

Project acronym: Lasers4MaaS

Project title: Laser-as-a-Service Digital Platform with Dynamic Beam Shaping for Acceleration of Smart, Decentralised and Sustainable Factory of the Future

Call HORIZON-CL4-2024-TWIN-TRANSITION-01-03 Manufacturing-as-Service: technologies for customised, flexible, and decentralised production on demand

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Work-package 20: Management and coordination (reporting period #1)

Deliverable D20.1: Project and risk management plans

Owner: WMG

Due date: 28th February 2025

Type		
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	Deliverable related to security issues	
OTHER	Software, technical diagram, algorithms, models, etc	

Dissemination level		
PU	Public, fully open, e.g. project website	x
SEN	Sensitive, limited under the conditions of the Grant Agreement	
Classified R-UE/EU-R	EU RESTRICTED under the Commission Decision No2015/444	

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HISTORY OF CHANGES

Version	Publication date	Change
1.1	02/02/2025	First draft
2.0	17/02/2025	Second draft with addition of templates and risks
3.0	22/02/2025	Final version

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LIST OF ABBREVIATIONS

AB	Advisory Board
CA	Collaboration Agreement
EC	European Commission
FS	Financial Statement
GA	Grant Agreement
IB	Impact Board
IP	Intellectual Property
KEMs	Key Enabling Methodologies
MB	Management Board
NDA	Non-Disclosure Agreement
PC	Project Coordinator
PTR	Periodic Technical Report
SB	Steering Board
TRL	Technology Readiness Level
WP	Work-Package

1. Executive summary

To guarantee the quality of the outcomes of the Lasers4MaaS project, the deliverable D20.2 defines the project management plans, procedures and standards, identification of the responsibilities, and risks for ensuring that these procedures and standards are followed, and the monitoring and control of results are implemented. It will ensure that all results and deliverables of the project are of a high-quality standard.

Given the project’s multidisciplinary nature, robust project and risk management processes will be implemented throughout the project lifecycle to meet deadlines, and proactively address unforeseen challenges. A structured and effective project management framework that includes regular review meetings, monitoring, and escalation processes (via the Steering Board), allows for rapid resolution of issues by consensus.

A comprehensive project plan with clearly defined milestones and critical paths clarifies all work packages, tasks, and deliverables. Our approach includes effective risk and issue management, progress reporting, stakeholder engagement, coordination of deliverables, budget monitoring, and the documentation of lessons learned and impact assessments to ensure that the project meets its objectives and delivers long-term value.

This version of the deliverable D20.2 discloses the plans for project management according to the best available information at project month 3. Once approved by the consortium, D20.2 becomes an official project document which is open for review processes through the entire project duration.

Lasers4MaaS is currently using Microsoft TEAMS as an intranet repository for project-related data and management. Details about data protection and access control are discussed in D20.1 – data management plan. The location of the main templates is provided below.

Type	Location
Agenda	Meetings\ Lasers4MaaS_Agenda_Template
Presentation	Management\Lasers4MaaS_presentation_template
Deliverable	Deliverables\Lasers4MaaS_deliverable_template
Minutes	Meetings\WP meetings (weekly)\WP_meetings_minutes

The Lasers4MaaS project team brings together 12 partners with complementary skills shown as follows:

THE UNIVERSITY OF WARWICK	WMG		Project lead/management, process development using dynamic beam shaping and sensors, host of demonstrators (lab scale)
UNIVERSITY OF STUTTGART	USTUTT		Laser welding powered by real-time AI-based decision module
UNIVERSITEIT LEIDEN	ULEI		Sustainability, circularity, cost assessment and digital product passport
TECHNISCHE UNIVERSITAET WIEN	TUW		Multi-physical and multi-scale modelling of laser welding
CIVAN ADVANCED TECHNOLOGIES LTD	CIVAN		Manufacturer of the ground-breaking dynamic beam shaping technology and will provide the laser generator and optical head for the demonstrators
UNITED KINGDOM ATOMIC ENERGY AUTHORITY	RACE		Specialised in design, build and operation of robotics solutions for extreme industrial environments. Will lead the demonstrator on future power plants.
ECOR INTERNATIONAL SPA	ECOR		Specialised in the welding and processing of pipes and components for packaging machines, aerospace and defence, advanced mechanics and hydrogen sector. Host of demonstrators (industrial scale)
IL SENTIERO INTERNATIONAL CAMPUS SRL	CAMPUS		Advanced testing and characterisation
Officine Metallurgiche Cornaglia S.p.A.	CORNAGLIA		Expertise in automotive manufacturing and e-mobility and will provide the stamped parts to produce the demonstrator for battery cooling
FFT PRODUKTIONSSYSTEME GMBH & CO. KG	FFT		Intelligent production systems, robotics, system automation and integration
Futurice GmbH	FUTURICE		Design and development of innovative solutions for the digital transformation of manufacturing industries
European Photonics Industry Consortium	EPIC		Lead the dissemination, communication, exploitation tasks

2. Project background

The objective of Lasers4MaaS is to revolutionise laser welding by dynamic beam shaping and digital technologies for servitisation of manufacturing. Building upon the growing advancement in dynamic laser beam shaping as an “all-in-one” laser welding tool, with immense potential for servitisation, Lasers4MaaS introduces a six-point strategy to reconfigure, connect, control, predict, improve and ensure compliance in manufacturing. With demonstrations in sectors like automotive, aerospace, food packaging and renewable energy, Lasers4MaaS aligns closely with Green Deal objectives.

3. Management structure

The governance structure of Lasers4MaaS is shown in Figure 1 and includes the **Management Board (MB)** responsible for the delivery of project and strategic decision-making. MB is led by the **project coordinator** (Dr P. Franciosa) who will report directly to the EC. The project coordinator will have quarterly meetings with the **Steering Board (SB)** to review priorities and goals - a gateway approach will be implemented to monitor progress and risks -, and the **Impact Board (IB)** will review the exploitation plan and upcoming opportunities. Bi-annual meetings will be organised (every 6 months) for the whole consortium (kick-off meeting and final event/open day included) that form the **General Assembly (GA)**. The industry **Advisory Board (AB)** meeting will take place once a year during one of the GA meetings. A dedicated budget has been allocated via WMG to allow the effective participation of the AB participants. The industry advisory board will support and streamline the dissemination, ensuring the project's findings reach and impact a wide range of industrial sectors; but also strengthen the exploitation roots. The on-boarding of the AB will be regulated by a dedicated NDA (being developed at month M3). WMG has allocated the “project management office” and the “research and impact service office” to assist the project coordinator with management, legal duties (including GA and the CA) and finance matters.

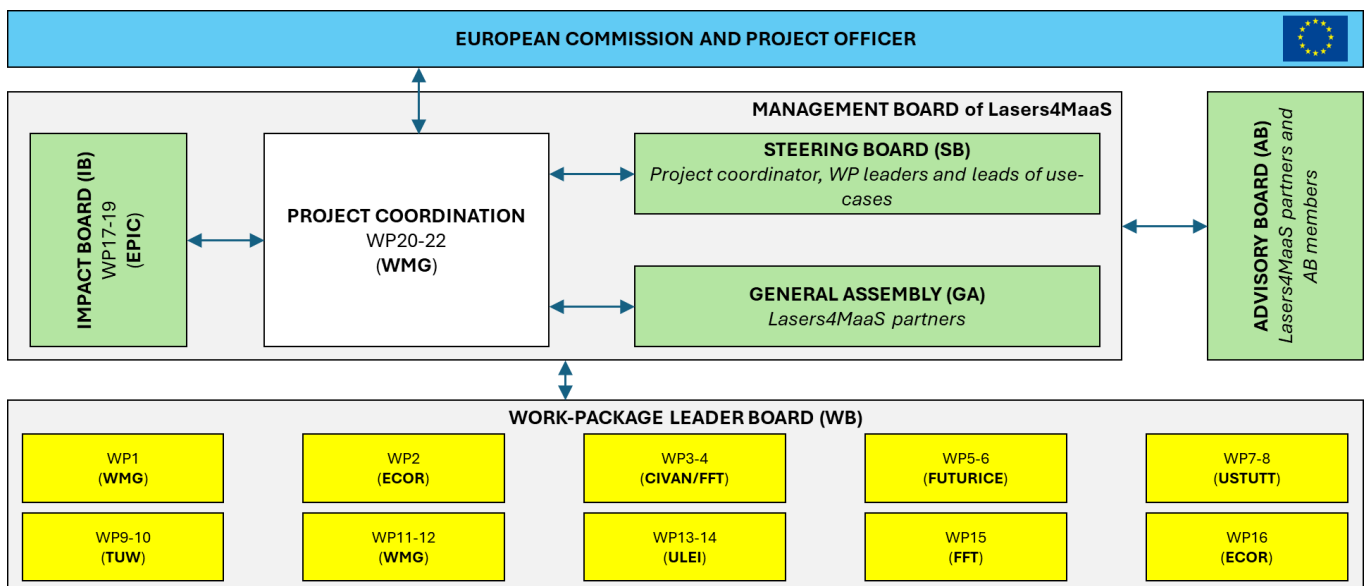


Figure 1: Management structure of Lasers4MaaS

4. Management tools

Lasers4MaaS is currently using Microsoft TEAMS as an intranet repository for project-related data and management. It has the advantages of chats, meetings and seamless sharing of documents, among the various features. The project folder on TEAMS applies a strict policy in granting and revoking access to data. Presentations and general documents shall be transmitted using the TEAMS folders. This system is administered and maintained by the project coordinator. The Lasers4MaaS’s TEAMS group include details about: (1) deliverables, (2) general management (contact details, GA and CA, GANTT chart, list of

deliverables, milestones, risk matrix, admin details, etc.), marketing materials, meetings details, minutes and work-packages data. Figure 2 shows screenshots of the TEAMS folders, taken at month 3 of the project.

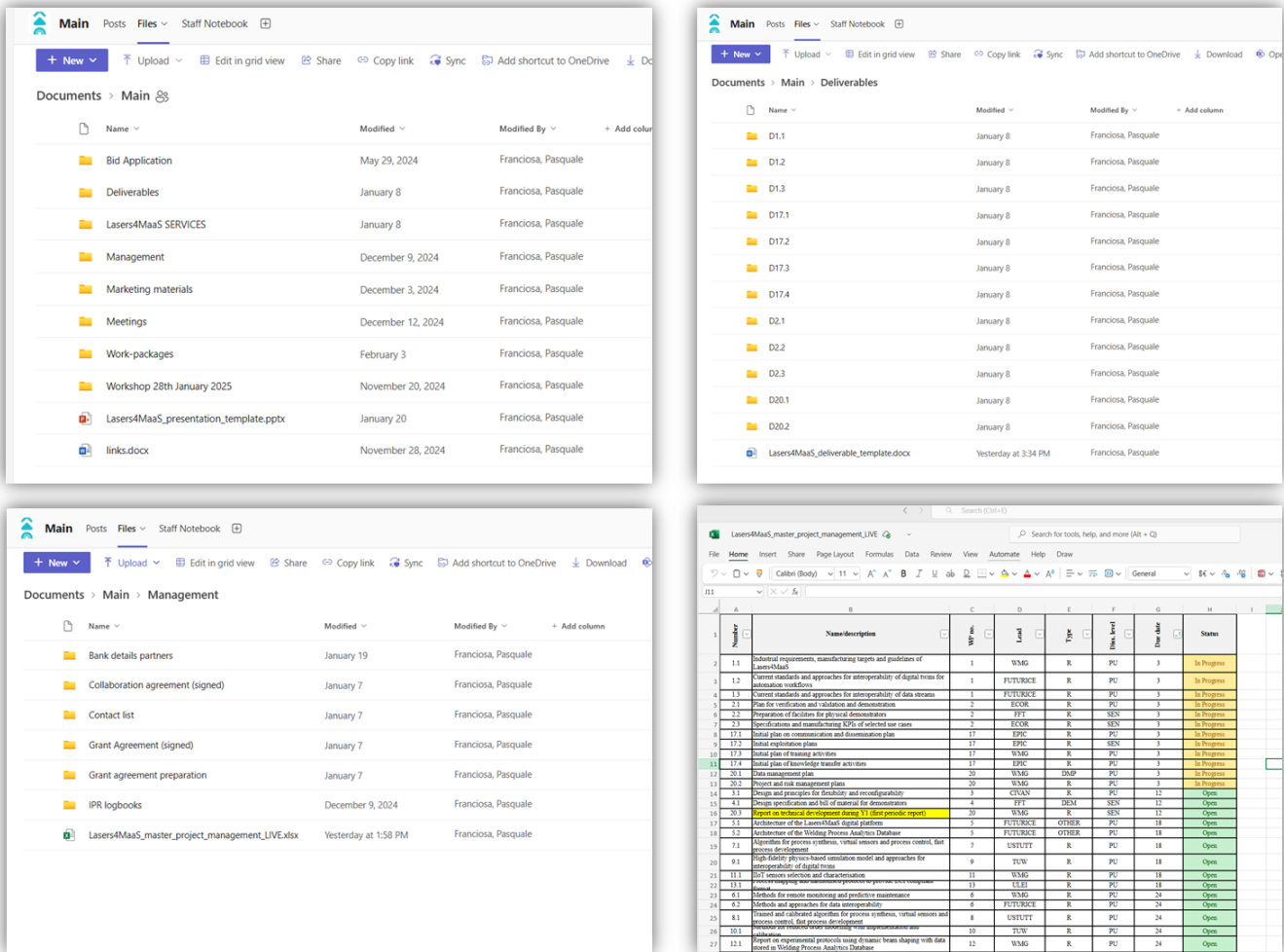


Figure 2: Lasers4MaaS’s TEAMS folder

5. Management reviews

5.1. Internal reviews

To ensure the quality and compliance to the project schedule of each WP, each WP leader is requested to report the technical and financial status of their own WP to the project coordinator every three months, during the SB meetings. During the weekly meeting at WP level any critical risks will be reviewed and mitigation actions put in place. The project coordinator will set and share the agenda at least one week in advance. During the SB meetings, the following information shall be discussed:

- Outlook on current progress and next targets
- Risks analysis and mitigations
- Status of each deliverable
- Status of each milestone
- Virement from the original project plan and timeline

5.2. Regular reporting to the EC

Continuous reporting. During the project, regular updates will be provided on the status of the project, including the report on critical risks, the summary for publication and the specific information on indicators

(i.e., trainings, gender, open data, etc.). Milestones and deliverables will be submitted by each participant for their work in accordance with the schedule set out for them. Public deliverables will be automatically published by the EC.

Periodic reporting. At the end of each reporting period (to be submitted by the PC within 60 calendar days after end of reporting period), progress reports have to be given to the EC. According to the GA, delivery dates are month 18, month 36 and month 42. The report will include: (1) the Periodic Technical Report (PTR), (2) the Financial Statements (FSs), (3) the Web-based reporting. Reports will be created by the PC with the support of all WP leaders. In addition to the periodic reports, after 12 months, the deliverable D20.3 (report on technical development during Y1) will summarise the main achievements during the first 12 months of the project.

Regular reviews with the EC. This will include one technical review in M12 and three reviews planned at the end of each reporting period – these reviews will coincide with the GA meetings. During the reviews, the consortium will present the work carried out, the main achievements and the use of the resources. Attendance at the review will include the PC and Lasers4MaaS partners, as well as the project officer assisted by external reviewers. The relevant report and deliverables need to be ready at least 3 weeks prior to the meeting. To achieve a timely delivery of the reports to the EC, the following timeline shall be followed:

- **eight weeks** before the regular review with the EC: the PC requests content from WP leaders
- **seven weeks** before the regular review with the EC: WP leaders share inputs to deliverables and/or complete draft of deliverables to the PC
- **six weeks** before the regular review with the EC: the PC sends out feedback on report drafts
- **four weeks** before the regular review with the EC: final drafts ready and final internal review/editing
- final report submitted by the PC **three weeks before the regular review with the EC**

5.3. Communications and meeting management

Standard working communication shall be done via email (or phone/MS TEAMS call when necessary). Important communication and exchange of information should be done via email to enable tracking and follow-up. Therefore, a mailing list for the partners is available and will be maintained and kept up to date by the project coordinator to ensure that no one will be excluded from important information. Contact details of project partners can be found on the TEAMS channel (**Management\Contact list**). To have an overview of the status, the PC contacts shall be included in all technical and administrative e-mails in copy (cc-ed) – the PC will then follow up actions when deemed necessary.

The schedule of meetings is: 2 x GA meetings (every 6 months) per year, face-to-face (option for attendance on-line will be considered); at least 1 AB meeting per year during one of the GA meetings, face-to-face (option for attendance on-line will be considered); SB meetings are on-line quarterly; weekly meetings at WP level are on-line. Table 1 reports the planned schedule of GA meetings. Venue of the meeting will be agreed upon in the SB meeting happening three months in advance. Meeting details can be found on the TEAMS channel (**Management\Lasers4MaaS meeting scheduler**).

Table 1: Schedule of regular GA meetings and reviews with the EU officer and reviewers

Type	When	Who	Mode
GA and kick-off	Month 2	Lasers4MaaS consortium and EU officer	Face-to-face
GA meeting	Month 6	Day#1: Lasers4MaaS consortium Day#2: Lasers4MaaS consortium	Face-to-face (option for on-line attendance if strictly required)
GA, year#1 review with EC and AB meeting	Month 12	Day#1: Lasers4MaaS consortium Day#2: Lasers4MaaS consortium and AB Day#3: Lasers4MaaS consortium, EU officer, EU reviewers	Face-to-face (option for on-line attendance if strictly required)
GA and regular review with EC	Month 18	Day#1: Lasers4MaaS consortium Day#2: Lasers4MaaS consortium members	Face-to-face (option for on-line attendance)

		Day#3: Lasers4MaaS consortium, EU officer, EU reviewers	if strictly required)
GA and AB meeting	Month 24	Day#1: Lasers4MaaS consortium - current status and AB meeting Day#2: Lasers4MaaS consortium – planning ahead	Face-to-face (option for on-line attendance if strictly required)
GA and AB meeting	Month 30	Day#1: Lasers4MaaS consortium Day#2: Lasers4MaaS consortium, AB members	Face-to-face (option for on-line attendance if strictly required)
GA and regular review with EC	Month 36	Day#1: Lasers4MaaS consortium - current status Day#2: Lasers4MaaS consortium – planning ahead Day#3: Lasers4MaaS consortium, EU officer, EU reviewers	Face-to-face (option for on-line attendance if strictly required)
GA and regular review with EC	Month 42	Day#1: Lasers4MaaS consortium Day#2: Lasers4MaaS consortium, AB members Day#3: Lasers4MaaS consortium, EU officer, EU reviewers	Face-to-face

The PC will set and share the agenda at least four weeks in advance. The template of the agenda is in the TEAMS channel (**Meetings\Lasers4MaaS_Agenda_Template**).

6. Logo and rules

The Lasers4MaaS’s logo has been approved by the SB during the Kick-off meeting. On external and internal publications, the use of the official project logo is required. The project logo is located on the project TEAMS channel (**Marketing materials\Logo**). Dependent on the colour of the background, the logo is available in different colours. On all project publications (deliverables, papers, etc.) the funding by the European Union needs to be acknowledged. This includes the usage of the Lasers4MaaS project logo and the EU flag in sufficiently high resolution – see example in Figure 3.



Figure 3: Logo showing the funding of the European Union together with the Lasers4MaaS’s logo

For the acknowledgement itself, the following sentence is mandatory: *This project has received funding from the European Union’s HORIZON EUROPE research and innovation programme under grant agreement No. 101178719. The content of this publication is the sole responsibility of the Consortium partners listed herein and does not necessarily represent the view of the European Commission or its services.*

7. Deliverables and presentation templates

To ensure that presented content is clearly connected to Lasers4MaaS and to create a recognition factor of the project itself, the usage of the official project presentation template is required for all official project presentations. This is especially the case for external presentations of project contents. The template document can be found on the TEAMS channel (**Management\Lasers4MaaS_presentation_template**).

Templates of the deliverables are available in **Deliverables\Lasers4MaaS_deliverable_template**. Figure 4 shows an example.

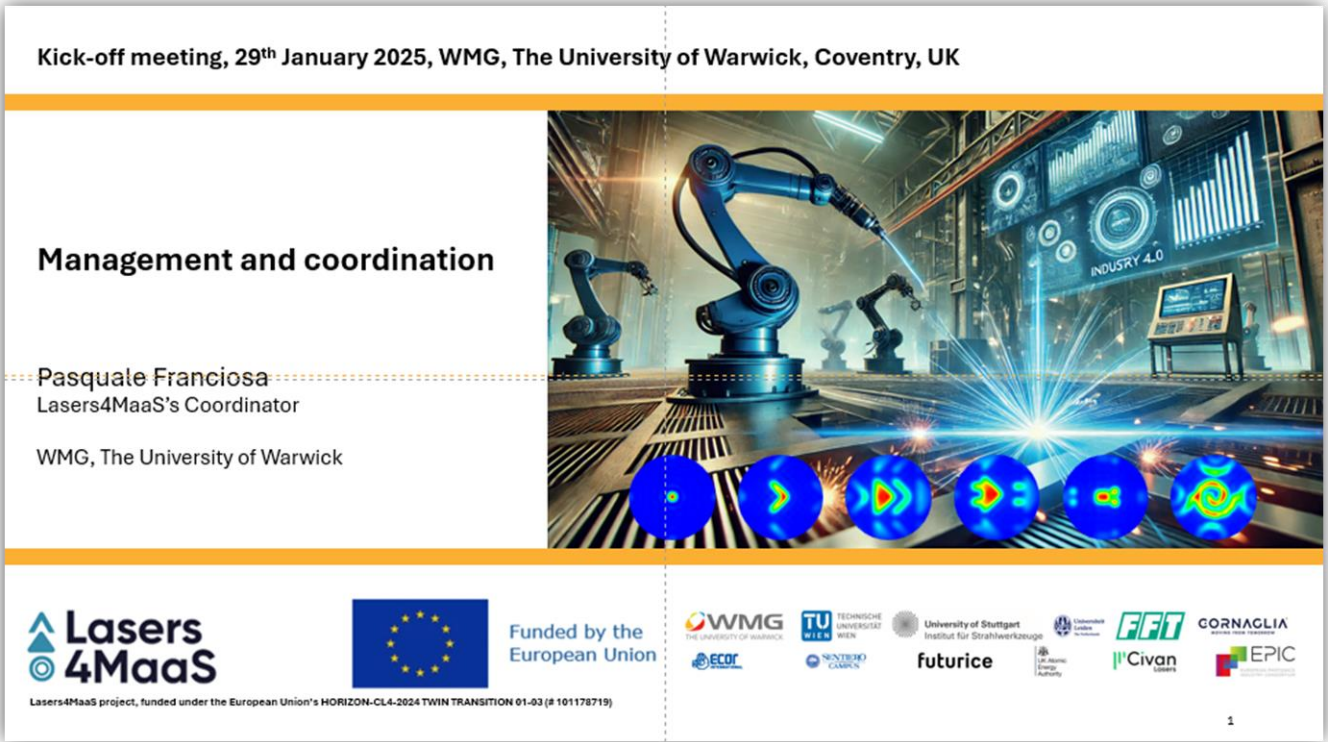
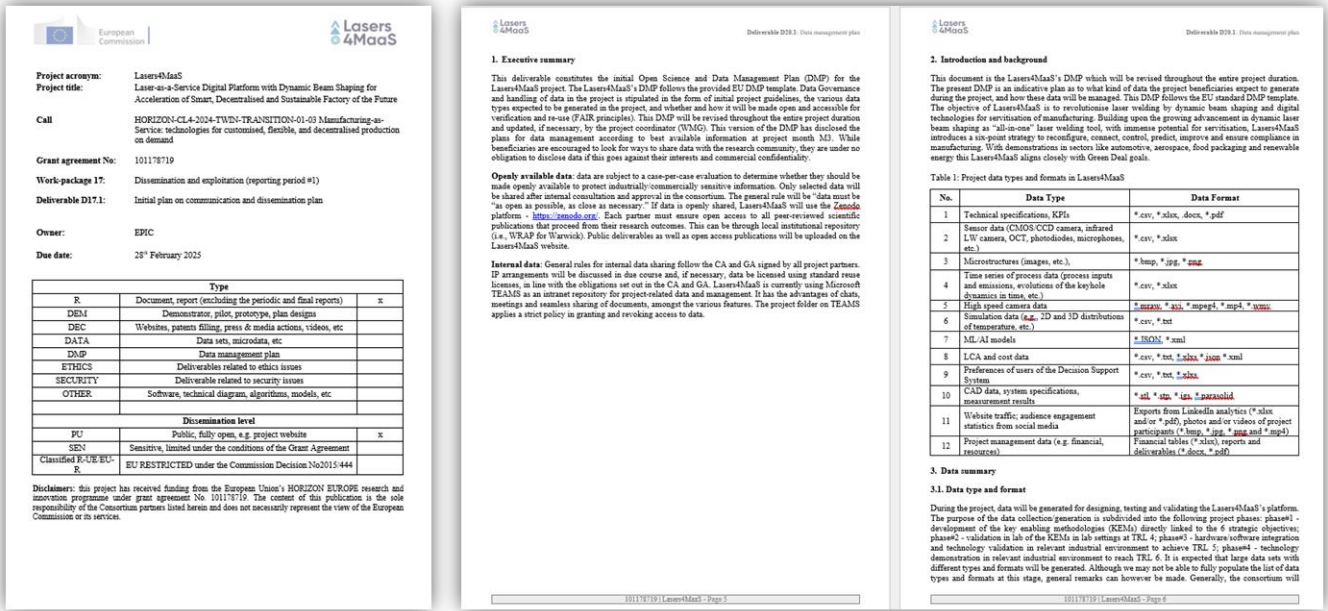


Figure 4: Example of deliverable and presentation front-page

8. Risk Management Plan

Risk Identification. Potential risks will be identified and assessed in project review meetings involving representatives from all partners and any new concerns will be promptly addressed. For each identified risk, mitigation strategies will be developed to minimise their impact on the project. Each work package leader will be responsible for monitoring risks in their area and will report potential issues to the risk management team during project meetings. The Risks Register can be found on the TEAMS channel (**Management\Lasers4MaaS_master_project_management_LIVE**).

Contingency Planning. If risks materialise, contingency plans will be prepared for each work package. This will include fallback options and resource reallocation strategies to keep the project on track. Each partner will contribute to these contingency plans by outlining possible solutions for their specific deliverables.

The Management Board either distributes the vacant tasks to the most appropriate participant(s) or decides to stop the concerned activity in agreement with EU officer.								
Date Updated	Risk No.	Description of risk	Likelihood	Severity	Wp	Proposed risk-mitigation measures	Status	Progress on Actions
06/02/2025	1	Loss of partners and/or key personnel	L	M	A8	The Management Board either distributes the vacant tasks to the most appropriate participant(s) or decides to stop the concerned activity in agreement with EU officer.	Open	
06/02/2025	2	Disagreement over tasks and implementation, coordination of tasks and conflicts	L	M	A8	The Management Board will implement a robust, well designed project management structure with regular meetings and monitoring, solving problems quickly by consensus. A detailed work plan and CA will specify roles/responsibilities. Additionally, the multi-layer management structure will ensure smooth resolution.	Open	
06/02/2025	3	Ineffective communication and information flow between partners	L	L	20-22	The Coordinator with the support of the Project Manager and overall Management Board will provide standards for documentation and procedures to set the information flows. Regular meetings (GA, AB, SB and VP level) will be organised to track progress and status of tasks.	In Progress	Weekly project reviews are taking place with all partners. The Teams site is accessible to all partners with relevant documentation available e.g. deliverable template, meeting actions.
06/02/2025	4	Project resourcing not available, leading to late or poor-quality deliverables	L	L	20-22	Clear project plan from the start, frequent monitoring of progress, assigning delegates for key project personnel. Partners will leverage in-post staff/engineers, with reduced risk of delayed recruitment.	Closed	No current issues with recruitment. Project Manager is monitoring and tracking status of deliverables due for the first deadline and regularly communicating with the partners to ensure they are delivered on time.
06/02/2025	5	Key staff on leave, and gap in skills is created, leading to project delay	L	L	20-22	To re-deploy other existing staff to fill the lost expertise. Project manager and VP leaders will keep other teams informed about developments and progress.	In Progress	A record of annual leave will be kept to track any gaps in staff resource over the duration of the project. The PM will ensure that there are back-up plans in place for any partners on leave during crucial delivery times.
06/02/2025	6	Publications are not produced/accepted in a timely manner, leading to negative impact on dissemination	L	L	17-19	All partners will support conference and expos attendance and dissemination to maximise uptake of the technology. The academic partners are highly experienced and able to mentor and guide the writing of technical paper and methodology as well as to follow up the entire process of submission and editing.	Open	
06/02/2025	7	IP management, confidentiality, sharing necessary data and related conflicts between partners	L	L	20-22	There is no existing patent which impedes commercialisation. IPRs and state-of-the-art will be reviewed every month. Vianick Ventures will provide support on any legal matters. Background IPRs to be brought into the project by partners will be agreed in advance, and all foreground IPRs to be generated during project will be managed according to the standard consortium agreement in due course. Partners do not compete within the	Open	
06/02/2025	8	Delays with the preparation of the technology area in ECOR for demonstration due to disruption in the supply chain (i.e. micro-chips supplies)	L	H	3, 15	(1) Purchase orders raised as soon as specs are defined in WP4 (see ME3). (2) Continuous monitoring of milestones and if delay occurs, critical tasks will be prioritised. (3) Use existing standard laser setup from application lab in CIVANL.	In Progress	ECOR, CIVAN, FFT - discussions ongoing, investigations are going well, no risk with timing. In planning phase, risk is low. In progress.
06/02/2025	9	High-fidelity physics-based simulation model is computationally too expensive, yielding unacceptably high simulation times	L	L	9	Austria's largest supercomputer (VSC) can be used if TUW's own servers are not capable of performing the simulations within reasonable time. At 4.2 PFlops/s, VSC is well-suited to handle even excessively demanding computations. Other HPC clusters are available with VMQ and USTUTT to help de-risking.	Open	
06/02/2025	10	Reduced-Order Models are not capable of predicting accurately the process parameter-KPI relationships	L	M	10	Task 9.3 is dedicated to exploring different ROM architectures and strategies, to find a good trade-off between speed and accuracy. If need be, the complexity of the ROMs can be increased at additional computational costs, which will be distributed across the partner HPC clusters (cf. risk no. 9).	Open	
06/02/2025	11	Quality of Training data is not sufficient for algorithm training	M	M	7, 8, 9, 10, 11, 12	The available data has to be reworked in terms of quality and therefore the amount of data will be reduced, as the performance of an algorithm depends more on the quality of data than on the quantity.	Open	
06/02/2025	12	Training data is not available in time	M	M	7, 8, 9, 10, 11, 12	The algorithm development can be performed using historical datasets. To leverage laser welding facilities across a few facilities (VMQ, CIVAN and USTUTT).	Open	
06/02/2025	13	Lack of primary data for the development of the sustainability and circularity assessment in some life cycle stage	L	M	13-14	Data will be available before the build of the demonstrators via lab-based tests across VPIB 12. Use existing database to fill data gaps and leverage on the extensive network of ULEI for sustainability and circularity assessment.	Open	
06/02/2025	14	Insufficient stakeholder engagement in the development of the decision support strategies	L	M	13-14	Develop a stakeholder engagement plan and regularly communicate updates on the development of the decision support strategies.	In Progress	Linked to advisory board

Figure 5: Example of risk register used in Lasers4MaaS