MADITRACE

Project Quality Plan

Deliverable D6.2

Version N°0.1

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Document information

Grant Agreement	101091502
Project Title	Material and digital traceability for the certification of critical raw materials
Project Acronym	MaDiTraCe
Project Coordinator	Daniel Monfort, BRGM
Project Duration	1 January 2023 – 31 December 2025 (36 months)
Related Work Package	WP6
Related Task(s)	T6.1 Project Coordination and Governance
Lead Organisation	LGi
Contributing Partner(s)	BRGM
Due Date	M3
Submission Date	15/03/2023
Dissemination level	Public

History

Date	Version	Submitted by	Reviewed by	Comments
01/03/23	0.1	Samy Strola	Mariana Terreros	
31/03/23	0.2	Samy Strola	Daniel Monfort	After review and approval of all partners
18/04/23	0.3	Samy Strola	Daniel Monfort	Final release

Table of contents

List of figures

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Summary

This deliverable presents the MaDiTraCe Project Quality Plan. It describes the guiding principle for the quality planning, the quality assurance and the quality control procedures. This document is effective throughout the lifetime of the project but it is open to revision if necessary.

Keywords

Project Management, Project Quality Plan, Quality Planning, Quality Assurance, Quality Control

Abbreviations and acronyms

Acronym	Description
AdvB	Advisory Board
CA	Consortium Agreement
COO	Coordinator
DEL	Deliverable
DoA	Description of Action
EC	European Commission
ExCom	Executive Committee
EUG	End Users Group
GA	Grant Agreement
GeAs	General Assembly
HE	Horizon Europe
KOM	Kick-Off Meeting
IMR	Interim Management Report
M	Month (of the project)
MS	Milestones
NDA	Non-Disclosure Agreement
PMO	Project Management Office
PO	Project Officer
PQP	Project Quality Plan
PR	Periodic Report
RP	Reporting Period
V	Version
WP	Work Package
WPL	Work Package Leader

1 Introduction

1.1 Purpose

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

- **Quality Planning** refers to quality policies like meeting, deliverables (DEL) 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, DELs and the publication process of scientific papers, are established and explained in this document.
- **Quality Assurance** involves the establishment of Interim Management Reports (IMRs), Periodic Reports (PRs) (as required by the EC) clear responsibilities and regular, clearly guided telephone conferences. A well-defined internal review process further supports the Quality Assurance of DELs.
- **Quality Control** focuses on feedback through internal processes (internal review process) and external advices (Advisory Board, project stakeholders and project catalysts and multiplicators). 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.

1.2 Application and validity

The requirements contained in this PQP apply to all personnel engaged and tasks planned in MaDiTraCe. Revisions of the contents of the PQP become valid from the date of issue.

1.3 Administration

LGI is responsible for the administration of the PQP. Proposals for modifications or additions must be submitted to LGI, which updates and issues the revisions of the PQP. All revisions need approval by the Coordinator (COO). Each new issue will be indicated in the revised document by means of a revision number.

1.4 Dissemination

The PQP and its annexes are confidential to the beneficiaries and may be circulated outside the beneficiaries only with the approval of the Executive Committee (ExCom). Each beneficiary of the project will receive the PQP at the issue date. It will also be available on the project collaborative web platform (*i.e.* Microsoft TEAMS).

2 Structure of the document

The PQP is an essential part of the MaDiTraCe project management. Its purpose is to describe how quality will be managed throughout the project-lifecycle. Quality must always be planned in a project in order to prevent unnecessary rework, as well as waste of cost and time. Quality should also be considered from both, an outcome and process perspective.

The processes and activities that produce DELs need to fulfil certain quality levels in order to reach the expected high-quality outcome. To address all quality requirements and quality assurance mechanisms in the MaDiTraCe project, 'Project Quality Plan' at hand has been developed by the project team. This plan acts as the quality bible for the project and all partners will adhere to the project quality plan.

Each project has its characteristics in terms of partners, WorkPackages (WPs) etc. and therefore requires a tailor-made quality plan, clear responsibilities and contact persons. This and how to get on board of the MaDiTraCe project is described within Chapter 3.

The overall Quality Management Strategy of MaDiTraCe is addressed in Chapter 4. It is divided in three key activities:

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

Quality Assurance
Quality assurance creates and monitors project processes, which need to be performed effectively to reach the targeted outcome. This involves the establishment of IMRs and PRs, clear responsibilities and regular, clearly guided telephone conferences (telcos) but also face-to-face meetings. These activities within MaDiTraCe are summarized in section 4.2.

Quality Control
Quality Control will be actively performed by all partners, e.g., by acting as an internal reviewer of DELs. A clear internal review process has been defined before the DEL submission to provide feedback to the editor. A proactive risk management has already been mentioned within the Description of the Action (DoA). The risk management has been established as planned in order to guarantee the project quality and avoid delays or failures. Feedback on the project progress and outcomes by the Advisory Board (AdvB) will support the quality controlling and guide the project into the right direction. This is described in section 4.3.

The goal of the following chapters is to give an overall explanation of how great quality can be assured.
All the processes identified in the MaDiTraCe project with the reference in this document and responsibilities are resumed in the table below.

Process	Reference in PQP	Who
Prepare and release:		
Contractual technical document	5.1	WPL
DELs	5.2, 7.1.2.1, 7.4.3	DEL author
Milestones	7.4.4	WPL
Name documents	5.3	All members
Report to the EC	5.4	WPL then COO

Resolve Conflict	5.5	Between partner and if failed at the COO level then at the EC level
Communicate with the EC	6.3	COO
Communicate internally via TEAMS • Documents sharing • Collaborative work on documents • Emailing • Public library	6.1.1, 6.1.2	All members
Communicate externally • Website • LinkedIn • Twitter	6.2	All members participate and WPL manages with the support of LGi
Organize and lead meeting	6.1.3	All members
Manage planning	7.1	COO
Create Visual Identity	7.1.1	LGI
Define Project policy • Meeting • DELs • Scientific papers	7.1.2 6.1.3 7.1.2.1 7.1.2.2	All members participate Management by COO & PMO
Manage Quality assurance Quality criteria and control	7.2 & 7.3 7.4	All members, WPL then COO
Interim Report Management Periodic Report	7.4.1 7.4.7	WPL, COO, PMO WPL, COO, PMO
Manage the risk	7.5	WPL & COO
Manage effort and costs	8	COO & PMO

3 Project structure overview

MaDiTraCe is a research project with 6 WPs and 14 partners, coordinated by BRGM. MaDiTraCe started the 1st January 2023 and will run over 3 years. The COO acts as the project leader and will be responsible for the innovation management and scientific coordination of the project. He is assisted by LGI, acting as Project Manager Officer (PMO).

Participant #	Official name	Short name	Country
1 (Coordinator)	BUREAU DE RECHERCHES GEOLOGIQUES ET MINIERES	BRGM	FR
2	DMT GmbH & CO. KG	DMT	DE
3	GEOLOGIAN TUTKIMUSKESKUS	GTK	FI
4	MONTANUNIVERSITAET LEOBEN	MU Leoben	AT
5	UNIVERSITEIT GENT	U Gent	BE
6	EIT RAW MATERIALS GMBH	EIT RM	DE
7	LGI SUSTAINABLE INNOVATION	LGI	FR
8	CLUSTER PARA LA MINERIA SOTENIBILEY SERVICIOS ASOCIADOS DE LA PENINSULA IBERICA - IBERIAN SUSTAINABLE MINING CLUSTER	ISMC	ES
9	FUNDACION ICAMCYL	ICAMCYL	ES
10	COMMISSARIAT A L'ENERGIE ATOMIQUE ET AUX ENERGIES ALTERNATIVES	CEA	FR
11	Alfred H Knight International Limited	AHK Group	UK
12	FUNDACION PARA EL DESARROLLO Y LA INNOVACION TECNOLOGICA	Funditec	ES
13	UNIVERSITEIT LEIDEN	ULEI	NE
14	METSO OUTOTEC FINLAND OY	MO Group	FI
15	SPHERITY GmbH	SPTY	DE

Figure 1: list of the MaDiTraCe partners.

Figure 2: MaDiTraCe project structure.

Lead	ID	Tasks / Timing (months)	START	END
MU Leoben	WP1	Assessment of needs and gaps in due diligence	1	36
EIT RM	T1.1	Stakeholder Network	1	36
MU Leoben	T1.2	State of Play and SWOT Analysis	1	18
MU Leoben	T1.3	Benchmarking	18	32
BRGM	WP2	Technological solutions: intrinsic material fingerprints and added tracers	1	36
BRGM	T2.1	On-site on-line MFP techniques	1	30
MU Leoben	T2.2	Laboratory MFP techniques	4	30
GTK	T2.3	Artificial Fingerprinting	1	36
CEA	T2.4	Follow-up of tracers and fingerprints along production chains	1	24
BRGM	T2.5	MFP Data analysis and interface to digital passports	9	30
CEA	WP3	Technological solutions: IT methods	1	36
ULEI	T3.1	Decentralized traceability of raw materials: requirements elicitation	1	30
CEA	T3.2	Concepts, methodology and data models for digital raw material passport	6	30
Sphenity	T3.3	Architecture and components for traceability concepts implementation	12	36
Funditec	T3.4	Cross-cutting issues analysis and recommendations: Security, Confidentiality, Accountability at Design and runtime control	12	30
DMT	WP4	Certification schemes development	1	36
DMT	T4.1	Readiness standard (CRS) for exploration	1	18
DMT	T4.2	Performance standard (CPS) for downstream	6	24
DMT	T4.3	Chain of Custody standard (CCS) for up- and downstream	1	36
DMT	T4.4	Final Product Standard (CFS) for final downstream products	18	36
BRGM	T4.5	Integration of traceability tools and compatibility with EU product passport	6	36
ISMC	WP5	Communication, dissemination, exploitation & business case	1	36
ISMC	T5.1	Dissemination and Communication plan, activities and events	1	36
DMT	T5.2	Exploitation strategy & business case	1	36
ICAMCYL	T5.3	Clustering	1	36
EIT RM	T5.4	MaDiTraCe knowledge-transfer program	1	36
ICAMCYL	T5.5	Integration with Smart Specialisation Strategies & Platform	6	32
BRGM	WP6	Project and data management	1	36
BRGM	T6.1	Project coordination and governance	1	36
BRGM	T6.2	Advisory Board	1	36
LGI	T6.3	Data and risk management	1	36
BRGM	WP7	Ethics requirements	1	36
BRGM	T7.1	Comply with the ethics requirements of the project	1	36

Deliverable   Milestone

Figure 3: MaDiTraCe GANTT

4 Project Management and Governance

4.1 Project management strategy

Project management includes all core activities to ensure the successful completion of the project within all technical and financial aspects set out in the Grant Agreement (GA). WP6, led by BRGM, is dedicated to the management and coordination of the project to ensure that it is stayed on track in terms of scope, costs, resources, and quality. All changes and optimizations essential for facilitating this goal are always under discussion with the partners and the decisions are taken based on the partners approval.

Good communication management practices are crucial for ensuring that information reach the appropriate partners, and that timely, efficient decisions can be taken. Quality management contributes to establish the relevant project quality control and quality assurance activities to ensure an efficient collaboration among the consortium partners and delivery of project results. Risk management is necessary for providing the process and

techniques for the evaluation and control of potential project risks, focusing on their precautionary diagnosis and handling.

4.2 Project management structure

The overall organizational structure of MaDiTraCe is illustrated in the Figure below.
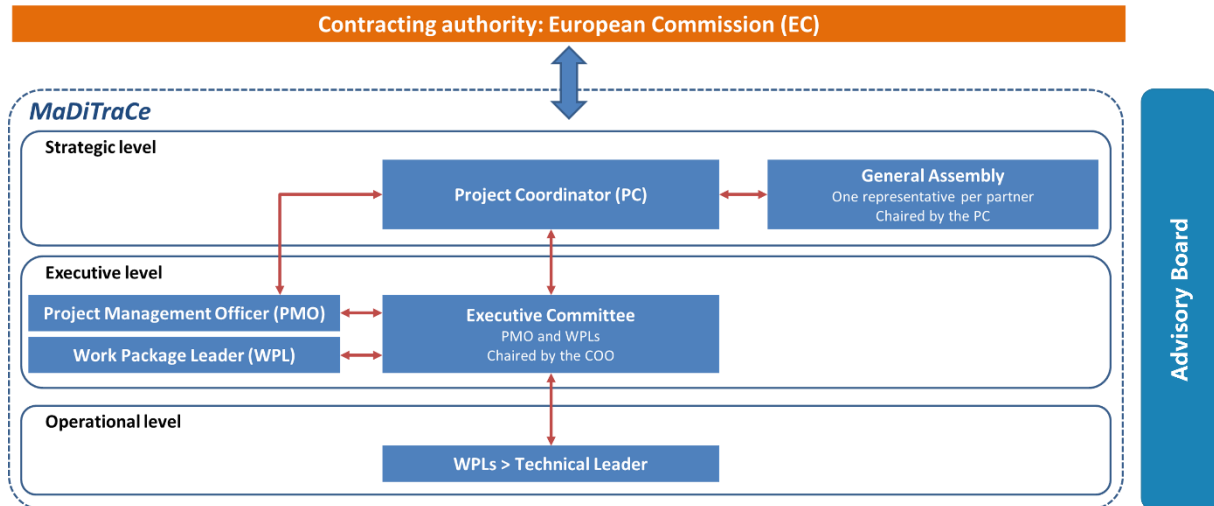

Figure 4: management structure of the MaDiTraCe project.

The MaDiTraCe project bodies, the decision-making process as well as the responsibilities are described in the Consortium Agreement (CA) and in the Grant Agreement (GA) and resumed in the Figure 3. The interaction, responsibilities and decision-making power is clearly split between the established project bodies.

Body	Who
GenAssembly	All partners (at least 1 person mandatory) COO PMO
ExB	WPLs (mandatory, ensure backup in case of absence) COO PMO
WP meetings	WPL & partners involved (COO if necessary)
Project Coordination	COO + PMO (In case of particular issue, a specific partners will be invited)
AdvB	AdvB members COO WPLs

Figure 5: project bodies.

The General Assembly (GeAs) is the assembly of all partners. The GeAs shall consist of one representative (Member) of each partner. It was established within the proposal and therefore included into the CA (see CA Art. 6).

The following deputies have been named to represent their organization during the MaDiTraCe GeAs:

Partner	First name	Last name
LGI	Bastien	Duplantier
BRGM	**Daniel**	**Monfort Climent**
Ugent	**Frank**	**Vanhaecke**
CEA	**Agnès**	**Lanusse**
CEA	David	Peralta
CEA	Sara	Tucci
DMT	**Michalis**	**Katapotis**
EIT RM	**Ignacio**	**Calleja**
MUL	Frank	Melcher
MUL	Michael	Tost
ISMC	**Santiago**	**Cuesta-López**
AHK Holland	**Patrick**	**Lemare**
AHK Holland	**Laurence**	**Donelly**
ULEI	**René**	**Kleijn**
Spherity	**Susanne**	**Guth-Orlowski**
Spherity	Johannes	Ebert
MO Group	Juha	Timperi
MO Group	**Jani**	**Kaartinen**
Funditec	**Oscar**	**Ramirez**
Funditec	Aruna Prem	Bianzino
GTK	**Quentin**	**Dehaine**

Figure 6: representatives of each organisation for the participation to the GeAs (in bold: main contacts).

The GeAs is the ultimate decision-making body that takes decisions concerning level management and strategic issues.

The Executive Board (ExCom) is the assembly of all Work Package Leaders (WPLs), it includes the PMO and is chaired by the project COO, from BRGM. It was established during the KOM.

The ExCom shall prepare the meetings, propose decisions and prepare the agenda of the GeAs. The ExCom shall be responsible for the proper execution and implementation of the decisions of the GeAs. The ExCom shall monitor the effective and efficient implementation of the project. In addition, the ExCom shall collect information at least every 3 months on the progress of the project, examine that information to assess the compliance of the project with the Working Plan and, if necessary, propose modifications of it to the GeAs.

The following representatives and deputies have been named for the MaDiTraCe ExCom:

First name	Last name	Notes
Samy	Strola	PMO
Daniel	**Monfort Climent**	**Coordinator, WP6&7 leader**
Wolfram	Kloppmann	Technical supervisor
Anne-Marie	**Desaulty**	**WP2 leader**
Agnès	Lanusse	WP3 leader
Michalis	**Katapotis**	**WP4 leader**
Michael	Tost	WP1 leader, Chair of Mining
Marie-Theres	Kügerl	WP1 leader, Chair of Mining
Maria	Fernandez	WP5 leader

Figure 7: ExCom members for the MaDiTraCe project ((in bold: main contacts).

The ExCom functions as the supervisory body for the proper execution of the project. It monitors and manages the day-to-day operations and is accountable to the GeAs.

WP Leaders (WPLs) are responsible for: i) planning the scientific and technical work of the WP, in coordination with all partners that are involved in this WP; ii) ensuring that the time maintained and indicate any discrepancies to the COO; iii) initiating corrective actions for project deviations (if required); iv) consolidating partner information and preparing the reports for submission to the COO; v) ensuring that the objectives and milestones of the whole WP as well as of the detailed activities within the WP are achieved in time; vi) ensuring that the DELs are provided according to the time schedule.

The Advisory Board (AdvB) consists of leading experts on project domains providing their advice and guidance throughout the implementation phase of the project.

The Stakeholders Network will use the major outcomes from MaDiTraCe: the SA roadmap for the coming years; and, more importantly, the E&T that we plan to conduct. The constitution of the stakeholders group is the responsibility of WP1.

Additionally MaDiTraCe project have an intermediate group called "Catalyst and multiplicators". This group will be composed by industrial companies and industrial alliances.

4.3 Steps towards participation in the project

Initial registration
New participants in the project need to contact the COO and the PMO in order to receive access to the project web-based secured repository, TEAMS, hosted and managed by LGI. New members in technical staff need to be communicated also to WPL where the new person will be engaged.

Mailing lists
All contact details (name, surname, email address) will be added to the MaDiTraCe contact list and the new participant will be subscribed to relevant mailing lists, as there are central tools for all project internal communication. The diffusion lists are defined and managed through the TEAMS platform.

PQP
New participants will receive this PQP to be used as a project handbook (available in the TEAMS repository) to get familiar with the project structure and the project procedures.
The project handbook is designed in a way to be easily consulted and it provides quick answers in the TEAMS repository. It is available as a PDF file and should be a living document. This implies that it will be updated regularly to record and list the lessons learned in order to improve the quality of the project. The partners will be involved in the revision process and informed about handbook modifications. In general, the COO and the PMO will be the main responsible partners for updating the project handbook. Modifications and updates will be performed whenever necessary, e.g. if there are changes to the mailing lists or if the project structure or the governing bodies composition changes. In any case, partners are always invited to propose updates if required.

Introduction to partners and start
Once being familiar with the project policies and the IT tools, newcomers will find the most relevant documents like the DoA, GA and CA on the TEAMS repository.

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5 Management Processes and Tools

5.1 Preparation of contractual technical document

During the first ExCom of the project, WPLs will define Technical Reviewers of the different DELs. A table will be issued and communicated to the entire project consortium.

Before processing the document under the process workflow, it is important to note that the document should be prepared on the chosen collaborative platform (*i.e.* TEAMS) following this process:

- As soon as possible and at the latest 2 months before the official deadline, the author must prepare the DEL on the collaborative platform. Please create the document in the corresponding WP folder,
- Notify the different contributors and the COO that the initial draft is available in this folder,
- This is the working document for the DEL. All contributors can work collaboratively on this draft and no versioning is necessary.

Once the DEL is ready for the technical review, the author must notify the related reviewer and the COO that the DEL is ready for a technical review. Technical reviewer are designed by the author and/or WPLs.

A special form is issued and dedicated to this technical review (see Figure below) and must be completed by the reviewer. The author must then answer and amend the DEL when necessary. This process will have as many iterations as necessary and will stop when author and reviewer agreed completely on the technical content of the DEL.

Form for the technical review of the deliverable for the project XXX

Deliverable number	Deliverable Title	Name of the author (Organisation)	Name of the technical reviewer (Organisation)
p. of the deliverable	Text of the deliverable	Remark from the reviewer	Answer from the author

Figure 8: technical review form.

Once the technical review is over, the author can start the official workflow on TEAMS and issue the DEL for the quality process.

Once the DEL reviewed and validated and that the formatting is ready, the DEL is ready to be processed under the TEAMS workflow (see 7.4.5).

5.2 DEL preparation

According to the GA, MaDiTraCe has 40 DELs, each one assigned to one responsible partner (see 7.2.2). The partner in charge of the DEL is responsible for its timely and of high-quality submission to the PC. After the quality review, the final version of the DEL is uploaded by the COO/PMO to the EC portal. The DEL preparation process is schematically depicted in the Figure below and exhaustively detailed in section 7.4.3.

Action	Due date
First draft for internal review ready	30 days before deadline
Final draft with internal reviews ready	15 days before deadline
Quality review by the PMO	7 days before deadline
Approval of the draft by the COO and preparation of finalized version	3 days before deadline

Figure 9: DEL preparation time plan.

Any deviations from the time plan should be communicated by the DEL leader to the COO/PMO as soon as possible. The time plan can be adjusted if previously agreed between the author, the reviewers, and the COO. The DELs marked as "public" will be uploaded to the MaDiTraCe website while the DELs marked as "confidential", will be only made available to the EC and the consortium partners via the project's repository.

5.3 Document formats and naming conventions

The partners of MaDiTraCe 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 based on the principle of self-explanatory titles and versions. The general file name conventions are as follows: MaDiTraCe_*[name of the document]_Vxy_date_[partner acronym/person name].FileExtension*

- The name of the document shall be as concise as possible but also self-explanatory i.e., Kick_Off_Meeting_Minutes
- The date should be presented in the form yyyymmdd i.e., 20221203
- The partner acronym or person name should be used as defined in the GA.

5.4 Reporting to the EC

MaDiTraCe has 2 Reporting Periods (RPs) which are related to payment requests:

- RP1 from M1 – M18 – June 2024
- RP2 from M19 – M36 – December 2025

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.

5.5 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 realization 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 start with informal contacts as a first step such as an oral discussion or ad-hoc meeting and further on include written notification in terms of email, minutes, etc.

The COO is responsible for the overall resolution of conflicts. The general principle is to solve conflicts at the lower possible level starting from the task level with strong emphasis on the use of negotiation skills.

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 GeAs. 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.

6 Communication Processes and Tools

6.1 Internal communication and monitoring

Communication is one of the most essential foundations of successful project collaborations.

Communication processes and tools form the communication framework of MaDiTraCe which will serve as a guide for communication throughout the duration of the project and can be adjusted as communication requirements may change. The COO will take a central and proactive role in ensuring effective communication on this project and facilitating the seamless implementation of the workplan. The internal communication regards to the processes and tools that will be used among the partners of the project.

6.1.1 Project repository

TEAMS repository will be used as the central repository for the project where all partners will be able not only to share documents but also to monitor project progresses and to communicate with each other.

TEAMS is restricted only to the personnel of the project offering:

- Support management tool restricted to the project community
- Online workplace for sharing documents
- Public library for DELs and any other related documents
- Safe and user-friendly environment
- Document sharing at any time and from any location and device
- Groups per working activities (e.g. WPs, ExCom, …)
- Emailing based on distribution lists

TEAMS access is upon email invitation and account online validation and is entirely managed by the PMO organisation (LGI). An user guide on TEAMS use and tools has been distributed to all partners.

A dedicated DEL (Online Workplace – D6.1), explaining TEAMS functionalities, has been released.

6.1.2 Mailing lists

Direct email will be limited as common means for sharing information and addressing day-to-day businesses of the project. Distribution lists will be privileged. Distribution lists have been created to communicate for different audiences:

- One list per each WP, including all people involved in the WP implementation

- A list for the AdvB, stakeholders network and catalysts and multiplicators group
- A list for the ExCom members
- A list for the GeAs members
- A list for the main contact of each partner
- An overall list including all members of the consortium

Distributions lists are managed and regularly updated by the PMO/COO with the collaboration of all partners. Due to the dynamic character of EU projects and the expected changes in personnel, people will be added/removed accordingly and upon partner's request.

6.1.3 Meeting structure

To ensure the project success it is necessary to implement an efficient meeting structure. For the organisation of meetings, different platforms will be used for virtual meetings, such as Framadate or Doodle.

At the beginning of the MaDiTraCe project, the Kick-Off Meeting (KOM) took place together with the first GeAs meeting on 24th and 25th of January, 2023 in Paris (France). After the KOM, dedicated meetings to each WP were organized to discuss the different expectations and schedules in order to make the definitive detailed work plan and required actions.

We plan the ExCom meetings every 3 months and one GeAs each 12 months. In addition there will be some regular WP-internal/ cross-WP face-to-face meetings on request, but due to experience and to recent pandemic crisis there will be more remote conferences instead of physical meetings. Monthly remote meetings between the COO and the PMO are planned to monitor all the ongoing and foreseen actions.

The provisional list of all meetings is reported in the table below.

Body	Who	When	Modality
GenAssembly	All partners (at least 1 person mandatory) COO PMO	M1 M12 M24 M36	F2F (France - BRGM) F2F (Austria - MUL) F2F (Germany - DMT) F2F (Finland - GTK)
ExB	WPLs (mandatory, ensure backup in case of absence) COO PMO	Each 3M max. (variable, if needed)	Remote
WP meetings	WPL & partners involved (COO if necessary)	Upon request	Remote (F2F if strictly necessary)
Project Coordination	COO + PMO (In case of particular issue, a specific partners will be invited)	Monthly	Remote
AdvB	AdvB members COO WPLs	Back-to-back with GenAssembly	F2F, if possible

Figure 10: list of MaDiTraCe meetings (tentative).

At the end of each RP there will be a Review Preparation meeting one day before the official Review meeting takes place (planned venue: EC premises in Brussels, or if applicable partner's premises). At the end of the MaDiTraCe project there will be a Project Finalisation meeting. Further it is planned to participate in several workshops and conferences.

According to our CA, the meeting chairperson shall give written notice of a meeting to each member of that Consortium Body as soon as possible. The chairperson also shall prepare and send the agenda to the members well in advance.

The chairperson of the meeting is also responsible that meeting minutes are produced and circulated to the members. These meeting minutes shall be considered as accepted if, within 15 calendar days from receipt, no member has sent an objection to the chairperson. Afterwards the accepted minutes shall be sent to all members (they are stored on TEAMS).

6.1.3.1 Face-to-face meetings

Usually, the intention is to execute the project meetings at partner`s premises and if that is not possible, the host can also arrange/ ask for offers for conference rooms in a hotel.

The following bullet points should be helpful for hosting upcoming meetings/ workshops:

Meeting Room(s):

- On the first day we would need one big room for approx. 30-40 people (if every partner shows up with 2-3 persons; a participant list will be created and provides further details).
- For the second day parallel sessions might be suitable. To plan such sessions, one-two rooms (for approx. 15 persons each) would be required. (It will be discussed in advanced how many break-out sessions will be necessary for the dedicated meeting).
- Are there any costs for the conference room/ day/ person? (Coffee break, lunch)?
- Are there any other expenses?

Infrastructure/Equipment:

- Free WLAN at conference
- Internet connection
- Projector in each room
- Flip charts and pens
- Power plugs for all participants
- Speaker for large rooms

6.1.3.2 Fully remote meetings

For the effective communication among the partners involved in the same WP and/or sub-WP, regular online meetings are expected to be held (see 7.1.2.1). Partners will privilege Microsoft Teams platform, when possible. Other platforms will be chosen (i.e. Google Meet, Skype, Webex, Zoom etc.). For the GeAs and ExCom meetings, organized by the POO/PMO, Microsoft Teams will be used. Currently, the PMO provides their telco system (i.e. Microsoft Teams) for all these virtual meetings.

6.1.3.3 Hybrid meetings

To ensure the full participation of all partner's members, several meetings will be organized in "hybrid" mode. Partners will be allowed to decide if they want to participate in person or remotely, according to their organization internal policies. The COO/PMO will then arrange these meetings by offering both modalities, as described previously.

6.2 External communication

For external communications, the consortium will establish its own website (www.MaDiTraCe.eu/) and communicate with external stakeholders by e-mail, social media accounts and social platforms (LinkedIn: https://www.linkedin.com/company/MaDiTraCe/ - Twitter: https://twitter.com/MaDiTraCe).

All partners are expected to produce high quality presentations and scientific papers for publication in specialized conferences and journals as well as more simplified press releases demonstrating the impact of the project for a wide range of readers.

In all external communication tools (including the web), materials (e.g., leaflets, posters, conferences, etc.) and dissemination activities, an acknowledge of EU support and display the European flag (emblem) and funding statement will be made, as required per Article 17.2 of the GA.

These efforts will be pursued throughout the project to raise awareness and ensure high visibility of the project results. More information about the external communication will be presented in the DEL "D5.1 Communication and Dissemination Plan" to be submitted in M3.

6.3 Communication with the EC

The COO is the responsible contact point on behalf of the project, for the communication with the EC. He is responsible, with the assistance of the PMO, for keeping the project portal always up to date i.e., regarding communication activities, milestones reached, DELs and progress report submitted etc.

Moreover, the COO is responsible for providing any requested information by EC as well as inform the partners about any information that should be shared from the EC. The partners are not supposed to communicate with the EC directly except for there is a certain need that has been prior discussed and agreed upon with the COO. In all other cases, the COO will communicate any issues to the EC.

7 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 MaDiTraCe project through three key processes, namely Quality Planning, Quality Assurance and Quality Control. These three processes are connected and interact in order to guarantee efficient and high-quality work.

7.1 Quality planning

Quality management planning determines quality policies and procedures relevant to the project for both project DELs and project processes, defines who is responsible for what, and documents compliance with certain guidelines. This planning is directly implemented in to the TEAMS channel.

7.1.1 Visual identity and templates

The creation of a project visual identity plays a significant role in the way the MaDiTraCe project presents itself to both internal and external stakeholders. A corporate visual identity expresses the values and ambitions of our project and its characteristics. Our corporate visual identity provides the project with visibility and "recognisability". It is of vital importance that people know that the organization exists and remember its name and core business at the right time.

Figure 11: visual identity of MaDiTraCe.

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.

7.1.2 Project policies

Internal project guidelines, our so-called project policies, were established to organize internal and external processes in terms of meetings, DELs and publications, to ensure quality. Previous sections of this document describe in detail these guidelines.

7.1.2.1 DELs

DELs must be put into the "DELs Folder" of the corresponding WP on TEAMS. Please use the following file naming:

- *DATEOFRELEASE*- MaDiTraCe-*[Dx.x]-[DEL name]-versioning*

Nature of the DELs

- "R" (Document, report)
- "DEM" (Demonstrator, pilot, prototype): such DELs will be accompanied by a small written report outlining its structure and purpose in order to justify the achievement of the DEL.
- "DEC" (Websites, patent filings, videos, etc.): such DELs will be accompanied by a small written report outlining its structure and purpose in order to justify the achievement of the DEL.
- "OTHER" (Other): such DELs will be accompanied by a small written report outlining its structure and purpose in order to justify the achievement of the DEL.

Structure of the DELs

As DELs are the most important outcome of the project, excellent quality needs to be ensured. Therefore, an internal review process has been defined, which is described in detail in section 5.1 and 7.2.

The template for the DELs prepared by the COO/PMO, includes all essential information of the project and the content of the DEL 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.

7.1.2.2 Policy for publishing scientific papers

Prior notice of any planned publication shall be given to the other parties in accordance with the CA (8.3.2). Any objection to the planned publication shall be made in accordance with the GA. 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 our official MaDiTraCe project website. Please inform the COO and the WPL of the WP5 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 and Twitter.

In addition, in order 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 Zenodo (see D6.5 – Data Management Plan).

All publications or any other dissemination relating to foreground that was generated with the assistance of financial support from the 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 in accordance with the CA, all partners have sufficient time to review the planned publication. This additional review process further contributes to high quality publications.

7.2 Quality assurance

According to the 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 summarized in the Figure below.
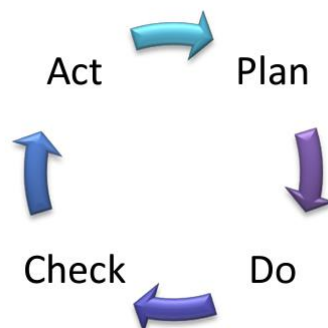

Figure 12: quality assurance principles.

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.

The focus of quality assurance is 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 of IMRs, PRs, clear responsibilities and regular, clearly guided telephone conferences and face-to-face meetings.

7.3 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.

BRGM, as COO of the project will ensure that he project's personnel is 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.

Each WPL are responsible for monitoring and controlling the implementation phase of the project and ensuring conformity with the quality requirements.

Therefore, as already mentioned previously, responsible persons for each organisation and per WP were defined. In a further step, responsibilities for DELs and Milestones (MS) were defined. The table below shows an excerpt of the DEL and MS of the project and their main benchmarks. While DEL leading organisations were already defined within the DoA, the concrete editor responsible for requesting and guiding partner inputs towards a punctual and high-quality submission, were named at the project start. In line with the concluded internal review process (described in section 5.1) at least one specific internal reviewer for each DEL and MS was defined and clear deadlines for first draft version, the review feedback as well as for the submission were established.

Alias	Name	Lead beneficiary	Official Date	Nature	Dessimination
D1.1	Description of the stakeholder engagement process	EIT RM	01/07/2023	Other	CO
D1.2	Interim State of Play Report	MU Leoben	01/01/2024	R	CO
D1.3	State of Play Report	MU Leoben	01/07/2024	R	PU
D1.4	Benchmarking synthesis	MU Leoben	01/09/2025	R	PU
D2.1	Review report on existing tracing and 3D printing technologies	AHK Holland	01/07/2023	R	PU
D2.2	Fingerprinting and tracing under controlled conditions along battery and magnet production chains	CEA	01/01/2025	R	CO
D2.3	Methodology for on-site material flow characterization	BRGM	01/07/2025	R	PU
D2.4	Methodology for lab-based geoforensic supply chain due diligence audits	MU Leoben	01/07/2025	R	PU
D2.5	Methodology for analytical data flow analysis	BRGM	01/07/2025	R	PU
D2.6	Final report on MaDiTraCe artificial fingerprinting technologies	GTK	01/01/2026	R	PU
D3.1	Draft report supply chain mapping, requirements elicitation	ULEI	01/01/2024	R	PU
D3.2	Reference architecture Model	CEA	01/01/2025	R	PU
D3.3	Guidelines for methodology implementation	CEA	01/07/2025	R	PU
D3.4	Architecture definition for PoC implementation	SPHE	01/01/2025	R	PU
D3.5	Components and smart-contracts support examples	CEA	01/07/2025	Other	PU
D3.6	Architecture definition for PoC implementation- Final report	SPHE	01/01/2026	R	PU
D3.7	Guidelines and recommendations for security/confidentiality/Privacy	Funditec	01/07/2025	R	PU
D3.8	Final report supply chain mapping, requirements, elicitation, classification	ULEI	01/07/2025	R	PU
D4.1	CRS audit catalogue	DMT	01/07/2024	Other	CO
D4.2	Downstream CPS audit catalogue	DMT	01/01/2025	Other	CO
D4.3	Upstream and Downstream CCS audit catalogue(s)	DMT	01/01/2026	Other	CO
D4.4	CFS audit catalogue	DMT	01/01/2026	Other	CO
D4.5	Roadmap report	BRGM	01/01/2026	R	PU
D4.6	Methodology to include secondary flows in CPS	CPS, ULEI	01/01/2025	R	PU
D4.7	LCAs of selected materials and products ULEI	ULEI	01/01/2026	R	PU
D5.1	Communication & dissemination plan	ISMC	01/04/2023	R	PU
D5.2	Preliminary exploitation plan	DMT	01/04/2023	R	PU
D5.3	Business plan and exploitation roadmap	DMT	01/07/2025	R	CO
D5.4	Report on identification of related projects and activities	ISMC	01/10/2023	R	PU
D5.5	Analysis and roadmap for implementation of a common strategy for the development of material traceability policies within specialisation strategies	ICA	01/09/2025	R	PU
D5.6	Midterm event report	BRGM	01/07/2024	R	PU
D5.7	Final event report	BRGM	01/01/2026	R	PU
D6.1	Online workspace	LGI	01/03/2023	R	CO
D6.2	Project Quality Plan	BRGM	01/04/2023	R	PU
D6.3	Intermediate AB recommendations report	BRGM	01/07/2024	R	PU
D6.4	Final AB recommendations report	BRGM	01/01/2026	R	PU
D6.5	Data Management Plan	LGI	01/04/2023	DMP	PU
D7.1	EPQ - Requirement No.1	BRGM	01/02/2023	ETHICS	CO
D7.2	EPQ - Requirement No.2	BRGM	01/02/2023	ETHICS	CO
D7.3	AI - Requirement No.3	BRGM	01/04/2023	ETHICS	CO

Figure 13: assignment of MaDiTraCe DELs.

Alias	Name	Lead beneficiary	Deadline
M1	Proof of concept on-site LIBS	MO Group	01/07/2024
M2	Lab comparison conducted	MU Leoben	01/01/2025
M3	Communication & dissemination plan and	ISMC	01/04/2023
M4	International Smart Specialisation Workshop	ICAMCYL	01/07/2025
M5	Midterm event	BRGM	01/07/2024
M6	Final event	BRGM	01/12/2025

Figure 14: assignment of MaDiTraCe MS.

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7.4 Quality criteria and control

The focus of quality control is on project management. Its main purpose is to strengthen the project ability to reach the objectives set, and to do so it sets a permanent assessment of management through feedback from internal and external advisors. Risk Management (see 7.5) 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 to opportunities.

All MaDiTraCe works either on the technical level or in written form such as reports, DELs, publications, have to be of high quality based on certain quality criteria. These criteria are based on the principles of completeness, accuracy, 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 MaDiTraCe as well as conform to the specifications of the EC. Punctuality, refers to the timely delivery based on predefined deadlines.

7.4.1 Interim management reports (IMRs)

The basic idea of internal IMRs is to implement a tool, which forces each partner to provide information regarding their ongoing and planned work and all identified deviations from the DoA and the proposed corrective actions. The IMR is planned as a short report each twelve months and will be provided during the ExCom / GeAs meetings. It is an efficient tool to provide the COO and the PMO a good understanding of the status and progress of the 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 last two months. It further asks the WPL explicitly for the achievements and results per WP, in order to have a clear view on the results and how they will impact the ongoing work. It was also of high importance to add a section which gives the partners the opportunity to describe deviations and corrections. This section gives ideas of problems partners have to cope with and that may be related to other deeper problems.

7.4.2 Advisory Board (AdvB)

The consortium will be supported and advised by an external AdvB (see 4.2). Their valuable feedback to the global project strategy and the communication strategy brings many benefits for the MaDiTraCe project. The AdvB members will provide an external unprejudiced advising view. To attain high quality results within the MaDiTraCe project, cooperation with the AdvB members through in-person and/or face-to-face meetings will be set on a reasonable frequency. Their feedback on the project management and outcomes will be highly valued in the global project monitoring in a natural way. The COO will be the last responsible to ensure that the feedback from AdvB is integrated within MaDiTraCe.

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

If confidential information will be provided to the AdvB members, the COO, with the help of the PMO, will ensure that a non-disclosure agreement (NDA) is put in place between the consortium and each AdvB member.

7.4.3 Stakeholders network and catalysts and multiplicator group

The WP1 will hold a network of project stakeholders. In order to precisely meet the expectancies of downstream companies and to facilitate uptake and implementation of the MaDiTraCe traceability and certification system, MaDiTraCe will establish a multi-stakeholder engagement process over the entire project life time following a three-pronged approach. The network will be involved throughout the project through a structured process, using a wide range of participatory methods, including annual workshops or webinars, and interviews. The purpose of the network is to gather information on current gaps, needs and implementation issues in supply chain due diligence which will provide the basis for state-of-the play synthesis, SWOT analysis, and method benchmarking with respect to existing and upcoming regulation on the CoC. It also provides a space where stakeholders can meet, interact, and learn from each other. The wider stakeholder network includes two further levels: the 'Catalysts and Multipliers' and the Advisory Board (7.4.2). Catalysts and Multipliers are industry associations and large companies that lead the way in supply chain due diligence of their respective industries. Due to their considerable market power, influence and experience they can support the dissemination, uptake and implementation of the project's results.

A priori the participation of these groups of stakeholders will not require NDA. They will not have access to confidential data from the project.

7.4.4 Ethical Advisor

BRGM have an ethics referent in the company: Fabienne Boutreau. If required, she will be the ethics mentor of the project MaDiTraCe.

If any ethical question/issue in the project requires an external advice to BRGM it is proposed to require the CEA ethics referent.

7.4.5 DEL quality assurance process

To ensure quality of DELs, an internal review process has been defined (see 5.1). The main goal of this process is to establish internal feedback by partners who did not directly participate as editor to the DELs before submitting it to the EC.
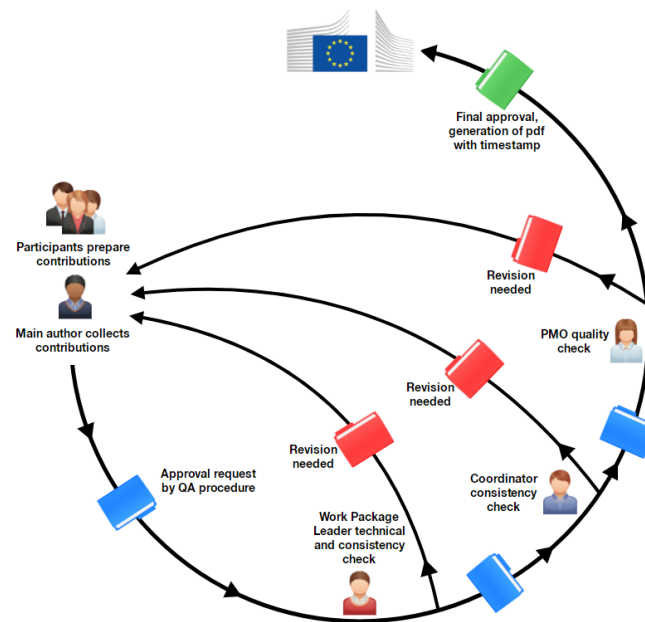
The review process is shown and explained below.

Figure 15: review process to ensure the quality of MaDiTraCe DELs.

Step 1 "Review"
Partners send the draft to the COO and the WPL (*Review = 15 days*). 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. Comments are entered into the text as Microsoft Word comments. The reviewers provide an internal review based on specific questions, in order to make sure that the content complies with the quality claims of the EC (e.g. required information, structure, etc.) as well as the project partners. It monitors the structure as well as the compliance with the description in the DoA. This gives feedback to the editor of this DEL in a clearly structured form and helps the editor to address all comments.

Step 2 "Update"
After the review, the editor has to make the necessary changes and updates. For the update it is important that in general, comments are not removed. Instead, there must be first a discussion between the involved authors to update the DEL according to the received comments. Secondly, the author either adds text to comments how they were addressed or adds additional comments on its own. (*Update = 7 days*).

Step 3 "Approval"
Send the final version to the COO for the final review. During approval, all comments that were sufficiently addressed are removed. (*Approval = 4 days*).

Step 4 "Release"
If there were final changes necessary, the editor has to update the document and send to the COO and the PMO the final version for submission. (*Release = 3 days*). The PMO will then submit the final document to the EC and upload it in the TEAMS repository.

A total of 40 DELs will be submitted until the end of the project. The DELs 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 DEL will focus on consistency and clarity of the document, relevance and coverage of the topic and language features. For each DEL one partner is being assigned as reviewer. Reviewers can be found in the TEAMS (see 5.1).

Naming conventions will follow rules defined in 7.1.2.1 section. The DEL number, the title and the responsible partner are defined in the GA and are also made available in the TEAMS.

7.4.6 MS quality control

For ensuring the quality of the project, 6 MS have been set throughout the duration of the project. The MS can be also regarded as quality control points where the progress of the project is evaluated.

7.4.7 Specific case of PR for the EC

According to the GA, the COO is responsible for issuing the PR (financial report and activity report) to the EC. The procedure to prepare these reports starts from the top level of the project and goes down through the various management levels. The reporting is divided into a financial part and a technical part. To ensure high quality and timely reporting, the PMO will use the approach outlined below. Being responsible for the execution of the entire reporting process, the PMO will provide support to the COO to ensure the quality of this reporting. For the financial part of the reporting, the procedure is shown below.
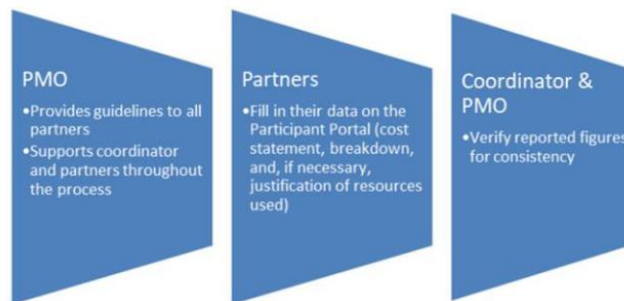

Figure 16: procedure for the financial RP.

On the other hand, for the technical part of the reporting (i.e. project progress), the process is as follow:

Figure 17: procedure for the activity RP.

Moreover, the WPLs are responsible for verifying and confirming the consistency between the funding needs and the resources as defined in the GA. If adaptations appear to be necessary, the WPLs have to inform the COO, who may propose to the ExCom some adaptations of the distribution of tasks and funding between the WPs, and if necessary, between beneficiaries (N.B. such changes require approval from the GeAs).

7.5 Risk management

7.5.1 Risk management plan

To guarantee the achievement of the objectives of the MaDiTraCe 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. 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 will be provided within the RPs. 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 will be mainly responsible to handle risks and inform all partners when necessary.

Figure 18: 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.

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

Figure 19: 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 20: general definition of risk levels.

7.5.2 Identified risks

The Figure below summarizes the critical risks identified in the proposal stage (see GA) and the countermeasures planned to address them. This list will be continuously updated during the lifetime of the project.

Risk number	Description	Work Package No(s)	Proposed Mitigation Measures
1	Key partner leaves the consortium => Delays Management risk likelihood: Low impact: Medium	WP4, WP2, WP6, WP3, WP5, WP1	Redistribute tasks to remaining partners with associated resources necessary
2	Pandemic risks, such as SARS-CoV-2 coronavirus (Covid-19) => Delays Management risk likelihood: Medium impact: Medium	WP4, WP2, WP6, WP3, WP5, WP1	Anticipate countermeasures to ensure work continuity (teleworking, virtual meetings...) A six-month period is also planned at the end of the project for security
3	Conflict among partners => Delays Management risk likelihood: Medium impact: Medium	WP4, WP2, WP6, WP3, WP5, WP1	The WP leaders and project coordinator will act as mediators as defined in the consortium and grant agreements.
4	Lack of contrasts of fingerprints between sources of key commodities => Hinders unambiguous identification of sources and processes. Resolution may be limited (types/regions but not individual mines) Technical risk likelihood: Low impact: High	WP2	Investigate a large range of analytical parameters for each commodity to find a set of discriminating parameters. Limit geographical resolution. Artificial (added) tracers for specific segments of the supply chains.
5	Loss of source fingerprinting information due to mineral processing => Hinders identification of sources, may limit MFP to upstream sections of supply chains Technical risk likelihood: High impact: Medium	WP2	Investigate conservative, discriminating tracers (e.g. isotopic). Focus MFP on upstream supply chains (mining to refining). Investigate processspecific fingerprints that may be used downstream. Added tracers.
6	Difficulties in procuring material samples => Limited material diversity Technical risk likelihood: Low impact: Medium	WP2	Use existing sample collections (BRGM, GTK, ULeoben…). Activate stakeholder network. CEA may procure material directly from its suppliers
7	Tracer Particles do not meet the industry requirements for bulk artificial fingerprinting => Change in approach needed Technical risk likelihood: Medium impact: Low	WP2	Looks into the use of microtaggants for artificial fingerprinting of seals, labels and containers
8	Unavailable process monitoring data sets from processing/refining plants => Hinders development of machine-learning algorithms Technical risk likelihood: Low impact: Medium	WP2	Anonymised data sets from clients of MO-Group, synthetic data sets based on laboratory twins of real-world process monitoring
9	Unavailable analytical infrastructure => Delay in the MFP development Technical risk likelihood: Medium impact: Medium	WP2	Shift the concerned analytical tasks to other project partners with similar equipment (interlab comparison will guarantee compatibility of methods)
10	Great variability of supply-chain situations and related complexity => Difficulty to find a common global test case Technical risk likelihood: Medium impact: Low	WP3	WP2, WP3 and WP4 will work in close cooperation to identify relevant test case situations. If no end-to-end test case can be found. Several test cases will be selected collectively to cover most representative and value adding ones
11	Rapidly evolving regulatory framework => Might lead to incompatible digital solutions Technical risk likelihood: Medium impact: Low	WP3	Permanent concertation with stakeholder networks, Digital Passport initiatives (GBA, INATBA), and solutions providers
12	No compatibility between the chemical, technical traceability tools and the certification scheme => The uniqueness of the project is not achieved Technical risk likelihood: Low impact: High	WP4, WP2, WP3	Interactions between the developments of the different WPs
13	Finding no pilot partners to test the audit catalogues => Only theoretical verified audit catalogues likelihood: Medium impact: Low	WP4	Search for pilot partners at the very beginning of the project. Identify customer interests during the development process in order to develop a customised solution

Figure 21: MaDiTraCe risks as identified during the proposal phase (top: risks; down: mitigation measures).

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 spirit, and interpersonal interaction contribute to high quality project performance.

8 Effort and Cost Management

8.1 Overview

The Effort and Cost Management Overview total effort and budget of the projects are defined in the GA. The aim of the effort and cost management is to ensure that the implementation of the project is conducted within the predefined PMs and Budget. The COO, supported by the PMO and in collaboration with all partners, will monitor throughout the implementation of the project, the effort and resources by comparing the actual numbers to the data defined in the GA.

To avoid confusion and complications due to conflicts between National and European Union reporting rules, all efforts are to be reported in full hours and Euro amounts are to be reported in two decimals. If effort and/or cost deviation of +/- the 5% are seen the status of the cost/effort will be set to "cautionary". In the unintended case where the deviation is +/- 10%, the status will be changed to "alert" and will trigger corrective actions which will be discussed first between the COO and the affected partner. Any cost/effort change will follow a thorough communication between the affected partner and the COO. Approvals for extreme project effort/cost changes may require a contract amendment with the EC.

8.2 Efforts and costs monitoring and reporting

In order to have timely information about the effort and costs consumed, so that corrective measurements can be discussed and taken immediately, each partner will have to report every 18 months the consumed effort and costs to the COO/PMO. The report will be submitted 15 calendar days after the completion of the 18-month period so as to provide the partners with adequate time for the compilation of the information. The COO/PMO will provide all necessary templates and guidelines so that the partners can easily complete the reports. The reporting of the effort and the budget absorption to the EC will be conducted in the two RPs of the project as well as with the submission of the IMR as described in section 7.4.1.

A set of financial dashboards will be regularly released and updated in the TEAMS repository.

Name of beneficiary	A.Personnel Costs	B. Subcontracting	C.1 Travel and subsistence	C.2 Equipment	C.3 Other goods, works and services	D.x Internally invoiced goods and services	E. Indirect costs ((A+C+D)*0.25)	Total eligible costs (A+B+C+D+E)	Funding rate	Requested EU contribution
BRGM	1 440 900,00	35 000,00	15 600,00	0,00	28 500,00	0,00	371 250,00	1 891 250,00	100%	1 891 250,00
DMT	1 144 570,00	0,00	20 600,00	0,00	23 000,00	0,00	297 042,50	1 485 212,50	100%	1 485 212,50
GTK	697 050,00	0,00	6 300,00	0,00	57 550,00	0,00	190 212,50	951 062,50	100%	951 062,50
MU Leoben	1 059 500,00	15 000,00	25 500,00	0,00	28 950,00	198 384,00	278 487,50	1 605 821,50	100%	1 605 821,50
U Gent	300 600,00	0,00	6 300,00	0,00	64 000,00	0,00	92 725,00	463 625,00	100%	463 625,00
EIT RM	261 250,00	50 000,00	9 000,00	0,00	0,00	0,00	67 562,50	387 812,50	100%	387 812,50
LGI	185 850,00	0,00	19 800,00	0,00	0,00	0,00	51 412,50	257 062,50	100%	257 062,50
ISMC	343 350,00	0,00	18 900,00	0,00	5 000,00	0,00	91 812,50	459 062,50	100%	459 062,50
ICAMCYL	172 500,00	0,00	12 600,00	0,00	26 000,00	0,00	52 775,00	263 875,00	100%	263 875,00
CEA	553 211,28	0,00	24 300,00	0,00	10 000,00	90 481,00	146 877,82	824 870,10	100%	824 870,10
AHK Group	393 750,00	0,00	12 900,00	0,00	48 950,00	0,00	113 900,00	569 500,00	100%	569 500,00
Funditec	162 729,00	0,00	6 750,00	0,00	26 500,00	0,00	48 994,75	244 973,75	100%	244 973,75
ULEI	590 875,00	0,00	10 800,00	0,00	23 000,00	0,00	156 168,75	780 843,75	100%	780 843,75
MO Group	175 275,00	0,00	6 300,00	0,00	5 000,00	0,00	46 643,75	233 218,75	100%	233 218,75
Spherity	451 950,00	0,00	6 300,00	0,00	27 000,00	0,00	121 312,50	606 562,50	100%	606 562,50
Total	7 933 310,28	100 000,00	201 950,00	0,00	373 450,00	288 865,00	2 127 177,57	11 024 752,85	100%	11 024 752,85

Figure 22: summary table as per GA of all costs per partner.

Participant	WP1	WP2	WP3	WP4	WP5	WP6	WP7	Total Person-Months
1 - BRGM	6.00	145.00	6.00	14.00	20.00	34.00		225.00
2 - DMT	7.50	6.00	7.50	156.00	20.00			197.00
3 - GTK	1.00	96.00		5.00	0.50			102.50
4 - MUL	74.00	72.00		15.00	2.00			163.00
5 - UGent	1.00	33.00			2.00			36.00
6 - EIT RM	12.50				15.00			27.50
7 - LGI	1.00				11.00	17.50		29.50
8 - ISMC	5.50				49.00			54.50
8.1 - ICAMCYL	1.00				29.00			30.00
9 - CEA	1.00	25.00	36.00	5.00	5.00			72.00
10 - AHK	1.00	36.00			0.50			37.50
11 - Funditec	1.00		36.00		4.00			41.00
12 - ULEI	14.00		20.00	45.00	2.50			81.50
13 - MO Group	1.00	19.00			0.50			20.50
14 - Spherity	1.00	10.00	35.00	15.00	4.50			65.50
Total Person-Months	128.50	442.00	140.50	255.00	165.50	51.50	0.00	1183.00

Figure 23: PMs per WP and per partner, as foreseen in the GA.

Funded by the European Union

					Partner	Max. grant amount	Max. grant amount %	Pre-financing due	Pre-financing paid #1	Pre-financing paid #2	Interim payment ceiling	Costs accepted in RP1	Interim payment 1 due	Interim payment 1 paid	Costs accepted in RP2	Interim payment 2 due	Interim payment 2 paid
Total pre-financing	8 819 802,00				BRGM	1 891 250,00	17,15%	1 418 437,45	0,00	0,00	1 607 562,50		0,00			0,00	
Guarantee fund	551 237,64				DMT	1 485 212,50	13,47%	1 113 909,34	0,00	0,00	1 262 430,63		0,00			0,00	
Interim payment 1					GTK	951 062,50	8,63%	713 296,85	0,00	0,00	808 403,13		0,00			0,00	
Interim payment 2					MU Leoben	1 605 821,50	14,57%	1 204 366,08	0,00	0,00	1 364 948,28		0,00			0,00	
Interim payment 3					U Gent	463 625,00	4,21%	347 718,74	0,00	0,00	394 081,25		0,00			0,00	
Coordinator IN	8 268 564,36				EIT RM	387 812,50	3,52%	290 859,37	0,00	0,00	329 640,63		0,00			0,00	
Coordinator OUT	0,00				LGI	257 062,50	2,33%	192 796,87	0,00	0,00	218 503,13		0,00			0,00	
Coordinator balance	8 268 564,36				ISMC	459 062,50	4,16%	344 296,86	0,00	0,00	390 203,13		0,00			0,00	
					ICAMCYL	263 875,00	2,39%	197 906,24	0,00	0,00	224 293,75		0,00			0,00	
					CEA	824 870,10	7,48%	618 652,55	0,00	0,00	701 139,59		0,00			0,00	
					AHK Group	569 500,00	5,17%	427 124,99	0,00	0,00	484 075,00		0,00			0,00	
					Funditec	244 973,75	2,22%	183 730,31	0,00	0,00	208 227,69		0,00			0,00	
					ULEI	780 843,75	7,08%	585 632,79	0,00	0,00	663 717,19		0,00			0,00	
					MO Group	233 218,75	2,12%	174 914,06	0,00	0,00	198 235,94		0,00			0,00	
					Spherity	606 562,50	5,50%	454 921,86	0,00	0,00	515 578,13		0,00			0,00	
					Total	11 024 752,85	100,00%	8 268 564,36	0,00	0,00	9 371 039,92	0,00	0,00	0,00	0,00	0,00	0,00

Figure 24: financial dashboard of the payment released during the project.

9 Conclusion

This PQP demonstrates that quality aspects are taken into account in a variety of processes and activities within the MaDiTraCe 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 DELs 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 project, but is open to revision if necessary. As described in chapter 4, 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.

=== End of the document ===