ADAMBÌ
green innovation

A GENERATION AHEAD

www.adambi.com

OUR SOLUTIONS

Smart Waste Bins • Management Software
Environmental Monitoring • Custom solutions

ADAMBÌ
green innovation

THE MANAGEMENT OF WASTE AND THE ENVIRONMENT

Territorial diversity, variety of collection systems, vehicle and container types, productivity and cost optimization…

Every waste management company **faces specific issues** that vary according to the type of users and their territorial distribution.
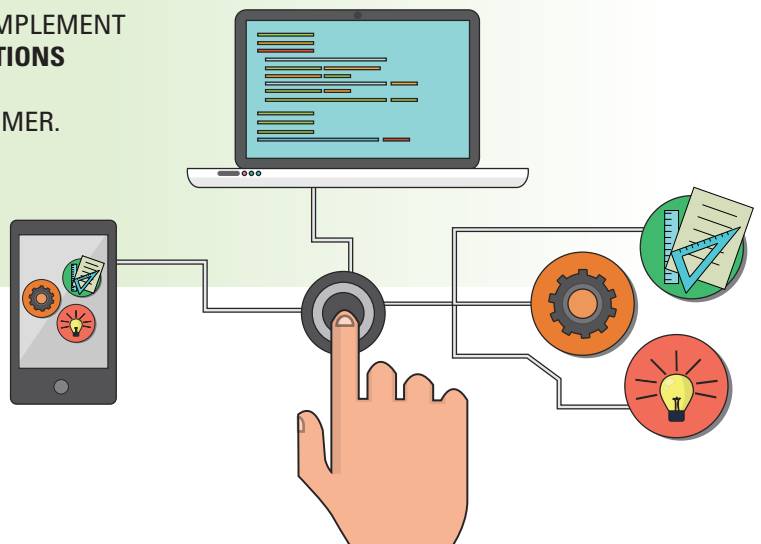**Managing different waste collection and fee systems, and complying with the constraints given by the territory and the sorted waste collection targets: these are the challenges that waste management companies have to face.**

THE ADAMBÌ SOLUTION

Our experience comes from Adgenera, a technological research and development company with many years of experience in designing and creating advanced solutions in the automotive, logistics, transport and industrial automation sectors, all the way to the most modern applications of the so-called Factory 4.0. Aware of the complexity to be managed, we have transferred the research and technological development know-how of Adgenera to the waste management sector.

TAILORED SOLUTIONS

- **THE COMPLETENESS AND FLEXIBILITY** OF OUR PRODUCTS ALLOW US TO SATISFY CUSTOMERS' REQUIREMENTS.

- UPON REQUEST, WE DESIGN AND IMPLEMENT **SOFTWARE AND HARDWARE SOLUTIONS** THAT RESPOND TO A PARTICULAR AND SPECIFIC NEED OF OUR CUSTOMER.

- OUR ENGINEERING BACKGROUND ALLOWS US TO GUARANTEE **RESULTS AND RELIABILITY**.

ADAMBÌ
green innovation

WHY CHOOSE ADAMBÌ?

Users, containers, resource and fee control and environmental monitoring: all connected in an integrated ecosystem.

Adambì was born from the idea of applying the most modern technologies to waste collection systems, aiming to:

- **provide a complete and reliable solution** that guarantees a high return on investment and **adapts to every context** (**street**, **condominium** and **door-to-door collection systems**);
- **integrate flexibly with existing systems**, including those from third parties (bins, vehicle fleets, RFID systems, software systems, etc…);
- **increase productivity**, offering a complete «dashboard» for the planning and monitoring of users, resources and vehicles on the territory;
- **significantly reduce the logistical costs of collection**, thanks to:
  - detection of actual fill level of individual containers;
  - optimization of collection rounds;
  - resource control;
- **significantly increase sorted collection**, empowering users in a simple way;
- **simplify the detection and quantification** of the waste produced by each individual user;
- **enable and manage any fee system** (even PAYT) for the services, both in the case of door-to-door collection and street collection;
- Adapt to regulations by introducing **usage-based pricing**.

Saving time and fuel

THE ADAMBÌ ECOSYSTEM

Adambì is the ecosystem of advanced and reliable technologies to organize, control and optimize waste management services and environmental monitoring.

SMART WASTE BINS RM

Reliable, lightweight and accurate for street and condominium collection. RM operates in underground containers too.
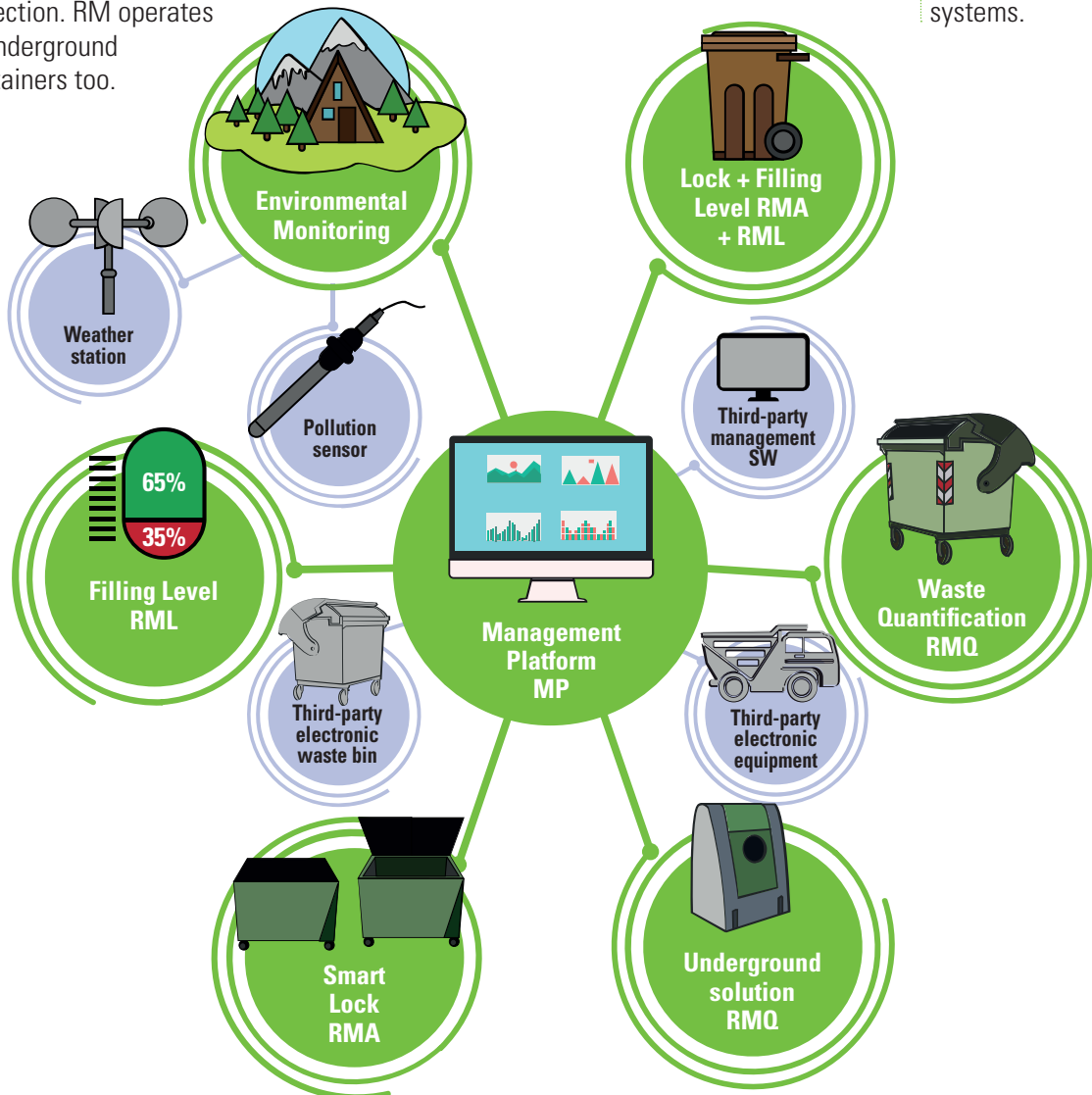
MANAGEMENT SOFTWARE MP

The easiest to use, modular, complete, open and integrated.

ENVIRONMENTAL MONITORING

Keep waste collection and disposal sites, landfills and territory under control.

CUSTOM SOLUTIONS

Our experience in designing «tailored» systems.

- Weather station
- Environmental Monitoring
- Pollution sensor
- Filling Level RML — 65% / 35%
- Third-party electronic waste bin
- Smart Lock RMA
- Management Platform MP
- Lock + Filling Level RMA + RML
- Third-party management SW
- Waste Quantification RMQ
- Third-party electronic equipment
- Underground solution RMQ

ADAMBÌ
green innovation

SMART WASTE BINS RM

The most advanced waste detection system: fast, precise and indestructible.

RM is the most advanced range of smart bins equipped with a patented and innovative, fast, precise and indestructible optical technology.

RM can be installed on bins of various sizes, from trash cans to 3200 litres, on waste collection banks and underground containers.

ROBUST AND INTUITIVE TECHNOLOGY

Thanks to the use of light waves, **there is no contact between the waste and the sensors**: this completely avoids any wear, blockage and jamming. The user has no trouble using it because the deposit takes place naturally: the user opens the lid and drops the bags. The RM smart bin has the appearance of a normal bin.

The installation is fast and requires no special adaptation: no civil works are necessary, neither any connections to the power grid nor changes to the means of collection.

Washing RM bins is not different from washing a regular waste bin. **RM technology is waterproof** and easily washable with the bin itself.

RM PRODUCTS

The RM smart bins offer a **comprehensive range** of products that meet the need to control, improve and make waste collection and management more efficient:

- **RML Level Sensors**
- **RMQ Waste Quantification**
- **RMA Smart Locks**

RM is the ideal solution for street and condominium waste bins, it allows to obtain the control of conferments and the quality of collection typical of "door to door" with extremely low operating costs.

RML LEVEL SENSOR

RML is the ideal solution for reliably monitoring **the fill level** of waste bins of any size and shape.

RML can be installed easily **in a few minutes**, **does not require maintenance** and provides immediate benefit for the Waste Collection Company.

The data collected and processed on the management platform allow it to:

- **Constantly monitor the filling level** of all bins on the territory from a single application.
- Set a **custom threshold** of "bin almost full alert".
- **Schedule emptying** only almost full containers.
- **Save time and fuel** during waste collection by optimizing the emptying frequency and the vehicle routes.

MEASUREMENT RELIABILITY

The patented optical technology integrates the most advanced algorithms to allow a reliable measurement in any bin, **even in the presence of bulky or irregularly shaped waste**.
While traditional products calculate the fill level on the basis of the waste closest to the sensor, RML is able to combine information from a large area and generate an **accurate measurement**.

QUICK INSTALLATION

RML can be easily installed under the lid or along the edge of any waste bin, waste bank, underground or semi-underground container.

There's no need to buy a new waste bin, RML works **both in new containers and in those already in use**.

RML does not require complex calibration: once installed it is **ready for use**.

The sensor **autonomously learns** the shape of the bin it's installed in. It calculates the filling level even in inclined containers or with unconventional shapes.
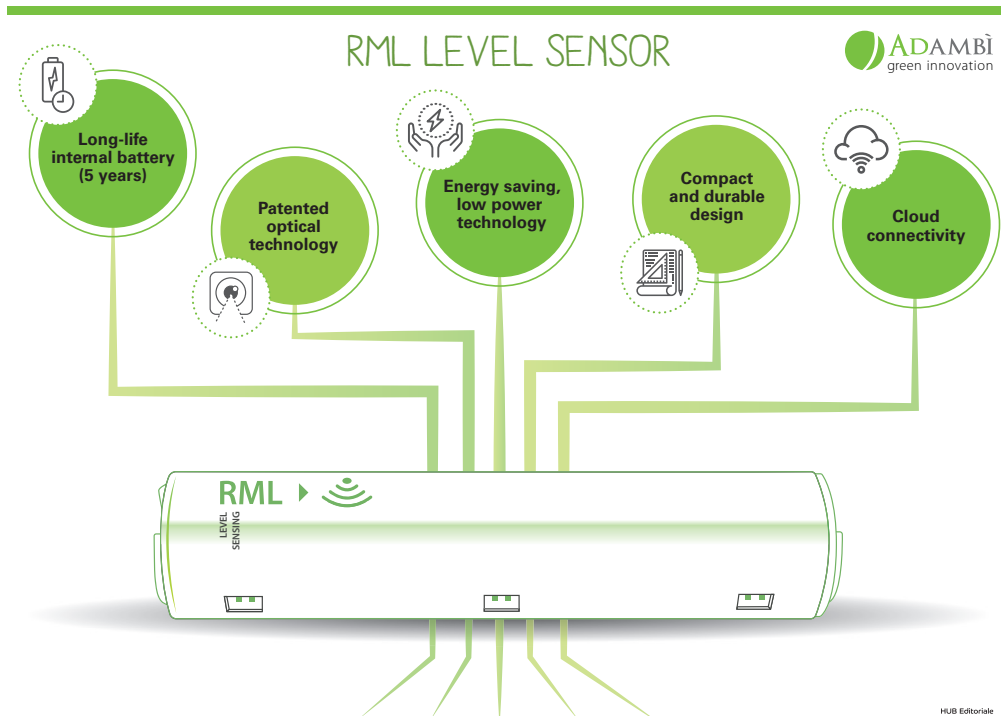
FLEXIBLE USE

RML starts up in a few minutes, withstands the bin emptying and high pressure washing and is powered by the internal battery, designed to last several years.

RML, like any Adambì product, is **integrated with the MP management software**.

The software easily shows the data recorded by the sensors and, if necessary it transmits data to a third management system.

RML is available in different models to fit any waste container.

RML LEVEL SENSOR

- Long-life internal battery (5 years)
- Patented optical technology
- Energy saving, low power technology
- Compact and durable design
- Cloud connectivity

RML ▶ LEVEL SENSING

HUB Editoriale

RMQ WASTE QUANTIFICATION

RMQ is a **smart bin** that allows the deposit of waste by authorized users only, identified through an electronic key.

RMQ is able to **quantify** the waste produced by each user, to record the deposit data and to transmit it securely to the management platform.

Thanks to RMQ, every container:
- **identifies the user** by an electronic key (RFID tag, magnetic card or smartphone);
- **detects precisely the volume of deposited waste** using an optical scanner;
- **communicates** individual deposits in real time;
- **measures** accurately the fill percentage of the container, communicating with the Service Operator to optimize the collection routes;
- **interfaces with the Adambì management software** or with third-party systems.

The amount of waste is linked reliably to the user who has deposited it, is registered internally and is sent to the server through an encrypted connection.

These data allow:
- the **optimization** of container emptying;
- the evaluation in **real time** of the waste production progress;
- the detailed **monitoring** of user behaviour;
- the application of the **detailed "pay as you throw" (PAYT)**.

ADVANCED TECHNOLOGY

The usage of the patented optical technology, in addition to making RMQ products reliable and durable, offers many advantages for the Management Company:

- Allows emptying the bins with the **existing collection vehicles**, without any modification.
- Suitable for **any type of bin**, of any size and material, even for already in use bins.
- Minimizes maintenance and operating costs.
- Appreciated by users because it is simple and natural to use.

The optical sensor is light and small, integrated into the bin's lid, completely protected and invisible when the bin is closed to prevent vandalism and tampering.

FLEXIBLE SOLUTION

The Waste Management Company may choose the tool with which the user identifies himself to unlock the lid of the RMQ bin (RFID tags and cards, Smartphones, magnetic cards or other systems agreed with the Company).

Furthermore, the product can be tailored in terms of:

- Acoustic and visual alerts for the user.
- **Alerts in real time** regarding any anomalous user behaviour.
- Maximum fill level of the bin.

Like any Adambì product, RMQ can connect to the MP management system or to other third-party management systems, transmitting the data of the deposits directly to the latter.

PAY AS YOU THROW SYSTEM

RMQ is the solution for the **pay as you throw application**, the waste tax based on the amount of waste produced by each user.
Municipalities which implemented this waste tax shown that the PAYT can actually achieve the main goal of **reducing the production of residual waste**. The system allows waste to be considered as a new resource.
Adambì's waste quantification system is the ideal product to pursue the aim of creating less waste, a goal which is becoming everyday more crucial.

RMA SMART LOCKS

RMA **controls the opening of the waste bin lid**, allowing the container to only be used by users authorized by the Management Company; it is safe, reliable and suitable for any type of bin, it can be installed on new bins or on those already owned by the Management Company. The Waste Management Company may **choose the tool with which the user gets identified** to unlock the lid of the RMA bin (RFID tags and cards, Smartphones, magnetic cards or other systems agreed with the Company).

REMOTE CONTROL

Through the webpage, it is possible to configure the users enabled to open each waste bin, so that the Management Company can best meet its needs.
The user assignment scheme can be changed quickly from the configuration page, without having to change the electronic keys distributed to the users and without manually updating the bins equipped with RMA.
This makes it easy to manage new users, terminating or transferring them, optimizing the distribution of containers over the territory, and keeping the deposits under control.

RELIABILITY AND FLEXIBILITY

RMA integrates a **durable electronic lock** able to keep the lid closed even if it is repeatedly forcibly lifted: this is possible thanks to the metal parts built to resist opening attempts. RMA is designed to be safe for users and for the operators in charge of emptying the bins, intuitive and easy to use, suitable for small or large bins with manual or pedal-operated opening. The particular design prevents the accumulation of waste or liquids and lets RMA be washed normally, thanks to the **waterproof feature of the lock and the entire electronic system**.

![ADAMBÌ green innovation]

MP MANAGEMENT SOFTWARE

Modular, complete and customizable. The management software adapts to the needs and is "open" to integrate with third-party solutions. **Adambì management software is the core of the ecosystem of technologies and resources used in waste management and environmental monitoring**.

WASTE COLLECTION AND USERS MANAGEMENT

- **complete management** of the waste collection and fee process (user registry, bill calculation, collection schedule);
- **dynamic optimization** of the collection routes;
- **fee schedules** (conventional, PAYT or even multiple schemes at the same time, differentiated by users);
- **monitoring of the data** regarding waste deposits and bin filling;
- reporting of **anomalous user behaviors** (deposit of bulky material, excessive or very low production, etc…).

THE ADVANTAGES

- It is **practical** and **intuitive**, with customizable and easy to navigate screens.
- It is **modular** and **scalable**, following the evolution of the Customer's needs.
- It **optimizes investments**, because it also connects with devices and software that are already available. It is designed to communicate with collection and monitoring systems. It provides a **single interface**, a complete "dashboard" for scheduling and managing the entire waste collection system and the environmental monitoring.
- It improves efficiency and **reduces management costs**.

Moreover, all the **data are centralized**: in this way all the modules that compose the software automatically share the information without manual reporting. MP is a Web application accessible from any device (PC, tablet, smartphone) without the need for installations or configurations.

MP MANAGEMENT SOFTWARE CAN INTEGRATE WITH THIRD PARTY SOLUTIONS

MP is modular and customizable: **it can integrate with third party solutions**.
Customers using a management system to handle parts of the waste collection process are not required to replace the system they are used to!
MP adjusts to customer›s needs to facilitate her/his work.

RICICLATA

ADAMBÌ
green innovation

Adgenera Srl

Corso Unione Sovietica, 612/3/d - 10135 Torino (Italy)

(+39) 011 199.20.012   info@adambi.com   www.adambi.com