

Smart collection system tool

Developed by the City of Porto

Short Introduction

The City of Porto seeks to improve its waste collection practices to separate bio-waste more effectively. To do so, it will be implemented a Smart Collection System tool based on a mathematical model that will integrate data from the new installed set of smart sensor containers with the transportation trucks. With this technology it will be possible to identify and locate every container. The data collected will be integrated into Urban Services Platform. The system collects information on the quantity of waste collected, together with data on usage patterns of the bins, and maintenance operations. This information can help optimize the bio-waste collection from the smart waste collection bins and to promote interaction with users. Porto is planning to make this data publicly available for businesses and for the general public to enable other potential applications. The software also allows the waste management of the City of Porto to develop better bio-waste collection routes.

Target groups

- Local Governments (waste management)
- Businesses

Keywords

- #Data Analysis
- #Innovative technologies
- #Recycle

Format

- Software

Current status

- Laboratory tests currently running

Replication

- *How could other cities use this tool?*

This tool can be replicated in other cities that pretend to remodel the bio-waste collection system. Although it will imply a full update to the software with each city's data, and a renovation of street bins if they are not compatible.



- *Would they need to develop their own version, which aspects of the tool are adaptable to other contexts, and which ones are unique to your city/context?*

They can use the base of this tool, but the data needs to be filled with each city's characteristics and equipment.

- *Which advice would you share with others who would make use of this tool?*
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Development

- *How was the tool developed?*
- *Which data sources were used for this?*
- *Which stakeholders were involved?*

In a succinct way, the SCS tool consists in placing electronic tags on all mobile assets (for example containers for depositing waste installed on public roads), instrumentalizing collection vehicles and equipment storage places with devices reading data recorded on electronic tags, and the data transmission process for Porto Ambiente's API will be guaranteed by the use of open or authorized networks and Wi-Fi and the use of integration software.

This innovative solution will allow, with a high degree of reliability, to identify and geolocate all Porto Ambiente's assets, as well as to record the collections of containers and other maintenance operations. The integration of this data in the Porto Ambiente API, in addition to allowing the reduction of operating costs and knowing, in real-time, all assets, will also enable the sharing of information by the city's platforms, promoting the transparency of the system and the improvement of the system. relationship with citizens.

Barriers:

- *Which difficulties occurred in the development of the tool?*
- *How did you solve this issues, which solutions did you find?*
- *Which difficulties to you expect/have you encountered in using this tool?*

The creation of this tool implies a high level of technical knowledge, and this technology is not available in Portugal, so the development and the tests can take more time. Since this is an innovative tool, we expect some difficulties at the beginning, because it will expect real-time adjustments that can only be evaluated and repaired once in the implementation in the field of the SCS tool.

Additional Information

For example:

- *Contact points*
- *Next steps*
- *References*





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