D7.2

Scientific quality assurance plan

Disclaimer: This deliverable has not yet been approved by the European Commission and should be seen as draft!

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Technical References

Project Acronym	ULTIMATE
Project Title	ULTIMATE: indUstry water-utiLiTy symbIosis for a sMarter wATer society
Project Coordinator	KWR
Project Duration	48 months

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Contributing beneficiary(ies)	EUT, KWR
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Actual submission date	

[1] PU = Public
   PP = Restricted to other programme participants (including the Commission Services)
   RE = Restricted to a group specified by the consortium (including the Commission Services)
   CO = Confidential, only for members of the consortium (including the Commission Services)

Document history

V	Date	Beneficiary	Author	Changes
1	02/07/2020	EURECAT	Anna Casadellà and Sandra Casas	First Draft
2	08/07/2020	KWR	Lydia Vamvakeridou-Lyroudia	Second Draft
2.1	20/07/2020	KWR	Joep van den Broeke	Quality Assurance

Summary

Deliverable 7.2 "Scientific quality assurance plan" was developed within Task 7.5 – Quality Assurance and Progress Monitoring, led by KWR, from WP7 - Project management. This deliverable aims at ensuring that the project will satisfy the established quality standards. The Plan defines quality management processes and includes procedures to review the internal management and quality progress reports, as well as the overall project deliverables. It also considers the evaluation of events and describes the management procedures and tools adopted for measuring and monitoring the project's progress. The QA officer (EUT) and KWR (coordinator) have contributed to this document.

Disclaimer

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List of Abbreviations

CA: Consortium Agreement

CO: Confidential

DoA: Description of Activities, referring to the Annex I of the Grant Agreement

EC: European Commission

GA: Grant Agreement

IPR: Intellectual Property Rights

PMT: Project Management Team

PSB: Project Steering Board

PU: Public

QA: Quality Assurance

QAO: Quality Assurance Officer

STC: Scientific and Technical Committee

WP: Work Package

1. Introduction

1.1. Purpose of this document

In ULTIMATE, project quality management activities are addressed within WP7. Quality assessment requires information from "internal sources" (project partners, Work Package (WP) leaders, Project Management Team (PMT), Scientific and Technical Committee (STC), etc.) and from "external sources" (e.g. participants of project events, Project Advisory Board (PAB) and other stakeholders). Such information will enable a more complete overview of items such as: quality of project management and results achieved; adequacy of materials produced; degree of satisfaction regarding project's events, etc.

Monitoring the project progress and quality assessment activities are managed by the Project Management Team (PMT) and the Scientific and Technical Committee (STC) and involve the following main procedures

- **Verification of successful accomplishment of project scientific and technical activities**
- **Organization internal quality assurance through adequate review mechanisms for reports and deliverables**
- **Evaluation of events**
- **Protection and management of IPR of the project results**

Therefore, the structure of D7.2 – *Quality Assurance Plan* is here organized in the following sections:
- **Quality assessment tools**
- **Evaluation of events**
- **Conclusions**
- **Annex I: Event evaluation form**
- **Annex II: Reviewer report**

This document serves two purposes: (i) establishing a framework for the PMT and the STC to effectively carry out quality assessment of the produced results, and (ii) being a handbook for every member of the project consortium to conduct their project activities at high-quality levels.

2. Quality assessment tools

2.1. Verification of work progress

The Project Management Team (PMT) is the board responsible for the project quality management. The PMT will ensure that the project activities necessary to design, plan and implement ULTIMATE are effective and efficient with respect to the purpose of the objectives and its performance.

PMT is formed by the Coordinator, represented by Gerard van den Berg at KWR, supported by other KWR experts for administrative, financial and contractual matters. The coordinator will also be supported in the management of crucial project domains by the following officers:

- Administrative Officer: Mrs. Bianca van der Wolf (KWR)
- Innovation and IPR officer: Responsible for T7.4: Prof. Francesco Fatone (UNIVPM)
- Quality Control officer: Responsible for T7.5: Dr. Sandra Casas (EUT)
- Risk Officer: Responsible for T7.6: Dr. Joep van den Broeke (KWR)
- Ethics Officer: Responsible for T7.7: Prof. May Thorseth (NTNU)

The PMT will have monthly meetings (usually as online conferences) to ensure that work is in accordance with the Grant Agreement, and will carry out the following tasks:

- Main interface between the consortium and the EC for all contractual and formal reporting matters;
- Coordination and progress monitoring of all project activities;
- Organisation (and chairing) of PSB meetings and STC meetings to discuss progress within and across the WPs and the need for any corrective measures.

Thus, PMT will be in charge of organizing STC meetings, where STC is the executive body where the progress of the project is monitored and managed and decision to be taken by PSB are prepared. The STCwill discuss and propose solutions in case of:

- Foreseeable difficulties in a WP to achieve objectives or deliverables
- Need for harmonisation of activities between and across WPs
- Obstacles and barriers causing delays in progress, in particular if this is likely to affect other WPs that need the output of another WP as a starting point.
- Need for reallocation of tasks within or among the WPs, if necessary
- Security or privacy issues raised as part of the DMP design and implementation
- Weak performance or malfunctioning of a partner

- Innovation Management issues in support to the overall business plan

The STC decides whether an issue can be tackled internally or has to be communicated to and decided by the PSB or the EC. In the latter cases, the STC will develop a proposal to be communicated to the PSB for decision.

To ensure a regular monitoring of the project's tasks, WP leaders are asked to report on the progress of their WP monthly in the STC meeting. For this purpose, WP leaders should collect the views of the task leaders and try to present information regarding:

- On-going activities;
- Short overview of the activities undertaken during that month period;
- Issues/delays with the activities. In case there are issues, the WP leader should also identify other tasks that can be impacted, and specify a plan to minimise the risks.

To ensure that the PMT Officers can monitor overall quality of the project, when an activity, task or deliverable is delayed or when there are deviations from GA, the PMT Officers should be informed and a valid justification should be provided. The WP leader together with the Coordinator and Risk Officer are then responsible to identify other tasks that can be impacted, and specify a plan to minimise the risks. Then, the STC, the Coordinator along with the Risk and Quality Officers will decide on corrective measures to improve the quality of results, and if necessary, to reallocate this responsibility to another partner. The Coordinator, in consultation with the STC, will be ultimately responsible for reporting to the EC and for coordinating mitigating actions, when necessary.

In case of conflict and dispute among the team members, the conflict resolution will follow the procedure described in the DoA and further elaborated in the Consortium Agreement (CA).

To facilitate the project progress monitoring, the ULTIMATE toolbox was created and made accessible to the consortium throughout the ULTIMATE SharePoint site. This tool provides information and standard templates for internal communication on deliverables and milestones status. ULTIMATE SharePoint is an action under T7.2 Project Management and contractual reporting.

2.2. Peer review of deliverables

2.2.1. Adequacy of deliverables

Deliverables should be conceived according to the objectives and the target audience, considering the purpose of the deliverable and defining the best way to convey the information.

The deliverables should be designed from the beginning to be clear about the objective, and then be very concise about which content to include in the documents. Very long deliverables should be avoided as they create several problems to write for the author, review for the reviewer and read for the final user. The focus of the deliverable must be clear and concise. Avoid repeating content from other documents (always use references for that) and synthesize, summarize and always get to the point.

The following elements are to be included in a deliverable: Executive Summary, an Introduction section outlining clearly the Purpose and Scope, a Conclusions and a Future Work Section (when applicable).

The right size for a given deliverable depends largely on the topic, the objective, etc. A suggested maximum size of 30 pages for dissemination/exploitation documents and 100 pages for technical deliverables, could be considered as reference. However, there might be exceptions and it will be the responsibility of the reviewer to indicate whether the report is too large or too short for the purpose (and the work included).

2.2.2. Quality Assurance procedure

All deliverables of ULTIMATE (PU and CO) will undergo a Quality Assurance (QA) procedure. Two procedures have been designed for the revision of the deliverables depending on the nature and origin of the content:

Deliverables produced within WP1 – WP5

1. WP leaders are responsible for the arrangements and logistics for the QA process and its supervision (contacting reviewers, deadlines, etc.). An excel file, available in the ULTIMATE SharePoint, will be used to track the writing and reviewing process of the pending deliverables. Progress of the writing of the deliverable will be included as well so to be able to plan the reviewing process on-time.

2. Reviewers will be selected by deliverable leader as early as possible (see following section on Quality Assurance Schedule) and will be given a check list of deliverables developed for ULTIMATE.
3. Reviewers' comments and contributions should be done as described in the following section "Methods to be used by reviewers".
4. Reviewers' comments should be addressed before the deliverable can be considered final. Thus, the author(s) of the deliverable should send the reviewed/revised document to the reviewers for a final acceptation of the document.
5. With the approval of the reviewer(s), the WP leader will check that the content of the deliverable is in line with the proposal in DoA. The Quality Assurance Officer will at this stage perform a last round of proof-reading, to find and correct typographical errors and mistakes in grammar, style, spelling, format and layout that may have been introduced the modifications done when addressing review comments and requests. The Quality Assurance Officer is responsible to oversee the application of QA standards to deliverables against pre-defined quality standards, layout and structure and, if needed, to call in external experts in collaboration with the Coordinator.
6. The final document will be submitted to the Coordinator for the final check and submission to the EC services.
7. Each document will be reviewed in two stages: a. Internal review (within the organisation leading the deliverable) b. External review (by other consortium partners
8. The internal review (Stage a) is a matter of the general procedures in place by each organisation. In case such procedures do not exist (e.g. for partners that seldom participate in EU funded projects), the suggested procedure is to appoint internally a person that was not involved in the writing of the deliverable, but senior and experienced enough to make a thorough review.
9. The external review (Stage b) will take place according to the following procedure:
    i. One main reviewer should review each deliverable (Type R = Reports)
    ii. The reviewer should be from a different organisation than the partner responsible for the deliverable.
    iii. It should be a person not involved as co-author or contributor to the deliverable, but with enough knowledge and expertise to be able to follow any related technical content, i.e. a senior researcher, participating in any WP (not necessarily the same WP).
    iv. The person should be fluent in English (if not a native English speaker) to ensure that the quality of English in the Deliverable will be adequate.
    v. If such a person cannot be found among the consortium members, the WP leader will notify the STC and the PMT, so as to appoint an external reviewer to the project (e.g. among the PAB).

vi.   In case the review at Stage (b) raises serious issues with the Deliverable, the WP leader will appoint a second external Reviewer and the procedure for Stage (b) will be repeated.

Note: The external Reviewer at Stage (b) is the *sole responsible* for the review and should *not* delegate this task to more junior persons in their own organisation, e.g. for lack of time. In case they don't have the time, they should notify the WP leader, so that another reviewer from a different organisation can be appointed.

Deliverables produced within WP6 and milestone reports

1. Deliverables produced within WP6 and milestone reports produced during the project will be reviewed by the project coordinator and the QA officer. Revision will be conducted according to the methods described for the rest of the WPs products and using the same templates. Revision will take place ensuring that the content produced meets the specifications of the DoA.
2. Track of the writing and revision of the deliverables will be conducted in the same file available in the ULTIMATE SharePoint.
3. QA and project coordinator's comments should be addressed before the deliverable can be considered final. Thus, the author(s) of the deliverable should send the reviewed/revised document for a final acceptation of the document.
4. The coordinator will proceed to the delivery of the Deliverable to the EC services.

Note: all deliverables of different types (P = Prototype, D = Demonstrator, O = Other), should be accompanied by a report to be reviewed according to the rules here defined for Deliverable of type R.

The Coordinator is responsible for uploading the final version of the deliverable to the correct location in the project repository and into the European Commission platform. All deliverables must be approved by the Coordinator before being submitted to the EC. The Coordinator is the ultimate responsible for all deliverables towards the European Commission.

All deliverables that are reports must be produced using the deliverables template, which is developed by WP7 and made available in the internal area of ULTIMATE (SharePoint).

2.2.3. Quality Assurance Officers

The Quality Assurance Officers will have the overall responsibility for Quality Assurance and Quality Control of the project results in ULTIMATE. **Sandra Casas** and **Anna Casadellà** (EUT) have been jointly appointed to this role.

The Quality Assurance Officers (QAO) will be in charge of the application of QA standards to deliverables against pre-defined quality standards, layout and structure and, if needed, can propose appropriate corrective actions in collaboration with the Coordinator. They also perform a last round of proof-reading, after review and revision is complete for all the deliverables.

2.2.4. Quality Assurance Schedule

When the deliverable preparation starts, the deliverable leader should contact the WP Leader to propose (and discuss) reviewers in case the deliverable is produced within WP1-WP5. The WP Leader will inform the QAO accordingly. In case the deliverable is from WP6 or it is a milestone report, then the revision will be conducted by the QA Officer and coordinator only.

Once reviewers have been defined and validated, they will be contacted by the deliverable leaders (keeping the WP leader informed in cc) about the future revision of deliverable, and agree on a binding procedure for the review process. The deliverable leader will propose the schedule for the review process in advance, agree on it with the reviewers and share it with the corresponding WP leader, who will then share it with the QAO. The process of revision will be tracked through an Excel file located in the ULTIMATE SharePoint, where the status of the revision and envisaged deadline will be indicated.

The schedules for the review process are provided in **¡Error! No se encuentra el origen de la referencia.** (for WP1-WP5) and Table 2 (for WP6 and milestones). However, the timing of specific review stages can be adapted if previously agreed between the coordinator, the WP leader, the deliverable leader and the corresponding reviewers.

Table 1. Schedule for the review process of deliverables in WP1-WP5

Review Process Stage	Starts When	Duration	Roles involved
Contact QA Officer. Select reviewers and agree on schedule	Start of deliverable preparation	1 week	Deliverable Leader WP leader QA Officer Reviewer (Stage b)

Review Process Stage	Starts When	Duration	Roles involved
Submit final draft to reviewer (Stage b) for content review and to WP leader for check with DoA	15 days before the submission date	5 days	Deliverable Leader Reviewer (Stage b) _**Please note**: At the end of this Stage the Reviewer must notify the WP leader in case serious issues arise, which will need a second external reviewer to be appointed_
Address reviewer comments and approval by reviewer	10 days before the submission date	6 days for update and 2 days for approval by the Reviewer	Deliverable Leader Reviewer (Stage b)
Quality Check and content check with DoA	2 days before submission date	2 days	Quality Assurance Officers Coordinator
Submission to European Commission	Deadline		Coordinator

Table 2. Schedule for the review process of deliverables in WP6 and milestone reports

Review Process Stage	Starts When	Duration	Roles involved
Contact QA Officer and coordinator and agree on schedule	Start of deliverable preparation	1 week	Deliverable Leader QA Officer Coordinator
Submit final draft to reviewers for content review and quality check and to WP leader for check with DoA	15 days before the submission date	7 days	Deliverable Leader QA Officer Coordinator
Address reviewer comments and approval by reviewer	8 days before the submission date	6 days for update and 2 days for approval by the QA officer and the	Deliverable Leader QA Officer Coordinator

		Coordinator	
Submission to European Commission	Deadline		Coordinator

It is the responsibility of the deliverable leader to make sure that the document is ready for starting the review process by the corresponding date and, therefore, to plan the previous writing phase accordingly. The deliverable leader should also take into consideration any internal rule regarding QA adopted by the contributing parties, so as to avoid delays.

2.2.5. Method to be used by reviewers

When working with Word documents, reviewers' comments and contributions should be done using "track change" mode combined with specific text comments aligned with the specific section. Reviews based on a pdf document, are not acceptable, because they do not allow for easy modification of the text. It is also possible, when the comments are of a general nature to submit an accompanying text document (as a separate word or pdf file).

The reviewers are invited to give detailed and constructive comments (with references, whenever possible) that will help the authors to improve the deliverable. A structured reviewer report is provided in **Annex B**.

2.2.6. Delays on the revision

In the case where, by unexpected reasons, the reviewer is not able to meet the deadline, the deliverable leader should be informed as soon as possible. If the reviewer cannot be replaced in time, or cannot meet the deadline, then the deliverable leader should inform the STC via the leader of the WP within which the deliverable is produced.

2.2.7. Other issues

The reviewers should take into consideration, when applicable, the issue of protection and management of IPR of the project results, making any suitable comments on this respect.
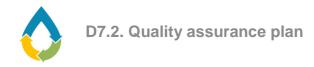
2.3. Evaluation of events

Meetings of the Project Steering Board (PSB) and other relevant external events of the project (e.g. Stakeholder and Dissemination events, International Conferences) should be evaluated by the participants to ensure high quality and continuous improvement. A model of questionnaire is provided (**Annex A**) to be used and adapted for this purpose. This model can also be used for other events that partners might organize.

3. Conclusions

This document summarizes procedures to ensure a successful collaborative work within the project, describes relevant roles and tasks, as well as tools and instruments available to conduct and report the work undertaken within the project at the highest possible quality level.

The document aims at being a project execution handbook and a reference for all project consortium members for the entire project duration.

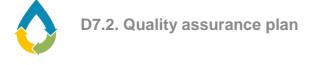# Annex A: Event Evaluation Form

[*Name of event*] **Evaluation Form (Place, d***ate*)

Dear [name],

It was a pleasure to have you in this event. We would like to know your opinion, so that we can improve future events and meet your expectations. Your identification is optional.

Thank you for your collaboration!

Name *(optional)***:** _____

Organization *(optional)***:** _____

I. Please rate each of the following items between 0 and 4 (0=not applicable (N/A); 1=excellent; 2=good; 3=average; 4=poor)

1. Meeting preparation and logistics (0=N/A; 1=excellent; 2=good; 3=sufficient; 4=poor)	
Meeting information provided in advance (e.g. dates, venue, programme)	.
Logistic arrangements to participate in the meeting: travel, accommodation, etc.	. .
Quality of hotel, meals, etc.	
Meeting venue (adequacy of the room where the meeting took place)	. .
Materials distributed during the meeting to support the sessions	.
Comments:	

2. Overall assessment of the meeting (0=N/A; 1=excellent; 2=good; 3= sufficient; 4=poor)	
Attainment of the objectives of the meeting (the objectives of meeting were met)	
Positive and collaborative atmosphere among participants	
Duration of the meeting (1=adequate; 4=totally inadequate)	.
Opportunity for individual participation and input in the meeting	.
Comments:	

3. Evaluation of sessions (0=N/A; 1=excellent; 2=good; 3= sufficient; 4=poor)		
Day 1	Clarity of presentations/speakers	Discussions (moderation, conclusions reached)
[name of session]		
[name of session]		
Comments to Day 1:		
Day 2	Clarity of presentations/speakers	Discussions (moderation, conclusions reached)
[name of session]		
[name of session]		
Comments to Day 2:		

II. In your opinion, what were the most positive and less positive aspects of the meeting?

_____
_____

_____
_____

_____
_____

III. What suggestions do you have for future meetings?

_____
_____

_____

Annex B: Reviewer Report

Overview Information

Deliverable Title		
Author(s):		
Dissemination level:		
Due submission date:		
Peer Reviewer (Person, Organization)		
Date of admission to Peer Review:		
Date of Peer Review completion:		

Length and Structure of the Deliverable

	Reviewer Comment	**Author's remediation**
Overall length. Is the overall length of the deliverable justified?		
Length of separate parts. Please indicate parts that are overlong, irrelevant, and redundant. Please indicate the parts which are too short or not enough elaborated.		
Overall style. Does the document comply with the project editing standards? (see Template for Deliverable, and Annex C: Check list for deliverables)		

Content

	Reviewer Comment	**Author's remediation**
Compliance with GA. Does the deliverable contain what was defined in the deliverable description in the Grant Agreement? If not, please indicate the parts where improvement is necessary.		
Logical consistence & clarity. Is the content presented in a logical and to-the-point manner? Is the work		

performed and results presented clearly? If not please indicate the parts where the improvements are necessary.		
Language quality. Are there any grammatical / typographical errors and/or incomprehensive sentences? If yes, please provide the authors with appropriate annotations.		
Overall content. Does the deliverable require substantial revision or rewriting? If yes, please make precise suggestions how the deliverable can be improved.		
Other observation. Mention any other striking aspects that require revision.		

Peer Review Summary

The overall rating:	☐	poor
	☐	below average
	☐	average
	☐	good
	☐	excellent
Current version of the deliverable:	☐	is ready to be submitted to the EC
	☐	requires minor revisions
	☐	requires substantial revisions
	☐	requires a second reviewer at stage (b)
Additional remarks/recommendations		