li> <li>• <b>lat, lon</b>: Geographical coordinates of each station.</li> <li>• <b>num_bikes_available</b>: Number of bikes currently available for rental at the station.</li> <li>• <b>num_docks_free</b>: Number of free slots for returning bikes.</li> <li>• <b>num_ebikes_available</b>: Number of electric bikes currently available.</li> <li>• <b>bike_status</b>: State of each bike (active, unavailable, maintenance, reserved).</li> <li>• <b>bike_id</b>: Asset identifier linking bikes to their real-time status.</li> <li>• <b>timestamp / last_updated</b>: System-generated time when the station status was last refreshed.</li> </ul>
Where will the data be stored?	On MaaSLab secure servers with restricted access, and in the metaCCAZE internal repository with controlled permissions.
Who is the responsible partner for managing the data (collection, processing, storage, backups, GDPR etc.)?	MaaSLab is responsible for storing, processing, anonymising, backing up, and ensuring GDPR compliance. Nextbike ensures GDPR compliance at source for operational datasets.
Will the data be publicly available?	No. Raw datasets will remain restricted. Only anonymised, aggregated indicators may be published in reports and deliverables.
Describe the procedure(s) for safely storing and securing the data	Data stored on encrypted, access-controlled servers. Transfers conducted through secure channels. Backups performed routinely. Spatial and operational datasets processed and visualised in controlled environments.
Does the data include personal information? (e.g. name, email)?	No. Nextbike Cyprus provides only operational and technical data without user identifiers. Trip records do not include names, emails, phone numbers, or account details.
Does the data include sensitive personal data (e.g. health, ethnicity, political opinion, sexuality, religion)?	The operational does not contain any sensitive categories of personal data.
Does the data involve tracking, observation, or localisation of participants?	Trip data contains station locations and timestamps but does not identify individual users. It does not track persons, only shared bikes as assets.
Does the data involve further	No. Nextbike provides operational data stripped of identifiers, and it is used only for analytical purposes under the project partnership. The survey collects new primary

processing of previously collected personal data ('secondary use')?	data directly for metaCCAZE. No secondary processing of personal data from external sources is performed.
Will Informed Consent Forms be used?	Not required, as MaaS Lab receives only non-personal, provider-level datasets.
How will the identity of participants be protected if required (e.g. via anonymisation)?	Operational data contains no identifiable users.
Does a Data Protection Certificate exist (i.e. including rules for protection, retention, destruction etc.)?	Yes. MaaS Lab follows internal data protection procedures covering secure storage, access control, retention limits, and data destruction.

Table 44: Data collection conducted as part of WP3: Implementations and Demonstrations in Limassol

<b>metaCCAZE Work Package and Month</b>	<b>M19- M24: T- LLs relates to WP3 -T3.4</b>
metaCCAZE activity number (if data will be collected as part of activity) – please refer to the Activities plan in the Activities folder)	T3.4 – Limassol (CY) Implementations and demonstrations – UC04 – Transport and Energy Integration and Management
Activities involved	Integration of multimodal transport supply, transport demand, energy, and urban context datasets into the Limassol digital twin. Spatial harmonisation, GIS modelling, temporal alignment, and generation of indicators for mobility, accessibility, energy pricing, and environmental context.
Audience size	Internal project partners (MaaS Lab, Limassol Municipality, consortium technical partners). No direct engagement with citizens.
Methods used for data generation	<ul style="list-style-type: none"> <li>• Collection of static datasets from municipal registries and national authorities.</li> <li>• Harvesting of real-time traffic datasets from Google.</li> <li>• Python-based data processing and indicator extraction.</li> <li>• GIS analysis for spatial representation and layer integration.</li> <li>• Use of Mapbox to display 3D buildings and urban morphology.</li> <li>• Harmonisation of formats for integration into the digital twin.</li> </ul>

Data used/collected Brief description of the data	Data includes public transport GTFS, EV charging infrastructure, EV pricing, land-use, socio-demographic structures, traffic accidents, bike-lane networks, parking spaces, 3D building layers, and real-time traffic conditions. These datasets support multimodal transport analysis, traffic monitoring, energy-mobility interactions, and scenario modelling in the digital twin.
Is the data primary or secondary?	Secondary data from public authorities, municipalities, and commercial providers. Real-time traffic data is primary from Google APIs.
(If secondary data is used/collected) Has consent for secondary use been obtained?	Yes. Data is used under cooperation with the Limassol Municipality and from open-data or publicly accessible sources.
Who is the creator of the data?	<ul style="list-style-type: none"> <li>• Public Transport Authority (GTFS)</li> <li>• Limassol Municipality (parking, bike lanes, land-use)</li> <li>• National Statistical Service (socio-demographics, land use, traffic accidents)</li> <li>• EV charging operators (locations, hardware)</li> <li>• Energy providers (EV pricing)</li> <li>• Mapbox (3D buildings via tilesets)</li> <li>• Google (real-time traffic)</li> </ul>
Who is the owner of the data?	Ownership remains with each respective provider. MaaSLab uses the data exclusively within the metaCCAZE framework.
Time period of data collection	<ul style="list-style-type: none"> <li>• GTFS: 2025 schedule</li> <li>• EV charging stations: 2024–2025 inventory</li> <li>• EV pricing: 2025 dynamic tariffs</li> <li>• Land-use: latest registry dataset (2024)</li> <li>• Socio-demographics: 2021 population statistics</li> <li>• Traffic accidents: 2020–2024</li> <li>• Bike lanes: 2024 GIS</li> <li>• Parking spaces: 2024–2025</li> <li>• Mapbox 3D buildings: 2024 tileset</li> <li>• Google real-time traffic: continuously updated</li> </ul>
Location of data collection	Municipality of Limassol and surrounding metropolitan area.
Detailed description of variables or records	<ol style="list-style-type: none"> <li>1. GTFS (Public Transport) <ul style="list-style-type: none"> <li>• stop_id, stop_name, latitude, longitude</li> <li>• route_id, route_type</li> <li>• trip_id, service_id</li> <li>• arrival_time, departure_time</li> <li>• calendar information</li> </ul> </li> <li>2. EV Charging Stations <ul style="list-style-type: none"> <li>• provider</li> <li>• location (lat, lon)</li> <li>• charging type (AC, DC)</li> <li>• number of plugs</li> <li>• socket type</li> <li>• payment method</li> </ul> </li> </ol>

	<ol style="list-style-type: none"> <li>3. EV Pricing (Energy Grid) <ul style="list-style-type: none"> <li>• Connection fee (€)</li> <li>• Subscription fee (€)</li> <li>• Fast charging price (€ per kWh)</li> <li>• AC charging price (€ per kWh)</li> <li>• Additional fees (e.g., parking fee, free charging)</li> </ul> </li> <li>4. Land-Use Dataset <ul style="list-style-type: none"> <li>• zoning category</li> <li>• land-use classification</li> <li>• municipal boundaries</li> </ul> </li> <li>5. Socio-Demographic Data <ul style="list-style-type: none"> <li>• Municipality borders</li> <li>• male/female population counts</li> <li>• age groups</li> <li>• population density</li> </ul> </li> <li>6. Traffic Accidents <ul style="list-style-type: none"> <li>• Event geolocation</li> <li>• Event street name</li> <li>• Event type</li> <li>• Event start time</li> <li>• Event stop time</li> <li>• Event last update</li> <li>• Event severity code</li> <li>• Event importance code</li> <li>• Event text</li> </ul> </li> <li>7. Bike Lanes <ul style="list-style-type: none"> <li>• segment_id</li> <li>• geometry (polyline)</li> <li>• length</li> <li>• classification</li> </ul> </li> <li>8. Parking Spaces <ul style="list-style-type: none"> <li>• location (lat, lon)</li> <li>• parking type</li> <li>• number of parking spaces</li> </ul> </li> <li>9. 3D Building Layers (Mapbox) <ul style="list-style-type: none"> <li>• building_id</li> <li>• footprint geometry</li> <li>• height attribute</li> </ul> </li> <li>10. Real-Time Traffic (Google) <ul style="list-style-type: none"> <li>• road segment ID</li> <li>• congestion level</li> </ul> </li> </ol>
Where will the data be stored?	MaaS Lab secure servers and metaCCAZE SharePoint with controlled access.
Who is the responsible partner for	MaaS Lab oversees storage, processing, GDPR compliance, backups, and access control.

managing the data (collection, processing, storage, backups, GDPR etc.)?	
Will the data be publicly available?	No. Only aggregated and anonymized indicators will be included in reports.
Describe the procedure(s) for safely storing and securing the data	Encrypted storage, Password-protected access, Limited rights for consortium members, Secure transfer channels, Regular backups, no user-level identifiers included in any dataset.
Does the data include personal information? (e.g. name, email)?	No personal information is included.
Does the data include sensitive personal data (e.g. health, ethnicity, political opinion, sexuality, religion)	No sensitive data categories are present.
Does the data involve tracking, observation, or localisation of participants?	No tracking of individuals takes place. Real-time traffic data refers to aggregated conditions, not people.
Does the data involve further processing of previously collected personal data ('secondary use')?	Yes. Municipal and registry datasets are reused under formal cooperation. None contain personal data.
Will Informed Consent Forms be used?	Not required, as no personal data is collected.
How will the identity of participants be protected if required (e.g. via anonymisation)?	Not applicable, as datasets do not relate to identifiable individuals.
Does a Data Protection	Yes. MaaSLab maintains internal GDPR-aligned data protection procedures covering storage, retention, and deletion.

Certificate exist (i.e. including rules for protection, retention, destruction etc.)?	
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Table 45: Data collection conducted as part of WP3: Implementations and Denonstrations in Tampere

<b>metaCCAZE Work Package and Month</b>	<b>M23- M24: T- LLs relates to WP3 -T3.5</b>
metaCCAZE activity number (if data will be collected as part of activity) – please refer to the Activities plan in the Activities folder)	T3.5: Tampere: Implementations and demonstrations -UC02 Tram-feeder service with advanced remote-control centre and inductive charging
Activities involved	Performance of autonomous robot bus. Operational improvements including charging
Audience size	Internal project partners, Tampere public transport authority (NYSSE).
Methods used for data generation	Remoted Oy operational data <ul style="list-style-type: none"> <li>• Passenger information: NOV 2025, Manual calculation and DEC 2025 onwards: Automated passenger count system.</li> <li>• Remoted control agent logs.</li> </ul>
Data used/collected Brief description of the data	<ul style="list-style-type: none"> <li>• Number of passengers served in a week</li> <li>• KM's driven in a week: How many KM's are driven in a week</li> <li>• Number of fatalities: Number of accidents and fatalities</li> <li>• Remote control agent intervention: How many times remote agent intervenes AV operations</li> </ul> Charging time: <ul style="list-style-type: none"> <li>• Automated charging in-use</li> </ul>
Is the data primary or secondary?	Operational data from Remoted Oy is primary provider data
(If secondary data is used/collected) Has consent for secondary use been obtained?	N/A. There is no personal data involved
Who is the creator of the data?	Remoted Oy
Who is the owner of the data?	Remoted Oy
Time period of data collection	NOV 2025 - DEC 2026.

Location of data collection	Tampere, Lintuhytti district and Hervantajärvi tram stop.
Detailed description of variables or records	<ul style="list-style-type: none"> <li>• Number of passengers served in a week: number</li> <li>• KM's driven in a week: How many KM's are driven in a week: km's</li> <li>• Number of fatalities: Number of accidents and fatalities: number</li> <li>• Remote control agent intervention: How many times remote agent intervenes AV operations; Number</li> <li>• Charging time: hrs</li> <li>• Automated charging in-use: number</li> </ul>
Where will the data be stored?	Remoted Oy Google Drive
Who is the responsible partner for managing the data (collection, processing, storage, backups, GDPR etc.)?	Remoted Oy
Will the data be publicly available?	No
Describe the procedure(s) for safely storing and securing the data	Access to data requires Remoted Oy user credentials
Does the data include personal information? (e.g. name, email)?	No
Does the data include sensitive personal data (e.g. health, ethnicity, political opinion, sexuality, religion)	No
Does the data involve tracking, observation, or localisation of participants?	No
Does the data involve further processing of	No

previously collected personal data ('secondary use')?	
Will Informed Consent Forms be used?	No
How will the identity of participants be protected if required (e.g. via anonymisation)?	Operational data contains no identifiable users.
Does a Data Protection Certificate exist (i.e. including rules for protection, retention, destruction etc.)?	Yes. Remoted Oy follows internal data protection procedures covering secure storage, access control, retention limits, and data destruction. These procedures apply to both operational and survey data used within metaCCAIZE.

## ANNEX V: Templates for Data Management within the Standardised Impact Evaluation Framework (SIEF)

<b>metaCCAIZE Work Package and Month</b>	<i>Specify WP number, task, and month range (e.g., M1–M41: T1.4; WP1). Link to related deliverables (e.g., D1.4 &amp; D1.6).</i>
Activity Number	<i>Reference the activity as per the Activities plan in the Activities folder.</i>
Activities involved	<i>List the specific activities generating or using the data.</i>
Methods Used for Data Generation	<i>Describe how data will be collected (surveys, sensors, MaaS platform logs, interviews, simulations, etc.).</i>
Brief Description of Data	<i>Short summary of what the data contains and its purpose.</i>
Primary or Secondary Data	<i>Indicate whether the data is collected directly (primary) or re-used from other sources (secondary).</i>
Consent for Secondary Use	<i>If secondary data is used, indicate whether appropriate consent or licenses are obtained.</i>
Creator of Data	<i>Name or organisation responsible for generating the data</i>
Owner of Data	<i>Legal or organisational owner of data</i>
Time Period of Data Collection	<i>Specify start and end dates of data collection</i>
Location of Data Collection	<i>Where data is collected (physical location, city, region or platform)</i>

Detailed Description of Variables / Records	<i>Explain what each variable represents, units, data type and coding if applicable.</i>
Data Format	<i>Specify file types (CSV, JSON, database, GIS, etc.)</i>
Data Volume / Size	<i>Number of records, file size, or expected data growth (useful for storage planning)</i>
Metadata / Documentation	<i>Describe data documentation: data dictionary, README or codebooks</i>
Data Quality / Validation	<i>Describe checks, cleaning procedures or validation steps applied</i>
Standards / Interoperability	<i>Standards, ontologies, or formats used (e.g. GTFS for mobility data, ISO codes)</i>
Storage Location	<i>Where the data will be stored (institutional servers, cloud storage, repository)</i>
Responsible Partner for Data Management	<i>Who manages collection, processing, storage, backup and GDPR compliance</i>
Public Availability / Licensing	<i>Indicate if data will be publicly shared and under which license ( CC-BY, restricted, etc.)</i>
Retention Period / Disposal	<i>Planned retention period and procedure for sale detection</i>
Procedure for Safe Storage and Security	<i>How the data is protected (encryption, access controls, backup procedures)</i>
Personal Information Included	<i>Does it contain names, emails or other identifiers?</i>
Sensitive Personal Data Included	<i>Health, ethnicity, political opinion, sexuality, religion, etc.</i>
Tracking/ Observation Localisation	<i>Does it involve GPS tracking, video observation, or participant localisation?</i>
Secondary Use of Personal Data	<i>Whether it involves further processing of previously collected personal data.</i>
Informed Consent Forms	<i>Indicate if consent forms will be used for data collection</i>
Participant Identity Protection	<i>Anonymisation, pseudonymisation or other methods to protect privacy</i>
Ethics Approval/ Oversight	<i>Any ethics board approval reference number or oversight procedures</i>
Data Protection Certificate	<i>Whether a certificate formal policy exists covering protection, retention and destruction</i>

## ANNEX VI: metaCCAIZE's s Data Protection Officers

PARTNER	DATA PROTECTION OFFICER	CONTACT
ERTICO	George Christou	g.christou@mail.ertico.com
NTUA	Evi Koliou	evi_koliou@mail.ntua.gr
MaaS Lab	Theodora Betsidou	th.betsidou@maaslab.org
BABLE	Breogan Sanchez	breogan@bable-smartcities.eu
FACTUAL	Eglantina Dani	eglantina@factual-consulting.com
STEINBEIS	Alexander Stücker	datenschutz@steinbeis.de
TRT	Sofia Pechin Castagnino	pechin@trt.it
GAMS	Geoff Holmes on behalf of the data protection officer at the municipality of Amsterdam	g.holmes@amsterdam.nl
AMS	Daniel Scheerooren	daniel.scheerooren@ams-institute.org
TU Delft	Gonçalo Correia on behalf of the data protection officer at the faculty of civil engineering and Geosciences of TU Delft	g.correia@tudelft.nl
ZOEV	Louden Jansen	Louden@pkwaterbouw.nl
TMAK	Indranil Bhattacharya, on behalf of the Townmaking Commons together with the City of Amsterdam	Indranil@townmaking.com
ARG	Jeroen Steenbakkens	Jeroen@argaleo.com
TNL	Edwin Mein	edwin.mein@technolution.nl
LHM	Sayalee Pendharkar	Sayalee.pendharkar@muenchen.de
TUM	Prof. Dr. Uwe Baumgarten	beauftragter@datenschutz.tum.de
STR	Patricia Schröer	datenschutz@stadtraum.com
B4B	Alexander Belz	alexander.belz@b4b-logistics.de
SCSPS	Sebastian Herter	sebastian.herter@smart-city-system.com
SDAG	Gabriele Toellner	datenschutz.deutschland@dbschenker.com
LIMA	Marianna Themistokleous	mthemistokleous@limassol.org.cy
EMEL	Petros Theocharides	petros@limassolbuses.com
OXYGONO	Eleni Neoptolemou	e.neoptolemou@harriskyriakides.law
NBBIKE	Antonis Nicolaides	antonis@nextbike.com.cy
TAM	Ari Andreasson	tietosuojavastaava@tampere.fi
REMOTED	Jaakko Autere	jaakko@remoted.fi
TAU	Riku Viri	riku.viri@tuni.fi
ATHENS	Panagiota Diamanti	dpo@athensanaplasia.gr
OASA	George. D. Stratiotis, D.P.O of O.A.S.A SA	dpo@oasa.gr
GMK	Jarosław Myślak	iodo@ztp.krakow.pl
MTIP	Donna Borg Micallef	donna.borg-micallef@gov.mt

MPT	Laura Calleja	dpo@publictransport.com.mt
UM	Karyn Scerri	karyn.scerri@um.edu.mt
AMAT	Lara Barbara Colombo	larabarbara.colombo@amat-mi.it
NEXT	Tommaso Gecchelin	Gecchelin@get-next.com
UNINA	Marcello Montanino	marcello.montanino@unina.it
MVK	Attila Bíró	biro.attila@mvkzrt.hu
BME	Domokos Esztergár-Kiss	esztergar-kiss.domokos@kjk.bme.hu
HCLINEAR	Balázs CZINEGE	metaCCAZE@hclinear.hu
CD78	Clément Papon (temporary)	Metaccaze@yvelines.fr
VED	Anouar Bouslah	anouar.bouslah@vedecom.fr
FLWR	Enea de Bollivier	dpo@floware.fr
AGETPL	Luca Tosi	luca.tosi@agenziatpl.it
MOBILYSIS	Manos Barmounakis	manos@mobilysis.ch

[www.metaCCAZE-project.eu](http://www.metaCCAZE-project.eu)



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