



# AMUSENS

## D1.1

### Project Quality Plan

<b>Project number</b>	101130159
<b>Project acronym</b>	AMUSENS
<b>Project title</b>	Adaptable multi-pixel gas sensor platform for a wide range of appliance and consumer markets
<b>Start date of the project</b>	1 <sup>st</sup> June, 2024
<b>Duration</b>	48 months
<b>Call</b>	HORIZON-CL4-2023-RESILIENCE-01-TWO-STAGE
<b>Topic</b>	HORIZON-CL4-2023-RESILIENCE-01-33

<b>Deliverable type</b>	Report
<b>Deliverable reference number</b>	CL4-2023-RESILIENCE-01-33 / D1.1 / 1.0
<b>Work package contributing to the deliverable</b>	WP1
<b>Due date</b>	August 2024 – M03
<b>Actual submission date</b>	27th August 2024

<b>Responsible organisation</b>	TEC
<b>Editor</b>	Magdalena Rauter
<b>Dissemination level</b>	PU
<b>Revision</b>	V1.1

<b>Abstract</b>	The project quality plan shows the project management process, review process, quality checks, project templates, meeting organization, which is communicated to all partners.
<b>Keywords</b>	Quality planning, quality assurance, quality control, visual identity, project policy



## **Editor**

Magdalena Rauter (TEC)

## **Contributors**

Patrick Leczek (TEC)

## **Reviewer**

Panagiotis Isigonis (LIST)

Mette Funding la Cour (ATLANT)

## **Disclaimer**

The information in this document is provided “as is”, and no guarantee or warranty is given that the information is fit for any particular purpose. The content of this document reflects only the author’s view – the European Commission is not responsible for any use that may be made of the information it contains. The users use the information at their sole risk and liability.

## Executive Summary

The Project Quality Plan shows how quality aspects are taken into account in a variety of processes and activities within the AMUSENS project. The interrelated quality processes – planning, assurance and control – have impact on the project work from its start to its end.

- Quality Planning refers to quality policies like meeting, deliverable or publication policies, the definition of responsibilities as well as the creation of a corporate visual identity including a project logo, project-like designed templates etc. In order to communicate adequately within the project as well as to project external persons, several tools, such as project policies including meetings, deliverables and the publication process of scientific papers, are established and explained in this document.
- Quality Assurance involves the establishment of Interim Management Reports, clear responsibilities and regular, clearly guided online meetings and teleconferences. A well-defined internal review process further supports the Quality Assurance of deliverables.
- Quality Control focuses on feedback through internal processes (internal review process). It further monitors how feedback is implemented and assures the project outcomes through proactive risk management.

The plan is effective throughout the lifetime of the project but is open to revision if necessary. Responsibilities for quality planning, assurance and control are shared between all partners, which allow various views on quality issues in order to reach the optimal outcome.

# Table of Content

<b>Chapter 1</b>	<b>Introduction .....</b>	<b>1</b>
<b>Chapter 2</b>	<b>Project Structure .....</b>	<b>2</b>
2.1	Project Bodies .....	2
2.2	Steps Towards Participation .....	4
<b>Chapter 3</b>	<b>Quality Management Strategy .....</b>	<b>6</b>
3.1	Quality Planning .....	6
3.1.1	Visual Identity .....	6
3.1.2	Project Policies .....	7
3.2	Quality Assurance .....	11
3.2.1	Interim Management Report (IMR) .....	12
3.2.2	Responsibilities and internal review .....	13
3.2.3	Telephone Conferences & Meetings .....	15
3.3	Quality Control .....	15
3.3.1	Internal Review Process .....	15
3.3.2	Risk Management.....	17
<b>Chapter 4</b>	<b>Summary and Conclusion .....</b>	<b>18</b>
<b>Chapter 5</b>	<b>List of Abbreviations.....</b>	<b>19</b>

## List of Figures

Figure 1: AMUSENS Project Bodies .....	3
Figure 2: AMUSENS Project Logo .....	6
Figure 3: Example extract of IMR, Chapter 1 .....	12
Figure 4: Review and Quality Assurance Process for Deliverables .....	15

## List of Tables

Table 1: AMUSENS Mailing Lists.....	5
Table 2: AMUSENS Quality Requirements for Meetings.....	8
Table 3: AMUSENS Deliverable Review Form.....	10
Table 4: AMUSENS Quality Requirements for Deliverables.....	11
Table 5: AMUSENS Quality Requirements for IMRs and Risk Assessment .....	13
Table 6: AMUSENS Deliverables and Milestone Overview until M12 .....	14

# Chapter 1 Introduction

The scope of AMUSENS is to develop an adaptable multi-pixel gas sensor platform through machine learning and additive manufacturing and to demonstrate it to the monitoring of personal exposure to gases and breath analysis. Professionals of different backgrounds will work together to provide dedicated, cost-efficient sensors with superior analytical performance and high integrability. For this reason, it is particularly important to implement an efficient structure to ensure the quality of the project and the effective identification and management of risks. Therefore, a Project Quality Plan has been implemented. The Project Quality Plan is an integral part of the AMUSENS project management. Its purpose is to describe how quality will be managed throughout the lifecycle of the project. Quality must always be planned in a project in order to prevent unnecessary rework, as well as waste of cost and time. Quality should also be considered from both, an outcome and process perspective. The processes and activities that produce deliverables need to fulfil certain quality levels in order to reach the expected high-quality outcome. To address all quality requirements and quality assurance mechanisms in the AMUSENS project, the 'Project Quality Plan' at hand has been developed by the project team. This plan acts as the quality handbook for the project and all partners will adhere to the project quality plan.

Each project has its characteristics in terms of partners, work packages (WPs) etc. and therefore require an individual quality plan, clear responsibilities and contact persons. This and how to get on board of the AMUSENS project is described within Chapter 2.

The overall **Quality Management Strategy** of AMUSENS is addressed in Chapter 3. It is divided into three key activities:

- **Quality Planning**

Quality Planning comprises quality policies and procedures relevant to the project for both project deliverables and project processes, defines who is responsible for what, and documents compliance with EC regulations. A corporate visual identity represents the project internally, in partners' organisations as well as externally. In order to communicate adequately within the project as well as to project external persons, several tools are established and introduced in this chapter. Clearly defined project policies in terms of policies for deliverable naming, for meetings, for scientific publications or the procedure of internal deliverable review etc. give security to the project partners, as they have clear guidance how to deal with upcoming issues.

- **Quality Assurance**

Quality Assurance creates and monitors project processes, which need to be performed effectively to reach the targeted outcome. This involves the establishment of Interim Management Reports, clear responsibilities and regular, clearly guided online meetings and teleconferences and face-to-face meetings. These activities within AMUSENS are summarized in section 3.2.

- **Quality Control**

Quality Control will be actively performed by all partners, e.g. by acting as an internal reviewer of deliverables. A clear internal review process has been defined before Deliverable Submission to provide feedback to the editor. Proactive risk management has already been mentioned within the Description of Action (DoA). Risk management has been established as planned in order to guarantee the project quality and avoid delays or failures. Feedback loops on the project progress and outcomes will support the quality controlling and guide the project into the right direction. This is described in section 3.3

The target of the following chapters is to describe how all the mentioned pieces of the puzzle fit and stick together.

## Chapter 2 Project Structure

This chapter gives an introduction to the project characteristics in order to allow new members to get easier on board and find important information at a glance. Therefore, this chapter will introduce shortly the main elements of the AMUSENS project in terms of participants, WPs and responsibilities.

### 2.1 Project Bodies

AMUSENS is a research project with 14 Work Packages (WPs) and 10 partners coordinated by LIST.

- 1) **LIST** Luxembourg Institute of Science and Technology
- 2) **TEC** Technikon Forschungs- und Planungsgesellschaft mbH (AT)
- 3) **SfC** Science for Change, SI
- 4) **ULiege** Universite de Liege
- 5) **ATLANT** Atlant 3D Nanosystems APS
- 6) **JLM** JLM Innovation GmbH
- 7) **UNIBS** Universita degli Studi Di Brescia
- 8) **IMT** Institut Mines-Telecom
- 9) **Sciosense** Sciosense Germany GmbH
- 10) **Ellona** Ellona SAS

The interaction, responsibilities and decision-making power is clearly divided between the established project bodies as shown in Figure 1. The governing culture of the AMUSENS project is based on democracy, co-determination and clear leadership.

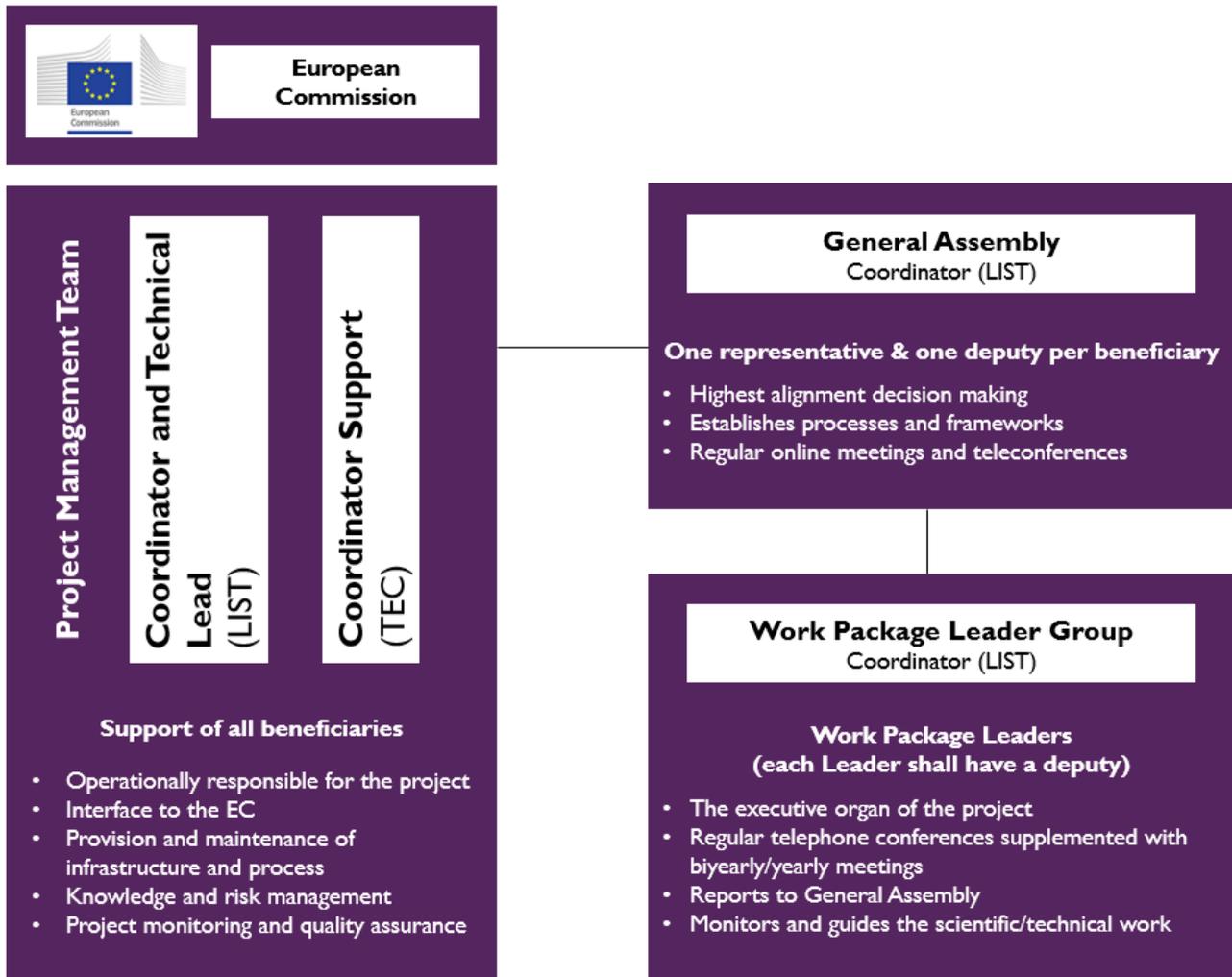


Figure 1: AMUSENS Project Bodies

The defined AMUSENS project bodies, the decision-making process, as well as the responsibilities are bindingly described in the Consortium Agreement and the Grant Agreement.

The **Project Management Team** consists of the Coordinator and Technical Lead LIST (main representative: Renaud Leturcq) and The Coordinator Support TEC. The **Coordinator** (LIST) is the Legal Entity acting as the intermediary between the Parties and the Funding Authority. The Coordinator shall, in addition to its responsibilities as a Party, perform the tasks assigned to it as described in the Grant Agreement and the Consortium Agreement.

The **General Assembly** (GA) is the assembly of all partners and therefore the decision-making body of the consortium. As such, it is the highest authority in AMUSENS. It was established within the proposal and therefore included in the Consortium Agreement. The General Assembly is chaired by the coordinator (LIST) unless otherwise agreed. To represent their organisations within the AMUSENS General Assembly, representatives and deputies have been selected. The General Assembly consists of the following beneficiaries:

- LIST
- TEC
- SfC

- **ULiege**
- **ATLANT**
- **JLM**
- **UNIBS**
- **IMT**
- **Sciosense**
- **Ellona**

The **Work Package Leader Group** is the assembly of all work package leaders. It is chaired by the coordinator LIST. According to the Consortium Agreement the Work Package Leader Group acts as the supervisory body for the execution of the project which shall report to and be accountable to the General Assembly. The Work Package Leader Group shall monitor the effective and efficient implementation of the project. Represented in the Work Package Leader Group are the 14 WPs.

- WP1: **LIST**
- WP2: **LIST**
- WP3: **LIST**
- WP4: **IMT**
- WP5: **LIST**
- WP6: **UNIBS**
- WP7: **Sciosense**
- WP8: **JLM**
- WP9: **ATLANT**
- WP10: **Ellona**
- WP11: **TEC**
- WP12: **TEC**
- WP13: **TEC**
- WP14: **LIST**

## 2.2 Steps Towards Participation

### 1) Initial Registration

New participants in the project need to contact the coordinator LIST in order to receive access to the AMUSENS file sharing and editing platform.

### 2) Contacts and mailing lists

All contact details are added to the AMUSENS contact list and the new participant will be subscribed to relevant mailing lists, as these are essential tools for project internal communication. So far, the following AMUSENS mailing lists are active and in use:

Mailing List Name	Members
All	All personnel actively involved in the project
General Assembly	General Assembly members and deputies
Technical	For all technical correspondence & WP discussions

Financial	All personnel responsible for financial questions and tasks
Legal	For legal correspondence
Publications	Partners to be informed about publications & notices

Table 1: AMUSENS Mailing Lists

### 3) Project Handbook

New participants will receive the Project Handbook (via the project SharePoint) to get familiar with:

- the AMUSENS infrastructure (SharePoint, public website, mailing lists)
- the project structure (partners, hierarchy of bodies, most important documents at a glance)
- the project procedures (meetings, deliverables, publications)

The project handbook is designed in a way to be easily consulted and to provide quick answers to project newcomers. It is available as a PDF file on the SharePoint and is a living document. This implies that it will be updated regularly to record and list the lessons learned in order to improve the quality of the project. All partners will be involved in the revision process and informed about any updates. In general, TEC will be the main responsible partner for updating the project handbook. Updates will be performed whenever necessary, e.g. if there are changes to the mailing lists or if the project structure or the General Assembly / Work Package Leader Group composition changes. In any case, partners are always invited to propose updates if required.

### 4) Introduction and start

Once familiar with the project policies and the infrastructure, newcomers will find the most relevant documents like the Description of Action (DoA), Grant Agreement (GA) and Consortium Agreement (CA) on our working directory – the SharePoint.

## Chapter 3 Quality Management Strategy

Quality is the degree to which the project results fulfil the project requirements. For this purpose, a Quality Management Strategy has been defined within the AMUSENS project through three key processes, namely Quality Planning, Quality Assurance and Quality Control. These three processes are interconnected and interact in order to guarantee efficient and high-quality work.

### 3.1 Quality Planning

Quality Planning determines quality policies and procedures relevant to the project for both project deliverables and project processes, defines who is responsible for what, and documents compliance with defined guidelines.

#### 3.1.1 Visual Identity

The creation of a corporate visual identity plays a significant role in the way the AMUSENS project presents itself to both internal and external stakeholders. A corporate visual identity expresses the values and ambitions of our project and its characteristics. Our corporate visual identity provides the project with visibility and “recognisability”. It is of vital importance that people know that the organization exists and remember its name and core business at the right time. In the following, we briefly list the actions that were taken in order to create a visual identity of the project. A detailed presentation of the materials and activities can be found in D11.1 “Plan for dissemination and exploitation incl. communication activities”.

**Logo:** For the improvement of its visibility, the AMUSENS project has adopted a project logo. The logo is used on all internal templates as well as on external dissemination tools (see, e.g. cover sheet or header of the deliverable).



Figure 2: AMUSENS Project Logo

**Project website:** For greater visibility of the project, a website was launched in month 2. The AMUSENS project website is available at the following link: [amusens.eu](https://amusens.eu)

**Leaflet:** The official AMUSENS [leaflet](#) is a four-page informative and graphically appealing A4 flyer, highlighting the objectives and the work programme of AMUSENS. It is used for distribution at conferences or certain other events in order to provide further visibility to the AMUSENS project. An electronic version of the leaflet is available on the website.

**Templates:** Presenting the AMUSENS project with a clear design is a claim by the whole consortium. Therefore, templates which bear the hallmark of the AMUSENS design were created. All templates include the AMUSENS logo, colours and the disclaimers. Templates developed in AMUSENS are for example:

- Meeting Minutes
- Interim Management Report
- Deliverables
- PowerPoint Presentation

**Social Media:** In order to reach a broad target group, [X](#) and [LinkedIn](#) are used to raise awareness of project specific news/results/publications/events and to foster cooperation activities.

### 3.1.2 Project Policies

Internal project guidelines, our so-called project policies, were established to organize internal and external processes in terms of meetings, deliverables and publications, to ensure quality.

#### 3.1.2.1 Meeting procedures

Physical meetings are planned to be taking place within the AMUSENS consortium, supported by a number of regular virtual meetings. The consortium decided in general, that the hosting partner of a meeting pays for conference facilities, catering and the like, while each partner pays for accommodation and provisions. Usually, the host invites for lunch and coffee breaks during the meeting. If possible, the hosting partner invites the partners to one common dinner. The meeting locations should change regularly in order to achieve a fair distribution of costs. To keep costs down, the consortium prefers to meet at company facilities that can often be used for free. If that is not possible, the host can also arrange/ask for offers for conference rooms in a hotel. Then the partners pay separately their conference fees (room fee including coffee and lunch breaks). The following bullet points should be a kind of **checklist for the host of upcoming meetings/workshops**.

##### Meeting Room(s):

- On the first day one larger room for approx. 20-30 people is needed (if most partners attend with 2-3 persons; a participant list will be created to provide further details).
- For the second day parallel sessions might be suitable. To plan such sessions, one or two rooms (for approx. 10-12 persons each) are required. (It will be decided in advance how many breakout sessions are necessary for the dedicated meeting.)
- Consideration if there are costs for the conference room/day/person e.g. for the coffee breaks or lunch
- Assurance by the meeting host whether further expenses could be incurred

##### Infrastructure/Equipment:

- Free WLAN at meeting/workshop
- Internet connection
- Projector/Beamer in each room
- Flip charts and pens
- Power outlets for all participants
- Ensuring remote participation in the meeting
- Presentation Laptop

The host of a AMUSENS internal meeting has to prepare a 1-2 pager with logistic information approx. one month before the meeting. This 1-2 pager is checked by the Project Management Team and discussed within the technical progress online meetings/ teleconferences to make sure that the meeting allocation fits the planned meeting and the number of participants.

The number of participants is collected through a participant list on the project's SharePoint, which needs to be completed by all partners at least one and a half months before the meeting. The Coordinator together with the meeting host have to prepare an agenda approx. one month before the meeting.

All these specific requirements are already taken into account when choosing the host of the next meeting. If a partner volunteers to host a meeting but is not able to fulfil the meeting process described in section 3.1.2.1, another partner will be chosen for hosting it.

### 3.1.2.1.1 Information Flow for Meetings and Quality Requirements

Work Package Leader Group- and General Assembly Meetings are held every 3 resp. 6 months (as required by the Consortium Agreement). In addition to formal WP Leader Group Meetings - if feasible organized as face-to-face meetings – monthly Technical Progress Calls are scheduled. The Coordinator is continuously in touch with the WP Leader Group members, regularly collects discussion items and prepares the agenda for all conference calls (except for WP-specific online meetings/ teleconferences). The main goal of WP Leader Group meetings and Technical Progress Calls is to provide a status update of each work package and to discuss next steps concerning specific tasks and deliverables.

For the General Assembly and Work Package Leader Group meetings agendas shall be provided in advance and minutes provided as follow-up. These will be made available on AMUSENS' information sharing platform. Meeting leaders, especially at work package (WP) and task level are requested to follow the same procedure. Templates for minutes have been made available on the SharePoint. The goal is for any member of the AMUSENS team to be able to view on the information sharing platform, summaries of the main GA, WP and task discussions and decisions. For all but the most minor of work package (WP) and task level meetings, there shall be at least a short summary of what was discussed and decided at the meeting.

The following table provides an overview of the AMUSENS quality requirements for meetings:

Nr.	Requirement	Metric(s)
1	Notice of upcoming meetings sent on time	Less than 10% non-conformities
2	Meeting agenda sent on time	Less than 10% non-conformities
3	Review of actions from previous meetings during the meeting itself	Done by the Project Management Team before each meeting
4	All points from the agenda addressed during the meeting itself	Less than 5% non-conformities
5	Meeting Minutes sent on time	Less than 10% non-conformities
6	Validation of the meeting minutes from the previous meeting	Done in all meetings

Table 2: AMUSENS Quality Requirements for Meetings

### 3.1.2.2 Deliverables

The Project Management Team contacts the partner responsible for the deliverable at least three months before the submission deadline to check the first draft of the table of content. If desired by the editor, the reviewers can already provide feedback on the table of content in order to identify shortcomings at an early stage. The editor is responsible for updating the table of content accordingly.

The minimum quality requirement for AMUSENS deliverables is that the deliverable meets all requirements specified in the DoA. The content of deliverables can even reach beyond to what is described in the DoA if it is in line with the general objectives of the project. As deliverables are the most important outcome of the project, excellent quality needs to be ensured. Therefore, an internal review process has been defined, which is described in detail in section 3.2.2. If a deliverable does not fulfil the quality requirements of AMUSENS, the review process will be repeated until it is in line – at least – with the DoA. The caused delay must be explained and justified by the editor, who - together with the Project Management Team - checks, if the delay affects other deliverables or the project progress in general. The following deliverable review form must be completed by the reviewers.

## REVIEW FORM for the Internal Reviewer AMUSENS deliverable:

Date of Internal Review:	Internal Reviewer:		
	Answer	Comments	Type*
<b>1. Is the deliverable in accordance with</b>			
i. the <u>Description of Action</u> ?	Choose an item.		Choose an item.
ii. the international State-of-the-Art?	Choose an item.		Choose an item.
<b>2. Is the quality of the deliverable such</b>			
i. that it can be sent to the EC?	Choose an item.		Choose an item.
ii. that it needs further editing?	Choose an item.		Choose an item.
iii. that the content needs to be improved?	Choose an item.		Choose an item.
<b>3. Does the Deliverable include</b>			
i. a clear structure (e.g. appropriate, understandable presentation of the work performed)	Choose an item.		Choose an item.

ii. a sufficient and meaningful executive summary	Choose an item.		Choose an item.
iii. an appropriate introduction	Choose an item.		Choose an item.
iv. a meaningful summary & conclusion	Choose an item.		Choose an item.

Table 3: AMUSENS Deliverable Review Form

Table 3 serves as an internal proof that at least the minimum quality requirement – compliance with the DoA – is achieved. If a deliverable is not ready for submission within the official submission date, the Coordinator informs the Project Officer (EC) about the delay and about any possible impact on other deliverables or the project progress in general.

Deliverables must be put into the “Deliverables Folder” of the corresponding Work Package on the repository. The following file naming is used for all deliverables:

*AMUSENS-[Dx.x]-[Dissemination-Level]-[Due-Month].*

To ease collaboration, MS Office (Formats: docx, xlsx, pptx) templates are defined as the standard document format for all administrative and scientific documents incl. deliverables. A template to be used for deliverables was implemented at the beginning of the project and made available to everyone on the SharePoint. Other formats are also not accepted for the deliverables. Reference material and stable versions should always be provided as an additional PDF file.

### Nature of Deliverables

The following types of deliverables are foreseen in the AMUSENS project:

- „**R**“ (Document, report): Written report
- “**DATA**” (data sets, microdata, etc)
- „**DEM**“ (Demonstrator, pilot, prototype)  
Deliverables marked as “DEM” are accompanied by a small written report outlining its structure and purpose in order to justify the achievement of the deliverable.
- “**DMP**” (Data Management Plan)
- “**ETHICS**” (Deliverables related to ethics issues)
- “**OTHER**” Software, technical diagram, algorithms, models, etc.

In addition to the types of deliverables, the dissemination level was also defined for each one:

- “SEN (Sensitive, limited under the conditions of the Grant Agreement)
- “PU” (Public, fully open)

The following table shows the AMUSENS quality requirements for deliverables based on the internal review process described in section 3.2.2:

Nr.	Requirement	Metric(s)
1	Content is in line with the DoA or goes even beyond	No deviations
2	Editor / Reviewer roles assigned on time	Less than 10% non-conformities
3	Table of content created on time	No deviation

4	Draft sent on time	Less than 10% non-conformities
5	Reviews performed on time	Less than 10% non-conformities
6	Final version sent on time	Less than 10% non-conformities
7	Approval made on time	Less than 10% non-conformities
8	Submission made on time	Less than 10% non-conformities

Table 4: AMUSENS Quality Requirements for Deliverables

### 3.1.2.3 Policy for Publications

**Prior notice of any planned publication** shall be given to the other parties **at least 45 days** before the planned publication submission date in accordance with the Consortium Agreement. Any objection to the planned publication shall be made in accordance with the CA in writing to the coordinator and to any party concerned within 30 days after receipt of the notice. If no objection is made within the time limit stated, the publication is permitted. (CA 8.4.2.1)

The project partners may agree in writing on different time limits to those set above, which may include a deadline for determining the appropriate steps to be taken.

Furthermore, the publication, or the link to it, will be made accessible on the project website. Partners shall inform the coordinator as soon as a link or document in pdf format is available. The Commission will be kept informed about scientific publications through continuous monitoring on the EC portal, as well as the project's social media channels and via our website. These social platforms will also provide access and additional information for all other interested parties.

In order to comply with GA Annex 5 (Article 17) the provision of open access to scientific publications, AMUSENS publications will be uploaded on open access repositories (e.g., ArXiv, or set-ups from beneficiaries, AMIF/ISF/BMVI Project Results platform...).

All publications or any other dissemination relating to foreground generated with financial support from the European Commission shall include the following acknowledgment (GA 17.2 and 17.3):



"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. Neither the European Union nor the granting authority can be held responsible for them."

If feasible, also acknowledge the project by listing the acronym "AMUSENS" or the Grant Agreement Number: GA 101130159.

### Authorship "Rules of Thumb"

We have ensured authorship through the following guidelines:

- the person has contributed significant portions of the text, and/or
- the person has contributed at least one significant idea, and/or
- the paper describes an implementation that has been performed by the person.

All other contributors/influencers should be mentioned broadly in the acknowledgements.

## 3.2 Quality Assurance

Quality assurance concentrates on the development and monitoring of processes to ensure that the requirements outlined during the quality planning phase are consistently met. It creates and monitors project processes, which need to be performed effectively to reach the targeted outcome. This

involves the establishment of Interim Management Reports, clear responsibilities and regular, clearly guided telephone conferences and face-to-face meetings.

### 3.2.1 Interim Management Report (IMR)

The basic idea of internal “Interim Management Reports” is to implement a tool, which requires each partner to provide information regarding their past, ongoing and planned work, as well as information on the spent resources in a specific period of time. The IMR is a cumulative report created on a quarterly basis, which all partners contribute to. It is an efficient tool to provide the Project Management Team a good understanding of the status and progress of the work and to detect any possible delays or deviations well in advance. For this purpose, the Coordinator provides a cumulative template, filled by each partner on the SharePoint. The outcome is reviewed by the whole consortium and if shortcomings are identified, the responsible partner is contacted individually and asked to update the report. In the end, the Coordinator prepares the final version and shares it with the Work Package Leader Group, asking them to review their WP description in the report. After that a final .pdf is uploaded to the SharePoint.

WP1 – Project, risk and innovation management P1 [M01-M18]
<b>Overview on Tasks in WP1:</b> Task 1.1: Project Management (M01-M18) Task 1.2: Risk & Quality Management (M01-M18) Task 1.3: Research and Innovation Management (M03-M18)
<i>Explain the work carried out in WP1 during the reporting period for your beneficiary!</i> <fill in>
<i>Explain the <u>reasons for deviations</u> from the DoA, the <u>consequences</u> and the <u>proposed corrective actions</u>.</i> <i>Include explanations for tasks not fully implemented, critical objectives not fully achieved and/or not being on schedule. Explain also the impact on other WP/tasks on the available resources and the planning</i>
Deviations from DoA: <yes/no>
<i>If yes, please provide the following information:</i>
Reason: <fill in if applicable> Consequences: <fill in if applicable> Corrective actions: <fill in if applicable>
Main Achievements and Results in WP1
Summarize the main achievements and results for WP1. <fill in>

Figure 3: Example extract of IMR, Chapter 1

Figure 3 presents an example extract from the IMR (Chapter 1), where all contributing parties are expected to detail their work completed during a specific period. In addition to summarizing tasks, this section allows the description of any deviations from the DoA. Finally, each WP Lead should provide a summary of the key achievements and results for the respective Work Package.

The structure and the target of each section in the IMR are as follows:

Chapter 1 “Explanation of the work carried out by the beneficiaries and overview of the progress (including deviations)” asks for partner information regarding the work performed within the respective quarter. This helps the Project Management Team to monitor partner activities and the progress made within the last quarter. It further asks the WP leader explicitly for the main achievements and exploitable results per WP, in order to have a clear view on the results and how they will impact the ongoing work. For the Coordinator it was also of high importance to add a section, which gives the partners the opportunity to describe deviations concerning the work plan described

in the DoA. In this subsection of each WP partners describe problems they had/have to cope with and that may be related to problems with larger impact.

Chapter 2 of the IMR reports on the status of the deliverables and milestones which were due until the issue of the report, as well as on those due in the upcoming quarter.

Chapter 3 is about the use of resources of each partner per WP. This Chapter gives an overview of the total planned person months in comparison to the actual spent person months. A subsection of Chapter 3 allows partners to shortly describe and justify deviations regarding their planned use of resources and person months. Every six months, a separate chapter about risk assessment will be added to the IMR. The process of risk management is described in Chapter 6.

Finally, the IMR is dedicated to dissemination, communication and exploitation activities carried out in the respective quarter (Chapter 4), while Chapter 5 summarizes the publications (and associated research data) that were submitted until the issue of the IMR or are planned to be submitted in the next quarter.

The following table provides an overview of the AMUSENS quality requirements for IMRs and risk assessment:

Nr.	Requirement	Metric(s)
1	Cumulative Report filled by all partners on time	Less than 10% non-conformities
2	No request for revision required by the Coordinator	Less than 10% need to be revised
3	No inconsistencies identified in the cumulative report	Done by the Project Management Team on each IMR
4	Risk assessment filled in by all WP leaders on time	Less than 10% non-conformities
5	No request for revision required by Project Management Team	Less than 10% need to be revised

Table 5: AMUSENS Quality Requirements for IMRs and Risk Assessment

### 3.2.2 Responsibilities and internal review

Transparency of roles and responsibilities has a big impact on the project success. Uncertainty can dramatically affect individual, organisational as well as the consortium's overall performance. Therefore, as already mentioned in Chapter 2, responsible persons for each organisation and per WP were defined. In a further step, responsibilities for deliverables are defined.

Table 5 lists all deliverables and milestones due within the first 12 months of the project. While the leader of each deliverable has already been set in the DoA, the editor responsible for requesting and guiding partner inputs towards a punctual and high-quality submission, were chosen at the project start or later. In line with the internal review process (described in section 3.3.1), one or two internal reviewer(s) for each deliverable is defined and clear deadlines for the first draft, the review feedback, as well as for the final version were established.

ACR	Nature	Type	Deliverables and Milestones	WHO	WP	Del. Month	Review Start	Deadline
MS1			Successful project start	LIST	WP1	M01	09/06/2024	30/06/2024
D14.1	ETHICS	SEN	OEI - Requirement No. 1	LIST	WP14	M01	09/06/2024	30/06/2024

D1.1	R	PU	Project Quality Plan	TEC	WP1	M03	10/08/2024	31/08/2024
D1.2	DMP	SEN	Data Management Plan (DMP)	LIST	WP1	M06	09/11/2024	30/11/2024
D11.1	R	PU	Plan for dissemination and exploitation incl. communication activities	TEC	WP11	M06	09/11/2024	30/11/2024
D1.3	R	SEN	Short Interim Management Report (1)	LIST	WP1	M07	10/12/2024	31/12/2024
D4.1	R	SEN	Report on targeted gases and sensing materials, testing procedures and standards for metrological qualification	IMT	WP4	M09	07/02/2025	28/02/2025
D4.2	DMP	SEN	Database structure for gas sensing materials specifications and metrological qualification data	Ellona	WP4	M09	07/02/2025	28/02/2025
<b>MS2</b>			<b>Choice of the targeted gases, sensing materials and testing procedures</b>	<b>IMT</b>	<b>WP4</b>	<b>M09</b>	07/02/2025	28/02/2025
<b>MS3</b>			<b>Validation of the database of sensing materials</b>	<b>Ellona</b>	<b>WP4</b>	<b>M09</b>	07/02/2025	28/02/2025
D1.4	R	SEN	Risk Assessment Plan	TEC	WP1	M12	10/05/2025	31/05/2025
D5.1	R	SEN	Report of ink formulation and processing for inkjet printing of metal oxide nanostructures	LIST	WP5	M12	10/05/2025	31/05/2025
D5.2	R	SEN	Report of direct atomic layer deposition of metal and metal oxide thin films	ATLANT	WP5	M12	10/05/2025	31/05/2025
<b>MS4</b>			<b>Validation of inkjet printing and DALP deposition conditions</b>	<b>ATLANT</b>	<b>WP5</b>	<b>M12</b>	10/05/2025	31/05/2025
<b>MS5</b>			<b>AI algorithm for material selection ready to be used</b>	<b>IMT</b>	<b>WP6</b>	<b>M12</b>	10/05/2025	31/05/2025

Table 6: AMUSENS Deliverables and Milestone Overview until M12

### 3.2.3 Telephone Conferences & Meetings

Communication is one of the most essential foundations of a successful project collaboration. Therefore, the AMUSENS consortium established regular conference calls (e.g. monthly Technical Progress meetings requesting WP status reports, as well as several WP-internal meetings on a regular basis). The Project Management Team provides their conference call system. Virtual meetings are planned in parallel to physical meetings, which are needed because of the complexity and large number of interfaces to be developed within this project.

To ensure the project success, it is necessary to implement an efficient meeting structure. At the beginning of the AMUSENS project, a virtual kick-off meeting took place on June 3<sup>rd</sup> 2024. Different expectations were discussed among all partners in order to define a specific plan about the further work plan and require actions. In addition, a personal kick-off meeting will also take place on September 9<sup>th</sup> and 10<sup>th</sup> 2024 at the coordinators venue (LIST) in Luxembourg.

The Coordinator plans to organize at least two Technical Meetings per year (either f2f or virtual), combined with General Assembly meetings. WP-specific or cross-WP meetings will be organized upon request. At the end of the AMUSENS project, there will be a Project finalisation meeting. Further, it is planned to participate in several workshops and conferences.

## 3.3 Quality Control

The scope of quality control is the management of feedback and deviations in the project. Quality control ensures that feedback, from internal, as well as from external advisors, is taken into account and therefore positively influences the work towards the project objectives. Risk management is an integral part of quality control as the proactive notice of deviations from the DoA allows the consortium to mitigate the consequences or even transform the latter into opportunities.

### 3.3.1 Internal Review Process

To ensure the quality of deliverables, an internal review process was defined. The main goal of this process is to gather internal feedback from partners, who did not directly participate as editor or contributor to the deliverable before its submission to the European Commission. The review process is shown in Figure 4 and explained below.

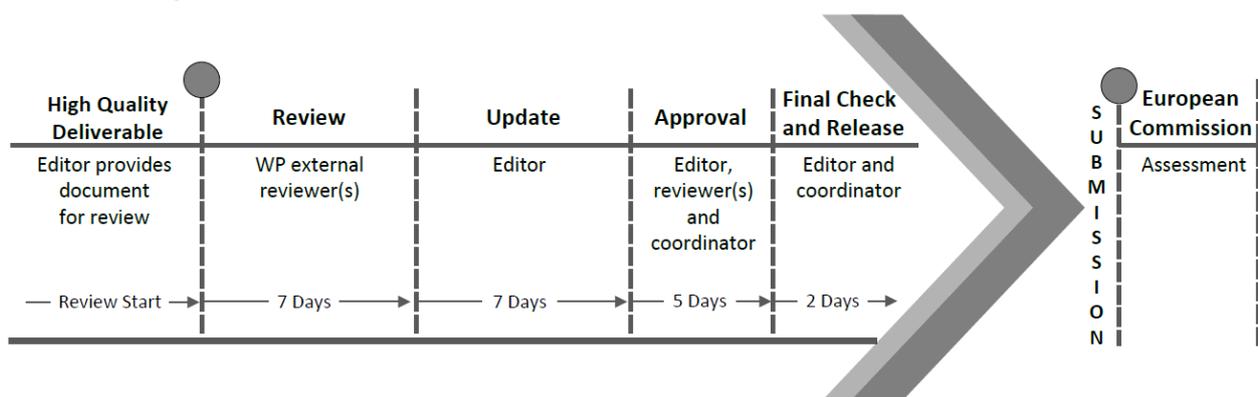


Figure 4: Review and Quality Assurance Process for Deliverables

**Step 1 “Review”:** partners send the High-Quality Deliverable to LIST and to internal reviewers, who were not directly involved in the deliverable work (*Review = 7 days*). High quality means, that all required input is included within the deliverable, all track changes accepted, and a first formatting check is performed. The reviewer reads the High-Quality Deliverable and compares the content against its objective as defined in the work plan. The review result is a draft with mark-up as follows:

**Word:** The editor protects the draft against changes or – if the deliverable is edited online – the reviewers always activate the “track changes” function. Typos and small changes are directly entered in the text through “track changes”, comments are entered as Word comments.

The internal reviewer has to fill in an Internal Review Form. The internal review form guides the reviewer through specific questions to make sure that the content complies with the quality claims of the EC (e.g. accordance with the DoA, required information, structure, etc.), as well as the project partners. In this way, the editor of the deliverable receives feedback in a clearly structured form, which helps him to address all comments.

**REVIEW FORM**  
**for the Internal Reviewer**  
**AMUSENS deliverable:**

Date of Internal Review:	Internal Reviewer:		
	Answer	Comments	Type*
<b>4. Is the deliverable in accordance with</b>			
i. the <u>Description of Action</u> ?	Choose an item.		Choose an item.
ii. the international State-of-the-Art?	Choose an item.		Choose an item.
<b>5. Is the quality of the deliverable such</b>			
i. that it can be sent to the EC?	Choose an item.		Choose an item.
ii. that it needs further editing?	Choose an item.		Choose an item.
iii. that the content needs to be improved?	Choose an item.		Choose an item.
<b>6. Does the Deliverable include</b>			
i. a clear structure (e.g. appropriate, understandable presentation of the work performed)	Choose an item.		Choose an item.
ii. a sufficient and meaningful executive summary	Choose an item.		Choose an item.
iii. an appropriate introduction	Choose an item.		Choose an item.
iv. a meaningful summary & conclusion	Choose an item.		Choose an item.

This table above shows the internal review form used in AMUSENS.

**Step 2 “Update”:** After the review, the editor makes the necessary **changes and updates**. For the update it is important that comments are not removed. Instead, there should first be a discussion between the involved editor/contributors to update the deliverable according to the received comments. Secondly, the editor/contributors either respond to the comments directly or add additional comments on their own. (*Update = 7 days*)

**Step 3 “Approval / 2<sup>nd</sup> review”:** During the **second review (Approval)** the editor contacts again the reviewers and the Coordinator to check if their comments have been addressed; if required, the reviewers update the review form and state if the deliverable is ready for submission. (*Approval = 5 days*)

**Step 4 “Final Check and Release”:** The editor performs a **final check** and informs the Coordinator that the deliverable is final. Then the Coordinator, together with coordinator support performs a final check (incl. formatting updates) and creates the final .pdf document. (*Release = 2 days*)

**Step 5 “Submission to the EC”:** The Coordinator submits the deliverable to the EC by the end of the month.

### 3.3.2 Risk Management

To guarantee the achievement of the objectives of the AMUSENS project, it is essential to identify and understand the significant project risks.

The continuous risk management process is based on the early identification of, and the fast reaction to, events that can negatively affect the outcome of the project. The frequent meetings of the project bodies therefore serve as the main forum for risk identification. The identified risks are then analysed and graded, based on impact and probability of occurrence.

Technical risks were analysed and graded, based on their probability of occurrence in order to answer the governing question: “How big is the risk and what its impact is?” Knowing how a risk impacts the project is important as several risks of the same type can be an indication of a larger problem.

The risks defined in the DoA, will be graded into low/medium/high risk levels.

	Low	Low probability of occurrence and low impact
	Medium	Low/high probability of occurrence and High/low impact
	High	High probability of occurrence and high impact

The risks will be monitored on a regular basis. Further, a detailed classification and evaluation will be provided within D1.4. The Risk Assessment Plan will show how potential risks are assessed and mitigated in order to avoid any negative influence on the AMUSENS project objectives. In addition to the above-mentioned tools and procedures, the project partners’ and the coordinator’s profound experience with H2020 and Horizon Europe projects implicates a high level of competence, expert knowledge, skills and qualifications, which further increases the quality of the project work. Furthermore, besides these hard skills, also soft skills, such as motivation, team spirit, and interpersonal interaction contribute to high quality project performance. In addition, the consortium will be supported by an independent ethics advisor.

## Chapter 4 Summary and Conclusion

This Project Quality Plan demonstrates that quality aspects are considered in a variety of processes and activities within the AMUSENS project. The interrelated quality processes – planning, assurance and control – impact the project work from its start to its end. The project aims at obtaining a high degree of quality, where outcomes are achieved in terms of the effectiveness and efficiency of working practices, as well as products and standards of project deliverables and outputs. This plan seeks to establish the procedures and standards to be employed in the project, and to allocate responsibility for ensuring that these procedures and standards are followed. The Project Management Team monitors that the above-described processes are fulfilled. In case of any deviations to the planned work the management team is in charge of taking necessary mitigation measures. The plan is effective throughout the lifetime of the project but is open to revision if necessary. As described in section 2.1, responsibilities for quality planning, assurance and control are shared between all partners, which allow various views on quality issues in order to reach the optimal outcome.

## Chapter 5 List of Abbreviations

Abbreviation	Translation
CA	Consortium Agreement
DoA	Description of Action
EC	European Commission
GA	Grant Agreement
IMR	Interim Management Report
WP	Work Package