HACID - Deliverable

Quality Management Plan

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

[2] The following codes are admitted:
- PU – Public, fully open, e.g. web (Deliverables flagged as public will be automatically published in CORDIS project's page)
- SEN – Sensitive, limited under the conditions of the Grant Agreement
- Classified R-UE/EU-R – EU RESTRICTED under the Commission Decision No2015/444
- Classified C-UE/EU-C – EU CONFIDENTIAL under the Commission Decision No2015/444
- Classified S-UE/EU-S – EU SECRET under the Commission Decision No2015/444

Document History

Version	Date	Description	Author	Partner
0.1	25.10.2022	Creation	Vito Trianni	ISTC-CNR
0.2	31.10.2022	Included revisions from partners	Vito Trianni	ISTC-CNR
1.0	03.11.2022	Final version	Vito Trianni	ISTC-CNR

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This plan specifies the quality monitoring and supervising activities for the HACID project. The Project Coordinator (PC) leads this activity in close dialogue and cooperation with the General Assembly (GA). A Quality Manager (QM) is appointed to supervise the quality assessment processes, ensuring that all steps are properly fulfilled. For the HACID project, the appointed QM is Andrea Giovanni Nuzzolese from CNR.

This document is produced adapting the PM^2 Alliance artefact template for quality management (for more information, see https://www.pm2alliance.eu/).

1. Quality Management Objectives

Project quality management aims to ensure that the current project will meet the expected results in the most efficient way and that deliverables will be accepted by the relevant stakeholders. It involves overseeing all activities needed to maintain a desired level of excellence. This includes creating and implementing quality planning and assurance, as well as quality control and quality improvement.

This project will follow the PM2 quality management process that comprises the activities related to the identification, planning, execution, and monitoring & control of project quality related activities.

The main project quality objectives are:
- The project's quality characteristics are defined, agreed and achieved throughout the project;
- Quality assurance activities are performed as planned;
- Any opportunity for quality improvements is identified and implemented;
- Deliverables are accepted by the relevant stakeholders based on the defined quality/acceptance criteria.

In the following, we describe the process that will enable achieving these objectives.

2. Quality Management Process

The project quality management process comprises all activities (related both to processes and deliverables) that will increase the ability to meet the project expected results. The quality management process for this project is comprised of five key steps:
- Define (Project) Quality Characteristics;
- Perform Quality Assurance;
- Perform Quality Control;
- Perform Deliverables Acceptance; and
- Perform Final (Project) Acceptance.

Step 1: Define Quality Characteristics
The purpose of this step is to identify the objectives, approach, requirements, activities and responsibilities of the project's quality management process and how it will be implemented throughout the project.

The Quality Management Plan includes the description of:
- Quality objectives, approach and requirements;
- Quality assurance activities and related responsibilities (e.g. periodic activity reports, compliance verification);

- Quality control activities for continuous improvement, e.g. project management artefacts review and quality plans reviews;
- Configuration procedure related to project artefacts and deliverables.

The PC determines the balance between cost/time/risk and quality of deliverables based on a cost-benefit analysis, and defines the quality assurance and control activities. For these activities, quality metrics should also be defined along with acceptance tolerances.

Step 2: Perform Quality Assurance

The purpose of this step is to verify the performance and compliance of project (and project management) activities with the defined quality requirements. Quality assurance will be performed by evaluating the design of the project controls, by confirming that they are implemented, and by assessing their operational effectiveness. These activities will consider the project quality objectives along with the project risks.

Quality assurance activities are performed by the QM. The results of the quality assurance activities will be documented in the relevant quality and status reports. Recommendations for improvements may result from quality assurance and are processed by quality control in the form of change requests.

Step 3: Perform Quality Control

The purpose of this step is to monitor and consolidate results from the quality assurance activities in order to assess compliance and performance, recommend necessary changes, and plan new or refine existing quality assurance activities. Quality monitoring and controlling is performed throughout the project by the PC, evaluating the quality control activities and validating compliance with the plans in terms of scope, time, cost, quality, project organisation, communication, and risks. The PC will summarise and document any remediation/improvement actions for the quality assurance. The project logs will then also be used to document related risk, issues, decisions and changes.

When controlling and verifying the adequacy of project quality management, the PC will consider all events that may influence adversely or favourably the achievement of project objectives and refine the Quality Management Plan accordingly. Moreover, the PC will determine the effectiveness of project processes, look for potential improvements in processes efficiencies, analyse measurement results and their effectiveness, and develop Quality Review Reports with the consolidation of the results and recommendations.

The results of the quality assurance activities will be used for improving the quality of project activities and so they may generate change requests for corrective or preventive actions, or updates in project documentation. After the identification of all non-conformities or opportunities to improve, the PC will elaborate/validate recommendations and establish action plans, consulting the relevant stakeholders.

Actions may result in change requests, identification of new risks and issues, re-scheduling activities or adding new activities to the Project Work Plan. It can also identify training and resources needs, additional quality assurance activities, among others. All these actions will be incorporated (at least the most effort/cost consuming ones) into the Project Work Plan, in order to have a consolidated view of all project related activities.

Furthermore, this step also comprises the review and validation of each project work package (defined in the Project Work Plan). If results are compliant with project quality requirements, the PC will obtain approval on the outputs produced, based on the defined criteria. Additionally, formal go/no-go decisions for each milestone or phase will be agreed on and accepted by the GA, based on the success criteria.

All changes to the Quality Management Plan will be agreed by the relevant stakeholders and approved by the GA.

Step 4: Perform Deliverables Acceptance

The purpose of this step is to obtain formal approval for each project deliverable. It comprises the process for deliverable production as well as the verification of deliverables to meet the predefined objectives.

Project deliverables are accepted if the acceptance activities (as described in the Deliverables Acceptance Plan, see below) are successfully performed. The Project deliverables may be conditionally accepted even with a set of known issues, provided that these are documented and that there is a plan for addressing them.

Step 5: Perform Final Acceptance

The purpose of this step is to manage the final acceptance of the project, including the accepted deliverables and to perform the administrative closure of the project.

Before the formal project sign-off, the PC should report on project performance in the Project-End Review Meeting, discuss lessons learned and develop the Project-End Report. This report should summarise project performance throughout the project lifecycle and describe the main risks, issues, constraints, opportunities and lessons learned identified along the project. The pitfalls, best practices and solutions implemented will be maintained in a project repository, accessible for future projects.

The administrative closure of the project includes updating, reviewing, organising and archiving all project documentation and records, with the help of the project support office. It also comprises the release of project resources, the final project acceptance and the communication of project end to the relevant stakeholders.

3. Quality Objectives

The objectives of the quality management for the HACID project are defined as follows:
- the activities of the different work packages;
- the production of deliverables;
- the execution of project and GA meetings;
- the achievement of milestones;
- the production of dissemination outputs.

4. Quality Assurance Activities

The QM is the overall accountable of the quality assurance activities within the project. The QM is also responsible for scheduling and initiating all formal project audits or reviews. The quality assurance activities will be performed by the GA, the work package leader or relevant stakeholders.

The quality assurance activities include the following:
- Bi-Monthly activities reports, by summarising the major tasks undertaken and any deviation from the work plan.

- Deliverable reviews and approvals (i.e. the fact that the content of a deliverable should be reviewed before it is considered finalised and sent for formal or informal approval/validation.
- Project GA meetings;
- Project Status Meetings;
- Project Review Meetings;
- Milestone reviews;
- Dissemination product review.

The project quality assurance activities are associated with metrics, frequency and tolerance as in the following table

Criterion Name	Frequency	Tolerance
Status reports distributed	Bi-Monthly	One month
Deliverable review	Once	No tolerance
Project and GA meeting performed	Bi-Monthly	One month
Milestone reviews executed	Per milestone	No tolerance
Dissemination activity reviewed	Per dissemination output	No tolerance.

5. Quality Control

Quality Reviews

Project quality reviews will be performed every four months in order to verify that all project plans and processes have been created and are executed as planned.

A Quality Review Checklist will be used to assess the project's compliance with the planned activities (and related outputs) in domains such as scope, time, costs, quality, communications, risks. The findings, recommendations and remediation/improvement actions will be consolidated in the annual Quality Review Report. Every time the Quality Control step is executed, the effectiveness of previous cycle recommendations and remediation/improvement actions should be assessed.

Deliverables Reviews and Acceptance Plan

Every contractual deliverable, prior to its submission, will be the subject of a review within the respective work package and a peer review by persons not directly involved in either the subject matter or the creation of that deliverable. The QM makes a final check of the deliverable for consistency and readability before sending it to the PC for final approval. Where necessary, the PC can request further work to the partners on a deliverable, to ensure that it compiles with the project's contractual requirements.

To ensure that this process can be followed through, the following time plan has been agreed:

1. A relatively complete draft of the deliverable should be made available by the responsible partner at least 4 weeks before the due date. A nominated partner outside the work package shall complete its review within 5 working days.

2. If the reviewer approves the deliverable, it will be passed on to the GA which will either approve or disapprove of the deliverable (within 6 days).
3. If the reviewer requests changes, the responsible WP has to address those. This procedure can be repeated. Then, however, the deliverable will be passed on to the GA. The latter has the final say about the deliverable.
4. Comments should be integrated and the final version should be made available to the QM and PC in the week before the deliverable is due, for a final check.
5. The PC will upload the deliverable once it has passed the review and the GA check.
6. It is up to the partner responsible for the deliverable to ensure that this schedule is maintained. The QM supervises the process.
7. If the WP leader knows that his/her team cannot meet the four-week deadline, the WP leader has to notify the QM six weeks prior to the deadline of the deliverable.

Quality control for dissemination

A coordinated dissemination of the project results is a key objective for all partners during all phases of the HACID project. In order to maximise the impact of its results, HACID will engage in a diverse set of dissemination activities throughout and after the duration of the project. These activities encompass open-source contributions, knowledge transfer activities, as well as scientific publications, public demonstrations and others.

Dissemination quality control focuses on the operational techniques and activities used by those involved in the project to:

● Establish publication rules for the duration of the project as defined in article 8.3 of the Consortium Agreement.
● Fulfil the requirements for quality (scientific content, correct English, format).
● Fulfil the rules for acknowledging the funding authorities.
● Fulfil the rules for Open Access.
● Fulfil the requirements for FAIR data.

Dissemination comprises making relevant project material available to others outside the project, e.g., in the form of presentations, paper submissions and provision of the underlying data. This is done in coherence with the Data Management Plan.

For those disseminations where (part of) the costs for the preparation and presentation are claimed under HACID, the following rules apply during the duration of the project and twelve months afterwards.

Formats

Reports and Deliverables will be produced in Google doc, which also ensures a versioning system. Working drafts and editable working copies will be supplied to partners as shared documents. The PC will make a final release version as a PDF file. This PDF version will also be made available to partners and will be regarded as the definitive version of the Report or Deliverable.

Reports and Deliverables should have a consistently styled cover sheet and structure. All pages should be numbered. A template is provided for Reports and Deliverables.

Presentations can be produced in different formats: PDF, PowerPoint, Keynote or Beamer templates are provided with a coherent style.

Logos and acknowledgements

All documents, reports and deliverables should carry the logo of HACID, in one of the supplied versions. All publications should acknowledge the HACID project in the appropriate

section. All publications and public displays produced by the project must carry the EU logo (made available to all partners) and the following text: "This project has received funding from the European Union's Horizon Europe research and innovation programme under Grant Agreement No. 101070588. UK Research and Innovation (UKRI) funds the Nesta and Met Office contributions to the HACID project".

Quality records

The quality records (evidence that quality management activities have been performed) are archived in the project repository, under the "Monitor & Control" folder. The different versions of the project artefacts (created at each artefact update) will provide evidence of the performance of these activities.