

# AI4Gov

Trusted AI for Transparent Public Governance  
fostering Democratic Values

## Deliverable 6.1

# Specification of UC Scenarios and Planning of Integration and Validation Activities V1


30.06.2023

Version 1.0



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## Abbreviations

Abbreviation	Description
AI	Artificial Intelligence
CSV	Comma-Separated-Values
DPB	Diputación Provincial de Badajoz
DWTS (or EDAR in Spanish)	Decentralised Wastewater Treatment System
EU	European Union
GDPR	General Data Protection Regulation
GPS	Global Positioning System
IoT	Internet of Things
JSI	Jozef Stefan Institute
MD	Markdown
MT	Ministry of Tourism
OECD	Organisation for Economic Cooperation and Development
OwiD	Our World In Data
PAYT	Pay As You Through
PDF	Portable Document Format
RFID	Radio Frequency Identification
SAX	Situation-Aware Explainability
SCADA	Supervisory Control and Data Aquisition
SDG	Sustainable Development Goal
SME	Small Medium Enterprize
UC	Use Case
URL	Uniform Resource Locator
US	User Stories
VVV	Vari - Voula - Vouliagmeni
WP	Work Package
WWTP (or ETAP in Spanish)	Wastewater Treatment Plants
XAI	EXplainable AI

## Abstract

This document, D6.1 “Specifications of UC Scenarios and Planning of Integration and Validation Activities V1”, was developed in the context of WP6 “Use Case Implementation, Validation, and Evaluation”. WP6 is devoted to designing and implementing the AI4Gov piloting activities, leveraging the AI tools developed during the project. It includes the pilot methodology and the first version of the pilot descriptions, the use cases and the current and future user stories. The user stories will be used by the technical partners in order to guide the technical work and address the pilot needs.

In this project, three pilots will be implemented:

- Using AI for Sustainable Development and the European Green Deal (Slovenia/International)
- Tourism-driven multi-domain policy management and optimization (Greece/Athens)
- Policies for Sustainable Water Cycle Management at a Large Scale (Spain/Badajoz)

In addition to the pilot information, this deliverable also includes some first reflections on the validation and evaluation of the activities, as well as the next steps towards the implementation process.

# 1 Introduction

## 1.1 Purpose and scope

This deliverable is the result of the work that has taken place under WP6 - Use Cases Implementation, Validation and Evaluation. This WP started in month 1 and ends in month 36, so it will run for the whole duration of the project. At this point, the deliverable will contain information mostly from T6.1 “Detailed Specification of Scenarios and Use Case Preparation”. The purpose of the task is “to provide a detailed specification of the AI4Gov use cases. The objective is to define the actors and systems involved in each use case, establish the interfaces between them, and outline the integration and utilisation of AI4Gov processes and services within the context of each scenario”.

The purpose of D6.1 is to present the AI4Gov pilot cases, the methodology that was followed in order to shape the use case scenarios, the scenarios themselves as they have been deployed up until this point, and finally the User Stories. This will be the basis for the use cases implementation and experimentation. The focus of this document is to create a list of User Stories, which will be fundamental to the technical Work Packages, since they will be used as inputs of the technical work. To create the User Stories list, it was necessary to define the pilots participating in the project and characterise the Use Cases. The User Stories will be used as the foundation to create the technical requirements of the AI4Gov tools and will be updated and enriched accordingly.

## 1.2 Document structure

The deliverable is structured as follows: **Chapter 1** introduces the document, including the purpose and scope, document structure, and any updates compared to the previous version. **Chapter 2** presents an overview of the pilot coordination, specifically focusing on the structure of Work Package 6. The target audience of the deliverable is also identified in this chapter. **Chapter 3** describes the pilot methodology, specifically the value proposition approach that will be utilised. **Chapter 4** provides detailed information about the pilots and their associated use case scenarios and user stories. **Chapter 5** focuses on the preparation for validation and evaluation, highlighting the necessary activities and measures to ensure the successful testing and assessment of the project outcomes. **Chapter 6** concludes this deliverable, summarising the key findings and next steps. **Chapter 7** includes the reference list, and finally, the appendix includes the pilot template for reference and further details.

## 1.3 Updates with respect to previous version

This is the first of the three versions of the deliverable on specification of UC scenarios, integration and validation activities. The second version will be delivered on M18 (June '24), and the third and last version on M30 (June '25).

## 2 Work Package 6 overview

### 2.1 WP6 Structure

WP6 is the WP associated with the piloting activities, devoted to deploying, operating, validating, and evaluating the use case scenarios with the active engagement of the public organisations and policy makers of the consortium. It breaks down into five tasks:

- T6.1 Detailed Specification of Scenarios and Use Case Preparation
- T6.2 Policies for Sustainable Water Cycle Management at a Large Scale
- T6.3 Using AI for Sustainable Development and the European Green Deal
- T6.4 Trustworthy Data-Driven Touristic Policies
- T6.5 Stakeholders' Feedback and Evaluation

The first task, as already mentioned in Chapter 1, is the preparatory task that supports the design and development of the Use Case Scenarios and the user requirements. Tasks T6.2, T6.3, and T6.4 correspond to the three pilots that will test the AI4Gov technologies. Finally, T6.5 is the task that will coordinate the evaluation of the pilot results and will map the gaps and needs that will arise.

#### 2.1.1 Relation to other WPs

WP6 is related to all WPs. Given the fact that it provides the user requirements from the pilot side, WP6 supports the work of the technical tasks in WP2, WP3 and WP4. In addition, it takes feedback from them, in order to better specify the needs of the Use Cases. Also, it is related to WP5, since the training courses that are to be developed, will support the capacity building of the people involved in the pilots.

#### 2.1.2 Target audience of the deliverable

This document constitutes the first version of the specifications of the UC Scenarios of the AI4Gov pilots, up until M6. It is an internal guide for the project's pilot manager and all project partners to use it a reference point for understanding the UC Scenarios and the needs of the pilot partners. In addition, the document can be utilised as a practical tool for "Horizon Europe" pilot managers of on-going and future projects, who will be willing to explore the AI4Gov pilot strategy and capitalise on it, as well as a control point for the reviewers of the European Commission. Last, the current deliverable report can be used by any possible future replicator of the AI4Gov pilot approach.



### 3 Pilot Methodology

To ensure the flawless implementation of the pilots and their UCs, the project designed a pilot methodology to use it as a guide throughout the process. Since this is an ongoing work, this methodology is constantly being evaluated to better address the project's needs. This methodology is presented in the section below.

#### 3.1 Value proposition approach

To identify and describe the Use Cases, the pilots followed a methodology that was **value proposition-oriented**, to collect information about the needs that the AI4Gov tools will cover and the added value they will have to the pilots' processes and services.

A value proposition-oriented approach is a strategic framework or methodology to identify and communicate the unique value offered by AI4Gov to the policy makers, and citizens. It outlines the benefits, advantages, and value of the project, setting it apart from competitors. This approach highlights the specific problems or needs that the AI4Gov solution solves and emphasises the gaps it fills (Rosário & Raimundo, 2021). This approach can showcase how the AI4Gov tools can positively impact the processes of the public bodies and, as a result, the life of the citizens, enhancing democratic values and Human Rights, on the principles of equality, accessibility, and inclusivity.



*Figure 1 Pilot overview*

AI4Gov will implement seven (7) use cases, through three (3) different pilots. The pilots will focus on different topics on a national and international level. These UCs will be presented in the next chapter. In order to draft the UCs, a pilot template was structured (available in the Annex section). This template included some introductory information about the pilot such as the description of the organisation, the idea and the ambition of the pilot, the current limitations, as well as the current processes related to the respective UC. Also, the pilots provided an initial list of the data sets and existing services they use and explained how they intend to build up on them or develop new services. Then, the template had separate tables to specifically describe the UCs and the future USs. The USs are short, simple descriptions of a feature told from the perspective of the end user who desires the new capability. The USs are comprised of 3 main parts:

1. Type of User: Identifies the person (citizen, municipal employee, policy maker etc) to which this user story relates.
2. Some Goal: Describes the intended goal that the user expects to be fulfilled.
3. Some Reason: Identifies the reason(s) to which this user story relates.

The User Stories described in this document are used as a starting point for the technical partners in order to navigate them toward the pilots' needs.

The current descriptions of the UCs have been re-organised based on the available information, so there might be a different order than in the template. The template was a tool that was used in order to guide the pilots. After that, the information was processed and presented the best way possible.

## 4 Pilots and UC Scenarios

In the context of AI4Gov, three (3) pilots will take place in three (3) European countries: Spain, Slovenia, and Greece. The pilot sites can be found on the map below:

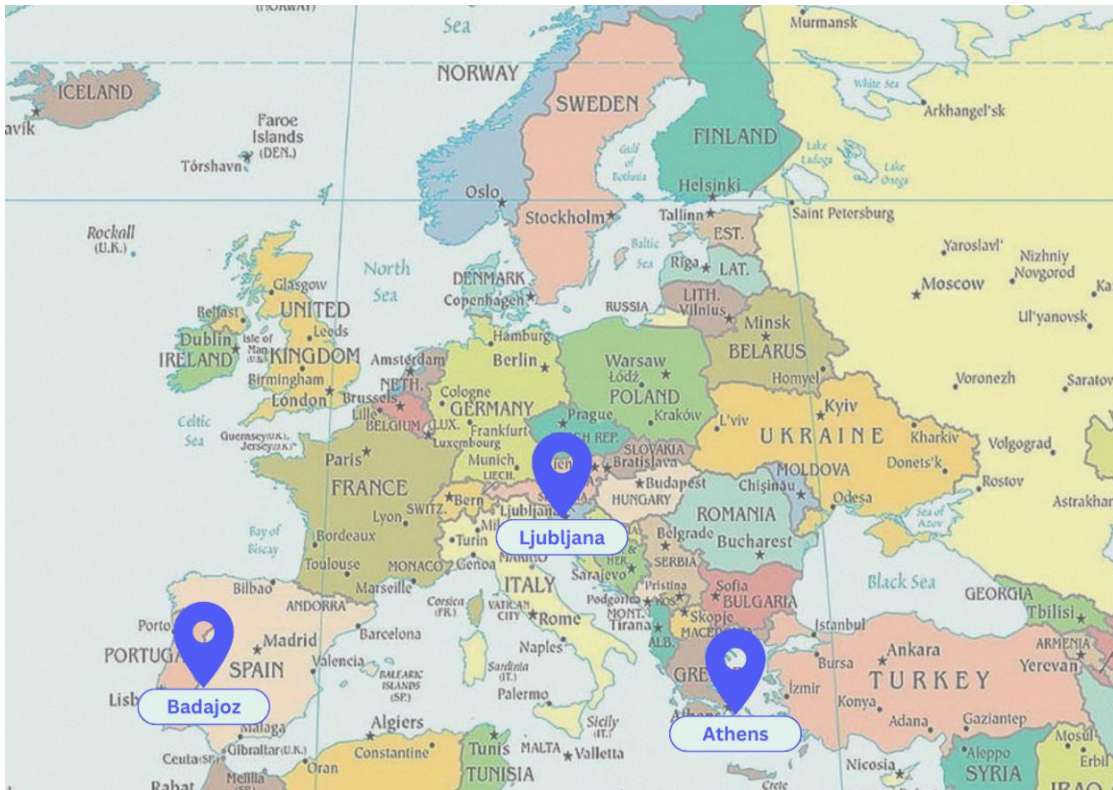


Figure 2 Pilot sites

Each pilot has deployed its UCs that will be implemented using the AI4Gov tools, in different domains, adding value to the project. An overview of the UCs can be found in the next section.

### 4.1 Pilot sites and UC overview

A total of seven (7) UCs will be implemented during the project, covering a variety of topics. The pilot site in Ljubljana will implement three (3) different use cases. The pilot sites in Athens and in Badajoz have identified two UCs each. The topics vary from monitoring the SGDs to creating efficient parking monitoring and water management efficient systems in order to optimise the life of the citizens and ensure their access to quality infrastructures. In detail, the sectors which the pilots are covering are Sustainability (2 UCs), AI Ethics & Policies (1 UC), Tourism (2 UCs), and Water Management (2 UCs). The figure below visualises the share of sectors based on the most prominent one per UC. However, most of the UCs address more than one category. For instance, the UCs on water management are also related to sustainability, while the waste management UCs also includes environmental provisions.

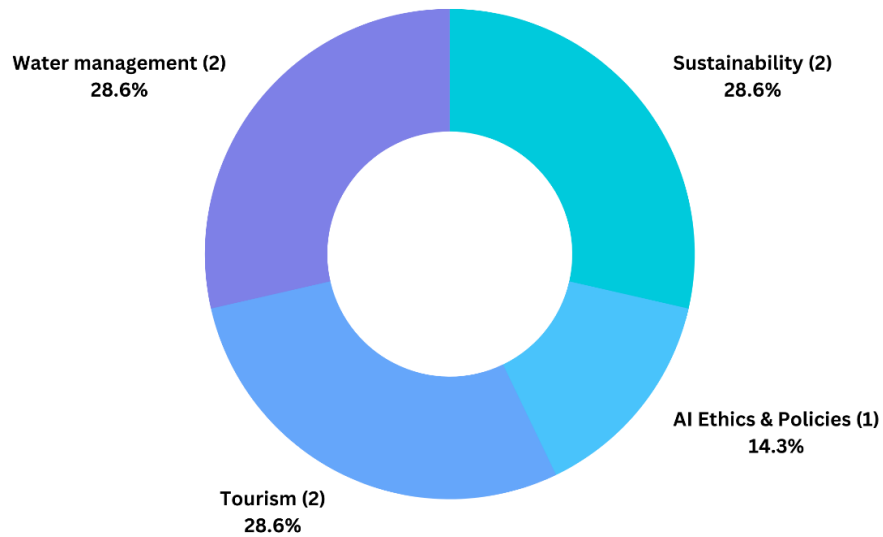


Figure 3 UC topics

The next section presents the first version of the UC descriptions as they have been formed up until now.

## 4.2 Pilot descriptions and UC

This section provides an overview of the first drafts of the Use Case Scenarios. The following information was obtained from the pilots at an early stage of the project, and it is an object of continuous evaluation. As the project progresses, so will the use cases.

### 4.2.1 Policies for Sustainable Water Cycle Management at a Large Scale (DPB)

The first pilot of the project, corresponding to T6.2, comes from Badajoz, Spain, and it is led by the Diputación Provincial de Badajoz. The Province is a local entity determined by the grouping of municipalities, with its own legal personality and full capacity to fulfil its purposes. The province is responsible for cooperation in the promotion of economic and social development and planning in the provincial territory, in accordance with the powers of the other public administrations in this area.

In AI4Gov, the pilot will work on policies for sustainable water cycle management, both about drinking and sewage water. The provincial council manages 63 drinking water treatment stations, to supply 137,910 inhabitants, as well as the treatment of its wastewater. The objective is to have intelligent tools that facilitate efficient water management, applied to the large data lake generated by the installed sensors, as well as the individual consumption data of the population. These tools will utilise the pre-existing Water Cycle management system and the data generated by it, improving the overall efficiency of the system.

The efficient management of the water cycle is a necessity for all the territories of the European Union. New technologies such as sensors, big data and artificial intelligence are ideal to contribute to the goal. The pilot will work on the development and application of tools based on these technologies that allow finding predictive ways that improve efficiency in the treatment, distribution and consumption of drinking water, as well as waste.

The objective of this pilot would be to provide a way to correlate the data obtained with possible causes of inefficiency within the system —leaks and water losses along the treatment cycle, off-hour electricity consumption, etc. This way, non-obvious solutions may be applied on a day-to-day basis by the overseeing technicians. The data provided by this pilot would also be useful for policy-makers to determine the best course of action regarding infrastructure improvements, budget allocation, etc.

In this pilot, the data will be used in order to train the models to detect malfunctions in the water management systems of both drinking and sewage water. This means that all data sets will be used in both UCs. The data sets that are available at the moment are presented below.

*Table 1 Water management - Related Data & Services*

<b>Relevant Data assets</b>		
<b>Data Asset name</b>		<b>Data models: SewageTreatment.</b>
Variety (pre-existing)	First-hand data	Water cycle management: Sewage Treatment Data collection starting date: 2019-01-01 / 2021-01-01 <ul style="list-style-type: none"> <li>Sensors used</li> </ul> Flowmeters, different types of probes, SCADA – remote control systems
	Second-hand data	Additional upcoming data: water cycle billing data
Velocity		Sampling frequency: Sewage Treatment (30 minutes) Measured parameters: pH, nitrates, ammonium, phosphorus nitrogen, conductivity...
Volume		N/A
Streaming data		Live data is input into the platform, with the frequency specified above
Historical data (if yes how long)		Starting 2019 for sensor data, 2021 for quarterly reports
Existing Discrimination/underrepresentation		Personal data and other data not in compliance with the National Security Framework (ENS) are not being included for the time being.
<b>Data asset name</b>		<b>Data models: DrinkingWaterTreatmentStation, QuaterlyVolume.</b>

Variety (pre-existing)	First-hand data	Monitoring of the quality of water at the drinking water treatment stations Large scale data to evaluate the use of water throughout the province <ul style="list-style-type: none"> <li>Sensors used</li> </ul> Flowmeters, different types of probes, SCADA – remote control systems
	Second-hand data	N/A
Velocity		Sampling frequency: DrinkingWaterTreatmentStation (30 minutes), QuaterlyVolume (3 months)  Measured parameters: pH, level, chlorides, water pressure, pumping hours...
Volume		Not clear yet
Streaming data		Live data is input into the platform, with the frequency specified above
Historical data (if yes how long)		Yes, starting in 2020.
Existing Discrimination/underrepresentation		Personal data and other data not in compliance with the National Security Framework (ENS) are not being included for the time being.
<b>Relevant Existing Services</b>		
<b>Service name</b>	<b>Provincial Platform for Smart Management of Public Services</b>	
Description	At this point, the province already has some services and tools to manage this work (FIWARE). A provincial platform for intelligent public services, made up of more than 40 servers, based on open technologies. High availability MySQL database (4 nodes) already exists. The employees conduct analysis based on Business Intelligence technology (Pentaho suite) for WWTP and DWTS, both at the operative and executive levels; water quality and waste generation analytics; treated water quality index; operating status and performance of each measuring device, displayed through charts; operational alarms. Lastly, FIWARE Space, the innovation centre of the Provincial Council of Badajoz, brings the new technologies of IoT and Big Data to citizens, SMEs and start-ups. It is constituted as an official Digital Innovation Hub (DIH) in Badajoz province to promote the digitisation and transformation of companies through technologies such as Internet of Things (IoT), Big Data and artificial intelligence with FIWARE as data connector from different sources.	
Type of user(s)	<ul style="list-style-type: none"> <li>Workers at the municipal consortium for water management</li> <li>Local administration</li> </ul>	

Points to be improved	<ul style="list-style-type: none"> <li>Limited ability to detect leaks and water waste.</li> </ul>
Existing Discrimination/underrepresentation	N/A

#### 4.2.1.1 Use Case #1 Water management cycle – drinking water

**Main sector of interest:** water management | **Keywords:** water management, drinking water, sustainability, Water Cycle, Real-Time Data, Efficiency

**Description:** This UC is dedicated to the drinking water treatment system of the municipalities supplied by DPB. The goal is to increase operational Efficiency Improvement for Water Management, leveraging real-time data to improve the efficiency of Water Cycle day-to-day management. Through the analysis and cross-comparison of real-time operational data for the different Drinking Water Treatment Stations, the pilot would provide a tool for technicians to detect possible sources of inefficiency within the system: system failures, water leaks, operational bottlenecks, etc. In addition to this, the UC will create an executive Reporting system for Water Management, to identify recurring problematic areas within the system, imbalances among points of service, over-time evolution of relative efficiency, etc. By analysing the data over longer periods of time, the pilot would help policy-makers identify recurring problems and overall trends in Water Cycle management, to provide a tool for improving long-term investment strategies.

#### Value proposition of the UC:

- Save technician’s time
- Reduce waste of drinking water
- Reduce public cost, by providing a more efficient system overall
- Increase available information for policy-makers and system administrators

#### Existing related services/data sets to be utilised:

Pre-existing Water Cycle Management system: This Water Cycle management system features visualisation tools for both Waste Water and Drinking Water management, supported by a common platform. As such, this service provides two different uses of the same system, as they exist right now.

#### Intended users:

- Technicians at the local Waste Management public consortium.
- Policy-makers,
- Consortium officials
- High-level public administration workers

#### Current user stories based on the existing services

Table 2 Current USs - Drinking water

Current USs	US Description	Pains and problem with the current story	Suggestions for addressing the problems	Related service
US #1	«As a worker at the municipal consortium for water management I monitor the quality of water at the drinking water treatment stations so that I may ensure the correct operation of both systems»	Limited ability to detect leaks, water waste.	A tool to monitor day-to-day operations and detect possible failures within the system	Current Water Cycle Management system
US #2	«As a member of the local administration I use large-scale data to evaluate the use of water throughout the province so that I may pursue the correct policies and make the necessary budget allotments»	Need to understand the evolution over time of water use.	A tool to estimate current trends and to build predictive water usage models.	Current Water Cycle Management system

Future user stories

Table 3 Future USs - Drinking water

Future US	US Description
US #1	«As a worker at the municipal consortium for water management I want to know as quickly as possible of any potential problems in the drinking water system, without having to check manually so that waste of water, power and time can be reduced all along the water treatment cycle»
US #2	«As a member of the local administration I want to have a clear picture of the main areas for improvement within the drinking water treatment system so that I have the most information available when making decisions on infrastructure improvement and long-term strategies»

4.2.1.2 Use Case #2 Water management cycle – Sewage water

Main sector of interest: water management | Keywords: water management, sewage water, sustainability, Water Cycle, Real-Time Data, Efficiency



**Description:** The second UC is dedicated to the waste water management, in respective municipalities included in DPB's system. The goal is the same as at the first UC, meaning to increase operational efficiency Improvement for Water Management, leveraging real-time data to improve the efficiency of Water Cycle day-to-day management. Through the analysis and cross-comparison of real-time operational data for the different Sewage Water Treatment Plants, the pilot would provide a tool for technicians to detect possible sources of inefficiency within the system: system failures, water leaks, operational bottlenecks, etc. In addition to this, the UC will create an executive reporting system for Water Management, to identify recurring problematic areas within the system, imbalances among points of service, over-time evolution of relative efficiency, etc. By analysing the data over longer periods of time, the pilot would help policy-makers identify recurring problems and overall trends in Water Cycle management, to provide a tool for improving long-term investment strategies.

**Value proposition of the UC:**

- Save technician's time
- Improve treatment of wastewater
- Reduce public cost, by providing a more efficient system
- Increase available information for policy-makers and system administrators

**Existing related services/data sets to be utilised:**

Pre-existing Water Cycle Management system: This Water Cycle management system features visualization tools for both Waste Water and Drinking Water management, supported by a common platform. As such, this service provides two different uses of the same system, as they exist right now.

**Intended users:**

- Technicians at the local Waste Management public consortium. Policy-makers,
- Consortium officials
- High-level public administration workers

**Current user stories based on the existing services**

*Table 4 Current USs - Sewage water*

Current USs	US Description			
<b>US #1</b>	<i>«As a worker at the municipal consortium for water management I monitor the quality of water at the waste water treatment plants so that I may ensure the correct operation of both systems»</i>	Limited ability to detect leaks, water waste.	to monitor day-to-day operations and detect possible failures	Current Water Cycle Management system

			within the system	
<b>US #2</b>	<i>«As a member of the local administration I use large scale data to evaluate the use of water throughout the province so that I may pursue the correct policies and make the necessary budget allotments»</i>	Need to understand the evolution over time of water use.	A tool to estimate current trends and to build predictive water usage models.	Current Water Cycle Management system

## Future user stories

Table 5 Future USs - Sewage water

<b>Future US</b>	<b>US Description</b>
<b>US #1</b>	<i>«As a worker at the municipal consortium for water management I want to know as quickly as possible of any potential problems in the sewage water system, without having to check manually so that waste of water, power and time can be reduced all along the water treatment cycle»</i>
<b>US #2</b>	<i>«As a member of the local administration I want to have a clear picture of the main areas for improvement within the sewage water treatment system so that I have the most information available when making decisions on infrastructure improvement and long-term strategies»</i>

### 4.2.2 Sustainable Development and the European Green Deal (JSI)

The pilot corresponding to T6.3 will be implemented by JSI in Ljubljana, Slovenia. JSI will employ the International Research Centre in Artificial Intelligence (IRCAI). IRCAI is an organisation under the auspices of UNESCO that aims to promote international cooperation and collaboration in the development and deployment of artificial intelligence (AI) for the benefit of humanity. Its vision is to bring AI solutions to Sustainable Development Goals. It wishes to create an international Network of AI experts in SDGs, promote research in AI for SDGs and make it possible for research projects to find specialised investors and make an impact with AI for specific problems such as climate, healthcare, education, economy, poverty, social injustice, etc. Currently, it is a part of Jožef Stefan Institute (JSI), which is the leading research institution for natural sciences in Slovenia with over 900 researchers within 25 departments working in the areas of computer science, physics, chemistry, biology, but also in different areas of machine learning, data mining, language technologies, semantic technologies and sensor networks.

JSI has already identified three use cases that they are planning to implement in the context of AI4Gov. In the sub-sections below, the first version of the UCs is presented.

#### 4.2.2.1 Use Case #1 IRCAI global top 100 projects

**Main sector of interest:** Sustainability | **Keywords:** SDGs, IRCAI, Top100 projects

**Description:** Top100 projects is an IRCAI initiative, funding projects to address problems related to the SDGs by using Artificial Intelligence, from all five geographical regions: Africa, Europe and Americas, Asia and the Pacific, and the Middle East. The primary objective is to identify and present solutions worldwide, making a significant contribution to the SDGs through the creation of a vast platform for sustainable solutions. The aim is to enhance the effectiveness and impact of these solutions. Ethical considerations are important, in order to introduce a methodology for the evaluation of bias in project proposals and how the applicants address these issues.

Applicants provide information about their projects through the IRCAI website by filling out an on-line form. The reviewers, which are the members of the IRCAI Scientific Programme Committees, Scientific Journal Editorial Board, and Business and Impact Council evaluate all individual projects, and based on their reviews, the final report on the projects is prepared. Reviewers have already pointed out that the online form should be improved to collect more technical background information about the submitted projects, and to better understand how projects address ethical considerations and bias issues. IRCAI has also identified the need for an improved project evaluation methodology, especially for the evaluation of bias in data and models, and AI ethics concerns. This is strongly correlated with the application form design.

The aim of the UC will be to create a document-style framework with listed services and a set of rules for bias evaluation. If possible, there will be a toolkit that allows the applicants to assess the bias in their data and models in order to self-evaluate their projects. Alternatively, the UC will create a bias evaluation platform, an API or web application where the applicants would be able to test samples of their datasets and/or their models. That application would help to assess bias and provide a report that could be used in our Top 100 project. In the long run, the UC will establish a clearinghouse for bias evaluation and have a model, rules, and toolkit for bias evaluation of any AI solution in general.

Reviewers have already pointed out the need for ethical consideration and the existing bias issues in the proposed projects. The report from 2021 proposals pointed out that the result of the first call revealed a lack of substantive awareness and consideration for ethical criteria, either in the form of AI principles such as privacy and transparency or in terms of the ethical risks and trade-offs inherent to many of the proposed solutions. The report from 2022 proposals indicates the same problems, and showed that AI Ethics, in particular bias analysis in AI algorithms and data, is still incipient.

**Value proposition of the UC:**

- Reduce the time of the application/evaluation processes
- Ensure higher quality of the proposals and consecutively the projects in terms of representation, inclusivity, and diversity
- Better representation among different (non-EU/western) countries

**Existing related services/data sets to be improved:**

- In-house developed web-based infrastructure for submitting the projects.
- In-house developed web-based infrastructure for reviewers to evaluate the submitted projects.
- Various in-house developed tools for analysis and visualisation of the data on submitted projects (these tools are web-based).
- Data sets with the 2021 and 2022 projects applications.

Intended users:

- Top100 reviewers
- Top100 applicants

Related existing online infrastructure

Table 6 Top100 projects - Related data & services

Data Asset name		Data sets with the 2021 and 2022 projects applications
Variety (pre-existing)	First-hand data	Data about the submitted projects are gathered by IRCAI and consist of textual descriptions of the projects, URL's with more information about the projects (applicants can also provide URL to the source code, to the demo or working solution, institutional website, etc.) and answers to the closed-ended questions from the submit form.  Reviewers also provide numeric and textual evaluation of the projects.
	Second-hand data	Data from other sources are not used.
Velocity		Data about IRCAI Top 100 projects are collected once a year.
Volume in project		Data about submitted projects are about 1 to 2 Mb per year. When the evaluation is over, the data about the projects is published on our website at <a href="https://ircai.org/global-top-100-outstanding-projects/results/">https://ircai.org/global-top-100-outstanding-projects/results/</a> . Currently data for 2021 and 2022 has been published. Data could also be provided in CSV format.
Streaming data		N/A
Historical data (if yes how long)		Data are available from 2021 (data from two years).
Existing Discrimination/underrepresentation		They collect the data from all five geographical regions (Africa, Europe and the Americas, Asia and the Pacific, and the Middle East), however the majority of submitted projects from 2021 were from Europe and North America. Analysis has also shown that 70% of the projects were male led.  A minimum of personal data is collected (name and contact of the person who submitted the project).  Processes are compliant with EU regulations on human rights protection.

Relevant Existing Services	
<b>Service name</b>	<b>Online submission form</b>
Description	Online form for submitting projects.
Type of user(s)	Teams in private or public Institutions/Organizations that are submitting projects to the IRCAI Global Top 100 program.
Points to be improved	Online form should be improved in order to collect more technical background about the submitted projects, and to better understand how projects address ethical considerations, and bias issues.
Existing Discrimination/underrepresentation	In our datasets global South is underrepresented.
<b>Service name</b>	<b>Online reviewers' platform</b>
Description	Online platform for reviewing projects.
Type of user(s)	IRCAI reviewers
Points to be improved	Online form should be improved in order to allow reviewers to evaluate ethical and bias aspect of the projects.
Existing Discrimination/underrepresentation	N/A

### Current user stories based on the existing services

Table 7 Top100 projects - Current US

Current US	US Description	Pains & problems	Solution suggestion	Related service
<b>US#1</b>	<i>As an AI researcher/journalist covering AI/potential investor/policy maker, I can get the information about the best AI projects focused on SDG's and find out the areas where AI could be used for improving the human life.</i>	The online form does not capture enough information about bias and ethics on the proposals, and there is a lack of a specific methodology for evaluation of how bias is tackled in	A document-style framework with listed services and a set of rules for bias evaluation.	Top 100 reviewers' platform

		proposed projects.		
<b>US#2</b>	<i>As a Top100 projects applicant I have access to general instructions about how to structure my proposal.</i>	I cannot see specific instructions on how to address bias in the proposal at the moment.	A checklist to help quantifying whether the proposal has sufficient provisions.	Top 100 submission platform

## Future user stories

Table 8 Top100 projects - Future US

Future US	US Description
<b>US #1</b>	<i>"As a reviewer of the IRCAI Top 100 program I need to evaluate ethical considerations and bias in the submitted projects so that we identify the AI projects that could be showcased for others (in terms of ethics)"</i>
<b>US #2</b>	<i>"As an applicant to the IRCAI Top 100 projects I need to understand which ethical and bias consideration should I think of when building my models so that my created models are fair"</i>

### 4.2.2.2 Use Case #2 SDG Observatory

**Main sector of interest:** Sustainability | **Keywords:** SDGs, IRCAI, SDG achievements, bias

**Description:** This UC aims to create a tool that will monitor the achievements of the SDGs, in order to support policymakers. The methodology for monitoring the achievement of all SDG's should be developed and additional data sources should be defined. The development of the SDG observatory aims to address the problem of possible bias in data and in general as much as possible. This UC will develop a tool that will detect and eliminate biases to make the data as unbiased as possible, while identifying the topics and themes that are more prone to bias. Bias could also be in not showing some data, that are otherwise relevant, so this UC is interested in the lack of data as well (for instance, because it is not available). The UC will describe the process of how the data set selection happens, in order to locate what is missing. The UC aspires to provide visualisation and analysis of achieving SDGs in an unbiased way, taking into consideration the issue of bias in data and models.

The UC would like to utilise XAI (eXplainable AI) and SAX (Situation-Aware Explainability) solutions in the development of the web platform, if possible. The Bias Detector Toolkit, training materials, organisational guidelines and blueprints for trustworthy AI will also be utilised.

**Value proposition of the UC:**

- Evidence-informed policy suggestions to achieve SDGs
- Time reduction of decision-making processes
- Increase in representation/accessibility of underrepresented countries

- Time reduction in gaps/needs detection mapping

Existing related services/data sets to be utilised:

- Public accessible data sources like World bank data, OwiD, OpenAlex, etc.
- EventRegistry, our in-house developed news intelligence platform
- Our existing observatories (Water observatory, AI observatory, EU-Japan.AI observatory, etc.).

New service to be created:

- SDG achievements monitoring tool

Intended users:

- Policy makers in the EU/Global/National level
- Experts and general public interested in SDG's.

Related existing online data sets

Data sources still need to be finally defined, but data are already being explored from World bank, OwiD, OpenAlex, EventRegistry and other reliable sources. Since the UC is developing a tool that will monitor the achievements of the SDGs, the first step is to define the methodology for monitoring the achievement of all SDG's and based on that the indicators can be define. When this is achieved, the relevant data sources can be identified.

Existing online services

Table 9 SDG Observatory - Related data & services

Relevant Existing Services	
<b>Service name</b>	<b>EventRegistry</b>
Description	Event Registry is the world's leading news intelligence platform, empowering organizations to keep track of world events and analyse their impact.
Type of user(s)	Various users (corporate, government, researchers)
Points to be improved	Data (media articles) ingestion, support for more languages.
Existing Discrimination/under representation	N/A
<b>Service name</b>	<b>Existing observatories</b>
Description	Existing Observatories JSI is developing, for instance EU-Japan.AI Observatory ( <a href="http://eujapan.ijs.si/">eujapan.ijs.si/</a> ), Water Observatory ( <a href="http://naiades.ijs.si/">http://naiades.ijs.si/</a> ), etc.

Type of user(s)	Various users (corporate, government, researchers, general public...)
Points to be improved	N/A
Existing Discrimination/under representation	N/A

### Future User Stories

(The tool to be developed doesn't exist yet, so there are no current user stories)

Future US	US Description
US #1	<i>"As a decision maker I want to be able to compare and rank different countries and regions to see their achievements about the SDG of my choice, so that I can identify the best performing countries and follow their practices"</i>

Table 10 SDG Observatory - Future US

#### 4.2.2.3 Use Case #3 OECD policy documents analysis

**Main sector of interest:** AI Ethics & Policies | **Keywords:** OECD papers, AI policies, anti-bias strategies

**Description:** OECD has a collection of various national AI policies and strategies. They have an online repository with over 800 AI policy initiatives from 69 countries, territories, and the EU. The UC will analyse these documents and map the chapters referring to bias. A visual summary of how these documents approach bias and what solutions they are providing to tackle the problem of bias will be created. This will facilitate the mapping of good practices.

This UC will provide visualisation and analysis of how different countries and international organisations are trying to tackle the problem of bias in AI, based on the content of the OECD policy documents. The team will analyse these documents and find the chapters presenting anti-bias policies and practices. Then a visual summary will be created presenting solutions and good practices. This UC will raise awareness of the importance of ethics in AI, and the importance of bias prevention approaches. Policy makers should be encouraged to address these issues accordingly and raise awareness among developers of AI solutions.

**Value proposition of the UC:**

- Best practices repository
- Time reduction of policy making process
- Evidence informed policy making

**Existing related services/data sets to be utilised:**

- Public accessible OECD repository with AI policies.



- In-house tools for web scrapping these documents and convert them to Markdown format.
- Various in-house tools for analysis and visualization of text data
- Policy documents in PDF and Markdown format

**New service to be created:** OECD papers analysis and visualisation platform

**Intended users:**

- Policy makers
- Legal and ethical experts interested in AI
- Journalists and general public interested in AI

**Related existing online infrastructure**

*Table 11 OECD papers - Related data*

Data Asset name		OECD policy documents
Variety (pre-existing)	First-hand data	OECD is collecting AI policy initiatives from all countries and territories. Those documents are publicly available on their website and can be downloaded and convert to Markdown format.
	Second-hand data	N/A
Velocity		List of documents is updated occasionally.
Volume in project		Currently documents are around 500 Mb. Data are provided in PDF and MD (Markdown) format.
Streaming data		N/A
Historical data (if yes how long)		N/A
Existing Discrimination/underrepresentation		OECD is collecting AI policy initiatives from all countries and territories. Those documents are public.

**Future User Stories**

(Since the tool to be developed doesn't exist yet, there are no current user stories)

Future US	US Description
<b>US #1</b>	<i>"As an expert for AI ethics I would like to see which national policy documents are talking about AI ethics and are considering bias in AI so that I can identify the current regulations and good practices"</i>

<b>US #2</b>	<i>"As a citizen I would like to identify countries that consider AI ethics and bias in AI in their legal documents so that I can identify the current regulations and good practices"</i>
<b>US #3</b>	<i>"As a decision maker I would like to identify best policy and legal practices dealing with bias in AI and AI ethics so that I can follow and adapt those best practices for my country"</i>

*Table 12 OECD papers - Future US*

#### 4.2.3 Tourism-driven multi-domain policy management and optimisation (VWV/MT)

The last AI4Gov pilot. Corresponding to T6.4, will be implemented by the Municipality of Vari-Voula-Vouliagmeni (VWV) in Athens, in cooperation with the Greek Ministry of Tourism (MT). VWV is a Local authority governed by the Municipal Council and the Mayor, with about 600 employees. It provides services to 50.585 residents (2021 data) and visitors. VWV lies in the eastern part of Attica region, with a long coastline, several sea-side restaurants and bars, as well as findings and archaeological sites. These attract several visitors, especially during spring and summer. The aforementioned visitors reflect four main types: (i) visitors from the wider Attica region that visit the municipality mostly in weekends, (ii) seasonal visitors that leave abroad, visit and stay in the municipality during spring and summer, (iii) tourists that visit Greece and aim at travelling on different areas (e.g., islands) but spend some days in Athens and visit the municipality and (iv) visitors that visit and/or participate to cultural and sport events organised by the Municipality, cultural and sport associations.

The touristic character of the municipality raises the need to alter and optimise the municipality's policies in different domains, ranging from transportation, cleanliness, and sanitation to healthcare provisioning, security, and public works. The challenge refers to the adaptation of policies based on the citizens flows considering spatiotemporal elements (i.e., specific areas on specific timeframes) and ad-hoc scenarios (e.g., in the case of severe weather conditions). Furthermore, the updates on specific policies (e.g., in the case of parking management) should account and should be accounted by updates on other policies (e.g., in the case of waste management) in a bi-directional way. Additional information regarding seasonal visitors and tourists - cases (ii) and (iii) above will be obtained by the Ministry of Tourism as an additional source of information on the expected citizens and the corresponding temporal aspects of their visits. In this context, the goal is to identify and predict specific citizen flows and propose efficient multi-domain policies to manage the citizens (and vehicles) flows in an optimum way.

The VWV has identified two (2) UCs, in the domains of parking ticket management and waste management. The UCs are presented in the sub-sections below. In terms of data sets, there will be some common and some separate data sets to be used. In table 8 the common data sets, related to the visitors' flows are presented.

*Table 13 Greek pilot case - Common data sets*

<b>Data Asset name</b>		<b>Municipality citizens demographics</b>	
Variety (pre-existing)	First-hand data	Citizens based on official population census 2021 Citizens based on household water supply meters	
	Second-hand data	N/A	
Velocity		Every 10 years	
Volume in project		Small	
Streaming data		No Streaming data	
Historical data (if yes how long)		Official population census 2011 A calculation 10 years ago for the Citizens based on household water supply meters	
Existing Discrimination/underrepresentation		No	
<b>Data Asset name</b>		<b>Visitors &amp; Tourists (1)</b>	
Variety (pre-existing)	First-hand data	Number of visitors & Tourists: Beaches Sites and Monuments	
	Second-hand data	N/A	
Velocity		N/A	
Volume in project		Xls file (100 kb)	
Streaming data		No Streaming data	
Historical data (if yes how long)		A calculation 10 years ago	
Existing Discrimination/underrepresentation		No	
<b>Data Asset name</b>		<b>Visitors &amp; Tourists (2)</b>	
Variety (pre-existing)	First-hand data		
	Second-hand data	Arrivals, overnight stays, and occupancy in hotel-type accommodation (municipal level) Boarded and disembarked cruise passengers at the port of Piraeus	

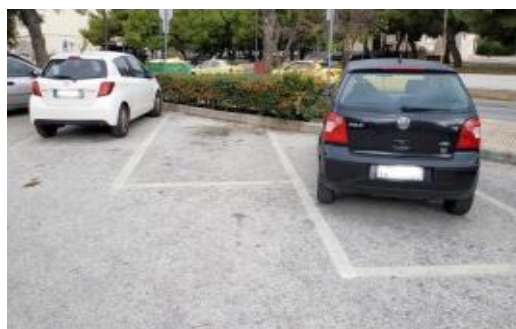
		Passenger traffic at Athens International Airport
Velocity		Data per year: They become available at the beginning of the 2nd semester for the previous year. The possibility of separating the data by month and by country of origin is considered.  Data per trimester  Data per month: the data is broken down into domestic and international traffic, per month. The possibility of separating arrivals and departures by nationality is being considered. They are available on the 1st day of each month for the previous month.
Volume in project		Xls file (150 kb)
Streaming data		No
Historical data (if yes how long)		Time frame: 2010 – 2021 Time frame: 2000 – 3rd trimester 2022 Time frame: 2002 – April 2023
Existing Discrimination/underrepresentation		No
<b>Data Asset name</b>	<b>Visitors and participants in sports and cultural events organised by the Municipality</b>	
Variety (pre-existing)	First-hand data	Number of visitors and participants in sport and cultural events organised by the Municipality
	Second-hand data	N/A
Velocity		After the completion of events
Volume in project		Xls file (100 kb)
Streaming data		No Streaming data
Historical data (if yes how long)		5-10 years ago
Existing Discrimination/underrepresentation		No
<b>Data Asset name</b>	<b>Citizens-reported information</b>	
Variety(pre-existing)	First-hand data	Number of Complaints, petitions, information etc. / kind (i.e., garbage, cleanliness,)
	Second-hand data	

Velocity	Daily
Volume in project	12,000 /year
Streaming data	Monthly and yearly reports
Historical data (if yes how long)	From 2017
Existing Discrimination/underrepresentation	No, as everyone can report via mobile application, telephone, email. GDPR is applied.

#### 4.2.3.1 Use case #1 Parking tickets monitoring

**Main sector of interest:** Tourism | **Keywords:** tourism, parking tickets, visitors

**Description:** The Municipality faces a significant problem with Parking especially during the Summer and weekends due mainly to the flow of visitors and tourists. According to a preliminary analysis of available data for the period 2019-2022, parking tickets represent almost 50% of the traffic law violations in the Municipality, while nearly 70% of them imposed between June and August. Overall, Parking tickets are imposed both by the Municipal Police (70%) and the Hellenic Police (30%). The Municipal administration seeks to handle the problem of Parking by



- applying Controlled Parking Zones
- procuring cars and equipment for Municipal Police
- using online services.

Currently, the Municipal Police and Hellenic Police staff imposes the fines and tickets for traffic law violation, and the relevant data are entered manually by the municipal servants in a software programme called “Car Tickets – Alfaware” on a 2-month basis and yearly basis respectively.

**The need:** The Municipality is in need of a tool that monitors the number of parking tickets issued and analyses their time and spatial evolution in order to allocate municipal police staff, vehicles and equipment in an optimum way.

**Value proposition of the UC:**

- Reduce municipality’s costs
- Reduce traffic accidents
- Increase mobility of vehicles and pedestrians

### Existing related services to be utilised:

- Software programme “Car Tickets - [Alfaware](#)”: The fines and tickets for traffic law violation are entered manually by the municipal servants as collected both by the Municipal Police on 2-month basis and Hellenic Police on yearly basis. An API is needed for real-time access to the database, otherwise an xls file can be produced on daily basis.
- Software programme “[Novoville](#)”: Citizens can report in a simple and fast way problems they encounter in their everyday life via mobile application, telephone and email. Reports from Mobile application are entered online in the database, while those via telephone and email are entered manually by the municipal servants on daily basis. An API is needed for real-time access to the database, otherwise an xls file can be produced on daily basis.

### Intended users:

- Policy makers - Municipal Council (Strategic Planning-Decision Making)
- Municipal staff and officers (Management-Operation)
- Citizens and visitors (Awareness-behavioural change)

### Related existing online data sets

*Table 14 Parking monitoring - Related data*

Data Asset name			Transportation data (1)
Variety (pre-existing)	First-hand data		N/A
	Second-hand data		Number of cars parking in the 4 most visited areas of the city
Velocity			
Volume in project			Xls file (619 kb)
Streaming data			No
Historical data (if yes how long)			5/2021-10/2022
Existing Discrimination/underrepresentation			No, as measurements based on representative sample.  GDPR is applied.
Data Asset name			Transportation data (2)
Variety (pre-existing)	First-hand data		Information collected from the police regarding fines and tickets for traffic law violation
	Second-hand data		N/A
Velocity			The fines and tickets for traffic law violations are entered manually by the municipal servant into the software

	programme “Car Tickets” of the private company “ALFAWARE” installed in the Municipality’s computers as collected both by the Municipal Police on 2-month basis and Hellenic Police on yearly basis.
Volume in project	Xls file (5 MB)
Streaming data	No real-time access to them. On demand. The database is operated by the company that has developed the application and must give real-time access to the Municipality by developing an API.
Historical data (if yes how long)	2019-2022. Can be extracted for longer period.
Existing Discrimination/underrepresentation	No. GDPR is applied.

### Current user stories based on the existing services

Table 15 Parking monitoring - Current US

Current US	US Description	Pains and problems	Solution Suggestion	Related service
US #1	<i>“As a municipal officer in charge of the Municipal police I monitor the compliance with the provisions of law relating to parking in the municipality so that I facilitate the mobility of vehicles and pedestrians and prevent traffic accidents”</i>	There is no monitoring and analysis of the time and spatial evolution of parking tickets.	A tool to monitor the number of parking tickets issued and analyse their time and spatial evolution.	Software programme “Car Tickets - Alfaware”
US #2	<i>“As a member of the Municipal Council I get information about the Parking problems in the city so that I facilitate the implementation of the Sustainable Urban Mobility Plan and Strategy”</i>			Software programme “Novoville”

### Future User Stories

Table 16 Parking monitoring - Future US

Future US	US Description
US #1	<i>"As a municipal officer in charge of the Municipal police I want to know which are the areas, days and hours that violation of parking rules is observed so that I allocate municipal police staff and equipment in an optimum way"</i>
US #2	<i>"As a member of the Municipal Council I want to know which are the areas, days and hours that violation of parking rules is observed so that I allocate necessary funds and resources to address the problem"</i>

#### 4.2.3.2 Use Case #2 Waste management - Pay As You Throw (PAYT)

**Main sector of interest:** Tourism | **Keywords:** tourism, waste management, visitors, PAYT

**Description:** Waste management has been a huge problem and challenge in Greece. Municipalities have to deal with the raising costs of burying the waste in landfills, while applying the PAYT system from 2028 onwards according to the existing legislation. PAYT system is the implementation of the 'polluter pays' principle that rewards those citizens that sort waste at Source. To this end, the Municipality of Vari-Voula-Vouliagmeni is the first to launch a separate bio-waste collection program for green and organic waste, which is applied to businesses and large producers such as restaurants and hotels as well as in some residential areas in town. The municipal fees are charged not only according to the square meters of the building, but also to the waste produced. In specific, the 60% of the total fee is fixed, while the remaining 40% depends on the waste produced. The annual total fee may be reduced to 50% if the total quantity of organic and recyclable waste is higher than that of residual garbage produced. In other words, a financial incentive is given to sort and reduce the volume so that only garbage goes to burial.



**The need:** The Municipality requires an innovative tool to streamline waste monitoring and optimize the allocation of staff and resources. Furthermore, as it seeks to implement the Pay As You Throw System to whole area of the Municipality, it needs a predictive tool as to the outcome of this expansion in economic terms. Finally, the tool will play a pivotal role in raising awareness among citizens and businesses, fostering a sense of responsibility and encouraging sustainable waste practices.

**Value proposition of the UC:**

- Reduce the municipality's, citizens' and businesses' costs
- Transition towards a more circular and sustainable economy

**Existing related online services to be utilised:**



- “PAYT” Electronic platform (e-track): A Dynamic Bin Weighing system is implemented with the aim of recording the collected quantities. For this purpose, RFID tags have been placed in the bins of the area and a scale and scanner have been placed on the garbage truck. During the collection process, the bin is weighed and scanned at the same time, the data is entered into an electronic platform called e-track, and the results of the waste producers are all identified.

**Intended users:**

- Policy makers - Municipal Council (Strategic Planning-Decision Making)
- Municipal staff and officers (Management-Operation)
- Citizens and businesses (Awareness-behavioural change-financial benefits)

**Related existing datasets & services**

*Table 17 Waste management - Related data & services*

Data Asset name		Pay As You Throw (PAYT)
Variety (pre-existing)	First-hand data	Quantity and type of garbage
	Second-hand data	National Electronic Waste Register ( <a href="https://wrm.ypeka.gr/">https://wrm.ypeka.gr/</a> )
Velocity		Data are generated constantly, distributed and collected daily
Volume in project		Businesses, restaurants, hotels and some residential areas in town (Pigadakia, Vouliagmeni , Miladeza). Number of bins: 2.150
Streaming data		Real-time information from garbage bins and garbage trucks equipped with weighing, volume measuring and location sensors
Historical data (if yes how long)		Data are available on a multiannual basis
Existing Discrimination/underrepresentation		N/A
Relevant Existing Online Services		
Service name		Pay As You Throw (PAYT) Electronic platform (e-track)
Description		A Dynamic Bin Weighing system is implemented with the aim of recording the collected quantities. For this purpose, RFID tags have been placed in the bins of the area and a scale and scanner have been placed on the garbage truck. During the collection process, the bin is weighed and scanned at the same time, the data is entered into an electronic platform called e-track, and the results of the waste producers are all identified.

Type of user(s)	Municipal Staff and Officers in the Waste Management and Recycling Unit	
Points to be improved	Raising awareness of citizens for optimal waste Sorting at Source containing waste prevention. Staff training Data and platform rearrangement for easier, more user-friendly use	
Existing Discrimination/underrepresentation	N/A	
<b>Data Asset name</b>	<b>Telematic track and manage of vehicle municipality's fleet</b>	
Variety (pre-existing)	First-hand data	Telematic track and manage of vehicle Municipality's fleet
	Second-hand data	N/A
Velocity	Data are generated constantly, distributed and collected daily	
Volume in project	Number of vehicles: 120	
Streaming data	There are telematics devices in every vehicle and control through GPRS network in real - time	
Historical data (if yes how long)	Data are available on a multiannual basis	
Existing Discrimination/underrepresentation	N/A	
<b>Relevant Existing Online Services</b>		
<b>Service name</b>	<b>Telematic tracking of vehicle fleet</b>	
Description	Fleet monitoring and vehicle tracking, integrated Telemetry system and GPS tracking	
Type of user(s)	Municipal Staff and Officers in the Waste Management and Recycling Unit	
Points to be improved	Staff training Data and platform rearrangement for easier, more user-friendly use	
Existing Discrimination/underrepresentation	N/A	

## Current user stories based on the existing services

Table 18 Waste management - Current US

Current US	US Description	Pains and problems	Solution Suggestions	Related service
US #1	<i>"As a municipal officer in charge of Waste Management and Recycling Unit I monitor the Dynamic Bin Weighing system so that I facilitate the Implementation of Pay As You Throw System."</i>	<ul style="list-style-type: none"> <li>- Lack of a reliable &amp; technologically advanced Management Information System</li> <li>- PAYT system is applied in a small part of the city</li> </ul>	<ul style="list-style-type: none"> <li>A tool to monitor overall data from telematics, recommend optimum areas and resource allocation, and predict financial outcomes</li> </ul>	<ul style="list-style-type: none"> <li>"Pay As you Throw e-track"</li> <li>&amp;</li> <li>"Telematic track and manage of vehicle Municipality's fleet"</li> </ul>
US #2	<i>"As a member of the Municipal Council I monitor the Implementation of Pay As You Throw System so that I reduce the municipality's costs and assist the transition towards a more circular and sustainable economy according to waste management legislation"</i>	<ul style="list-style-type: none"> <li>- Waste Sorting at Source needs financial incentives and raising awareness</li> </ul>		

## Future User Stories

Table 19 Waste management - Future US

Future US	US Description
US #1	<i>"As a municipal officer in charge of Waste Management and Recycling Unit, I want to know which are the areas where the Pay As You Throw System will be expanded, so that I allocate municipal staff, vehicles and equipment in an optimum way"</i>
US #2	<i>"As a member of the Municipal Council, I want to know which are the optimum areas and to predict the financial outcomes regarding the expansion of the Pay As You Throw System, so that I allocate necessary funds and resources"</i>

All in all, chapter 4 provides the first version of the pilot descriptions and the UC scenarios, as described by the pilot partners. As already mentioned earlier, this is an ongoing process and all UCs will be updated and enriched, according to the new information and data that will be used,

as well as the feedback from the technical partners. This will facilitate the alignment of the work among the WPs and the successful testing and validation of the AI4Gov technologies.

## 5 Preparation for Validation and Evaluation

This chapter focuses on **T6.5 Stakeholders' feedback and evaluation**, responsible for collecting and analysing pilot results and stakeholders' feedback across all use cases in order to evaluate the effectiveness of the AI4Gov solutions. The analysis of this feedback will play a pivotal role in enhancing and fine-tuning the AI4Gov services, encompassing aspects such as efficiency, usability, standards compliance, and more. Furthermore, this chapter places emphasis on a holistic evaluation approach for the use cases. This comprehensive evaluation will encompass multiple perspectives, including technical, socioeconomic, legal, organisational, and usability aspects. To ensure a rigorous evaluation process, a well-defined evaluation methodology, along with relevant metrics and tools, will be specified at the outset.

Throughout the entire implementation and execution of the use cases, soliciting stakeholders' feedback will be a key priority. This will be achieved through a series of workshops conducted to actively engage stakeholders and gather their input. By involving stakeholders continuously, their perspectives will contribute to shaping and refining the AI4Gov solutions, ensuring their alignment with real-world needs and requirements. This chapter sets the stage for a thorough evaluation of the AI4Gov solutions, leveraging stakeholder feedback as a vital source of insights and guidance. Through this evaluation, the project aims to drive continuous improvement and deliver impactful outcomes that address the diverse needs and expectations of stakeholders, particularly those from underrepresented groups.

Since T6.5 officially started in M6, the responsible partners are at the beginning of the mapping and reviewing of different methodologies that will help them design a solid, innovative, and customised on project needs, evaluation methodology. This methodology will be presented in the next deliverable, *D6.2 Specification of UC Scenarios and Planning of Integration and Validation Activities V2*.

## 6 Conclusion and next steps

This deliverable has provided a comprehensive overview of the work conducted in Work Package 6, along with the methodology employed for the pilot phase. The pilot methodology introduced the value proposition approach, which served as a guiding framework for the pilot activities. Moving forward, the document provided the first version of the specifications of the Use Case Scenarios, an overview of the pilot sites and their respective use cases. Additionally, the deliverable touched upon the preparations made for the upcoming validation and evaluation phases, ensuring a smooth transition to the next stage of the project.

Currently, the Use Cases are being evaluated by the technical partners of AI4Gov, in order to ensure they have all the information they need to create the tools that will cover the needs of the pilots. The use case implementation is an ongoing process that is constantly being reviewed and evaluated to support both the pilots' needs as well as provide the technical partners with appropriate information to translate the use case requirements into features to be incorporated into the AI4Gov tools.

This deliverable serves as a guide and reference point for stakeholders involved in the project, providing valuable insights and setting the stage for successful implementation and evaluation of the pilots.

## 7 References

Berg, V. d. (2022). *Artificial Intelligence and the Future of Public Policy*. Retrieved from [https://ec.europa.eu/jrc/communities/sites/jrccties/files/06\\_berg.pdf](https://ec.europa.eu/jrc/communities/sites/jrccties/files/06_berg.pdf)

*AI Observatory - 2021*. Ai Observatory. (n.d.). <https://eujapan.ijs.si/dashboards/Main/Index?visualization=MAG--country-indicators>

*Alfaware (n.d.)*.

<https://alfaware.gr/%CE%B5%CF%86%CE%B1%CF%81%CE%BC%CE%BF%CE%B3%CE%AD%CF%82/>

*IRCAI Global Top 100*. IRCAI. (n.d.). <https://ircai.org/global-top-100-outstanding-projects/results/>

*OECD*. (n.d.). <https://www.oecd.org/>

*Redefining civic engagement*. Novoville. (n.d.). <https://www.novoville.com/>

Rosário, A., & Raimundo, R. (2021). *Importance of value propositions in marketing: Research and challenges*. *Academy of Strategic Management Journal*, 20(2), 1-23.

*Use the power of AI to turn news content into actionable insights*. Event Registry. (n.d.). <https://eventregistry.org/>

*Water Observatory - Naiades*. Water observatory. (n.d.).

<http://naiades.ijs.si/dashboards/Main/Index?country=Global&language=English&visualization=main-main>

*Εφαρμογές για Ο.Τ.Α.* eDimon Alfaware. (n.d.). <https://alfaware.gr/>

*ΥΠΕΚΑ - ΥΡΕΚΑ*. Ηλεκτρονικό Μητρώο Αποβλήτων. (n.d.). <https://wrm.ypeka.gr/>

## APPENDIX – Pilot template

### Use Cases & User Stories

To identify and characterise the User Stories in all AI4Gov pilot sites, we are following a value proposition-oriented approach. This template is divided into two main sections: the current state of the pilot's situation, and the pilot concept for the implementation and integration of the AI4Gov tools:

#### Current state of the pilot

##### Location and background

Pilot ID	
Place Location	
Responsible partner(s)	pilot
Logo(s)	
Entity Type	Type of organisation: Higher or secondary education establishment; International Organisation; Non-governmental organization; Private for-profit organisation; Public organisation; Research organisation; Small or medium-size enterprise; Other
Role	Description of the organisation
Address	
Website	
Contact(s)	

Background and motivation	
Pilot title	Pilot case title
Sector(s) of interest	Sustainability, environmental policies, tourism, etc
Background idea (200 words max)	
Motivation (needs and gaps)	Extended description: Drivers and motivation for the pilot – needs and gaps to be covered in terms of:  Services



	Expertise
	Inclusivity & Accessibility limitations (ethnic minorities; migrants; religious groups; persons with disabilities etc)
Relevant services/tools (bullet point list)	existing (bullet point list)
Relevant Data assets (bullet point list)	

### Existing infrastructure

Relevant Data assets (Replicate as many times as the assets)	
Data Asset name	
Variety existing	(pre-First-hand data) Data gathered by the pilot partner
	Second-hand data Data from other sources
Velocity	Data velocity refers to the speed at which data is generated, distributed, and collected.
Volume in project	Data volume refers to the amount of data that is stored or used by the pilot partner under this data asset.
Streaming data	Streaming data is data that is generated continuously during the project and the pilot partner has real-time access to them.
Historical data (if yes how long)	The historical data includes the long-term data stored by the pilot partner.
Existing Discrimination/underrepresentation	Please mention any identified “discrimination” and “underrepresentation” in the data asset. Also mention the Compliance to existing EU regulations on human rights protection.
Relevant Existing Services (Replicate as many times as the services)	
Service name	
Description	
Type of user(s)	

Points to be improved	
Existing Discrimination/underrepresentation	Please mention any identified “discrimination” and “underrepresentation” in the supported services. Also mention the Compliance with existing EU regulations on human rights protection.

**Current user stories based on the existing services**

Current User Stories	As a «type of... user», ...	I can/do/monitor/etc «service capability» ...	... so that «somePains the problem the story	andSuggestions withaddressing the currentproblems	forRelated theservice
	Identify the costumer to which the user relates.	Describe the job(s) to which the user storybe fulfilled.	Identify the intended goal that the user expects to be fulfilled.	Identify the reason(s) to which this user story relates.	Identify the existing services the User Story refers to
US #1	«As a municipal officer in charge of public transportation»	«I monitor the open hours of sightseeing in the municipality»	«so that I combine it with the bus lines schedule»	Not possible to see which bus lines are busier. people that use the bus daily/hourly.	«Service x»
US #2					
US #3					
US #N					

**Moving forward: Pilot concept**

Pilot #1	
Pilot Name	Pilot case title
Summary	A short summary of the pilot (maximum 500 characters)
Concept Objectives	& Extended description of the pilot (text, images, etc.) and its objectives – correlation to the identified needs

## Identified Use Cases

Definition of the Use Cases for the described pilot (To replicate as many times as the UCs).

Use Case #1	
Use Case Name	Name of the Use Case
Summary	Short summary (with a maximum of 300 characters) of the Use Case
Description	Extended description of the Use Case (text, images, etc.)
Value Proposition(s) of the UC	Bullet list with value proposition(s)/benefits of the Use Case: Examples: [Increase] enrolled citizens in x service [Reduce] municipality's costs [Improve] public transportation timetable according to the visitor flows
Existing related services to be improved	
New services needed	
Intended users	
Image(s)	Could be a map of the location where the pilot will take place
Keywords	

## Future User Stories

User Stories are short, simple descriptions of a feature told from the perspective of the person who desires the new capability, usually a user or customer of the system.

User Stories	As a «type of user»,... I want «some goal» ...	... so that «some reason».	«someRelated UCs
	Identify the customer job(s) to which this user story relates.	Describe the intended goal that the user expects to be fulfilled.	Identify the reason(s) to which this user story relates.
US #1	«As a municipal officer in charge of public transportation»	«I want to know which is the busiest part of the day in terms of traffic around the sightseeing»	«so that I add more buses to the respective bus lines»
US #2			