EASI SMR

EASI-SMR – D9.1

Project Quality Plan

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Summary

This deliverable presents the EASI-SMR Project Quality Plan (PQP). It describes the guiding principle for the quality planning, the quality assurance and the quality control procedures.
This deliverable is effective throughout the lifetime of the project but is open to revision if necessary.

Abbreviations and acronyms

Acronym	Description
AB	Advisory Board
C&D	Communication & Dissemination
CA	Consortium Agreement
COO	Coordinator
DoA	Description of Action
EC	European Commission
ExCom	Executive Committee
GA	Grant Agreement
GB	Governing Board
KOM	Kick-Off Meeting

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LW-SMR	Light Water Small and Modular Reactor
PMO	Project Management Office
PQP	Project Quality Plan
RP	Reporting Period
WP	Work Package
WPL	Work Package Leader

Introduction

This Project Quality Plan (PQP) shows how quality aspects are taken into account in a variety of processes and activities within the EASI-SMR 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 meetings, deliverables or publication policies, the definition of responsibilities as well as the creation of a project 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 minutes, 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 conferences. A well-defined internal review process further supports the Quality Assurance of deliverables.
- Quality Control focuses on feedback through internal processes (internal review process) and external advices (Advisory Board). It further monitors how feedback is implemented and assures the project outcomes through proactive risk management

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.

1. Management Processes and Tools

1.1. Project internal platform

EASI-SMR will use a secured platform based on Teams (Microsoft Office/SharePoint environment) as central repository and web space for collaborative work. All documents must be shared on this platform rather than by email. The use of dedicated channels and tags should also be privileged for internal communication. A OneNote space for the project is also available to all contributors. It is subdivided by WP and contains visual management aids for the various executive committee meetings. Contributors are encouraged to use this space mainly to share meeting minutes and other project information.

1.2. Deliverable preparation

According to the GA, EASI-SMR has 80 deliverables, each one assigned to the responsible partner. The partner in charge of the deliverable is responsible to provide a high-quality content and timely submission to the WPL and COO for review. After quality review, the final version of the deliverable is uploaded by the COO/PMO onto the EC portal. Deliverables are uploaded and shared via the dedicated Teams channel for collaborative work. Each deliverable leader is in charge of their document, collects inputs for the report and sends it for internal review to the WPL and COO. The deliverable preparation process is detailed in section 2.4.3.

1.3. Document formats and naming conventions

The partners of EASI-SMR will use standard format and production tools to release their material (e.g. Microsoft Office suite, .pdf, .zip, usual image formats).
In order to ease the communication process and the identification of documents and versions all partners are advised to use some naming conventions using the principle of self-explanatory titles and versions.

The general file name conventions are as follows: *EASI-SMR_[name of the document]_date_V#.FileExtension*

- The name of the document shall be as concise as possible but also self-explanatory i.e., KOM_Minutes.
- The date should be presented in the form yyyymmdd.

For example: EASI-SMR_D9.1_Project Quality Plan_20241031_V1

1.4. Reporting to the EC

EASI-SMR has 3 reporting periods (RP) which are related to payment requests:

- RP1 from M1 – M18
- RP2 from M19 – M36
- RP3 from M37 – M48.

The RP are being prepared with the contribution of all partners and the overall responsibility and coordination of the COO. The final reports are to be submitted to the portal by the COO/PMO, within 60 days after the end of the RP.

1.5. Conflict resolution

Project and quality management activities as well as the awareness of all partners about their commitments, will ensure the proper implementation of the project plan and the realisation of its objectives. Decisions will normally be taken by the responsible partners based on the work to be conducted, as described in the GA. Transparency and a good communication among the project members are key to avoid challenges and conflicts before they arise. It is expected though, that during the project, the partners may need to resolve various issues and reach agreements. The processes to be followed starts with informal contacts as a first step such as an oral discussion or ad-hoc meeting and further on includes written notification via email, minutes, etc.
The COO is responsible for the overall conflicts management. The general principle is to solve conflicts at the lowest and earliest possible stage starting from the task level and with strong emphasis on the use of negotiation skills.

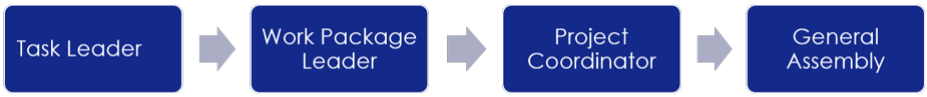

Figure 1: conflict resolution process for the EASI-SMR project.

Task leaders and WPLs should notify the COO as soon as possible when conflicts arise so that intermediate corrections can be proposed. Conflicts that are not being solved on the COO level, will be communicated to the GA. Any correction measures will be in accordance with the GA and the CA. Good communication among all involved parties is key point for resolving any conflicts.

2. Quality Management Strategy

Quality is the degree to which the project results fulfil the project's requirements. In order to fulfil and exceed the project requirements, a Quality Management Strategy has been defined

within the EASI-SMR project through three key processes, namely Quality Planning, Quality Assurance and Quality Control. These three processes are connected and interact to guarantee efficient and high-quality work.

2.1. Quality planning

Quality management 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 certain guidelines.

2.1.1. Visual identity and templates

The creation of a project visual identity of good quality plays a significant role in the way the EASI-SMR 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 organisation exists and remember its name and core business at the right time.
In parallel, templates (.ppt and .doc) have been created on the basis of the project visual identity. They will be adopted by partners for all types of dissemination and communication (both internal and external).
All these elements are available in the dedicated folder of the Teams repository.
For more details and examples of visual elements, please consult D8.5 Communication & Dissemination Plan.

2.1.2. Project policies

Internal project guidelines, or as we name it the project policies, were established to organise internal and external processes in terms of meetings, deliverables and publications, to ensure quality.

2.1.2.1. Deliverables

As mentioned in section 1.1. each deliverable leader is asked to use the appropriate Teams channel to collect inputs for the deliverable report and send it for internal review to the WPL and COO (see Figure 4).
Types of deliverables as per EASI-SMR GA

- "R" (Document, report)
- "DMP" (Data Management Plan)

Structure of the deliverables
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 previously described in section 1.1 and 2.2.
The template for the deliverables prepared by the COO/PMO, includes all essential information of the project and the content of the deliverable including call identifier, GA number, title, acronym, duration, document revision history with assigned roles and description, table of contents, figures and tables (if applicable), list of acronyms, executive summary.

2.1.2.2. Policy for publishing scientific papers

Prior notice of any planned publication shall be given to the other parties concerned 30 days in advance in accordance with the CA. Any objection to the planned publication shall be made in accordance with the CA in writing to the COO and to any party concerned within 21 days after receipt of the notice. If no objection is made within the time limit stated, the publication is permitted.

The beneficiaries 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 paper/article, or the link to it will be published on the official EASI-SMR project website. The COO/PMO and the WPL should be informed as soon as a link or document in pdf format is available. The EC will then be informed about the scientific publication via our website and also via LinkedIn.
In addition, to ensure open access to scientific publications (GA Article 17), these peer-reviewed papers will be uploaded in the project repository, in the partners' repositories and on a public repository to be defined in D9.3 Data Management Plan to be delivered at M6.
All publications or any other dissemination relating to foreground that was generated with the assistance of financial support from the European Union shall follow rules as per GA 17.2.
Authorship "Rules of Thumb"
A person should be author and the person may veto a publication if:
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.
As prior notice needs to be given at least 30 days before the publication, all partners have sufficient time to review the planned publication. This additional review process further contributes to high quality publications.

2.2. Quality assurance

According to the Project Management Body of Knowledge - PMBOK,[1] "*Quality Assurance is the process of auditing the quality requirements and the results from quality control measurements to ensure that appropriate quality standards and operational definitions are used.*"
Quality assurance is a fundamental part of the implementation of the project and will be performed throughout the duration of the project by all the partners.
The quality assurance plan is based on the plan-do-check-act cycle introduced by W. Edwards Deming[2], and is schematically represented in the Figure below.

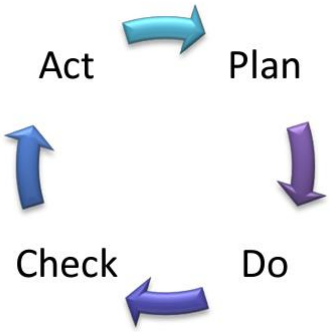

Figure 2: quality assurance principles.

Plan: is related to the objectives, processes, tools and resources needed to deliver the results according to the work plan and the project requirements;
Do: is referring to the implementation of the planned work;
Check: is referring to monitoring and evaluating the project outcomes and services based on the planned work and the requirements;
Act: is referring to the actions taken if necessary, to make correction and improve outcomes and performance.

[1] https://www.pmi.org/pmbok-guide-standards/foundational/pmbok
[2] https://deming.org/explore/pdsa/#:~:text=The%20PDSA%20Cycle%20(Plan%2DDo,was%20first%20introduced%20to%2 0Dr

The focus of quality assurance is made on the creation and monitoring of processes. Quality assurance creates and monitors project processes, which need to be performed effectively to reach the targeted outcome. This involves the establishment by the management team of the dedicated Project monitoring tools, clear responsibilities and regular, clearly guided online conferences and face-to-face meetings.

2.3. Roles, responsibilities & 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 performance.
EDF, as the COO of the project will ensure that the project's collaborators are aware of the Quality Assurance Plan and of the way each partner contributes to the successful implementation of the project and achievement of the project's quality requirements. Moreover, the COO is responsible for the control of the documented information of the project, which includes storage & backup and versioning & control of changes.
The Teams repository which was chosen as the central repository for the project is supporting both requirements and as such is ensuring that this information can be available at any time.
In the first step, responsible persons for each organisation and per WP were defined. Each WPL is responsible for monitoring and controlling the implementation phase of the project and ensuring conformity with the quality requirements. As for the Deliverables, the D-leading organisations were already defined within the DoA, but the concrete editor responsible for requesting and guiding partner inputs towards a punctual and high-quality submission, are identified in the Project monitoring file shared on the internal platform. In line with the internal review process (see 2.4.3), the WP leader will generally be the main reviewer and clear deadlines for first draft version, the review feedback as well as for the submission were established.
All the records of responsibilities for Deliverables (D) and Milestones (MS), as well of action & status tracking were established via the Project monitoring excel file, available to all participants in Teams. This file is reviewed at every ExCom meeting, thus allowing to reduce the risks of complex tasks mismanagement, confusion of roles or timeline issues.

2.4. Quality criteria and control

The focus of quality control is on feedback and deviation management in the project. Quality control ensures this feedback: it is taken into account from internal as well as from external advisors and therefore positively influences the work towards project objectives. Risk Management (see 2.5) is an integral element of quality control as the proactive notice of deviations from the DoA allows the consortium to control the consequences or even transform those consequences into opportunities.
Any material produced by EASI-SMR (technical data, reports, deliverables, publications), have to be of high quality based on certain quality criteria. These criteria are based on the principles of completeness, correctness, and punctuality[3].
Regarding the content, completeness is seen as covering in depth the topic without missing any important aspect or making redundancies. The accuracy is seen in the context of clear statement of the results, sufficiently evidence supports of the research and outcomes, minimization of errors and ambiguities. All the produced materials have to follow the visual identity of the project and follow the templates of EASI-SMR as well as conform to the specifications of the EC. Punctuality, refers to the timely delivery based on predefined deadlines.

2.4.1. Project Monitoring Tools

The basic idea of internal EASI-SMR Project Monitoring files is to implement tools, which forces each partner to provide information regarding their ongoing and planned work and all identified

[3] Bots, J.M., Heck, E. van, Swede, V.van, "Management information", pub. CAP Gemini Publishing BV, Rijswijk, 1990, pp. 550-555

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deviations from the DoA and the proposed corrective actions. These tools take shape of a) an Excel Project Monitoring File, which allows detailed monitoring of each WP activities; and b) One Note Dashboard file, which summarises in brief all acute points from all WPs and is primarily used during the monthly ExCom meetings to have a concise overview of the progress, changes and deviations. Combination of these tools is an efficient mean to provide the COO and the PMO a good understanding of the status and progress of work and to detect any possible delays or deviations well in advance. This helps the coordination team to monitor partner activities and the progress made within the previous months. It was also considered necessary to add sections which give partners the opportunity to describe issues/alerts/news risks and contingency/mitigation measures. This helps to keep track of hurdles partners have to face with and that may be related to other deeper problems. To facilitate information sharing within the consortium, a summary technical report in table form by WP (quarterly highlights, alerts, main future events, communications) will be shared quarterly via OneNote with all project contributors. The coordinator will be responsible for this quarterly technical reporting within the project, and will ask the WP leaders for information.

2.4.2. Advisory Board (AB)

The consortium will be supported and advised by an external expert group consisting of minimum 7 members (one per technical WP). Their valuable feedback to the global project strategy and the communication strategy is expected to bring a number of benefits for the EASI-SMR project. The AB members will provide an external unprejudiced scientific feedback and advice on the project results. To attain high quality results within the EASI-SMR project, a strong cooperation with the AB members will be actively pursued and facilitated by frequent interaction in the form of face-to-face and remote meetings.
Through the integration of an AB, interim feedback of enormous importance regarding the overall orientation of the project outcome is expected. This supports the path towards objectives and controls the quality of the project work as well as the quality of expected outcomes.
The Coordinator is the chair of the AB and is in charge of preparing the implementation of the AB suggestions.
The COO will ensure that a non-disclosure agreement (NDA) is executed between the consortium and each AB member.

2.4.3. End User Group (EUG)

The project's end-user group (EUG) brings together organizations interested in gaining knowledge about light water SMRs, with a view to the potential integration of this new technology in European countries. These organizations may be industries engaged in the design or consultancy of LW-SMRs, Technical and Safety support Organizations (TSOs) and regulators, or universities researching topics related to the EASI-SMR project.
The role of the EUG is to take advantage of the results of the project directly and rapidly, increasing the exploitation, and possibly to give feedbacks to make them even more useful.
Entities involved in the EUG are mainly external to the consortium but may also be part of it.
The EUG will be chaired by the coordinator and a dedicated online workspace will be provided where selected documents can be shared with the EUG participants. EUG members will also be invited to meetings of EUG working groups and to various project meetings (workshops, project progress meetings, etc.).

2.4.4. Deliverable quality assurance process

To ensure quality of deliverables, an internal review process has been defined. The main goal of this process is to establish internal feedback by partners who did not directly participate as editor to the deliverables before submitting it to the EC.

The review process is shown and explained below.

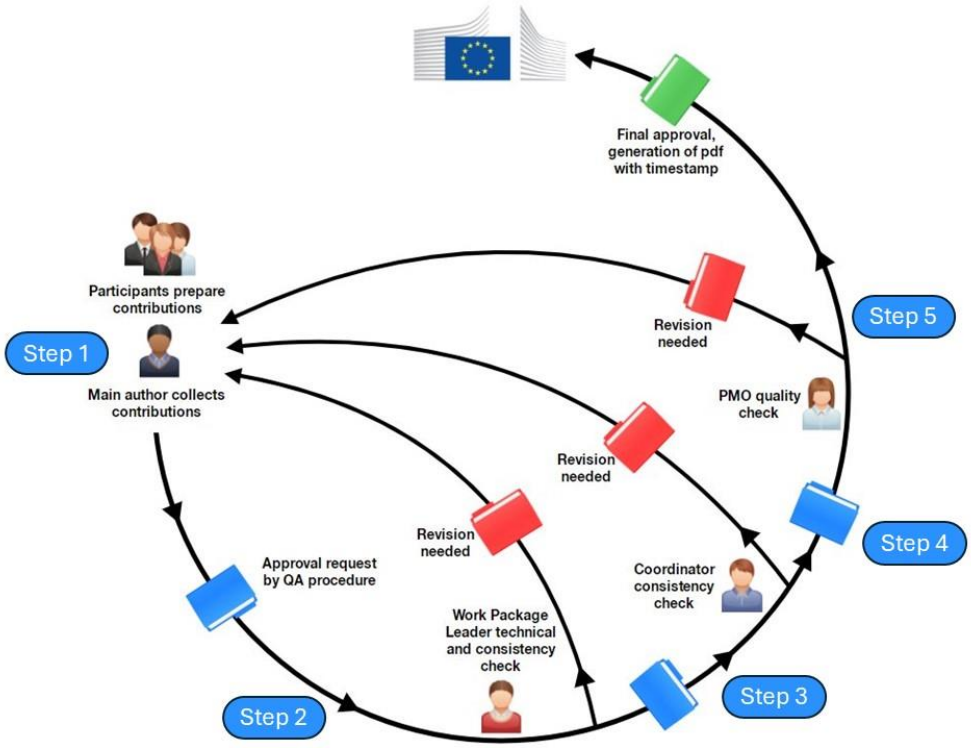

Figure 3: review process to ensure the quality of EASI-SMR deliverables.

Step 1 "Input collection"
The main author is responsible for collecting the necessary contributions from other partners to have a **final draft ready at the latest 30 days before the deliverable deadline.**
Step 2 and 3 "Review"
Main author (deliverable leader) sends the draft to the WPL at least 30 days before the deadline and then to the COO at least 20 days in advance (*Review = 10 days (WPL) + 15 days (COO)*). The reviewers read the draft 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: For Microsoft Word, the author protects the draft against changes (always save with "track changes" activated). Typos and small changes are directly entered on the text while using "track changes". Comments are entered into the text as Microsoft Word comments. The reviewers proof-reed the document using questions or guidelines (when available), in order to make sure that the content complies with the quality claims of the EC (e.g. required information, structure, etc.) and of the project partners.
Steps 4 "Quality check" and 5 "Release"
The deliverable leader must provide to the COO and the PMO the final version for submission minimum 2 days before the official deadline for the Deliverable submission to the F&T Portal. After a quality check (Step 4), the PMO will then submit the final document to the EC (Step 5).

A total of 80 deliverables will be submitted until the end of the project. The deliverables will all follow the same template set up by the COO/PMO who will provide guidelines about their use, the time plan, and the expected final result, to all partners.
The review of the deliverable will focus on consistency and clarity of the document, relevance and coverage of the topic and language features.

2.4.5. Milestones quality control

For ensuring the quality of the project, fifty milestones have been set throughout the duration of the project. The milestones can be also regarded as quality control points where the progress of the project is evaluated and in many cases they will consist of a technical note. In the latter case a process similar to the one described in the previous section and on Figure 3 will be applied, except for the steps 4 and 5. Instead, the PMO will mark the Milestone as achieved once the technical note or deferral is considered complete by the Coordinator.

2.5. Risk management

2.5.1. Risk management plan

To guarantee the achievement of the objectives of the EASI-SMR project, it is essential to identify and understand the significant project risks. Risk management refers to all activities undertaken for identifying, analyse, monitor, and control potential risks that could affect the execution of the project. Risk management is a continuous process that will be undertaken throughout the lifetime of the project.

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 (see the flow-chart Figure 4). 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.

The risks will be monitored on a regular basis and an updated risk table is to be provided within the Reporting Periods. Risks will be minimized and managed by using well-established methodologies for project planning and project control. The splitting of project work into work packages also minimizes internal risks. The COO and the PMO in cooperation with the ExCom members will be mainly responsible to handle risks and inform all partners when necessary.

Figure 4: schematic of the risk management process.

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 evaluated based on the risk assessment matrix[4] against its impact and likelihood, according to the Figure below. This results in an easily comprehensible way of visualizing the potential risks. Depending on the severity of each risk, different mitigation measures will be taken.

[4] https://www.maintworld.com/Partner-Articles/Using-a-Risk-Assessment-Matrix-to-Improve-Maintenance

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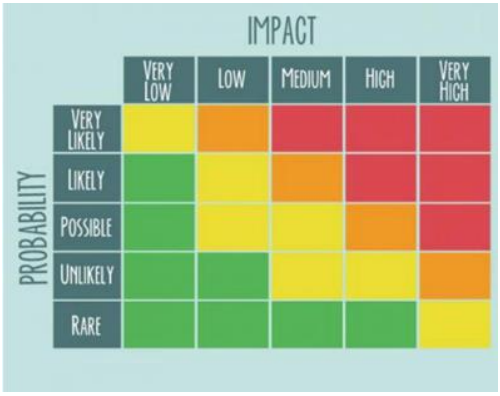

Figure 5: risk assessment matrix.

The definition of the risk level is calculated based on the relation between Probability/Likelihood and Impact with the "Impact value" weighting more than the "Likelihood value". The risk levels are explained as following.

Risk level	Definition
LOW	Has little potential to cause disruption of schedule, increase in cost, or disruption of performance. Normal effort will probably be able to overcome difficulties
MODERATE	Can potentially cause some disruption of schedule, increase in cost, or disruption of performance. However, special effort will probably be able to overcome difficulties.
HIGH	Likely to cause significant serious disruption of schedule, increase in cost, or degradation of performance even with special effort and close monitoring of the contracting activity.

Figure 6: general definition of risk levels.

2.5.2. Identified risks

Six critical risks have been identified in the proposal stage (see GA) and the countermeasures planned to address them. This list, which cannot be cited in present document for the reasons of data sensitivity, will be continuously revisited and updated during the lifetime of the project and reviewed during each Executive Committee meeting.

In addition to the above-mentioned tools and procedures, the project partners' and the coordinator's profound experience with European 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 cohesion, and interpersonal interaction contribute to high quality project performance.

Conclusion

This PQP demonstrates that quality aspects are considered in a variety of processes and activities within the EASI-SMR 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 (COO and PMO) 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

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