Ref. Ares(2021)4902039 - 01/08/2021

PROJECT DELIVERABLE REPORT

NAIADES

Greening the economy in line with the sustainable development goals

D9.4 Plan for exploitation and dissemination of results – PEDR – Mid-term

A holistic water ecosystem for digitisation of urban water sector

SC5-11-2018

Digital solutions for water: linking the physical and digital world for water solutions

"This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 820985"

Document Information

Grant Agreement Number	820985	Acronym	NAIADES
Full Title	A holistic water ecosystem for digitisation of urban water sector		
Topic	SC5-11-2018: Digital solutions for water: linking the physical and digital world for water solutions		
Funding scheme	IA - Innovation action		
Start Date	1stJUNE 2019	**Duration**	36 months
Project URL	www.NAIADES-project.eu		
EU Project Officer	Alexandre VACHER		
Project Coordinator	CENTER FOR RESEARCH AND TECHNOLOGY HELLAS - CERTH		
Deliverable	D9.4 Plan for exploitation and dissemination of results – PEDR – Mid-term		
Work Package	WP9 – Raising Awareness, Standardisation and Exploitation Roadmap		
Date of Delivery	**Contractual** M10	**Actual**	M10
Nature	R - Report	**Dissemination Level**	PU-PUBLIC
Lead Beneficiary	ADSYS		
Responsible Author	José J. de las Heras (ADSYS)	Email	jheras@advanticsys.com
	Maria Mendoza (ADSYS)	Email	maria.mendoza@advanticsys.com
Contributing author	Anna Brékine (MI), Christina Grimm (MI)		
Reviewer(s):	DISY, SIMAVI		
Keywords	Exploitation, dissemination		

Revision History

Version	Date	Responsible	Description/Remarks/Reason for changes
0.1	30/09/19	José J. de las Heras (ADSYS)	Table of contents
0.2	20/03/20	José J. de las Heras (ADSYS), Maria Mendoza (ADSYS)	Addition of Exploitation section

0.3	27/03/20	Anna Brekine (MI)	Addition of Dissemination section
0.4	29/03/20	Anna Brekine (MI)	Minor changes to Dissemination section
0.5	07/04/20	Anna Brekine (MI)	Addition of dissemination data collection templates
0.6	07/04/20	José J. de las Heras (ADSYS)	Minor changes to Joint exploitation section
1.0	09/04/20	José J. de las Heras (ADSYS)	Final version ready for peer-reviewing
2.0	26/07/20	Anna Brékine (MI), Christina Grimm (MI)	Final version considering EC recommendations

Detailed Updates of Revision 2.0

Number of Section	Title	Update	Description/Remarks/Reason for changes
3.2.5	Dedicated NAIADES Webinars and Workshops	Adding of section	This section has been added to provide some more details on planned webinars and workshops related to the promotion of KERs.
5	Joint Dissemination and Exploitation Plan	Adding of section	In order to show the market orientation of the dissemination activities, as well as bridging the gap between the dissemination and exploitation activities of the NAIADES project, this section was added to the deliverable.

Disclaimer: Any dissemination of results reflects only the author's view and the European Commission is not responsible for any use that may be made of the information it contains.

© NAIADES Consortium, 2019

This deliverable contains original unpublished work except where clearly indicated otherwise. Acknowledgement of previously published material and of the work of others has been made through appropriate citation, quotation or both. Reproduction is authorised provided the source is acknowledged.

Contents

1 Summary 6
2 Introduction 7
3 Dissemination 9
3.1 The Scope of Dissemination Activities 9
3.2 Dissemination Strategy 9
3.3 Dissemination Plan 10
3.3.1 Subject of Dissemination 10
3.3.2 Target Audience 10
3.3.3 Dissemination Activities Timing 12
3.3.4 Dissemination Management 14
3.3.5 Dissemination Channels 17
4 Exploitation 24
4.1 Exploitation Strategy 24
4.2 Exploitation Plan 26
4.2.1 Initial approach 26
4.2.2 Joint Exploitation Strategy for the NAIADES Ecosystem 27
4.2.3 Characterisation of the other Exploitable Results 28
4.3 Individual Exploitation Plans 36
4.3.1 Industrial Partners 36
4.3.2 Academic and Research Partners 37
4.3.3 Public Authorities and End Users 38
4.4 IPR protection strategy 38
5 Joint Dissemination and Exploitation Plan 40
5.1 Joint Dissemination and Exploitation Table Structure and Approach 40
5.2 Joint Dissemination and Exploitation Plan 41
5.2.1 For Awareness 41
5.2.2 For Adoption 41
6 Conclusions 44
Annex I. Template for initial identification of potential Exploitable Results 45
Annex II. Template for Key Exploitable Results risk mapping 46
Annex III. Slides presented during Elevator Pitch session. January 2020 47

List of figures

Figure 1: NAIADES Project Sequence 7
Figure 2: Communication, Dissemination and Exploitation (source: European Commission) 8
Figure 3: Dissemination Process 9
Figure 4: Dissemination Activities Timeline 13
Figure 5: Deliverable Page 17
Figure 6: NAIADES Website 18
Figure 7: Freedcamp 19
Figure 8: Link between the NAIADES exploitation plan and the other project tasks 25
Figure 9: Progressive elaboration and refinement of the Exploitation Plan 25

List of tables

Table 1: Deliverable Distribution 8
Table 2: NAIADES Target Audiences 12
Table 3: NAIADES Dissemination KPIs Summary 14
Table 4: Distribution of Dissemination Activities Between Partners 15
Table 5: List of Targeted Journals 20
Table 6: List of Targeted Events 20
Table 7: Attended Events (M1-M10) 21
Table 8: Future Events 22
Table 9: Other Future WP Related Events 22
Table 10: Initial list of Key Exploitable Results (KER) 26
Table 11: Joint Dissemination and Exploitation Plan - for Awareness Section 42
Table 12: Joint Dissemination and Exploitation Plan - for Adoption Section 43

Abbreviations

ICT	Information Communication Technology
IPR	Intellectual Property Rights
IoT	Internet-of-things
MS	Milestone
KPI	Key performance indicators
API	Application programming interface
KER	Key exploitable results
SCADA	Supervisory control and data acquisition
EAB	External Advisory Board

1 Summary

The key goal of the NAIADES project is to have a positive impact on the smart water sector in general and on partner organisations. To achieve this goal, the project must communicate and exploit its results appropriately. This can be achieved in two ways:

(a) Through dissemination and awareness-raising and;
(b) Through exploitation by the Consortium (or sub-sets of the Consortium).

This document deals with both dissemination and exploitation and encompasses the work which has been carried out in task T9.2, in which the project partners elaborated dissemination strategy and defined initial key exploitable results. The document focuses on the initial steps made up to Month 10.

The document is divided into the following sections:

- Section 3: Dissemination Strategy including identified actions, metrics and management.
- Section 4: Exploitation Strategy methodology, which includes the description of NAIADES exploitation approach and the description of the Exploitation Plan, which includes the first list of the exploitable results, the exploitation per partner, which provides for the description of partners' planned exploitation of NAIADES results. The Intellectual Property Rights (IPR) protection plan to safeguard the value of project results, which contains the IPR protection strategy, is also included in that section.
- Section 5: Joint Dissemination and Exploitation Plans exemplifying the interplay between dissemination and exploitation activities by highlighting targeted and market-oriented efforts related to promoting the awareness and the adoption of NAIADES solutions.

2 Introduction

The NAIADES Plan for Exploitation and Dissemination of Results seeks to provide the guidelines for the project activities within WP9 Raising Awareness, Standardisation and Exploitation Roadmap. The plan is intended as a preliminary version that presents the initiatives and measures put into place to ensure successful exploitation and dissemination of the project results. It will also illustrate how exploitation and dissemination interconnect by drawing upon relevant activities to promote the awareness and the adoption of KERs to target audiences.

Dissemination and exploitation activities are two important elements of the NAIADES project research sequence and are directly dependent on the project's research and technical development. Since both require previous activities, close collaboration and participation of all the Consortium members are indispensable to support exploitation and dissemination activities. As seen in Figure 1, in the first stages of the project, the light will be shed on research, technical development, and building a strategy for standardisation, dissemination and exploitation (defining the priorities, the strategic vision, the coordination, as well as the identification of relevant partners). This process will be incremental since the beginning of the project. As a result of this process, NAIADES will gather sufficient material, knowledge and expertise to disseminate, exploit and transfer relevant information on the project to deliver tangible impact.

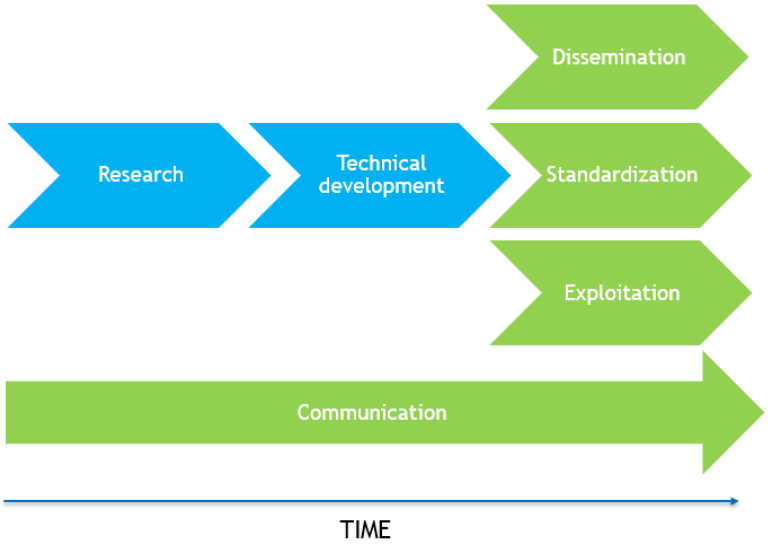


Figure 1: NAIADES Project Sequence

According to the Grant Agreement the dissemination and communication plans should be separated into two distinct deliverables. Table 1 provides an overview of the deliverable distribution on outreach and exploitation matters to clarify in which deliverable specific information can be found.

Table 1: Deliverable Distribution

	Communication	Dissemination	Exploitation
Plan	D9.1 (MI, M10)	D9.4 (ADSYS, M10)	
Mid term reporting		D9.6 (MI, M10)	
Final reporting and future plans	D9.2 (MI, M36)	D9.5 (ADSYS, M36) D9.7 (MI,M36)	D9.5 (ADSYS, M36)

Consequently, and in order to avoid duplicate effort, the present deliverable will only tackle dissemination-related matters, as defined in the EC terminology (see Figure 2 below). For all other aspects related to communication, please directly refer to D9.1 NAIADES Communication Plan and Communication Activities Report for complementary information.

Communication	Dissemination	Exploitation	
"Communication on projects is a strategically planned process that starts at the outset of the action and continues throughout its entire lifetime, aimed at promoting the action and its results. It requires strategic and targeted measures for communicating about (i) the action and (ii) its results to a multitude of audiences, including the media and the public and possibly engaging in a two-way exchange." (Source: EC Research & Innovation Participant Portal Glossary/Reference Terms)	"The public disclosure of the results by any appropriate means (other than resulting from protecting or exploiting the results), including by scientific publications in any medium." (Source: EC Research & Innovation Participant Portal Glossary/Reference Terms)	"The utilisation of results in further research activities other than those covered by the action concerned, or in developing, creating and marketing a product or process, or in creating and providing a service, or in standardisation activities." (Source: EC Research & Innovation Participant Portal Glossary/Reference Terms)	Definition
Reach out to society and show the impact and benefits of EU-funded R&I activities, e.g. by addressing and providing possible solutions to fundamental societal challenges.	**Transfer knowledge & results** with the aim to enable others to use and take up results, thus maximising the impact of EU-funded research.	**Effectively use project results** through scientific, economic, political or societal exploitation routes aiming to turn R&I actions into concrete value and impact for society.	Objective
Inform about and **promote** the project AND its results/success.	**Describe** and **ensure results available** for others to **USE** ➡ focus on results only!	**Make concrete use** of research results (not restricted to commercial use.)	Focus
Multiple audiences beyond the project's own community incl. media and the broad public.	Audiences that may take an interest in the potential **USE** of the results (e.g. scientific community, industrial partner, policymakers).	People/organisations including project partners themselves that make concrete use of the project results, as well as user groups outside the project.	Target Audience

Figure 2: Communication, Dissemination and Exploitation (source: European Commission)[1]

[1] European IPR Helpdesk, Making the Most of Your H2020 Project, 2018, https://ri-links2ua.eu/object/document/546/attach/EU-IPR-Brochure-Boosting-Impact-C-D-E_0.pdf , p. 13

3 Dissemination

3.1 The Scope of Dissemination Activities

In the context of Horizon 2020 projects, dissemination can be defined as "the public disclosure of the results by any appropriate means (other than resulting from protecting or exploiting the results), including by scientific publications in any medium"[2]. In more general terms, according to the European Commission, the objective of dissemination is "to transfer the knowledge & results with the aim to enable others to use and take up results, thus maximising the impact of EU-funded research"[3].

As illustrated in Figure 1 earlier, dissemination is very closely dependent on the NAIADES' research progress. WP activities deliver research results that, once validated and approved internally, may be shared with target audiences potentially interested in their use and exploitation. Given the more specialised nature of the results and NAIADES outputs, the dissemination channels to be prioritised include:

- Public deliverables
- NAIADES and partner's website
- Conference articles
- Various publications (e.g., scientific articles, reports, etc.)
- Workshops
- Training sessions
- Events

The dissemination process is illustrated in Figure 3 below.

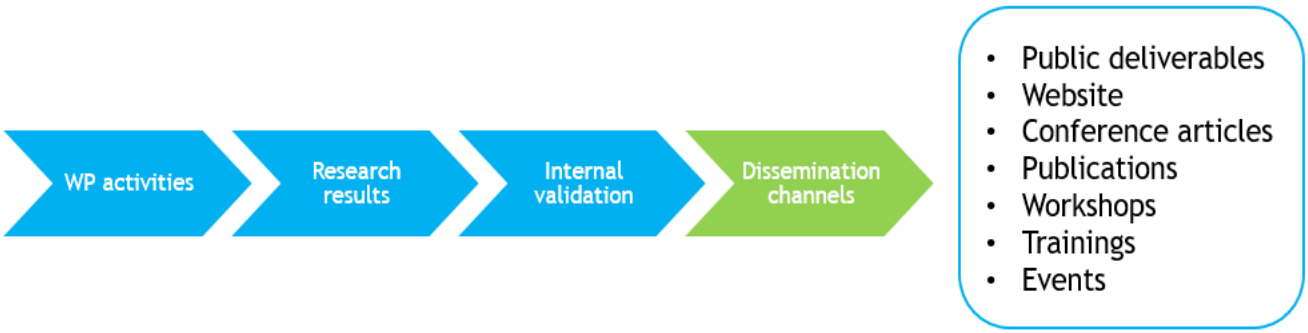


Figure 3: Dissemination Process

3.2 Dissemination Strategy

A dissemination strategy seeks to convey valuable and practical knowledge to relevant and specialised target audiences, particularly research communities, the public and private sector, policy makers and regulatory bodies. Each of these target audiences has its own particular needs, creating the need for tailored and specific dissemination strategies. The NAIADES dissemination strategy aims to:

[2] European Commission, 'Funding & Tenders'. Accessed 1 July 2021. https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/support/glossary.

[3] European IPR Helpdesk, Making the Most of Your H2020 Project, 2018, https://ri-links2ua.eu/object/document/546/attach/EU-IPR-Brochure-Boosting-Impact-C-D-E_0.pdf , p. 13

- Extract clear, simple, and active messages or key conclusions from research results;
- Identify credible 'carriers' of the message;
- Execute a consistent set of activities to ensure the success of the dissemination strategy;
- Disseminate the NAIADES achievements and findings to all key actors in the field, and integrate their feedback to the specification, design, development and evaluation work;
- Organise and publish results in international journals, conferences, and workshops to inform the scientific community about NAIADES, its goals, activities and results and to gather valuable information on related issues.

3.3 Dissemination Plan

Among the main interrogations that need to be addressed when elaborating the dissemination plan, the following aspects can be found:

(a) What is the subject of dissemination;
(b) Who is it addressed to (target audiences);
(c) What is the most effective way to reach that audience (tools); and
(d) When and by who an action will be executed in order to achieve the above (activities)?

This subsection will elaborate on the dissemination plan and detail the specific activities planned. First, the subject of and target audience for dissemination will be presented before delving into the timing and management of the dissemination efforts. Last, the various channels employed will be detailed.

3.3.1 Subject of Dissemination

In the context of the NAIADES project, the following general subjects of dissemination have been identified:

1. NAIADES project itself (general objectives, expected impacts, progress and activities)
2. Interim results (main achievements)
3. Techniques and methodologies (in respect of IPR issues)
4. Technologies (in respect of industrial IPR issues)
5. Open innovation aspects

The following sections will analyse the target audience, the timing and management of dissemination activities, as well as the employed channels in a detailed manner. Later in this deliverable, namely in chapter 5, a more market-oriented joint dissemination and exploitation plan, taking into account the KERs and their objectives, will be presented.

3.3.2 Target Audience

The primary objective is to exploit the dissemination potential of the NAIADES consortium by leveraging each partner's professional network and connections. Dissemination activities must be designed adequately to target relevant groups through specific dissemination tools and activities. It is essential to distinguish between two types of target audiences: within the NAIADES partners (internal dissemination) and beyond the NAIADES partners (external dissemination). More details will be provided in the following sections.

Dissemination within the NAIADES Partners (Internal Dissemination)

Guaranteeing adequate dissemination methods between the NAIADES partners is a key success factor for the project. Methods of internal dissemination are diverse, varying from referring to the NAIADES project on the partners' respective websites, to seminars, training sessions and workshops, to conference articles and scientific publications.

In order to facilitate the internal dissemination within the consortium, MI has created 10 mailing lists at the beginning of the project. Amongst them, 9 will be intended for each of the project's work packages:

- naiades-wp1@genevaproxy.com : for internal WP1 dissemination
- naiades-wp2@genevaproxy.com : for internal WP2 dissemination
- naiades-wp3@genevaproxy.com : for internal WP3 dissemination
- naiades-wp4@genevaproxy.com : for internal WP4 dissemination
- naiades-wp5@genevaproxy.com : for internal WP5 dissemination
- naiades-wp6@genevaproxy.com : for internal WP6 dissemination
- naiades-wp7@genevaproxy.com : for internal WP7 dissemination
- naiades-wp8@genevaproxy.com : for internal WP8 dissemination
- naiades-wp9@genevaproxy.com : for internal WP9 dissemination

Furthermore, MI has also set up a mailing list for the overall project (naiades-all@genevaproxy.com). The purpose behind creating specific WP related mailing lists is to facilitate the discussion between the involved partners and avoid oversharing. MI will continuously manage the subscriptions to the mailing lists and ensure that any new memberships are processed in a timely manner. The partners will use the respective mailing lists to disseminate information relevant to their WPs.

In addition to the requested EC and Internal reporting, all partners are expected to regularly communicate with WP Leaders about work progresses and encountered issues. WP Leaders will regularly keep the project coordinator updated about the activities. All partners are required to inform the project coordinator of any administrative and legal issues arising. The project coordinator is at the partners' disposal respectively for any technical and organisational information/issue.

To enable the agile workflow and collaborative work required in this project an internal collaborative work platform, Freedcamp, as well as a shared Gitlab at https://gitlab.distantaccess.com/naiades/ have been provided. These platforms allow the sharing of documents and files as well as ease the internal dissemination by providing a centrally managed repository.

Dissemination Beyond the NAIADES Partners (External Dissemination)

The dissemination of NAIADES results will create awareness and transfer knowledge from the project team to the project stakeholders and other interested parties throughout Europe and internationally; thus, reaching a diversified and large audience and preparing for and contributing to successful exploitation as well as improving the competitive edge of the partners and the EU. NAIADES targets various parties that have been grouped into the below categories as identified in the Grant Agreement.

Table 2: NAIADES Target Audiences

Type of audience	Actors	Motivations
Technology providers	• scientific community, • non-profit organisations, • technology and services, • industry, • cloud computing and orchestration cloud service, • industry big data/ machine learning/ artificial intelligence;	This group targets actors interested in the NAIADES project's progress, results and exploitation plans and active in technological development in a field similar to NAIADES. Furthermore, disseminating to this target group supports knowledge sharing of NAIADES research results and facilitates the exploitation and market adoption of technological solutions.
End-users	• water services providers, • utility providers, • municipalities;	This group targets the primary beneficiaries of the technologies and innovations developed in the framework of the NAIADES project. In addition, they play a crucial role for exploiting and adopting resulting NAIADES solutions.
Facilitators	• EU Institutions (EC, European Science Foundation, MEPs), • national public authorities (industrial committees, national regulation authorities, ministry and regional councils), • standardisation bodies, • related EU-funded projects, organisations & EU alliances in topics addressed by NAIADES, • European technology platforms and respective clusters, • public bodies & organisations	The facilitators are a large group involving public bodies and international organisations, SDOs, as well as EU research clusters, which will benefit from the knowledge generated by the project in their own activities. All facilitators should be aware of the NAIADES initiatives and of the technological advancements carried out within the framework of the project, which could pave the way to specific activities, including standardisation and policy making.

3.3.3 Dissemination Activities Timing

NAIADES will follow a phased approach to defining, planning, organising and exploiting a rich set of activities and instruments in the most effective way towards building a solid and vibrant smart water-oriented community in the EU that will make a difference both in the ICT and sustainable development scene. In respect to the Grant Agreement, the project will follow a 3-phase approach to outreach and impact creation, as follows:

Figure 4: Dissemination Activities Timeline

"Phase 1 – Preliminary Project Promotion phase" (M1-M12)

During the first phase, the dissemination strategy and plan will be defined, with target groups, planned activities and tools. Furthermore, a set of dissemination tools and mechanisms to maximise outreach and engage target stakeholders will be prioritised.

Outcomes:

- Agreeing upon the dissemination strategy and future activities;
- Creating initial awareness in the markets related to the Project's objectives and scope.

"Phase 2 – Project Commercialisation phase" (M12-M24)

Phase 2 of the NAIADES dissemination strategy will actively reach out to targeted stakeholders and the public to generate interest and demand for the NAIADES activities and outcomes. This will create further synergies and collaboration opportunities with relevant partners and projects.

Outcomes:

- Create more "targeted awareness" regarding NAIADES technologies with key players and potential users;
- Share preliminary results of the project with targeted audiences
- Inform the target market about the technological benefits of NAIADES through dedicated dissemination and exploitation efforts (see Section 5).

"Phase 3 – Business Strategy phase" (M24-M36)

This phase of the NAIADES dissemination strategy represents the period closely before the end of the project when the NAIADES partners will start orienting their efforts on the realisation of their exploitation plans (see Section 4). Phase 3 will seek to raise awareness about the business exploitation of the project and will provide further dissemination in the final period.

Outcomes:

- Maximising target market and industry awareness regarding the NAIADES ecosystem;
- Contributing to ensure the project sustainability and full exploitation.

3.3.4 Dissemination Management

Key Performance Indicators

The KPIs for outreach activities have been defined in the proposal stage and cover various areas, including project documentation, project publications, online presence and events. The following table provides a summary of the dissemination-specific KPIs and the main target stakeholders, extracted from Table 2.2.5 "NAIADES Dissemination and Communication summary chart" in the Description of Actions. For communication KPIs, please refer to D9.1. The table below will serve as the primary reference for monitoring and evaluation purposes for dissemination activities.

Table 3: NAIADES Dissemination KPIs Summary

Dissemination supports and channels	KPIs	Main Target Stakeholders		
		Technology providers	End-users	Facilitators
Articles and proceedings	3 publications per year (on average)	O	X	O
Project deliverables	See list of deliverables	X	X	X
Open access repository	1 deposit per year	X	O	O
Project website	1 website, monthly updated	X	X	X
Related websites	10&	Depending on specific website		
Presentation and feedback sessions	3	X	O	O
Training sessions	3	O	X	X
External events	30&	Depending on specific event		
Caption				

X	Main target
O	Secondary target

Distribution of Responsibilities

According to Article 29.1 of the EC-GA, "Each beneficiary must – as soon as possible – 'disseminate' its results by disclosing them to the public by appropriate means (other than those resulting from protecting or exploiting the results), including in scientific publications (in any medium)." Therefore, every possible opportunity will be embraced by all the NAIADES Consortium, individually or on a collective basis, to disseminate the NAIADES results to specialised audiences and to the general public as well. All partners of the Consortium will contribute to the dissemination according to their role and effort and using all available tools.

Table 4: Distribution of Dissemination Activities Between Partners

Dissemination supports and channels	KPIs	Responsible partners
Articles and proceedings	**3 publications per year (on average)**	All partners are encouraged and solicited to write articles and proceedings and to participate in meeting the quantitative KPIs for publications.
Project deliverables	**See list of deliverables**	All partners are responsible for delivering the deliverables assigned to them.
Open access repository	**1 deposit per year**	MI will provide an open-access feature to centralise all the contributions. All partners are encouraged and solicited to provide open access publications and to participate in order to meet the quantitative KPIs for publications.
Project website	**1 website, monthly updated**	MI is in charge of managing the website. All partners will contribute as relevant and provide inputs to the various sections as relevant.
Related websites	**10&**	The NAIADES website will link to related websites. All partners will be solicited to link the NAIADES website to their individual websites.
Presentation and feedback sessions	**3**	The three pilots will organise a presentation and feedback session with their end-users to present their activities and collect direct feedback.
Training sessions	**3**	Technical partners will be invited to organise training sessions. MI will facilitate the organisational process during events like the IoT Week.
External events	**30&**	All partners will participate/host relevant events and workshops and report on them to the WP Leader.

Dissemination Policy and Rules

NAIADES dissemination activities are subject to intellectual property (IP) rights protection, which is clearly stated in the EC Grant Agreement Article 23a.

Dissemination activities including but not restricted to publications and presentations shall be governed by the procedure of Article 29.1 of the Grant Agreement subject to the following provisions. "A beneficiary that intends to disseminate its results must give advance notice to the other beneficiaries of — unless agreed otherwise — at least 45 days, together with sufficient information on the results that will be disseminated. Any other beneficiary may object within — unless agreed otherwise — 30 days of receiving notification if it can show that its legitimate interests in relation to the results or background would be significantly harmed. In such cases, the dissemination may not take place unless appropriate steps are taken to safeguard these legitimate interests." This does not change:

- The obligation to protect results (Art 27.1)
- The general confidentiality obligations (Art 36.1)
- The security-related obligations (Art 37)
- The obligation to protect personal data (Art 39)

Any dissemination of project results (in any form, including electronic) must indicate at all times that the project received funding from the European Union. Moreover, all publications based on work funded by EC within the activities of the NAIADES Project should acknowledge their affiliation to NAIADES and bear recognition of the EC funding. To comply with the Grant Agreement (Art 29.4-29.5), for all types of result dissemination activities, partners must:

(a) Display the EU emblem
(b) Include the following text: "This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 820985".
(c) Include the following disclaimer: "The content of this (paper/article/publication/report) is the sole responsibility of the authors. The European Commission or its services cannot be held responsible for any use that may be made of the information it contains".

Open Access

In terms of dissemination of results, NAIADES will follow the open access requirements to the Grant Agreement provisions (Art 29.2), stipulating that "each beneficiary must ensure open access (free of charge online access for any user) to all peer-reviewed scientific publications relating to its results."

NAIADES will seek to publicise project results and public deliverables broadly via open access channels. All relevant deliverables will be freely and electronically available to anyone through the website. Furthermore, publications and articles will also be made available through the website or through the CKAN open access repository available at http://ckan.iotlab.eu/dataset/articles-and-publications. Additionally, all user-generated data created by the public will remain the copyright and intellectual property of the data providers (the organisations involved in the NAIADES project) or data creators (the users) in compliance with the data providers' own terms and conditions.

Later in the deliverable, the exploitation plan will present all key project exploitable results and further specify the consortium strategy towards either protection or dissemination to avoid possible misunderstanding.

Evaluation and Monitoring

To ensure accurate monitoring and reporting of dissemination activities, NAIADES deliverables include a number of reports linked to dissemination activities. MI and ADSYS are responsible for the content of these reports.

The WP9 leader will be in charge of the overall monitoring of all dissemination activities and will report to the project coordinator in case of any problem. The KPI table will serve as the primary reference for MI in monitoring and evaluation purposes for communication activities. In addition to the table, MI will organise regular conference calls at the WP9 level to keep track of the progress and of the partner's individual communication activities.

Nonetheless, each partner is encouraged to liaise with national and local media for dissemination purposes and for ensuring that they engage enough stakeholders to enlarge the community properly.

For event reporting purposes, MI has disseminated a shared document where the partners should indicate their past and future events attendance. Furthermore, an additional shared spreadsheet serves to report on the relevant articles, publications and presentations. MI will make use of these tables to keep track of the

NAIDES dissemination efforts, both for reporting purposes and for KPI monitoring. More details on the structure of these tables will be provided below.

3.3.5 Dissemination Channels

The following sections describe the dissemination tools that will be used within the context of the NAIADES dissemination strategy.

Public Deliverables

All partners will be responsible for completing the deliverables assigned to them. On the NAIADES website's 'Deliverables' page (see Figure 5), all the project deliverables are listed. Public deliverables developed throughout the course of the project will be uploaded and made available for preview and download after their validation by the European Commission.

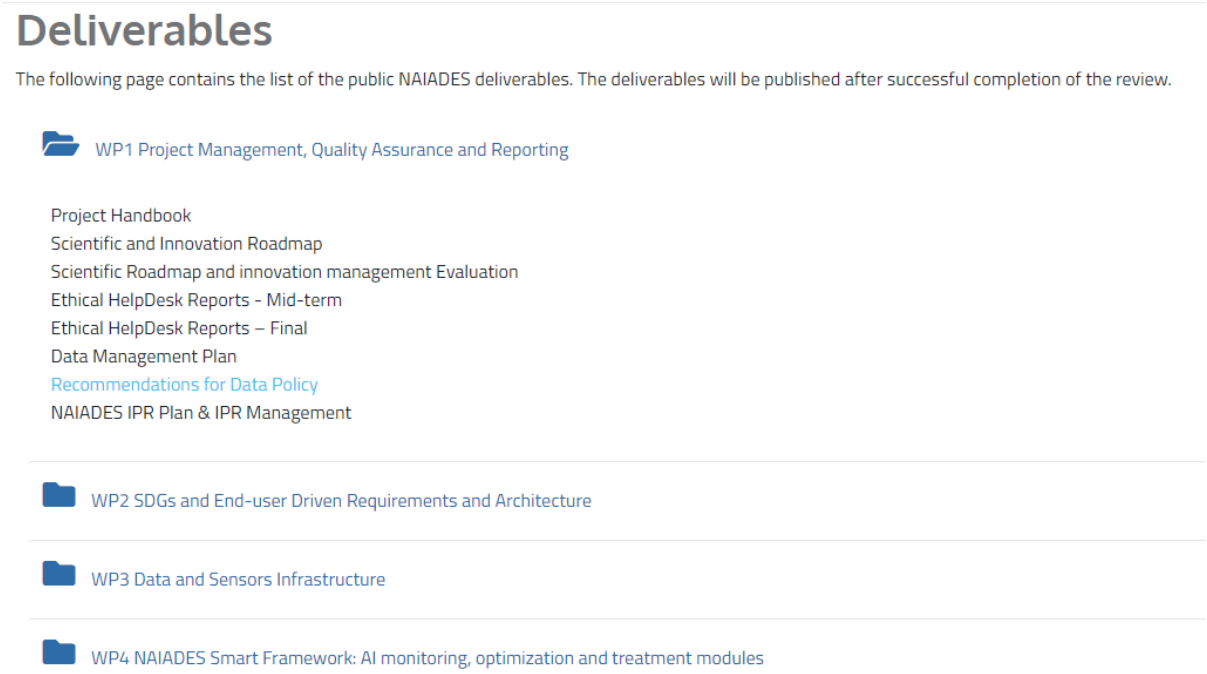


Figure 5: Deliverable Page

Project Website

The NAIADES website is the main platform for promoting and disseminating the project's objectives, pilot use cases, activities and results to a broad audience. It will be used as a dissemination channel, as it will assist in raising public awareness and ensuring maximum visibility of the project key facts, objectives, activities and findings, not only with the scientific community but also with the public at large. The website might remain active after the end of the project.

The NAIADES website was developed in a clear and user-friendly way. In order to guarantee the successful promotion of the project, to sustain the interest of the target audience and to draw new visitors, the website's content will be maintained, continuously updated and populated with new information throughout the project's lifetime.

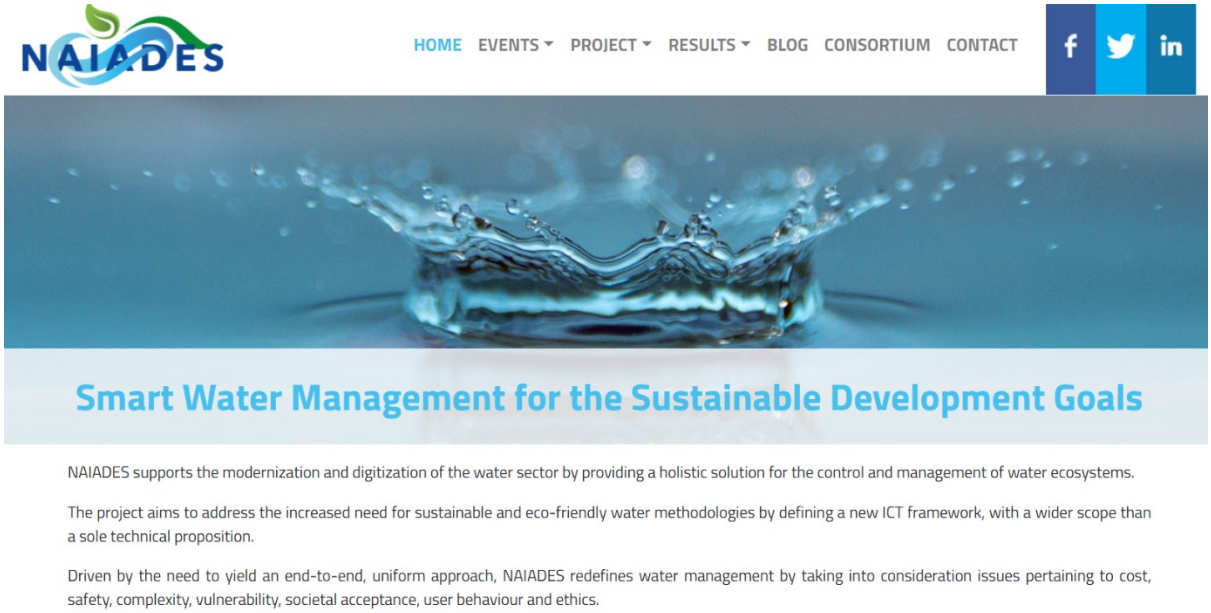


Figure 6: NAIADES Website

The project website will be a key element for the dissemination of the NAIADES results. The 'Results' section on the website will provide all the related NAIADES documented material. The documents can be public deliverables, presentations (including the digital version of printed material such as brochures, banners or posters) and other publications (e.g., scientific papers, etc.), as well as newsletters. Particular categories of each type of result can be reached using the provided submenu.

Private Area

The NAIADES project will make use of the Freedcamp platform (see Figure 8), administered by CERTH, the project coordinator. The guidelines on how to use Freedcamp have been shared with the Consortium in M3. Freedcamp offers a collaborative space to all partners to share and discuss their work progress, share documents, discuss collectively through information threads, assign tasks to all partners, keep track of their progress, and view dates and deadlines in the project calendar.

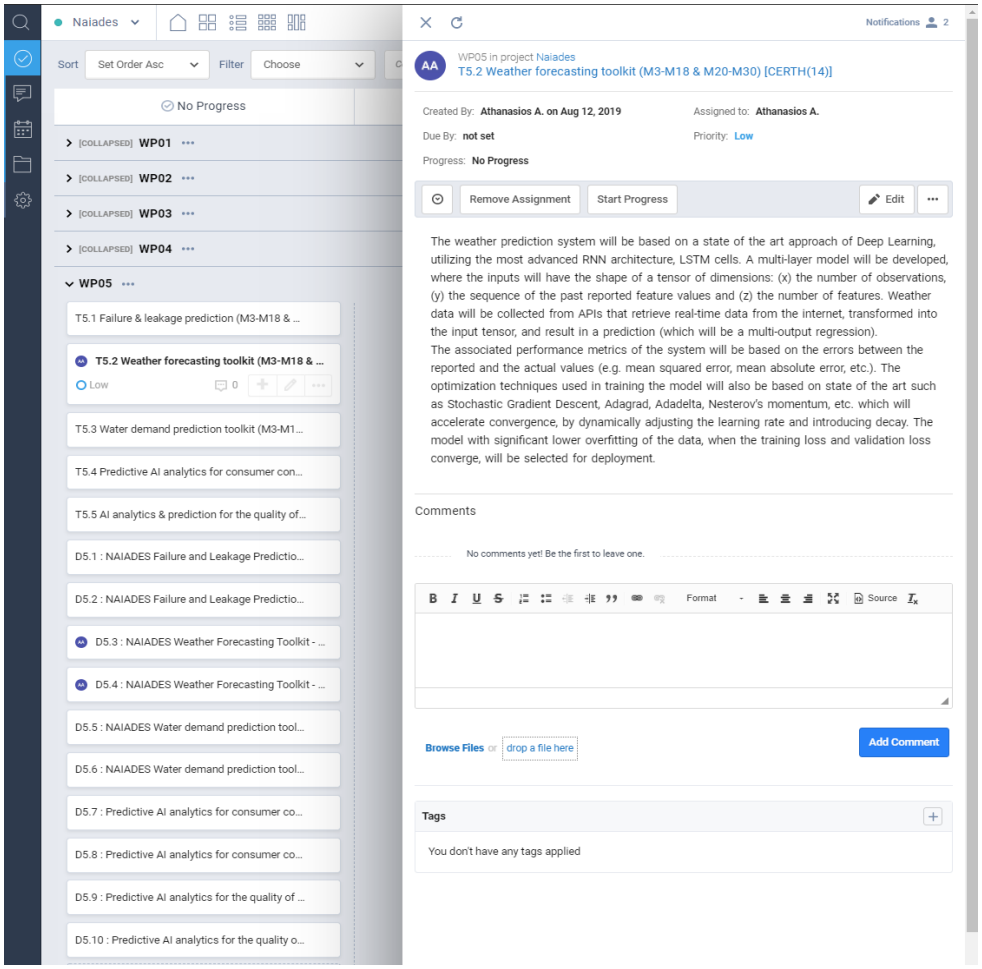


Figure 7: Freedcamp

Web 2.0 – Social Media

Social media is one of the key channels for communication and dissemination of information to the general public. For this reason, it is essential for NAIADES to use these tools to communicate effectively about project news and promote the outcomes to the different stakeholders. NAIADES will set up the following social media channels:

- Twitter
- Facebook
- LinkedIn
- YouTube channel

For additional information about NAIADES communication tools and the social media channels, please refer to D9.1.

Articles and Publications

It is expected that the NAIADES project will result in a number of publications in scientific, peer-reviewed journals. Project partners are encouraged to collaborate with each other and jointly prepare publications relevant to the NAIADES project. Scientific journals that provide open access (OA) to all their publications will be preferred, as it is required by the European Commission, and the contributions will be uploaded to the project's open access repository. The partners in the project will disseminate the results in relevant scientific conferences, workshops and journals, targeting the research areas that are relevant to the problem. The table below presents the list of targeted journals, as described in the Description of Actions.

Table 5: List of Targeted Journals

Journals	Environmental Management, Smart Water, Journal of Water Resources Planning and Management, Desalination and Water Treatment, Environmental Engineering Research, Water Research, Urban Water, Reliability Engineering & System Safety, Computers, Environment and Urban Systems, Journal of Environmental Management, Science of The Total Environment, Energy Policy, Journal of Hydrology, Environmental Modelling & Software, American Water Works Association. Journal, International Journal of Water Resources and Environmental Engineering.

Furthermore, Mandat International created a collaborative Excel sheet template on Freedcamp, where partners are required to report on articles and papers, standardisation contributions, publications, keynotes and scientific presentations. Partners are expected to continuously update the dissemination reporting table to keep track of the progress. Whenever new publications are added to the sheet, the NAIADES website is updated accordingly.

The Excel document for monitoring and reporting on the articles and publications developed in the context of the project consists of two sheets:

- The first sheet entitled 'articles, papers and publications' contains a table in which partners are requested to fill in the fields: document title, document type, publication date, conference/journal/publisher, the estimated percentage of relevance to the NAIADES project and the name(s) of the responsible consortium partner(s).
- The second sheet, entitled 'standardisation contributions', is solely intended for contributions to Standard Developing Organisations. The reporting table includes the fields: document title, document type, submission date, and organisation, the estimated percentage of relevance to the NAIADES project and the name of the responsible consortium partner.

Conferences and Events

Conferences are perfect platforms for presenting NAIADES and its technical aspects, especially with regard to the dissemination of interim results. The research community, industrial stakeholders and other relevant target groups of NAIADES attend those conferences. The partners are strongly encouraged to attend relevant conferences and events and inform the participants about the project and its development.

NAIADES will be presented at a number of events aiming to promote and communicate, by all means, and tools, all relevant information that will increase the project´s visibility. As per the Grant Agreement, the following events have been identified as suitable venues for the project.

Table 6: List of Targeted Events

Conferences	Smart Water Management Symposium, Smart Water Systems, Water Policy Conference, IWA World Water Congress & Exhibition, International Conference on Water Security, Annual Smart Water Systems Conference, Water Market Europe, Water Innovation Europe, International Conference on Hydroinformatics (HIC), Smart Water - International Water Summit, IoT Week

The NAIADES representation at the events can take place in different ways, including paper or project presentations, poster presentations, simple participation for liaising or networking purposes or workshops organisation. Communication materials such as brochures, a poster or a roll-up (where relevant) will also be used for promotional purposes (see D9.1).

A collaborative Excel spreadsheet listing pertinent events based on importance and participation was created in order for the project consortium to be able to keep track of the partners' participation and to report about these activities and their respective impact in the dissemination deliverables as well as on the project website. All partners are encouraged to inform the Consortium about relevant events to be held in their region or elsewhere.

The Excel document for monitoring and reporting on the events in the context of the project consists of three sheets:

- The first sheet entitled 'Planned – future' contains a table where partners indicate the events they are planning to attend in the future. In this table, it is required to specify the following fields: name of the event, date, location, URL, focus/target stakeholders, relevance to NAIADES, and the attending partners.
- The second sheet entitled 'Attended – past' seeks to report on the events that the partners attended in the past. In this table the following fields are required: name of the event, date, location, category of dissemination, type of audience/target stakeholders, approximate size of the audience, partner(s) involved and URL.
- Finally, the third sheet entitled 'WPs other events' contains a spreadsheet where partners provide information about future events relevant to their WPs and of possible interest to other partners. In this table, the following fields are required: name of event, WP, date, location, URL, focus/target stakeholders, target of event, and other information.

In the early phase of the project, partners have identified and attended six events in line with the activities of NAIADES (see table below).

Table 7: Attended Events (M1-M10)

No	Event Name	Date	City, Country	Category of Dissemination	Type of audience / Target stakeholders	Approx. size of audience	Partner(s) involved
1	ICT4Water Cluster Annual Event	10-11 June 2019	Brussels, Belgium	Presentation to gather requirements for SAREF-WATR	industry, academy, EC	>200	CERTH, ADSYS, EUT
2	Smarter Catchment Monitoring, Cleaner waters	4-7 September 2019	London, UK	Presentation of Interoperability and standardization roadmaps	industry, academy, EC	>201	EUT
3	Expo APA 2019	23-25 September 2019	Bucharest, Romania	Suppliers and Water Companies	industry, academy, EC	>250	ARA, IWA
4	AQUATECH Conference	2-5 November 2019	Amsterdam, Netherlands	Visitor	industry, academy, EC	>1000	EUT
5	Smart Water 2019	15 November 2019	Le Châble, Switzerland	Visitor	academy, communal authorities, SMEs, companies, etc.	250	MI
6	IWA Young Water Professional´s Congress	12-15 December 2019	Madrid, Spain	Visitor	Every water sector stakeholder	>250	AMAEM

As far as future plans are concerned, partners were also able to identify the following five upcoming events they intend to attend. It is important to point out that in light of the current events related to the COVID-19, the dates, location and participation in these future events are subject to change and will be assessed on a continuous basis.

Table 8: Future Events

No	Name of the event	Type	Dates	Location	URL	Focus/target stakeholders	Relevance to NAIADES	Partner attending
1	Expo APA 2020	Water Loss Conference	25-27 May 2020	Bucharest, Romania	www.araromaqua.ro	Suppliers and water industries	ARA, IWA	SIVECO
2	IoT Week 2020	Conference	TBC	Dublin, Ireland	www.iotweek.org	Industry, academy, EC	Sessions on SDGs and water management	MI, UDG
3	ICT4WATER Cluster Annual Meeting	Keynote	16 June 2020	Brussels, Belgium	www.ict4water.eu	Industry, academy, EC	Conference on ICT4WATER interoperability & standardization	EUT
4	Workshop zu Künstliche Intelligenz in der Umweltinformatik	Workshop	29 September - 1 October 2020	Karlsruhe, Germany	https://umwelt-ki.de/	Academy, Public	Workshop for scientific community in field between CS and environment	DISY
5	Hydroinformatics Conference 2020	Oral presentation	11 - 15 January 2021	Mexico City, Mexico	https://hic2020.org/	Academia	Water modelling approaches and ICT for water	IHE

In addition to the planned events, three relevant WP related events have been identified by the Consortium in the future and shall be considered by the partners in the framework of their respective WP activities. The dates of these events are also subject to change due to the COVID-19 situation.

Table 9: Other Future WP Related Events

No	Name of the event	WP	Dates	Location	URL	Focus/target stakeholders	Target of event
1	iFORS 2020	WP3	21 - 26 June 2020	Seoul, South Korea	http://www.ifors2020.kr/	Academia, Business	Academia
2	GI_FORUM 2020	WP3	07-10 July 2020	Salzburg, Austria	https://gi-forum.org/	Academia, Government, Business in Spatial Domain	Academia, Government, Business in Spatial Domain
3	Hydroinformatics Conference 2020	WP4	26 - 30 July 2020	Mexico City, Mexico	https://hic2020.org/	Academia	Academia

Tutorials, Training Activities and Hackathons

Partners will be solicited to organise tutorials and training activities to share the knowledge and expertise acquired throughout the course of the project with targeted audiences. All partners will be invited to participate, however, emphasis will be put on the three pilot cities to partake and contribute.

Tutorials are intended to take the form of live or recorded video sessions where members of the team deliver a short (max. 20 minutes) presentation about the project's findings or a related topic in the scope of NAIADES.

Partners will be presented with the possibility of organising a hackathon in the context of the future editions of the IoT Week conference.

Dedicated NAIADES Webinars and Workshops

A series of webinars and workshops will be organised in the second half of the project when the results will be more mature and more specific solutions can be presented. The aim of these events will be to foster the adoption and awareness of the NAIADES project and its KERs. Section 5, further in the deliverable, provides some more details on which channel will be employed to promote a specific KER.

The idea is to organise around five workshops, including panel discussions as well as presentations and demonstrations of NAIADES solutions. Relevant stakeholders, such as municipalities, industry partners, etc., will be solicited to participate in the events. Tentative titles for this type of potential workshop are as follows:

- 'Water sustainability: from consumer awareness to behavioural change support'
- 'IoT Technologies for smart water systems'
- 'Smart water management in cities'
- 'Smart water solutions for SDGs'

In addition, a series of at least three webinars on relevant topics is also planned. The topics will be defined in the second half of the project after consultation with the technical partners and teaching institutions. They will possibly discuss interoperability in the water sector with a link to smart cities and smart water solutions for European policies. The webinars will follow an interactive approach, starting with a presentation, followed by a Q&A session and will be recorded and published on the project website and YouTube.

4 Exploitation

4.1 Exploitation Strategy

The NAIADES exploitation strategy is already defined and will be further expanded and reviewed over the course of the project with the full collaboration and commitment of the partners. It will be additionally communicated to external potential future stakeholders/users as well as ICT and water domain vendors via the NAIADES external advisory board (EAB).

The exploitation in the NAIADES project is considered at two levels:

1. At the partner level: where research and technology partners (specially dedicated to the development of devices, modules and tools) identify components of the overall NAIADES ecosystem (platform and its components) that may be exploited and ultimately commercialised both individually as well as in combination with the second level. At the same time, utility and local authority partners focus on the level of business scenarios, data collection and flows, integration needs, and the assessment of the NAIADES integrated solution.
2. At the Consortium level: the objective is to better define the "NAIADES ecosystem" as a whole, the types and forms of exploitation paths, and derive a priority actions plan for further exploitation. Key points to examine include (i) a competition analysis to understand the market opportunities and constraints, and (ii) questions about (a) likely customers of the technology/solution and/or the corresponding services, as well as (b) the development of potential partnerships with local authorities, utilities and/or third-party technology providers that might commercialise outputs of the project.

The NAIADES exploitation strategy will implement the following actions:

- Analysis of NAIADES results in order to identify what are the key ones;
- Characterisation of key exploitable results;
- Definition and discussion on IPR claims;
- Definition of individual exploitation paths aligned to each organisation roles and internal strategy;
- Consortium discussion about the possible routes of exploitation of the NAIADES ecosystem;
- Consultation with NAIADES EAB members;
- Discussion with other potential users' representatives (e.g. at the events NAIADES will participate in) in order to confirm the value of the results and the business models.

As a consequence, the plan for exploiting the foreground generated by the NAIADES project will be developed taking into account several elements:

- Given the fact that the project involves industry, academic partners, research organisations and end-users (water companies, water authorities, utilities and municipalities), the exploitation strategy needs to be developed in line with the general rules outlined by the European Commission and which ensures that the interests of all the parties are appropriately taken into account in the exploitation of the foreground generated by the project.
- Such a strategy needs to be set up well before the availability of the project results. This means a more iterative/fluid process in reality as the Consortium investigates the best exploitation routes. In particular, during these first ten months of the project, we have focused our activities on analysing the expected NAIADES results and characterise the key exploitable outcomes.
- Any strategy also takes into account all the inputs and results derived from the different NAIADES project activities as shown in the following figure.

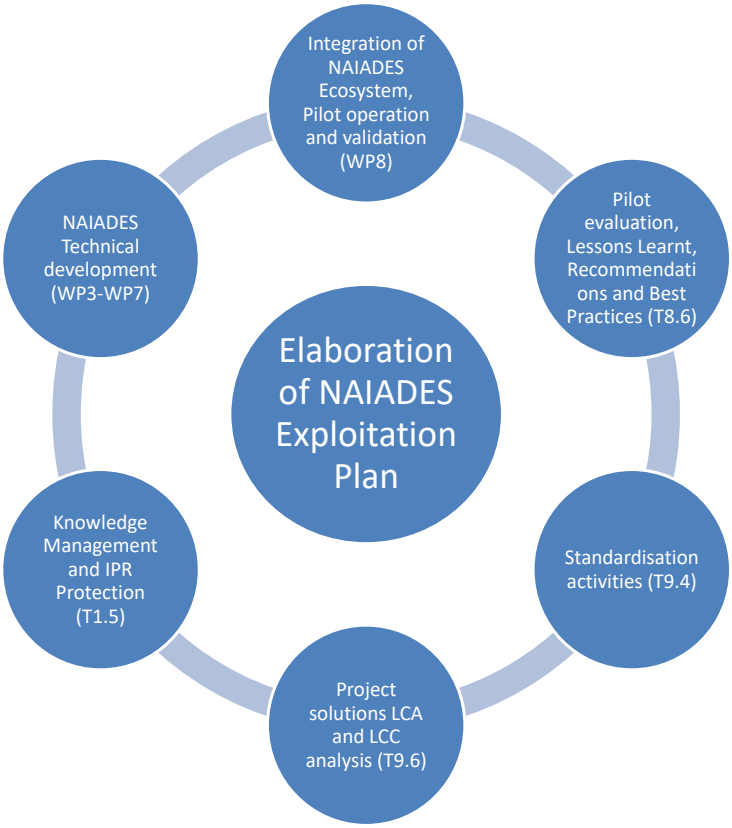


Figure 8: Link between the NAIADES exploitation plan and the other project tasks

The elaboration of the Exploitation plan is strictly linked to the achievements of the NAIADES project Milestones (MS) (see following figure).

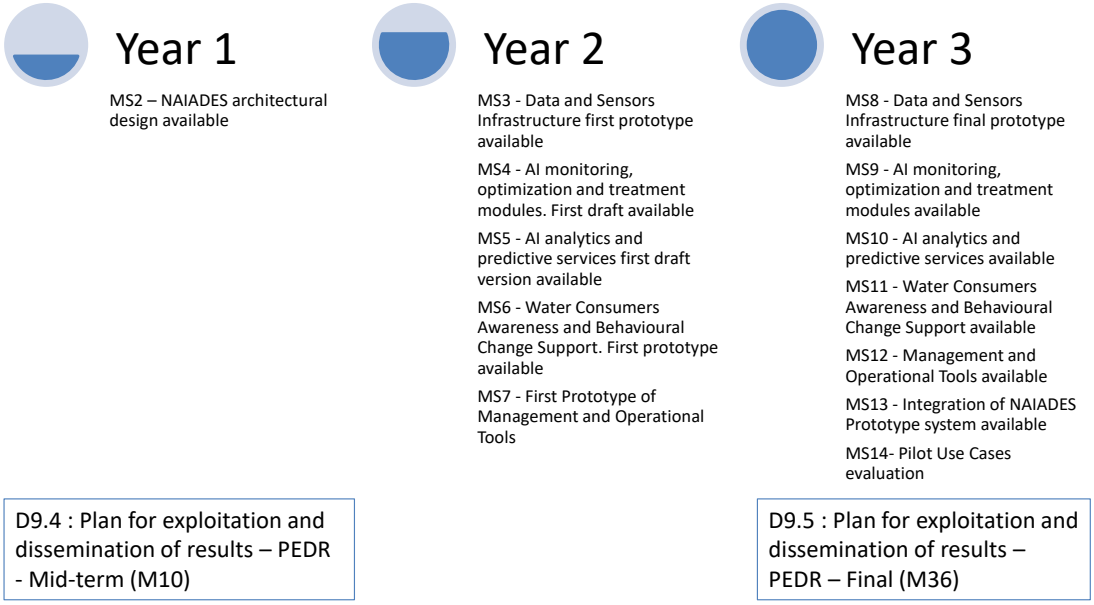


Figure 9: Progressive elaboration and refinement of the Exploitation Plan

For this reason, two releases of the Exploitation Plan will be submitted to the Commission: M10 – Mid-term version (D9.4 - current document); and M36 – final version (D9.5).

4.2 Exploitation Plan

4.2.1 Initial approach

As described in the Grant Agreement, NAIADES relies and builds upon various types of data collected from different water monitoring and control systems in Europe in order to (i) establish more efficient water consumption in both retail and commercial environments, (ii) generate increased confidence of water consumers (including special groups as ageing, disabled persons and children), (iii) to measure the water quality in residential buildings, offices and public infrastructures (mall, hospital), (iv) assure the safety and reliability through the detection of warning signs in near real-time and other monitoring systems, and (v) enhance public awareness on water consumption and usage savings and promote user engagement in water conservation activities through personalised persuasive feedback and recommendation services provided to the NAIADES App Users.

During the first months of the project, all partners were requested to elaborate an initial identification of their expected key exploitable results (KER), following the template attached as Annex I, ending up in at least 17 expected outcomes. Additionally, partners were requested to participate in an "elevator pitch" session during the NAIADES Plenary meeting which took place in Alicante, Spain, in January 2020 (slides can be found as Annex III).

Such amounts of different technologies, methodologies, expertise and business interests need to be properly addressed in two different and complementary approaches. On the one hand, the joint exploitation of the entire system as a whole (**KER 1**) and, on the other hand, the individual exploitation of products/services (**KERs 2 –KER 17**) which are in the main either solely developed or have limited joint-ownership.

Table 10: Initial list of Key Exploitable Results (KER)

Daf	Short Description	IPR Holder / Responsible
1	NAIADES Ecosystem	All partners
2	Water demand Prediction Toolkit	KT, JSI
3	Model for Predictive AI Analytics of water quality	AIMEN
4	Event detection system from urban water	EUT
5	Spatio-Temporal IoT Data Pipeline and Transformator	DISY
6	Monitoring toolkit for water consumption and	JSI
7	Data Fusion layer	ADSYS
8	Water Consumption Awareness and Behavioural	ICCS
9	NAIADES IoT Platform	UDGA
10	Environmental Monitoring & Weather Forecasting	CERTH, JSI
11	WAS Platform	SIMAVI
12	Dynamic Water Treatment Support Tool	AIMEN
13	Blockchain based log signing and audit	GT
14	Methodology for SDGs Compliance	MI
15	Trend Analysis for Smart Water Services	IHE
16	Methodology for model-based big data generation of critical events	IHE
17	Behavioural change measures to support ICT	IHE

In particular, **KER1** identifies the NAIADES ecosystem, i.e. the core components/platform to which other components, modules and services can be connected/integrated (see more details in Section 4.2.2).

The remaining KERs (2 to 17), described more extensively in Section 4.2.3, are in part components of the overall ecosystem, or services that utilise it, and altogether represent the comprehensive result of the project efforts. Such components/services are themselves both standalone and embedded solutions (algorithms,

methodologies, techniques) that will exhibit their maximal value-added potential when aggregated into the NAIADES packaged solution.

However, there are clear challenges that surround the exploitation of the NAIADES ecosystem, i.e. the effective and commercial deployment of the designed and developed end-to-end solution covering the whole water value chain. Such challenges are not new in the context: other projects and initiatives (see for example, ICT4Water Action Plan, 2018[4]) recognise that the key challenges of implementing smart water systems are the lack of the following issues: a strong business case (customer propositions/pricing/availability), cooperation between water utilities and/or between other utilities based on open data approaches, policy and regulation (privacy/security/encryption), standards and reference architectures (technology and protocols, both national and international), matureness of technology architecture (systems integration/ communications/ event handling).

One can understand that it could be easier and more viable to exploit a single component or subsystem, rather than facing the challenges of exploiting the whole platform and information system. It is indeed recognised that if the complete NAIADES ecosystem could be effectively deployed and run, there would be clearly a preferential exploitation route also for the components and individual solutions.

4.2.2 Joint Exploitation Strategy for the NAIADES Ecosystem

In considering how **KER1** might be brought to the market, the Consortium initially made the following two distinctions:

1. **A product/service (A):** An implementation of the NAIADES ecosystem and approach, i.e. an as-is implementation that mirrors the NAIADES instantiation. This would be provided as a product or a service (NAIADES-as-a-Service). It could be hosted on an organisation's own cloud infrastructure in the former case or possibly even in the latter. This would have basic tiered access that incorporates the NAIADES basic platform for data collection, fusion and operational alerts and dashboards interfaces. Beyond these specific services, leakage detection, the personalised behavioural change support tool, or the Weather Forecasting Toolkit, would be additional paid services.
2. **A reference architecture/approach (B):** For this case, the approach and architecture would be made available as FIWARE-compatible and extending modules/services enabling third-party developers to make use of this architecture and publish new tools in the NAIADES marketplace for data-driven exploitation.

It is clear in this distinction that in the exploitation of the two NAIADES settings, the Consortium is forced to consider and articulate different proposition and positioning strategies, e.g. on critical paths for more explicitly identifying, among other things:

- Target groups and among them, prospects, potential customers and early adopters;
- Modular approaches for offering hardware, software and services;
- Variable sets of competencies and skills for delivering the customised solution;
- Cost analysis elements, which include different types of assets (hardware, software, services...) to be measured and valued according to a user/ customer perspective.

During the next year, in order to characterise the KER1 for both paths A and B, characterisation tables similar to those used for the other KERs (see Annex I) will be completed considering the following aspects:

- The novel solution: Description of the Result, Innovativeness introduced compared to already existing Products/Services, Unique Selling Point (competitive advantages);

[4] https://www.ict4water.eu/wp-content/uploads/2019/04/ict4wateractionplan2018.pdf

- Market: Product/Service Market Size, Market Trends/Public Acceptance, Product/Service Positioning; Competitors/Incumbents, Prospects/Customers;
- External factors: Legal or normative or ethical requirements (need for authorisations, compliance to standards, norms, etc.);
- Go to market aspects: Cost of Implementation (before exploitation), Time to Market, Estimated Product/Service Price, Adequateness of Consortium Staff, External Experts/Partners to be involved;
- IPR Status: Background (type and partner owner), Foreground (type and partner owner);
- Exploitation Strategy: Exploitation Forms (direct industrial use, patenting, technology transfer, license agreement, publications, standards, etc.); which partner contributes to what (main contributions in terms of know-how, patents, etc.) Partner/s' expectations, Sources of financing foreseen after the end of the project (venture capital, loans, other grants, etc.).

A risk assessment will also be completed on KER 1 (KER 1-A, KER 1- B and also KER 1 overall) through the use of Priority Mapping. A Priority Map provides a snapshot of the most common risks faced by the project, previously identified through the Risk Matrix assessment tool (Risk Matrix). The Risk Matrix aims to identify the level of the different risks factors in accordance to the level of importance of the risk related to the final achievement of Key Exploitable Result and the probability for such a risk to happen. Through the Risk Matrix, the following six different categories of risks will be analysed:

- Partnership Risks: internal risk factors related to the composition of the partnership or specific behaviours of the partners, conflict of interests, etc.
- Technological Risks: external factors related to the feasibility of the technology, its level of development, presence of other emerging technologies, etc.
- Market Risks: external risk factors related to fulfilment of marked needs, presence of competitors or alternative products, etc.
- IPR Risks: factors related to the presence of similar previous patents, the possibility to protect the developed technology/product, patent counterfeit, etc.
- Environmental Risk factors: external factors related to the presence of or changes in legislation, standards, etc. Special attention is given to regulatory environment and standardisation issues.
- Financial Risk factors: factors related to the availability of funds for bringing the research stage to prototyping industrialisation/commercialisation.

The template to be used is attached to this document as Annex II.

4.2.3 Characterisation of the other Exploitable Results

In Month 6, all the partners carefully analysed their potential exploitable results by filling the template shown in Annex I. Although this list will evolve and the exploitation resources will be focused on the most promising results during the last year of the project, it already shows a clear commitment of the whole Consortium to provide relevant technologies/methodologies/standards to the water market.

KER 2: Water demand Prediction Toolkit	
Leader Partner Name	KT
Nature of the result[5]	Software
Description of the result	A forecasting system that provides efficient and robust water demand predictions which result from the incorporation of algorithms and knowledge to the available profiles and models. Aiming to obtain the water demand for the next few hours. The machine learning techniques implemented will match

[5] Product/Process/Training program/Software/Model/ Methodology/Standardisation/Policy recommendation

	forecasted and measured values considering boundary conditions as weather forecast, type of day, building demand profiles etc. The application of the mentioned techniques will enable NAIADES as a self-tuning approach to buildings demands forecasting objective.
Partners with background for this result	KT,JSI
Partners with foreground for this result	KT,JSI
Partners interested in exploitation	KT,JSI
Natures of the Exploitation[6]	Expertise, licensing
Form of the Exploitation[7]	Not defined yet

KER 3: Model for Predictive AI Analytics of water quality	
Leader Partner Name	AIMEN
Nature of the result	Model
Description of the result	An AI model that can predict short and mid-term water quality. As inputs, the model will use historical data from heterogeneous sources such as quality (turbidity, CoD, etc.), weather (rain, temperature, etc.), social (population) and consumption (water demand) parameters in order to relate it with historical quality data (turbidity, CoD, etc.). Once the model is trained, it will predict the future (hours, days, weeks) water quality from the new measured values and estimations of quality, social, weather and consumption parameters. The early prediction of water quality will allow WTP to plan and prevent quality deterioration in advance, optimising the water treatment process. This model will cover NAIADES specifications, and its application to novel scenarios (other treatment plants, etc.) will require model improvements. Therefore, it will serve as the basis for future water prediction models to be used in future research.
Partners with background for this result	AIMEN, AMAEM, CAR, CUP
Partners with foreground for this result	AIMEN
Partners interested in exploitation	AIMEN
Natures of the Exploitation	Licensing
Form of the Exploitation	Internally

KER 4: Event detection system from urban water	
Leader Partner Name	EUT
Nature of the result	Model
Description of the result	Data-driven models for supporting the synthetic generation of data. In this regard, the exploitable product will be focused on a software aimed to collect information from urban water infrastructure (flows, demand water, water quality information, hydraulic model information) and, based on such information, perform feature engineering (outlier detection, scale

[6] Expertise/Service (engineering)/Service (training)/Manufacturing/Assembling/Customisation/Selling/ Licencing/Lobbying/Advising

[7] Internally/Joint-venture/New legal entity/No exploitation/Group of interest/Partnership agreement/Research program/Start-Up

	harmonisation of the information, avoiding data gaps, anonymisation, etc.). Moreover, and based on the critical events to be evaluated, the software will provide class balancing mechanisms to maximise further analysis of the data. As a result, the exploitable result is a combination of data-driven models to ensure anonymised and balanced data set to support AI methods and services to optimally trained.
Partners with background for this result	EUT
Partners with foreground for this result	EUT
Partners interested in exploitation	EUT
Natures of the Exploitation	Expertise
Form of the Exploitation	Internally

KER 5: Spatio-Temporal IoT Data Pipeline and Transformator Tool	
Leader Partner Name	DISY
Nature of the result	Product
Description of the result	We intend to develop a pipeline tool to connect, integrate and transform the different data models and data formats used and developed in the NAIADES project. We focus on the interoperability between the SynchroniCITY models as well as the FIWARE models for Smart Cities and water management. In particular, the data formats with a spatio-temporal connection are providing a big challenge for the application of such systems as are developed in NAIADES. The benefit lies in the future ease of data integration and connection with the provided pipeline tool and associated adapters and API. To achieve this goal, this will be based on the TALEND open-source ETL tool and the Disy geospatial extension for TALEND. This extension will be extended for IoT - in particular water management based - use cases and for the temporal aspects on the pure data side and on providing the needed formats and transformation for the DSS and AI/ML parts from raw data from the processing point of view.
Partners with background for this result	DISY, UDGA
Partners with foreground for this result	DISY, UDGA, ADSYS
Partners interested in exploitation	DISY, UDGA
Natures of the Exploitation	Service (engineering), licensing
Form of the Exploitation	Joint-venture, partnership agreement

KER 6: Monitoring toolkit for water consumption and prediction	
Leader Partner Name	JSI
Nature of the result	Product
Description of the result	One of the results will be an online website that would enable monitoring and prediction of water consumption.
Partners with background for this result	JSI
Partners with foreground for this result	JSI
Partners interested in exploitation	AMAEM, CAR, CUP

Natures of the Exploitation	Service (engineering), customisation
Form of the Exploitation	Not defined yet

KER 7: Data fusion layer	
Leader Partner Name	ADSYS
Nature of the result	Software
Description of the result	Data-driven business intelligence has the potential to radically transform the way water and water infrastructure are understood, managed and used, but there is a lack of interoperability between systems and correlation between multiple data sources is costly and inefficient. We will create a service-oriented data fusion layer that provides: Real-time data collection from heterogeneous data sources; Consolidation, cleansing and correlation non-structured data from in-house facilities (SCADAs) but also external third-party services (e.g. weather agencies)
Partners with background for this result	ADSYS
Partners with foreground for this result	ADSYS
Partners interested in exploitation	ADSYS
Natures of the Exploitation	Licensing
Form of the Exploitation	Internally

KER 8: Water Consumption Awareness and Behavioural Change Support Service	
Leader Partner Name	ICCS
Nature of the result	Software
Description of the result	The water consumption awareness and behavioural change support service is a versatile tool that i) supports local administrations to understand water consumption in their area and effectively implement sustainable water policies and ii) enhances user awareness on sustainable use of water and nudges them towards sustainable behaviours. The service provides advanced water consumption data analytics, coupled with proper visualisation of "city-dashboards" for officials in local administrations and municipalities, that enable multiple comparisons of several consumption points (including public buildings, schools, gardens, sports facilities) based on their activity, location, uses, etc. The set of analytical functions include historical consumption data evolution, assessment of improvement measures, abnormal consumption notifications etc., and facilitate the creation of awareness and understanding of water consumption in the examined areas. Furthermore, the service couples information personalisation with persuasive technology to educate water end-users on aspects related to sustainable water use and guide them towards efficient decisions and actions. This is performed through an end-user application accessible via web interfaces, including smartphones and tablets, that facilitates its users to understand how much water is consumed and generates recommendations of actions for water conservation. The application leverages the power of persuasive technologies through the implementation

	of persuasive strategies (including social proof, self-monitoring, goal setting) and can be used to change the attitudes and practices of water consumers (e.g. high school students) by nudging them towards water conservation actions and efficient water use. Data captured from smart meters/sensors and users' feedback feed persuasive visualisations, while personalised insights are provided through water usage comparisons with other similar users of the application that are efficient in terms of water use.
Partners with background for this result	ICCS
Partners with foreground for this result	ICCS
Partners interested in exploitation	ICCS
Natures of the Exploitation	Expertise
Form of the Exploitation	Research programme

KER 9: NAIADES IoT Platform	
Leader Partner Name	UDGA
Nature of the result	Software
Description of the result	Our IoT Platform by design will be easy to deploy and integrate into external systems. Its features are: Open API based modular solution, Secure communication, High Interoperability, FIWARE and OASC Compliant
Partners with background for this result	UDGA
Partners with foreground for this result	UDGA
Partners interested in exploitation	UDGA, CAR
Natures of the Exploitation	Expertise, service(training), licensing
Form of the Exploitation	Internally, research programme

KER 10: Environmental Monitoring & Weather Forecasting Toolkit	
Leader Partner Name	CERTH
Nature of the result	Model
Description of the result	Part of the integrated DSS will be a short-term Environmental Monitoring and Forecasting prediction system based on the incident retrieval system. For the environmental monitoring state-of-art, Deep Learning techniques will be used, with an advanced RNN architecture (LSTM cells). The environmental monitoring data will be collected from open APIs in real-time. Various learning techniques will be considered for their suitability using State-of-the-Art algorithms like Stochastic Gradient Descent, Adagrad, Adadelta, Nesterov's momentum, etc. The convergence of the proposed methodology will be accelerated by dynamically adjusting the learning rate and introducing decay. The incident retrieval system will be interfaced with APIs reporting various environmental alterations (snow, extreme heat etc.) along with water supplies and infrastructure status (frozen pipes etc.). The weather forecasting toolkit will be used to (i) monitor critical environmental parameters including temperature, humidity, wind speed, precipitation and provide short-term prediction

	within a maximum time horizon of 24 hours and (ii) assess and predict the future weather-based comfort in both indoor and outdoor environments and (iii) provide weather indications that could be used to immediately detect possible infrastructure failures, extreme water supplies alterations etc.
Partners with background for this result	JSI
Partners with foreground for this result	CERTH
Partners interested in exploitation	CERTH
Natures of the Exploitation	Service (engineering)
Form of the Exploitation	Internally

KER 11: WAS Platform	
Leader Partner Name	SIMAVI
Nature of the result	Product, software
Description of the result	A cloud-based solution that will be able to perform data acquisition and logging for monitoring and diagnostic purposes. The platform will allow bidirectional communication between a centralised manager and units. Communication and control requirements will be addressed by using specially designed embedded devices in each particular location within the neighbourhood where water demands are taken care of by the Water Supply System (WSS). Technology: Web service using Springboot Framework with Java. Solution WMS communication infrastructure – Java backend application.
Partners with background for this result	SIMAVI
Partners with foreground for this result	SIMAVI
Partners interested in exploitation	SIMAVI
Natures of the Exploitation	Service (engineering), licensing
Form of the Exploitation	Internally

KER 12: Dynamic Water Treatment Support Tool	
Leader Partner Name	AIMEN
Nature of the result	Model
Description of the result	A model that will receive quality parameters in order to detect and react to events related to the quality of water in a dynamical way. Its purpose will be to increase the performance and safety of current systems. A model will be trained using measured quality-related parameters such as water flow, turbidity, pH, COD, etc. Those parameters will be linked to the best treatment method using the model. In order to relate the data with the appropriate treatment, the results from treatment simulations used by the treatment plants and also from the lab-scale demonstration will be used as the inputs labels during the training. The resultant model will suggest the best treatment in real-time, reducing reaction time to react efficiently to water quality changes. It will be created based on NAIADES specifications, and will be re-used in future related research.

Partners with background for this result	AIMEN, AMAEM, CUP, CAR
Partners with foreground for this result	AIMEN
Partners interested in exploitation	AIMEN
Natures of the Exploitation	Licensing
Form of the Exploitation	Internally

KER 13: Blockchain based log signing and audit	
Leader Partner Name	GT
Nature of the result	Software
Description of the result	Guardtime will design a novel blockchain-backed logging architecture that provides anti-tamper and early warning protection for critical log and event feeds by registering events with Guardtime KSI® blockchain, creating an audit trail that can be independently verified at any point in the future. This solution will enable the preservation of the integrity of log events, which in turn enables detection of changes and promotes situational awareness. For example, in the case of NAIADES (and other critical infrastructure management systems), there are many different IoT devices and critical infrastructure management systems (e.g. smart meters, SCADA devices) that act as a source of logs entries, and it is not feasible to change their interfaces in a custom way to achieve central and highly secured auditability. The new solution provides proof for 3rd parties in auditing critical processes for post-incident investigations that allows to independently verify the integrity of critical log data. Specific exploitations will be clarified during the project to achieve the best solution for the business
Partners with background for this result	GT
Partners with foreground for this result	GT
Partners interested in exploitation	GT
Natures of the Exploitation	Service(engineering), licensing
Form of the Exploitation	Internally

KER 14: Methodology for SDGs Compliance	
Leader Partner Name	MI
Nature of the result	Methodology
Description of the result	The methodology for SDGs will help to assess research projects, pilots and new technologies with the SDGs. It will be a valuable tool to the private and public stakeholders involved in smart water management and wishing to align their practices with the SDGs. As part of the exploitation plans, MI intends to promote it further and make it available to the research community.
Partners with background for this result	MI
Partners with foreground for this result	MI
Partners interested in Exploitation	MI

Natures of the Exploitation	Service (methodological tool)
Form of the Exploitation	Internally

KER 15: Trend Analysis for Smart Water Services	
Leader Partner Name	IHE
Nature of the result	Product
Description of the result	The introduction of smart technologies has been gaining momentum in the water services sector over the past decade. This momentum is the result of a combination of new ICT technologies and increasing challenges (such as the impact of climate change and pollution of water resources) facing water utilities supplying water. At the same time, water utilities are notoriously hesitant to adopt new technologies as possible breakdowns may hinder the utility from supplying an essential service. By analysing the trends for smart water technologies, this result will create a better understanding of how water providers adopt technologies. This understanding can then be used to facilitate the introduction of new technologies in water providers.
Partners with background for this result	IHE
Partners with foreground for this result	IHE
Partners interested in exploitation	IHE
Natures of the Exploitation	Service (training)
Form of the Exploitation	Internally

KER 16: Methodology for model-based big data generation of critical events	
Leader Partner Name	IHE
Nature of the result	Methodology
Description of the result	Although Artificial Intelligence (AI) approaches have been explored and improved within the Hydroinformatics field in the last decade, only in the recent years have these approaches been implemented in real water systems. In particular, current efforts are aiming to improve decision making in water distribution systems. This is done by feeding machine learning platforms with real-time sensor data collection. This approach, however, does not take into account potential critical situations for which sensor data is effectively non-existent. This result proposes a methodology to generate this data based on probabilistic scenarios and the use of hydraulic models. For each critical situation, sets of optimal solutions are found and made available to feed the AI platform.
Partners with background for this result	IHE
Partners with foreground for this result	IHE
Partners interested in exploitation	CUP, AMAEM
Natures of the Exploitation	Service (training)
Form of the Exploitation	Internally, research programme

KER 17: Behavioural change measures to support ICT interventions

Leader Partner Name	IHE
Nature of the result	Product
Description of the result	Behavioural change of water consumers is best induced through a combination of different types of consumer-oriented interventions. These interventions must be complementary to be successful. This result aims to study how ICT interventions can best be supported through non-ICT measures such as awareness-raising, etc. By better understanding the relationship between ICT and non-ICT measures, the ICT interventions can be made more effective.
Partners with background for this result	IHE
Partners with foreground for this result	IHE
Partners interested in exploitation	IHE
Natures of the Exploitation	Service (training)
Form of the Exploitation	Internally

4.3 Individual Exploitation Plans

The foreground generated by the project may be subject to different types of exploitation: industrial Exploitation, academic and research centre Exploitation, Exploitation by end-users (water companies, water authorities, utilities and municipalities).

Whilst industrial exploitation generally deals with the direct or indirect utilisation of the generated foreground for commercial purposes, academic exploitation deals with its utilisation within further research activities other than those covered by the project. The exploitation by water end-users aims, on the one hand, to optimise the water network, and on the other, to improve water awareness use thorough best practices.

The NAIADES Consortium is composed of 3 water utilities/operators and local authorities (AMAEM, CUP and CAR), 4 Universities (ICCS, JSI, IHE, VUB), 3 Research Centres (AIMEN, EUT and CERTH), and finally, eight industrial Partners (KT, MI, UDGA, ADSYS, DISY, IBA, SIMAVI and GT). The following sections provide a short description of the partners and their initial interest, as well as the opportunities they see in exploiting results they are involved in and/or responsible for within the NAIADES project and the different expectations according to their targets and taking into account the different partners expectation in a more focused future-customer perspective (Industrial partners, academic partners, end-users partners).

4.3.1 Industrial Partners

KT main exploitation goal is to bridge the current gap between its own services and the new technologies developed within NAIADES. KT will set up close cooperation with its own clientele to develop and commercialise services using NAIADES. KT develops software for several industrial sectors as well as a series of applications for a variety of domains (energy efficiency, transport, supply chain, mobile etc.). KT will take advantage of its clientele list and will promote the NAIADES platform and tools.

MI will promote its Methodology for SDGs Compliance in other projects related to smart water services and water management.

UDGA will integrate the results of NAIADES directly into the smart city platform that UDGA is building for the city of Carouge. The City of Carouge will have enriched the urban platform and services by the results of NAIADES, and UDGA will be able to widen its smart city services by integrating innovative water management solutions and systems that NAIADES aims to develop.

ADSYS, as a system integrator and ICT solution developer and provider, will base its exploitation to improve current IoT & Cloud solution capabilities by adding new modules such as the data fusion layer or any other module developed by any other partner looking for a commercialisation route.

SIMAVI, as a technological partner, will carry out the exploitation of its WAS platform through its usual channels, adding it to its current technology portfolio.

DISY aims to position its geo-ETL tool Geospatial extension for Talend as core elements of the NAIADES Data Integration Middleware.

IBA will open business opportunities in a sub-market of sensors for detection and monitoring of water quality and CBRN agents in various WSDN locations from piping to public baths. IBA will increase its product series, providing an integrated solution for actions in the specific scenarios addressed in NAIADES pilots. These solutions will be certainly suitable for a wide range of customers, from water operators, municipalities and bathing area operators to small clients managing private leisure sites. In addition, IBA will expand its client portfolio for weather stations providing a customised solution for water utility operators. This solution may find suitable locations nearby gardening areas or wastewater treatment plants. NAIADES will provide a real scenario for testing and validation of these tools.

GT will expand its solution portfolio by developing an innovative KSI blockchain-based auditing system providing an opportunity to enter into a new market (water management systems) in addition to facilitating cooperation with and giving access to potential new customers.

4.3.2 Academic and Research Partners

CERTH will be mainly focused on the Exploitation of the Environmental Monitoring & Weather Forecasting Toolkit, promoting it in other research projects and among relevant research communities.

VUB will promote privacy, data protection and security in the emerging innovative solutions and the keenness to identify and facilitate the mitigation of data protection threats and risks. Apart from the unique opportunity to enhance and adapt the EU data protection legal framework on the use of IoT platforms, VUB will not only monitor legal compliance with the European legal framework but will contribute to Privacy- and Security-by-Design solutions and upgrade its know-how.

EUT, as an expert in ICT4Water and semantic interoperability, will commercialise the subsequent results throughout their customer network as a part of their smart water portfolio. The customer segments interested in such solutions are: (i) standardisation bodies, such as the OGC®, BDVA and the AIOTI, that are seeking knowledge-based and reference architectures that enhance interoperability, contextualisation and integration in the water sector; (ii) ICT4Water cluster and other EU associations to online measure and monitor the advances in smart water technology and solutions; (iii) ICT suppliers seeking to penetrate the water market; (iv) engineering/consultancy companies focused on developing services to enhance plan and operational activities in the water infrastructure; (v) water utilities interested in holistic and more integrated monitoring and control solutions; (vi) policy-makers and governments to ensure the safety and security in their regions; and (vii) the academic sector interested in new advancements in emerging smart water technologies. Indirectly, EUT will commercialise their products by establishing partnerships with industries in the water sector (e.g. water utilities, water software companies).

AIMEN expected results indicated previously will be protected by copyright, but patent protection will also be studied. AIMEN will exploit these results through licensing, for consultancy services to water companies and for further research and training activities.

IHE will advance its expertise in multiple fields, as shown in the previous section. On top of that, the team will investigate the commercialisation of some of these components or their by-products through the establishment of spin-offs. Moreover, the IHE team will strengthen their scientific profile through collaboration with partners on inter-disciplinary research topics.

ICCS is a non-profit research organisation and hence does not focus on making a profit from products or services. On the contrary, one of the main missions of the institute is to promote the visibility of technology through dissemination, education activities and successfully transfer innovative technological modules to project partners, spin-off companies and the industry (mainly through ICT researchers). Technology transfer in the context of NAIADES targets enterprises and organisations interested in nudging users towards sustainable choices in domains such as energy, water, mobility, healthy living etc. The goal of the technology transfer to such organisations would be to educate them on using personalisation and behavioural change support technology in order to nudge users towards sustainable choices.

JSI aims to implement its technologies within the industry and manufacturing setting, thereby exploiting its research in the area of Artificial Intelligence. Moreover, it will continue using knowledge and semantic technologies in different industry scenarios; this has already opened several business opportunities for JSI that are in the process of development.

4.3.3 Public Authorities and End Users

The three end-users **(AMAEM, CAR, CUP)** will incorporate the different products and services developed during the NAIADES project in their day-by-day and medium term operation planning. AMAEM and CUP will also integrate NAIADES' app in their strategy for public awareness on water consumption and user savings. The monitoring of water quality in fountains, wastewater quality and water saline intrusion into the sewerage will be integrated into their processes. This will become the first step towards an analysis of market acceptance and value proposition.

4.4 IPR protection strategy

The main goal of the project is the development of the so-called NAIADES Ecosystem, which envisions transforming urban water management through automated and smarter water resource management and environmental monitoring, achieving a high level of water services for both residential and commercial consumers, exploiting the efficient use of physical and digital components of the water ecosystem.

Since the technologies require complementary expertise and as they will be developed jointly by the partners of the Consortium, it is important to select the most suitable protection prior to the start of the exploitation and dissemination activities. Converting the intellectual assets into legal property will secure the owner to prevent others from exploiting them.

Within this framework, the IPR protection plan foresees that the generation of foreground is continuously monitored, and willingness of any partner to apply for any kind of protection of the Intellectual Property is notified to the appointed responsible body within the project before taking any action, following the procedures defined in the signed Consortium Agreement. In the frame of the Management Board, the Exploitation Manager will analyse the proposed patentable idea, and he will discuss with the other members how to proceed.

The planned activities aim to guarantee that the results will be formulated and compiled into secure forms. An appropriate plan will also provide the necessary protection for the Consortium, following the rules described in the Consortium Agreement.

Ensuring an adequate share in the protection of joint efforts needs an innovation or any foreground to be specified whenever it is generated, as well as sharing being ascertained and agreed among the partners creating that foreground. This should occur on a case-by-case basis and under the supervision of the Project Management Board and, in particular, of the Exploitation Manager, who should act as a supervisor on behalf of the rest of the partners.

The joint foreground is expected to be generated within a restricted subset of the partners working together on joint development. Therefore, any activity or group of activities belonging together, as well as all actors therein, have been catalogued in the exploitable result table in the previous chapter, and procedures have

been developed to monitor developments generated within those groups. Moreover, as illustrated in the previous section, a preliminary analysis of exploitable results by identifying the partners involved in each exploitable result has been carried out.

The procedure implemented by NAIADES project requires that any partner intending to apply for any kind of protection of Intellectual Property informs the Coordinator of their intention. The Coordinator shall then inform the Project Management Board. A more detailed description of the strategy, including the list of IPR protection activities carried out, will be included in the deliverable D1.9 NAIADES IPR Plan & IPR Management, due on month 36.

5 Joint Dissemination and Exploitation Plan

Following the identification of the KERs by the partners, as well as the definition of the dissemination plan for NAIADES, the current chapter seeks to build market-oriented synergies in order to best align the dissemination activities with the partners' exploitation plans. For this purpose, a shared spreadsheet has been developed, bridging the gap between both the previously defined dissemination plan and the exploitation plan.

5.1 Joint Dissemination and Exploitation Table Structure and Approach

The joint dissemination and exploitation table seeks to assess the 17 KERs against the dissemination method (for awareness, for adoption), the target audience for the chose type of dissemination and the respective channels to reach the designated audience. The table is structured around the following items:

- the number of the KER
- 17 KERs identified in the exploitation plan,
- the name of the owners of the 17 KERs

Furthermore, to strengthen the market-orientability of the Dissemination and Exploitation plan, the table makes the distinction between two dissemination purposes, i.e., 'for awareness' (a type of dissemination which strives to raise awareness around the technological advances of NAIADES and the KER) and 'for adoption' (a kind of dissemination that seeks to support the market exploitation of the KER and its market adoption by relevant target groups). Indeed, it was considered that the dissemination activities around a KER may vary in function of the desired dissemination purpose and may thus target various target audiences through distinct channels. For this reason, each of the categories ('for awareness' and 'for adoption') is split into two additional categories dedicated to the dissemination targets and channels. The following dissemination targets (both for raising awareness and for fostering adoption) have been defined in the table as per the Grant Agreement:

- Scientific community
- Non-profit sector
- Technology and services
- Industry
- Water services providers
- Utility providers
- Municipalities
- International organisations
- Others (to be specified)

Additionally, the table identifies the following dissemination channels (both for raising awareness and for fostering adoption):

- Conference
- Webinar
- Workshop
- Exhibition/fair
- Training sessions
- Scientific articles/theses
- Contributions to standardisation
- Demonstration
- Others (to be specified)

The NAIADES KER owners have been solicited to fill in the joint dissemination and exploitation table by indicating the relevant target groups with a cross (X) and specify to the best of their abilities, the relevant channels for the chosen type of dissemination.

5.2 Joint Dissemination and Exploitation Plan

The following two tables (see Table 11 and 12) provide an overview of the inputs provided by the Consortium regarding the dissemination efforts for each KER. They illustrate how the dissemination activities are related to the Exploitation of NAIADES solutions and how they work towards creating and feeding a growing community of relevant stakeholders. It has to be noted that the indicated channels might vary in function of the evolution of the COVID-19 pandemic through the course of the project and might be adapted accordingly. Also, many activities will be determined once the end results have been obtained.

5.2.1 For Awareness

Based on the results obtained through the mentioned study, it can be noted that the most important target group of the activities related to awareness-raising is the scientific community, with 14 KERs targeting it. Second come water service providers, which also play an essential role. Municipalities and general technology and service providers are targeted by 9 KERs, respectively, highlighting the importance of sensitising the intended end-users of the developed solutions and thus the market-oriented approach employed for dissemination. Other specific target groups such as NGOs, IOs and industrial actors are also addressed in an appropriate manner. However, it can be stated that it is consistent with the aim of the project that awareness efforts will be aimed more to the scientific community as it supports knowledge sharing and contributes to the research development.

To raise awareness, partners are principally referring to channels such as social media, bilateral discussions with relevant stakeholders, blogposts, MSc programmes and publications on their respective websites (all stated under "other"), as well as conferences and scientific articles and theses. As stated in the section on dissemination, the consortium partners will organise several workshops and webinars to promote the KERs, with their precise structure still to be determined by M30.

5.2.2 For Adoption

Regarding the dissemination activities related to the adoption of NAIADES solutions, the partners mainly aim at utility providers, municipalities as well as the scientific community. This result is due to the fact that especially the scientific community is relevant for transferring research results to the private sector in order to support and nurture the adoption of developed solutions. Besides, important efforts towards other identified target groups such as water service providers, technology and service providers, etc. are also taking place.

In terms of channels employed to inform these target groups about adoption possibilities, the principal tool is again social media, bilateral discussions with relevant stakeholders, blog posts and publications on the partners' website, as well as conferences. As touched upon above, many additional dissemination activities related to the adoption of NAIADES solutions are still to be defined. Indeed, many final results will only be obtained towards the end of the project when adapted efforts will be undertaken.

Table 11: Joint Dissemination and Exploitation Plan - for Awareness Section

*n	KER	Owner(s)	For Awareness																
			Target group									Channel							
			Scientific Community	Non-Profit	Technology and Services	Industry	Water Service Providers	Utilities Providers	Municipalities	International Organisations	Other	Conference	Webinar	Workshop	Exhibition/Fair	Training Sessions	Scientific Articles/Theses	Contributions to Standardisation	Demonstration	Other Channels
1	NAIADES Ecosystem	All partners	X	X			X		X	X		IoT Week, Digital Around the World, Digital Water Summit	Series of webinars organised by NAIADES on IoT for Smart Water	Dedicated NAIADES workshops, Workshop with Digital Water 2020	IWA World Water Congress & Exhibition	TBD after full results in M30	Chapter Digital Water in Springer Handbook	Contribution to ITU Q5/SG20	IoT Week	Newsposts, Podcasts, TV programs related to technology & innovation, NAIADES's social media channels, NAIADES's website, CERTH's website
2	Water demand Prediction Toolkit	KT, JSI	X			X			X		X									Bilateral discussions with national organisations as "Ministry of the Environment and Spatial Planning", "Strategic panel for digitalisation" and various Slovenian municipalities (e.g. Dragomer as an example interested in turning into a smart city).
3	Model for Predictive AI Analytics of water quality	AIMEN	X	X	X	X	X	X	X	X		TBD after full results in M30		Participation in workshopr TBD after full results in M30		TBD after full results in M30	TBD after full results in M30			TBD after full results in M30 (Journal) & AIMEN's social networks & https://naiades-project.eu/blog & part of further research
4	Event detection system from urban water	EUT	X	X	X	X	X	X	X			TBD after full results in M30			TBD after full results in M30		TBD after full results in M30	Usage of NGSI-LD & SAREF4WATR		
5	Spatio-Temporal IoT Data Pipeline and Transformator Tool	DISY	X		X	X		X	X		X			TBD, ideas include the EnviroInfo, the AK UIS and the Informatik 2022						Newspost, Blogposts, Social Media Channels
6	Monitoring toolkit for water consumption and prediction	JSI	X			X	X				X		TBD	TBD						Bilateral discussions on various levels and application in industry and real sector, including water sector. E.g., beside usage in Naiades, the monitoring tool has been tested and used also in fin-tech (Bank of Slovenia), analysing financial streams.
7	Data Fusion layer	ADSYS	X										TBD	TBD						Current customers and potential ones subscribed to our newsletters and mailing lists
8	Water Consumption Awareness and Behavioural Change Support Service	ICCS	X	X	X	X	X	X	X			IEEE COINS2021 (submitted, AUGUST 23 – AUGUST 26, 2021)		WebAndTheCity, workshop for smart cities as part of WWW2022			MDPI Sustainability (open access journal). Article to be submitted in the coming period			Newspost, Blogposts, Social Media Channels
9	NAIADES IoT Platform	UDGA			X		X								Propositions of events include Smart Water, FIWARE WATER SUMMIT and AQUA360				Propositions of events include Smart Water, FIWARE WATER SUMMIT and AQUA360	
10	Environmental Monitoring & Weather Forecasting Toolkit	CERTH, JSI	X		X		X	X	X			TBD					MDPI Applied Sciences			
11	WAS Platform	SIMAVI	X										TBD	TBD						
12	Dynamic Water Treatment Support Tool	AIMEN	X (as AIMEN)		X*			X*			X*	TBD after full results in M30								TBD after full results in M30 (Journal) & AIMEN's social networks & part of further research
13	Blockchain based log signing and audit	GT			X	X	X	X	X	X									Reference demos	
14	Methodology for SDGs Compliance	MI	X	X		X				X		Connect University Summer School, IoT Week, Digital Around the World					IoT Handbook of Springer	ITU Green Standards Week		
15	Trend Analysis for Smart Water Services	IHE	X				X				Mainly MSc students in Water Management and Governance					TBD				MSc Education programme at IHE Delft
16	Methodology for model-based big data generation of critical events	IHE	X		X							SimHydro 2021					3 MSc theses, one journal article under preparation to be submitted to Water Resources Planning and Management Journal			
17	Behavioural change measures to support ICT interventions	IHE					X	X	X								Scientific article; journal TBD			

X* through the NAIADES platform

Table 12: Joint Dissemination and Exploitation Plan - for Adoption Section

*n	KER	Owner(s)	For Adoption																
			Target group									Channel(s)							
			Scientific Community	Non-Profit	Technology and Services	Industry	Water Service Providers	Utilities Providers	Municipalities	International Organisations	Other	Conference	Webinar	Workshop	Exhibition/Fair	Training Sessions	Scientific Articles/Theses	Contributions to Standardisation	Demonstration	Other Channels
1	NAIADES Ecosystem	All partners	X		X	X	X	X	X		X	Water Innovation Europe, Smart Water Utilities 2022	Series of webinars organised by NAIADES on IoT for Smart Water	Dedicated NAIADES workshops, Workshop with Digital Water 2020	IWA World Water Congress & Exhibition	TBD after full results in M30		Contribution to ITU Q5/SG20	TBD	Newsposts, Podcasts,TV programs related to technology & innovation, NAIADES's social media channels, Blogpost on NAIADES website
2	Water demand Prediction Toolkit	KT, JSI	X			X			X		X		TBD	TBD						Bilateral discussions with national organisations as "Ministry of the Environment and Spatial Planning", "Strategic panel for digitalisation" and various Slovenian municipalities (e.g. Dragomer as an example interested in turning into a smart city).
3	Model for Predictive AI Analytics of water quality	AIMEN	X	X											ICT4WATER Cluster Annual Meeting, IWARR, Waterborne Technology Platform					AIMEN Direct sales force; AIMEN's corporate website, social networks and specialized magazine (AIMEN Annual report); B2B marketing, Supporting partners networks & activities
4	Event detection system from urban water	EUT	X	X								TBD after project results on M30			ICT4WATER Cluster Annual CROSS-SYNERGIES					
5	Spatio-Temporal IoT Data Pipeline and Transformator Tool	DISY			X	X		X	X		X								Internal Customer Conference at DISY	Bilateral discussions with national associations such as the TZW for multiplicator effects ; News articles
6	Monitoring toolkit for water consumption and prediction	JSI	X			X	X				X		TBD	TBD						Bilateral discussions on various levels and application in industry and real sector, including water sector. E.g., beside usage in Naiades, the monitoring tool has been tested and used also in fin-tech (Bank of Slovenia), analysing financial streams.
7	Data Fusion layer	ADSYS				X														Current customers and potential ones subscribed to our newsletters and mailing lists
8	Water Consumption Awareness and Behavioural Change Support Service	ICCS			X		X	X	X				TBD	TBD						Bilateral discussions with interested stakeholders, inlcuding water utilities and municipalities,
9	NAIADES IoT Platform	UDGA			X		X	X	X						Propositions of events include Smart Water, FIWARE WATER SUMMIT and AQUA360					Propositions of events include Smart Water, FIWARE WATER SUMMIT and AQUA360
10	Environmental Monitoring & Weather Forecasting Toolkit	CERTH, JSI			X		X	X	X		X		TBD	TBD						
11	WAS Platform	SIMAVI						X											Presentation of the solution to other interested external users (other utilities companies in Romania which showed interest to the project - Brasov Water Company; Buzau Water Company)	
12	Dynamic Water Treatment Support Tool	AIMEN						X*	X*				TBD	TBD						
13	Blockchain based log signing and audit	GT																		
14	Methodology for SDGs Compliance	MI	X	X						X		Sustainable Development Goals Action Campaign, IoT Week					IoT Handbook of Springer	Green Standards Week, ITU	Demonstration to WMO, UNEP, DG ENV	Blogpost on NAIADES website
15	Trend Analysis for Smart Water Services	IHE																		
16	Methodology for model-based big data generation of critical events	IHE	X									CHWE001 2021: 15. International Conference on Hydroinformatics and Water Engineering December 02-03, 2021 in Amsterdam, Netherlands					TBD		
17	Behavioural change measures to support ICT interventions	IHE																		

X* through the NAIADES platform

6 Conclusions

The objective of this report was to present the mid-term NAIADES Dissemination and Exploitation plan defined in the framework of task 9.2 within WP9 to guide the project towards effective visibility and a viable exploitation strategy on a global scale ensuring significant benefits for all the project partners.

The following aspects have been illustrated in this report:

- The creation of the dissemination strategy focused on a results-oriented approach, maximising the visibility of the outcomes enhancing future business opportunities.
- The identification of the initial exploitable results
- The identification of the partners' individual exploitation expectations
- The definition of the IPR protection strategy
- The interconnection between dissemination and exploitation activities illustrated through the joint plans

This is only the first stage in a challenging approach that will be running from the beginning till the end of the project helping the Consortium partners to decide the most profitable business model and to define their position in the market and improve their own business offering, making use of the dissemination strategy potential.

Annex I. Template for initial identification of potential Exploitable Results

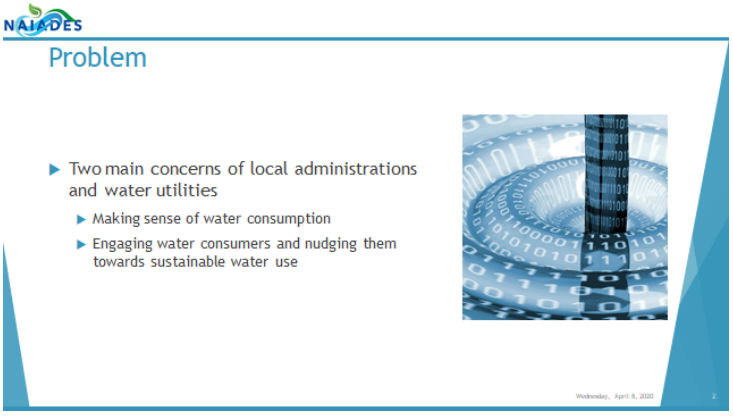
POTENTIAL EXPLOITABLE RESULT																
Project Acronym	G-1	NAIADES														
INSTRUCTIONS		COLOR CODE →		← Please do not edit			← If required				← Mandatory field					
GENERAL DESCRIPTION OF THE RESULT																
This number will be used to organize multiple results by the same partner	D-1	Number	1													
Please consider to put something meaningful	D-2	Title														
Which WPs allowed the development of this result	D-3	WPs														
List the deliverables where and when details can be identified	D-4	Deliverables														
The lead partner is usually the partner willing to exploit the result, the best positioned	D-5	Partner Name								Contact Person →						
Select from the list	D-6	Nature of the result	Product													
How close is this result as compared to the objective as set in the DoW? In %	D-7	Level of achievement (Select from the drop-down menu)	0%													
Please consider to tell us when you think the result will be exploited	D-8	Expected Completion date. Use DD/MM/YYYY format please →	30/01/2021													
Select from the list	I-1	Partners interested in exploitation														
Select from the list	I-2	Partners with background for this result														
Select from the list	I-3	Partners with foreground for this result														
Provide a paragraph that explains for technical readers the potential/benefit of this result	E-1	Description of the result														
Explain to a wider community the potential of this result	E-2	Brief description														
EXPLOITATION																
A result may be exploited by different partners in different ways		For each exploitation provide the nature and forms (use the drop-menu to select)	Exploitation-1	Exploitation-2	Exploitation-3	Exploitation-4	Exploitation-5	Exploitation-6	Exploitation-7							
This information allows knowing which organisation is behind an exploitation. An organisaton may have several plans of exploitation	F-1	Organisation														
A result may be exploited in various form. Select from the list	F-2	Natures of the exploitation														
Select from the list	F-3	Form of the exploitation														

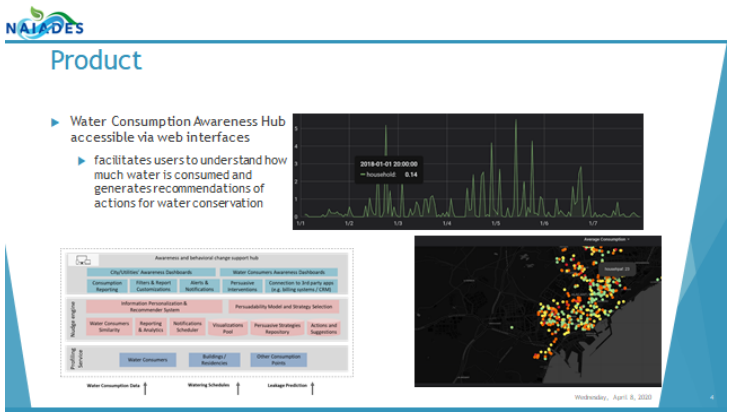
Annex II. Template for Key Exploitable Results risk mapping

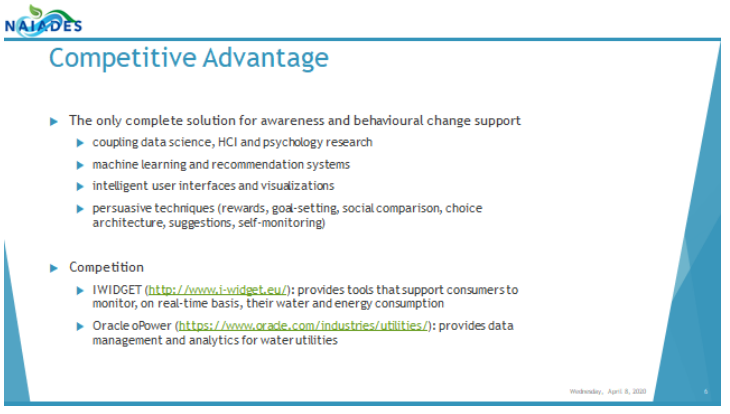
	KER #	Degree of importance of the risk related to the final achievement of this Key Exploitable Result. Please rate from 1 to 10 (1 low- 10 high)	Probability of risk happening Please rate from 1 to 10 (1 low - 10 high)	Risk Grade	Scope and type of potential intervention	Feasibility/Success of Intervention Please rate from 1 to 10 (1 low- 10 high)	Priority Level
1	**Partnership Risk Factors**						
	Industrialization at risk: no manufacturer for the exploitable result.						
2	**Technological Risk Factors**						
	Significant dependency on other technologies.						
	Result aiming at replacing existing and well entrenched technologies						
	Worthless result: better technology/methodology exists.						
3	**Market Risk Factors**						
	Difficulty in market penetration/customer reception and acceptance of technologies						
	Nobody buys the product. Standards to make it compulsory don't yet exist.						
	Nobody buys the product. Too expensive.						
4	**IPR/legal Risk Factors**						
	Competitors replicate technology						
	Know- how risks: a counterfeit cannot be proved						
5	**Financial/management Risk Factors**						
	Weak exploitation: Inadequate business plan						
	No resources (human and/or financial) secured to make the next step toward exploitation						
	Lack of endorsement from top management						
6	**Environmental/regulatory Risk Factors**						
	Not in compliance with regulations						
	Influence of laws and regulations						

Annex III. Slides presented during Elevator Pitch session. January 2020

ICCS – Water Consumption Awareness Hub - Understanding water consumption data and fostering behavioural changes for efficient water use







GT - Blockchain based log signing and audit

guardtime

Guardtime

2020 JANUARY

COMPANY CONFIDENTIAL. DO NOT SHARE.

WHAT GUARDTIME CAN PROVIDE

- **Integrity**. Signature links an input data to a widely witnessed evidence (Calendar blockchain and ultimately published newspapers) by a one-way hash chain.
- **Signing time**. Signature is a strong proof of signing time. Due to design (a value is added exactly once a second and all values are hashed together) the signing time is encoded into the "shape" of the calendar blockchain database.
- **Signing entity**. Signature provides attestation of origin. Identities of all nodes involved in creating the signature(from customer application to Blockchain core nodes) is stored in the signature. The chain of identities is forward secure (can not be altered after signature is created) but it does not provide non-repudiation*

* Lack of non-repudiation means that KSI itself can not indisputably prove the actual entity (e.g. a person or a device) who requested the signatures. For every use-case, it is necessary to supplement KSI technology with an adequate set of legal framework, procedures, system engineering and application design which might include additional cryptographic engineering. In order to achieve desired strength and granularity of signer's identity. Keys used for authentication within the KSI infrastructure are symmetrical—as a parent entity controls the use of (and could impersonate) its child entities. Therefore the meaning, strength and legal status of a KSI signing entity must be explicitly agreed for each use-case and deployment. For example, using KSI to manage identities of IoT devices within a corporate network could be feasible and sound. Identifying users on a public environment, without additional effort, is not.

FOLLOWING SHOULD BE CONSIDERED WHEN ASSESSING THE DEPLOYMENT OPTIONS:

- Gateway should be behind a firewall or have local iptables/firewall configured to allow traffic only from authorized IP addresses.
- Gateway should be accessible to applications that sign data and extend signatures. Corporate deployments usually expect access to the Gateway to be through secure network.
- Gateway should have access to upstream Aggregators and Extenders in KSI network. This communication is not required to be over secure networks.

INTEGRATION

KSI signing is server-based, which means that signing data requires online access to the KSI service. There are two major options for generic integration with KSI:

- KSI Software Development Kit (SDK) – provides low-level KSI functions (signing, extending, verifying).
- Catena middleware – provides higher-level KSI functions (asynchronous signing, signature persistence, automatic extension of signatures, signature annotation, and cryptographic linking of the signing events).

Both are not exclusive and can be used in combination whenever appropriate and necessary.

TESTING ROOM

The access credentials to try out servers for KSI Gateway can be requested from guardtime.com/technology/blockchain-developers. (ref NAIADES/KRISTO KLESMENT)

The simplest way to start using KSI Blockchain functions is with KSI command-line tool. It can be used for signing data in files or other sources, extending existing KSI signatures and verifying them using different trust anchors.

KSI signatures can be verified also with https://guardtime.com/verify which calculates document hash in the local browser and compares it with the one in KSI signature.

GUARDTIME PRODUCT IN NAIADES CONTEXT

WHAT: a technical solution that makes it possible for all participants to trust a common process by immutably recording who did what, when, where and why.

NAIADES IoT data repository or log data signing will be options for example.

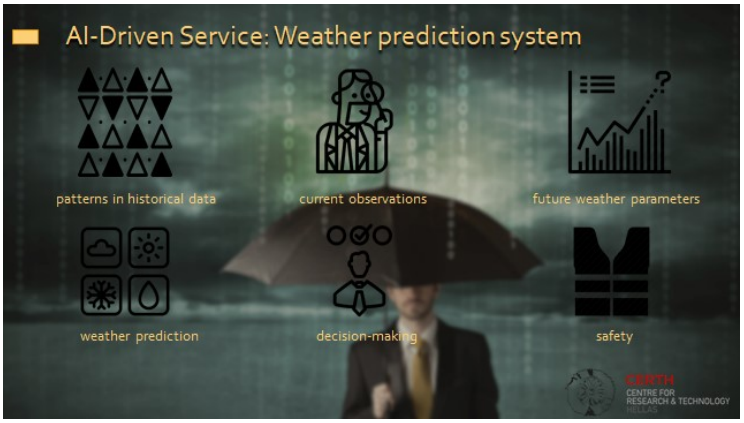
WHO: Critical infrastructure operators / consumers and local government officials responsible - potential market is about 10 000 local government owned utility companies in EU – local ICT integrators will purchase the installation support and sign license agreement.

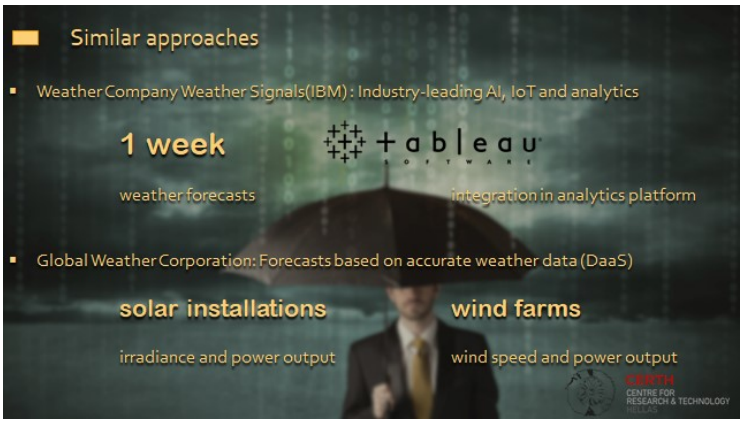
WHY: Competitive advantage is in patented mathematical approach and speed of transaction that allow sharing with trust and comfort.

Service is a transaction-based server-centric solution with the goal of adding trust to a registry / service.

It is based on single trust domain where it generates proofs of correct operation, which would make incorrect behavior immediately evident.

CERTH – Weather forecasting toolkit





ADSYS – Data fusion layer – enhancing interoperability in the water sector

Problem

- Data-driven business intelligence has the potential to radically transform the way water and water infrastructure is understood, managed and used
  - BUT lack of interoperability between systems
  - AND correlation between multiple data sources is costly and inefficient

Wednesday, April 8, 2020 2

Solution

- Creating a service-oriented data fusion layer that provides:
  - Real-time data collection from heterogeneous data sources
  - Consolidation, cleansing and correlation non-structured data from in-house facilities (SCADAs) but also external third party services (e.g. weather agencies)

Wednesday, April 8, 2020 3

Target customers

- Water utilities and public administrations
- ALSO other similar fields such as energy (buildings, renewable plants, etc.)
- Initially, we will offer this solution to our current customers to:
  - Enable collaboration among devices in the same and different market segments
  - Provide common methods for discovery, service interaction and a common data model for all device types, irrespective of underlying physical transport (with no extra cost for equipment purchase).
  - Better understand their business activity through the integration and correlation of multiple data sources

Wednesday, April 8, 2020 4

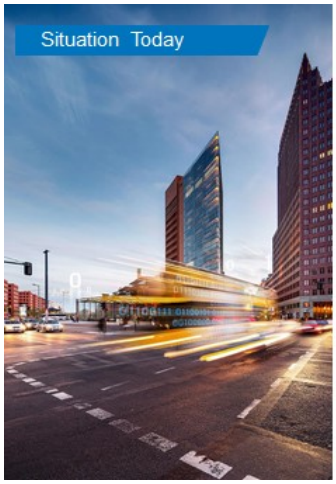
DISY - Spatio-Temporal IoT Data Pipeline and Transformator Tool

Spatio-Temporal IoT Data Pipeline and Transformator Tool

disy Geointelligenz für Ihre Daten

NAIADES

Situation Today



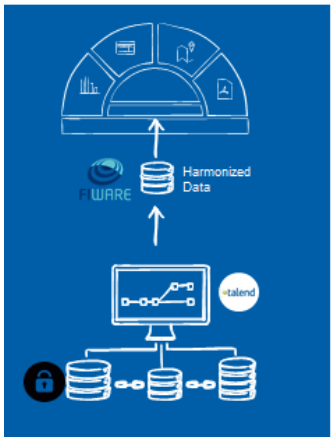
disy

- Smart City solutions are becoming increasingly common
- They provide many benefits for the society
  - In particular for municipal agencies
- However:
  - There are many competing solutions
  - They have highly heterogenous standards and data formats
  - There is no agreed upon exchange format
  - The key hardware provider offer only their own, proprietary and closed solutions

→ This leads to a vendor lock-in

Our Solution

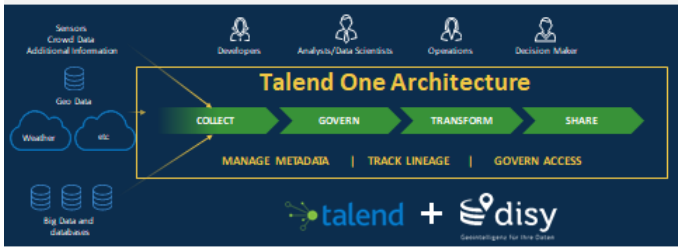
disy



- Develop a Spatio-Temporal IoT Data Pipeline and Transformation Tool
- Make it simple and easy for any user to connect different smart city frameworks
- Ease the exchange of data through automatic transformation
- Avoid vendor lock-in for municipal agencies
  → Goal is an open source solution
- Be more flexible in exchanging smart city systems

Using TALEND to provide our solution

disy



GeoJSON PostGIS FIWARE

Basis: Plugin „GeoSpatial Integration für Talend“ by Disy

Goal: Using TALEND as a basis for data enrichment, transformation and piping in an overaching IoT and/or smart city solution
→ Develop a prototypical plugin

- Using FiWare as data and exchange standard
- Adding the benefit of spatial data integration

Benefits and Chances

- Ease the adoption of smart city solutions
- Ease the future data integration and connection of IoT systems, in particular for water provider
- Integrate our novel plugin and toolset in the overall NAIADES solution
- Provide the option to extend this novel tool for more IoT use cases and as a standalone tool

NAIADES

disy

Thank you for your attention

Questions?

Our team:

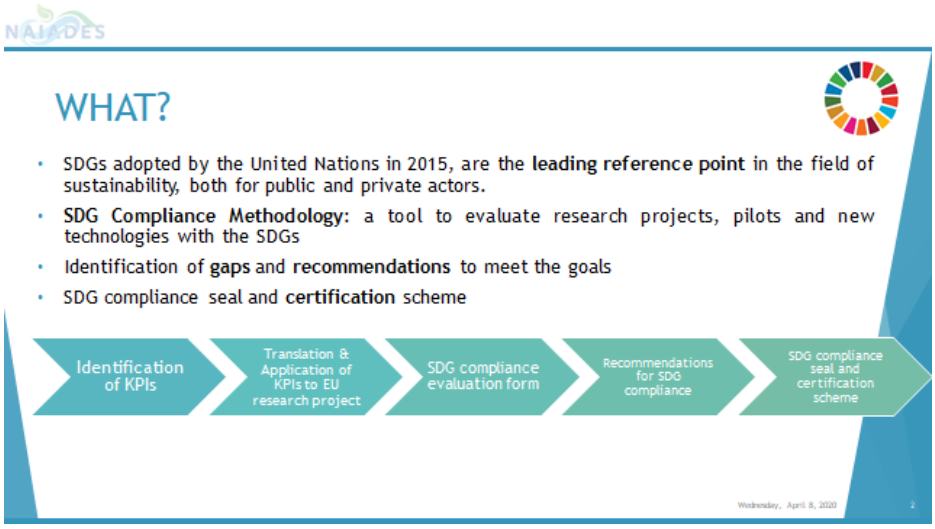
Disy Informationssysteme GmbH
Tel.: +49 721 16006-000
info@disy.net
www.disy.net

Dr.-Ing Julian Bruns

Dr. Andreas Abecker

M.Sc. Ruben Beck

MI – Methodology for SDG compliance



AIMEN – AI Water Quality models for Water Quality Forecast and dynamic treatment suggestions

Products

1) AI models for dynamic treatment suggestions.
The model will receive quality parameters as input in order to detect and react to events related to the quality of water in a dynamical way. Its purpose will be to increase the performance and safety of current systems on drinking water treatment plants. The model will be trained using measured quality related parameters such as water flow, turbidity, pH, COD, etc. Those parameters will be linked to the best treatment method (best treatment process parameters).

2) AI models for short/mid-term water quality forecast.
The model will predict short and mid term water quality. The model will use as input historical data from heterogeneous sources such as quality (Turbidity, CoD...), weather (rain, Temperature...), social (population) and consumption (water demand) parameters; in order to relate it with historical quality data (Turbidity, CoD...). Once the model is trained, it will predict the future (hours, days) water quality from the new measured values and estimations of quality, social, weather and consumption parameters. The early prediction of water quality will allow to prevent/control quality deterioration in advance.

Wednesday, April 8, 2020 2

Targeted Market

The models will be licensed and used mainly as basis for future research. Therefore, the main use will be internal for research purposes. Additionally, the results could be interesting to:

1) AI models for dynamic treatment suggestions - Drinking Water Treatment Plants.

2) AI models for short/mid-term water quality forecast - Water Management Institutions, water consumers.

Wednesday, April 8, 2020 3

Advantages

1) AI models for dynamic treatment suggestion.
Existing similar solutions:
- IntelliFlux - Focused on filtration systems optimization [1]
- Pentaho data integration and analysis platform (Hitachi) [2] for coagulation dosage control.

Our models will cover different treatments: filtration, chlorination, coagulation...

2) AI models for short/mid-term water quality forecast.
Existing similar solutions:
- Many solutions are focused on real-time water quality monitoring and may include trend analysis, but not future value predictions.
- EPANET does simulations of non-reactive tracer materials and chlorine decay, but is computational demanding [3] when comparing with Artificial Neural Network models.

Our models will predict mainly short/mid term water quality parameters (to be decided according to user requirements and data availability) using ANNs.

[1] https://ifctrl.com/#aboutUsFrontPage
[2] https://www.hitachi.com/rev/archive/2017/r2017_07/r7-04/index.html?WT.mc_id=ksearch
[3] Mala-Jetmarova, H., Sultanova, N., & Savic, D. (2017). Lost in optimisation of water distribution systems? A literature review of system operation. *Environmental Modelling & Software*, 93, 209-254.

Wednesday, April 8, 2020 4

SIMAVI – WAS Platform

Product

WAS Platform capabilities:

- customizable solution providing functionalities like: real time prediction, diagnostic ,etc
- customizable web services that rapidly compose intelligent applications with extensive APIs
- comprehensive tools and frameworks to build, deploy and operate AI products and services at scale

NAIADES AI- driven services:

- NAIADES Failure Prediction Engine
- Environmental Monitoring and Forecasting Toolkit:
- Water demand prediction Toolkit:
- Predictive AI analytics for water consumers' comfort assessment:
- AI-Water Quality Monitoring & Dynamical Water Treatment
- Analytics & Prediction for the Quality of the Water:
- Optimisation of water consumption and smart water operation scheduling:

Wednesday, April 8, 2020 2

Targeted Market&Competitive advantage

Targeted Market : **Water companies**

Market analysis - Existing Solutions on Romanian market

1. Water supply and sewerage networks solution https://www.manandmachine.ro/produse/urbano
   - (+) Measurements and analysis of consumption, curve definition
   - (+) Water demands
   - (+) rain flow and waste flow calculations
   - **(-) water consumption prediction**
2. Solution for water consumption urban lever using Lora sensors -https://eta2u.ro/index.php/studii-de-caz-innovation/1476-aquawan-solutie-centralizata-de-telecitire-contoare-apa
   - (+) consumer awareness
   - (+) remote consumption readings
   - (+) open platform with IoT capabilities
   - (+) water quality indicators monitoring
   - (+) data analysis / analytics
   - (-) semantic analysis

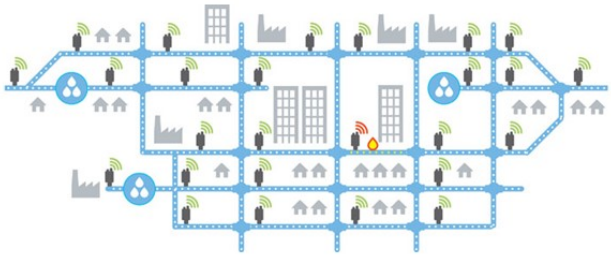
Competitive Advantage WAS platform

- (+) Real time Prediction, Forecasting (AI, ML)
- (+) Semantic analysis (NLP)
- (+) integration of location and weather sensors plus flow and water leakage sensors
- (+) personalization (consumer behaviour analysis
- (+) analytics, water consumption optimization
- (+) decision support

Wednesday, April 8, 2020 3

JSI – Monitoring water consumption

Problem: How to identify leakage point?



Solution: Anomaly Detection tool

- Monitoring water consumption and identifying leakage points.
- Monitoring saline intrusion and identifying points of intrusion.

Service Exploitation

The service is available through Naiades platform and available to any city.

UDGA – IoT platform as a service

UDG Alliance

IoT Platform as a Service

UDG Alliance
Geneva, Switzerland
Eunah Kim (eunah.kim@devicegateway.com)

All rights reserved – UDG Alliance

UDG Alliance

We are involved in projects covering large set of IoT verticals.

Smart Cities
Smart Mobility
Smart Water
Smart Energy
Smart Building
Security

5G
Cloud
AI
Blockchain

We build innovative solutions using cutting-edge technologies.

All rights reserved – UDG Alliance

UDG Alliance

Our effort on IoT Interoperability is recognized in AIOTI

Source: AIOTI WG3 (IoT Standardisation) – Release 2.7

IoT SDOs and Alliance Landscape from AIOTI (Alliance for Internet of Things Innovation)

All rights reserved – UDG Alliance

UDG Alliance

Our IoT Platform by design are easy to deploy and to integrate to external systems.

Open API based modular solution

Secure communication

High Interoperability

FIWARE and OASC Compliant

All rights reserved – UDG Alliance

FIWARE iHubs

UDG Alliance is a FIWARE iHub for Western Switzerland

A FIWARE iHub is the center for the adoption of open source FIWARE platform technology among businesses in a given region. As the Western Switzerland FIWARE iHub, UDG Alliance offers a number of services to companies who want to become more competitive in the digital economy

- Technology and consulting support, training, research and testing by using FIWARE technology
- Individual coaching of startup and SMEs
- Support on certification process for Powered by FIWARE applications and FIWARE IoT Ready applications
- Market information and organization of events to spread FIWARE technologies

All rights reserved – UDG Alliance

UDG Alliance

Who can get benefits from our IoT Platform

Are you a smart city manager?	You will receive customized IoT platform serving all of your Smart City Verticals
Are you a Device Manufacturer?	We care the connectivity of your IoT devices and data interoperability for the services based on your devices
Are you a Service Provider?	Our Open API based solution will make you easy to use our platform and the data for your services

All rights reserved – UDG Alliance