Horizon 2020 Framework Programme

H2020-MG-2020 - LC-MG-1-14-2020

954377 – nPETS

NANOPARTICLE EMISSIONS FROM THE TRANSPORT SECTOR: HEALTH AND POLICY IMPACTS

Project Start Date: 2021-06-01

Duration: 36 Months

Deliverable Name: D1.1 - Project Management Plan

Dissemination Level: Public

Due Date: 2021-07-31

Authors

Document Manager: Suat Sevencan

Contributor(s): Dimitris Margaritis, Ellen Bergseth, Ulf Olofsson

Editorial Reviewer(s): Ellen Bergseth, Ulf Olofsson

History of Changes

Version	Date	Changes	Page
0.1	2021-07-01	First internal draft	-
0.2	2021-07-27	Final draft External dissemination and communication section added	
1.0	2021-07-30	Editorial review is done. Final – Ready to submit	
1.1	2022-01-20	Revised as per request EU funding and disclaimer added.– ready to submit	3

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 954377

For further information please contact us at: https://www.npets-project.eu/index.php/contact/

Contents

List of Figures

List of Tables

Glossary

DoA	Description of Action
EC	European Commission
GA	Grant Agreement
PC	Project Coordinator
PM	Project Manager
PMB	Project Management Board
QAP	Quality Assurance Procedure
SC	Steering Committee
UG	User Group
WP	Work Package
WPL	Work Package Leader

Introduction

This deliverable, details the Project Management Plan of the nPETS project, providing a documented plan for the management and control of the organizational, developmental, and supporting processes necessary for the successful implementation of the project.

It outlines the project overview, and organizational structure; defines the responsibilities and roles of project participants; identifies the communications methods, internal and external; and specifies the general procedures and management tools that are implemented to ensure effective project management and successful project completion.

This plan will be updated and revised throughout the project to keep up with the changes, if any.

Overview of the Project

The story that nPETS aims to communicate is the life of the sub 100 nm emissions from its creation to its potential path to human beings and animals. Thus, the nPETS project aims to contribute to better public health policies by developing new knowledge in the area of transport generated sub 100 nm particle emissions and their toxicology and providing suggestions for effective mitigation measures. nPETS will, for example, contribute with innovative methods for quantification of toxicity in the field for all transport modes. Today there are no existing methods for measuring these sub 100 nm particle emissions from various individual sources. nPETS will identify these sources, linked to its transport mode, and their impact on health risks, to understand and build knowledge so that new policies are targeting hot-spots, which are responsible for the most health damage. For identified critical sources, it is expected an average of 50% reduction in sub 100 nm particle number.

To more easily achieve the overall aims, we break down the work into five objectives. These focus on quantifying and characterising sub 100 nm particle emissions from different transport modes and quantifying the toxicological effects of these particle emissions. These findings will enable the quantification and evaluation of possible future impact on new policies linked to sub 100 nm particle emissions. nPETS will power public awareness to improve public acceptance of potential new policies through campaigns involving local authorities.

Air pollution in European cities is still threatening human health, even though EU emission directives have been sharpened over the last 25 years. Adverse health effects of airborne particles are strongly linked to their size and chemistry and major fraction of outdoor ultrafine particles is traffic generated from road, rail, air, and sea transportation, each one representing a transport source. The nPETS consortium will link particles with certain characteristics to its source using toxicity markers. The different toxicological markers will be integrated to obtain a toxicity score for each source. Various multivariate analysis tools will be used to: 1) relate the different physical/chemical parameters with the toxicity of the sources, combining the laboratory emission studies and datasets and 2) apportion nanoparticle toxicity to different transport sources and different aging particles, combining the field emission studies (ambient air) and datasets.

The nPETS consortium vision is to improve the knowledge of transport generated exhaust and non-exhaust nanoparticle emissions and their impacts on health and new public policies. It aims to monitor and sample with state-of-the-art particle instruments sub 100 nm transport generated emissions both in field and controlled laboratory environments. Both fresh and aged aerosols will be considered, including primary and secondary volatile and non-volatile particles.

Project Objectives

A list of project's objectives and the descriptions of these objectives can be found in the Grant Agreement (GA) Annex 1 Part B Section 1.1

Proposed Methodology

The methodology that will be used to achieve the project's objectives can be found in the GA Annex 1 Part B Section 1.3.b.

Project Budget

Project's budget table can be found in the GA Annex 2.

Project Plan

The project's plan and description of work packages can be found in the GA Annex 1 Part A and B Section 3.1, respectively.

Gantt Chart

A WP level Gantt Chart of the project can be found in the GA Annex 1 Part B Section 3.1. The detailed Gantt chart and the Work Breakdown Structure can be found in the Appendix 1.

Deliverables

Table 1 - List of Deliverables

#	WP.D	Name	Lead Beneficiary	Deliverable Leader	Due Date
D1	D1.1	Project Management Plan	KTH	Suat Sevencan	31 Jul 2021
D2	D2.1	Literature review	AUTH	Zissis Samaras	30 Sep 2021
D3	D2.2	Design of experiments, laboratory and field tests	AUTH	Tasos Kontses	30 Nov 2021
D4	D2.3	nPETS Database publically available	CERTH	Nikos Dimokas	31 May 2024
D5	D3.1	Technical report sub 100 nm emissions from exhaust	KTH	Ulf Olofsson	30 Nov 2022
D6	D3.2	Technical report sub 100 nm emissions from non-exhaust	KTH	Ulf Olofsson	30 Nov 2022
D7	D3.3	Input to nPETS database from lab-campaigns	KTH	Minghui Tu	31 Jan 2023
D8	D4.1	Input to nPETS database from field-campaigns	CSIC	Sharon Ridolfo	31 Jan 2023
D9	D4.2	PNSD characterization from different transport modes in ambient air	CSIC	Angeliki Karanasiou	31 Mar 2023
D10	D4.3	Fresh vs. aged nanoparticles contribution from different transport modes to ambient air	CSIC	Fulvio Amato	31 May 2023
D11	D5.1	Results from the literature review communicated with WP6	KI	TBD	31 May 2022

D12	D5.2	Results I from toxicity testing communicated with WP6	SU	TBD	31 May 2023
D13	D5.3	Results from modelling communicated with WP6	KI	TBD	31 May 2023
D14	D5.4	Results II from toxicity testing communicated with WP6	SU	TBD	31 May 2024
D15	D6.1	Optimization of the protocol for measurements	IRFMN	Andrea Colombo	30 Sep 2022
D16	D6.2	Physico-chemical characterization of the samples	IRFMN	Ada Pohlenz	30 Jun 2023
D17	D6.3	Size and morphology characterization of the samples	IRFMN	Matteo Tironi	30 Jun 2023
D18	D6.4	Report on source specific toxicological scores	SLB	Sanna Silvergren	30 Nov 2023
D19	D7.1	Report on impact areas, pathways and new policies	UNIVLEEDS	Haibo Chen	31 Aug 2023
D20	D7.2	Report on health impacts and economic valuation of nanoparticle emissions from transport	SLB	Magnuz Engart	31 May 2024
D21	D7.3	Report on social aspects of nanoparticle policies	UNIVLEEDS	Haibo Chen	31 May 2024
D22	D7.4	Recommendations for European and international standards in critical areas	KTH	Ulf Olofsson	31 May 2024
D23	D8.1	Dissemination, communication and exploitation plan	CERTH	Dimitri Margaritis	30 Sep 2021
D24	D8.2	Data Management Plan	CERTH	Dimitri Margaritis	30 Nov 2021
D25	D8.3	Dissemination, communication and exploitation plan 1st update	CERTH	Dimitri Margaritis	30 Nov 2022
D26	D8.4	Final exploitation plan	CERTH	Dimitri Margaritis	31 May 2024
D27	D9.1	NEC - Requirement No. 1	KTH	Suat Sevencan	31 Aug 2021
D28	D9.2	HCT - Requirement No. 2	KTH	Suat Sevencan	31 May 2024
D29	D9.3	H - Requirement No. 3	KTH	Suat Sevencan	31 May 2024
D30	D9.4	POPD - Requirement No. 4	KTH	Suat Sevencan	31 May 2024
D31	D9.5	A - Requirement No. 5	KTH	Suat Sevencan	31 May 2024

Milestones

List of milestones can be found in the GA Annex 1 Part A Section 1.3.4.

Project Organization

Governance Structure

The organizational structure of nPETS is implemented by four bodies, as illustrated in the figure.

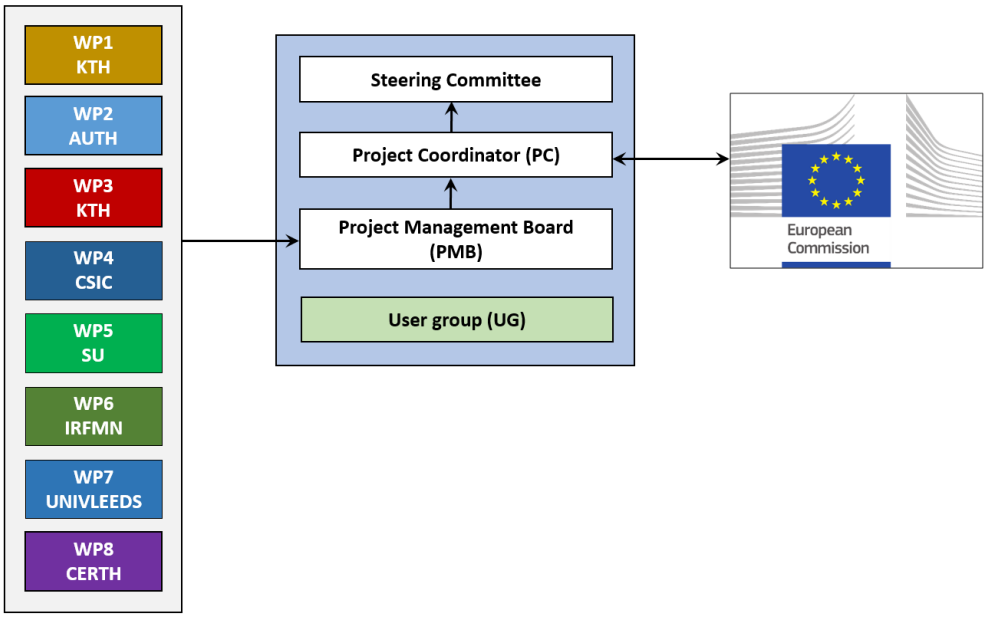

Figure 1 - nPETS Project Management Structure.

Roles and Responsibilities

Descriptions of roles and responsibilities can be found in the GA Annex 1 Part A Section 3.2.1.

Project Communication Strategy

In this section we briefly describe the initial project communication strategy. This will be described in greater detail in the Communication and Dissemination plan. Subsequent versions of this document will make reference to this plan.

Internal Communications

Below we outline the tools and procedures to ensure clear lines of communication within the project consortium.

Project Management Tool

nPETS will utilize EMDESK (https://npets.emdesk.com/) for project management activities, e.g., monitoring project progress, internal communications, internal reviewing and reporting, regular task updates, document repository, preparation for financial statements etc. Each beneficiary has a maximum of 3 accounts available, one for administrative staff, one for the PI and another for a researcher.

Email lists

An email list with subgroups will be implemented in the project website.

Communications through Project Management Tool

EMDESK enables discussions to be attached to work packages and tasks. Users, Tasks, Deliverables and Milestones can be tagged in discussions. However, this is not a good venue for broader discussion on issues that cut across work packages.

Regular Meetings

There will be monthly WP meetings and Project Management Board (PMB) meetings. The minutes from these meetings will be stored in the document repository in EMDESK. WP meetings should be organised by the WP leader. The monthly PMB meetings are organised by the project coordinator.

Document repository

EMDESK has a documents module where the project's finalized documents are collected. The working documents are held in the KTH BOX folder created for nPETS to enable collaborative editing via MS Office Online tool made available to the project contributors via the KTHBOX service.

Note: KTH BOX will be replaced by OneDrive by the end of 2021.

Templates

Templates for reports, presentations, posters, and flyers will be made available for all the project contributors in the document repository.

Shared Calendar

An online calendar based on a Joomla plugin with all the information about nPETS internal meetings and external meetings and relevant events will be shared with all the nPETS partners to facilitate the management, communication and dissemination activities within the project. All the partners will be invited to directly update the calendar, adding all the information about internal/external events which might be of interest of the Consortium.

External Communications and Dissemination

Dissemination Strategy

Key elements of the strategy include the project identity (branding); identification of target audiences; specification of channels for connecting with audiences (events and media platforms); cross-integration of dissemination output (print, electronic, and face-to-face). All dissemination activities will follow the dissemination strategy plan developed in the early stage of the project. The activities begin as soon as the first project results are available and continue after the project has ended.

Publications

The nPETS results will be published in peer-reviewed scientific journals and conferences as well as magazines dealing with e.g. air quality and sustainable cities. Open access of nPETS publications will be secured to all interested users through the project website in compliance with the open research and access strategy. The technical results and findings will also be disseminated through presentations and demonstrations at conferences and other technical events.

Press and Publicity

Specific press releases will be released to target the general press, following the latest requirements of the EC. Two key nPETS technical dissemination events will be organised: a mid-term conference and a final event. Attention will be given to the creation of strong collaboration links with already established groups and forums dealing with the topic. Besides, information and ideas will be shared with related H2020 projects.

Website

The website is published on behalf of the nPETS consortium. The aim of the website is to disseminate the project activities, outcomes and to serve as an interaction platform for project relevant data and information. The website presents the work of the nPETS consortium as well as latest news and events. The project website will be the: http://npets-project.eu/.

Other communication tools

The website will integrate social tools (e.g., YouTube, Twitter, Facebook) for active participation and support to the community that concerns the project. A promotional flyer will be distributed (in print and electronic forms) to a broad range of potential stakeholders. The flyer will be followed up with a project brochure describing the nPETS activities and goals in greater detail. Audiences will also be invited to subscribe to the public update newsletter issued during the project. All of the publications (flyers, brochures, and newsletters) will be made available on the nPETS website. nPETS will also disseminate its activities through LinkedIn and ResearchGate.

A database will manage the research data generated and/or collected during the project. It will be fully available to all consortium members during the project duration, while it will also be uploaded to an open access repository so that restricted access will also be granted to researchers outside the consortium.

Communications with the European Commission

The Project Coordinator is the official interface with the nPETS consortium. Therefore, all exchanges of information with the EC will be processed through the project coordinator or delegated through the Project Manager.

Communications to public and wider audiences

Communication activities will cover the whole project period and start at the outset of the project. The nPETS projects has established a User Group (UG) to engage interested parties, outside the consortium, in exchanging information, experience, and best practices with the project partners. The UG members will have the opportunity to provide requirements or feedback to the project and will be regularly informed about the project's news and work progress.

Process for monitoring Communication and Dissemination activities

Dissemination and communications activities done by partners will be reported internally using the forms in Appendix 2, which will be made available to the partners in the document repository. The communication team then collate these data and report it to EC.

Risk Management

Strategy

The risk management strategy that is applied to the nPETS project to attempt to decrease the probability and impact of any events that might have negative impacts to the project outputs, schedule or budget.

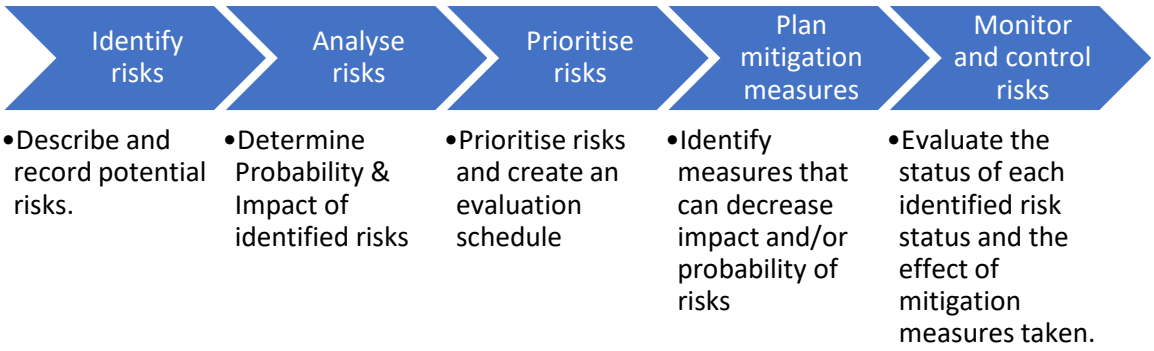

Figure 2 - Risk management process

Risk identification

A proactive/iterative approach to risk identification has been used in the nPETS project. Project Coordinator, Work Package Leaders, subject-matter experts and Project manager have taken part in the risk identification process. The first iteration of this process took place during the proposal preparation, after which the risks identified were re-examined/updated during the Grant Agreement Preparation and newly identified risks were added to the list.

Risk analysis

During this phase the risks are evaluated, the type, effects of materialization, the probability and the impact level to the project of each risk are identified. The combination of probability and impact is used to evaluate the risk level and to get a list of the prioritized risks. Table 2 visualizes the Impact and Probability matrix, with risk levels marked in different colours, where the level of a risk corresponds to evaluation frequency.

Types of Risks

- Management Risk
- Time Risk
- Competence Risk
- Technical Risk

Probability levels

- Rare
- Unlikely
- Moderate
- Likely
- Almost Certain

Impact levels

- Negligible
- Minor
- Moderate
- Significant
- Severe

Table 2 - Probability – Impact matrix

		Impact				
		Negligible	Minor	Moderate	Significant	Severe
Probability	Rare	9 months	9 months	9 months	7 months	7 months
	Unlikely	9 months	7 months	7 months	5 months	5 months
	Moderate	9 months	7 months	5 months	3 months	3 months
	Likely	7 months	5 months	3 months	3 months	1 month
	Almost Certain	7 months	5 months	3 months	1 month	1 month

Risk response planning

The process of Risk Response Planning answers two key questions:

1. Who is responsible for the risk?
2. What should be done to mitigate the risk, i.e., decrease the probability of the risk materializing and decrease the impact of it should the risk materialise?

Strategies and plans are developed to minimize the effects of a risk to a point where the risk can be controlled and managed. For all identified risks, the various handling techniques should be evaluated in terms of feasibility, expected effectiveness, cost and schedule implications and the effect on the system's technical quality and performance. The results of the evaluation will then be documented in the risk register along with; the description of risk, effects of risk materialising, impacted WPs, risk tracker, mitigation measure and the future actions should the risk materialise.

Monitoring

Throughout the project's lifetime risks will be monitored and evaluated with the frequency selected according to the Probability – Impact Matrix. Monitoring may also provide a basis for developing additional response actions and identifying new risks and is done in a continuous manner.

During risk monitoring and control the following tasks will be performed:

- Identifying, analysing, and planning for new risks.
- Reviewing project performance information (such as progress/status reports, issues, and corrective actions).
- Re-analysing existing risks to see if the probability, impact, or mitigation measures has changed.
- Reviewing the execution of mitigation measures and analysing their effectiveness.
- Reviewing the effectiveness of the risk management strategy to determine whether changes to the approach, tools or techniques are required.

Quality Management

Quality management is fundamental to the success of the project, and the project adopts a methodology with two separated processes:

- **Quality Assurance** is the execution of processes and procedures to ensure the achievement of the objectives and to assure that the project satisfies the needs for which it was undertaken.
- **Quality Control** verifies and assesses the achievements/deliverables; it is concerned with the operational activities and techniques that are used to fulfil the requirements of quality.

Quality management is the responsibility of the PC, who defines a Quality Assurance Procedure (QAP) which ensures quality of the project management and consequently, of all deliverables and provides measurement criteria to verify the success of the project.

Quality assurance procedure

Quality assurance is the monitoring of specific project outputs to determine whether the project is performing to relevant quality standards and the identification of actions required to correct unsatisfactory performance. These quality assurance activities consist of process quality reviews followed by recommendations and possible corrective action plans.

Quality assurance procedure defines the responsibilities, templates, review processes, working methodology and quality objectives for the project. It defines internal and external processes applicable within the project, e.g., between WPs, between partners, and in some cases, between the project and external /project/body/stakeholder.

To ensure that the project outputs keep to the project's quality objective the PC will,

- make sure that all templates, standards and planning documents are available in the document repository.
- make sure that standards appropriately address the criticality of the project.
- make sure that all team members are familiar with the templates, relevant planning documents and the associated rules and standards.
- verify that the outputs are delivered on time.
- ensure compliance with all relevant standards.
- follow the Quality Management process described in this Management Plan.

Project milestones, deliverables and the timeline are described in the DoA, GA – Annex 1. Assessing the adherence to the baseline conditions define in the DoA is the method for evaluating the quality of both the project and its outputs.

The PC is supported by the PM in the definition of the QAP items applied to the project, and in the execution of the control activities planned or considered useful during the project. The PC also receives support, advice and help from WPLs and the EC through the Project Officer.

Document production process

During the project, many kinds of documents will be produced. It is crucial to define common formats of documents, uniform rules of their description, responsibilities, revision plans and revision procedures.

When producing any document to be distributed to at least another partner of the project, contributor will make sure that they use the template provided in the communications toolkit in the document repository and it is accessible to other contributors via the document repository.

All deliverables of the project will have the following structure:

- Cover page with general data about the document and the project logo
- History of changes table
- Table of contents
- A list of figures and a list of tables (optional, but placed here if there are any)
- A Glossary
- An Executive summary (when applicable)

- An introduction including the scope of the document.
- Chapters constituting the body of the document.
- Possible Annexes
- All the single pages of the document will include the project name, GA number, the name of the document and the number of pages using the format “Page X of Y”

Deliverables monitoring and control.

A deliverable production process is developed for the project to ensure the quality of deliverables.

Deliverables are generated under the responsibility of the deliverable leader as indicated in **Error! Reference source not found.**, who will oversee that the deliverable is prepared in a timely manner and to the scientific quality the project desires.

Project deliverables will be held to an internal review by two people from the project but outside the involved WPs assigned by the PC and/or PM to guarantee that it meets the objectives of the project as a whole and reflects the quality level targeted by the project. The review process is not to exceed 5 working days. During the review the PC and/or PM will check the deliverable’s format and will monitor and maintain the review process.

The Deliverable leader then updates the document after the internal review taking the reviewers’ comments into account. All the contributors to the deliverable, PC and PM should be in copy of the internal review correspondences.

All the deliverables of the project should adhere to the following quality aspects:

- The contribution of the deliverable to the WP and the overall goals of the project should be clearly stated.
- The objectives of the deliverable should be clearly expressed. Specifically, the deliverable should feature a short introduction paragraph that clearly states the role and duty of said document, in the scope of the project.
- The deliverable’s relation to previous and future deliverables in the WP and -if applicable- to deliverables from other WPs should be clearly stated.
- The relation / additions / differences to previous deliverables in the same work package (i.e. in the case the deliverable is an improved version of a previous one) should be clearly stated.
- The deliverable should be a self-contained document, which can be understood without knowledge of the DoA (or previous deliverables).
- The deliverable contents should be consistent with its description in the DoA; if not, the deviation should be explained.
- The deliverable should be cohesive and concise (typically not more than 50 pages).
- The deliverable should not contain any claims that are not proven or supported by references.

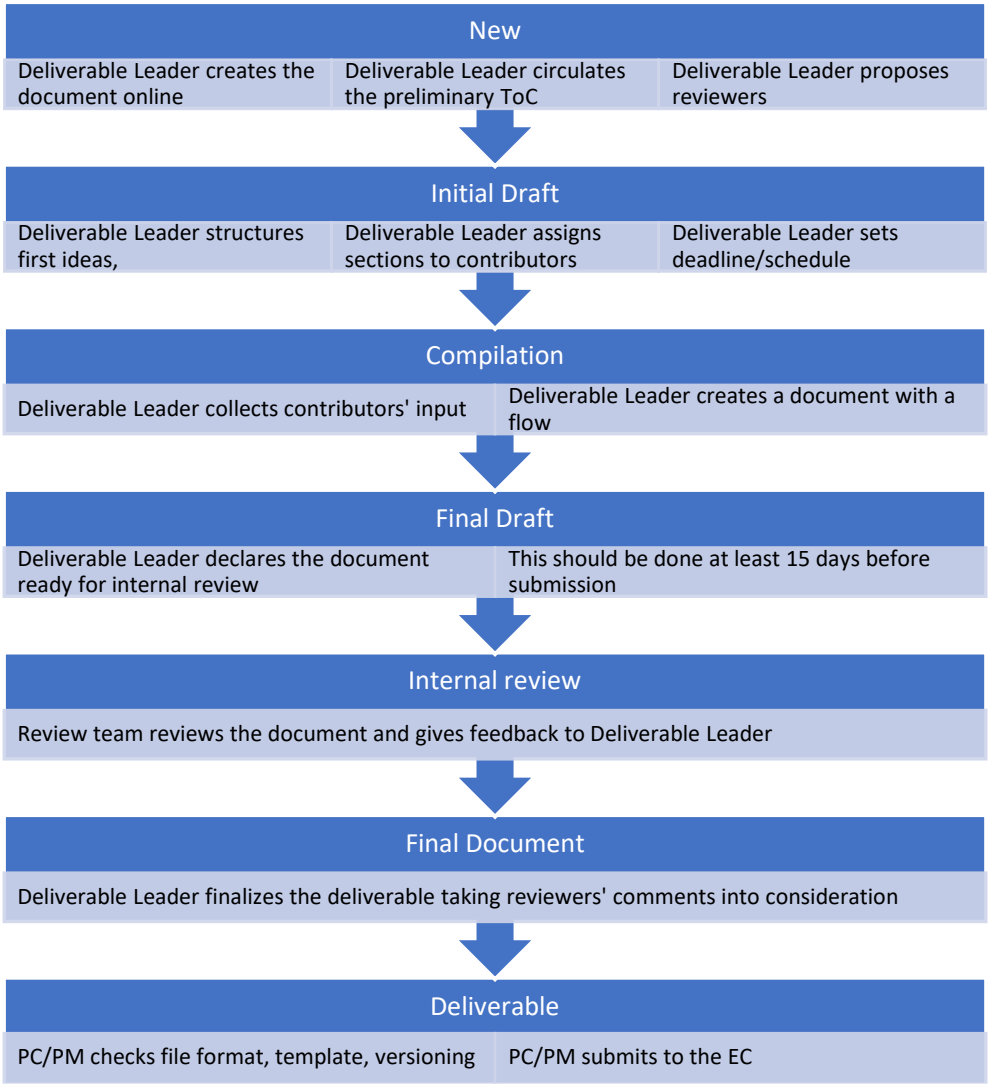

Figure 3 - Deliverable Production Process

In addition to the process described above, to be able to foresee potential challenges to the production of the deliverables and facilitate communicating progress on each deliverable, each WPL reports progress and challenges on the work package and on deliverable production to the PMB in monthly meetings.

Change Management

The purpose of the change management is to document how the changes are managed throughout the project life cycle. It defines activities and processes related to managing changes to the project activities, deliverables, timeline, etc., as they are described in the GA.

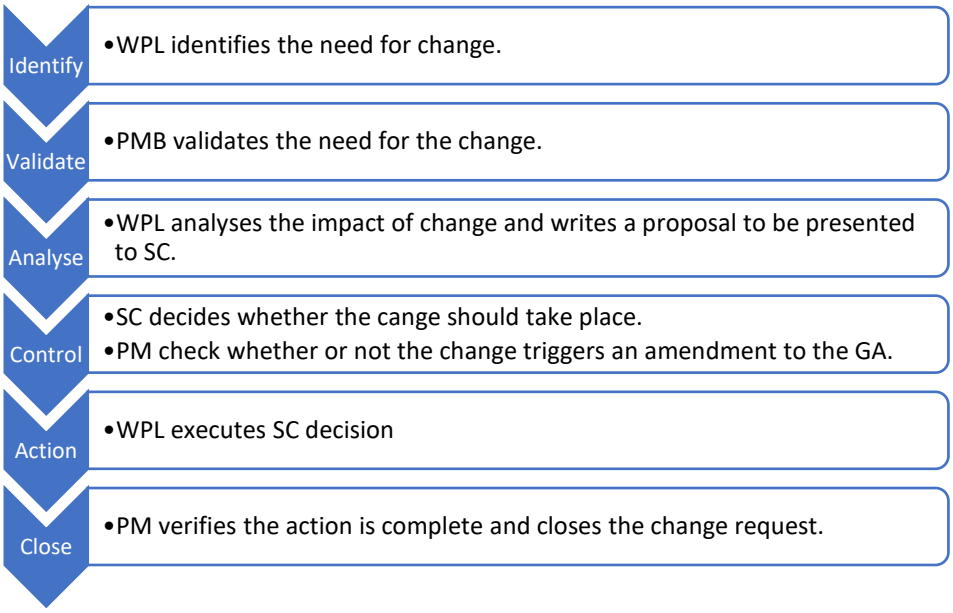

Figure 4 - Change management process

As is it mentioned in the quality management section WPLs report progress and challenges on their WPs and deliverables to the PMC in monthly meetings. When a WPL identifies a challenge that might trigger a change they present it to the PMC with justification. PMC then assesses the change and decides whether the change should be escalated to SC. WPL then prepares the change proposal including the justification and implications of the change on cost, schedule and scope. If SC decides the change should be implemented, then the PM checks if the change triggers a GA amendment and prepares one if needed. WPL executes the change and PM verifies the change taken place and closes the change request.

Document Change Process

Any change to a document must be clearly documented in the history of changes table of the document. The reason must be clearly stated, and the significant changes should be listed with page numbers so the new text can easily be recognized.

When a change to a deliverable requested the deliverable leader is responsible to analyse the impact of the change to the deliverable itself as well as the overall project outcomes and may consult the PC/PM if they see fit. The deliverable leader can either approve or disapprove a change request. They then inform the originator of the request on the results of the evaluation with justification for the decision. If the request is approved, then the deliverable leader implements the changes to the document and documents the changes in the history of changes table.

Project Reporting

Internal Reporting

Beneficiaries will report progress and expenses through the project management tool EMDESK every 9 months.

Reporting to the European Commission

Project reporting to EC will be done through commission's Funding & Tender Opportunities portal using the System for Grant Management (SyGMa).

Appendix 1

Work Breakdown Structure

Gannt Chart

Appendix 2

The dissemination activities report should be filled in by the leading partner of every realised dissemination activity. The purpose of this report is to provide the information needed to the WP8 Leader (dmarg@certh.gr) for publishing the activity to the nPETS website and reporting to the European Commission.

FOR EVENTS *(Conferences, Meetings & other occasions)*		
Title of event		
Place (city, country)		
Dates of event		
Event organiser / host		
Website of the event (if any)		
In case of a multi-day event, state the date on which the activity or presentation by nPETS was performed		
Type of Event:	Conference, Exhibition, Demonstration, Meeting, etc.	
Type of presentation (if any):	Presentation / Technical paper / Poster / Exhibition / Panel discussion, etc.	
Person(s) from nPETS attending or presenting		
All authors (in case of a paper):		
Other activities (if any)		
Type of audience addressed (event/meeting)	Scientific community (higher education, research)	
	Industry	
	Civil society	
	Policy makers / Public authorities	
	Media	
	Other: please specify	
Reach of event/meeting	local or regional national european wolrdwide Language(s) of event: Number of overall attendees (can be estimated): Size of audience addressed by the performed activity (if relevant):	
Liaison with relevant actors (if relevant)	Who? (names, organisations) Opportunities for further involvement with the above actor(s), if any? If any useful feedback received for the project, what?	

FOR ALL OTHER DISSEMINATION ACTIVITIES		
Presented material *(Full paper/article/poster/ presentation, etc.)*	Attached to this form	
	Link to nPETS app.box	
Permission to publish the material on the nPETS website:	YES	
	NO	
Other Comments:		