



SCOREwater

Smart City Observatories implement REsilient Water Management

DELIVERABLE D7.9 EUROPEAN HACKATHON

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REVISION HISTORY

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2	<p>Addressing the comments of the external reviewer following the review meeting 23 June 2022.</p> <p>The following has been updated:</p> <ul style="list-style-type: none">• Added section 4.3, containing more information on the three selected proposals by the jury.• Added higher resolution screenshots to Annex 2, containing the challenge website.• Added higher resolution screenshots to Annex 4, containing the instructions for the participants.	De Jong, Pieter	05-07-2022





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ABBREVIATIONS

Abbreviation	Definition
API	Application Programming Interface
CKAN	Comprehensive Kerbal Archive Network
ICT	Information and Communications Technology
IoT	Internet of Things
SDG	Sustainable Development Goals
SME	Small and Medium-sized Enterprise





PROJECT ABSTRACT

SCOREwater focuses on enhancing the resilience of cities against climate change and urbanization by enabling a water smart society that fulfils SDGs 3, 6, 11, 12 and 13 and secures future ecosystem services. We introduce digital services to improve management of wastewater, stormwater and flooding events. These services are provided by an adaptive digital platform, developed and verified by relevant stakeholders (communities, municipalities, businesses, and civil society) in iterative collaboration with developers, thus tailoring to stakeholders' needs. Existing technical platforms and services (e.g. FIWARE, CKAN) are extended to the water domain by integrating relevant standards, ontologies and vocabularies, and provide an interoperable open-source platform for smart water management. Emerging digital technologies such as IoT, Artificial Intelligence, and Big Data is used to provide accurate real-time predictions and refined information.

We implement three large-scale, cross-cutting innovation demonstrators and enable transfer and upscale by providing harmonized data and services. We initiate a new domain “sewage sociology” mining biomarkers of community-wide lifestyle habits from sewage. We develop new water monitoring techniques and data-adaptive storm water treatment and apply to water resource protection and legal compliance for construction projects. We enhance resilience against flooding by sensing and hydrological modelling coupled to urban water engineering. We will identify best practices for developing and using the digital services, thus addressing water stakeholders beyond the project partners. The project will also develop technologies to increase public engagement in water management.

Moreover, SCOREwater will deliver an innovation ecosystem driven by the financial savings in both maintenance and operation of water systems that are offered using the SCOREwater digital services, providing new business opportunities for water and ICT SMEs.

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EXECUTIVE SUMMARY

The SCOREwater WaterChallenge took place during most of March and the beginning of April 2022. This document gives a description of the challenge in chronological order, describing part of the process and the different phases. The primary goal of this document is to show how the challenge was set up. The secondary goal to function as a reference document for similar future challenges.

The main question of the WaterChallenge was to “come up with ways to visualise the data of the SCOREwater project, plus enrich it with external data sources, to make it interesting and useful for citizens”. The main target groups of this challenge were people interested in the topics water management, sustainability and smart city. To ensure that we did not only attract programmers (which would be a traditional take on a hackathon) we employed the ‘paper prototyping’ methodology. This enabled a broader audience to join the challenge, since no specific technical skills were required to participate in the challenge. All contributions were judged by a jury of four, who made a pre-selection of the three best contributions. The teams behind these contributions were asked to present in front of the jury and the team with the proposal called ‘Moist’ came out as the winner.

The main lessons learned from setting up this challenge are:

- Paper prototyping as a method is a good way to engage a broad audience since it does not require a very specific skillset.
- Make sure that there is a clear question that you like to be answered. The narrower the question, the easier it is to promote the challenge and the more relevant the contributions will be.
- The threshold for joining a challenge is higher than, for example, joining an event. It requires quite some effort from the participants so try to guide the participants along the way as much as possible. Think about creating:
 - ... a project webpage;
 - ... clear visuals;
 - ... an instruction manual & Terms and Conditions;
 - ... Q&A sessions for the participants.

1. INTRODUCTION

This document deals with deliverable 7.9, which is the European Hackathon, from WP7 *Dissemination and communication*. It is described in the project plan as a “side event of a FIWARE Summit” and it should be a “24-hour competition to stimulate innovation and create new tools by IT-professionals with in the FIWARE community, companies and Universities.” However, Covid-19 shook up this plan. It forced us online since traveling within Europe was cumbersome if possible. This meant that we could not connect to the FIWARE Summit, which in turn also changed dates. We did manage to successfully transform the hackathon into an online challenge while still sticking to the goals, which are: stimulating innovation and engaging the community.

The transformation came also with a new name, from European hackathon we transformed into the SCOREwater WaterChallenge. The following is an account of the process itself, in chronological order. We have distinguished four different phases, the:

- ▣ brainstorming phase (chapter 2);
- ▣ preparation phase (chapter 3);
- ▣ promotion & challenge phase (chapter 4);
- ▣ follow up phase (chapter 5).

Starting off with the brainstorming phase, in which we decided to rebrand the name and landed on the leading question of the challenge. During this time a time plan was created, which includes the different phases and can be found in section 2.3. The brainstorming phase is followed by the preparation phase, describing the creation of the project website, Terms and Conditions and the instruction manual. All this material was used and distributed during the promotion phase which coincided with the challenge phase and thus is included in the same chapter. These phases were in parallel, since people could join the challenge anytime during its runtime as long as they respected the final deadline which was April 10 2022. Subsequently all contributions were judged and the teams behind the three best contributions had to present in front of the jury. The document concludes with the lessons learned from the WaterChallenge and future plans.

2. THE BRAINSTORMING PHASE

2.1 FINDING THE LEADING QUESTION

The preparations for the hackathon started in November 2021 with two brainstorming sessions that took place during the biannual SCOREwater consortium meeting. To ensure that the brainstorm connected to the hackathon idea as worked out in the project plan certain boundaries were put into place.

The hackathon ...:

- ...has to relate to SCOREwater;
- ...can relate to one or multiple case studies;
- ...needs publicly accessible data/ availability of datasets;
- ...outcomes/ answers to the question should be valuable for the project;
- ...needs to answer a question that resonates with certain project partners, and those partners should be invested in the results;
- ... can be done online instead of offline at a FIWARE summit (cause: COVID-19)

These sessions resulted in a long list of possible topics for a hackathon, attached as ANNEX 1. A great variety of topics was displayed, but the overarching desire was to make better connections between all the data being gathered within the project. In order to make it more accessible and understandable for the broader public.

This led to the creation of the leading question: **Come up with ways to visualise the data of the SCOREwater project, plus enrich it with external data sources, to make it interesting and useful for citizens.**

2.2 FROM HACKATHON TO WATERCHALLENGE

Since the challenge dealt with SCOREwater datasets that were not complete yet -data collection was ongoing during the challenge- and as we were not allowed to give out any sum of price money, there was no way that anyone would put in the effort to make an app or similar from scratch. This assumption was confirmed after having talked with SCOREwater project members that had personal experiences with hackathons, and conversations with other hackathon organisers. This is why we asked the participants to answer the main question through a so-called ‘paper prototype’.

Paper prototyping is a method to create the earliest mock-ups of an interface using paper and other low-fidelity materials. Commonly, it is used for creating interaction sequences and user scenarios for screen-based interfaces (Snyder 2003). Compared to other methods that could be used for designing an idea, paper prototyping is more inclusive as it does not require expertise in design or in a specific field and can be employed by everyone. As a result, this method is commonly used in collaborative design contexts such as participatory design or co-design workshops (Buruk 2021).

Using the paper prototyping method in the context of the SCOREwater project, meant that technical knowhow was not necessary to participate in the hackathon. This gave room to a broader scope of potential participants. To show that it was accessible for a broader audience we moved away from the term ‘hackathon’ to a less technical description. And so the WaterChallenge was born.

2.3 TIMEPLAN

Below a table with the time plan of the challenge. This table may also be used as a future reference for similar challenges.

Table 1. Time plan challenge

Phase	Date	Action
Brainstorming	November 2021	Brainstorming sessions on the topic and main question of the challenge.
	December 2021	Deciding the main question.
Preparation	January 2022	Creating the Terms and Conditions + instruction manual.
	End of January	Website + promotion materials ready.
Promotion	February	Promoting the challenge through different channels, mailings, social media, (partner) websites.
Promotion & challenge	March 7	Challenge open for contributions.
	March 15	First Q&A session for the participants.
	March 30	Second Q&A session for the participants.
	April 10	Deadline contributions.
	After April 10	Pre-selection of the three best scoring contributions.
	April 19	The three best scoring contributions present for the jury, followed by a short session (on the same day) in which the jury announces the winners.
Follow up	April - May	Promoting the winning concept.
	T.b.d.	Winning team presenting on location at a Consortium Meeting.

3. THE PREPARATION PHASE

With the main question in place, the methodology selected and the time plan written out, we could really start creating the content necessary for the challenge which entailed:

- Creating a project website (see ANNEX 2);
- Drafting the terms and conditions of participation (see ANNEX 3);
- Making sure the project data was accessible (see ANNEX 4).

3.1 PROJECT WEBSITE

The project website was pivotal for the challenge. It contained all the information about the challenge, hyperlinks to external documents and the possibility to register for the challenge and to hand in the contributions. We decided for this approach to make it as clear as possible for the participants. Making it as clear as possible was also the philosophy behind designing the visuals and colour scheme which were based on the SCOREwater visual identity. Visuals (Figure 1) were created to grab the attention of potential candidates, and to bring across the message in seconds.

The webpage designed for the challenge was hosted under the scorewater.eu domain name <https://scorewater.eu/waterchallenge>, to show the connection to the SCOREwater project. Screenshot of the website is attached as ANNEX 2 since this document will be around for longer than this specific challenge webpage.



REGISTER

Before you start you have to **register** your team (4 persons max), or participate on your own.



WORK

Work on your innovative idea to make sense of the water data.



PRESENT

Present your work digitally in front of an expert jury.



WIN

Win an all-inclusive trip to one of the SCOREwater cities (Amersfoort, Barcelona, Göteborg) to present your idea and talk about possible follow ups.

Figure 1 | The WaterChallenge explained in 4 steps

3.2 TERMS AND CONDITIONS

Good terms and conditions are a must for a challenge like this. In ANNEX 3 you will find the full document, so we will not repeat it here. What we like to mention here is the reasoning behind some of the points of the terms and conditions.

Who can participate? Besides the obvious things (family members not being able to participate) we decided to limit the country of residence for participants to the European Union, UK, Iceland, Norway or Switzerland. First of all because the SCOREwater project is a H2020 funded project. Secondly to make sure possible follow-ups on interesting contributions are feasible for the SCOREwater partners which are all located within the EU.

Timeframe of the challenge. The period of one month to participate in the challenge was chosen to give the participants room to fit the challenge into their own -possibly busy- schedules. It also enabled us -the organisers- more time to promote the challenge, even after it started (see Table 1).

3.3 INSTRUCTION MANUAL

To ensure the accessibility of the data the IT experts within the project (Civity) created a data portal, which contains several datasets of the SCOREwater project. These datasets functioned as a reference for the participants of the challenge, so they would know what data was available and shape their paper prototype around this. This data portal can be seen as the first, experimental version, of what will end up as the SCOREwater portal which is due at a later stage of the project.

At the moment of writing - April 2022- the SCOREwater portal contains three categories, the three cases, each containing technical documentation on how to use the API and a description of the data.

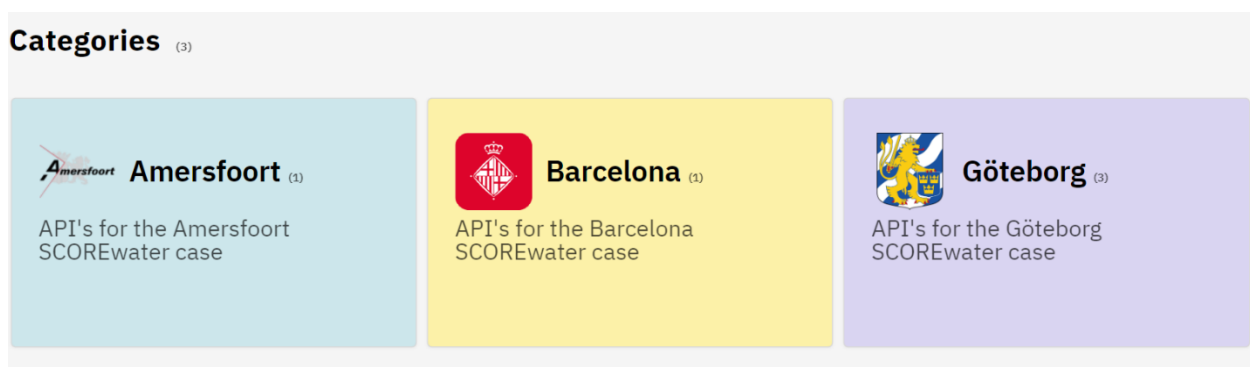


Figure 2 | Categories of the SCOREwater portal

A document was created to guide the participants through the available datasets, which were accessible through APIs. In order to accommodate the less technical participants to the challenge, parts of the datasets were exported to filetypes that everyone could access - like the csv format which can be opened in Excel or similar software.

The document containing the guidelines and additional open data sources is attached as ANNEX 4.

4. PROMOTION & CHALLENGE PHASE

When the website was in place and the communication material ready, the promotion phase started. This phase started in February 2022 (see Table 1). Since the challenge ran for one month, the promotion continued after the challenge started since one could join after the start date. Having a month gave some flexibility to the participants. What wasn't flexible though was the end date. All the paper prototypes needed to be handed in before April 11.

To increase the reach of the challenge several actions were undertaken. The main one being promotion of the challenge through mailing lists from both Future City and the SCOREwater project. In total +- 5000 people received one or multiple emails about the challenge. The main target groups were: everyone who attended a SCOREwater event; everyone who subscribed to the SCOREwater mailing list; people interested in smart city (through FC); everyone who joined similar challenges in the past (through FC).

These mailings were supported by several posts on social media (LinkedIn and Twitter), the SCOREwater website and several (project partner) websites. All interested people were directed to the challenge website (<https://scorewater.eu/waterchallenge>) which resulted into an influx of new visitors (Figure 3).

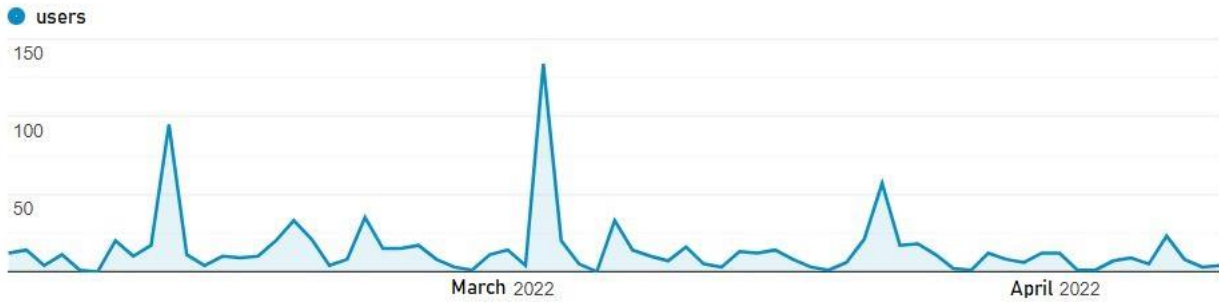


Figure 3 | Daily users of the SCOREwater website | March 1 until April 10, 2022

4.1 CHALLENGE PARTICIPANTS

We received twelve registrations for the WaterChallenge, from teams spread across Europe. Half of the registrants came from countries where the SCOREwater project has case studies. See Figure 4 for the map containing the countries of residence of the registrants.

To help the participants we organised two Q&A session during the runtime of the challenge, on March 15 and March 30. These sessions were not well visited, we had two teams during the first session and one during the second session. However, the questions and input from these participating teams did lead to improvements in the accessibility of the project data, since they commented on unclear data descriptions which could subsequently be updated by the SCOREwater team.

To keep the challenge fair, we limited the maximum team size at 4 persons. It was still possible to also participate as an individual or a two-person or three-person team. The division was: 7 solo contestants, 1 two-person and 4 four-person teams.

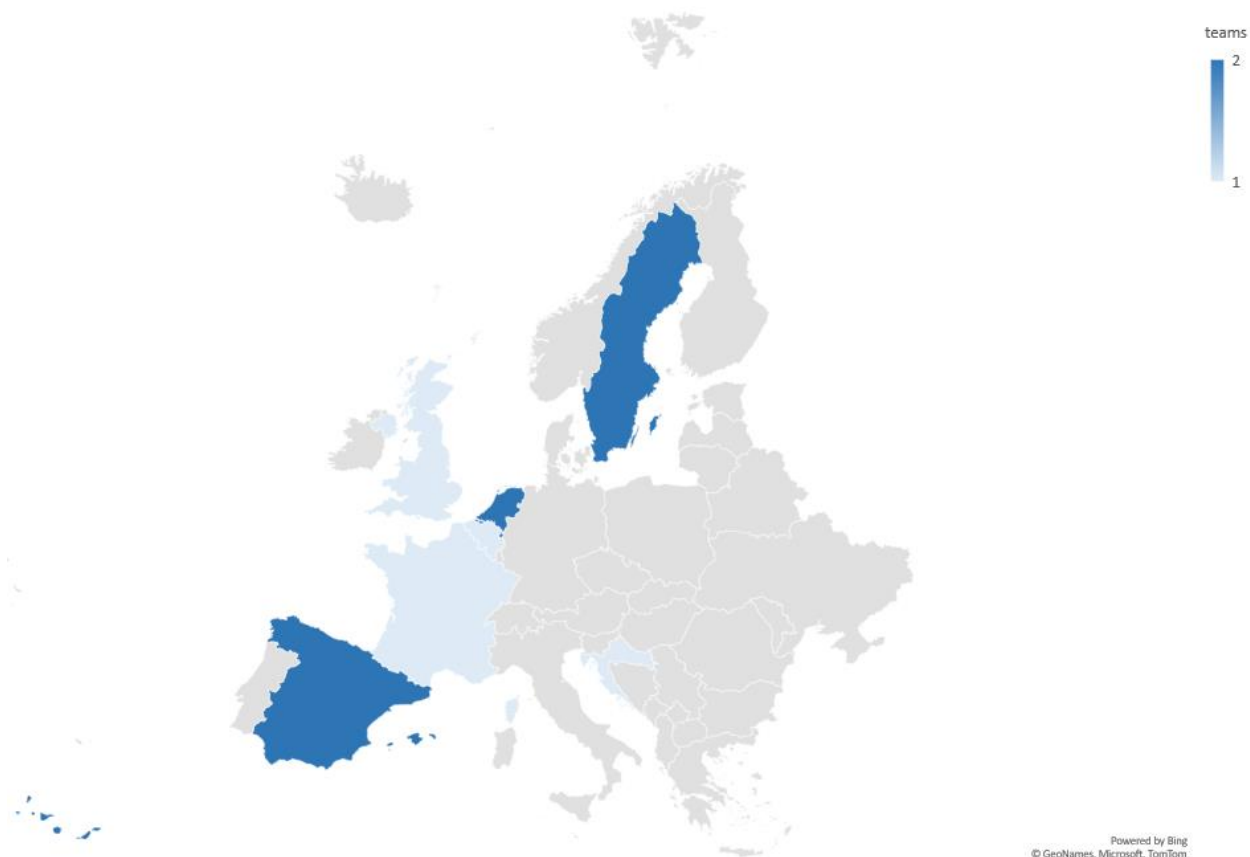


Figure 4 | Location of the teams who registered for the WaterChallenge

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4.2 JUDGING

Judging of the paper prototypes was done by a jury selected from within the project members. The jury comprised of four persons, Åsa Nilsson (IVL), Christa Törn-Lindhe (Universeum), Huug Meijer (city of Amersfoort) and Bas Vanmeulebrouk (Civity). The diversity in the jury ensured that all paper prototypes could be effectively judged.

Table 2. Judging criteria

Criteria	Description
Readability	Your idea should be well described, and in English.
Visualisation	Your idea is supported by good visualisations.
SCOREwater data	Your idea integrates the SCOREwater data.
Other data (<i>optional</i>)	Your idea integrates other available data sources outside of the SCOREwater project and you show why adding this data is relevant/ supports the SCOREwater data.
Usefulness	It should be clear what the value of your idea is, what 'problem' could it solve?
Feasibility	Your idea is feasible: technically, economically & legally
Creativity	Your idea stands out, it's not merely a copy of an existing product.

4.3 THE SELECTED CONCEPTS

The jury selected three paper prototypes and the teams behind those were invited to present in front of the jury. This happened in three different sessions, each of 30 minutes, in which there was room for a short presentation and some Q&A. Based on these sessions and the written-out prototype, the winner was decided and presented in attendance of all the selected teams and some SCOREwater project members.

If you want to get in contact with the team behind one of the three selected proposals, please reach out to the SCOREwater team through the contact form on the project's website: www.scorewater.eu







Winning concept

The winning concept carries the name 'MOIST' and is created by a team of four, all working at Royal HaskoningDHV. The following is a description of the concept, given by the team behind it.

Moist is an app that shows you exactly when it is time to water your garden, the duration of watering and how much water is needed. This way you can enjoy a beautiful blooming garden without too much precious drinking water being wasted. On the one hand, this is beneficial for citizens, but also for the water companies, so that they can see exactly when the water demand is greatest.

In order to arrive at a tailor-made watering advice, use is made of geographical open data such as soil type, groundwater levels, rainfall and temperature. This is supplemented by local data from sensors from the SCOREwater project such as soil moisture measurements and electric conductivity. You only need to fill in your address and MOIST does the rest.

Table 3. Data sources that would be integrated in the MOIST app

	<p>Rainfall</p> <p>After a couple of days of rainfall, there is no need to water your garden. Even if you experience days of drought, if weather forecast data say it will rain soon, you don't have to water your garden.</p>		<p>Conductivity</p> <p>Electrical conductivity is an important parameter used to estimate the level of dissolved salts in soils, which can be harmful to your garden. If the levels are too high, MOIST tells you to water it down.</p>
	<p>Temperature</p> <p>Plants can be pretty resilient to heat waves. But by precisely tracking the temperature, MOIST knows when your plants are getting thirsty.</p>		<p>Soil moisture</p> <p>The majority of plants thrive in soil with a moisture level that ranges between 20% and 60%. Below that? Open the tap! Above that? Keep the hose in the shed.</p>
	<p>Ground water levels</p> <p>When ground water levels rise, the need to water your garden is less necessary. But when they drop, MOIST is there to help!</p>		<p>Soil data</p> <p>Open soil maps provide input on your watering planning. Healthy soils store much more water, which takes away the need for watering.</p>

Opportunities

MOIST is designed to make open data and SCOREwater data available to citizens. But they are not the only ones who will benefit from the app

The app shows exactly when the water demand will be the greatest. This is valuable information for drinking water companies. This allows them to respond smarter to the water demand. For example, by filling their reserves when spraying days are coming. The app can also smooth out peaks in water demand by offering different users different watering times. In urban areas, people are working hard to combat the effects of climate change. Drought is an important factor. Especially when you pump up groundwater to irrigate crops and gardens. MOIST will minimize this and make a major contribution to climate resilience.

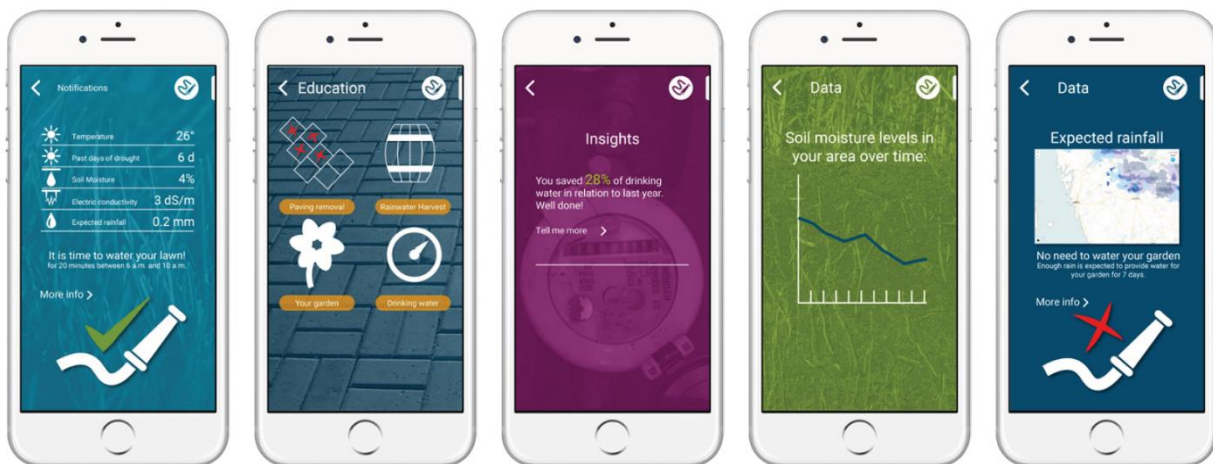


Figure 5 | Impression how the MOIST app could look like



Runners-up

The runners-up in no particular order were: ‘Water4Amersfoort (W4A)’ and ‘Marina’.

The **W4A concept** is created by a team of four, all working at groundstation.space. The following is a description of the concept, given by the team behind it. “We are committed to developing a tool to address the issue of civic involvement in Amersfoort. With our approach, we hope to make it easier for individuals to obtain information and demonstrate how timely data from a mobile device can considerably improve everyday living in often flooded areas.”



Figure 6 | W4A - app mock-up

CITIZENS	BUILDERS, HOME OWNERS	RESEARCHES	POLICYMAKERS	DATA PROVIDERS
green infrastructure monitoring	better urban planning thanks to available data	access to a wide range of data for research in one place	online monitoring of public opinion for policy improvement	direct communication with the end user
improving the quality of life in the city through the on-time notifications of what is happening, for example, flooding	management of existing buildings (e.g. restoration, strengthening)	the opportunity to promote their research and articles through the application's features (news, forums)	direct communication with the end user of data	increasing project awareness, promotion
access to data translated into a simple language in one place	availability of soil moisture data for construction planning	search for co-authors and like-minded people to conduct research (using the application's features)		
quick access to city services to report problems				

Figure 7 | W4A - The value of the app for possible target audiences

The Marina concept is created by an individual residing in Sweden. The following is a description of the concept, given by the creator. It is “An exploration based digital storytelling experience set in the Gothenburg region. We play as Marina, a researcher who is trying to collect a complete set of pins that describe the aquatic ecosystem around Gothenburg.”



Three main components

Marina moves through the city of Gothenburg as the person does in the physical world. Similar to the popular app – Pokemon GO , The players must navigate to certain physical locations in order to find the pins they want. As they navigate the city, they must keep their map updated with the latest water status – collected through the Talkpool sensor data. A few pins are scattered around the city, but most are only found when water status flag is healthy.



There are physical installations in certain points around the city that are places of aquatic interest or are points important to the city that would have NFC tags that enable the local app to update the water status information with the latest info. In the case of unhealthy water quality, the area of map that is available with pins (Discovery Area) is reduced.



Collecting more pins allow the players access to a wider range of customisation but also invitations to digital Q&A forums with actual researchers. A selection of rarer pins would be available only in these sessions, encouraging more involvement with the scientific community.



Figure 8 | Marina - The three main components of the concept

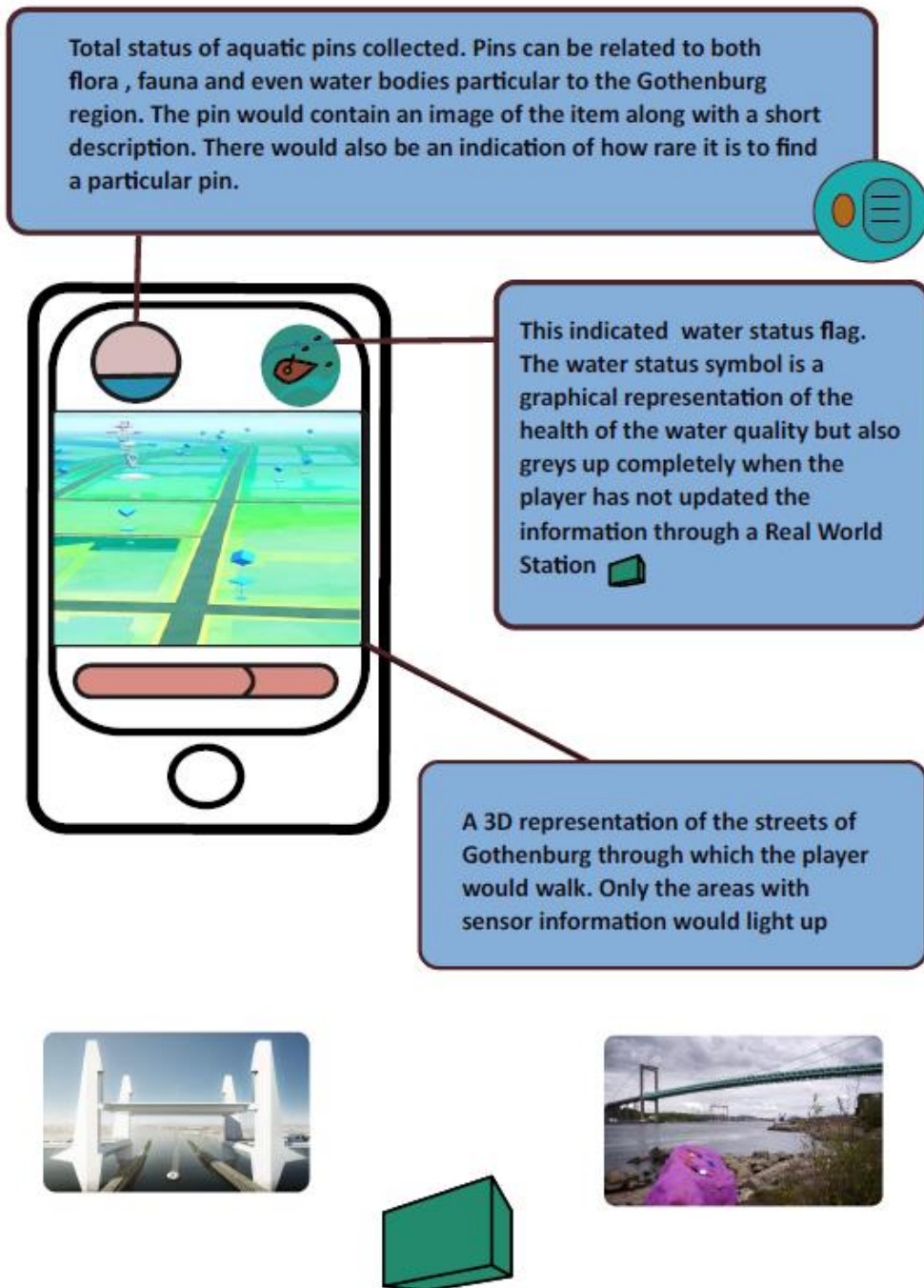


Figure 9 | Marina - app layout

5. FOLLOW UP

The winning team will be invited to the next consortium meeting in one of the three case-study cities (location and date yet to be determined), to present their idea for the whole consortium and to explore if there is an interest with the individual project partners to further develop the paper prototype. Note that we write about ‘individual project partners’, since there are no budgets allocated within the project to fund the idea. The winning team will also receive attention in the communication outlets of the SCOREwater project, such as the newsletter, website and the social media channels LinkedIn and Twitter.

The lessons learned from organising the WaterChallenge will be put into practice in deliverable D7.6 - due in April 2023 - which deals with organising hackathons in Amersfoort, Barcelona, and Gothenburg. These hackathons differ from the WaterChallenge in the sense that they have a far more localised scope, and are aimed at engaging public engagement within these cities. The three main takeaways from the WaterChallenge are:

- Paper prototyping as a method is a good way to engage a broad audience since it does not require a very specific skillset.
- Make sure that there is a clear question that you like to be answered. The narrower the question, the easier it is to promote the challenge and the more relevant the contributions will be.
- The threshold for joining a challenge is higher than, for example, joining an event. It requires quite some effort from the participants so try to guide the participants along the way as much as possible. Think about creating:
 - ... a project webpage;
 - ... clear visuals;
 - ... an instruction manual & Terms and Conditions;
 - ... Q&A sessions for the participants.

6. REFERENCES

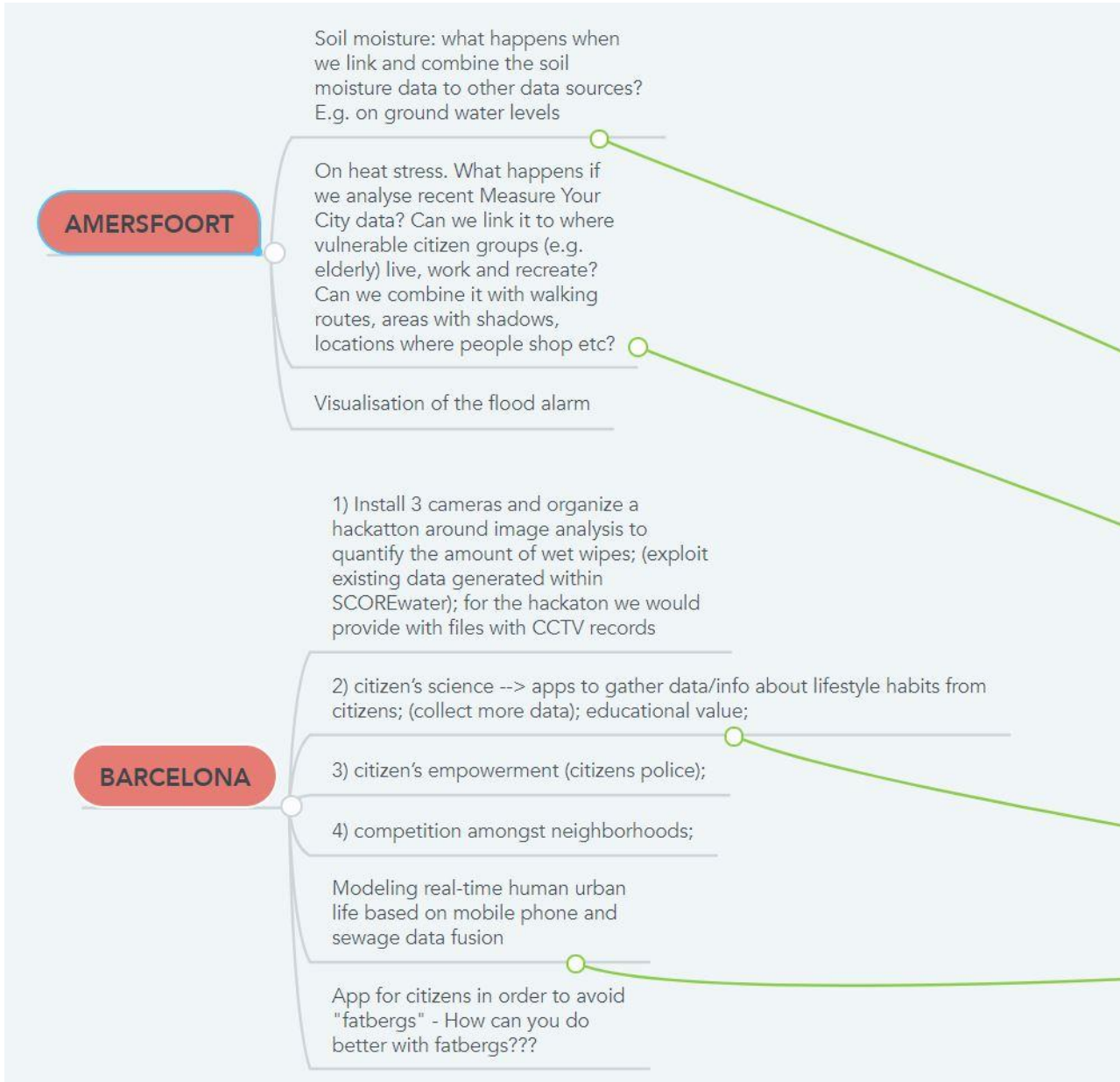
Buruk, Oğuz 'Oz & Hamari, Juho. (2021). Immersive Video Sketching: Low-Fidelity Extended Reality Prototyping for Everyone. 165-175. 10.1145/3464327.3464330.

Snyder C.: Paper prototyping: The fast and easy way to design and refine user interfaces, Morgan Kaufmann, (2003)

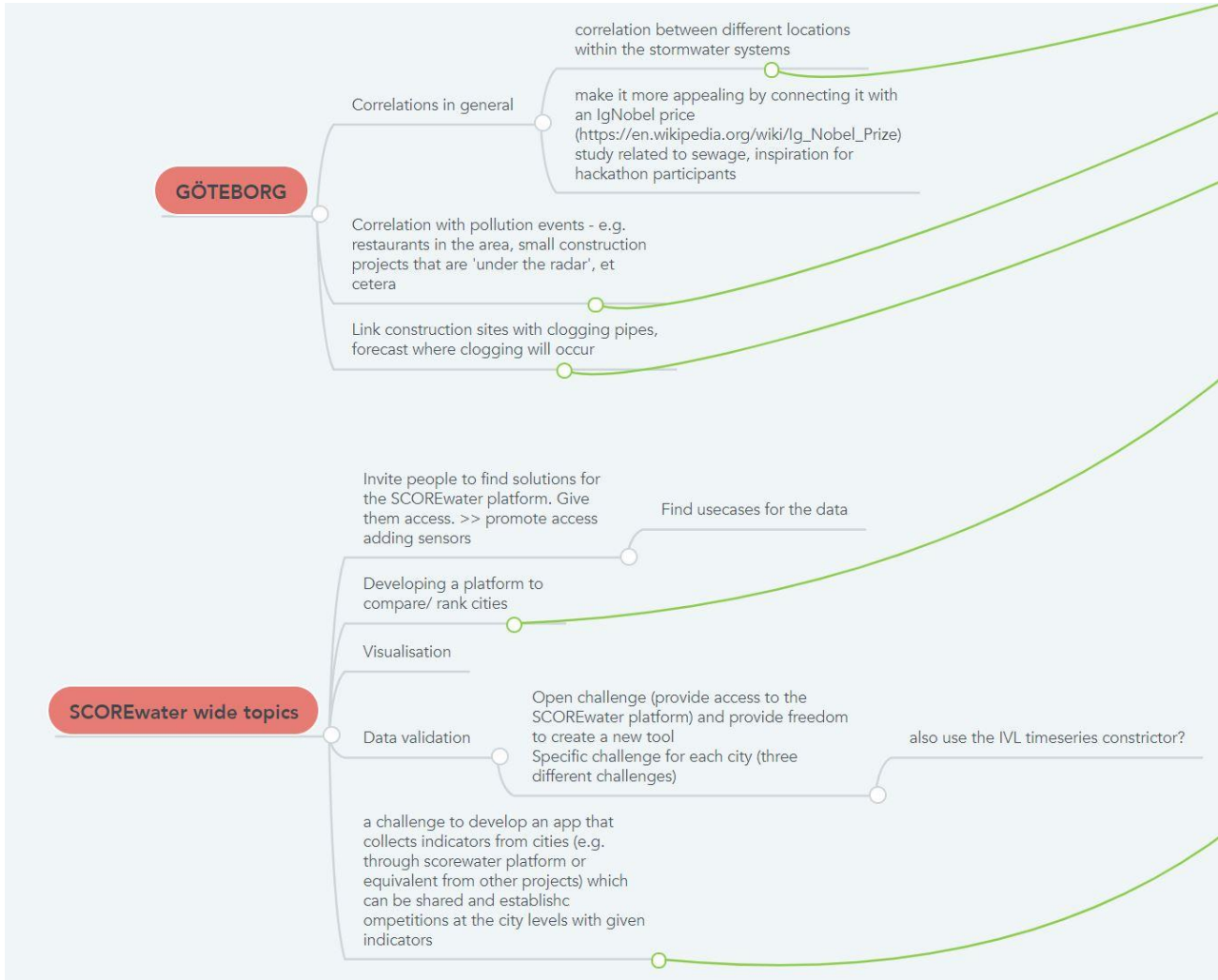
ANNEX 1 – BRAINSTORMING

The initial brainstorming session with the SCOREwater team on the main question of the challenge, during the Consortium Meeting in November 2021

Screenshot 1/3



Screenshot 2/3



Screenshot 3/3



ANNEX 2 – CHALLENGE WEBSITE

[GO TO SCOREWATER WEBSITE](#)[> REGISTER FOR THE CHALLENGE HERE <](#)

WATER CHALLENGE

What if you could prevent water pollution, so you can have a nice swim during a hot summer day?
What if you could predict your house being flooded, so you can take measures to prevent this?
Does this seem far-fetched? It is not. Most of the data to be able to do this is readily available, however most people are not aware and the data is sometimes difficult to understand.

This is the point where you come in. Take on the **#WaterChallenge** and make this important water data **accessible for everyone**. This is formulated into the main question:

Come up with ways to visualise the data of the SCOREwater project, plus enrich it with external data sources, to make it interesting and useful for citizens.

*The list of open data-sources will be provided on March 1, the start of the WaterChallenge, but you are allowed to use other data sources as well.

** This challenge is accessible for anyone, as long as you are able to visualise your idea. New ideas and existing ideas are eligible for participation. Terms and conditions can be found at the bottom of the page.

[> REGISTER FOR THE CHALLENGE HERE <](#)

The #WaterChallenge will be open for your contributions from MARCH 7 until APRIL 10

[> HAND IN YOUR CONTRIBUTION HERE <](#)

*This link will be active during the runtime of the challenge

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THE CHALLENGE EXPLAINED



REGISTER

Before you start you have to **register** your team (4 persons max), or participate on your own.



WORK

Work on your innovative idea to make sense of the water data.



PRESENT

Present your work digitally in front of an expert jury.



WIN

Win an all-inclusive trip to one of the SCOREwater cities (Amersfoort, Barcelona, Göteborg) to present your idea and talk about possible follow ups.

CONTEXT

This challenge is connected to the EU-funded (Horizon 2020) research and innovation project SCOREwater. It focuses on enhancing the resilience of cities against climate change and urbanization by enabling a water smart society. The project develops smart (sensor based) solutions in three different cities, Amersfoort (Netherlands), Barcelona (Spain) and Göteborg (Sweden). The overarching vision is to link the physical and digital world for city water management solutions.

A lot of data has been gathered within this project and to make the most of all this data we set up this challenge. The project data contains for example: data on water quality at construction sites; soil moisture levels in the city; chemical composition of what is being flushed down the toilet. These data are useful for organizations and municipalities involved in the project, however it is still unreadable for the average citizen.

PARTICIPATION & CONTRIBUTION

Participation in the #WaterChallenge is open to all: startups, university students, researchers, professionals, citizens and associations. One can join this challenge as an individual or as a team of maximum 4, **register** to join. Please read the terms and conditions, which can be found at the bottom of the page, before applying.

We are expecting that you answer the main question through a so-called '**paper prototype**'. This means that we don't expect you to create a full app, website, or fully worked out solution (although the more effort you put into it, the higher that chance you win). Paper prototyping comes from the design world, and it is the process where a team creates a 'paper' representation of a digital product. Please read the terms and conditions, to get the full list of conditions it must meet.

Timeline

- **March 7:** open for contributions
- **March 15, 16:00-17:00 (UTC+1):** Q&A session 1
- **March 30, 11:00-12:00 (UTC+1):** Q&A session 2
- **April 10:** deadline contributions
- **April 19, 14:00-17:00 (UTC+1):** best scoring contributions will present for the jury

DATA SOURCES

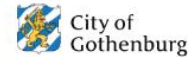
Below a link to the PDF in which all the data sources are compiled. You are free to also use other, free data sources in your paper prototype.



TERMS AND CONDITIONS

Download the PDF below for the full list of terms and conditions.





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Design by Future City Foundation

[Privacy Statement](#)

ANNEX 3 – TERMS AND CONDITIONS

Changelog from 'march version'

* Deadline for contributions changed to midnight April 10, 2022

WATER CHALLENGE

What if you could prevent water pollution, so you can have a nice swim during a hot summer day? What if you could predict your house being flooded, so you can take measures to prevent this? Does this seem far-fetched? It is not. Most of the data to be able to do this is readily available, however most people are not aware and the data is sometimes difficult to understand.

This is the point where you come in. Take on the **#WaterChallenge** and make this important water data **accessible for everyone**. This is formulated into the main question:

Come up with ways to visualise the data of the SCOREwater project, plus enrich it with external data sources, to make it interesting and useful for citizens.

*The list of open data-sources will be provided on March 1, the start of the Water\challenge, but you are allowed to use other data sources as well.

** This challenge accessible for anyone, as long as you are able to visualise your idea. New ideas and existing ideas are eligible for participation. Terms and conditions can be found below.

THE CHALLENGE EXPLAINED

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0. Before you start you have to **register** your team (4 persons max), or participate on your own.
1. **Work** on your innovative idea to make sense of the water data.
2. **Present** your work digitally in front of an expert jury.
3. **Win** an all-inclusive trip to one of the SCOREwater cities (Amersfoort, Barcelona, Göteborg) to present your idea and talk about possible follow ups.

CONTEXT

This challenge is connected to the EU-funded (Horizon 2020) research and innovation project SCOREwater. It focusses on enhancing the resilience of cities against climate change and urbanisation by enabling a water smart society. The project develops smart (sensor based) solutions in three different cities, Amersfoort (Netherlands), Barcelona (Spain) and Göteborg (Sweden). The overarching vision is to link the physical and digital world for city water management solutions.

A lot of data has been gathered within this project and to make the most of all this data we set up this challenge. The project data contains or example: data on water quality at construction sites; soil moisture levels in the city; chemical composition of what is being flushed down the toilet. These data are useful for organisations and municipalities involved in the project, however it is still unreadable for the average citizen.

TERMS AND CONDITIONS

PARTICIPATION

a) Who can participate?

Participation in the SCOREwater WaterChallenge is open to all: startups, university students, researchers, professionals, citizens and associations. As long as you are from an European Union country or live in the UK, Iceland, Norway or Switzerland.

b) Excluded from participation

Excluded from participation are: the jury and their families, SCOREwater project members and their families, everyone below the age of 18 years.

c) Methods of participation

One can join this challenge as an individual or as a team of maximum 4. In any case you need to supply the organizer with the following details when registering for the challenge:

- Name of the team
- First name, last name of each individual member of the team
- An email address of the contact person (used for all communication about the challenge)
- Description of the distinctive competencies of the individual participants in the group.

d) How to apply?

To participate in the WaterChallenge, you need to apply through the registration form made available on the website. Please read this document, containing the terms and conditions,

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before applying. *Note: if you participate as a team one team member (who will also be the contact person) will need to fill out the application form.*

e) How much time do I need to reserve for this challenge?

There is a time window of one month to work on your product and to hand it in. Within this month, you can take as long as you like.

TIMEFRAME

f) When will the challenge take place?

The challenge will take place during the month March, 2022. This means that on March 1 all participants who registered for the WaterChallenge will receive detailed instructions, a PDF containing the access information to the datasets that need to be used. The deadline of handing in your contribution is midnight on April 10, 2022.

g) Cancellation or Change of Dates

In the event of extraordinary events or other circumstances that make it necessary, the promoter may cancel the Water Challenge or move it to another date.

CONTRIBUTION

h) Language used

The official language of the challenges is English. Contributions written in another language will not be judged.

i) How should your contribution look like?

We are expecting that you answer the main question through a so-called 'paper prototype'. This means that we don't expect you to create a full app, website, or fully worked out solution (although the more effort you put into it, the higher that chance you win). Paper prototyping comes from the design world, and it is the process where a team creates a 'paper' representation of a digital product. The conditions it must meet are:

- The prototype should be well described, and exported to PDF.
- It should be clear how SCOREwater data is integrated in the prototype.
- It should be clear how external data to the SCOREwater project (other open data) is integrated in the prototype.
- The target audience of the prototype you are building are citizens.

Optional criteria that will give you bonus points

- You took the paper prototype to the next step and already built a working proof of concept (app, website, etc.)

j) Intellectual property

Each team member is committed to:

- respect all intellectual property rights of third-party creations used.
- indemnify the promoter and partners in the event of disputes, including legal disputes, with third parties or partners.
- Each participant as a person guarantees that the final product has not been edited or sold and that it is an original work of which team members are the authors and that it does not violate intellectual property rights or other rights of any third party.
- Each participant as a person also declares that he/she has all the rights necessary to comply with the Regulation.
- Any violation of the above will ensure disqualification.

k) How to submit your contribution?

Your contribution can be submitted through the link supplied on the website between the start of the challenge and April 10, 2022.

l) What will the SCOREwater project do with the results?

The data gathered within SCOREwater can be quite complicated and visualisations can help to make citizens more aware and engage them with the themes of SCOREwater. The results of the





WaterChallenge will i) be used in communication of the project and ii) used as input for future challenges on the level of the individual cities.

m) Personal data and Image Rights

The promoter and its members are authorised to disseminate the names of the winners, the name of the project, its purpose and description, together with extracts or images of the final product. Each team member agrees that the promoters and their members will photograph or film him/her and disseminate to the public images that may include his/her person

JUDGING

n) Jury

The contributions will be judged by a jury consisting of members of the SCOREwater project.

Regarding the jury decisions:

- The jury has the final say if a proposal qualifies or not.
- In the case there are no qualified or good enough proposals, the jury will decide to have no winners.
- In the case the jury decides there are no winners, the promotor has the right to not to give out the price
- All decisions of the jury shall be final, and no correspondence will be entered into regarding its decisions.

o) Winners

Based on the jury reports 3 teams (and/ or individual contributors) will be invited to present their prototype in a digital meeting. After the presentation the jury will decide who gets the all-inclusive trip to the next non-digital SCOREwater consortium meeting in one of the three project cities (Amersfoort, Barcelona, Göteborg), to present their idea and to talk about possible follow ups.

OTHER

p) Right of Disqualification and Exclusion

The promoter reserves the right to disqualify anyone who does not comply with the rules, materials made available to him/her, and the premises of the WaterChallenge.

q) Other Provisions

The participant acknowledges that he/she has been informed that he/she will be held solely responsible for any inaccuracies contained in the registration format he/she has completed or for any failure to comply with the obligations contained in the regulations.



ANNEX 4 – INSTRUCTIONS PARTICIPANTS



pag.1

The SCOREwater #WaterChallenge

All you need to know to participate in this challenge.

First of all, thanks for participating. This document serves the purpose of pointing out the relevant data for the #WaterChallenge.

Timeline

One can join the #WaterChallenge any time between March 7 and April 11, as long as you hand in your paper prototype - the product of the challenge- before April 11.

- **March 7:** open for contributions
- **March 15, 16:00-17:00 (UTC+1):** Q&A session 1
- **March 30, 11:00-12:00 (UTC+1):** Q&A session 2
- **April 10:** deadline contributions
- **April 19, 14:00-17:00 (UTC+1):** The three best scoring contributions will present for the jury

Main question

Come up with ways to visualise the data of the SCOREwater project, plus enrich it with external data sources, to make it interesting and useful for citizens.

Paper prototype

We are expecting that you answer the main question through a so-called 'paper prototype'. This means that we don't expect you to create a full app, website, or fully worked out solution (although the more effort you put into it, the higher that chance you win). Paper prototyping comes from the design world, and it is the process where a team creates a 'paper' representation of a digital product

Judging criteria

- | | |
|-------------------------|--|
| • Readability | Your idea should be well described, and in English. |
| • Visualisation | Your idea is supported by good visualisations. |
| • SCOREwater data | Your idea integrates the SCOREwater data. |
| • Other data (optional) | Your idea integrates other available data sources outside of the SCOREwater project and you show why adding this data is relevant/ supports the SCOREwater data. |
| • Usefulness | It should be clear what the value of your idea is, what 'problem' could it solve? |
| • Feasibility | Your idea is feasible: technically, economically & legally |
| • Creativity | Your idea stand outs out, it's not merely a copy of an existing product. |

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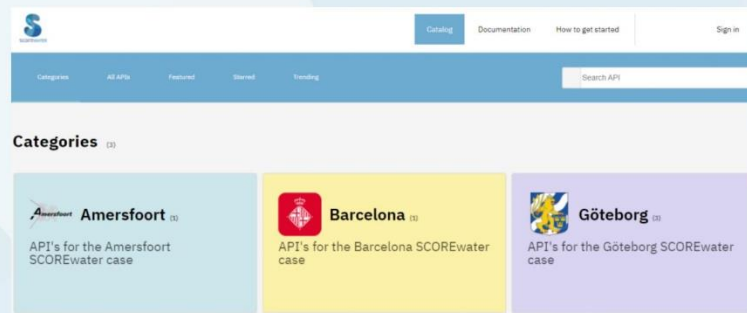
SCOREwater data sources

The SCOREwater datasets can be found on the SCOREwater dataportal. Keep in mind that this portal is still under construction, it is the alpha version, so not everything is being built yet. Being a participant of this challenge, you are among the first to make use of it. Below a short explanation how to use this portal, and direct links to different datasets.

How to use the portal

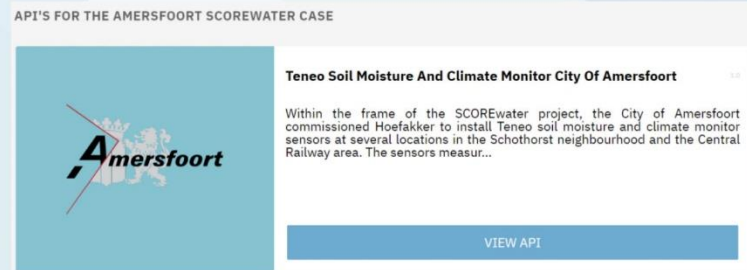
1 | Go to the website

visit: <https://gravitee-scorewater-portal.dataplatform.nl/catalog/categories>



2 | select a City

3 | View API



4 | Go to 'Documentation'. Here you will find the documentation of the data from the selected dataset



5 | Under the heading 'Access the data' you will find the ways how to access the dataset

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Other datasets

With 'other datasets' is meant all data that is not gathered within the SCOREwater project. The list below is not determinative, but created to help you accessing other datasets. You are allowed to use other datasets which aren't mentioned below.

Amersfoort

Meet je Stad	Data gathered by the citizen science collective 'Meet je Stad'
Vallei en Veluwe	Surface water data of the Amersfoort region
Dataplatform Amersfoort	Selection Amersfoort data from dataplatform.nl
Groundwater	184 groundwater monitoring point in Amersfoort
Groenstructuren	Map of all the greenery in Amersfoort
Samen meten - RIVM	The National Institute for Public Health and the Environment of the Netherlands has collected (sensor) measurements from several sources and displays them on this dataportal

Barcelona

Open data BCN	522 downloadable datasets from the open data service of Barcelona
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Göteborg

Dataportal Göteborg	51 datasets from Göteborg
Vatten i staden	Water related data from Göteborg

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ANNEX 5 – STOCKTAKING

A final Annex of stocktaking was included in all Deliverables of SCOREwater produced after the first half-year of the project. It provides an easy follow-up of how the work leading up to the Deliverable has addressed and contributed to four important project aspects:

1. Strategic Objectives
2. Project KPI
3. Ethical aspects
4. Risk management

STRATEGIC OBJECTIVES

Table 4 lists those strategic objectives of SCOREwater that are relevant for this Deliverable and gives a brief explanation on the specific contribution of this Deliverable.

Table 4. Stocktaking on Deliverable’s contribution to reaching the SCOREwater strategic objectives.

Project goal	Contribution by this Deliverable
SO6. Increase citizen involvement and engagement in the transition to a water-smart, resilient society	Engagement Activating public engagement, by letting people directly interact with the SCOREwater data. Public engagement is the core goal of Task 7.2.
SO3. Enable the monetization of water cycle data	Accessibility The first step creating new (visual) tools that help the broader audience to make sense of the data.

PROJECT KPI

Table 5 lists the project KPI that are relevant for this Deliverable and gives a brief explanation on the specific contribution of this Deliverable.

Table 5. Stocktaking on Deliverable’s contribution to SCOREwater project KPI’s.

Project KPI	Contribution by this deliverable
KPI 15. Number of involved and engaged citizens in demo cities.	> The challenge helped to engage more people directly with the SCOREwater data. Something that was not done before within the project.
KPI 16. Percentage of change of behavior among participants in project tasks.	> Hard to measure change. However, through providing the challenge and letting the participants engage with the topics of the project, we did provide new inputs/food for thought for all participants.
KPI 20. Number of external stakeholder groups identified and approached.	> In the outreach for the challenge and subsequently communicating about the results, we managed to reach a broad audience. Going from the registrations for the challenge we were able to target a demographic of relatively young, educated people in the age group of 20-35.

ETHICAL ASPECTS

Table 6 lists the project’s Ethical aspects and gives a brief explanation on the specific treatment in the work leading up to this Deliverable. Ethical aspects are not relevant for all Deliverables. Table 6 indicates “N/A” for aspects that are irrelevant for this Deliverable.

Table 6. Stocktaking on Deliverable's treatment of Ethical aspects.

Ethical aspect	Treatment in the work on this Deliverable
Justification of ethics data used in project	N/A
Procedures and criteria for identifying research participants	N/A
Informed consent procedures	A dedicated Terms and Conditions document was created specific to the challenge.
Informed consent procedure in case of legal guardians	N/A
Filing of ethics committee's opinions/approval	N/A
Technical and organizational measures taken to safeguard data subjects' rights and freedoms	Secure internal way of sharing information through Sharepoint (created by IVL)
Implemented security measures to prevent unauthorized access to ethics data	N/A
Describe anonymization techniques	N/A
Interaction with the SCOREwater Ethics Advisor	N/A

RISK MANAGEMENT

Table 7 lists the risks, from the project's risk log, that have been identified as relevant for the work on this Deliverable and gives a brief explanation on the specific treatment in the work leading up to this Deliverable.

Table 7. Stocktaking on Deliverable's treatment of Risks.

Associated risk	Treatment in the work on this Deliverable
Too difficult/technical for the participants	Action 1: Let them hand in a Paper Prototype Action 2: Creation of an instruction manual Action 3: Setting up two Q&A sessions during the runtime of the challenge
Few attendance (Risk nr. 18, 14)	Action: Marketing push
Not enough project data for the participants to really create something interesting. (Risk nr. 10)	Action: Working together with Civity to make sure data is accessible
Unacceptable quality of results (Risk nr. 7)	Action: Hackathon website with clear instructions for participants, so it's totally clear what we expect from them.



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