DATA MANAGEMENT PLAN

D1.2

December, 2020

DELIVERABLE NUMBER	D1.2	WORK PACKAGE	WP1
DELIVERABLE TITLE			

Data Management Plan

ABSTRACT

Deliverable D1.2 describes the Data Management Plan (DMP) of PROCRUSTES regarding data collection and generation, data handling, data classification and storage, and data sharing status (open or protected/restricted). The DMP will evolve during the lifetime of the project and will also include the requirements about data handling (restricted / public) of the supporting stakeholders.

DELIVERY DATE	DELIVERABLE AUTHORS
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QUALITY ASSURANCE

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DOCUMENT STATUS				APPROVED BY
DRAFT	☐	**FINAL**	☒	Christos Makropoulos – 28/12/2020

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HFRI   Hellenic Foundation for Research & Innovation

PI   Principal Investigator

DMP   Data Management Plan

RRM   Risk Reduction Measure

RRKB   Risk Reduction Knowledge-base

WP   Work Package

GA   Grant Agreement

ICCS   Institute of Communication and Computer Systems

QA   Quality Assurance

1   Data Description

PROCRUSTES project will gather information regarding hidden cyber-physical threats and vulnerabilities leading to Low Probability, High Consequence (LPHC) events that systems are not originally designed to handle and facilitate the identification and selection of appropriate risk reduction measures (RRMs) based on literature review and through the planned consultation processes and dedicated workshops.

The supporting water utilities will be engaged in the PROCRUSTES process by taking part into technical meetings organised at their premises or through online meeting tools and questionnaires. In particular, the research team members will organise technical meetings to acquire the necessary information, with the responsible staff for operations, security, monitoring and research of EYDAP S.A. (Athens), EYATH S.A. (Thessaloniki) and EDEYA (Larissa). More specifically, the meeting's objectives are: i) to inform the stakeholders about the project's progress, objectives, results and outcomes; ii) to acquire knowledge regarding the vulnerable CI assets (WP2), the used RRMs (WP4) outline the most applicable RRMs to be used in the stress testing of the CPS (WP4) and define the most appropriate parts of their CPSs to be included in the semi-hypothetical CPS used in the stress testing (WP4); and iii) to acquire information about the water utility's opinion, requirements and technical capabilities relevant to the toolkit and the stress testing platform (WP3), the risk assessment and treatment framework (WP5) and define their decision-making procedures in terms of tactical and strategic risk management (WP5). The information gathered will then be analysed with the goal of steering the developments closer to the sector's needs and expectations and increase the project's results up-take by water utilities. WP6 will support the engagement of supporting water utilities and will create the necessary questionnaires to acquire the needed information. Questionnaires will avoid sensitive personal information or disclosure of confidential data. No datasets from the supporting utilities will be requested for the purposes of the PROCRUSTES project.

Tasks will be supported by literature review to provide information regarding state-of-art and best practices in each field. The literature will be gathered and reviewed by the PROCRUSTES project team which will use the literature contents in the individual tasks and in the final project report referenced appropriately, based on scientific rules. However, access to the literature is related to the type (open access or not) and each institution's subscription status.

2   Data access and Data sharing

During the PROCRUSTES project data will be shared internally between the designated stakeholders. Regarding information sharing with the Cooperative Organisation and Advisory Board, no personalized, sensitive or confidential data will be communicated. Website, newsletters and dissemination materials can only host public outputs, following the DMP principles.

3   Classified or Confidential Data

PROCRUSTES project plan does not include the acquiring, use or distribution of classified data from collaborating organisations or other sources, but several deliverables are flagged as confidential (CO) for reasons of non-disclosure of sensitive source code.

Table 1 List of CO flagged deliverables

Deliverable Number	Deliverable Name	Related WP	Dissemination Level
2.1	ABM of assessing risk in Cyber-Physical Systems (CPS) (Other/Software)	2	CO
3.1	Stress-Testing Platform (Other/Software)	3	CO
4.1	RRKB (Other/Software)	4	CO
4.2	Applicable RRMs in cyber-physical water supply systems (Report)	4	CO
5.1	Risk Assessment and Treatment Framework and Guidelines (Report)	5	CO

Those deliverables will be reviewed according to the QA plan (see D1.1) and disseminated without sharing sensitive data or code, ensuring all necessary protection measures. Those measures can include isolation and obfuscation of the software, implementation of access right protocols etc. Documents relevant to those deliverables must not include, imply or reveal sensitive data or information. Confidentiality of the sensitive data applies also at the state of "work-in-progress" for all relevant tasks that lead to the confidential deliverable. All parties involved in PROCRUSTES have the duty to protect all confidential information, regardless of its form or format, from the time of its creation or receipt until its authorized disposal.

Special attention must be given in the development (architecture) and population of the RRKB (WP4). This result is designed to facilitate the identification and selection of appropriate risk reduction measures which include actions, activities or processes that can be applied in order to reduce the occurrence and minimize consequences of threats. Measures can act on risks in different ways: reduce the level of risk either by modifying the likelihood and/or by changing the consequences; avoiding the risk by discontinuing the activity that creates the risk; removing the risk source; sharing the risk with another party. This type of information can be a sensitive piece of knowledge, best preserved when obscured and undisclosed to the wider public audience.

PROCRUSTES will follow a suitable approach to ensure integrity of this task and its associated activities.

In the unlikely occasion of use and analysis of confidential data not produced within the context of the project, proper anonymisation must be followed to guarantee a secure and viable management of the data with no or minimal additional cost for PROCRUSTES. In respect to this, assistance can be sought to the advisory board or external experts.

4   Data interoperability

The project will develop a decision support tool to guide the choice of risk treatment options (WP5), which will include: an Agent Based Model for quantifying cyberphysical risks (WP2), a modelling toolkit simulating the combined cyber and physical aspects of the water supply system used for risk analysis and evaluation and system stress-testing (WP3), a knowledge base with risk reduction measures and recommending actions to avoid or mitigate the occurrence and the consequences of risk events for water CIs to be evaluated against cyber-physical threats through system stress-testing (WP4). The final architecture that links the individual components to the decision support tool is not finalised at the time this deliverable is written. PROCRUSTES will progressively adapt to the needs that will arise from the progress of the tasks and their interconnection, using well-established interfaces and open-data schemes like JSON formats to limit complexity and achieve interoperability.

5   Data Storage and backup

A master copy and a backup copy of each digital file (i.e., data files, documentation, and other related files) will be stored in the PI premises (NTUA) in different hardware infrastructures to ensure safe storage. The research team can share documents and other data through the online cloud sharing service adopted to host files.

6   Selection and Retention

After the end of the project, the PI will archive the full dataset and documentation for the long term, supporting the data through changing technologies, new media and data formats if needed and based on internal purposes.

7 Ethics and Privacy

All participants of PROCRUSTES workshops or recorded meetings will be asked to sign the consent form developed by WP6, prior to the activity. This can be found in ANNEX A. The consent form is written in 2 languages (English and Greek) to accommodate the activity for both national and international participants and provide suitable content for their consent. An explicit commitment of all parties involved in PROCRUSTES is to timely and clearly notify for any possible disclosure of sensitive or confidential data, regardless of its form or format. According to article 32(2) of the GDPR, PROCRUSTES will implement appropriate technical and organisational measures to ensure the appropriate level of security for personal data when needed, including inter alia as appropriate:

a) the pseudonymisation of personal data
b) the assurance for the ongoing integrity, availability and resilience of the hosting systems
c) the ability to restore the availability and access to personal data in a timely manner in the event of a physical or technical incident

8 Responsibility

The PI will have the overall responsibility for data management over the course of the project and will monitor the compliance with the plan. Assistance will be provided by the Data Management expert of the research team. Individual members of the team are responsible to check the dissemination level of the activities carried, comply with the rules and take care of security.

1 Consent form (EN)

Agreement to Participate

I understand that:

- My participation is entirely voluntary.
- I am completely free to refuse to answer questions at any time.
- I may be asked for clarification of some points, but I am not obliged to clarify or participate further.
- I can decide not to participate at this point and that I can withdraw my participation at any time. If I decide to do so, any material regarding my participation will be deleted or destroyed.
- If I have any questions regarding this study or need additional information, I can contact the PROCRUSTES Principal Investigator: Dr. Christos Makropoulos, Associate Professor, NTUA, +30 2107722886, cmakro@mail.ntua.gr
- That all individual results will be treated confidentially.
- That the anonymised research data will be kept safely in a secure location only accessible to the researchers.
- My name, email address and availability provided via the sign-up form will only be accessible to PROCRUSTES team. These data can be kept for up to 12 months after the conclusion of the project.

I declare that I have read and understood this form, that I have been able to ask questions, and that I consent to participate in this activity.

_____ _____ _____ _____

Your name   Date   Location   Your signature

_____ _____ _____ _____

On behalf of PROCRUSTES   Date   Location   Signature

2 Consent form (GR)

Συμφωνία συμμετοχής

Κατανοώ ότι:

- Η συμμετοχή μου είναι πλήρως εθελούσια
- Είμαι ελεύθερος/η να αρνηθώ να απαντήσω σε οποιαδήποτε ερώτηση.
- Μπορεί να μου ζητηθούν επιπλέον διευκρινήσεις, χωρίς να υπάρχει υποχρέωση από μέρους μου να προσφέρω περαιτέρω λεπτομέρειες.
- Μπορώ να μη συμμετάσχω στη δράση και να αποσύρω τη συμμετοχή μου. Εάν αποφασίσω να αποσύρω τη συμμετοχή μου, οποιοδήποτε υλικό σχετικό με τη συμμετοχή μου θα διαγραφεί ή καταστραφεί.
- Εάν έχω απορίες σχετικά με τη δράση ή επιθυμώ να λάβω περισσότερες πληροφορίες μπορώ να επικοινωνήσω με τον Επιστημονικό Υπεύθυνο του έργου PROCRUSTES: Αν. Καθηγητής Χρήστος Μακρόπουλος, ΕΜΠ, +30 2107722886, cmakro@mail.ntua.gr
- Ότι όλα τα ατομικά αποτελέσματα της δράσης θα αντιμετωπίζονται εμπιστευτικά.
- Ότι τα ανωνυμοποιημένα ερευνητικά δεδομένα θα φυλάσσονται σε ασφαλές μέρος και θα είναι προσβάσιμα μόνο από την ερευνητική ομάδα.
- Τα στοιχεία ονόματος, διεύθυνσης ηλεκτρονικού ταχυδρομείου και διαθεσιμότητας που παρέχω μέσω της φόρμας εγγραφής θα είναι προσβάσιμα μόνο από την ερευνητική ομάδα του PROCRUSTES. Αυτά τα δεδομένα μπορούν να διατηρηθούν έως και 12 μήνες μετά την ολοκλήρωση του έργου.

Δηλώνω ότι έχω διαβάσει και κατανοήσει το περιεχόμενο αυτής της φόρμας, ότι είχα την ευχέρεια να πραγματοποιήσω ερωτήσεις και ότι συμφωνώ να συμμετάσχω σε αυτή τη δραστηριότητα

_____	_____	_____	_____
Ονοματεπώνυμο	Ημερομηνία	Τοποθεσία	Υπογραφή

_____	_____	_____	_____
Εκ μέρους του PROCRUSTES	Ημερομηνία	Τοποθεσία	Υπογραφή