

## Satellite tracking applied to separate waste collection



The solution for the  
georeferencing  
of fleets and people

## The problem

- Thanks to a constant and growing Green awareness of both Public Authority and citizens, the culture of separate waste collection begins to spread, which often translates into door-to-door service.
- For companies operating in this sector, one of the main needs is to collect, in a precise way, the data coming from the various collection points. For each of these it must be possible to know which user it is assigned to and when it was unloaded from the vehicle.



## The solution

Thanks to its *DesktopMate* platform and the specific *Fleet2Track* solution, it is able to offer companies in the sector a complete solution, able to satisfy, even gradually and scalable, various needs:

- supply of *software and sensors* dedicated to *waste collection* companies
- Mobile software (APP) dedicated to *citizens* who use the waste collection service
- Mobile Software (APP) dedicated to *Public Authority*, to communicate in real time any problems encountered in the area during the performance of their service



## For waste collection companies

In this context, Fleet2Track is able to provide "turnkey" solutions, which include the supply of sensors and accessories to be installed on vehicles and bins and specific software for managing the entire process.

To obtain the best result we have adopted TAG with UHF technology, which allow to have a greater range and direction for the reading of each bin:

- each bin is equipped with a passive TAG
- each vehicle of two UHF antennas for their reading

Using this technology, the vehicle can read both the bins that are emptied manually and those emptied from the rear using a forklift. Each reading of the TAG code is memorized by the satellite control unit which sends it in real time to the central server.

## For waste collection companies

The satellite control unit is installed in the cabin



Antenna for covering on manual emptying

Antenna for covering on emptying with trolley

## For waste collection companies



## For waste collection companies

In addition to sending the read TAG code, in order to generate the information available to the management systems dedicated to billing, the satellite control unit provides a whole range of additional information such as:

- Position of the vehicle in real time
- History of the laps made by the vehicle (for each of these, date, time, address, speed, stops)
- Connection to the CanBus of the vehicle to detect data relating to km traveled, consumption, etc.
- EcoDrive, driving style, useful for allowing corrections in such a way as to obtain savings on consumption
- Direct communication with drivers via touch screen installed on the vehicle, Smartphone or Tablet with a special APP



## The benefits for companies

- Exact reading of the codes applied to each bin
- Real-time sending of codes to the management system
- Control of vehicles and their efficiency
- Lap statistics and their optimization
- Consumption optimization
- Fuel saving





## For citizens

Citizens who collaborate in separate waste collection, perhaps even with the door-to-door system, can be involved by the waste collection company, to which the same can provide general and detailed information. Through the DesktopMate platform, it's be possible to create a Mobile APP that allows:

- to all those who have downloaded the APP to provide general information, such as the collection schedule, collection points, household waste management methods, etc.
- users who are profiled and logged into the system, for example with their customer code, will be provided with detailed information for the individual citizen, such as the successful passage of the door-to-door service, a summary of the emptying carried out, their invoices, their own payments, etc.
- to both "anonymous" and "logged in" users, the company may also send PUSH messages, both textual and graphic, to make direct communications to its users.



## The benefits for citizens

- Quick consultation of the collection calendar
- Have information and suggestions to improve the collection
- Functionality for requesting specific services (for example bulky collection)
- Know in real time the emptying of your bins or be notified of any problems related to the service itself
- View a "statement" with the emptying of your own bins, by type, quantity delivered, etc.
- View your invoices and payments
- Receive any communications in real time from the waste collection company

**together we make...**



**...the difference**

## For the Public Authority

The Public Authority that contracts the collection service to a specialized company, will be able to use, through a series of tools applicable in various areas:

- availability of access to the Fleet2Track software to view the collection data relating to your area of expertise
- availability of Mobile APPs built on a DesktopMate basis to be able to take advantage of real-time information even while on staff of the Entity is off-site
- availability of Mobile APP built on a DesktopMate basis to allow a direct and privileged connection between the driver of the vehicle and the Municipal Police, in case of problems encountered in the area
- etc.



# The benefits for Public Authority

- Increase of the Green consciousness of its citizens, with the possibility of increasing the percentages of separate waste collection and therefore avoiding sanctions from the European Community
- Real-time consultation, both from Web and from Mobile, of the performance of the service contracted to an external company
- Availability of data and information relating to emptied bins
- Visualization on the map of the location of the vehicles to respond to any users who complain of disservices
- Creation of a direct channel between drivers and Police for any problems encountered in the area, or for any provision by citizens of material that does not comply with the regulations



# Data analysis

The adoption of the integrated system, DesktopMate and Fleet2Track, also allows the waste collection company to collect all the information deriving from:

- Vehicle and collection tracking system
- Citizens who use the APP
- Public Authority that uses the system both from the Web and from the APP thus creating an indispensable database for the analysis of the service, the verification of its profitability, the improvement of the service and the optimization of the activities to be planned for the future, both of its staff, as well as towards citizens and public authorities.



# Use display OnBoard



The new vehicle device allows you to manage your activities onboard:

- Receive the job card
- Display of road sections to be swept
- Know which bins it withdraws from