

QUALITY AND RISK MANAGEMENT PLAN

D1.2: Quality and Risk Management Plan

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Abstract

ULaADS sets out to offer a new approach to system innovation in urban logistics. Its vision is to develop sustainable and liveable cities through re-localisation of logistics activities and re-configuration of freight flows at different scales. Specifically, ULaADS will use a combination of innovative technology solutions (vehicles, equipment and infrastructure), new schemes for horizontal collaboration (driven by the sharing economy) and policy measures and interventions as catalysers of a systemic change in urban and peri-urban service infrastructure. This aims to support cities in the path of integrating sustainable and cooperative logistics systems into their sustainable urban mobility plans (SUMP). ULaADS will deliver a novel framework to support urban logistics planning aligning industry, market and government needs, following an intensive multi-stakeholder collaboration process. This will create favourable conditions for the private sector to adopt sustainable principles for urban logistics, while enhancing cities' adaptive capacity to respond to rapidly changing needs. The project findings will be translated into open decision support tools and guidelines.

A consortium led by three municipalities (pilot cities) committed to zero emissions city logistics (Bremen, Mechelen, Groningen) has joined forces with logistics stakeholders, both established and newcomers, as well as leading academic institutions in EU to accelerate the deployment of novel, feasible, shared and ZE solutions addressing major upcoming challenges generated by the rising on-demand economy in future urban logistics. Since large-scale replication and transferability of results is one of the cornerstones of the project, ULaADS also involves four satellite cities (Rome, Edinburgh, Alba Iulia and Bergen) which will also apply the novel toolkit created in ULaADS, as well as the overall project methodology to co-create additional ULaADS solutions relevant to their cities as well as outlines for potential research trials. ULaADS is a project part of ETP ALICE Liaison program.

Keywords

quality management plan, risk management plan, risk identification, analysis, mitigation measures

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Executive summary

The aim of this deliverable is to report the detailed risk management plan prepared by the project coordinator together with all partners, aiming at guaranteeing the successful implementation of ULaaDS. Building upon the draft included in the proposal, we have further expanded the different risks identified, reviewing its initial assessment (probability, impact), and managed its countermeasures: defined mitigation actions and a related contingency plan to anticipate and avoid potential project deviations.

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1. Introduction

Risk management is a continuous process throughout the lifetime of a project and addresses the planning of risk management, identification, analysis, monitoring and control, including the definition of corrective measures to mitigate the risk and a contingency plan to avoid failure.

Under the ULaaDS project (Urban Logistics as an on-Demand Service), a consortium led by 3 municipalities (pilot cities) committed to zero emissions city logistics has joined forces with logistics stakeholders as well as leading academic institutions in EU to accelerate the deployment of novel, feasible, shared and ZE solutions addressing major upcoming challenges generated by the rising on-demand economy in future urban logistics.

Transparency and good communication between the management team, steering committee and the project members are key to preventing problems and conflicts before they arise. A good communication strategy will favour cohesion among the participants, while projecting a positive image of the project to the outside.

1.1 Purpose of the risk management plan

A risk is an event or condition that, if it occurs, could have a positive or negative effect on a project's objectives. Risk management is the process of identifying, assessing, responding to, monitoring, and reporting risks. This risk management plan defines how risks associated with the *ULaaDS* project will be identified, analysed, and managed. It outlines how risk management activities will be performed, recorded, and monitored throughout the lifecycle of the project and provides templates and practices for recording and prioritizing risks.

The risk management plan is created by the project manager in the Planning Phase and is monitored and updated throughout the project.

2. Roles and responsibilities

2.1 Management team

The project management will focus on creating the necessary governance structure for an effective project direction and management; performing the financial, legal, administrative and technical coordination; establishing the communication flow and methods for reporting, progress monitoring and quality assurance; management of knowledge and intellectual property; promoting gender equality and networking with other related projects and networks. Measures for avoiding risks related to financial, legal, administrative and technical coordination will be established from the beginning of the project and contingency plans will be ready to be launched when necessary.

The management team is composed of:

- **Project coordinator** team – **BRE** as coordinator of the project who has internal structure of a support team in the coordination.
- The **Project Secretariat** – **BAX** consists of senior and support staff from BAX, and its role is to support the coordinator with the monitoring of project progress and expenses, internal communication and other administrative tasks and obligations towards the EC. They have long experience with EU collaborative projects and will provide the necessary additional capacity efficiency and effectiveness to a smoother execution.

Other groups related with the risk progress and action plan:

- The **Steering Committee (SC)** will consist of the Work Package leaders Bremen, FGM, RUG, VIL, TØI and EURO CITIES which will support the coordinator on the R&D implementation of the project. The SC will monitor and supervise the quality of the results of the project through the revision of each deliverable, ensuring that they meet the specifications set in the DoW.
- The **General Assembly (GA)** is the main decision-making body, consisting of 1 representative from each partner, all having one vote.

The management team will endorse the risk management of the project and are responsible for the risk management process, assuring the monitoring and control of risks of all project activities. The project risk management plan is the responsibility of the MT, but all the partners should be involved in it, and in particular, the WP leaders regarding the risks within the tasks of their WP.

2.2 Work package leaders

The work package leaders are responsible for the implementation of the work within their own WP, so they have to bear the specific risks for the deliverables and milestones within the WP they are leading. They assure the identification and management of the risks and should inform the management team. If new risks are identified, they should be reported to the management team who will update the table of risks.

2.3 The steering committee

The steering committee will consist of the WP leaders BRE, FGM, RUG, VIL, TOI and EUR. The SC, in collaboration with the management team, will monitor and supervise the quality of the results of the project through the revision of each deliverable, ensuring that they meet the specifications set in the DoW. They will monitor the project and prepare the decisions to be taken by the General Assembly. Concerning the risk management plan, the steering committee should advise the management team and the partners if problems cannot be easily resolved.

3. Risk management procedure

3.1 Process

The management team working with the steering committee will ensure that risks are actively identified, analysed, and managed throughout the life of the project. Risks will be identified as early as possible in the project so as to minimize their impact. The steps for accomplishing this are outlined in the following sections.

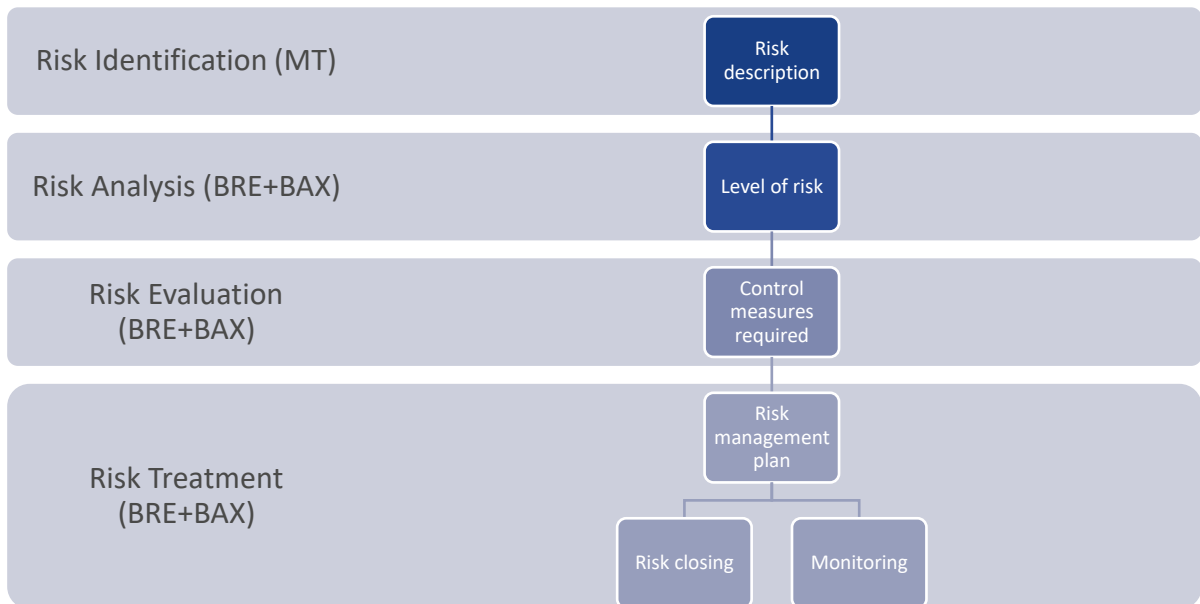


Figure 1 ULaDS risk management process - Schematic representation

3.2 Risk identification

Risk identification will involve the management team and steering committee, and will include an evaluation of the different factors active in each work package. Careful attention will be given to the project deliverables, assumptions, constraints, cost/effort estimates, resource plan, and other key project documents.

Risk identification is analysed throughout the lifecycle of the ULaaDS project. The following issues shall be considered as tools and techniques for risk identification:

- Monitoring of milestones and technical progress, as foreseen in the WP description
- Analysis of deliverable status
- Analysis of WP schedules and scopes
- Regular communication of the management team with the WP leaders.

A risk management log will be generated and updated as needed and will be stored online and regularly updated in the project intranet.

3.3 Risk analysis

All risks identified will be assessed in order to identify the range of possible project outcomes. Qualification will be used to determine which risks are the top risks to pursue and respond to and which risks can be ignored.

The exposure to a given risk is estimated using the risk matrix in figure 2. Concerning each of the risks, the Project Coordination team, in collaboration with the WP leaders, will estimate the probability of problems arising (Low/Medium/High).

3.3.1 Qualitative risk analysis

The probability and impact of occurrence for each identified risk will be assessed by the project manager, with input from the project team using the following approach:

Likelihood

High – 3 Likely

Medium – 2 Unlikely

Low – 1 Highly Unlikely

Impact

High – 3 - Risk that has the potential to greatly impact project cost, project schedule or performance

Medium – 2 - Risk that has the potential to slightly impact project cost, project schedule or performance

Low – 1 - Risk that has relatively little impact on cost, schedule or performance

Risks that fall within the red and yellow zones will have risk response planning which may include both a risk mitigation and a risk contingency plan.

Table 1: Risk Matrix

	Slightly Harmful (1)	Harmful (2)	Extremely Harmful (3)
Highly Unlikely (1)	Insignificant Risk	Low Risk	Medium Risk
Unlikely (2)	Low Risk	Medium Risk	High Risk
Likely (3)	Medium Risk	High Risk	Extreme Risk

3.3.2 Quantitative risk analysis

Analysis of risk events that have been prioritized using the qualitative risk analysis process and their effect on project activities will be estimated, a numerical rating applied to each risk based on this analysis, and then documented in this section of the risk management plan.

3.4 Risk response planning

Each major risk (those falling in the red & yellow zones) will be assigned to a project work package leader for monitoring purposes to ensure that the risk will not “fall through the cracks”.

For each major risk, one of the following approaches will be selected to address it:

Avoid – Eliminate the threat by eliminating the cause

Mitigate – Identify ways to reduce the probability or the impact of the risk. For each risk that is mitigated, the work package leader will identify ways to prevent the risk from occurring or reduce its impact or probability of occurring. This may include prototyping, adding tasks to the project schedule, adding resources, etc.

Accept – For each major risk that is accepted, a course of action will be outlined in the event that the risk materializes in order to minimize its impact.

Transfer – Make another party responsible for the risk (buy insurance, outsourcing, etc.)

3.5 Risk monitoring, controlling, and reporting

The level of risk on a project will be tracked, monitored and reported throughout the project lifecycle using the project intranet (OneDrive). It is the responsibility of each ULaDS work package leader assigned to every risk to communicate to the Project Coordinator team about the status and effectiveness of each risk and mitigation plan in order to update the risk management register and assess the relevance of the tools. Risk exposure will be continuously re-evaluated and modified accordingly.

A **“Top 10 Risk List”** will be kept by the project team and will be reported as a component of the project status reporting process for this project. All project change requests will be analysed for their possible impact on the project risks. Management will be notified of important changes to risk status as a component of the Executive Project Status Report.

3.6 Risk mitigation measures

Each partner is responsible for executing the risk-mitigation activities which relate to the WP they lead. If a mitigation action cannot be effectively carried out or does not solve the risk, the risk exposure is likely to become more important. In this case, visibility of the risk has to be highlighted by the project manager and the mitigation measure modified in an efficient way.

An item can be considered closed when the following criteria are brought together: the risk-mitigation measures have been implemented and a new risk exposure is estimated as low using the risk matrix.

4. The risk management table

ULaDS risks are registered within the risk management table register presented below, which will be available in the project intranet and updated at least at the end of each reporting period by all partners. Risks are numbered and subdivided per WP.

#	LEADER	STATUS	% DONE	LIKELIHOOD + IMPACT	DATE OPEN	DEAD LINE	RISK / TASK	DESCRIPTION	MITIGATION MEASURES	COMMENTS ON STATUS / RESULTS
							WP1 Project Coordination and Project Management			
1.1	BRE	Not materialised	Mitigation not started	Medium	Not open	N/A	A partner leaves the project.	A partner leaves the project due to differences with the partnership or due to internal reasons.	The rest of the consortium will try to assume the partner' tasks, responsibilities and resources. In case that is not possible, the consortium will look for a substitute partner with the same profile.	
1.2	BRE	Not materialised	Mitigation not started	Medium	Not open	N/A	Slow start caused by different delays in the initiation phase.	Slow start caused by different delays in the initiation phase. Sequenciality of certain activities means this is a risk with certain impact.	Create a project with stepwise progress, realistic timeline and resource estimates based on industrial experience and best practice.	
1.3	BRE	Not materialised	Mitigation not started	Medium	Not open	N/A	Failure of partners to deliver work on time and to quality required	Due to delays or having not dedicated enough time, partners who are responsible for a task might not perform it and deliver it in due time and form.	Strict monitoring from WP1, anticipating deliverables and setting up a quality control procedure with deadlines and peer-revision.	
1.4	BRE	Not materialised	Mitigation not started	Low	Not open	N/A	Partners do not agree on the IPR of the results of the project.	IPR not accepted by all the partners in the consortium.	A CA will be signed by all partners before the project starts, establishing the basic rules for the management of the IPR, identifying the expected results of the project (foreground), as well as who will be the owner.	

1.5	BRE	Not materialised	Mitigation not started	Medium	Not open	N/A	Project delays due to Covid-19	The Covid-19 pandemic has impacted projects in many way with strict lockdowns and limits to face-to-face interaction. Prolongued strict measurements could affect the delivery of the project.	If the work cannot be rearranged and adapted to meet the limits set by health authorities or in case the project monitoring detects a significant delay, the solution will be to talk with the PO and explore possibilities like the extension period of work or redefinition of some activities.
							WP2 360 observatory of on-demand needs & future scenarios		
2.1	FGM	Not materialised	Mitigation not started	High	Not open	N/A	Definition of collective target system is difficult due to diverging interests of relevant players	The target system requires that external stakeholders too share the interests and objectives that the project has defined for a correct target system	Establish a dialogue with the relevant stakeholders almost from the start and by involving them in a cocreation process this risk will be minimized
2.2	FGM	Not materialised	Mitigation not started	Medium	Not open	N/A	Use cases are not economical or there are not enough data available to co-create scenarios	Use cases might not fit the qualities desired for the objectives of the project, or might be missing elements that make it not possible to integrate them in the project with the methodologies the project wants to use.	Care will be taken to involve the necessary stakeholders in the cities
2.3	FGM	Not materialised	Mitigation not started	Medium	Not open	N/A	Stakeholders do not cooperate providing data, assets or infrastructure	The observatory and benchmark needs a good flow of information from stakeholders and in some cases access to infrastructure or specific assets	All relevant stakeholders will be involved and their willingness to provide necessary data (guaranteed confidential and anonymized) will be clarified before project start. City administrations are partners in the project to supervise their commitment. The project will engage with as many (potential) stakeholders as possible so as to ensure sufficient input is provided.
2.4	FGM	Not materialised	Mitigation not started	High	Not open	N/A	COVID 19 will influence success of the local urban freight fora	The observatory and benchmark needs a good flow of communication with stakeholders that can be affected negatively by the impossibility of creating a solid bond with them due to Covid-19 face-to-face interaction limitations.	Prepare & offer possibilities for online meetings. WP- and Task Leaders make sure that the use of these meeting tools is understood by all participants.
							WP3 ULaADS: new on-demand logistics models		

3.1	RUG	Not materialised	Mitigation not started	Medium	Not open	N/A	Stakeholders do not cooperate providing data, assets or infrastructure	The observatory and benchmark needs a good flow of information from stakeholders and in some cases access to infrastructure or specific assets	All relevant stakeholders will be involved and their willingness to provide necessary data (guaranteed confidential and anonymized) will be clarified before project start. City administrations are partners in the project to supervise their commitment. The project will engage with as many (potential) stakeholders as possible so as to ensure sufficient input is provided.
3.2	RUG	Not materialised	Mitigation not started	Medium	Not open	N/A	Early stage companies / startups as solution providers may foresee unexpected futures	Provider companies are often startups who often face financial difficulties and might even go bankrupt or there might be any other reason why it would mean an end to the technological solutions	To ensure data collection and capability to meet expectations, pre-validation and concrete budget will be done prior the start of ULaaS
3.3	RUG	Not materialised	Mitigation not started	Medium	Not open	N/A	Proprietary nature of technology solutions, operating and business models	The technology solutions might be owned by a (bigger or different) company who is not interested in collaborating with the project.	Create a clear working process on confidentiality.
3.4	RUG	Not materialised	Mitigation not started	Medium	Not open	N/A	Pre-validation requires some form of implementation	Some technologies or models that need validation in this WP might need some form of implementation as foreseen in WP4	Create close connection with WP2 and WP4; work closely together with partners that provide technology and operating solutions.
WP4 ULaaS research trials									
4.1	VIL	Not materialised	Mitigation not started	Medium	Not open	N/A	Lack of engagement from policy-makers and local stakeholders	The city specific dynamics could impact the trials approach. Elections might change the priorities for the city councils and the plans and ambition at the start of the project could be dwindled by the changing policy-makers or stakeholders.	Close follow-up and establishment of a practical framework for organising trials and strict pro-active approach towards stakeholders
4.2	VIL	Not materialised	Mitigation not started	Medium	Not open	N/A	Lack of or incompatibility of legislation	The cities might be affected by existing or new laws that would make it impossible for them to carry out the planned trial(s).	The legislative framework will be analysed in task 4.1 before organising trials. Any project of law/regulation that might negatively affect the trials will be monitored before approval to prepare a specific action plan.

4.3	VIL	Not materialised	Mitigation not started	Low	Not open	N/A	Lack of technical consistency between trials for objective evaluation	For a correct evaluation and comparison of the results, the trials have to be designed in a way that the data is compatible	In parallel with the design of the trials, the project will collectively come up with an evaluation framework to be accepted before the start of the implementation.
4.4	VIL	Not materialised	Mitigation not started	Medium	Not open	N/A	Upscaling incompatibility	The trials could be designed in a way that it is very difficult to upscale as foreseen in WP5	The design of the trials in the cities will be done in coordination with the tasks leaders of WP5 so the potential/possibility of scaling up is contemplated from the start.
WP5 Impact & Upscaling assessment									
5.1	TOI	Not materialised	Mitigation not started	Medium	Not open	N/A	Objectives are too ambitious and cannot be reached	ULaDS has defined ambitious objectives beyond the state of the art, and as an innovation project, there is a risk that the objectives are not reached.	While objectives are ambitious and are clearly beyond state of the art, WPs have been designed carefully to ensure the objectives can be reached. Buffers are planned for all steps.
5.2	TOI	Not materialised	Mitigation not started	Medium	Not open	N/A	Fragmented approach in addressing common implementation challenges / insufficient transfer of innovations	For a correct evaluation of the impact and replication, there must be a common approach throughout the project.	Setting up and applying a replication framework with defined activities, targets and methodologies. Actively engaging local authorities and stakeholders within and beyond the consortium.
5.3	TOI	Not materialised	Mitigation not started	Low	Not open	N/A	Missing or insufficient data from Lighthouse cities	While the trials in Lighthouse cities might go as planned and be considered successful, an adequate transmission of the data and sharing practices is essential for the upscaling phase.	Implementation of standard procedures for collection of data from the Lighthouse cities, with easy to fill in template. Planning of webinars and online meetings to ensure a good cross-pilots flow of information. Using existing data to evaluate possible cases.
WP6 The role of ULaDS in the existing SUMP and SULP process									
6.1	BRE	Not materialised	Mitigation not started	High	Not open	N/A	Differentiation to other toolkits is not clear	Several projects and European initiatives are working to help the development/improvement of city SUMP and SULPs.	Clear distinction between ULaDS' and other toolkits needs to be illustrated and clarified, find unique selling points of it and promote it in WP7.

							WP7 Public awareness, Dissemination & Exploitation			
7.1	EUR	Not materialised	Mitigation not started	Medium	Not open	N/A	Continuation of the COVID19 health crisis and the consequent cancellation of events and networking opportunities	The project's awareness and dissemination strategies include presence in events and participating in networking opportunities that might not take place due to restrictions to face-to-face interaction.	Closely monitor the situation and adapt promptly to the changing environment, including strengthening the capacity of partners to participate in on-line events (both internal and external), digital meetings and online cooperation's platforms.	
7.2	EUR	Not materialised	Mitigation not started	Medium	Not open	N/A	Lack / late sharing of data and updates by the partners related to communication and exploitation	Communication and dissemination needs a good flow of information from partners about the work they are doing and the results they have achieved.	Implementation of standard procedures for continuous monitoring and reporting to ensure information is shared. Dedicated meetings and workshops to jointly define the best exploitation and communication strategies. Friendly templates, focused on key input	
7.3	EUR	Not materialised	Mitigation not started	Medium	Not open	N/A	Lack of engagement with relevant external stakeholders to define and collaborate with the Advisory Board	The collaboration with the Advisory Board requires commitment from the entities involved.	List of >20 entities already pre-identified, half of them already confirmed (either LoS in the proposal or dialogue)	
7.4	EUR	Not materialised	Mitigation not started	High	Not open	N/A	Lack of interest from the market about project outputs	The market might not show the expected interest and the impact be less than expected, compromising project results.	Dedicated exploitation activities. Build up strong communication channels, as well as relying on partners' existing communication networks.	

Table 2 Risk Management Table

Acronyms

Acronym	Meaning
AI	Artificial Intelligence
AV	Autonomous Vehicles
D	Deliverable
EC	European Commission
DE	Deutschland/Germany
GA	Grant Agreement
ICT	Information and Communication Technology
LF	Load Factor
LSP	Logistics Service Provider
O	Objective
ODD	On-demand Delivery
P	Product
PPP	Public Private Partnership
PM	Person Month
SUMP	Sustainable Urban Mobility Plan
SULP	Sustainable Urban Logistics Plan
T	Task
UC	Use Case
UCC	Urban Consolidation centre
UFT	Urban Freight Transport
ULaDS	Urban Logistics as an on-Demand Service
WBS	Work Breakdown Structure
WP	Work Package
VUR	Vehicle Utilisation Rate
ZEV	Zero Emission Vehicle