



# Scientific quality assurance plan

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# Technical References

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Project Title	Towards a next generation of water systems and services for the circular economy
Project Coordinator	<u>KWR</u>
Project Duration	

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<sup>1</sup> 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
1	30/09/2018	KWR	Christos Makropoulos
2	04/10/2018	CTM	Sandra Casas & Xavier Martinez (QA officer)



## Summary

Deliverable 7.1 "Scientific quality assurance plan" was developed within Task 7.4 – Quality Assurance and Progress Monitoring, led by KWR, from WP7 - Project management. This deliverable aims at ensuring that the project will satisfy relevant quality standards. The Plan defines suitable quality and risk management processes and includes mechanisms 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. All WP leaders have contributed to this deliverable.

## 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

KPI: Key Performance Indicators

PPR: Project Progress Reports

PSB: Project Steering Board

PU: Public

QA: Quality Assurance

QC: Quality Control

STC: Scientific and Technical Committee

WP: Work Package





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# 1. Introduction

## 1.1 Purpose of this document

In NextGen, project quality and risk management activities are addressed within WP7. These activities provide valuable inputs to support a successful project monitoring and steering, including quality assurance and control, efficient project management within contractual rules and deadlines, active communication with the European Commission and addressing of potential problems and implement adjustments to processes, tasks and activities where necessary.

Quality assessment requires information from “internal sources” (project partners, Work Package (WP) leaders, coordinator, 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 Scientific and Technical Committee (STC) and involve the following main procedures (as described in the DoA, section 3.2.3):

- 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
- Conduct project risk management
- Protection and management of IPR of the project results

Therefore, the structure of D7.1 – *Scientific Quality Assurance Plan* is here organized in the following sections:

- Quality assessment tools
- Evaluation of events
- Project progress reports
- Risk management activities
- Conclusions
- Annex I: Event evaluation form

This document serves two purposes: (i) establishing a framework for the project coordination team and the STC to effectively carry out all management activities and monitor the project to identify current and future risks and avoid negative effects, 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 STC is responsible for the project quality management, thus to ensure that the project activities necessary to design, plan and implement NextGen are effective and efficient with respect to the purpose of the objectives and its performance. The main responsibility of the STC is to ensure that the scientific and technical activities of the project are accomplished successfully.

The STC will have monthly meetings (usually as online conferences) to discuss progress within and across the WPs and the need for any corrective measures. The STC will discuss arising issues in more detail than can be done by the Project Steering Board (PSB), e.g. down to the task level. They will 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 needed
- 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:

- Expected 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.

If there is a serious issue, KWR, as Coordinator, will set up an additional virtual meeting with the WP leader and the task leader to develop a plan to minimise the impact of that issue.



In case of conflict and dispute among the team members, the conflict resolution will follow the procedure described in the DoA, Section 3.2.6 and further elaborated in the Consortium Agreement (CA).

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

## 2.2 Peer review of deliverables

### 2.2.1 Deliverable adequacy

Deliverables should be conceived according to the objectives and the target audience. The following three key questions should be determined by the responsible for each deliverable:

- What is the purpose of the deliverable?
- Who is the target audience?
- What is the best way to convey the information?

### 2.2.2 The Short-Deliverable Policy

Very long deliverables create several problems:

- It takes long to write them
- Their revision requires long time, and results in more comments that require further revisions
- They are not readable and prone to lose the focus.

Therefore, 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. The focus 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.

It is of utmost importance to have a clear Executive Summary, an Introduction section outlining clearly the Purpose and Scope, a Conclusions and a Future Work Section.

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



### 2.2.3 Quality Assurance

All deliverables of NextGen (PU and CO) will undergo a Quality Assurance (QA) procedure, as follows:

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 NEXTGEN sharepoint, will be used to track the reviewing process of the pending deliverables.
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 NextGen.
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 acceptance of the document.
5. With the approval of the reviewers, the final document will be submitted to the Coordinator for the final check and the delivery of the Deliverable to the EC services. The **Quality Assurance Officer** (see Section 2.2.3.1) 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. Two reviewers should review each deliverable (Type R = Reports)
  - a. Reviewer 1 should be from the lead organisation for this deliverable. If this is not possible, another partner also enrolled in the same Work Package should be used. If this is not possible, another project partner must be chosen, even if not participating in the WP.
  - b. Reviewer 2 should be a partner acquainted with the Work Package, but not from the lead organisation for this deliverable. If this is not possible, another project partner should be chosen and if this is not possible then an external reviewer should be identified (e.g. a PAB member).
  - c. Reviewers shall not be authors or co-authors of the deliverable to be reviewed.

**Note:** all deliverables of different types (P = Prototype, D = Demonstrator, O = Other), should be accompanied by a report to be reviewed as for 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 NextGen/H2020, which is developed by WP7 and made available in the internal area of NextGen (SharePoint).

### **2.2.3.1 Quality Assurance Officers**

The Quality Assurance Officers will have the overall responsibility for Quality Assurance and Quality Control of NextGen results. **Xavier Martinez** (CTM) and **Sandra Casas Garriga** (CTM) have been jointly appointed to this role.

As suggested earlier, the Quality Assurance Officers oversee 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 (as per Section 2.2.3) for all deliverables.

To ensure that the Officers can monitor overall quality, when an activity, task or deliverable is delayed or when there are deviations from GA, the Officers should be informed and a valid justification should be provided. The WP leader together with the NextGen Coordinator are then responsible to identify other tasks that can be impacted, and specify a plan to minimise the risks. Then, the STC, the Project Coordinator along with the QA 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.

The first Periodic Project Management Actions Report (QA and Risk Assessment), which is an internal report incorporating feedback from the Advisory Board, KPI Monitor Officer and QA Officer, will be prepared in M18, while the second is for M36.

### **2.2.3.2 Quality Assurance Schedule**

When the deliverable preparation starts, the deliverable leader should contact ESCI (WP6 leader), regarding deliverable target audience and content, propose reviewers to be validated by the QAO. Once, reviewers are validated, they will be contacted by the deliverable leader for future revision of deliverable, and agree on a binding procedure for the review process with the two reviewers. 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 Quality Assurance Officers. The process of revision will



be tracked through an Excel file located in the NEXTGEN SharePoint, where the status of the revision and envisaged deadline will be indicated.

The schedule proposed in

Table 1 is recommended and deliverable leaders are encouraged to adhere to it. However, the timing of specific review stages can be adapted if previously agreed between the deliverable leader and the corresponding reviewers.

**Table 1. Schedule for the review process of deliverables**

Review Process Stage	Starts When	Duration	Roles involved
Contact WP6 (ESCI)	Start of deliverable preparation	1 week	Deliverable Leader WP6 leader (ESCI)
Select reviewers and agree on schedule	Start of deliverable preparation	1 week	Deliverable Leader Reviewers
Submit final draft to reviewers	6 weeks before submission date	3 weeks	Deliverable Leader Reviewers
Address reviewer comments and approval by reviewer	3 weeks before submission date	2 week	Deliverable Leader Reviewers
Quality Check	1 week before submission date	1 week	Quality Assurance Officers 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 to avoid delays.

### **2.2.3.3 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. If the revision is based on a pdf document, the reviewer should use the possibility of adding notes to the text. It is also possible, when the comments are of a general nature to submit a text (separate word or pdf document).

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**.



**2.2.3.4 If a reviewer fails the agreed deadline**

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. In exceptional cases, if the deliverable leader is not able to replace the reviewer in due time, then the leader should check whether the QA is guaranteed by one reviewer. If it is believed that this is not the case, then the leader should inform the STC via the leader of the WP within which the deliverable is produced.

**2.2.3.5 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.



### 3. Evaluation of events

Meetings of the Project Steering Board (PSB) and other relevant external events of the project (e.g. Communities of Practice, 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.

### 4. Project progress reports

The project progress reports will be submitted to the Commission at M19, M37 and M50 as a part of periodic reports. The reports will follow the applicable EC template and contain all financial and technical information regarding the project progress, meetings, decisions made and particular issues which necessitates to be reported to the EC.

Project Progress Reports (PPRs) will have to be available at:

- M19 covering period M01-M18 to be reported to EC as periodic report by 31 January 2020
- M37 covering period M19-M36 to be reported to EC as periodic report by 31 July 2021
- M50 covering period M37-M48 to be reported to EC as periodic report by 31 August 2022

KWR will provide the reporting tools as follows:

- Project Progress Reports (PPR) templates (WP status reports) for each WP which will include, besides the activity reporting and the assessment of WP progress towards objectives, information about efforts and cost spent in the reporting period
- PPR tool for reporting of efforts (by person-month) and costs (in kEUR) by each NextGen partner.
  - Cost and effort figures provided can be good estimates, but still serve to control the effort and cost consumptions in a regular basis, avoid severe deviations from the plan and take mitigation actions if necessary.

Stages in the progress reporting:

1. Initiation and preparation of the project progress reports:
  - The Coordinator will send a reminder to the WP leaders on the 1<sup>st</sup> day after the reporting period ends on provision of project status reports and the applicable deadlines.



- WP leaders are responsible to collect scientific and technical information from the task leaders and the participating partners in the WP and assemble the report within the deadlines.
  - The Coordinator will send a reminder to partners on the same dates to update the PPR tool with used efforts (by person-months) and costs (in kEUR). The beneficiaries are obliged to follow the assigned deadlines for reporting of efforts and costs.
2. Reporting of the status to the STC
- The Coordinator will review the WP status reporting and follow up that all WP's have made the necessary reporting within the deadlines.
  - WP leaders will provide an overall report of the WP status, including efforts reported for relevant WPs in the PPR tool during the next STC meeting. Be attentive that the reported progress (WP status reports) and reported efforts (PPR tool) are to be coherent.
  - The STC will control the effort and cost consumptions in order to avoid severe deviations from the plan and propose mitigation actions when necessary.
3. Reporting of the status to the EC
- Periodic progress reports will be reported by the Coordinator to the EC at M19, M37 and M50 and follow the internal deadlines applicable for the project deliverables.
  - The STC is responsible for the reporting of the scientific and technical activities of the project in a timely manner with the appropriate quality.
  - The Coordinator is responsible to submit the provided periodic progress reports in a timely manner.



## 5. Risk Management

Risk management is undertaken to avoid or minimize impact of potentially possible but unforeseen or unlikely external or internal events that change the likelihood to achieve the targeted outcome in projected time, quality or cost. The management process will, during the project's implementation, identify and monitor internal and external risks as well as any other issues that might affect the project progress towards its objectives, to carry out preventive, corrective or mitigation actions as early as possible. Risks can arise from unexpected technical difficulties or unexpected scientific findings, poor communication or co-operation between the partners, resource shortage by the partners, human operational errors, planning errors, poor quality, incomplete tasks, etc. Each partner has the responsibility to report immediately to their respective WP Leader and to the Project Coordinator any risky situation that may arise and may affect the project objectives or their successful completion. Any change in the time schedule of deliverables or in the allocated budget must be reported to the corresponding WP Leader.

In case of problems or delays, the STC will be consulted and it may establish a “task force” to take necessary actions according to the directions provided by the PSB. In case no resolution is reached, the PSB will be consulted and mitigation plans will be established to reduce the impact of the risk occurring. Responses may include increased supervision, adjustments to the project strategy, changes to implementation arrangements, and/or changes in budget allocations. Based on the risks and contingencies plans outlined in the DoA (part B section 3.2.8 and part A table 1.3.5), the risk management process is repeated at regular intervals during the project execution to control risk factors. Not all events can be foreseen, but the continuous monitoring shall catch all events that endanger the success of the project or the quality of the results.

The STC must monitor closely the risks and WP leaders must evaluate and update their likelihood regularly. It is also expected that new risks may appear and some others will be discarded because risks are dynamic.

Three tasks should be integrated in the management activities:

- Develop consistent and comprehensive reporting procedures.
- Monitor risk and contingency resolution.
- Provide feedback of analysis and mitigation for future risk assessment and allocation.

Every month, as part of the monthly STC meetings, Risks status will be assessed. The meeting will be used also to describe new ones or to report those that have disappeared, and to evaluate and update the corresponding contingency plans (described in the DoA part A table 1.3.5). To this purpose an editable database has been created by the Coordinator (see Table 3.2b in the DoA that lists the critical risks for implementation of NextGen and the proposed mitigation measures), to facilitate the process of monitoring and treating project's risks.



## 6. 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, date)**

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)**

<b>Day 1</b>	Clarity of presentations/speakers	Discussions (moderation, conclusions reached)
<i>[name of session]</i>		
<i>[name of session]</i>		
Comments to Day 1:		
<b>Day 2</b>	Clarity of presentations/speakers	Discussions (moderation, conclusions reached)
<i>[name of session]</i>		
<i>[name of session]</i>		
Comments to Day 2:		

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

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III. What suggestions do you have for future meetings?

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# 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	
<b>Overall length.</b> Is the overall length of the deliverable justified?		
<b>Length of separate parts.</b> Please indicate parts that are overlong, irrelevant, and redundant. Please indicate the parts which are too short or not enough elaborated.		
<b>Overall style.</b> 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	
<b>Compliance with GA.</b> 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.		
<b>Logical consistence &amp; clarity.</b> Is the content presented in a logical and to-the-point		



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

### Peer Review Summary

<p>The overall rating:</p>	<input type="checkbox"/> poor <input type="checkbox"/> below average <input type="checkbox"/> average <input type="checkbox"/> good <input type="checkbox"/> excellent
<p>Current version of the deliverable:</p>	<input type="checkbox"/> is ready to be submitted to the EC <input type="checkbox"/> requires minor revisions <input type="checkbox"/> requires substantial revisions
<p>Additional remarks/recommendations</p>	

