



Advanced AI Solutions



AIWASTE

Smart City Waste Management



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WHO I AM

I am Alessandro Frulio and I am one of the two founders and the innovation manager of Athlos. I am very happy to be here and I thank ICE for the invitation.





WHO IS ATHLOS

Athlos supports public administrations and private companies in the **digital transition** and implements the **advanced AI solutions**. This image shows our smart city project:





INTRODUCTION

The growing volumes of waste are largely caused by two factors:

- large-scale urbanization
- the growth of the industry.

Modern lifestyles around the world produce far more waste per citizen than just ten years ago. The United Nations predicts that 66% of the world's population will live in cities by 2050. To support all these factors, problems and challenges, cities need a sophisticated and efficient tool to **manage waste, monitor containers with sensors and optimize capacity and collection.**



AIWASTE

AIWASTE is the innovative integrated solution for Smart Cities Waste Management which, through the use of an **intelligent booking system** and a **web based software platform**, allow the intelligent management of separate waste collection.

In details, through AIWASTE it is possible to:

- Optimize waste collection frequencies.
- Reduce costs.
- Collect waste on request, reflecting actual need.
- Alleviate traffic congestion in the city related to regular waste collection routes.

 **Financed by**



**SARDIGNA CHIRCAS
SARDEGNA RICERCHE**

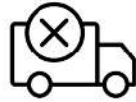
 **ATHLOS**



ADVANTAGES



Cost
Reduction



No missed
collections



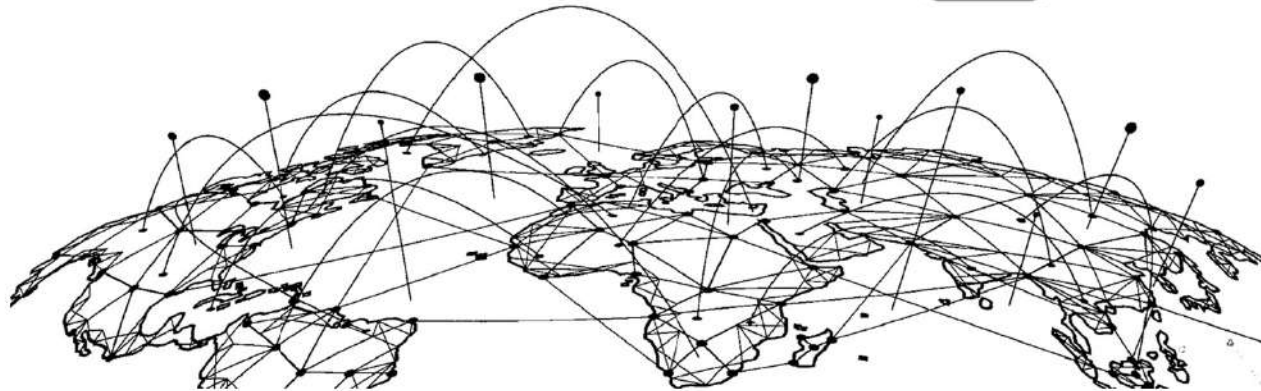
Avoid overfilling
the collection bin



Analysis of waste
production



Reduction of CO2
production





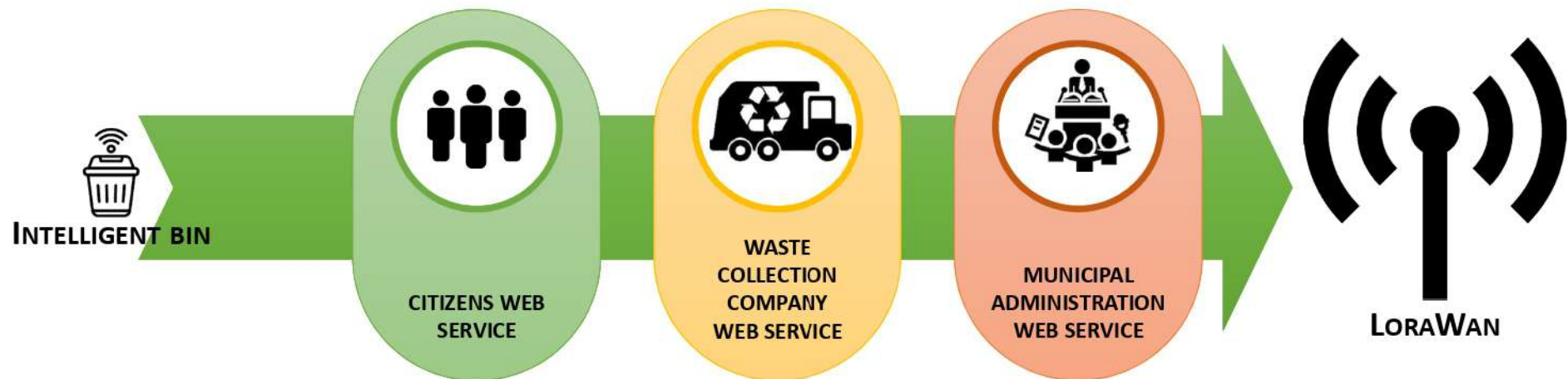
WHAT IS AIWASTE



Through the use of an **intelligent bin** and a **web based software platform**, it is possible to manage the separate waste collection activity.



THE ARCHITECTURE OF AIWASTE



Through a **LoRAWAN NETWORK** (antennas mounted on lighting poles or buildings) with **SMART BINS** it's possible to book and collect data on separated waste and provide a series of services to citizens, the municipal administration and of the waste collection company.



THE INTELLIGENT BIN

The intelligent bin allows you to implement computerized waste collection in **traditional street containers** and in **individual waste bin**, without changing citizens' habits or the organization of the service.

The smart bin is available in different versions to adapt to different types of containers and can be integrated with a **VOLUMETRIC AND/OR WEIGHT SENSOR** for real-time control of the efficiency of the service.

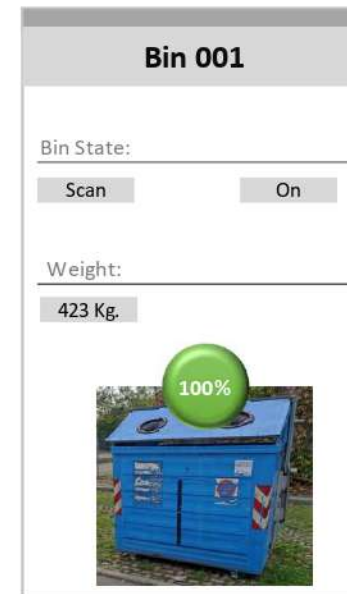
It allows you to detect: USER IDENTIFICATION CODE, CONTAINER IDENTIFICATION DATA, DATE AND TIME OF WASTE DISPOSAL and FUNCTIONAL PARAMETERS OF THE SYSTEM.





THE INTELLIGENT BIN

Through the smart bin it is possible to **monitor and analyze filling and/or weight data in real time** and provide information that helps avoid collecting waste from empty or half-empty street waste containers.





THE CITIZENS WEB SERVICE

The portal allows citizens to:

- Analyze waste production time series.
- View paid and payable punctual tax rate (pay as you throw away).
- Interact with a digital assistant for information.
- Express the level of satisfaction.





WASTE COLLECTION COMPANY WEB SERVICE

The portal allows the waste collection company to:

- Manage the transport vehicles.
- Calculate the optimal waste collection route taking into account bin bookings and/or the weight/volume of waste they contain.
- Monitor collection activity in real time.

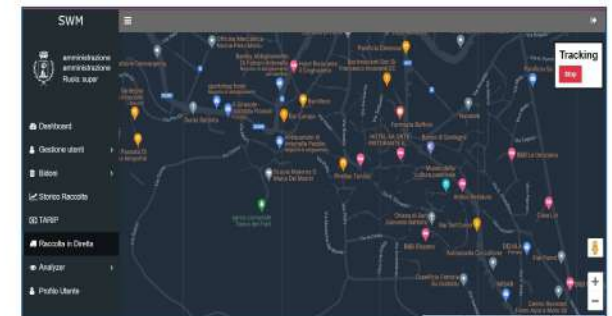




MUNICIPAL ADMINISTRATION WEB SERVICE

The portal allows public administrations to:

- Analyze historical data.
- Pay as much as you throw away.
- Monitor collection activity in real time.
- Analyze the anomalous behaviour of citizens.
- Analyze citizens' level of satisfaction.





PILOT CASES



COMUNE
DI FONNI

PUBLIC ADMINISTRATION



WASTE COLLECTION COMPANY

MUNICIPALITY OF FONNI: TIMING & ROI

 Users
2.292

 Time to Start AIWASTE Platform
30 Days

 Improvement of separate waste collection
+20%

 Experimentation Time
5 years

 ROI
117%



ATHLOS

ADVANCED AI SOLUTIONS



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THANK YOU VERY MUCH

AI Solutions for Smart City