ferrovial
services

CISCO

DYNAMIC MUNICIPAL WASTE COLLECTION

GRANADA is a pioneer in the smart use of urban information to manage municipal waste collection.

Granada city government

Granada is a trail-blazer, having deployed an IoT network covering 75% of the city

based on the installation of sensors in waste bins; sensor information plus urban information (Open Data) are processed in the Ferrovial Services analytical platform using predictive analytical models.

RED**IoT** + **OPEN DATA**

F5 analytical platform

IoT city platform

URBAN DATA
- City Data (Open Data)
- Weather Data

URBAN DATA

IoT INFRASTRUCTURE

Technology, methodology and quality

This system enhances citizens' living standards, improves service quality and minimises its environmental impact

The technology makes it possible to develop a methodology for using data analysis in municipal services, and it is scalable, meaning it can be used in other types of waste and other services

technology
environment
living standards
service quality

RED**IoT**

IoT network deployed in the city of Granada

420 sensors installed in bins
They provide information on fill level, temperature, inclination and incidents (fire/vandalism)

75% coverage of Granada

LoRa

5 GATEWAY antennas
Reception of sensor data (LORA protocol)

Sensor unit management

Cisco Kinetic
cutting-edge platform for managing IoT networks

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OPEN DATA

Inclusion of urban data
Weather, traffic, events, etc.

FS data analysis platform

Analysis of sensor fill data + urban data (Open Data)
Generation of predictive analytical models and algorithms for selecting bins

Dynamic waste collection

Predictive selection of bins and generation of optimal waste collection routes

Transmission of optimised routes
Trucks receive optimised routes in order to offer a better quality service with a lower environmental impact