



D1.2

# Quality management plan

## PoDIUM

PDI connectivity and cooperation enablers building trust and sustainability for CCAM

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## Quality Control

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### List of abbreviations and acronyms

| Abbreviation | Meaning                                       |
|--------------|---|
| CCAM         | Cooperative, Connected and Automated Mobility |
| EAB          | External Advisory Board                       |
| EC           | European Commission                           |
| GA           | General Assembly                              |
| MEC          | Multi-Access Edge Computing                   |
| PC           | Project Coordinator                           |
| PU           | Public  |
| TM           | Technical Manager                             |
| TMT          | Technical Management Team                     |
| UC           | Use Case                                      |
| UCL          | Use Case Leader                               |
| WP           | Work Package                                  |
| WPL          | Work Package Leader                           |

## Executive summary

Deliverable D1.2 – Quality Management Plan (QMP) of PoDIUM aims at providing a single point of reference for the quality management processes implemented during the project.

The QMP defines guidelines to ensure the overall project quality. It sets the basis for high-quality project outcomes and primarily applies to deliverable management, reporting and dissemination activities. It also describes the project organisation, roles and responsibilities related to Quality Assurance (QA) and Quality Control (QC) activities. QA comprises managerial actions aiming at high-quality output, whereas QC is used to verify the quality of the output.

This deliverable complements D1.1 – Project management plan. D1.1 describes the overall project management and introduces elements that are essential to a proper understanding of the present document, for instance the detailed organisational structure of the project and risk management.

The QMP covers the following topics:

- Introduction to quality assurance and quality control.
- Description of QA and QC roles.
- QA activities and procedures, including but not limited to:
  - A definition of the roles and responsibilities of each partner in the consortium with regard to quality issues.
  - Guidelines to define quality metrics associated with technical activities carried out in the project. This part complements the outputs resulting from all technical WPs.
  - Harmonisation of PoDIUM's communication elements, such as templates for deliverables, internal or European Commission (EC) reports. This part complements the outputs resulting from WP7 – Dissemination, exploitation, standardisation and liaison activities.
- QC activities and procedures, including but not limited to:
  - A methodology for peer reviewers to guarantee that the project deliverables are of high-quality and meet scientific standards and project objectives.
  - Clear deliverable evaluation criteria to monitor all phases of their development process.

The QMP is structured as follows:

- Chapter 1 – Introduction describes the key concepts of quality management and outlines the QMP structure.
- Chapter 2 – QA plan presents the project's quality management principles in a comprehensive manner to help partner beneficiaries carry out their activities with a high standard of quality.
- Chapter 3 – QC activities provides a set of procedures for optimal monitoring of the project quality and production of deliverables.
- Chapter 4 – Conclusion summarises the main points of the deliverable.

# 1. Introduction

## 1.1. Introduction to PoDIUM

PoDIUM aims to support advanced Use Cases (UC) of connected and cooperative automated mobility in real traffic conditions. Building urban and highway UCs on the facilities of 3 well-equipped Living Labs in Germany, Italy and Spain, PoDIUM will tackle all the different requirements for availability and performance of connectivity as well as the different cooperation enablers per UC. The proposed UCs aim to advance a set of key technologies both in the physical and digital part of the infrastructure. In particular, the following non-exhaustive list of contributions will be pursued:

- A multi-connectivity approach to ensure reliability, availability and redundancy of the PDI system.
- Advance data fusion and integration of Multi-access Edge Computing (MEC) to the proposed hybrid data management environment to enable enhanced environment perception models towards digital twins.
- New C-ITS messages for enabling the specific advanced CCAM use cases.
- Ensure software integrity, trust and truthfulness of CCAM data, their exchange and their processing.
- Demonstration of urban and highway use cases in a diverse set of configurations with integration of Vulnerable Road Users (VRU).

## 1.2. Introduction to project quality management

This section outlines key concepts about project quality used in this the document. Our Quality Management Plan (QMP), mainly relies on the Project Management Body of Knowledge (PMBoK), a set of standard terminologies and guidelines for project management. The body of knowledge evolves over time. Its most recent version was released in 2021. PMBoK is the result of work done by the Project Management Institute.

The PMBoK highlights the importance of quality planning, quality assurance and quality control as essential aspects of the project management plan. These quality management processes are defined in Table 1.

Table 1 Project quality management processes

| Quality management processes   | What  |
|--|---|
| <p><b>Quality Planning</b></p> <p><b>When:</b><br/>-Before the production process.<br/>-If quality assurance activities find a quality issue involving project changes and an update of the project management plan.</p> | <p>The QMP determines the quality requirements, how they will be measured and controlled. In PoDIUM, it is implemented via this deliverable as a standalone document.</p> <p><b>Outputs:</b> The QMP should contain at least:</p> <ol style="list-style-type: none"> <li>1. The quality assurance procedures that must be followed during the generation of outcomes and collection of data.</li> <li>2. The quality control procedures that should apply on the generated outcomes.</li> </ol> |
| <p><b>Perform quality assurance</b></p> <p><b>When:</b></p>  | <p>Quality assurance is related to the prevention of errors that could affect quality. It ensures that the processes are in place to produce the project deliverables at the applicable level of quality, by asking the following questions:</p> <ol style="list-style-type: none"> <li>1. What are the applicable quality standards?</li> </ol>  |

|   |   |
|---|---|
| <p>During the production process, throughout the duration of the project.</p>               | <ol style="list-style-type: none"> <li>2. How is quality measured?</li> <li>3. Who measures it?</li> <li>4. What is measured?</li> <li>5. When is it measured?</li> <li>6. What are the criteria for rejection?</li> </ol> <p>Quality assurance creates and analyses the systems to measure and control quality, in order to create confidence that quality deliverables will be produced.<br/> <b>Outputs:</b> A continuous quality management system is in place.</p> |
| <p><b>Perform quality control</b></p> <p><b>When:</b><br/>After the production process.</p> | <p>Quality control is inspection for quality. Quality control measures the quality level of individual products and deliverables and accepts or rejects them based on the criteria developed by quality assurance.<br/> <b>Outputs:</b> Quality is monitored on project outputs. Measures are taken to reach the expected quality, which may result in a change to the QMP.</p>   |

### 1.3. Purpose of the deliverable

The QMP is delivered as part of WP1 and serves as a guideline and reference to enable a successful collaborative work towards achieving the project objectives with the highest quality. The document establishes Quality Assurance (QA) and Quality Control (QC) procedures, which are carried out through the following activities:

- Liaising with the Technical Management Team (TMT) about the quality status of project results.
- Supporting the Project Coordinator (PC) and the project managers by monitoring and mitigating quality risks.
- Defining PoDIUM’s quality procedures and providing guidelines for the production and peer review of project outputs.
- Supporting the Deliverable Leaders (DLs) in maintaining a high standard of quality in their reports.
- Monitoring the development of the internal reports and deliverables corresponding to project tasks, in liaison with the TMT.
- Supporting the Communication Manager (CM) with the production of high-quality presentations and papers from the participants

### 1.4. Intended audience

The dissemination level of D1.2 is public (PU) and is meant primarily for (a) all members of the PoDIUM project consortium, and (b) the European Commission (EC) services, but it will also be available to those external to the project.

This document is intended to serve as an internal guideline and reference for all PoDIUM beneficiaries, especially the governance bodies such as the General Assembly (GA), the TMT, and the External Advisory Board (EAB).



## 2. Quality assurance plan

Quality Assurance (QA) is a primary component of a project quality system and comprises a set of processes to ensure that project deliverables meet the planned quality standards.

In PoDIUM, the QA plan:

- specifies the necessary tools (Redmine, quality registers) and quality metrics;
- defines roles and responsibilities of all parties involved in the quality processes; and
- establishes QA procedures to obtain project deliverables at a high-quality level.

### 2.1. Quality assurance tools

#### 2.1.1. Redmine: the platform to share documents and store deliverables

Redmine is a web-based project management and collaboration platform and serves as the main document management tool used in PoDIUM. All draft and submitted deliverables are saved on Redmine. Quality management tracking tools and procedures are also accessible there.

#### 2.1.2. Quality registers

The outputs of the quality management processes operated in PoDIUM include three documents:

- Deliverable register. This file monitors deliverables' writing and submission processes. It is based on the list of deliverables as described in the grant agreement.
- Quality metrics register. It includes a set of indicators to be monitored during the project and simple, effective methods for measuring project quality performance.

The editors of these files are, in order of priority: PC > Risk & Quality Manager (RQM) > other Project Managers > Work Package Leaders (WPLs). Any changes are made to these documents are discussed in the following TMT meeting.

#### 2.1.3. Quality metrics (QMe)

PoDIUM brings together many different areas of expertise. In this context, it is important to establish a clear list of assessment criteria so that the performance of each WP and each project activity can be evaluated. This is the purpose of defining certain quality metrics (QMe).

According to PMBoK, "A quality metric specifically describes a project or product attribute and how the control quality process will measure it." Quality metrics are used both in the QA process (when writing deliverables or working on the project) and the QC process (when checking deliverables against quality metrics).

All QMes are fully described in the quality metrics register, which is an Excel file managed by the RQM throughout the duration of the project. For the sake of clarity, it is accessible to all project members on Redmine. This file is intended to evolve throughout the project and will naturally consider and aggregate some performance indicators used by project managers and WPLs (e.g., dissemination). Ultimately, this file should help the RQM to get a regular overview of the quality level of a variety of project attributes.

The currently identified QMes can be found in the Annex.

### 2.1.4. Milestones

Complementary to the metrics mentioned above, milestones have been defined to ensure that the project progresses according to the schedule. These milestones are listed in the deliverable register file and are regularly checked by the PC and the TMT to ensure their successful completion. As with the other registers, updates and additions of milestones can be made by the WPLs, if necessary. Up to the time of writing of this deliverable, the milestones are as specified in the grant agreement.

## 2.2. Quality assurance roles

This section lists the governance bodies that have a direct responsibility in project quality management, as well as their roles. The complete project organisation, including the different management structures and contact details, are described in deliverable D1.1.

### 2.2.1. Operational bodies

Operational bodies are fully detailed in D1.1. The two most important decision-making bodies in the context of quality management are:

- The **Project Coordinator (PC)**, ICCS, is responsible for the successful and smooth running of the entire project and coordinates the Project according to EC rules and the terms of the grant agreement and the consortium agreement. The PC has full authority over all aspects that may affect the quality of the project and is responsible in particular for: (a) chairing PoDIUM decision-making bodies; (b) monitoring and controlling the deliverable drafting and submission processes.
- The **Technical Management Team (TMT)** monitors the operational execution of the project. It is chaired by the PC and is composed of four managers and the WPLs (see D1.1). The Technical Manager (TM) (a.k.a. Technical and Innovation Manager) is also a key person responsible to monitor and align all technical activities across the project, irrespective of WP/task and Use Case.

The quality assurance roles in PoDIUM are distributed to most of the participants according to their level of involvement and responsibilities. Especially, the Risk & Quality Manager (RQM) has an important role in quality management. All roles are summarised in Table 2 below.

Table 2 Quality assurance roles in PoDIUM

| Body                        | Role in the project   | Role regarding quality management   |
|-----------------------------|---|---|
| <b>Work package leaders</b> | <ul style="list-style-type: none"> <li>- Act at WP level.</li> <li>- Are responsible for the executive management of the individual WPs.</li> <li>- Are supported by the task leaders.</li> <li>- Are responsible for tracking the delivery of the final deliverables of the WP.</li> </ul> | Are part of the TMT.  |
| <b>Task leaders</b>         | <ul style="list-style-type: none"> <li>- Act at task level.</li> <li>- Are responsible for the executive management of the individual tasks.</li> <li>- Are supported by the task participants.</li> </ul>  | Coordinate the preparation, quality control and submission of the deliverables related to their task. |

|  |  |  |
|--|--|--|
| <p><b>Deliverable leaders</b></p>  | <ul style="list-style-type: none"> <li>- Are either task leaders or members of the TMT in order to ensure the proper communication of their activities.</li> <li>- Must ensure the entire life cycle of deliverables' development.</li> </ul>  | <p>Have the full responsibility for the deliverable production process with expected quality standards and for submitting them on time.</p>  |
| <p><b>Task participants</b></p>  | <ul style="list-style-type: none"> <li>- Contribute to the tasks to which they are allocated.</li> <li>- Must contribute to the project deliverables resulting from tasks that involve them.</li> </ul>  | <p>N/A</p>   |
| <p><b>Use case leaders</b></p>   | <ul style="list-style-type: none"> <li>- Responsible for the successful execution of each use case they are assigned with.</li> <li>- Are involved in the technical validation and demonstration of the use cases.</li> </ul>  | <p>Report to the WPL of WP5 and to the TMT.</p>  |
| <p><b>Technical &amp; Innovation Manager (BOSCH) (i.e., Technical Manager)</b></p> | <ul style="list-style-type: none"> <li>- Crucial and active role in the overall coordination of the technical activities.</li> <li>- Acts at project level.</li> <li>- Leads the task related to Innovation Management (T1.2) to ensure that the project coordination develops favourable conditions for innovation and takes necessary actions to make certain that the innovations are effectively exploited after the end of PoDIUM.</li> </ul> | <ul style="list-style-type: none"> <li>- Is part of the TMT.</li> <li>- Quality control and overall risk management.</li> <li>- Monitoring and control of the production of deliverables.</li> </ul>   |
| <p><b>Data manager &amp; protection officer (ATE)</b></p>                          | <ul style="list-style-type: none"> <li>- Acts at project level.</li> <li>- Leads the Data Management related task (T1.3) and will ensure project coordination in terms of the collection, storage and handling of project data, as well as their publication as part of the Open Research Data Pilot (ORDP).</li> <li>- Ensures adequate dealing with data privacy and data protection regulations.</li> </ul>                                     | <p>Is part of the TMT.</p>   |
| <p><b>Risk &amp; quality Manager (ICCS)</b></p>                                    | <ul style="list-style-type: none"> <li>- Acts at project level.</li> <li>- May be involved at WP level (upon request or through the TMT meetings).</li> </ul>  | <ul style="list-style-type: none"> <li>- Leads the Quality assurance and risk management (T1.4), thus ensuring high quality of deliverables and outcomes of the overall project targets.</li> <li>- Supports project coordination in achieving the milestones.</li> <li>- Acts in support to the TMT (in particular WPLs)</li> </ul> |

|                                    |   |  |
|------------------------------------|---|--|
|                                    |   | for implementing the QMP and management of quality processes.<br>Is part of the TMT. |
| <b>Communication manager (ERT)</b> | <ul style="list-style-type: none"> <li>Acts as project level.</li> <li>Leads the Dissemination, exploitation and international cooperation WP (WP7) to ensure that the project is well coordinated for achieving excellent outreach with public events, scientific publications and presentations.</li> </ul> | Is part of the TMT.  |

### 2.2.2. Strategic and decision-making bodies

These bodies are also fully described in D1.1. They have a general role in QA, as explained in Table 3 below.

Table 3 Strategic and decision-making bodies in PoDIUM

| Body                                 | Role in the project  | Role regarding quality management   |
|--------------------------------------|--|---|
| <b>General Assembly (GA)</b>         | Ultimate decision-making body of the PoDIUM consortium, consisting of at least one representative per beneficiary. | Validate actions if the grant agreement is affected.  |
| <b>Steering Committee</b>            | Responsible for the proper execution and implementation of the decisions of the GA.                                | Propose internal quality processes, common templates and communication tools.   |
| <b>External Advisory Board (EAB)</b> | Formed by external experts on specific topics who will regularly advise project contributors on their work.        | With its high-quality technical expertise, ensures quality in terms of relevance to the latest technical advancements |

## 2.3. Quality assurance procedures

This section describes a series of procedures used to ensure a high standard of quality in the activities and outputs of the project.

### 2.3.1. Deliverables

The project deliverables are official documents that are formally submitted to the EC. They are listed in deliverable D1.1 and in the grant agreement.

#### 2.3.1.1. General principles

All content generated through PoDIUM must be fully consistent with the scope of the project and with the expected impact of the task with which it is associated. In particular, high quality of text and figures is critical. Some good practices regarding form and style while drafting deliverables are:

- Use of the Project templates. Microsoft Word should be preferably used.
- Purpose of the document and an initial Table of Contents (ToC) defined before starting work on the content of the document.

- A complete executive summary of the entire document is provided.
- Proofreading and language check is applied before submission.
- Figures and tables should be relevant and have appropriate titles. Captions should be inserted using the automatic numbering in Microsoft Word.
- Cross-referencing of section numbers must be used to avoid generating errors following text updates.

To ensure high-quality content, DLs and contributors must liaise and communicate efficiently and regularly. Lapses must be relayed to the WPLs as well as the PC. The text should be relevant and must reflect the vision of the project.

### 2.3.1.2. Deliverable structure

#### Microsoft Word Templates

All Microsoft Word templates are available on the Redmine platform. Their use is mandatory for all deliverables. Deliverables must not override the structure defined in the templates. These templates include a document control sheet (Annex) that serves as a change tracking system. These templates are structured as follows:

- Cover page
- Control sheet
- Table of contents
- List of figures (if not empty)
- List of abbreviations (if not empty)
- Executive summary
- Introduction
  - Project introduction (required if public deliverable)
  - Purpose of the deliverable
  - Intended audience
- Content
  - A ToC and a high-level description need to be defined before writing
- Conclusion
- Annexes (if not empty)

#### Naming convention

All deliverables should be named using the following structure: “PoDIUM - DN.N - Name [- vX.X].docx”. Version indication at the title is optional, since Redmine supports versioning.

### 2.3.1.3. Deliverable life cycle

WPLs are responsible for the **monitoring** of the activities related to a deliverable, including quality aspects and the respect of deadlines. DLs are responsible for the **execution** of the activities related to a deliverable. WPLs report the progress to the TMT following the guidelines and timeframe set out in this document. The complete deliverable life cycle is described in Table 4 below. These elements also describe the processes related to the handling of deliverable files and their owners. Peer reviewing activities are part of quality control and hence defined in the next chapter.

If there is a conflict, problem or need for assistance in any of the steps described below, then the DL can interact with the WPL, which in turn can involve the RQM, if needed.

Table 4 Deliverable life cycle & process owners

| When                           | Owner        | Actions  | Supporting tools                      |
|--------------------------------|--------------|--|---------------------------------------|
| At any time                    | WPL          | <ul style="list-style-type: none"> <li>- Responsible for the respect of deadlines and the monitoring of the deliverable progress throughout its life cycle.</li> </ul>   | Redmine/Deliverable register, e-mails |
| 4 months before deadline       | DL           | <ul style="list-style-type: none"> <li>- Provides description of “Purpose of the deliverable” and “Intended audience”</li> </ul>   | Redmine/Draft version folder          |
| 3 months before deadline       |              | <ul style="list-style-type: none"> <li>- Complete ToC – up to Level 3 with high level description.</li> <li>- With all task contributors:               <ul style="list-style-type: none"> <li>- Agree on ToC.</li> <li>- Share drafting responsibilities between contributors.</li> </ul> </li> </ul>                     |                                       |
| Writing process                |              | <ul style="list-style-type: none"> <li>- Monitors progress continuously, corrects bugs and ensures consistency across contributions.</li> <li>- Regularly interacts with WPL.</li> <li>- Iteratively updates: purpose – audience – conclusion – executive summary.</li> </ul>  |                                       |
| 2 months before deadline       | WPL          | <ul style="list-style-type: none"> <li>- Verify the availability of two peer reviewers not contributing to the deliverable with the support of the RQM. A third reviewer may be appointed by the RQM if needed (this may include the RQM him/herself).</li> <li>- Informs peer reviewers about the review date.</li> </ul> | Redmine/Deliverable register, e-mails |
| 1 month before deadline        | DL           | <ul style="list-style-type: none"> <li>- Merges input from all contributors.</li> <li>- Performs final editing of the first draft and consolidates the deliverable. The DL may optionally decide to conduct a WP internal review.</li> <li>- Notifies the WPL by e-mail when consolidation is done.</li> </ul>             | Redmine/Draft version folder, e-mails |
| 3 weeks before deadline        |              | <ul style="list-style-type: none"> <li>- Launches peer review.</li> </ul>  |                                       |
| 10 days before deadline        | Reviewers    | <ul style="list-style-type: none"> <li>- Send comments to DL.</li> </ul>   |                                       |
| 3 working days before deadline | DL           | <ul style="list-style-type: none"> <li>- Takes into account reviewers’ comments.</li> <li>- Creates a final version of the deliverable and uploads it to the folder named Final version.</li> <li>- Sends the final version to the WPL, the RQM and the PC.</li> </ul>   | Redmine/Final version folder, e-mails |
| Final period check             | PC, RQM, WPL | <ul style="list-style-type: none"> <li>- Final check of the deliverable file before submission.</li> <li>- Last-minute changes are managed by the WPL, with the assistance of the RQM.</li> </ul>  |                                       |

|          |    |                                      |   |
|----------|----|--------------------------------------|---|
| Deadline | PC | - Submits the deliverable to the EC. | EC portal (unless printed copies are requested) |
|----------|----|--------------------------------------|---|

### 2.3.2. Internal reporting

Partners are responsible for keeping their organisation contact details up to date:

- By updating the administrative data on the EC Participant Portal.
- By informing the PC about contact details or internal organisational changes.

The PC is responsible for updating Redmine and the project contact database.

In order to ensure an effective and efficient internal coordination, internal communication involves the organisation of meetings, whether physical or virtual. Categories of meetings are summarised in deliverable D1.1.

Each meeting is led by a chairperson, who is usually the initiator of the meeting, or appointed by the initiator, for example a WPL. The chairperson is responsible for producing the meeting minutes using the corresponding template. The chairperson distributes the meeting minutes to attendees for review within 10 days. If there are any comments, the chairperson introduces them in the document and shares a reviewed version of the minutes. Attendees have again 10 days to provide feedback. If there are no comments, the minutes are considered accepted and they are shared with the PC by the chairperson, and through Redmine. As an alternative a meeting may be recorded after the consensus of all participants. In this case the record file is uploaded at Redmine within 2 days after the meeting. Meeting categories are defined in D1.1.

A meeting minutes' template is available in Redmine and its use is mandatory for all partners. All meeting minutes' documents should be named using the following structure: "yyyy mm dd - PoDIUM - meeting name [- vX.X].docx".

### 2.3.3. Dissemination activities

Task leaders and WPLs have to inform the communication manager and the WPLs about intended dissemination activities. A reference to the project (name, grant agreement number) must be made in all communication materials.

Regarding presentations, the Microsoft PowerPoint templates available in Redmine can be used.

Depending on the nature of the dissemination activity, the timeframes and the exact dissemination procedure for internal communication and permission to disclose project information will be specified in D1.4 – Dissemination Plan.

**Dissemination reporting tool:** WP7 leader is responsible for developing the dissemination reporting tool that is shared with all partners. Partners record all results of their dissemination efforts in this tool.

**Dissemination guidelines:** External communication of the project results follow the guidelines established by the EC as stated in article 17 of the grant agreement. This article sets mandatory rules regarding the use of the European emblem, the information on the EU funding, the disclaimer excluding Commission responsibility and presents the consequences of non-compliance.

### 2.3.4. Financial reporting

The financial management is carried out by the PC. Each member of the consortium must provide every six months a periodic financial report to declare the actual project costs (including the personnel and other costs) incurred during the execution of the project for each WP, explaining the nature of the

mentioned costs. WPLs and the PC review the reports and verify that the work has been properly carried out.

At the end of each reporting period, all partners are required to provide a financial statement to the PC. The template will be available on time, financial data are entered manually, and overall figures are generated automatically by predetermined formulas. All partners submit their financial statements to ICCS electronically no later than 30 days after the end of the reporting period. After gathering all partners' inputs, ICCS will fill in the portal session previously opened by the EC. The financial data entered into the portal must be verified accurately by each partner, validated and signed electronically only by the authorised representative (PFSIGN). Afterwards, the PC will submit them to the EC on behalf of the consortium partners.

The due date of the financial reports is 60 days after the end of each reporting period. The established meetings' scheme will ensure the follow up of these reports as a priority task and dedicated meetings (or conference calls) will be set 2 months prior to the end of each reporting period to monitor the development of the report and data collection.



### 3. Quality control activities

This chapter describes the quality control procedures established to verify the quality of each project deliverable.

#### 3.1. Deliverable life cycle progress

Each step of the processes described in the previous chapter have to be completed according to an established timeframe and corresponds to a percentage of advancement as described in Table 5 below.

Table 5 Deliverable life cycle progress (with completion percentage)

| Advancement | Name   | Description  |
|-------------|--|--|
| 10%         | First draft of the deliverable's ToC completed | Corresponds to the preparation of the first table of contents. It includes the overall deliverable scope, the scope of each section and indicates the partner in charge of preparing each section.   |
| 40%         | Half of the sections are completed             | Corresponds to the completion of 50% or more of the sections drafted in the ToC. This state of advancement has to be reported by the DL to the Task and WPLs, and the WPL reports this to the TMT.   |
| 80%         | Deliverable content completed                  | Corresponds to the completion of all the content of the deliverable. This also includes the WP internal review steps, which are the responsibility of the DL. The deliverable is available for peer-review. This state of advancement has to be reported by the leader of the deliverable to the Task and WPLs, and the WPL reports this to the TMT. |
| 90%         | Peer review completed                          | This state corresponds to the completion of the peer review of the deliverable, by two project members that didn't participate extensively in the creation of the document. For technical deliverables, the peer-reviewers need to fill Table 7 and send it to the DL for consolidation and revision for the final version.                          |
| 100%        | Deliverable submitted to the EC                | This state is reached with the submission of the deliverable to the EC by the PC. The PC will perform a final check and submit the deliverable to the EC according to the established deadline.  |

#### 3.2. Peer review process

All deliverables will be peer-reviewed by two experts within the consortium. To this matter, the RQM has developed a deliverable register to have a view on all deliverables, their status, and the reviewers that are allocated. Before this process is carried out, a WP internal review, managed by the DL, is

carried out in order to obtain a consolidated version. The detailed steps of the peer review process is presented in Table 6 below.

Table 6 Peer review process

| When   | What   | Owner          | Supporting tools  |
|--|--|----------------|---|
| 2 months before the submission deadline        | The WPL verifies the availability of the two allocated peer reviewers, and if not available updates the allocation, with the assistance of the RQM if needed.  | WPL            | WPL updates the deliverable register file accordingly               |
| 2 months before the submission deadline        | The WPL notifies the peer reviewers about their assignment with an indicative date to start the review.  | WPL            | E-mail  |
| Any time                                       | Peer reviewers can consult the deliverable register file to see their assignments as well as an overview of the deliverable properties.  | Peer reviewers | Redmine   |
| 3 weeks before the submission deadline         | The DL uploads the deliverable to be reviewed on Redmine and formally assigns it to reviewers. Reviewers can edit and comment the document.  | DL             | Redmine, with the “add reviewers” option, deliverable register file |
| Maximum 10 days before the submission deadline | Each peer reviewer returns a review form to the DL via Redmine. The deliverable itself must be directly commented with the “Track Changes” option in Microsoft Word and sent back to the DL. Peer reviewers may contact the DL or consult the RQM if needed. | Peer reviewers | Redmine<br>If needed: “Track Changes” comments on Microsoft Word    |
| 3 working days before the submission deadline  | The DL, assisted by the contributors who will focus on their own sections, finalises the deliverable based on the comments received.   | DL             | Redmine   |

### 3.3. Peer review evaluation table

To review a technical deliverable, each reviewer completes a “review form” a stored on Redmine. This review form contains:

- The “peer review evaluation table” as shown in Table 7, which may be updated with specific evaluation criteria, depending on the deliverable technical requirements.
- A free evaluation field.

Table 7 Peer review form

| Criteria  | Definitely | Satisfactorily | Somewhat | Not at all | Not applicable |
|---|------------|----------------|----------|------------|----------------|
| Deliverable matches the description of the task it relates to |            |                |          |            |                |

|  |  |  |  |  |  |
|--|--|--|--|--|--|
| Objectives are clear and in line with the planned task activities            |  |  |  |  |  |
| Issues at project level are properly treated (e.g., conflict with other WPs) |  |  |  |  |  |
| Authors responds to readers' needs (defined through deliverable objectives)  |  |  |  |  |  |
| Technical approaches used are appropriate                                    |  |  |  |  |  |
| Content is well organised  |  |  |  |  |  |
| Issues raised are relevant   |  |  |  |  |  |
| Achievements are clearly stated  |  |  |  |  |  |
| Contents contribute to the state of the art                                  |  |  |  |  |  |
| Conclusions (if any) are valid   |  |  |  |  |  |
| Deliverable is complete (no major parts missing)                             |  |  |  |  |  |
| Deliverable is formally correct (aligned with the quality management plan)   |  |  |  |  |  |
| Any additional criterion to be added by WPL                                  |  |  |  |  |  |

## 4. Conclusions

The quality management plan of PoDIUM covers all the procedures, control measures and operating practices intended to ensure that all project activities are carried out with a high standard of quality. It complements the project management plan (see D1.1) and must be carefully examined and followed to ensure the proper implementation of the project and the high quality of its deliverables. This work is also crucial to the other project tasks and serves as a reference point for process monitoring, in both technical and managerial terms.

Together with the grant agreement and the consortium agreement, this document is to be regarded as a reference for the overall project quality management of PoDIUM.

## 5. Annex

In this annex, we provide a view on basic QMP tools/files described throughout this Deliverable.

### 5.1. Templates

Three template categories are available on Redmine:

- Meeting minutes/Various documents (Microsoft Word)
- Presentations (Microsoft PowerPoint)
- Deliverables (Microsoft Word)

All deliverables will include in the beginning of the document “Document control sheet” according to the provided template, and as shown below:

|                                     |                   |
|-------------------------------------|-------------------|
| <b>Dissemination level</b>          | Choose an element |
| <b>Type of deliverable</b>          | Choose an item    |
| <b>Work package</b>                 | Choose an item    |
| <b>Deliverable number</b>           | Choose an element |
| <b>Status - version, date</b>       | Vx.y, DD/MM/YYYY  |
| <b>Deliverable leader</b>           |                   |
| <b>Contractual date of delivery</b> | DD/MM/YYYY        |
| <b>Keywords</b>                     |                   |

## Quality Control

|               | Name | Organisation | Date       |
|---------------|------|--------------|------------|
| Peer review 1 |      |              | DD/MM/YYYY |
| Peer review 2 |      |              | DD/MM/YYYY |

## Version History

| Version | Date | Author | Summary of changes |
|---------|------|--------|--------------------|
|         |      |        |                    |
|         |      |        |                    |
|         |      |        |                    |

## 5.2. Deliverable register

The current state of the deliverable register is as shown below:

| Del. No. | Deliverable Name   | WP | Lead   | Type | Diss. lvl | Delivery date | Reviewer 1 | Reviewer 2 |
|----------|--|----|--------|------|-----------|---------------|------------|------------|
| D1.1     | Project management plan  | 1  | ICCS   | R    | PU        | M03           | ERT        | ATE        |
| D1.2     | Quality management plan  | 1  | ICCS   | R    | PU        | M03           | ERT        | ICCS       |
| D1.3     | Innovation management plan   | 1  | BOSCH  | R    | PU        | M06           | INC        | VICOM      |
| D1.4     | Data management plan   | 1  | ATE    | DMP  | PU        | M06           | ICCS       | ETRA       |
| D1.5     | Data management plan mid-term version  | 1  | ATE    | DMP  | PU        | M18           | BOSCH      | RETE       |
| D1.6     | Data management final version  | 1  | ATE    | DMP  | PU        | M36           | ICCS       | ETRA       |
| D1.7     | Innovation management report   | 1  | BOSCH  | R    | PU        | M36           | ICCS       | ERT        |
| D2.1     | PoDIUM use cases description and specifications  | 2  | ETRA   | R    | PU        | M06           | ICCS       | VICOM      |
| D2.2     | PoDIUM platform requirements and specifications  | 2  | LINKS  | R    | PU        | M09           | ETRA       | AAE        |
| D2.3     | PoDIUM availability and cooperation enablers definition and evaluation data specifications | 2  | VICOM  | R    | PU        | M09           | UULM       | LINKS      |
| D3.1     | PoDIUM platform architecture description   | 3  | UULM   | R    | PU        | M12           | ICCS       | i2CAT      |
| D3.2     | Initial report on the PoDIUM platform developments   | 3  | NOKIA  | R    | PU        | M18           | IDIADA     | RETE       |
| D3.3     | Final report on the PoDIUM platform developments   | 3  | ETRA   | R    | PU        | M29           | UDE        | ENIDE      |
| D4.1     | Deployment of PoDIUM architecture to the LLs and development of data collection tools      | 4  | IDIADA | R    | PU        | M24           | SWM        | LINKS      |
| D4.2     | PoDIUM LLs integration and pre-evaluation testing report                                   | 4  | AAE    | R    | PU        | M32           | RETE       | ETRA       |
| D5.1     | PoDIUM evaluation methodology  | 5  | VICOM  | R    | PU        | M21           | CRF        | MILLA      |
| D5.2     | Technical evaluation and demonstration of the UCs  | 5  | i2CAT  | R    | PU        | M35           | UDE        | VICOM      |
| D5.3     | Public acceptance and impact assessment report   | 5  | ICCS   | R    | PU        | M36           | BOSCH      | i2CAT      |
| D6.1     | Market and actor-role analysis   | 6  | INC    | R    | PU        | M16           | ERT        | UULM       |
| D6.2     | Business models for sustainable CCAM service provisioning                                  | 6  | ETRA   | R    | SEN       | M24           | INC        | TENAL      |
| D6.3     | Techno-economic analysis and sustainability of PoDIUM business models                      | 6  | INC    | R    | SEN       | M36           | ETRA       | FSCOM      |
| D6.4     | Std. activities, EU policies and regulations recommendations                               | 6  | FSCOM  | R    | PU        | M36           | LINKS      | ICCS       |
| D7.1     | Brand identity and guidelines  | 7  | ERT    | DEC  | PU        | M03           | ICCS       | ENIDE      |
| D7.2     | Communication strategy and plan- Version I   | 7  | ERT    | R    | PU        | M06           | ATE        | ICCS       |
| D7.3     | Communication tools -Version I   | 7  | ERT    | DEC  | PU        | M06           | LINKS      | NOKIA      |
| D7.4     | Dissemination plan   | 7  | ICCS   | R    | PU        | M06           | BCN        | INC        |
| D7.5     | Communication strategy and plan – Version II   | 7  | ERT    | R    | PU        | M18           | INC        | TIM        |
| D7.6     | Communication tools – Version II   | 7  | ERT    | DEC  | PU        | M18           | BRE        | SSC        |
| D7.7     | Exploitation plan – Version I  | 7  | ENIDE  | R    | SEN       | M06           | NOKIA      | SWM        |
| D7.8     | Exploitation plan – Version II   | 7  | ENIDE  | R    | SEN       | M18           | TENAL      | FSCOM      |
| D7.9     | Report on the dissemination activities   | 7  | ICCS   | R    | PU        | M36           | RETE       | ERT        |
| D7.10    | Report on liaison activities and international cooperation                                 | 7  | ATE    | R    | PU        | M36           | BRE        | IDIADA     |
| D7.11    | Exploitation report  | 7  | ENIDE  | R    | SEN       | M36           | IMI        | MILLA      |

Figure 1: Deliverable register

### 5.3. Quality metrics register

Table 8 Quality metrics register

| QMe ID | Related WPs | Type                    | Quality metric  | Performance measure   | Acceptance criteria  |
|--------|-------------|-------------------------|---|---|--|
| QMe1   | All         | Governance              | Deliverable is submitted to the PC at least 5 working days before the deadline for submitting the deliverable to the EC | $QMe1 = (\text{deadline} - 5) - \text{PC submission date}$                            | $QMe1 \geq 0$  |
| QMe2   | All         | Governance              | Respect of the deadline for submitting the deliverable to the EC  | $QMe2 = \text{deadline} - \text{EC submission date}$                                  | $QMe2 \geq 0$  |
| QMe3   | WP2 - WP6   | Technical dissemination | Number of scientific publications   | $QMe3 = \text{number of papers in scientific journals and international conferences}$ | 1st year: $QMe3 > 3$<br>2nd year: $QMe3 > 5$<br>3rd year: $QMe3 > 8$   |
| QMe4   | All         | Dissemination           | Number of non-scientific publications   | $QMe4 = \text{number of non-scientific publications}$                                 | 1st year: $QMe4 > 1$<br>2nd year: $QMe4 > 2$<br>3rd year: $QMe4 > 2$   |
| QMe5   | All         | Dissemination           | Number of project-related presentations   | $QMe5 = \text{number of presentations}$   | 1st year: $QMe5 > 5$<br>2nd year: $QMe5 > 10$<br>3rd year: $QMe5 > 15$ |
| QMe6   | All         | Dissemination           | Popularity of public events   | $QMe6 = \text{total number of participants} / \text{number of events}$                | 1st year: -<br>2nd year: $QMe6 > 70$<br>3rd year: $QMe6 > 100$         |
| QMe7   | All         | Dissemination           | Number of trade shows   | $QMe7 = \text{number of PoDIUM-related exhibition stands}$                            | $QMe7 > 1$ (annually)  |
| QMe8   | WP7         | Dissemination           | Website popularity  | $QMe8 = \text{number of users per month}$   | 1st year: $QMe8 > 50$<br>2nd year: $QMe8 > 100$                        |

|       |     |               |   |   |  |
|-------|-----|---------------|---|---|--|
|       |     |               |   |   | 3rd year: QMe8 > 150   |
| QMe9  | WP7 | Dissemination | Social networks impact                                    | QMe9 = number of messages with the #PoDIUM hashtag                                      | 1st year: QMe9 >= 60<br>2nd year: QMe9 >= 100<br>3rd year: QMe9 >= 140     |
| QMe10 | WP7 | Dissemination | Engagement to the project via professional social network | QMe10 = number of followers of PoDIUM group in LinkedIn                                 | 1st year: QMe10 >= 60<br>2nd year: QMe10 >= 100<br>3rd year: QMe10 >= 150  |
| QMe11 | WP7 | Dissemination | Leaflets dissemination activity                           | QMe11 = number of technical leaflets published and distributed (project brochure, etc.) | 1st year: QMe11 >= 100<br>2nd year: QMe11 >= 100<br>3rd year: QMe11 >= 100 |
| QMe12 | WP7 | Dissemination | Videos dissemination activity                             | QMe12 = number of project videos produced   | 1st year: QMe12 > 1<br>2nd year: QMe12 > 2<br>3rd year: QMe12 > 2          |
| QMe13 | WP7 | Dissemination | Webinars  | QMe13 = number of webinars per year   | 1st year: QMe13 >= 1<br>2nd year: QMe13 >= 2<br>3rd year: QMe13 >= 2       |
| QMe14 | WP7 | Dissemination | Participation in webinars                                 | QMe14 = number of participants in each webinar  | QMe14 >= 50  |