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D I.2

Quality Assurance Manual

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PROJECT DELIVERABLE

D I.2 – QUALITY ASSURANCE MANUAL

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RECORD OF CHANGES

This is a controlled document for any changes and amendments done for the deliverable.

Amendment shall be by whole document replacement.

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1.0	Draft version	31.05.07	TUHH Svenja Töter
2.0	Final version including Review comments from project coordinator	21.06.07	TUHH Svenja Töter

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LIST OF ABBREVIATIONS / GLOSSARY

CA	Consortium Agreement (document type)
EC	European Commision
EX	Executive Summary (document type)
DEL	Deliverable
FinRep	Final Report (document type)
ISO	International Standards Organisation
KISS	Keep It Short and Simple
NC	Non-Conformance
No.	Number
PM	Project Manual
PO	Project Officer
PAR	Periodic Activity Report (document type)
PMR	Periodic Management Report
PRR	Peer Review Report (document type)
QA	Quality Assurance
QAM	Quality Assurance Manager
QAS	Quality Assurance System
QM	Quality Assurance Manual (document type)
SP	Subproject
TA	Technical Annex
EFFORTS	Effective Operations in Ports
TR	Technical Report (document type)
WP	Work Package
WPL	Work Package Leader

Terminology

Deficiency	Quantitative or qualitative deviation from an agreed or contracted milestone.
Non-conformance	Failure to meet specified requirements
Quality Assurance	The planned and systematic activities implemented within the project life cycle, which are required to develop sufficient confidence that the project Deliverables and results will satisfy the quality specifications.
Quality Assurance Manager	Executive organisation function authorised by the consortium to administer all the managerial tasks for maintaining and enhancing the quality system.
Quality Audit	Systematic and independent examination of the degree of conformance of the project's activities to established terms & requirements. Examination of whether these are appropriate for the fulfilment of the projects objectives and its deliverables.
Quality Assurance Manual	Document stating the project's quality policy and describing its quality system.
Quality Control	Operational techniques and actions are used to fulfil requirements for measuring and monitoring quality.
Quality System	The organisational structure, responsibilities, procedures, processes and the means for the implementation of quality management.
Traceability	Ability to trace the history, application or location of an entity (product or service) by means of recorded identification

1 Introduction

The EFFORTS Quality Assurance Manual (QM) has been prepared with the aim of maintaining the Quality Assurance of the project's development and results. It is a tool that relates the generic requirements of quality management and quality assurance to the specific requirements of the EFFORTS project. The overall "Project Management" responsibilities, the Project Quality goals and the Technical Annex (TA) have been taken into account in the preparation of this document.

The QM is the formal guide to the project's quality system and includes the quality policy, quality system structure and establishes the nature and flow of documentation, since this is an important aspect of presenting the project to the outside world, especially its Deliverables.

The Project Quality Control section establishes the procedures for applying the control required for measuring and monitoring the progress of the project. There are also a series of quality assurance procedures. These aim at ensuring that the overall quality performance of the project will be within the requirements of the TA.

During the project's life cycle, the QM will be reviewed the Quality Assurance Manager (QAM). He will take into consideration any suggestions from members of the consortium, who are encouraged to bring any relevant points to their attention. If necessary, the document will be revised to reflect any changes and re-issued.

The QAM, TUHH, is responsible for the maintenance and distribution of the QM, ensuring that each member of the EFFORTS consortium is provided with a current copy of this manual.

2 Executive Summary

This QM is a living document to define a set of procedures, templates, conventions and guidelines so that all partners will operate and report in the same way, thus increasing the project efficiency and the quality of the deliverables.

The objectives of this document are

- to identify the different types of deliverables and specify their templates
- to specify the procedures and control of the document flow
- to define a convention for the document code
- to specify quality assurance guideline

3 General

3.1 Quality Assurance Manager

The **Quality Assurance Manager** is appointed by TUHH to develop and disseminate a quality system, in order to ensure that the project functions in a timely and cost effective manner. The QAM will be responsible for the internal quality control of Deliverables and providing the assessment criteria for their Peer Reviewers. The QAM has the right and the obligation to intervene, at the co-ordination level, whenever the resources and results delivered do not correspond to the requirements of the TA or the project's quality system.

The QAM is to ensure that there are adequate procedures and methods within each Work Package's (WP) organisation, to enable the production of timely and cost effective Deliverable, of the required quality.

Any change in the work package descriptions needs to be confirmed by the QAM.

3.2 Quality Policy

The Coordinator, representing the consortium throughout the life cycle of the EFFORTS project, maintains that the policy of the consortium is to operate and produce results at the highest level of quality possible, under the following constraints:

- The need to comply with the international / national / local maritime rules and regulations
- The need to take into consideration the national / local rules and regulations for data and radio communication
- The project's budget and timeframe.
- The need to include all known provisions for civil and environmental protection, as they may relate to the planning and implementations or other EFFORTS related developments

3.3 Quality System

The consortium, in order to ensure compliance of its products and services are developed to the contracted specifications and goals and other implied quality requirements and documents, maintains a Quality System.

Since the concept of system includes the operational structure and the resources across the entire project, this Manual and the system it describes, refers to the totality of the consortium's activities.

The QAM is responsible for designing an appropriate quality system. The implementation and maintenance of the quality system is the responsibility of all partners, with the co-ordinating support of the QAM.

The prime responsibility for general direction and the required authorisations for the Quality Assurance system functions rest with the QAM.

This Quality Manual, together with the Technical Annex and the project's quality control records, establishes the procedures, practices and controls of the quality system.

4 Project deliverables and standard templates

This chapter specifies the project deliverables, templates, the coding conventions and the technical requirements.

4.1 Project deliverables

A project deliverable represents a verifiable output of the project which is subject to review by the Commission.

The WP leader (WPL) is the main author of a technical report / Deliverable, associated with his / her WP.

Technical reports / Deliverables are to be sent by mail printed and signed to the QAM (TUHH) and additionally by email in appropriate format. The deliverable will only be accepted from the WPL respectively to ensure that the deliverable is approved by the WPL.

The electronic version will be forwarded to the Technical Coordination Team. The TCT will read the reports and comment on their contents within a reasonable time. If considered necessary up to two Peer Reviewers nominated by the TCT in accordance with the QAM will ensure that these reports satisfy criteria on presentation and readability. Proposals by the WPL for peer reviewers to be nominated are welcome and will be taken into account. More importantly, the TCT and the peer reviewers will also ensure that the reports meet the objectives and requirements stated in the contract. When the report has been accepted by TCT, and Peer Reviewers the QAM will send the report to the Commission.

4.1.1 Types of project deliverables

Within the EFFORTS project there are the following deliverables that need templates and / or guidelines:

- Work plan
- Technical deliverables per work package or horizontal activity
- Presentations
- Cost statements
- Peer review
- Minute of Meeting
- Periodic Reports
    - The periodic activity report
    - The periodic management report
    - The periodic report on the distribution of the Community's contribution

- The draft planning for next 18 months
- The interim science and society reporting questionnaire
- The interim reporting on the implementation of the gender action plan
- The interim socio-economic reporting questionnaire
- Supplementary reports

- Final Reports
  - A publishable final activity report
  - A final plan for using and disseminating the knowledge
  - A final management report
  - A final report on the distribution of the Community's contribution
  - A final science and society reporting questionnaire
  - A final reporting on the implementation of the gender action plan
  - A final socio-economic reporting questionnaire
  - Supplementary final reports
- Internal Activity Reports (on demand of TCT)

4.1.2 Templates

Templates for the identified deliverables are produced in a self-contained document and the explanation if necessary is to be found in those documents.

To ensure that all required references are available, and to avoid clerical errors and unnecessary questions, each written document should be based on the templates electronically available on the EFFORTS website.

The following table gives a summary of the deliverables that are essential for quality assurance:

Item	Description	Responsibility of	Closing Date	Reference to online template
Work plan	Plan describing the Work in the WP	WP leader	At the beginning of WP life time and at intervals when updates are needed	Work plan
Technical deliverables	All official project deliverables as defined in the WP descriptions	WP leader	As defined in the TA	Technical Report
Periodic Activity reporting	WP reporting	WP leaders and all partners	Annually	Periodic Activity report
Periodic Management Report	Management status	Project management	Annually	Periodic Management Report
Peer Review reporting	Peer Review	QAM	Frequently	Peer Review Report
Internal activity reporting	WP reporting	WP leaders and all partners	Frequently	Internal Activity Report

Table 1: reports essential for quality assurance

4.1.2.1 Reporting periods

The project is divided into reporting periods of the following duration:

P1: from month 1 to month 12 (May 2006 – April 2007)

P2: from month 13 to month 24 (May 2007 – April 2008)

P3: from month 25 to month 36 (May 2008 – April 2009)

P4: from month 37 to month 42 (May 2009 – October 2009)

Periodic Activity Reports and Periodic Management Reports correspond to these periods.

Internal Activity Reports have to be delivered on demand of the TCT within a reasonable time.

4.1.3 Format and Filing

Language: All documents, presentations and deliverables in EFFORTS shall be produced in English language. Any documents in other languages than English that are of use for the project should be summarised in English.

Letter type: For standard text the letter type is Verdana, font 11, single line spacing.

Further formats to be used are defined in each template.

Technical requirements :

- Mircosoft Office 200x (including WORD, EXCEL, Power Point)
- MS Project
- Acrobat Reader 6.0 or higher
- Graphic formats: TIFF Bitmaps (TIF), JPEG Bitmaps(JPG), Windows Bitmaps(BMP)
- Upload format: pdf

4.1.4 Filing of documents

The QAM will keep a file of each document as well as the track of the progress of the project in order to develop a project archive, which will be available via the project's website. However, it is important that all participants should still file all documents pertinent to the project.

Work package leaders should decide themselves whether or not a certain document is to be filed if, for instance, such a document is oriented to minor management issues. The WPL shall upload the documents on the EFFORTS website. There will be a guided tool for uploading. The system relies on work package leaders identifying their documents properly. The QAM provides support if necessary.

The file name given will be extended by the following key:

EFFORTS-[Workpackage]-[type of Document]-[date of filing (ddmmyy)]-[Partner]-[document numer-version]-[<final>]-[description (filename)]

Following is the explanation to each key for the composition of the file name.

First section: EFFORTS workpackage

EFFORTS-[WP or SP][WP number].[task number]

Second section: Type of document

AC:	Audit Certificate
DUP:	Dissemination and Use Plan
DEL:	Deliverable Dxx/xx (Example: D05/02)
REP:	Report
DOC:	other Document
MOM:	Minutes
PMR:	Periodic Management Report
PAR:	Periodic Activity Report
PRR:	Peer Review Report
TR:	Technical Report

Third section: date of filing

Notation: ddmmyy

Fourth section: partner id

Abbreviation used for the partner. Example: TUHH, Dapp, etc…

Fifth section: document number

Contains two elements, the first is a continuous number (incremented by 1 for each new document); the second is the version of a particular document.

Example: 18-03

Sixth section: “final” tag (if applicable)

Seventh section: document description

An appropriate description of the document supplied, usually the filename. The following characters are allowed: “a-z”, “A-Z”, “0-9”, “-“, “_”, “.” Do not use white spaces.

Example of an appropriate filename:

EFFORTS-WPI-DOC-130207-TUHH-18-02-
Template_Project_Deliverable_Final_V2.0.doc

4.1.5 Peer Review reports

Deliverables will become peer reviewed if appropriate. The peer review process will be organised by the QAM and TCT as well as the responsible work package leader.

The peer review process is one whereby a Deliverable is tested for quality prior to its submission to the Commission. The purpose of the review is to ensure that the project Deliverables are of high quality, state-of-the-art and meet user requirements.

The peer review reports should accompany the Deliverable, when it is submitted to the Commission. Adequate time must be allowed for reviewers to review the Deliverable and for the project to make any necessary changes, which may result from the review. A letter should accompany the Deliverable outlining what changes were made to the Deliverable following the review process. The following are some guidelines for good practice:

- Up to two reviewers should be adequate for most Deliverables. There should ideally be one consolidated review report.
- Peer reviewers' confidentiality agreement is covered in their standard contract.
- The project QAM should be in charge of the peer review process.
- Plan the review so that there is adequate time to do it, make the necessary changes, and submit the Deliverable to the Commission on time.
- Reviewers should be real "peers", that is, people who are either expert in the specific subject covered by the Deliverable and / or represent the users addressed by the application or service.
- It is not essential to appoint the same reviewers for all Deliverables; it may be appropriate to have real 'users' and at other times technical experts may be appropriate.
- The review process is not intended to be a cumbersome one - it is a mechanism to help to ensure quality. Adapt the process to suit your needs. For example, it may be appropriate to have your reviewers 'walk through' a prototype instead of reading a report. The 'depth' of the review should reflect the importance and value of the Deliverable. Some Deliverables may merit a short review process (and a very brief review report), others, such as a formal walk through, might be more appropriately done with a wider group of reviewers (and may need a more substantial report but this should not exceed five pages).
- Peer reviewers' costs are a part of the cost of producing a Deliverable. They will be paid as sub-contractors by the QAM.

The peer review report should contain:

- A list of the reviewers and a short (2/3 lines) CV of each of them.
- The procedure followed (for example: workshop, walk through or report reading).
- The main results of the review, including:

- Is the Deliverable relevant and does it contributes to research in this field?
- How it meets the objectives of the work package and the project?
- Is the Deliverable well presented, clear and coherent?
- Does the Deliverable address a real need (either in the research or user context)?

4.1.6 Some recommendations regarding reports

- Use project / Commission templates (as applicable),
- Maintain consistency, uniformity, format and style, (An EFFORTS-document must be recognised as a product of the EFFORTS consortium)
- Use the KISS-principle (keep it short and simple)
- **but** Ensure high quality,
- Check the size (in bytes) of graphics if you intend to incorporate any,
- Reduce the size of graphics if overall quality is not lost,
- Do not use graphics just to make a report look nice (exceptions prove the rule),
- Do not divide a document into central and branch parts.

5 Project Quality Control procedures

5.1 Project Progress Review

5.1.1 Purpose & Scope

To establish, by periodical review, the Project's progress against contractual agreements and obligations, as reflected in Annex III of the contract and the Technical Annex.

5.1.2 Procedure

The Coordinator and the TCT compile Periodic Reports and Final Reports. These reports are based on the consortium's input and Deliverables that have been produced during the relevant reporting period. The Project Coordinator takes care for the Management Reports and the TCT is responsible for the Activity Reports.

The Coordinator and the TCT will liaise with the QAM in production of Periodic and Final Reports. In cases where significant deviations are detected, as far as the expected progress and / or minimum quality is concerned, the Coordinator and the TCT, in liaison with the QAM, may choose to arrange a Quality Audit.

During the preparations for the Periodic Report, the QAM will check the progress of the Deliverables. From this examination he will complete his records to reflect any or all of the following:

- non-conformances
- corrective actions
- delays and timeliness generally
- quality contractual obligations and quality characteristics of delivered work.

The findings of this examination will be discussed with the Co-ordinator and with the relevant WP-leaders, as necessary.

After this review the Coordinator will finalise the consolidated Project Report, circulate it to partners for comment and then submit it to the Commission.

5.2 Work Package Design Control

5.2.1 Purpose & Scope

To establish the requirements for WP design control, which includes control of design input elements and validation of pertinent product / service quality plan.

5.2.2 Procedure

- For each WP-Leaders reference, the WP description contains the respective report / software description that stands as a contractual requirement (equivalent to product / service brief).
- For each Deliverable (product / service) the WP-Leader will design its format and list its intended features.
- The WP-Leader will develop the work plan, where an outline of the work to be done will be provided, the required partners' resources allocated the objectives of exploitation and, where possible, assigned target values and dates and associated control methods.
- Develop a work plan where, for each step and design element, the minimum requirements will be stated for the outputs to be successful (i.e. describe quality characteristics and acceptance criteria).

After the preparation of the work plan, which should be circulated to the partners involved for comment before being finalised, the WP-Leader submits copies to the Coordinator and the QAM for WP-design review. The Coordinator and the QAM will cooperate during the reviewing phase of each WP-work plan, informing the WP-Leader of the work plan's acceptability or of any clarification / modification requirements**.**

It is particularly important that the work plan provide milestone dates and, in particular, that sufficient time is allowed for circulation of draft Deliverables for consortium comment, Peer Review and final editing and printing by the Co-ordinator. At least 4 working weeks before the Deliverable's submission date needs to be allowed for this process.

The finalised work plan should then be distributed to the consortium partners involved in the work package, for implementation.

Any changes to a WP-design are to be communicated to the QAM, who in turn will review them; inform the Coordinator; and notify the WP-Leader for updating of the original plan.

5.3 WP-progress Quality Control

5.3.1 Purpose & Scope

To describe the quality control procedure that will be applied during the development of the WP.

5.3.2 Procedure

The WP leader establishes a detailed work plan. The aim of the controls is to assess conformance of the Deliverables under development and to provide the capability for in-time corrective action, when necessary.

The controls are established by considering the WP milestones and WP work plan. In this way there will be visibility of both the quantitative and qualitative status of the WP process.

The WP descriptions must contain a detailed description of expected results, a work allocation stating the involved parties and their person months and a schedule including milestones. It has to be specified which input has to be given from other work packages/tasks and which output has to be delivered for other work packages/tasks.

The results will be assessed. If major problems or non-conformances arise during the process, or are revealed when applying process control, they should be communicated to the Co-ordinator and the QAM, in order to seek solutions through a team effort.

The process quality controls are applied throughout the life cycle of a work package (from input up to final output; Deliverables included).

The final acceptance of a Deliverable, where suitable, may occur during the quality assessment of site applications.

6 Quality Assurance System Procedures

6.1 Document Control

6.1.1 Purpose & Scope

To establish that all documents and data related to the Quality Assurance System (QAS) requirements are issued, reviewed and maintained in a controlled manner.

6.1.2 Procedure

The QAM is responsible for establishing, maintaining, and disseminating this procedure throughout the consortium, for the benefit of components of consortium members' organisations that produce or use any of the above mentioned documents.

Within the 'control' concept, the QAM ensures that all documents are properly structured, identified and dated, as described in this manual.

As a general rule the originator of a document related to deliverables will produce a copy, sign it and forward it to the Coordinator. In this way the authenticity of produced documentation will be demonstrated and any confusion is prevented.

However, since e-mail provides an efficient mean of immediate and relatively secured document exchange, it can be used for communication between the partners and the Coordinator; the authorised copy can be forwarded in due course.

Each generator of documents is required to maintain an electronic copy of the work (e.g. CD-ROM or zip-drive) properly identified and stored. The author must be in position to present this copy, upon request or during a Quality Audit.

The updates of an original document will be copied and stored together with the original and properly identified so that no historical data is lost or untraceable.

Among the documents, there are certain reports and records that are important for the QAM in his role to ensure that quality is invariably under control or, when it is in question, the appropriate corrective mechanism is promptly activated. Thus the documents that belong to the category of quality control records are the ones that when generated, the QAM should be notified through e-mail. Such records are:

- quality control data from measurements at test trials
- self-evaluation results by WP-Leaders when they control degree of compliance to milestones and interim (or final) quality characteristics of Deliverables
- discrepancy reports (i.e. compliance failures to quality standards) of Deliverables or of inputs
- corrective action documentation

In order to provide visibility to the current issues of documents that are generated / updated during the project, the QAM will maintain a table of all such documents on the project web site.

Like other EFFORTS related documentation, all quality documentation will be retained for at least 5 years after the end of the project.

6.2 Product identification and Traceability

6.2.1 Purpose & Scope

To describe the requirements for identifying the products (software, tools etc.) that will be developed and the requirements for traceability of product development.

6.2.2 Procedure

Every tangible Deliverable - be it software, diskettes, CD-ROMs etc. - must be properly identified by the WP leader. Identification requirements include:

- Name of the product
- Description, in brief, of the technical aspect it covers in EFFORTS
- Labelling with the EFFORTS logo
- WP-No., thus indicating the principle custodian of this product
- Date when the product was originally available (or was modified)

As far as possible, the layout of product identification should be such that the name appears first, next the description - in smaller letters - and then the WP-owner and any relevant date. The project should feature prominently and, perhaps, be in the centre of any label

In addition, information will be required for traceability. Thus each WP-No & date should have a file for the product with all necessary historical data of its development specifications, software or other data and information that was used for the generation of the final product.

As a general rule, all partners when reporting information, producing interim Deliverables, or final elements of EFFORTS must make provision for traceability, allowing retrospective identification of the original information and of methods employed to Deliverable production.

6.3 Control of non-conforming products

6.3.1 Purpose & Scope

To provide a system that will establish and maintain procedures for the control of non-conforming products (software, tools, and services). It includes all products that are found not responding or satisfying to the given specifications for intermediate or final Deliverables, as well as any non-conforming supplies that may be used in the completion of an intermediate or final Deliverable. It applies especially in site test trials, for software and tools and /or services that are found deficient during the development of work packages or the execution of the tests.

6.3.2 Procedure

During WP activities and especially during development, test or trial processes involving direct contact and usage of software, tools and services, non-conformances (NC) may be found.

WP leaders or other partners, when encountering an NC, are required:

- To document the non-conforming product. A typical NC document will include:
  - identification of the WP
  - identification of the document originator
  - document sequence number; it is recommended to number each NC document as “NC-01”, “NC-02”, etc.
  - date of document generation
  - description of non-conformance, to include product identification, stage / circumstances under which it was found, extent of failure and effect on work.
- To identify the non-conforming product (if it is tangible, such as CD, diskette, hardware etc.).
- To isolate it, to prevent usage
- To report the finding by sending a copy (e-mail / fax) of the NC document to the QAM. In case the NC affects the critical path of the task, the NC shall also be copied to the Co-ordinator, by the same means.
- If the product belongs to a user or a site they must also be notified.
- File the NC document.

The QAM will maintain a file of NC documents arranged by originator. He will characterise them as minor / major; summarise their effects in periodic reports as appropriate, emphasising failure trends and overall effects.

6.4 Corrective and preventive action

6.4.1 Purpose & Scope

To establish the requirements for investigation, corrective action and follow-up, in cases where NC of products and / or work are encountered

This refers to products where NC has been reported or to work that indicates undesirable results or systematic deficiencies of some functions or structures of the project.

6.4.2 Procedure

For every non-conformance the responsible WP leader will analyse whether it is systematic, i.e. likely to recur, or a remote case. If it is not systematic, no further investigative action need be taken. If it is systematic, corrective action should be taken as follows:

- Investigate the causes of NC, identifying the most probable cause.
- Establish a method of preventing or minimising the conditions that could generate the cause.
- Document the above activity in a Corrective Action form. The form should include the following:
    - Identification of discrepancy
    - Description of the cause
    - A summary of corrective steps

If a NC is traced to a sub-contractor or supplier, then the WP leader is obliged to forward a report of it and a request for corrective action as stated in annex B.

For the cases of NC indicated by unsuccessful results or deficiencies in the structure of the project, the QAM will inquire about the details of the NC, document them and report to the Co-ordinator. In this case, the Co-ordinator may call for a team effort including the QAM, as a team leader, and any of the functions involved in the NC and / or in the required corrective action.

The records of the failure analysis (cause investigation) and the corrective steps, together with the document that initially described the NC or deficiency will be kept by the affected WP leader and copied to the QAM.

In cases where the NC investigation is initiated and coordinated by the QAM, all original records will remain in his files while a summary will be included in the QMR / ProRep, as appropriate.

The activity described in the above procedure, if followed in a disciplined and timely manner, will be the basis for prevention of complications, delays and possibly of conditions that may cause inadvertent damage to the project.

6.5 Quality Records

6.5.1 Purpose & Scope

To establish a system that will provide for proper identification, segregation, filing accessibility and disposition of project's quality records. These records constitute historical data of the quality status of the project and also useful references for the exercise of quality management.

For this project the quality records are:

- Quality Control Records,
- Corrective or Improvement action plans that result from Quality Audits and pertinent follow-up documentation,
- NC or systematic deficiency reports and relevant corrective action documentation.

6.5.2 Procedure

Quality Control Records, generated by WP leaders, should be completed and retained in a way that makes them easily accessible during quality audits, or as required.

Quality Control Records generated during inspection and testing of site applications are to be forwarded to the QAM as described in the last sub-section of section 5.4.

NC reports and summaries of corrective actions are also to be forwarded to the QAM.

Those forwarding Quality Control Records are to retain the original documents. The QAM will file them systematically, so that they can be easily retrieved. These files can be in hardcopy or electronic form.

Any other documents mentioned in this procedure are to be well maintained and made available to the Coordinator, on request.

6.6 Quality Audits

6.6.1 Purpose & Scope

To establish the procedure for ensuring that the elements of the QA system are performing to the required level. This procedure includes all activities that affect the quality performance of the project's Deliverables. The scope of quality auditing also includes topics concerning time and cost control. **Quality audits will be performed only if found necessary by the consortium or deemed so by the Coordinator.**

6.6.2 Procedure

Quality audits will be performed, as requested by the QAM, to ensure that the work that WP leaders have undertaken, progresses as scheduled and performance meets the required quality level.

These audits can be achieved by forwarding records and data, from the various sites and WP leaders, to the QAM as requested by him. This procedure can be supplemented by visits to selected sites.

An EFFORTS quality audit will review:

- Quality Control Records
- Corrective action documentation
- Vendors' and sub-contractors' evaluation records and approved vendors' lists
- Traceability evidence for Deliverables
- Milestones and budget-cost comparative data.

The auditor will use support documentation for a quality audit to evaluate the status of development work and its quality level. This documentation may include quality plans, WP descriptions (from the TA) and time and cost allocation tables.

Quality audits may precede respective technical review meetings by the Commission. In addition, one or more audits may be conducted where deemed necessary by the consortium / Coordinator.

Audit results will be documented and commented on by the QAM. Audit reports will be forwarded to the affected partners and a copy is sent to the Co-ordinator.

If the quality audit reports contain suggestions for corrective action, it will be expected that the affected parties will submit corrective plans. In cases where discrepancies are revealed involving cost or timeliness the affected parties will be required to submit a report giving an explanation and the necessary remedial steps, to the Co-ordinator.

Notes :

a. To clarify the issues of timeliness and budgeting, each WP leader is required to maintain detailed time schedules and cost estimates. At planned intervals the WP leader is to conduct internal audits to verify that resource

consumption is in alignment with work plan estimates. If, during this verification process, deviations between actual and planned cost and duration are revealed they must be reported, together with a plan for how these deviations will be accommodated.

b. In case changes to schedules and / or budgets are required, these changes must be clearly specified, justified and sent to the Coordinator for authorisation. For major changes the Coordinator will have to process them through the project hierarchy in the Commission.

Quality Audit reports are reviewed during internal progress reviews and the responsible bodies - e.g. Co-ordinator, QAM and Peer Reviewers - examine the corrective plans, together with follow-ups. As a result new requirements may be imposed on the affected partners, with the intention of creating the least possible disturbance to the overall project and its resources.

6.7 Work Package Closure Requirements

6.7.1 Purpose and Scope

To establish the requirements for ensuring that work package processes are closed as planned. This includes work package records and Deliverables

6.7.2 Procedure

Every WP leader will, upon completion of their planned work, compile, identify, prove and then forward to the Coordinator the following:

- Final Deliverable
- Any deviation / non-conformance records
- Relevant corrective action (to the item above)
- Actual cost data summary (to be used in comparison to the contract)
- Any responses or suggestions that may arise from the marine environment or site users in reference to project work.

The Coordinator will:

- Review all closure data described above
- notify the QAM for receipt of WP closure data
- Seek the QAM's input on possible deviations from WP plans and, if required, cooperate with a WP leader, in order to clarify / resolve issues that may arise during reviews by himself or by the QAM.

The QAM will check his records for final acceptance with the Coordinator for release of Deliverables. On completion of which, Deliverables will be submitted to the Commission.

7 Conclusions

This manual is issued to the members of the EFFORTS consortium as an initial guide for standardisation of document format and flow, for quality control throughout the life cycle of the project and quality assurance of Deliverables, according to project WP objectives, as described in the TA.

Version 1.0 (initial release) of the QM may be replaced by updated versions, as necessary, to reflect new or improved methods or procedures during the project. To this end, during the project, all consortium members are invited to contact the project QAM with any constructive suggestions for the manual's improvement.

8 Bibliography

ISO 9001, Quality Systems - Model for Q.A.

ISO 9004-5, Guidelines for Quality Plans

ISO 10006, Guidelines to Quality in Project Management

EFFORTS Project Manual (Internal Publication part of the internal area of the EFFORTS website)

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