PROCRUSTES

QUALITY ASSURANCE PLAN

D1.1

December, 2020

The Project PROCRUSTES has duration three years (23/12/2019-22/12/2022) and is funded by the Hellenic Foundation for Research and Innovation (H.F.R.I.) under the "First Call for H.F.R.I. Research Projects to support Faculty members and Researchers and the procurement of high-cost research equipment grant" (Project Number: HFRI-FM17-2918)

DELIVERABLE NUMBER	D1.1	WORK PACKAGE	WP1
DELIVERABLE TITLE			

Quality Assurance Plan

ABSTRACT

Deliverable D1.1 "Quality Assurance Plan" describes the fundamental procedures to be followed within the PROCRUSTES project to ensure the objectives are met, the work is conducted according to the specifications set and the outcomes will have the expected high quality level. This is ensured through the continuous monitoring, quality assurance steps and guidance, the progress reporting details and other information provided in the document.

DELIVERY DATE	DELIVERABLE AUTHORS
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QUALITY ASSURANCE

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LIST OF ACRONYMS

HFRI	Hellenic Foundation for Research & Innovation
PI	Principal Investigator
WP	Work Package
GA	Grant Agreement
ICCS	Institute of Communication and Computer Systems
QA	Quality Assurance
F2F	Face-to-face

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QUALITY ASSURANCE PLAN

1 Quality management in PROCRUSTES

The Quality Control and Quality Assurance tasks (Task 1.3) of the PROCRUSTES project are covered through the activities of WP1 and apply for the entire duration of the project. Those quality management actions aim to support efficacy and continuity in the project management, foresee potential bottlenecks and mitigate them through proper adjustments in tasks and processes and finally to ensure evaluability of the project's research outcomes. The activities are managed by the Principal Investigator (PI), in close collaboration with the team member of ICCS (Cooperative Organisation) in terms of scientific and qualitative control of the project's deliverables. Additional quality assurance steps include the possible communication with the project advisory board formed to advise on scientific matters, assure high quality and link the project to the international state-of-the-art. Moreover, the QA actions include the preparation of scientific reports and the project's progress report according to the GA and the HFRI specifications.

In summary, the Quality Control and Quality Assurance steps address the following topics:

a) Monitor work progress and ensure alignment with project goals and high scientific standards
b) Define the structure and organize review of the project deliverables
c) Perform project risk management to timely identify and mitigate issues
d) Prepare and communicate project's progress reports

Based on the above requirements, this report, D1.1 "Quality Assurance Plan" is structured accordingly into 4 sections. Those sections are:

1) Quality Control and Assessment
2) Project Deliverables
3) Risk Management
4) Progress reports

This deliverable sets out the pillars on which project management can rely to ensure proper implementation of the project plan, fulfilment of its objectives and provide effective reporting and communication within the project and towards HFRI.

2 Quality Control and Assessment

2.1 Progress Monitoring and Evaluation

The PI is responsible for the quality management of the PROCRUSTES project, with a focus on ensuring efficient and effective implementation of all necessary actions towards fulfilment of the project's goals. Those actions also include the monitoring and evaluation of the scientific quality in each task/activity.

To ensure timely identification of potential problems and ensure proper guidance to steer actions towards high-quality results, frequent internal communication is planned (usually online, considering the F2F barriers due to COVID pandemic). In these direct communications, team members will provide details on the early-stage overview and progress at task level, ensuring proper communication of goals and scheduled actions. Task leaders will inform about on-going activities and interactions across WPs, including input requests for up-coming activities.

Moreover, team members will report any concerns/issues to be discussed like for example technical difficulties, complications in the achievement of the task goals, barriers that cause delay, need to reallocate task actions etc.. The PI can decide, based on the nature and complexity of the problem, to seek advice from the Cooperative organisation and jointly form the optimum solution. In case of overly complex issues or lack of consensus on scientific or technological approaches, proper actions will be taken so that opinions will be advised from the members of the Advisory Board and outside the project experts.

To ensure offline and online team collaboration and facilitate progress monitoring, a cloud sharing service is adopted to host files. In this commonly shared hub, access and editing rights are granted to the project team.

2.2 Quality Assurance Steps and Schedule

All PROCRUSTES deliverables undergo QA process. The deliverable authors initiate the communication for the QA process and are responsible for its completion under the supervision of the PI. The PI decides whether the deliverable requires review from either a member of the Advisory Group, the team member from ICCS, or another member from the project team members. The deliverable authors should address all review queries, andprovide the revised version of the document for final acceptance. The report is re-submitted to undergo the final thorough check from the PI. CO deliverables can undergo only internal review prior to their approval. The deliverable's team is required to address all QA comments and fulfil the specifications that lead to the final approval from the PI.

Regarding the schedule for the QA described previously, it is advised that the deliverable authors follow the QA steps in a timely manner. Time and duration of any given QA step can be adapted to serve any specific need or request that does not affect the final quality of the deliverable.

Table 1 Review schedule and proposed timeline

Review step	Maximum duration	Involved
Communicate with PI, propose reviewers if needed and agree on schedule	1 week	Deliverable authors, PI
Contact reviewer and discuss the schedule	1 week	PI, Reviewers (optional)
Submit draft for review	1 week	Deliverable authors, PI (or Reviewers)
Address review comments and provide revised version for approval	2 weeks	Deliverable authors, PI (or Reviewers)
Final quality check and approval by the PI. Final version of deliverable	1 week	Deliverable authors, PI

Documents that will undergo QA steps must be written in a format that allows "track changes" and on text comments/notes to accommodate review and subsequently the revision steps. It is strongly suggested that only the final version is formatted in a PDF document.

2.3 Guidelines for Review

The reviewers are asked to provide thorough and constructive comments on the deliverable under-review with a focus on its efficacy to support a more cyber-resilient water sector. External links and references are acceptable as an additional source of knowledge that can increase the quality of the final deliverable. To ensure a homogenous approach over the PROCRUSTES deliverables' QA, the reviewers are given a list of questions to serve as a general guideline. Those questions are:

1) Is the report in accordance with the provided template?
2) Is the deliverable number, name and description in accordance with the PROCRUSTES plan?
3) Is the scientific approach adequate? Is it state-of-art?
4) Is the report written in good syntax and simple language?
5) Is the length of the deliverable within the limits for the suggested size? If not, does its content justify the extra length?
6) Are all figure and tables in the report of good quality and easy to comprehend?

Attention should also be given to ensure all references are relevant and properly cited in the Refence list. The reviewers must take into close consideration any issue of intellectual property protection and deliver attentive management of the process according to the dissemination level.

3 Project Deliverables

3.1 Structure

PROCRUSTES project includes 3 types of deliverables. Those are “Report”, “Software” and “DEC”. The latter refers to the website, media actions, newsletters etc. In the case of “report” deliverables, the project is expected to present results in a homogenous structure depicting the identity of the project. The document must provide all necessary details including the deliverable number, the referenced WP, its authors, the delivery date, the QA and other information.

To help this process a report template has been created and is available to the project team through the cloud shared folder. The template clearly provides the project identity (graphical logo) and the HFRI funding details. If the produced deliverable is a software, an additional memo with the fundamental characteristics and unique features can be communicated, following the same format. “DEC” deliverables will also have a homogenous structure with clear reference to the project’s identity.

3.2 Report Size

Reports that are excessive in length can generate numerous problems. Typically, it is more time-consuming to write and review them, are prompt to more errors/misinterpretation and less readable. Thus, PROCRUSTES reports must be designed to be clear, concise and focused in presenting key-information. Also, in the case of “linked” deliverables, authors must avoid repeating previously reported content and prefer using references instead. This will allow reports to compose the necessary information for the reader and increase evaluability of the results.

The actual page size depends on each report’s objective, nevertheless a maximum of 25 pages must be used as a reference for reports and 4 pages for the questionnaires. Regarding supporting memos for the software deliverables, when produced, it is preferable to summarise fundamental characteristics in under 5 pages, to ensure to-the-point review. When composing the reports, authors must always consider the question “what is the most efficient way to communicate the information”.

3.3 Report Language

The PROCRUSTES project confronts major challenges, such as the security of water supply, by addressing a modern problem of water utilities, that of cyber, physical and their combination threats to their critical infrastructure system. It is a research topic that resonates on a large international audience, both scientific and technical. Furthermore, PROCRUSTES also engages a project Advisory Board that includes international external advisors, to assure high quality and link the project to the international state-of-the-art. To this end, the developed material will be using the English language to ensure efficient communication of the results to the international audience.

Nevertheless, PROCRUSTES aims to actively engage the national water utilities and to ensure the product uptake to support their decision making and enhance their resilience. To support this goal, all material used to communicate with national utilities will be written in Greek language to ensure direct, clear understanding of the topics and easier promotion of knowledge to all personnel away from language barriers. Since the goal is to ensure cyber-resilient, no one should be excluded, as security chain is as strong as our weakest link. Table 2 below provides an overview of the wider stakeholders for the PROCRUSTES project and the communication channels.

Table 2 Stakeholders and target audience for communication of PROCRUSTES outcomes

Stakeholder group	Description	Needs & expectations	Communication channels used by PROCRUSTES
Water utilities & Security and monitoring teams of water utilities	Operators of CI as end-users Control all the safety aspects of urban water systems	Clear solutions to their problems Technical content with details for practical uses	Software packages Technical reports Technical meetings Conferences Annual newsletter Website
Local and regional government, National water associations	Responsible for setting technical rules	Executive material Lessons learnt Short content with clear conclusions	Conferences Annual newsletter Website
Decision & policy makers, regulators	Responsible for planning, leading and supervising the work of a group of individuals Technical knowledge expected	Executive material Short content with clear conclusions	Conferences Annual newsletter Website
Scientific community	Cyber security, physical security, infrastructure asset management and risk management in urban water systems experts	Technical developments beyond State of the Art	Scientific publications Conferences Annual Newsletter Website
Academia	Responsible for educations of undergraduate, postgraduate students and academics	Educational material	Scientific papers Website
Leading EU companies of the sector; Industrial trade associations; Networking organisations; Standardisation and Certification organisations	Cyber security, physical security, asset surveillance, infrastructure asset management, risk management, urban water domain	Expect technical content with details for integration opportunities and best practice.	Scientific publications Conferences Annual Newsletter Website

As the website is a common communication channel for both national and international stakeholders, D6.1 of WP6 has already launched a bilingual website for the project. The website can be found following the link http://www.procrustes.gr/en/.

4 Risk Management

To assure the quality of PRCRUSTES outcomes, the project management includes the activity of managing the project's risks through the timely awareness of potential problems and initiation of remedial actions to ensure achievement of objectives, including scientific quality and cost.

The continuous process of risk management throughout the PROCRUSTES implementation includes the steps of a) identifying, b) monitoring and analysing risks that may endanger the outcomes or the performance of the project and c) proceeding to proper mitigating pr preventing actions, based on the available alternatives and capacity. The PROCRUSTES implementation plan has already recognized a list of potential risks per WP and respectively composed a contingency plan with viable alternatives for each.

The risk source can vary from shortage in technical resources, planning errors and cascade from incomplete tasks up to unknown and unexpected external parameters. For the latter, the risk management process will need to evaluate the level of the risks induced and in due time produce, together with the HFRI if needed, a proper amendment to adjust to the new conditions. Any such alteration to the physical or financial scope of PROCRUSTES stemming from the risk management process will be reported by the PI, with detailed description of the amendments and other changes.

Following the list of identified risks and the accompanied contingency plan alternatives, the process is iterated frequently to monitor, check and assess the risk factors during the project lifetime and for each WP. The WP team must also closely monitor and report if a risk needs to be re-evaluated and subsequently addressed. In respect to the overall management, it is pivotal to the project's pace that clear, comprehensive communication paths are established within the team, to report potential risks and swiftly adopt the suitable mitigation measure, if applicable. Moreover, this communication path will also provide the important feedback on the evaluations of the contingency plan performance and allow for quicker response in case more actions are needed. Overall, the risk management issues may be included in the Progress Report and communicated to the HFRI.

5 Progress reports

The PROCRUSTES management plan has foreseen 3 periodic progress reports that help monitor and steer the progress of the project on annual base. The 3 periodic reports are covering the periods M1-M12, M1-M24 and M1-M36 respectively. The reports must include information regarding the project progress per WP, milestones achieved, decisions made and issues which need to be reported to the HFRI. Note that periodic reports can be rescheduled based on justified amendments and new timelines by the PI.

According to the HFRI specifications, PROCRUSTES must submit to the Department of Research Projects 2 Project Progress Reports. The first is the Interim Progress Report (midterm of project duration, M18), and the Final Progress Report upon project completion. Both reports must include the following:

1) Reference to the project physical scope completed within the reference period (including any project dissemination and promotion activities)
2) Deliverables completed during the reference period
3) Milestones accomplished during the reference period
4) Reference to the project financial scope completed within the reference period
5) Copies of expenditure supporting documents for the corresponding period
6) Detailed description of any amendments and other changes, to the physical and financial scope

In addition to the above, the Final Progress Report must also include an extended synopsis of the Final Report (in both Greek and English language) in a form suitable for posting/uploading onto the HFRI website, or wherever considered suitable by the funding institution. Project progress reports must be submitted to the HFRI or/and the IT system exclusively within 30 calendar days from the end of the audit period.

To ensure a smooth process of reporting both internally and to the HFRI, a report template will be constructed and communicated to accommodate input for each WP activity and assessment of the progress towards the accomplishment of objectives. The report will also present any risk management issues and indicate the latest level of likelihood for the identified risks.