www.nautilos-h2020.eu

EUROPROJECT
Department Project Management

NAUTILOS Quality Plan

Date: 03.02.2021
Doc. Version: V1.2

10.5281/zenodo.7163673

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 101000825 (NAUTILOS). This output reflects only the author's view and the European Union cannot be held responsible for any use that may be made of the information contained therein.

Document Control Information

Settings	Value
Deliverable Title	Quality Plan
Work Package Title	WP1. Project Management
Deliverable number	D1.4
Description	NAUTILOS Quality Plan will describe the quality processes and procedures to be adopted within NAUTILOS. It will provide a detailed presentation of the quality management process procedures and timing - quality review, deliverable review, peer reviews, stage- gate reviews and the deadlines for each. There will be sections on risk management, issues management, quality of the communication. The following deliverable will represent the initial version of the plan.
Lead Beneficiary	EP
Lead Authors	Natali Dimitrova, EP
Contributors	Viktoria Geraskova, EP
Submitted by	Gabriele Pieri, CNR
Doc. Version (Revision number)	Final
Sensitivity (Security):	Public
Date:	03/02/2021
DOI	10.5281/zenodo.7163673

Document Approver(s) and Reviewer(s):

NOTE: All Approvers are required. Records of each approver must be maintained. All Reviewers in the list are considered required unless explicitly listed as Optional.

Name	Role	Action	Date
Gabriele Pieri	Coordinator/WP1 leader	Review	23.11.2020
Gabriele Pieri	Coordinator/WP1 leader	Review	14.01.2021
Sandra Sa	WP10 leader	Review	19.01.2021
Gabriele Pieri	Coordinator/WP1 leader	Approval	03.02.2021

Document history:

The Document Author is authorized to make the following types of changes to the document without requiring that the document be re-approved:

- Editorial, formatting, and spelling
- Clarification

To request a change to this document, contact the Document Author or Owner.
Changes to this document are summarized in the following table in reverse chronological order (latest version first).

Revision	Date	Created by	Short Description of Changes
VO.1	01.12.2020	Natali Dimitrova	Deliverable Structure Created
V0.2	18.12.2020	Victoria Geraskova	First complete draft
V0.3	08.01.2021	Natali Dimitrova	First amended draft
V1.0	20.01.2021	Natali Dimitrova	Second amended draft
V1.1	28.02.2021	Natali Dimitrova	Third amended draft
V1.2	03.02.2021	Natali Dimitrova	Final deliverable
V.1.3	08.10.2022	Antonio Novellino	DOI refs added

Configuration Management: Document Location

The latest version of this controlled document is stored in <location>.

Nature of the deliverable		
R	Report	✓
DEC	Websites, patents, filing, etc.	
DEM	Demonstrator	
O	Other	

Dissemination level		
PU	Public	✓
CO	Confidential, only for members of the consortium (including the Commission Services)	

ACKNOWLEDGEMENT

This report forms part of the deliverables from the NAUTILOS project which has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101000825. The Community is not responsible for any use that might be made of the content of this publication.

NAUTILOS - New Approach to Underwater Technologies for Innovative, Low-cost Ocean observation is an H2020 project funded under the Future of Seas and Oceans Flagship Initiative, coordinated by the National Research Council of Italy (CNR, Consiglio Nazionale delle Ricerche). It brings together a group of 21 entities from 11 European countries with multidisciplinary expertise ranging from ocean instrumentation development and integration, ocean sensing and sampling instrumentation, data processing, modelling and control, operational oceanography and biology and ecosystems and biogeochemistry such, water and climate change science, technological marine applications and research infrastructures.

NAUTILOS will fill-in marine observation and modelling gaps for chemical, biological and deep ocean physics variables through the development of a new generation of cost-effective sensors and samplers, the integration of the aforementioned technologies within observing platforms and their deployment in large-scale demonstrations in European seas. The fundamental aim of the project will be to complement and expand current European observation tools and services, to obtain a collection of data at a much higher spatial resolution, temporal regularity and length than currently available at the European scale, and to further enable and democratise the monitoring of the marine environment to both traditional and non-traditional data users.

NAUTILOS is one of two projects included in the EU´s efforts to support of the European Strategy for Plastics in a Circular Economy by supporting the demonstration of new and innovative technologies to measure Essential Ocean Variables (EOV).

More information on the project can be found at: http://www.nautilos-H2020.eu.

COPYRIGHT

EXECUTIVE SUMMARY

The following document comprises the quality management and control procedures as well as sections to be followed in the execution of the NAUTILOS project. It is adaptive in its nature and may be updated, if necessary, to reflect changes in the project's rules and procedures until its final acceptance in M24.

The following deliverable has eight main sections:

- Chapter I: Introduction
- Chapter II: Quality Objectives
- Chapter III: Quality Management. The section translates the quality management plan into executable quality activities that incorporate the quality processes with NAUTILOS. Specifically, it covers the quality management process, roles and responsibilities, tools and techniques and metrics to be used.
- Chapter IV: Quality Assurance and Control. Quality Assurance introduces the activities to be carried out in order to ensure that project quality objectives are met and quality expectations are achieved. Quality Control identifies internal review and evaluation procedures that will ensure the successful project implementation. It covers the deliverables review and approval, work performance quality reviews, project quality reviews and quality control records.
- Chapter V: Risk Management defines the steps managing risks: identification, monitoring and control the implementation of the risk response activities while continuously monitoring the project environment for new risks. An overview of the risk control register is presented.
- Chapter VI: Issue Management covers the process of identifying and resolving issues. The section overviews issue identification, assessment and action recommendation, actions implementation as well as the issue log.
- Chapter VII: Configuration Management assists in the effective management of project artefacts effectively and to provide a single reliable reference to them. The project management files naming convention is presented as well as the rules for storage and archiving artefacts and deliverables.
- Chapter VIII: Quality of Project Communication outlines the optimal information flow so that stakeholders receive the necessary information at the right time.
  The current documents outline the frequency of project communication as well as the tools used.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF ACRONYMS AND ABBREVIATIONS

Abbreviation	Definition
CA	Consortium Agreement
CDE	Communication, Dissemination and Exploitation
CP	Consortium Partners
EAB	External Advisory Board
EC	European Commission
EU	European Union
GA	General Assembly
KOM	Kick-off meeting
KPI	Key Performance Indicator
TcL	Task Co-Leader
TIB	Technical and Innovation Board
TIM	Technical and Innovation Manager
OCM	Outreach, Communication & Dissemination
PC	Project Coordinator
PM	Project Manager
RAM	Responsibility Assignment Matrix
RASCI	Variant of the RAM (responsible, accountable, supporting, consulted, informed)
RWPL	Reviewing Work Package Leader
TL	Task Leader
WPL	Work Package Leader
WPcL	Work Package Co-Leader

I. INTRODUCTION

The NAUTILOS Project Quality Plan is a key deliverable for WP1 setting up the basis for an effective quality management and implementation of the project. The main goal of this deliverable is to provide a single point of reference on the quality assurance policies that will be applied along the NAUTILOS project. This document is intended as a manual for all Consortium members to be used as a guide when a specific question needs to be answered for many day-to-day activities. As its guiding purposes, this deliverable provides a harmonized set of indication, procedures, and support documents to be used by all partners for an effective quality implementation of the project.

The present form represents the official document submitted to the European Commission in compliance with Grant Agreement commitments. Nevertheless, this plan is adaptive in its nature and will be evolving according to project needs until its final release in M24.

Being an integral part of management planning, providing a common standard to be applied throughout the entire project life, the Quality Plan defines a set of procedures to be followed to secure that:

- the Grant Agreement requirements and conditions have been fully applied and followed by all partners,
- EU/national regulations are considered in operational, administrative, and financial management,
- all rights and obligations defined in the Grant Agreement and the Consortium Agreement are fulfilled,
- all project activities are implemented in accordance with the Work Plan (as described in the Grant Agreement).

The objectives of this document are:

- To define the quality expectations and goals.
- To outline the quality strategy, approach and process to be used for the project.
- To identify the roles and responsibilities related to project quality management.
- To define project standards and compliance criteria.
- To define the quality assurance and control activities and to plan them throughout the project.
- To identify a set of procedures and metrics to be used to determine performance quality levels.
- To specify the methodology, tools and techniques used to support quality management.

Once approved, the Quality Plan will be used in daily and overall project management and quality control by all project partners.

II. QUALITY OBJECTIVES

The Project Quality Plan aims to ensure the achievement of high-quality project results and smooth project implementation regarding completion of the project's tasks on time, on budget, in scope and in line with the contractual obligations with EC. Therefore, the document is intended to provide a solid ground for ensuring compliance with all relevant rules and provisions.

The main objectives of this document are:

- The project's quality characteristics are defined, agreed, and achieved throughout the project.
- Quality assurance activities are performed as planned, including assuring compliance with EU's rules and regulations, as well as with relevant governmental and industry rules, regulations, and legislation.
- Quality control activities are performed as planned.
- Any non-conformity (or opportunity for quality improvements) is identified and corrected (or implemented).
- Deliverables are accepted by the respective project partners based on the defined quality/acceptance criteria.
- Project documents (project final and interim reports) are accepted by the respective project partners based on the defined quality/acceptance criteria.

III. Quality Management

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

This project will follow the PM^2 quality management process that comprises the activities related to the identification, planning, execution, and monitoring & control of project quality related activities.

1. Quality Management Process

The NAUTILOS project defines a set of procedures to be performed and followed throughout the project to facilitate the quality management process.

All partners will be involved in the quality management process, though a particular quality management structure is established among project partners (described in section II. Quality Management Roles and Responsibilities).

The quality management process for this project is comprised of five key steps:

- Define (Project) Quality Characteristics.
- Perform Quality Assurance.
- Perform Quality Control.
- Perform Deliverables Acceptance and
- Perform Final (Project) Acceptance.

Step 1: Define Quality Characteristics

The purpose of this step is to identify the objectives, approach, requirements, activities and responsibilities of the project's quality management process and how it will be implemented throughout the project. These are documented in this plan based on the project objectives, approach, deliverables, expected benefits and resources available (as defined in the Grant Agreement, Consortium Agreement, and other relevant plans).

The *Quality Plan* includes the description of the:

- Quality objectives, approach, and requirements,
- Quality standards, guidelines, tools, and techniques, e.g., the Quality Review Checklist and the Deliverables Acceptance Checklist,
- Quality assurance activities and related responsibilities, e.g., Project Review Meetings, activities report, compliance verification, among others,
- Quality control activities for continuous improvement, e.g., project management artefacts review and quality plan reviews,
- Risk Management and Control Activities,
- Issue Management and Control Activities,
- Configuration procedure related to project artefacts and deliverables.

Any quality activities related to project artefacts and deliverables, quality assurance and control are documented in the Quality Plan.

Step 2: Perform Quality Assurance

The purpose of this step is to verify the performance and compliance of project (and project management) activities with the defined quality requirements. The quality assurance activities are defined based on the overall project management approach and have been described in detail under Section III, part 1.

Step 3: Perform Quality Control

The purpose of this step is to monitor and consolidate results from the quality assurance activities to assess compliance and performance, recommend necessary changes, and plan new or refine existing quality assurance activities. Quality monitoring & controlling is performed throughout the project by the Project Manager (PM).

Step 4: Perform Deliverables Acceptance

The purpose of the abovementioned steps is (i) to verify each deliverable compliance with the predefined objectives and set of criteria, and (ii) to obtain formal multilevel approval before their submission to the EC. See Section IV, part 2 for a review of the process and the roles and responsibilities.

Step 5: Perform Final Acceptance

The purpose of this step is to manage the final acceptance of the project, including the accepted deliverables and to perform the administrative closure of the project. The final acceptance is obtained from the Project Coordinator (PC), through a formal Project Acceptance Note.

Before the formal project sign-off, the Project Manager (PM) should report on project performance in the Project-End Review Meeting, discuss lessons learned and develop the *Project-End Report*. This report should summarize project performance throughout project lifecycle and describe the main risks, issues, constraints, opportunities and lessons learned identified along the project. It can also identify stakeholders' satisfaction level based on questionnaires or other type of feedback. The pitfalls, best practices and solutions implemented should be maintained in a project repository, accessible for future projects.

The administrative closure of the project includes updating, reviewing, organising and archiving all project documentation and records. It also comprises the release of project resources, the final project acceptance and the communication of project end to the relevant stakeholders. A *Phase-exit Review Checklist* will be used to validate the completion of project activities.

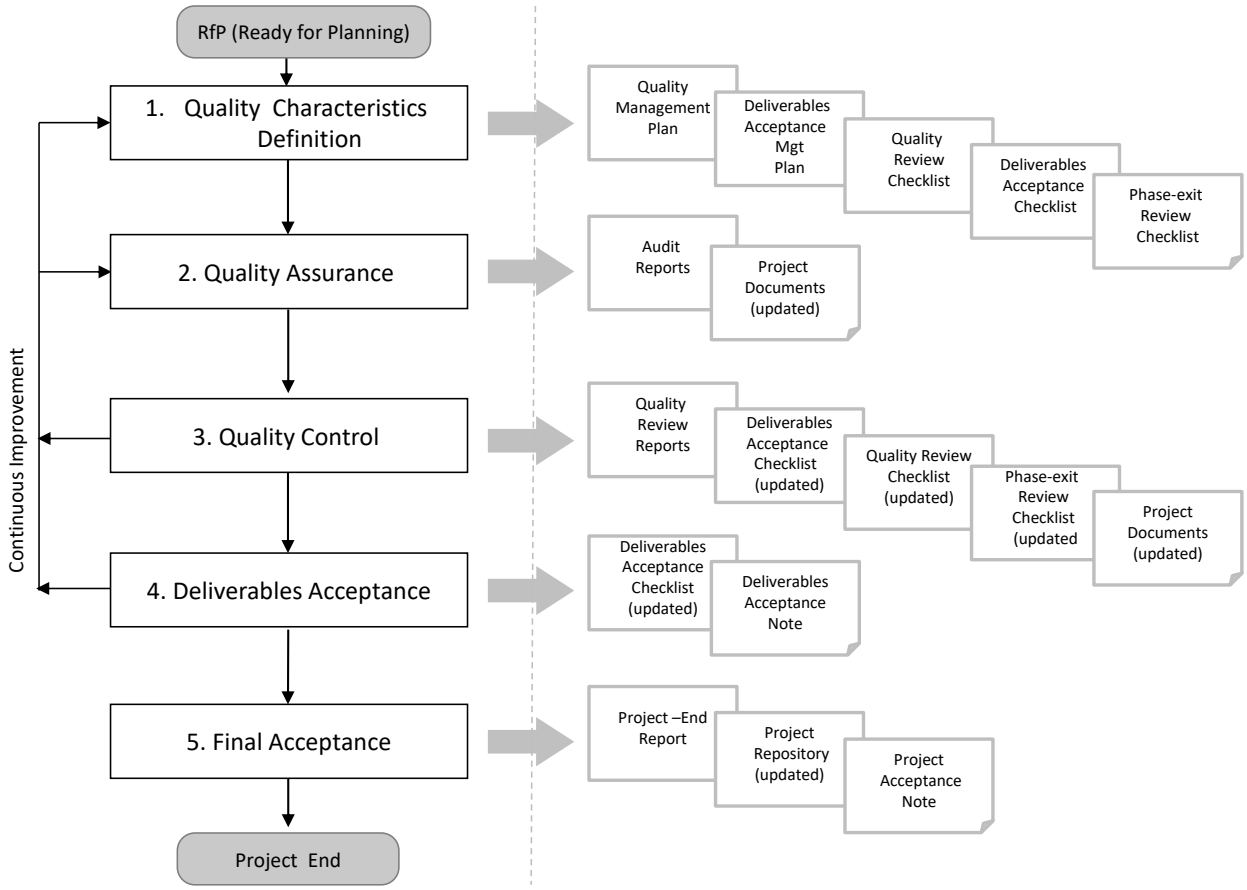


Figure 1. Quality Management Process

2. Quality Management Roles and Responsibilities

All partners are involved in the quality assurance process and are intended to follow the procedures identified in the Quality Plan to ensure that deliverables will be issued within the due date and will be compliant to the already established criteria.

A responsibility assignment matrix (RAM), also known as RACI matrix, describes the participation by various roles in completing tasks or deliverables for a project or business process. RACI is an acronym derived from the four key responsibilities most typically used: responsible, accountable, consulted, and informed. It is used for clarifying and defining roles and responsibilities in cross-functional or departmental projects and processes. There are several alternatives to the RACI model such as the RASCI table to be used within NAUTILOS. This is an expanded version of the standard RACI, less frequently known as RASCI, breaking the responsible participation into:

R - **Responsible** (also recommender)
Those who do the work to complete the task. There is at least one role with a participation type of responsible, although others can be delegated to assist in the work required.

A - **Accountable** (also approver or final approving authority)
The one ultimately answerable for the correct and thorough completion of the deliverable or task, the one who ensures the prerequisites of the task are met and who delegates the work to those responsible.[6] In other words, an accountable must sign off (approve) work

that responsible provides. There must be only one accountable specified for each task or deliverable.

S – **Support**
Resources allocated to responsible. Unlike consulted, who may provide input to the task, support helps complete the task.

C - **Consulted** (sometimes consultant or counsel)
Those whose opinions are sought, typically subject-matter experts; and with whom there is two-way communication.

I - **Informed** (also informee)
Those who are kept up to date on progress, often only on completion of the task or deliverable; and with whom there is just one-way communication.

The following RASCI table defines the responsibilities of those involved in quality management:

RAM (RASCI)	GA	PC	PM	TIB	RWPL	WPL	WPcL	TL	CP
Quality Management Plan	I	C	A	I	C	C	C	R	I
Perform Quality Assurance	I	I	A	C	N/A	R	S	A	S
Perform Quality Control	I	A	R	C	N/A	S	S	S	I
Perform Deliverables Acceptance	I	R	A	I	C	C	S	R	I
Perform Final Project Acceptance	I	R	A	I	C	C	C	C	I

The **Project Coordinator** (PC), as WP1 Leader, is accountable for the supervision of the quality assurance activities.

The **Project Manager** (PM) is accountable for scheduling the reviewing and acceptance activities and ensuring that they are performed according to the plan, ensuring the correct and full completion of the quality assurance activities as well as for performing quality control throughout the project.

The respective **WP, task, sub-task or deliverable lead** are accountable for deliverables and outputs acceptance and for ensuring the availability of resources (including people) and guidelines for acceptance testing.

3. Tools and Techniques

The following tools and techniques will be used for project planning, management, and control: quality management:

- Work Package Status Reports

- Work Package Progress Reports
- Deliverable Peer Reviews,
- Deliverable Review and Acceptance Checklist
- Project Review Meetings,
- Project Internal Reports (Status and Progress)

4. Metrics

This section includes the quality criteria to be collected and reported during the project, for project artefacts (i.e. project management outputs).

Criterion Name	Frequency	Tolerance
Artefacts review (per project phase)	Once	No tolerance.
WP Status reports distributed	Monthly	One month (i.e. every two months).
WP Progress Reports distributed	Bi-annually	One month
WP Project Review (following completion of WP Progress Report)	Bi-annually	One month
Project Management Review Meetings performed	Weekly	One week. Holiday period, each three weeks.
Project Technical Innovation Board (TIB) meetings performed	Quarterly	One month (i.e. every three months).
Milestone reviews executed	Per milestone	No tolerance.
Reporting period reviews executed	Per reporting period	No tolerance.
Stakeholders' satisfaction questionnaires sent, received and analysed	Yearly or once during the project	No tolerance.

IV. Quality Assurance and Control

1. Quality Assurance Activities

The Project Manager (PM) is the overall accountable of the quality assurance activities within the project. The PM is also responsible for scheduling and initiating all project quality reviews.

The NAUTILOS quality assurance process is structured in such a way to comprise all levels and types of project activities and to ensure high-quality project communication, deliverables delivery, issue and risk management.

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

The quality assurance activities include the following:

- Evaluating the design of the project controls, by confirming that they are implemented, and by assessing their operational effectiveness. These activities will consider the project quality objectives along with the project risks.
- Compliance verification with EU's policies, rules and regulations, as well as with other relevant governmental and industry rules, regulations and legislation.
- Artefact reviews and approvals (i.e.,the fact that the content of an artefact (project management deliverable) should be reviewed before it is considered finalised and sent for formal or informal approval/validation);
- Monthly Work Package Status Reports
- Bi-annual Work Progress Reports
- Project Review Meetings.
- Project TIB Meetings.
- Milestone Reviews.
- Phase-exit Reviews.
- Project Acceptance Review.

2. Deliverables Review and Approval

A total of 98 deliverables are to be submitted to the European Commission over the project implementation, 71 of which will be available to the public and will thus be accessible long after the project's completion. Therefore, a review process is a key step in the preparation of the deliverable to guarantee that the result is up to the appropriate standard and to the quality expectations.

2.1. Deliverable requirements

NAUTILOS creates deliverables that are either reports or demonstrators as described in Annex I of the Grant Agreement. For deliverables that do not take the form of a written report, a written record will nevertheless be prepared to include supporting material for the output/outcome. For demonstrators, a technical report will be created, capturing the outcomes of the demonstration.

All report deliverables must be prepared in the Microsoft Word format – docx. For collaboration, partners may use other tools. To ensure consistency, a template will be

constantly available on the ownCloud platform. All deliverables must use the template provided, be written in English and proofread using spell checker. When submitting the final deliverable, it must be converted to the PDF format, before uploading it.

The content of each deliverable depends on the type of deliverable itself. It should cover all the information relevant to the activity that it results, and all the information needed by other Partners for performing their activities. The responsibility is of its author(s). Nevertheless, the **deliverable should meet a set of requirements**, based on the following aspects:

Regarding Content:

(1) **Relevance**. Presented information should be true to the original objectives set out in Annex A of the GA and is relevant for the achievement of the Project goals and focused on the key issues.
(2) **Accuracy**. Information presented must be reliable - all claims need to be proven and/or supported by relevant references.
(3) **Completeness**. The deliverable should include all the necessary information to achieve its purpose.
(4) **Concision**. The deliverable should include only necessary and relevant information and eliminate redundancies.

The deliverables are to have a uniform appearance, structure and referencing scheme. It is therefore necessary to use document referencing and template provided in this Project Quality Management Plan and align to the following guiding principles in terms of appearance, structure and overall presentation:

(1) **Clarity**
- Sentences are short, engaging and grammatically correct.
- The layout and formatting of the document helps readers follow along and make sense of the content.
- Abbreviations are used only when necessary and clearly outlined at the beginning of the document.

(2) **Consistency**
- Ensure there is consistency between different sections, internal document references, related requirement, documents, and other deliverables.
- Ensure that all tables, figures, and charts have been properly referenced.

(3) **Use of language**
- Use specific, definite, and concrete language.
- Check your spelling, grammar, and punctuation.
- Have the deliverable proofread before sending to reviewers.

All of the requirements described above have been transposed to the Deliverables Reviewing Checklists to be used by all three reviewing levels.

2.2. Reviewing procedure

2.2.1. Roles and responsibilities

The NAUTILOS project defines the following responsibilities:

- Progress on deliverables is monitored on a monthly basis by the Coordinating and the Project Manager. The status of upcoming and eventually pending deliverables should be monitored by the WP leaders within WP quarterly meetings and reported to the Coordinator. Any problems or expected delays should be flagged immediately providing an explanation, any planned mitigation action and the anticipated completion date.
- Each **task leader** is responsible for the deliverables of their task. They are supported in its elaboration by all partners involved in the respective related task/s. The need to use the template "Deliverable Template" in NAUTILOS' ownCloud.
- The **Work Package Leader and co-leader** are responsible for checking that the deliverable will be done on time by the task leader and report to the **Project Coordinator and Project Manager** if any delay is foreseen.
- The deliverable passes an internal review by **Review Team 1** consisting of the Project Coordinator, Technical Innovation Manager, WP leader and co-leader who approve the structure of the deliverable.
- As a second reviewing step the first complete draft of the deliverable must pass cross-work package review by a peer work package - **Review Team 2**.
- The finalised deliverable is then sent back to **Review Team 1** for final acceptance. If not accepted, it is returned for alterations to the deliverable's lead.
- Deliverables must be delivered by the Coordinator to the EC Portal at the end of the official delivery month given in Annex 1, Part A. To allow sufficient delivery time, the first complete version of the deliverable is to be ready 30 days before the deadline when it is distributed to **the review team 2 (WP)** for final comments and amendments.
- Finally accepted deliverables are transmitted to the EC by the **project coordinator.**
- In case of the delay of a deliverable the WP leader is responsible for updating the list of deliverables with the new expected delivery date and a comment on the reasons for delay.

Note: The deliverable lead can add an additional reviewer at their own discretion based on the specifics of their respective deliverable.

2.2.2. Peer review of Work Packages

NAUTILOS deliverables are reviewed twice before submission to the EC. The first review is by the technical manager, project coordinator, WP leader and co-leader. The second review is by a peer work package. Peer Review of work packages is assigned in **Errore. L'origine riferimento non è stata trovata.**. Work package leaders are responsible to assign the reviewing task to personnel within their work package.

Reviewers are expected to provide constructive suggestions for improvement. Written comments may be provided directly in the document, always using "Track Changes", and reviewing comments. Therefore, if changes are made to the document, they should be clearly

visible to the deliverable leading partner. After receiving review comments, the authoring team shall address them and if necessary, communicate with the reviewing team.

Table 1. Reviewing Work Packages in NAUTILOS

Work Package being reviewed	WP1	WP2	WP3	WP4	WP5	WP6	WP7	WP8	WP9	WP10	WP11	WP12	WP13
Reviewing Work Package	WP10	WP5	WP4	WP3	WP2	WP7	WP6	WP9	WP8	WP11	WP1	WP13	WP12

2.2.3. Reviewing Timeline

The NAUTILOS project will follow the following timeline to assure timely quality delivery and approval of the deliverables:

Table 2. Timeline for deliverables execution

WHEN	WHAT
75 days before the deadline	An official reminder will be sent by the **project manager** to Lead Author(s) and WP Leader and co-leader responsible of the Deliverable.
60 days before the deadline	High level skeleton, incl. design of prototypes and expected length must be submitted to **review team 1: coordinator, TIB (or a TIB representative) and the respective WP Lead and co-lead**.
50 days before the deadline	The review team responds, approving and/or giving explicit and tangible guidance for improvements/changes.
30 days before the deadline	Once the first complete version of the deliverable is ready the deliverable is distributed to **the review team 2 (WP)** for final comments and amendments.
20 days before the deadline	The review team and partners involved respond with potential additional requests for revisions.
7 days before the deadline	The final deliverable is submitted to **review team 1**. If no further comments the project coordinator gives final approval and submits.
Following the submission	The submitted deliverable may receive comments or request for improvement form the EC. The corrective actions will be implemented as soon as possible, not following the schedule above. The responsibility for improvements is with the WP and task lead, but can be

	delegated to specific partner, covering the topic in question.

Document Information	
Organisation / Department:	<Name of the organisation and department.>
Reviewer Name:	<Name of the reviewer>
Review Date:	<dd/mm/yyyy>
Deliverable lead:	<Name of the Deliverable Lead>
Deliverable title:	<Title of the Deliverable>
Deliverable Nr:	<Number of the Deliverable as defined in the GA>
Overall Score:	100%
Overall Deliverable Quality Assessment	

Scoring Legend:	
0	"No" answer: does not meet the requirements
5	"Yes, Partially" answer: some work done, but not to the required/expected
10	"Yes" answer. Meets requirements and expectations as per the
1 to 10	The questions started by "How well...?" should be answered by scoring the
N/A	This check is not applicable to this deliverable

Overall Assessment Key:	
	Critical /significant issues or major deliverable non-compliance.
	Deliverable needs to be revised
	Minor/No issues encountered

Figure 2. Deliverables Reviewing Checklist

Deliverables Review Checks	% of Compliance	75%	
Description	Answer		Comments
General			
Concision: Does the deliverable follow a clear and concise structure? Does it include only necessary and relevant information and eliminate redundancies?	Yes	10	
Relevance: Presented information should be true to the original objectives set out in Annex A of the GA and is relevant for the achievement of the project goals and focused on the key issues. Are the results clearly related to original propositions, hypotheses, research questions, and data analysis?	No	0	
Accuracy: Information presented must be reliable, all claims need to be proven and/or supported by relevant references. Is the document well referenced, claims proven and references well used? Are findings adequately and accurately described? Is the report free of any confidential information?	Yes, Partially	5	
Completeness: The deliverable should include all the necessary information to achieve its purpose. Do tables, charts and graph (c	N/A	-	
Appearance, Structure and Overall Presentation			
Clarity: Are abbreviations used only when necessary and clearly outlined at the beginning of the document? Are the layout and fo	Yes	10	
Consistency: Is there consistency between different sections, internal document references, related requirement, documents and other deliverables. Are all tables, figures and charts properly referenced?	Yes	10	
Language use: There are no spelling, grammar and/or punctuation errors	Yes	10	
Any Additional Comments			
	1	45	

2.3. List of NAUTILOS Deliverables

Table 3. List of NAUTILOS Deliverables

Del. No.	Deliverable Title	WP no.	Lead beneficiary	Type	Dissemination level	Due Date (in months)
D1.1	Report on Management Procedures	WP1	1 - CNR	Report	Public	2
D1.2	External Advisory Board Report 1	WP1	1 - CNR	Report	Public	12
D1.3	Data Management Plan	WP1	1 - CNR	ORDP	Public	6
D1.4	Quality Plan	WP1	21 - EP	Report	Public	3
D1.5	EthAB Reports	WP1	1 - CNR	Report	Public	48
D1.6	External Advisory Board Report 2	WP1	1 - CNR	Report	Public	24
D1.7	External Advisory Board Report 3	WP1	1 - CNR	Report	Public	36
D1.8	External Advisory Board Report 4	WP1	1 - CNR	Report	Public	48

D1.9	Final Quality Plan	WP1	21 - EP	Report	Public	24
D1.10	Data Management Plan - 1st periodic report update	WP1	1 - CNR	ORDP	Public	18
D1.11	Data Management Plan - 2nd periodic report update	WP1	1 - CNR	ORDP	Public	36
D1.12	Final Data Management Plan	WP1	1 - CNR	ORDP	Public	48
D2.1	A review and prospectus of the mandate for marine environmental monitoring systems: technology challenges and opportunities	WP2	1 - CNR	Report	Public	6
D2.2	Document describing technical requirements required for sensors in WP3 and WP4	WP2	3 - NIVA	Report	Confidential	9
D2.3	Integrated ICD - Interface Control Document for partners' vehicles, platforms and infrastructure	WP2	12 - SCT	Report	Confidential	9
D3.1	Report and fabrication of a dissolved oxygen sensors based on fluorescence quenching	WP3	14 - HES-SO	Report	Public	18
D3.2	Report on the development of Dissolved Oxygen and Chlorophyll-a sensors for fishery vessels	WP3	10 - NKE	Report	Confidential	18
D3.3	Report on laboratory tests of downward looking sensors	WP3	3 - NIVA	Report	Confidential	18
D3.4	Report on initial laboratory and tank tests of Passive Broadband Acoustic Recording Sensor	WP3	11 - AQUATEC	Report	Confidential	18
D3.5	Report on initial tank tests of Passive Acoustic Event Recorder	WP3	11 - AQUATEC	Report	Confidential	18
D3.6	Report on initial laboratory tests of Active Acoustic Profiling Sensor	WP3	11 - AQUATEC	Report	Confidential	18
D3.7	Report on laboratory tests of suspended matter sampler hardware/software	WP3	3 - NIVA	Report	Confidential	18
D3.8	Report on development and initial testing of concept change detection system to trigger event-based sampling	WP3	18 - DFKI	Report	Confidential	18
D4.1	Report on the development of carbonate chemistry/ocean acidification sensors	WP4	3 - NIVA	Report	Confidential	24
D4.2	Report on the development and laboratory tests of Silicate electrochemical sensor	WP4	10 - NKE	Report	Confidential	24

D4.3	Report on the development of standard device for sampling nano- and microplastic particles in the ocean	WP4	12 - SCT	Report	Confidential	24
D4.4	Report on the development and characterization of low-cost of a new microplastic fluorescence sensor for microplastic detection	WP4	15 - CSEM	Report	Confidential	24
D4.5	Report on development and laboratory tests of Deep ocean CTD sensor	WP4	16 - UL-FE	Report	Confidential	24
D4.6	Report on development event-based sampling	WP4	18 - DFKI	Report	Confidential	18
D4.7	Report on the development of the radioactivity sensor	WP4	2 - HCMR	Report	Confidential	24
D5.1	Report on "Novel multi-platform cooperative network integration"	WP5	8 - EDGELAB	Report	Public	18
D5.2	Report on integration of sensors on Unmanned Vehicles/ Platforms	WP5	8 - EDGELAB	Report	Confidential	36
D5.3	Report on integration of payloads/sensors on ASV	WP5	13 - CEIIA	Report	Public	36
D5.4	Report on integration of payloads/sensors on UAV	WP5	13 - CEIIA	Report	Public	36
D5.5	Report on Silicate sensor integration on a profiling float	WP5	10 - NKE	Report	Public	36
D5.6	Validation and integration report on ships of opportunity	WP5	1 - CNR	Report	Public	34
D5.7	Report on integration of payloads/sensors on Lander platform	WP5	13 - CEIIA	Report	Public	36
D5.8	Data sheet of final animal towed tagging system with O2 sensor	WP5	13 - CEIIA	Report	Public	18
D6.1	Report on results and methodology of calibration/validation experiments performed in T6.1	WP6	2 - HCMR	Report	Confidential	36
D6.2	Report on results and methodology of calibration/validation experiments performed in T6.2	WP6	3 - NIVA	Report	Public	36
D6.3	Report on testing results of the joint operations of sensors, buoy, lander and ASV in ST6.3.1	WP6	2 - HCMR	Report	Public	36
D6.4	Report on the testing results of the joint operations of sensors, buoy and AUV in ST6.3.2	WP6	8 - EDGELAB	Report	Public	24

D6.5	Report on the testing results of the joint operations of sensors and UAV in ST6.3.3	WP6	13 - CEIIA	Report	Public	36
D7.1	Fisheries and Aquaculture Observing Systems demonstration mid-term	WP7	1 - CNR	Report	Public	40
D7.2	Fisheries and Aquaculture Observing Systems demonstration final report	WP7	1 - CNR	Report	Public	48
D7.3	Platforms of Opportunity and Ferryboxes demonstration final report	WP7	4 - SYKE	Report	Public	48
D7.4	Augmented Observing Systems demonstrations final report	WP7	2 - HCMR	Report	Public	48
D7.5	Report on the demonstration of silicate sensor on ARGO float in the Mediterranean Sea	WP7	10 - NKE	Report	Public	48
D7.6	Report on Animal Borne Instruments demonstrations	WP7	13 - CEIIA	Report	Public	48
D7.7	Report on final reached TRL of NAUTILOS technological products	WP7	2 - HCMR	Report	Public	48
D8.1	Technical documentation and operational field primary data capture systems	WP8	7 - ETT SPA	Report	Public	18
D8.2	Interoperability requirements definition	WP8	7 - ETT SPA	Report	Public	9
D8.3	Data management workflow	WP8	7 - ETT SPA	Report	Public	12
D8.4	Design of Thematic Assembly Center for innovative parameters	WP8	7 - ETT SPA	Other	Public	12
D8.5	Interoperability services and catalogues	WP8	7 - ETT SPA	Other	Public	15
D8.6	Model approach implementation and specifications	WP8	9 - UALG	Other	Public	12
D8.7	Fully developed Graphic User Interface	WP8	1 - CNR	Other	Public	18
D8.8	Citizen Science tools and Interface	WP8	1 - CNR	Other	Public	18
D8.9	Automatic image analysis tools	WP8	1 - CNR	Other	Public	18
D9.1	Evaluation of the impact of NAUTILOS observation strategies	WP9	9 - UALG	Report	Public	24
D9.2	OSSE assessment	WP9	3 - NIVA	Report	Public	48
D9.3	Advanced advection diffusion modelling tool	WP9	2 - HCMR	Other	Public	48
D9.4	Report on remote sensing matchups	WP9	3 - NIVA	Report	Public	48

D9.5	KPI definition for the NAUTILOS data management and dissemination infrastructure	WP9	7 - ETT SPA	Report	Public	24
D9.6	KPI assessment 1	WP9	7 - ETT SPA	Report	Public	36
D9.7	KPI Assessment 2	WP9	7 - ETT SPA	Report	Public	48
D10.1	Outreach, Communication and Dissemination Strategy	WP10	21 - EP	Report	Public	2
D10.2	NAUTILOS Project Website	WP10	21 - EP	Websites, patents filling, etc.	Public	4
D10.3	Policy Briefs	WP10	17 - EUROCEAN	Report	Public	36
D10.4	Dissemination impact reports - 1	WP10	17 - EUROCEAN	Report	Public	24
D10.5	Strategic Policy Agenda	WP10	17 - EUROCEAN	Report	Public	24
D10.6	Report on communication activities at key events	WP10	17 - EUROCEAN	Report	Public	36
D10.7	Report on established synergies	WP10	21 - EP	Report	Public	48
D10.8	Outreach, Communication and Dissemination Strategy 2	WP10	21 - EP	Report	Public	18
D10.9	Report on Citizen Science Campaigns (WP10)	WP10	2 - HCMR	Report	Public	48
D10.10	Dissemination Impact Reports - 2	WP10	17 - EUROCEAN	Report	Public	48
D11.1	NAUTILOS Exploitation Strategy	WP11	13 - CEIIA	Report	Public	3
D11.2	Open Access Instrumentation Roadmap	WP11	13 - CEIIA	Report	Public	24
D11.3	Brokerage Events Meeting Protocols	WP11	21 - EP	Report	Public	48
D11.4	NAUTILOS Environmental Impact Assessment - final	WP11	9 - UALG	Report	Public	45
D11.5	NAUTILOS Socio Economic Impact Assessment - final	WP11	13 - CEIIA	Report	Public	45

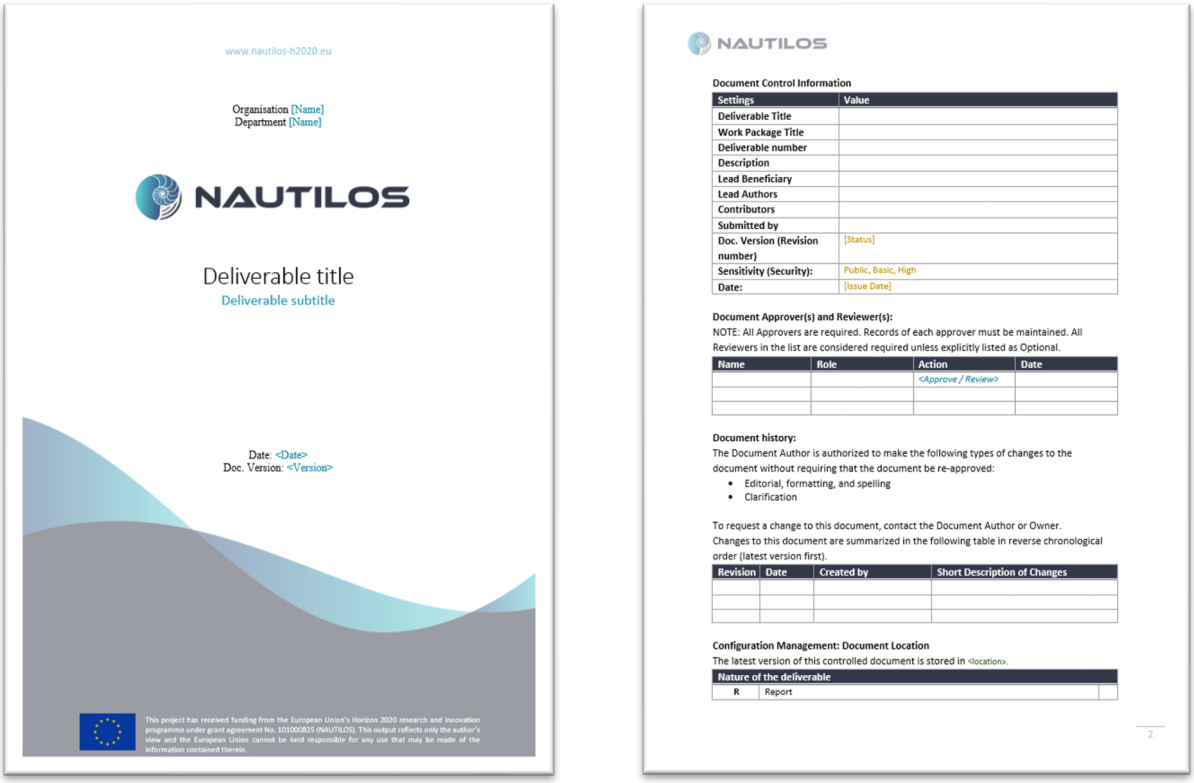
D11.6	NAUTILOS Environmental Impact Assessment	WP11	9 - UALG	Report	Public	24
D11.7	NAUTILOS Exploitation Strategy - final	WP11	13 - CEIIA	Report	Public	48
D11.8	NAUTILOS Socio Economic Impact Assessment	WP11	13 - CEIIA	Report	Public	24
D12.1	ESPCE report on collaborations and synergies	WP12	2 - HCMR	Report	Public	48
D12.2	Publication of ESPCE - related citizen science data and graphical maps in the citizen science interface	WP12	2 - HCMR	Other	Public	48
D12.3	Report on Citizen Science Campaigns (WP12)	WP12	3 - NIVA	Report	Public	48
D12.4	Educational material for the Capacity Building Learning Labs	WP12	17 - EUROCEAN	Report	Public	48
D13.1	H - Requirement No. 1	WP13	1 - CNR	Ethics	Confidential	3
D13.2	POPD – Requirement No. 2	WP13	1 - CNR	Ethics	Confidential	3
D13.3	A - Requirement No. 3	WP13	1 - CNR	Ethics	Confidential	3
D13.4	NEC - Requirement No. 4	WP13	1 - CNR	Ethics	Confidential	3
D13.5	EPQ - Requirement No. 5	WP13	1 - CNR	Ethics	Confidential	3
D13.6	DU - Requirement No. 9	WP13	1 - CNR	Ethics	Confidential	6
D13.7	GEN – Requirement No. 10	WP13	1 - CNR	Ethics	Confidential	18
D13.8	GEN – Requirement No. 11	WP13	1 - CNR	Ethics	Confidential	36
D13.9	GEN – Requirement No. 12	WP13	1 - CNR	Ethics	Confidential	48
D13.10	GEN – Requirement No. 13	WP13	1 - CNR	Ethics	Confidential	6

To ensure the efficient, timely and high-quality delivery of all deliverables, the following steps and measures have been undertaken:

- Deliverables types and formatting rules definition.
- Roles and responsibilities definition.
- Peer review of Work Packages.
- Deliverables review timeline.

2.4. Deliverable Template

The NAUTILOS Deliverables Template has been presented below.



www.nautilos-h2020.eu

Organisation [Name]
Department [Name]

NAUTILOS

Deliverable title
Deliverable subtitle

Date: <Date>
Doc. Version: <Version>

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 101000825 (NAUTILOS). This output reflects only the author's view and the European Union cannot be held responsible for any use that may be made of the information contained therein.

NAUTILOS

Document Control Information

Settings	Value
Deliverable Title	
Work Package Title	
Deliverable number	
Description	
Lead Beneficiary	
Lead Authors	
Contributors	
Submitted by	
Doc. Version (Revision number)	[Status]
Sensitivity (Security):	Public, Basic, High
Date:	[Issue Date]

Document Approver(s) and Reviewer(s):
NOTE: All Approvers are required. Records of each approver must be maintained. All Reviewers in the list are considered required unless explicitly listed as Optional.

Name	Role	Action	Date
		<Approve / Review>	

Document history:
The Document Author is authorized to make the following types of changes to the document without requiring that the document be re-approved:
- Editorial, formatting, and spelling
- Clarification

To request a change to this document, contact the Document Author or Owner.
Changes to this document are summarized in the following table in reverse chronological order (latest version first).

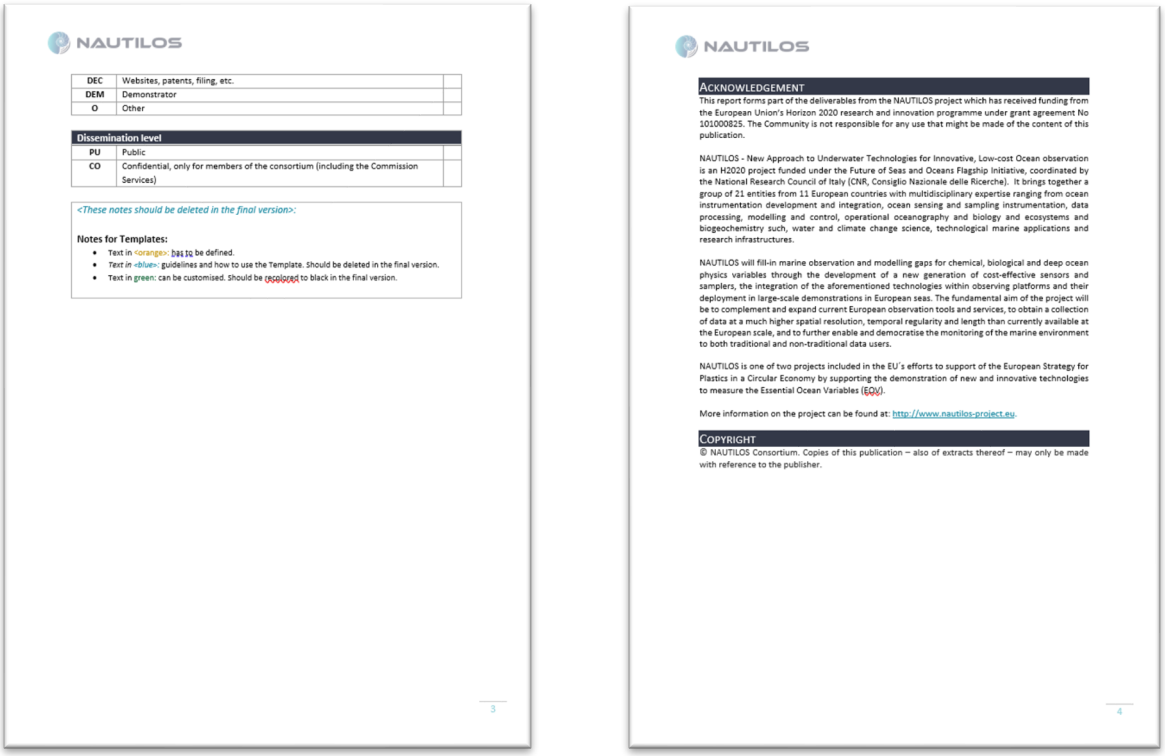
Revision	Date	Created by	Short Description of Changes

Configuration Management: Document Location
The latest version of this controlled document is stored in <location>.

Nature of the deliverable		
R	Report	

2

Figure 3. NAUTILOS Deliverables Template



NAUTILOS

DEC	Websites, patents, filing, etc.	
DEM	Demonstrator	
O	Other	

Dissemination level		
PU	Public	
CO	Confidential, only for members of the consortium (including the Commission Services)	

<These notes should be deleted in the final version>:

Notes for Templates:
- Text in <orange>: has to be defined.
- *Text in <blue>*: guidelines and how to use the Template. Should be deleted in the final version.
- Text in green: can be customised. Should be recolored to black in the final version.

3

NAUTILOS

ACKNOWLEDGEMENT

This report forms part of the deliverables from the NAUTILOS project which has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101000825. The Community is not responsible for any use that might be made of the content of this publication.

NAUTILOS - New Approach to Underwater Technologies for Innovative, Low-cost Ocean observation is an H2020 project funded under the Future of Seas and Oceans Flagship Initiative, coordinated by the National Research Council of Italy (CNR, Consiglio Nazionale delle Ricerche). It brings together a group of 21 entities from 11 European countries with multidisciplinary expertise ranging from ocean instrumentation development and integration, ocean sensing and sampling instrumentation, data processing, modelling and control, operational oceanography and biology and ecosystems and biogeochemistry such, water and climate change science, technological marine applications and research infrastructures.

NAUTILOS will fill-in marine observation and modelling gaps for chemical, biological and deep ocean physics variables through the development of a new generation of cost-effective sensors and samplers, the integration of the aforementioned technologies within observing platforms and their deployment in large-scale demonstrations in European seas. The fundamental aim of the project will be to complement and expand current European observation tools and services, to obtain a collection of data at a much higher spatial resolution, temporal regularity and length than currently available at the European scale, and to further enable and democratise the monitoring of the marine environment to both traditional and non-traditional data users.

NAUTILOS is one of two projects included in the EU´s efforts to support of the European Strategy for Plastics in a Circular Economy by supporting the demonstration of new and innovative technologies to measure the Essential Ocean Variables (EOV).

More information on the project can be found at: http://www.nautilos-project.eu.

COPYRIGHT

© NAUTILOS Consortium. Copies of this publication – also of extracts thereof – may only be made with reference to the publisher.

4

NAUTILOS

NAUTILOS

TABLE OF CONTENTS

5

NAUTILOS

EXECUTIVE SUMMARY

<Please customise as per your specific deliverable needs>

6

NAUTILOS

LIST OF FIGURES

LIST OF TABLES

LIST OF ACRONYMS AND ABBREVIATIONS

Abbreviation	Definition

7

NAUTILOS

I. HEADING 1

<Please customise as per your specific deliverable needs>

1. HEADING 2

<Please customise as per your specific deliverable needs>

1.1. Heading 3

i. ROLES AND RESPONSIBILITIES

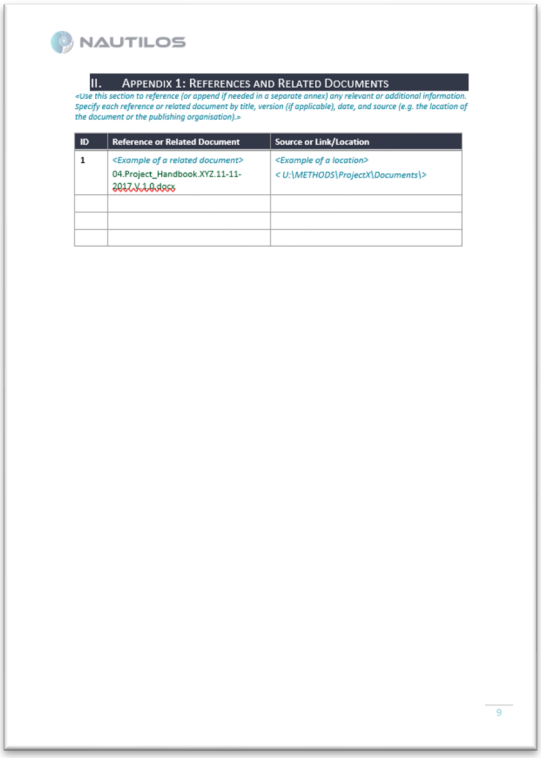
The following RASCI table defines the responsibilities of those involved in the respective work carried out in relation to the deliverable:

RAM (RASCI)	AGB*	PSC	PO	BM	UR	SP	PM	PCT
Quality Management Plan	I	A	C	C	C	C	R	C
Deliverables Acceptance Plan	I	A	C	S	I	C	R	C
Perform Quality Assurance	I	I	I	S	C	I	A	R
Perform Quality Control	I	I	I	C	C	A	R	C
Perform Deliverables Acceptance	I	I	A	S	C	I	R	C
Perform Final Acceptance	I	A	C	C	I	C	R	I

AGB: *Appropriate Governance Body.*

<Please customise the above matrix as per your deliverable needs>

8



NAUTILOS

II. APPENDIX 1: REFERENCES AND RELATED DOCUMENTS

«Use this section to reference (or append if needed in a separate annex) any relevant or additional information. Specify each reference or related document by title, version (if applicable), date, and source (e.g. the location of the document or the publishing organisation).»

ID	Reference or Related Document	Source or Link/Location
1	*<Example of a related document>* 04.Project_Handbook.XYZ.11-11-2017.V.1.0.docx	*<Example of a location>* *< U:\METHODS\ProjectX\Documents\>*

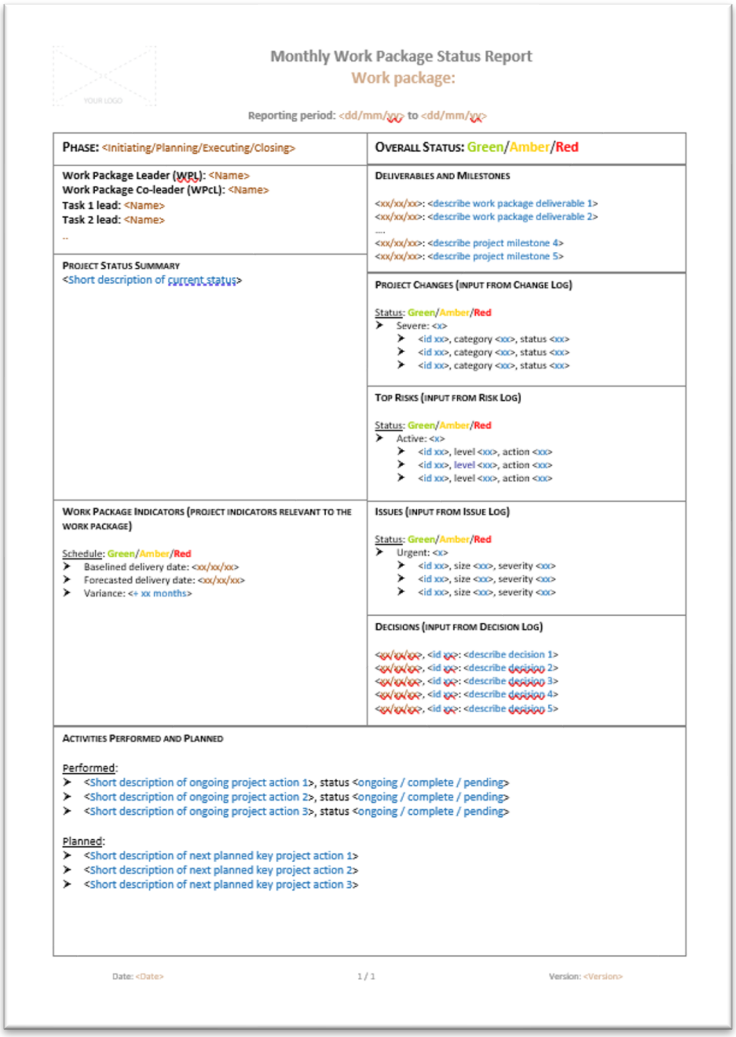
9

3. WORK PERFORMANCE QUALITY REVIEWS

3.1. Work Package Status Reports

The project quality will be monitored and managed also through periodic reporting on the work package status, use of resources, risk and issues encountered and activities planning.

Once per month each Work Package leader will fill in a 1-page Work Package Status Report. The Project Manager will remind each Work Package Leaders to do so 10 days before the end of the month. The template for the report has been presented below:



Monthly Work Package Status Report
Work package:

Reporting period: <dd/mm/xx> to <dd/mm/xx>

PHASE: <Initiating/Planning/Executing/Closing>	OVERALL STATUS: Green/Amber/Red
Work Package Leader (WPL): <Name> Work Package Co-leader (WPcL): <Name> Task 1 lead: <Name> Task 2 lead: <Name> ..	DELIVERABLES AND MILESTONES <xx/xx/xx>: <describe work package deliverable 1> <xx/xx/xx>: <describe work package deliverable 2> .... <xx/xx/xx>: <describe project milestone 4> <xx/xx/xx>: <describe project milestone 5>
PROJECT STATUS SUMMARY <Short description of current status>	PROJECT CHANGES (INPUT FROM CHANGE LOG) Status: Green/Amber/Red ➢ Severe: <x> ➢ <id xx>, category <xx>, status <xx> ➢ <id xx>, category <xx>, status <xx> ➢ <id xx>, category <xx>, status <xx>
	TOP RISKS (INPUT FROM RISK LOG) Status: Green/Amber/Red ➢ Active: <x> ➢ <id xx>, level <xx>, action <xx> ➢ <id xx>, level <xx>, action <xx> ➢ <id xx>, level <xx>, action <xx>
WORK PACKAGE INDICATORS (PROJECT INDICATORS RELEVANT TO THE WORK PACKAGE) Schedule: Green/Amber/Red ➢ Baselined delivery date: <xx/xx/xx> ➢ Forecasted delivery date: <xx/xx/xx> ➢ Variance: <+ xx months>	ISSUES (INPUT FROM ISSUE LOG) Status: Green/Amber/Red ➢ Urgent: <x> ➢ <id xx>, size <xx>, severity <xx> ➢ <id xx>, size <xx>, severity <xx> ➢ <id xx>, size <xx>, severity <xx>
	DECISIONS (INPUT FROM DECISION LOG) <xx/xx/xx>, <id xx>: <describe decision 1> <xx/xx/xx>, <id xx>: <describe decision 2> <xx/xx/xx>, <id xx>: <describe decision 3> <xx/xx/xx>, <id xx>: <describe decision 4> <xx/xx/xx>, <id xx>: <describe decision 5>

ACTIVITIES PERFORMED AND PLANNED

Performed:
➢ <Short description of ongoing project action 1>, status <ongoing / complete / pending>
➢ <Short description of ongoing project action 2>, status <ongoing / complete / pending>
➢ <Short description of ongoing project action 3>, status <ongoing / complete / pending>

Planned:
➢ <Short description of next planned key project action 1>
➢ <Short description of next planned key project action 2>
➢ <Short description of next planned key project action 3>

Date: <Date> 1 / 1 Version: <Version>

Figure 4. NAUTILOS Work Package Status Report Template

3.2. Work Package Progress Report

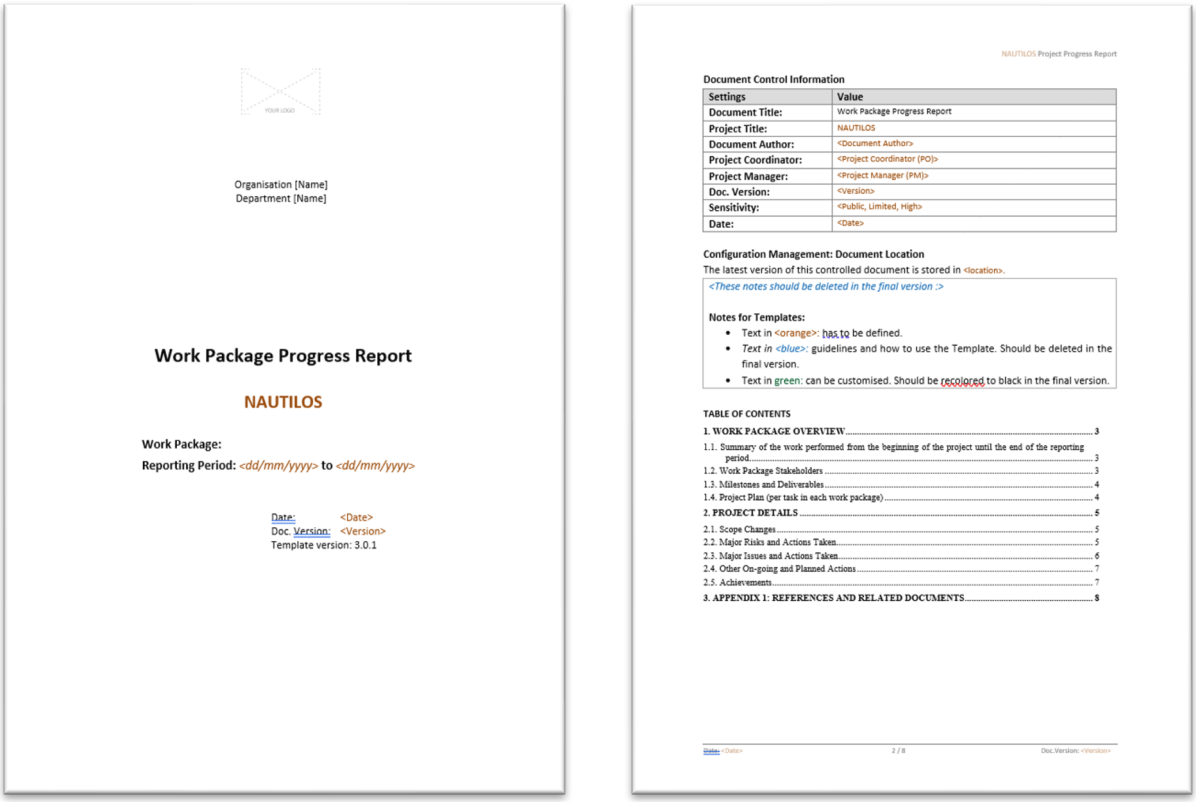
Additionally, all Work Package Leaders will be asked to report every 6 months all activities they have performed, risks or issues encountered within the respective work package (including technical activities, communication and dissemination activities etc.), using the Work Package Progress Report template.

A reminder will be sent to each work package leader by the Project Manager 20 days before the deadline. WPLs are responsible to gather all the information on the technical progress in their WP from the task leaders (sub-task leaders) in their respective work package and compile a WP report before sending it to the coordinator and Project Manager.

Regular monitoring of project activities allows to assess if the project is being carried out within scope, at the desired quality and according to the pre-defined schedule. The impact on the stakeholders (both in quantitative and qualitative terms) is also being assessed. All of the above allows for application of corrective actions if necessary.

All work package Progress Reports will be integrated as part of the Project Quality Reviews.

The template for the report has been presented below:



YOUR LOGO

Organisation [Name]
Department [Name]

Work Package Progress Report

NAUTILOS

Work Package:
Reporting Period: *<dd/mm/yyyy>* **to** *<dd/mm/yyyy>*

Date: <Date>
Doc. Version: <Version>
Template version: 3.0.1

NAUTILOS Project Progress Report

Document Control Information

Settings	Value
Document Title:	Work Package Progress Report
Project Title:	NAUTILOS
Document Author:	<Document Author>
Project Coordinator:	<Project Coordinator (PO)>
Project Manager:	<Project Manager (PM)>
Doc. Version:	<Version>
Sensitivity:	<Public, Limited, High>
Date:	<Date>

Configuration Management: Document Location
The latest version of this controlled document is stored in <location>.

<These notes should be deleted in the final version :>

Notes for Templates:
- Text in <orange>: has to be defined.
- *Text in <blue>:* guidelines and how to use the Template. Should be deleted in the final version.
- Text in green: can be customised. Should be recolored to black in the final version.

TABLE OF CONTENTS

Date: <Date> 2 / 8 Doc.Version: <Version>

Figure 5. Work Package Progress Report Template

1. Work Package Overview

1.1. Summary of the work performed from the beginning of the project until the end of the reporting period

<This section is only applied for the yearly reporting and the indicative maximum length is 0.5 page.

The section should provide a high-level overview of the entire project and the actual status. The executive summary may include the following elements such as: overall outcomes and business triggers, overall description of the solution, major changes in scope, resources, cost and planning, constraints, achievements, etc.>

1.2. Work Package Stakeholders

Work Package Due Date	
Project-related	**Project Coordinator (PC):**
	Technology and Innovation Manager (TIB):
	Data Manager (DM):
	Project Manager (PM):
	<other stakeholders, if applicable>
Work Package Leader **Work Package Co-Leader**	
Work Package Support Team (PST)	
Other stakeholders	

1.3. Milestones and Deliverables

<This section should address the full lifespan of the project and should not focus exclusively on the reporting period. The objective is to provide an overview for the complete project duration.>

ID	Milestone / Deliverable Name	Target Delivery Date	Actual Delivery date	Status	Comments
				<on-going, planned, achieved>	

<The deliverable IDs should be aligned with the ones used within the Grant Agreement>

1.4. Project Plan (per task in each work package)

<This section is to be fulfilled for each task in the work package if a considerable cost is involved or the effort is greater than 20 workdays (WDs)>

<Work Task #[...] and name description>									
Planned		Actual		Total Planned Effort at Completion (man months)	Planned Effort for the period (man months)	Actual Effort (man months)	Progress (percentage of work completed)	Performance	
Start Date	End Date	Start Date	End Date					Schedule[1]	Effort[2]
M1	*M6*	*M1*	*M8*	*<4 MM>*	*<4 MM>*	*<3 MM>*	*<80%>*	*<75% >*	*<75% >*

<The effort can be measured in Man-days (MDs) or Man-Months (MMs) >

[1] Ratio= Progress / Planned effort/ *100 (R<100%= ; R>100%=)

[2] Ratio= Progress /Actual effort * 100 (R<100%= ; R>100%=)

<Work Package #[...] and name description>									
Planned		Actual		Total Planned Effort at Completion	Planned Effort	Actual Effort	Progress (Earned Value)	Performance	
Start Date	End Date	Start Date	End Date					Schedule	Budget

2. Work Package Details

2.1. Scope Changes

<This section is only applied for the yearly reporting.

It should give an overview of the project scope changes that need to be escalated to the Management, for the reporting period, based on the project Change Log.>

ID	Category[3]	Title	Description	Status[4]	Action Details (effort & responsible)	Size[5]	Priority[6]	Approval decided by	Actual Delivery Date

2.2. Major Risks and Actions Taken

<This section should highlight the project risks that were identified in the project Risk Log and need to be escalated to Management. You may refer to the project Risk Log for a complete list and description of risks and corresponding actions.>

[3] Categorize the changes. Examples of categories are: new requirement, technical, issue or risk related, business improvement, etc.
[4] The Change Status can assume the following states: Submitted; Assessing; Waiting for Approval; Approved; Rejected; Postponed; Merged; Implemented
[5] Size represents the effort related to the change implementation and the possible values are: 5=Very high; 4=High; 3=Medium; 2=Low; 1=Very low
[6] Priority is a numeric value given to a project change to classify its relative importance in comparison to other changes and the possible values are: 5=Very high; 4=High; 3=Medium; 2=Low; 1=Very low

ID	Category[7]	Risk Name	Description	Status [8]	Likelihood[9]	Impact[10]	Risk Level [11]	Risk Owner	Risk Response Strategy [12]	Action Details	Target Date

2.3. Major Issues and Actions Taken

<This section should give an overview of the major project issues (to be escalated to Management), aligned with the project Issue Log. You may refer to the Issue Log for a complete list and description of issues and corresponding actions>

ID	Category[16]	Title	Description	Status[13]	Action Details	Urgency[14]	Impact[15]	Size[16]	Target Date	Issue Owner

[7] Categories of risks / issues related to the area affected by the risk / issue (e.g. Business, IT, People & Organisation, External and Legal).
[8] The risk status can be any of the following: Proposed; Investigating; Waiting for Approval; Approved; Rejected; Closed.
[9] A numeric value denoting the estimate of the probability that the risk will occur. The possible values are: 5=Very high; 4=High; 3=Medium; 2=Low; 1=Very low.
[10] A numeric value denoting the severity of the impact of the risk (should it occur). The possible values are. The possible values for opportunities are: 5=Very high; 4=High; 3=Medium; 2=Low; 1=Very low. Or negative numbers for threats.
[11] The risk level is the product of the likelihood and impact (RL=L*I).
[12] The possible risk response strategies are: Avoid/ Transfer or Share/ Reduce / Accept.
[13] The issue status can be any of the following: Open; Postponed; Resolved; Closed.
[14] A numeric value denoting the urgency of the issue. The possible values are: 5=Very high; 4=High; 3=Medium; 2=Low; 1=Very low.
[15] A numeric value denoting the severity / impact of the issue. The possible values are: 5=Very high; 4=High; 3=Medium; 2=Low; 1=Very low.
[16] Issue size represents the effort related to the issue resolution. The possible values are: 5=Very high; 4=High; 3=Medium; 2=Low; 1=Very low.

2.4. Other On-going and Planned Actions

<This section is optional and the objective is to detail further actions currently on-going or planned to be done in the next reporting period, if relevant.>

Actions	Due date	Who & Comments

2.5. Achievements

<This section is optional and the objective is to provide an overview of what has been achieved that haven't been yet referred in this document. It should focus exclusively on the reporting period.>

Project Highlights / Achievements	Comments

3. Appendix 1: References and Related Documents

<Use this section to reference (or append if needed in a separate annex) any relevant or additional information. Specify each reference or related document by title, version (if applicable), date, and source (e.g. the location of the document or the publishing organisation).>

ID	Reference or Related Document	Source or Link/Location
1	*<Example of a related document>* *<04.Project_Handbook.XYZ.11-11-2017.V.1.0.docx>*	*<Example of a location>* *< U:\METHODS\ProjectX\Documents\>*
2	Project folder	*<Insert project folder location.>*
3		

4. Project Quality Reviews

All work performance quality reviews will be analysed, and recommendation and remediation/improvement actions will be defined in the Quality Review Report.

Project quality reviews will be performed every six months to verify that all project plans and processes are executed as planned and at the expected quality. The objective of the internal report is to monitor the project's technical progress. It will be a summary of the technical work completed, progress on the work which is ongoing as well as an explanation for any deviations from Annex 1.

A ***Quality Review Checklist*** will be used to assess the project's compliance with the planned activities (and related outputs) in domains such as scope, time, cost, quality, project organization, communications, risks, end user satisfaction. The findings, recommendations and remediation/improvement actions will be consolidated in the Quality Review Report and reported to the General Assembly. Additionally, the Project Manager (PM) will summarize and document the Quality Review Checklist findings, their impact, recommendations along with any remediation/improvement actions. The project logs will then also be used to document related risks, issues, decisions, and changes.

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

The results of the quality assurance activities will be used for improving the quality of project activities and so they may generate change requests for corrective or preventive actions, or updates in project documentation.

5. Quality Control Records

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

V. Risk Management

The risk management procedure described in this section aims to facilitate the identification and documentation of risks and opportunities that can impact the achievement of project's objectives.

1. Risk Identification and Description

In the preparation phase, the Consortium has created an initial risk list, which can be updated whenever new risks have been identified. The preliminary list of potential project risks and mitigating actions is included in the Grant Agreement, Section 1.3.5. WT5 Critical Implementation risks and mitigation actions.

For each risk from the initial risk list, the consortium made a first analysis identifying:

- The associated WP.
- The level of risk both before risk mitigation.
- The appropriate contingency plan.

Risks will continue to emerge during the lifetime of the project so project risk management processes will be conducted iteratively (continuously identified throughout the project lifecycle).

2. Risk Assessment

The purpose is to assess the impact of the identified risks in terms of their influence to the project objectives (risk level). This assessment is necessary before any risk response planning/actions can be done and is being done based on likelihood of occurrence and the impact in project objectives.

The matrix is a visualisation tool presented and used by WPLs to register open project risks. It measures risks based on a likelihood scale which assesses the probability of an event (from unlikely to probable) and the severity of one (from acceptable when a risk is hardly felt to generally unacceptable when a risk may threaten a project's fulfilment). Severity and impact result in the degree of risk impact or the overall risk level which is a bottom-line measurement used to prioritise possible issues and raise red flags where necessary.

Initial assessment (during NAUTILOS setting up stage) and possible mitigation measures of the project's implementation risks has been carried out within the preliminary risk assessment list as outline in NAUTILOS Grant Agreement (cf. p. 86,

The list will be presented, reviewed and modified during each MM until the project's end as new risk are identified, and existing risks get resolved or become irrelevant.

If at any point a risk of medium to high likelihood, high severity and respectively high impact is identified, the Project Coordinator will be immediately informed, s/he will consult with appropriate consortium partners, TIM, DM, PM about how to best manage the risk and consequently design the best risk mitigation plan. If a high impact risk remains unresolved it will be discussed during MMs.

Table 4. Risk Assessment Matrix

		SCALE OF SEVERITY		
SCALE OF LIKELIHOOD		ACCEPTABLE (1)	TOLERABLE (2)	GENERALLY UNACCEPTABLE (3)
	NOT LIKELY (1)	LOW	MEDIUM	MEDIUM
	POSSIBLE (2)	LOW	MEDIUM	HIGH
	PROBABLE (3)	MEDIUM	HIGH	HIGH

3. Risk Response

This stage aims at identifying and planning the actions to control the risks. The selection of risk response strategy will be based on the results of the risk assessment (risk level), the type of risk, on the effects on the overall project objectives etc. The strategy/ies selected for each risk are documented by the PM.

4. Risk Control – Risk Register

All risks will be recorded in a risk log/risk register. It will capture details of the identified individual project risks, including:

- Risk Identification and Description Section – this section will include risk category, title, description, status, identified by and identification date.
- Risk Assessment Section – likelihood, impact, risk level (probability), risk owner and escalation.
- Risk Response Section – risk response strategy, action details (effort and responsible), target date, traceability/comments.

The purpose is to monitor and control the implementation of the risk response activities while continuously monitoring the project environment for new risks or changes (e.g., probability and/or impact) in the risks already identified.

Project work package and consortium meetings will be used to revise the status of risks and related actions, and to identify new risks that can impact project milestones, deliverables, or objectives. Risks will be revised at regular predetermined intervals, but also after the occurrence of any event that might have a significant impact on the project environment and hence the project risks.

The Risk Owner will report periodically the status of the risk and any response activities to the Project Manager (PM) and the Project Coordinator (PC). PM will be responsible for documenting any risk updates, including new risks or actions, updating the status of response activities, changing risk levels based on mitigation actions, changing the assignment of actions, etc.

The Project Manager (PM) will report to the TIB the status of the major risks and to other project stakeholders. If any of the identified risks occur, then the Project Manager (PM) will ensure the implementation of the contingency plans and communicate the issue to the TIB.

The Project Risk Register Template has been presented below:

Risk Register

NAUTILOS

	Risk Identification and Description						Risk Assessment					Risk Response			
ID	Category	Title	Description	Status	Identified By	Identification Date	Likelihood (L)	Impact (I)	Risk Level (L*I)	Risk Owner	Escalation	Risk Response Strategy	Action Details (effort & responsible)	Target Date	Traceability/Comments
Guidelines	*<Risks can be organised in different categories such as Business, Staffing, Contractor, Legal ...>*	*<Short title for the risk>*	*<Description of the risk including its causes, the kinds of problems that could result (potential effects), and risk dependencies.>* *<Because of (CONDITION), it might be that (EVENT), which will lead to(IMPACT).>*	*<Status for the risk: One of the following values:* *- Proposed* *- Assessing* *- Awaiting for Approval* *- Approved* *- Rejected* *- Closed>*	*<The name of the Person who identified the risk>*	*<Date when the risk was identified <dd/mm/yy>>*	*<A numerical value denoting the probability that the risk will occur:* *5- Very High to 1- Very Low>*	*<A numerical value denoting the severity of the risk's impact:* *5- Very High to 1- Very Low>*	*<Product of the two previous columns: RL = L * I>*	*<Name of the person accountable for managing and monitoring the risk>*	*<Should the issue be escalated to the Directing or Steering Layers? <Yes> or <No>>*	*<Strategy for managing the risk:* *- Avoid* *- Reduce* *- Accept* *- Transfer/ Share>*	*<Description of the mitigation action(s), including the objective, scope, deliverables, the person responsible and the estimated effort needed. >*	*<Date on which the risk response is expected to be implemented. >*	*<Related artefacts:* *- ID for the related mitigation tasks in the Project Plan* *- ID for related changes, issues or decisions (log entries) .>*
RL01															
RL02															
RL03															
RL04															
RL05															
RL06															
RL07															

Figure 6. NAUTILOS Project Risk Register

VI. Issue Management

Issue management aims to ensure that issues that have a potential impact on project scope, time, cost, quality, risk, or stakeholder satisfaction are assessed and acted upon. Relevant issues will be logged and followed-up and key decisions will be documented to bring visibility and accountability as to how and by whom they are taken, and to whom they should be communicated.

The issue management process for this project is a four-step process and falls under the responsibilities of the Project Manager (PM) who should execute the process when required throughout the project lifecycle:

1. Issue Identification

The purpose of this step is to facilitate the identification and documentation of issues. Examples of issues that can arise in the project are:

- There are disagreements on the interpretation of requirements.
- WP team has difficulties achieving the set goals (e.g., in terms of time, resources or quality);
- Non-conformities are identified by various stakeholders.
- Identified risks changing from potential to existing problems.
- External effects that influence the project in a negative way.
- Other reasons.

Issues can be identified/raised by any Project Stakeholder throughout the project lifecycle, using different communication channels as meetings, emails, reports etc.

2. Issue Assessment and Action Recommendation

The purpose of this step is to assess the urgency and impact of the issue and decide on a priority for its resolution.

When an issue arises, an initial assessment (informal) will be performed by the person who raised the issue. This informal assessment will consider dimensions like relation to a specific area, possible consequences, level of urgency and size/scope.

After this first assessment, the Project Manager (PM) will have the responsibility to assign the detailed analysis of the issue to a project stakeholder and to document the proposed solution and decisions made.

3. Actions Implementation

After issues are evaluated and the remediation actions approved, the Project Manager (PM) will incorporate these actions into the project documents.

4. Issue Control – Issue log

All issues will be recorded in an issue log. It will capture details of the identified individual project issues, including:

- Risk Identification and Description Section – this section will include risk category, title, description, status, identified by and identification date.
- Issue Assessment and Action Description – action details, urgency, impact, size, target date, issue owner, escalation, traceability/comments.

The issue control measure includes monitoring and control of the issues identified during the project to easily communicate them to the several project decisional layers, for remediation action approval or status updates.

Issues status can be discussed during the weekly PM meetings, bi-monthly WP meetings, Management meetings (every 6 months). Ad hoc meetings can be organized whenever needed to revise the status of issues and related actions. The Project Manager (PM) is responsible for monitoring issues status and updates, including adding new issues, updating issue status, updating remediation action details, modifying urgency, impact, and/or size levels based on changes in project environment, etc.

Additionally, the Project Manager (PM) will report periodically the status of the major issues identified for the project to the Project Coordinator and the General Assembly.

The Issue Log Template has been presented below:

Issue Identification and Description						
ID	Category	Title	Description	Status	Identified By	Identification Date
Guidelines	*<Issues can be organised in different categories such as Business, Staffing, Contractor, Legal ...>*	*<Short title for the issue>*	*<Description of the issue, including how it came about (known risk, unknown risk, ...) and its impact on the project.>*	*<Status for the issue: One of the following values: - Open - Postponed - Resolved - Closed>*	*<The name of the Person who identified the issue>*	*<Date when the issue was raised or was identified <dd/mm/yy>>*
IL01						
IL02						
IL03						
IL04						
IL05						
IL06						
IL07						
IL08						
IL09						

Figure 7. Issue Log Template

Issue Assessment and Action Description							
Action Details (effort & responsible)	**Urgency**	**Impact**	**Size**	**Target Date**	**Issue Owner**	**Escalation**	**Traceability/Comments**
'roposed strategy to handle the issue: ı the remediation plan, the following main steps should be executed: dentification of the non-conformities, impact and recommended actions; \nalysis of the different scenarios and associated resources, timetable and costs; :election of the most cost/effective action and assignment of responsibilities.>	*<A numerical value from 1 to 5 denoting how urgent the issue is: 5- Very High to 1- Very Low>*	*<A numerical value from 1 to 5 denoting the issue's impact: 5- Very High to 1- Very Low>*	*<A numerical value denoting how much effort will be necessary to resolve the issue: 5- Very High to 1- Very Low>*	*<Date on which the issue is expected to be resolved <dd/mm/yy> >*	*<Name of the person tasked with resolving the issue>*	*<Should the issue be escalated to the Directing or Steering Layers? <Yes> or <No>>*	*<Related artefacts: - ID for the related risk - ID for the related tasks in the Project Plan - ID for related changes in the change log.>*

VII. Configuration Management

The purpose of the project configuration management process is to help project stakeholders to manage project artefacts effectively and to provide a single reliable reference to them, ensuring that the correct versions are available to the relevant parties. Additionally, it helps the Project Manager (PM) to identify the latest state of project artefacts and be able to gather all sources, documents, and other information for the project, prevent unauthorised changes, guarantee artefacts traceability, and return to previous versions (fall-back procedure).

The project configuration management procedure comprises the identification of project configuration items (CIs), their attributes and status codes, the establishment of baselines, the definition of roles and responsibilities for authorised changes to CIs, and the maintenance and control of a project repository.

The project configuration management covers:

- Definition of project CIs;
- File and email naming conventions;
- Versioning and tracking of project documents;
- Control of the release of project artefacts and deliverables and changes to them;
- Periodic reviews to CIs records, to see if the configuration procedure is being undertaken and if records match the actual status;
- Storage and archiving of project management artefacts, including folder structure and naming conventions;
- Security of the CIs, i.e., CIs access management, CIs copies / backups, fall-back procedures and retention period.

1. PM^2 Project Management Files Naming Convention

This NAUTILOS project follows PM^2 methodology and uses the following naming convention:
Files: (XX).(DocumentName).(ProjectName).(dd-mm-yyyy).v(x.x)
<Example: D1.4.Quality Plan_NAUTILOS_08.01.2021.V0.2.docx>

Explanations:

- XX (two numerical characters) is the numerical sequence of documents or the deliverable number when referring to a deliverable.
- x.x is referring to the version of the document. If it begins with a "0.x" it means that the document hasn't yet been approved; minor changes can be reflected in the decimal (revisions number) and major changes (formal reviews) in the number.

When creating a project document, the Project Manager (PM) will include:

- The title of the document;
- The document type (e.g. plan, check list, log, guide, template, study, report);
- The version number;
- The issue date;
- The document control information, document approver(s) and reviewers and document history and location;
- The confidentiality classification of the document.

Project email subject tag: (ProjectName), (Topic), (type of communication, e.g. for approval, for information, for review, for action), (FreeText – if needed).

<Example: [WebCom][Follow-up Meeting][Agenda] [for Review] …>

2. Storage and archiving of project management artefacts and deliverables

The project will utilise two repositories:

1. ownCloud

OwnCloud is an open-source file sync and share software which provides a safe, secure, and compliant file synchronization and sharing solution on servers and is to be utilised by NAUTILOS partners throughout the four years of the project. All partners' representatives have an account which is password protected and has thus access to all information available within. Sign in is enabled via the NAUTILOS website. All finalised project documents are stored within the ownCloud account.

- Versioning

With the Versions Application enabled, ownCloud automatically saves old file versions thus preventing accidental deletions or unintended amendments.

2. Team Drive

Whilst ownCloud will be utilised to store finalised versions of the deliverables Google Team Drive will be used to collaborate on working versions of documents. Once those have been finalised they will be transferred to the project's OwnCloud.

VIII. Quality of Project Communication

Controlling project communications ensures optimal information flow so that stakeholders receive the necessary information at the right time. Communications must be controlled throughout the project life cycle. Some information will require more frequent communication and will be driven by stakeholder needs.

The NAUTILOS project has determined a set of guidelines with regards to the quantity and quality of the project communication, both internal and external.

5.1.1. Frequency

The following initial internal meeting frequency has been set during the project's KOM to serve as the initial structure for the project communication:

- Weekly between the Project Coordinator (CNR) and the Project Manager (EP);
- Bi-monthly (depending on the intensity of the work) WP/set of WPs meetings in ongoing work packages:
    - Initiated and chaired by the respective WP leader/s;
    - Follow the project dynamics,
- Every three months between TIB members:
    - Chaired by Technical and Innovation Manager;
    - Operational issues, status reports.
- Management meetings (every 6 months)
    - Chaired by the Project Coordinator.
    - Project steering and strategy.
- External Advisory Board Meetings
    - Chaired by the Project Coordinator
    - Project progress review and high-level direction
- General Assembly meetings (during MMs, every 6 months)
- Other, ad-hoc meetings
    - E.g., technical teams, 1:1.

5.1.2. Tools

- Email

Email represents a primary means of communication within NAUTILOS. All partner representatives contact information is available on ownCloud and shared among all partners. Several communication levels have been identified during the project preparation phase and the grant agreement preparation. Those include:

- Intra-WP: mostly between two or three partners; specific issues, technical communication, ad-hoc.
- Inter-WP: addressing the issues between different WPs, interfacing, dependencies. The communication is organized by the relevant WP leads.
- General Assembly: delegates are defined in the chapter I of D1.1. The communications are organized by the project coordinator.
- TIB: delegates are defined in the chapter I of D.1.1. The communications are organized by the technical and innovation manager.

To enable a smoother and easier communication among those specific groups of partners distribution lists have already been created by EP (using the NAUTILOS website domain) including (c.f. D1.1. Report on Management Procedures)

- Online Meetings and Web Conferencing Tools

Modern communication tools enable collaborative work and may greatly improve cooperation between different partners. Project teleconferences will be conducted within NAUTILOS when required, each based on its own schedule (e.g., WP meetings, task-specific meetings, TIB calls). The chairperson of each teleconference shall decide the appropriate tool and invite all the relevant attendees.

- Discussion space and/or forum

Internal communication tools have been discussed with partners with the options ranging from forums to business communication platforms such as Slack. Currently, most partners utilise Skype as a tool for immediate engagement with the respective partners with Skype IDs additionally shared within the contact list of NAUTILOS available at the project's ownCloud.

Appendix 1: References and Related Documents

Deliverable 10.1 has been developed in accordance with the provision outlined within the following related documents:

- NAUTILOS Grant Agreement Nr. 101000825,
- NAUTILOS Consortium Agreement.

Alongside to these key documents, this Plan has been produced following the European Commission guidelines and templates. Finally, this document will be complementary to other project deliverables and plans such as D1.1 Report on Management procedures (M2), D10.1 Outreach, Communication & Dissemination Strategy (M2), D1.3 Data Management Plan (M6) and D11.1 – NAUTILOS Exploitation Strategy (M3).

ID	Reference or Related Document	Source or Link/Location
1	NAUTILOS Grant Agreement Nr. 101000825	NAUTILOS ownCloud
2	NAUTILOS Consortium Agreement	NAUTILOS ownCloud
3	D1.1. Report on Management Procedures	10.5281/zenodo.7162213
4	D10.1. Outreach, Communication and Dissemination Strategy	10.5281/zenodo.7163695