

## CASE STUDY

# INTELLIGENT TECHNOLOGY FOR WASTE CONTAINERS AUTOMATIC IDENTIFICATION FOR TRACKING AND TRACEABILITY IN ENVIRONMENTAL SERVICES

Versione 1.0

**CUSTOMER**  
HERA GROUP

**SECTOR**  
UTILITIES

**APPLICATION**  
AUTO-ID

**TECHNOLOGY**  
BARCODE and RFID

**PARTNER**  
OMNI-ID

### COMPANY

Set up in 2002, Hera (Holding Energia Risorse Ambiente) is the first Italian national agency to combine local council owned utility companies (11 companies operating in Emilia-Romagna) to create a single multi-utility agency that operates as a fully qualified public services enterprise. With its 8,500-strong workforce, the Hera Group is one of the primary multi-utility agencies in Italy, operating in 181 municipalities in Emilia-Romagna and Tuscany, 95 in Friuli Venezia Giulia, 62 in Marche and 20 in Veneto. The group supplies energy (gas and electricity), water services (supplies, drains and water treatment) and environmental services (waste collection and disposal) to more 4 million residents.

The multi-utility agency, which has its headquarters in Bologna, is listed in the Midex segment of the Italian stock exchange.  
Site: [www.gruppohera.it](http://www.gruppohera.it)

### NEEDS

The Hera Group has opted for technological innovation to optimise the quality of its services. How? By introducing a new tracking and traceability system to support environmental services management to guarantee perfect compliance with the requirements of the process in

terms of efficiency and effectiveness. The project was developed thanks also to the support of

two high-tech vendor companies specialised in automatic identification: Omni ID and Tenenga.

### SOLUTIONS

The service is engineered using a combination of RFID tags fitted to road waste containers and UHF scanners mounted on collection vehicles or hand-held scanners used by collection crews. Tenenga has supplied more than 200 thousand RFID tags for this service. The choice of hardware fell on EXO 800 transponders whose characteristics make them suitable for use on plastic and metal substrates. The sealed and extremely rugged tags are ideal for use in harsh environments and are fully compliant with MIL STD 810-F military standards (for enhanced stress-resistance during deployment in the field). Protection against water and dust infiltration is guaranteed by the IP68 protection rating. Introducing a reading system for automatic identification, each bin, crane-lift igloo, road container and dumpster is equipped with a tag (secured to the exterior with special rivets for easy scanning). From now, waste collection containers have got smart: when the collection vehicle arrives to empty them they communicate their unique identification code to an RFID scanner mounted on the vehicle or to a hand-held device used by the operatives. Thanks to the availabi-



lity of additional support instruments equipped with GPS systems, the exact position of the containers can be logged, together with chronological information concerning the collection time. This allows collection activities to be logged and made available to a central computer system for rapid and accurate accounting of services provided. With secure RF identification, service data can be rapidly processed and analysed, assisting in efforts to maximise service effectiveness and efficiency.

### benefits

- Automation of processes
- Identification and geolocation of each container
- Streamlined and accurate field data processing and accounting
- Tracking and traceability of all information logged
- Constant efforts to maximise service efficiency and effectiveness by analysing incoming data
- Compliance with normative requirements

