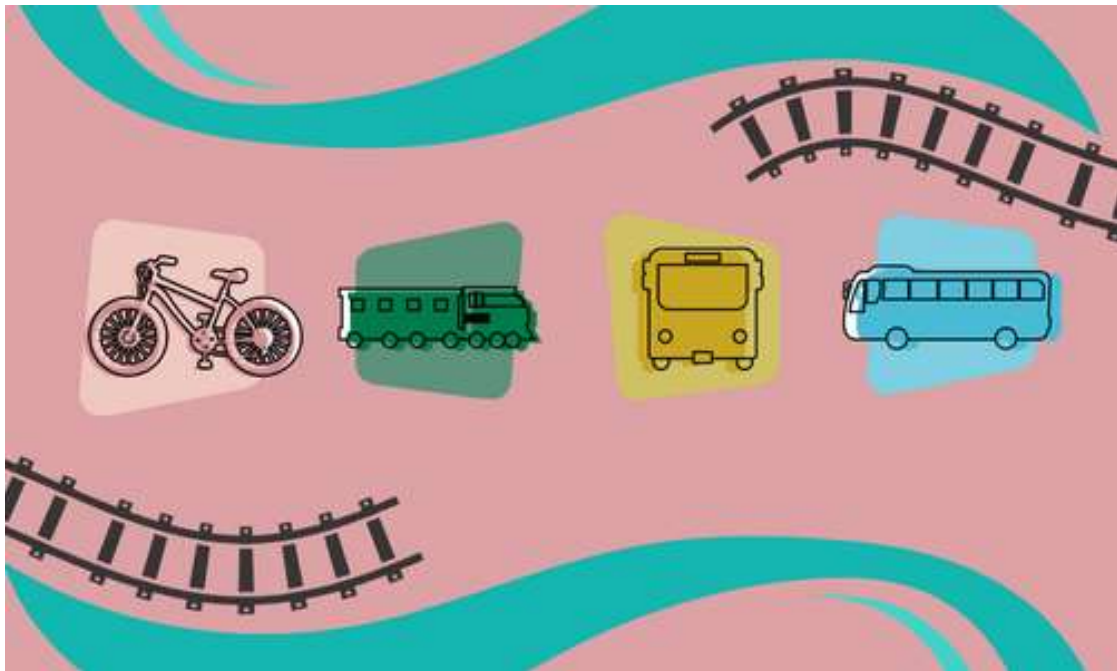




D8.1 - Project management plan



Multimodal Optimisation leveraging Data Acquisition from Local Stakeholders towards a Holistic Improvement of Freight and People Transport



Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Climate, Infrastructure and Environment Executive Agency (CINEA). Neither the European Union nor the granting authority can be held responsible for them.



Project Information

Grant Number	Agreement	101203040	Acronym	MODALSHIFT
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Call and topic identifier	HORIZON-CL5-2024-D6-01-06			
Duration	42 months			
Start Date	1 June 2025	End date	30 November 2028	
Website	https://modalshift.eu/			
Coordinator	Instituto Tecnológico de Aragón (ITA)			

Document Information

Beneficiary responsible	Cristina de la Hera /Elena Pallarés
Author/-s	Cristina de la Hera
Co-author(s)	Elena Pallarés (ITA)
Work Package	8
Deliverable	8.1
Due date	30/11/2025



Nature of the deliverable

R	Document, report (excluding the periodic and final reports)	X
DEM	Demonstrator, pilot, prototype, plan designs	
DEC	Websites, patents filing, press & media actions, videos, etc.	
DATA	Data sets, microdata, etc.	
DMP	Data management plan	
ETHICS	Deliverables related to ethics issues	
SECURITY	Deliverables related to security issues	
OTHER	Software, technical diagram, algorithms, models, etc.	

Dissemination level

PU	Public, fully open, e.g. web (Deliverables flagged as public will be automatically published in CORDIS project's page)	X
SEN	Sensitive, limited under the conditions of the Grant Agreement	

Quality procedure

Date	Version	Reviewer	Action
14/11/2025	V1	Cécile Fligny (EQY)	General review of the document
24/11/2025	V2	Veronique Rottier (ID4Mobility)	Revision and suggestions



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ANNEXES

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1 PROJECT ABSTRACT

The vision of **MODALSHIFT** lies in the creation of a transport network and traffic management optimisation framework, trusted and valuable for local stakeholders, that bridges the data from infrastructures, logistics and mobility operators.

New IoT devices - a smart box enabling Capacity-as-a-Service, and a e-subscription device for public transport access for vulnerable people, will increase the sources for data collection. A mobility data space, associated to novel geolocation data anonymisation, will be set up in the 3 Case Studies (Bulgaria, Italy, Spain) to ensure trusted and secure data exchange between data providers and users.

Agent-based modelling will identify how a modal shift towards low-carbon, active and shared mobility services can be acceptable by end-users and support a reshape of the public transport services and the use of urban space. A multimodal traffic management platform will orchestrate, upon the data space, the cooperation of stakeholders at network and multimodal hub scales. It enables the connection of dynamic optimisation algorithms to operational drivers' tool for mobility operators, and of static models to visual interface for transport planners.

With this approach, MODALSHIFT stimulates new uses of the transport network to reduce traffic congestion for low-carbon and inclusive mobility, avoiding pernicious rebound effects.

2 EXECUTIVE SUMMARY

2.1 PURPOSE

The purpose of this document is to describe the tools and procedures for the effective management of the project, as well as to ensure the quality of the expected results and to manage potential risks.

The development of these tools has been linked to Milestone 15: Management tools available, which was achieved in Month 3 of the project.

At the time of release of this document, all the elements described herein (structures, tools, procedures, etc.) have been fully developed, are well known across the consortium, and are fully operational.

2.2 INTENDED AUDIENCE

This deliverable is intended to serve as a reference document for all beneficiaries of the MODALSHIFT project, as well as a guidance resource for managers of similar projects (particularly those under Horizon Europe), who may find inspiration in the management mechanisms developed and described herein for the implementation of their own projects.

2.3 DESCRIPTION OF THE MAIN ACTIVITIES AND KEY RESULTS

The main activities related to this deliverable include:

- Deployment of the project management tools (MS15).
- Implementation of internal and external communication tools for the project.
- Definition and launch of regular project monitoring and follow-up meetings.



- Establishment of contact with the Multimodal Traffic Management Cluster, participating by projects with a complementary approach to multimodal transport under the H2020 and Horizon Europe Program.
- Development of a risk matrix and corresponding mitigation strategies.

2.4 KEY RESULTS

As a result, the following elements are now available:

- Contractual documents: Grant Agreement (GA) and Consortium Agreement (CA), signed and known by all partners.
- Communication tools, including the project website and social media profiles, for external communication.
- A shared space for internal document exchange.
- Tools to facilitate online meetings.
- Templates for project reporting and monitoring (event tracking, meeting tracking, etc).
- A template for deliverable quality review.

2.5 CONCLUSION

A key finding is that all defined management elements (structures, tools, procedures, templates, and contractual documents—GA and CA) are now fully developed and operational. This confirms that the project's management framework is robust and ready for the implementation phase. No immediate critical issues that threaten the project's viability were detected at this stage; instead, a complete list of potential risks has been identified and documented in the risk matrix.

In conclusion, by Month 6 of the project, a set of well-defined tools and processes is in place and fully known by all consortium members, ensuring the proper management of the project in terms of both implementation and reporting. This document provides a detailed description of these elements.

3 INTRODUCTION

This deliverable addresses the need to provide the MODALSHIFT project consortium with the tools and methodology (procedures) required to:

- Ensure effective project management, including communication, continuous monitoring and control of implementation, and both technical and financial reporting.
- Guarantee the quality of the planned deliverables.
- Manage potential risks that may arise during the project implementation.

4 THE CONSORTIUM

The MODALSHIFT project consortium is composed of 17 partners (16 beneficiaries and one associated partner) from 7 EU countries: Spain, Belgium, France, Italy, Austria, Bulgaria, and Portugal, as well as Canada.

16 partners + 1 Associated partner (PNAEAS). 7 countries UE + Canada.

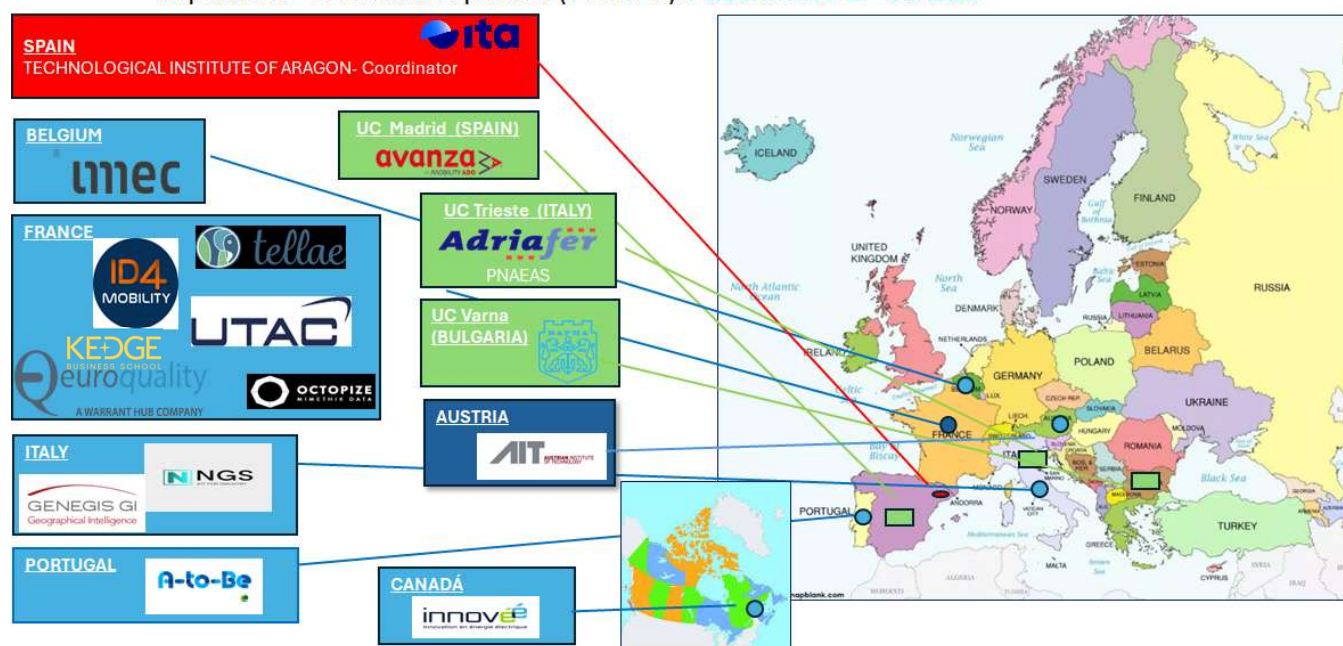


Figure 1: Consortium's partners' geographical distribution overview

LIST OF PARTNERS

The complete list of partners is shown in the table below:

Table 1 1: List of beneficiaries

N.	Participant organisation name	Type	Acronym	Country
1	ITA - Technological Institute of Aragon	RTD	ITA	ES
2	A-to-Be - MOBILITY TECHNOLOGY SA	Company	ATOBE	PT
3	Austrian Institute of Technology	RTD	AIT	AT
4	ID4Mobility	Association	ID4M	FR
5	KEDGE Business School	RTD	KEDGE	FR
6	GeneGIS GI	SME	GGI	IT
7	Interuniversitair Micro-Electronica Centrum - IMEC	RTD	IMEC	BE
8	Tellae	SME	TELLAE	FR
9	New Generation Sensors	SME	NGS	IT
10	Octopize Mimethik Data - Big Data Santé	SME	OCTO	FR
11	UTAC France	Company	UTAC	FR
12	Adriafer S.R.L	Company	ADF	IT
13	Varna Municipality	Public	VARNA	BG
14	Avanza Spain S.L.	Company	AVANZA	ES
15	Euroquality SAS	Company	EQY	FR

16	InnovÉÉ - Innovation en énergie électrique	Public	INNOVEE	CA
Associated partner				
17	Port Network Authority of the Eastern Adriatic Sea	Public	PNAEAS	IT

In terms of capabilities, the consortium is well-balanced both in its geographical distribution and in the legal nature of its members. It brings together companies, research centres, universities, public administrations, and associations — all of which play a fundamental role in the deployment of the use cases.

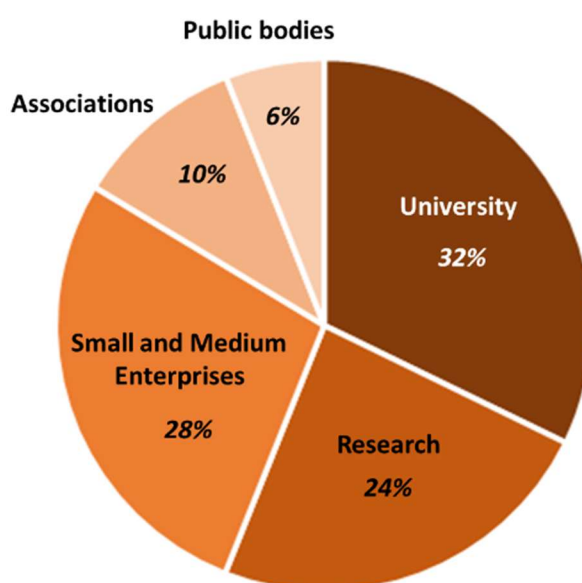


Figure 2: Consortium's activity sector repartition

4.1 USE CASES

The MODALSHIFT Project has three use cases that will be deployed in Varna (Bulgaria), Port of Trieste (Italy) and Madrid (Spain) which scope is briefly described as follows:

The annexes contain supplementary information about MODALSHIFT's use cases

4.2 COORDINATION

Instituto Tecnológico de Aragón – ITA is the coordinator of the consortium. ITA is a non-profit research center, dependent on the regional Government of Aragon which mission is guide and help all kind of organizations to be more competitive through innovation and technological development.

ITA has a large background of more than 40 years working for many industrial sectors like manufacturing, automotive, mobility/logistics, aeronautics, Building, Agri-food...

Services provided:

- **R&I projects:** providing multidisciplinary technological knowledge, 320 EMPLOYEES
- **Technological and Laboratory Services.**
- **Technological Consulting** for the digital& green transition.

Focused on addressing global challenges, in five domains:



Figure 3: MODALSHIFT's area of work

PROJECT STRUCTURE

The project will be conducted to achieve 10 principal results, through a five-step process from an initial analysis phase leading to specifications, used as guidelines for the development of processes and solutions to be adapted in view of their integration in the Case Studies where they will be tested and validated, with the final aim to make the results of the project widespread.



Figure 4: Timeline of the project

Table 2 2: Project results of the project and their description

Principal Result	Description
PR1	Capacity-as-a-service design and strategies for increasing the value of multimodal transport services.
PR2	Governance structures and guidelines for the uptake of multimodal multistakeholder transport management, pool of model dynamic incentives including pricing, rating system identifying best return on investment.
PR3	Data collection and communication systems for infrastructures, vehicles, people and loads.
PR4	Trusted and secure mobility and freight data spaces.
PR5	Multimodal transport network digital twins in case studies.
PR6	Traffic forecasting algorithms
PR7	Multi-objective decision-making algorithms for network and traffic management
PR8	Collaborative platform for multisource multistakeholder traffic and network management

PR9	Dynamic tools for daily transport service providers operations
PR10	Data and scenario visualisation platform for the planning of transport modes and services

4.3 WP STRUCTURE

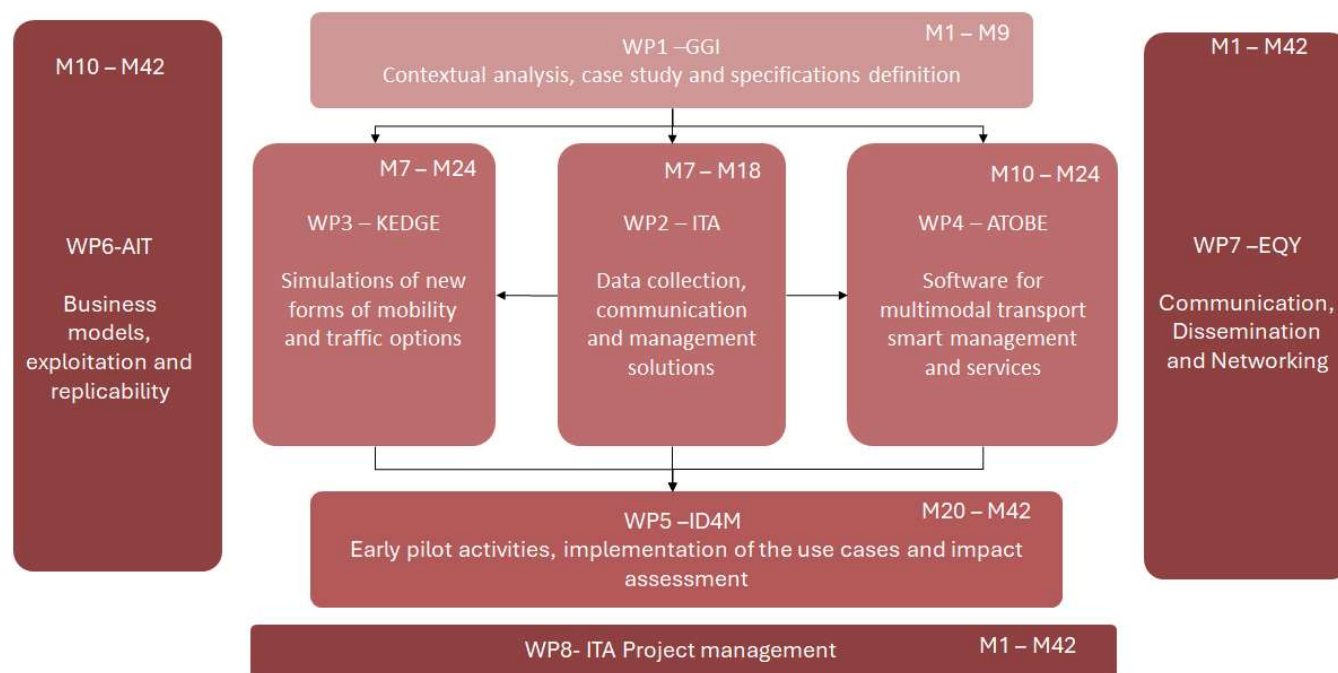


Figure 5: Work Plan structure

To achieve the project's expected results, the tasks to be executed will be carried out over the 42-month project implementation period and are grouped into eight work packages. During the implementation of the project, 26 deliverables will be released, 23 of which will be public.

5 INTERNAL COLLABORATION, COMMUNICATION, AND PROJECT MEETINGS

Communication is a key activity for ensuring the proper execution of the project, but also for fostering the partners' commitment to it and for generating a network of human relationships that maximise the project's internal results and its external impact.

5.1 COMMUNICATION TOOLS

As a proposition from EQY validated by the other partners, the consortium decided to use Teams (and/or Zoom) as both a communication tool for meetings and a repository platform with secured access for each participant.

The simplified procedure (Figure 1) is the following:

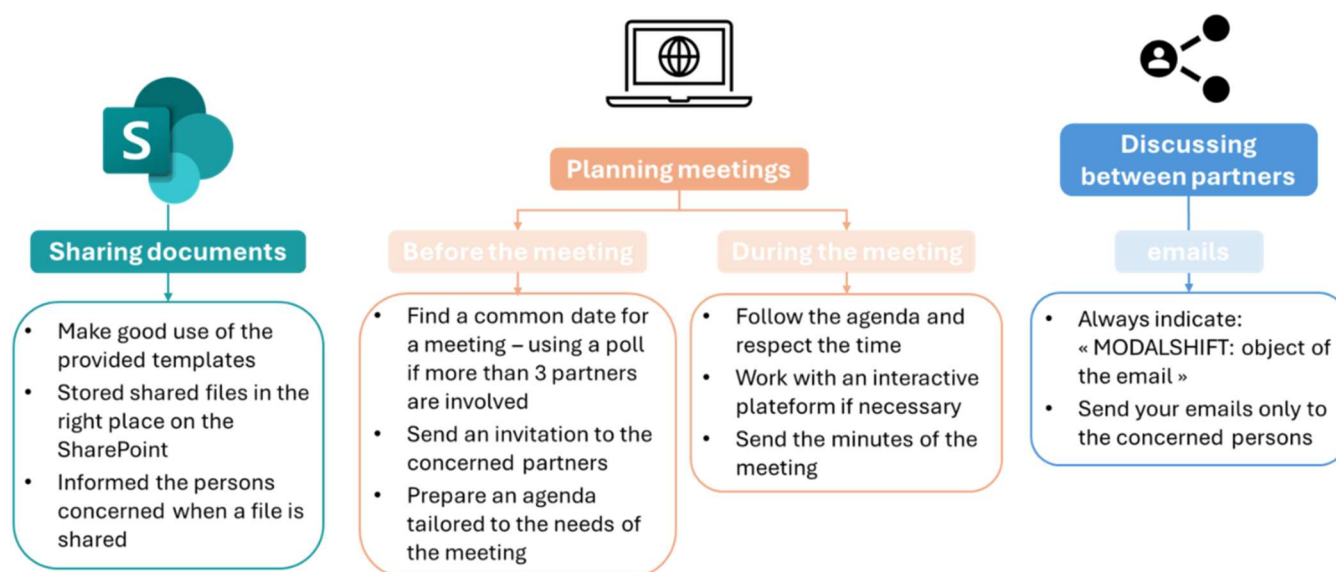


Figure 6: MODALSHIFT communication tools

5.1.1 E-MAIL AND MAILING LISTS

Partners will communicate with each other through direct emails or telephone/web calls in cases where only a subset of the consortium partners needs to be reached or where sensitive or critical information needs to be communicated. Mailing lists constitute an important communication tool used in MODALSHIFT, and all mailing lists are private with members-only access to them.

An internal Excel file called “MODALSHIFT General & WP Contact list” gathers all contact information, subdivided into WP contacts and admin/Financial contacts. It must be updated by each organisation when team members of the organisation are changing.

5.1.2 SHARED SPACE

All partners in the consortium are using the Microsoft Office suite, provided by their organisation. They can therefore access the repository with their Office ID through either a desktop application (Teams/SharePoint) or a webpage (shared with partners).

The repository of the MODALSHIFT project is organised as follows (see Figure 7 below).

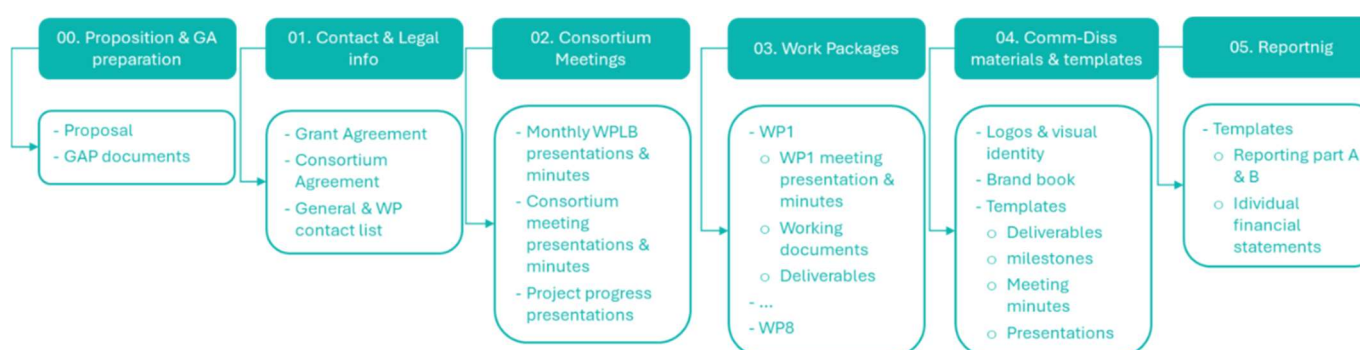


Figure 7: SharePoint structure

5.1.3 COMMUNICATION TEMPLATES

Throughout the project, specific templates will be used to ensure a coherent and recognisable project identity across all internal and external activities. These include templates for consortium meetings (PowerPoint presentations) and reports, deliverables, press releases, flyers and dissemination materials (posters, newsletters, etc.).

In line with the graphic charter, these templates will contribute to homogenise and reinforce the visual identity of the project to both scientific and non-expert stakeholders, improving the project's visibility and recognition.

All partners will be encouraged to use the official templates for communication, communication and presentation activities related to the project. EQY, leader of the WP7 – Communication and Dissemination activities, will be responsible for developing, updating and distributing these templates, according to the HORIZON EUROPE funding acknowledgement requirements and the European Commission's communication standards.

The template and comm/diss materials will be made available in a shared workspace, the general SharePoint, put at the disposal of the partners.

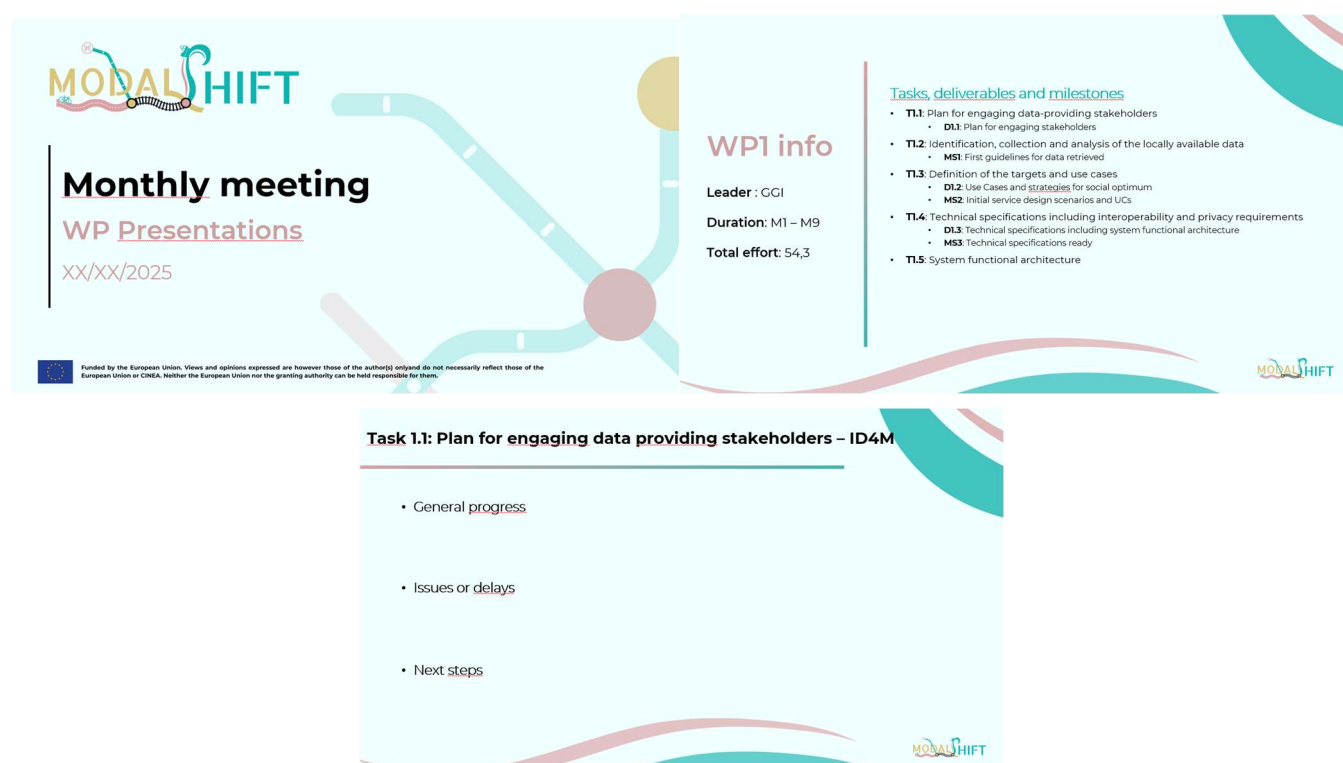


Figure 8: Template PowerPoint





Figure 10: MODALSHIFT logo

This logo is a full version to be used on all project promotional materials. A simplified version has also been designed for use on social media and related documentation



Figure 11: MODALSHIFT's logo round version

All information about the project's dissemination and external communication is thoroughly defined and compiled in Deliverable D7.1: the Dissemination, Exploitation and Communication Plan.

This deliverable (D7.1) integrates essential elements such as the visual logo, the project website and structure, social media presence with all network links, scientific publications, promotional material, and a schedule of events planned for the MODALSHIFT project's outreach and dissemination activities.

This Communication Plan and the entire external communication strategy are formally detailed in a separate deliverable, but the execution of this strategy remains inherently connected to the overall project management

6.2 MULTIMODAL TRANSPORT MANAGEMENT CLUSTER

The MODALSHIFT Project is one of the projects that has recently joined the MTMC. This cluster comprises 13 funded projects (€65 million) under the Horizon 2020 and Horizon Europe programmes and the CCAM partnership. The aim of this cluster is to create a space for participation and the creation of synergies between R&D projects related to multimodal traffic management with an objective that goes beyond the scope of the participating projects themselves: to contribute to the definition of the policies, measures and regulations to be included in the next work programme within the new EU mandate that has just begun, and to provide vision and guide on the upcoming topics for research in the field of multimodal transport.

In this regard, the MTM Cluster, which MODALSHIFT is joining, is working on the definition of a roadmap for the implementation of MTM Technologies and Services.

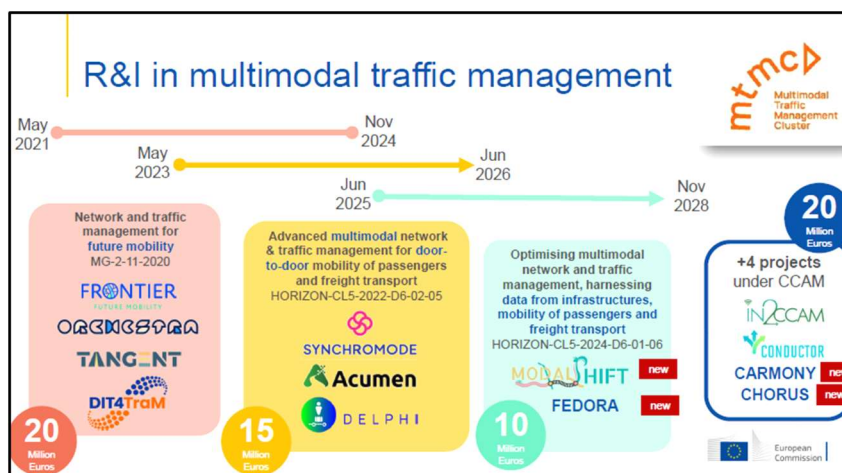


Figure 12: MTM cluster projects

7 PROJECT MONITORING AND REPORTING

7.1 PERIODIC AND FINAL PROGRESS REPORTS / INTERNAL MONITORING

The project coordinator will oversee the tasks related to reporting, payments and communicating with EC. To facilitate **internal follow-up and ensure adherence to the project** following mechanisms have been activated.

- Internal Progress Monitoring Report, due by Month 9, must be delivered before the first official report – due to month 12-. This is an internal tool to assess the appropriate progress and performance of the project.
- Rehearsals for preparation of Review Meetings (or eventually meetings with EC representatives). Starting preparation 4 weeks before.

The **three official reporting periods** of the project have been set in the Consortium Agreement,

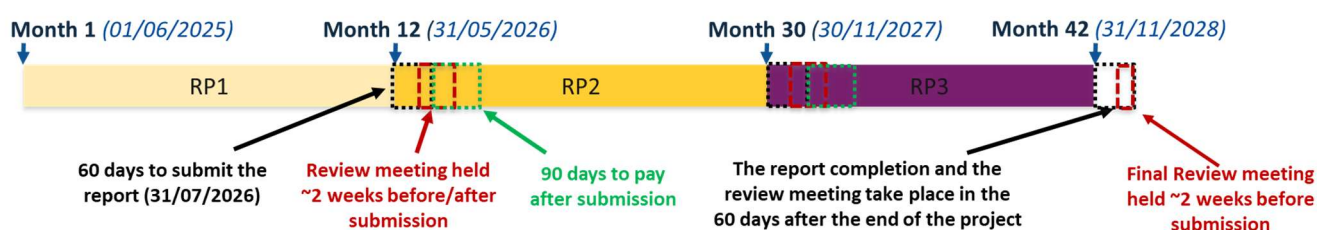


Figure 13: Reporting periods agenda

Those periodic reports will include technical information, financial statements and continuous data reporting.

7.2 TEMPLATES FOR MONITORING AND MANAGEMENT

To facilitate the monitoring of the project and, consequently, project reporting, the following templates have been delivered by month 3 of the project, linked to Milestone 15- "Management tools available":

- **Deliverables, milestones, reporting and risks tracker**, to have updated information about the level of fulfilment of deadlines for deliverables, milestones and reporting regarding the initial planning and to keep records on the risks occurring during the project, and mitigation actions deployed. Also, reviewers from the consortium have been designated to evaluate the deliverables and milestones before submission ensuring consistency and completeness of the information provided.
- **Timesheet template**, to be used optionally by those partners who do not have a time recording management system.
- **Meetings track**, to be used mandatorily to keep a record of the meetings held, their purpose, and participation.
- **Minutes template**, to be used during consortium meetings to keep a record of key discussion points, decisions and agreed next steps, bringing support, effective coordination and follow-up.
- **Reporting template**, to be used by the partners for reporting periods requested by the European Commission, ensuring tracking of the work done throughout the project.

7.3 MILESTONES AND DELIVERABLES

Deliverables and milestones are part of the continuous reporting and must be submitted on time.

- **Deliverables:** distinct outputs of the project that will be shared with the EC –report, document, piece of code, etc.-

All project deliverables -26- are identified and recorded in the Deliverables, Milestones and Risk Tracker.

A schedule has been drawn up and agreed upon by all partners for their preparation, review and submission, as shown below.

Table of Contents	Skeleton Ready	Full Version to Reviewing Team	Submit Deliverable	Deliverable Due Date
•4 Months •Validated ToC with main partners and WP Leader •Distribution of chapter per partner	•2 Months •Draft outline is prepared and shared. •Status (50%)	•1 Month •Full draft is reviewed internally •Status (100%)	•5 Days •Final version is uploaded to Participant Portal	•0 Days •Official deadline for submission

Figure 14: Deliverable submission timeline

The deliverables are developed collaboratively by the involved partners within shared folders. The final version is saved in both editable and PDF formats. Once completed, they are uploaded by the deliverable owner and submitted by the coordinator through the EC portal.

- **Milestones:** control points in the project that help to chart progress and would slow down the project if not reached. All project milestones -26- are identified in the Deliverables, Milestones and Risk Tracker. Once they are achieved, they must be recorded, together with the delivery date and a comment.

8 QUALITY ASSURANCE

8.1 DELIVERABLE TEMPLATE

Several mechanisms have been established to guarantee the quality of the deliverables of the project:

- A schedule for the preparation of deliverables mentioned in the previous section, which ensures that there is sufficient time for their preparation and review before submission.
- A double review level for each of the deliverables, carried out by two partners other than the one responsible for their preparation. Below is shown a section of the table that has been created to identify the reviewers.

	B	C	D	E	F	G
1	Deliverable	Lead	Reviewer 1	Reviewer 2	Deadline	Reviewer 1
2	Data Management Plan	ITA	OCTO	AIT	Aug-25	
3	Plan for engaging stakeholders	ID4M	AIT	ITA	Sep-25	
4	Use Cases and strategies for social optimum	ID4M	ITA	EQY	Feb-26	
5	Technical specifications	GGI	IMEC	KEDGE	Feb-26	
6	Platform for multimodal network and traffic management	ATOBE	TELLAE	VARNA	Feb-26	
7	Agent-based modelling	AIT	ITA	KEDGE	Jun-26	
8	Dynamic predictive and prescriptive optimisation algorithms	KEDGE	IMEC	AIT	Jun-26	
9	Logistics and mobility management app	GGI	AVANZA	EQY	Jun-26	
10	Decision support tool for planning future transport services	TELLAE	NGS	ID4M	Jun-26	
11	Set of advanced data collection processes and devices	NGS	ID4M	OCTO	Dec-26	
12	Processes for data anonymisation and treatment	OCTO	ITA	AIT	Dec-26	
13	Traffic forecasting algorithms	IMEC	KEDGE	ITA	Feb-27	
14	Data space connectors and architecture	ITA	IMEC	KEDGE	Mar-27	
15	Digital Twin representing the three Case Studies	ITA	AIT	KEDGE	Apr-27	
16	Business models and dynamic incentives of towards modal shift	ATOBE	ID4M	VARNA	Sep-27	
17	Exploitation strategies and innovation landscape	ID4M	KEDGE	ITA	Jul-28	
18	Learnings and governance schemes from the early pilot phases	ID4M	AIT	GGI	Nov-28	
19	Scenarios and strategies for low-carbon and inclusive transport	AIT	KEDGE	TELLAE	Nov-28	
20	Regulatory and policy recommendations	AIT	ID4M	EQY	Nov-28	
21	Dissemination, Exploitation and Communication Plan	EQY	ID4M	TELLAE	Nov-25	
22	Report on communication and dissemination activities	EQY	ITA	KEDGE	Nov-28	

Figure 15: Reviewer's pair list for each deliverable

- Finally, a template has been designed to assess the quality of the deliverables. This document is to be completed by the two reviewers, who will record both their evaluation and their specific contributions.


 MODALSHIFT - Multimodal Optimisation leveraging Data
 Acquisition from Local Stakeholders towards a Holistic
 Improvement of Freight and people Transport

Scoring Sheet for Deliverable D

Date:		Reviewer:	
Please specify the dissemination level of the Deliverable		Please specify the type of the Deliverable	
Public ☐		Report ☐	
Sensitive ☐		Demonstrator, pilot, prototype ☐	
		Other ☐	

Content

	Yes	Should be improved	No	Improvement suggested
Is the outline clear and reasonable?	☐	☐	☐	
Does the material support the aims of WP and GA/Dual?	☐	☐	☐	
Is the information given clearly, accurately, and pertinently?	☐	☐	☐	
Is the material accurate and free of false claims?	☐	☐	☐	

Figure 16: Scoring sheet template



9 RISK MANAGEMENT

The MODALSHIFT project will implement a robust and proactive risk management strategy throughout its entire duration. This plan is designed to identify, assess, and mitigate potential threats that could impact the project's success, ensuring that all foreseen challenges are addressed with a clear and effective response.

There is a structured approach in this potential risk mitigation plan that ensures the project is prepared to adapt to any unforeseen challenge, maintaining its trajectory to successfully achieve all its objectives, on time, with the required quality and as expected.

A total of 14 potential risks were selected in the proposal development from these mentioned categories, evaluating them by their likelihood of occurrence throughout the project and the severity of their impact. Only one of these risks was assessed with a medium likelihood and a high severity in the event that it materialized.

A dedicated Risk Register has been established to systematically monitor all potential risks.

Each risk is categorized by its likelihood (Low, Medium, High) and severity (Low, Medium, High). For each identified risk, a specific mitigation measure has been defined, and a responsible Work Package (WP) and lead partner have been assigned to ensure accountability.

The main categories of risks identified, and their corresponding mitigation strategies, are as follows:

- **Management and Coordination Risks:** The potential for a partner to withdraw from the project is mitigated by the pre-assessment of partner solvency and a clear task reallocation plan. Risks related to collaboration difficulties between partners of different expertise are addressed through regular meetings and the use of dedicated management and communication tools provided by the WP8 leader.
- **Technical and Operational Risks:** Risks such as the lack of data to test solutions or technical failures during the demo phase have been carefully considered. Mitigation measures include the pre-identification of data sources, a robust Data Management Plan, and early testing and simulation of all technical components.
- **Dissemination and Exploitation Risks:** The project has foreseen risks related to the limited relevance of results or low stakeholder engagement. These are addressed through a continuous stakeholder engagement plan, the involvement of the consortium in key initiatives (like the CCAM and MTM Cluster), and a dedicated exploitation strategy to ensure project results are well-received and widely adopted.

Furthermore, as part of the project management, an Excel sheet has been created to track the management of the risks. This sheet also includes an analysis of the period in which the risk may appear and addresses questions such as: "Did you apply risk mitigation measures?", "Did your risk materialize?", and if "the risk mitigation measures couldn't be applied," it explains why.

Conflict Resolution and Decision-Making Process

Effective project execution requires clear mechanisms for making timely decisions and resolving inevitable conflicts among partners. This process is structured to ensure fast resolution at the lowest possible governance level before escalation.

Project decisions will follow an escalation path based on the nature and impact of the decision.

Work Package (WP) Level: Routine and technical decisions related to a specific WP are made by the WP Leader in consultation with the involved Task Leaders. These decisions are reported to the Project Coordinator.

Operational/Technical Level: Decisions with moderate technical impact, requiring cross-WP consensus, are decided by the Technical Committee, generally by simple majority.



Strategic/Financial Level: All major strategic, financial, contractual, and risk-related decisions are approved by the Project Coordinator and the WP Leaders. The Project Coordinator holds the final decisive vote in cases of potential disagreements or issues requiring immediate contractual action.

Conflict Resolution Mechanism

Any dispute or conflict that arises among partners must follow a formal resolution process in a progressive manner.

Stage 1: Informal Resolution

The parties directly involved must first attempt to resolve the issue internally and informally (e.g., bilateral meetings, emails) within a maximum period of seven working days. The relevant Work Package Leader must be informed.

Stage 2: Risk Management and Formal Mediation

In a subsequent stage, each Work Package Leader is responsible for managing a specific type of risk.

If either of these two stages fails, the conflict must be formally reported to the Project Coordinator and all WP Leaders to initiate formal mediation.

The Project Coordinator will convene a meeting specifically to discuss the conflict and propose a resolution, generally within ten (10) working days following the reception of the formal report.

10 INTELLECTUAL PROPERTY RIGHTS (IPR) AND EXPLOITATION MANAGEMENT

The MODALSHIFT project is committed to maximizing the valorisation and impact of its results. To this end, a robust strategy for Intellectual Property Rights (IPR) management and exploitation has been defined. This strategy, led by WP6, is designed to systematically identify and protect all Foreground IP generated by the project. The management of these rights, including their ownership and access, is clearly defined in the Consortium Agreement to prevent potential competition and ensure fair collaboration among partners. Furthermore, the project's strategy includes the identification of Key Exploitable Results (KERs), for which specific market and business models will be developed. This proactive approach ensures that the project's innovative solutions and knowledge are not only protected but also effectively transferred to the market and society, contributing to the long-term sustainability of the project's outcomes.

11 CONCLUSION

The MODALSHIFT Project Management Plan establishes the necessary framework and methodology to ensure an efficient and transparent implementation, as well as the successful achievement of all its objectives. A set of key tools and procedures have been defined and put into operation, covering everything from internal communication to quality control, ensuring comprehensive project management. This plan guarantees fluid collaboration through shared tools and regular meetings and reinforces the quality of deliverables through a double-review process.

A structured financial planning approach, as detailed in the proposal's budget breakdown, ensures that all costs and expenses are managed responsibly with continuous monitoring. A proactive risk management strategy has also been implemented, with a dedicated register to monitor, assess, and mitigate any potential challenges that may arise.



Furthermore, the project is committed to a robust Data Management Plan (DMP), which governs how research data will be managed, preserved, and shared in accordance with FAIR principles (Findable, Accessible, Interoperable, Reusable). This approach guarantees the integrity of our research and a greater usability of the results. The overall project strategy also incorporates sustainability principles, with outcomes designed to contribute to a more sustainable transport system and a circular economy.

In closing, the structured approach of this plan is set to ensure the project maintains its trajectory, adapting effectively to any unforeseen circumstances to achieve its goals within the established deadlines, with the required quality and expected impact.

12 ANNEX(ES)

Annexe 1: Use Cases Information

12.1.1 BULGARIA-VARNA

Leader partner: Municipality of VARNA (Public authority)

Participant partners: GGI (technical)

The use case (UC) will focus on enabling and improving low-carbon urban freight by leveraging on the existing cargo-bike fleet owned by the municipality, with expected benefits on the traffic in the city centre. Sensors for tracking cargo bikes will be installed, and a dedicated tool for T&T&M and Horeca “pay-per-use” bike-sharing model will be deployed for enabling by local business to see the availability of the cargobikes and book them and collecting further data useful for traffic and network state analysis and forecasting. The second UC focuses on the more general improvement of public transport and active mobility on two axes: 1) improved intermodality train-bus at the railway station; 2) rethinking public and active mobility service/schedule to better align with the (seasonal) needs and future bike lanes. Given the relatively low data, the improvement of data literacy and collection processes is also an objective in MODALSHIFT, with the implementation of a data space and digital twin. Specific developments will focus on the compatibility and integrability of the digitalised collaborative platform with the legacy system for traffic infrastructure management. These enhancements will be undertaken concurrently with the developments at the Estación Sur outlined in Spanish CS.

MODALSHIFT will support the city in alleviating congestion and reducing emissions, while empowering local businesses with a cost-effective, sustainable transportation solution that avoid the need for upfront bike purchases and absolves them of maintenance obligations. ID4M and AIT will provide recommendations and guidelines for the completion and implementation of the SUMP providing a replicable framework for other cities to integrate multimodal solutions into long-term urban planning.

12.1.2 ITALY-PORT OF TRIESTE

Leader partner: ADF (port shunting operator to rail).

Participant partners: PNAEAS (public)

The main goal of this Use Case is to enhance interoperability between waterway, rail and last mile to ensure seamless transfer of goods. This involves improving real-time data sharing between national railway infrastructure (RFI) and ADF on disruptions and delays, coordinating loading and unloading schedules, last-mile shunting slots, train departures and arrivals, and evaluating the impact of passenger train delays on freight operations. This will be achieved by developing a collaborative platform that integrates data from stakeholders such as port authorities, rail operators, and logistics companies, utilizing PCS Sinfomar to aggregate data from maritime,



customs, terminal, shunting, and IM operations. This platform will also integrate digital twins and AI to simulate and forecast traffic flows, allowing for dynamic decision-making and efficient management of resources.

ADF will share the results with other shunting managers (e.g. ERF in Venice) and railway companies in their network to spread best practices. Nationally, as part of FerCargo (Italian Railway Undertaking Association), ADF promotes initiatives to improve the railway sector while emphasizing its environmental benefits. These results will also be widely disseminated through ADF's extensive ALICE network.

12.1.3 SPAIN- MADRID

Leader partner: AVANZA (Bus company)

Participant partners: ITA (Tech)

A Digital Twin to virtually represent the transport network of Madrid will be developed using open mobility data, of the city and integrating new sources of data and derive upgraded public transport service in the Community of Madrid, with adaptations from planning and operational perspectives. Besides redesigning inter-city buses schedules/lines and optimising the use of resources, new on-demand mobility service will be studied to boost punctuality and reliability, increasing user satisfaction and adoption. The second UC aims at integrating passenger and freight transportation in the multimodal hub of Estación Sur (South station). The communication system between the various stakeholders will be united for facilitating real-time data exchange, including up-to-date information on traffic conditions to ensure dynamic adjustment of operations (routing, schedules, shared infrastructure use). Synchromodality will be developed to enable 1) coordinated passenger transport service to limit connection delays, and 2) Capacity-as-a-Service of freight in available public transport space.

The UC will be replicable in all AVANZA's companies. The PR will be designed for high replicability, enabling other public transport companies and municipalities to easily implement them.