

# RFID & TELEMATICS SOLUTIONS



**RFID / COST-EFFECTIVE AND  
TRANSPARENT WASTE COLLECTION**

MOBA-AUTOMATION.DE

# RFID & TELEMATICS SOLUTIONS IN THE DISPOSAL SECTOR

## COST-EFFECTIVE, EFFICIENT, TRANSPARENT

**Since its introduction in 1992, the established pioneering system for identifying waste containers has constantly been developed to include new features that make day-to-day disposal easier.**

Whether by means of innovative hardware developments or process-optimised software upgrades, MOBA's RFID and telematics solutions are ever-evolving in order to lay the foundation for forward-thinking concepts such as 'smart cities'.

The basic principle is simple: transponders on the waste containers and transponder readers on the vehicles are used to identify the containers automatically during the emptying process. The emptying data are then sent via telematics and are available immediately in the office for further administrative processing.

The **RFID and telematics** solution can easily be upgraded with an additional weighing scale at any time.



### ADVANTAGES

- » Indisputable emptying-data acquisition thanks to system certification by the German Federal Office for Information Security (BSI)
- » Planning, preparation, delivery, installation plus maintenance and premium service from a single source
- » Experience from hundreds of successfully realised projects guarantees smooth system introduction
- » Modular structure and upgradability of system thanks to CleANopen-enabled devices
- » Solutions optimised to suit the disposal market as all devices are developed entirely in-house
- » High service standard thanks to online remote maintenance and diagnosis

# WHAT GROUPS CAN BENEFIT FROM USING **RFID & TELEMATICS SOLUTIONS** FROM MOBA?



## **MUNICIPALITIES**

- » Indisputable and automatic measurement of emptying processes
- » If containers have been made available illegally, they are located rapidly and legitimately excluded from disposal
- » Complete control over the correct collection schedule and repeated provision of containers
- » Transparency in the collection processes through online transmission of emptying data and obstacles recorded by the driver
- » Improved service, as information can be provided promptly if enquiries or complaints are received from citizens
- » Option of changing to billing by individual container provision



## **DISPOSAL COMPANIES**

- » Profit increase from raw materials thanks to repeated recycling
- » Transparenz über alle Vorgänge während der Abfuhr
- » Optimisation of routes and services on the basis of documented routes and reliable service data
- » Exact and indisputable proof of services provided thanks to automatic data acquisition
- » Considerable time savings, as follow-up processing of orders is no longer necessary
- » No repeat journeys due to unjustified complaints



## **CITIZENS**

- » Exact proof of emptying with date and time
- » No subsidisation of illegally provided containers
- » Exact and prompt information in response to enquiries or complaints
- » Blocking and rapid location of stolen containers
- » Billing models with special consideration of usage-based fee principle



## ON-BOARD COMPUTER **MOBA OPERAND**



The rapid **MOBA Operand** with quad-core processor displays both order and measurement data directly in the driver's cab and makes them available for immediate processing. Thanks to the open operating system WindowsCE, the on-board computer is compatible with all common management software and can be incorporated into any installation quickly and easily.

The significant reduction in administrative workload by means of automatic data digitalisation not only saves paper but also results in considerable time and cost savings. The data entry workload and the errors this can involve are reduced to a minimum thanks to user-friendly predefined selection lists. Additional assistance systems such as truck navigation software and sorting of the orders by time and distance offer drivers even more convenience and speed up order fulfilment.

### **CAN-GATEWAY CG-1**

- » Acquisition of GPS positions and other data
- » Online data transmission to a central data server
- » Identification system and a weighing scale can be connected
- » Various interfaces including two CAN and digital inputs and outputs



01

### **IDENTIFICATION PROCESSOR IDC30**

- » Reader for LF transponders (125 and 134.2 kHz) and UHF transponders
- » Up to four antennas can be connected
- » Enables high read ranges
- » Can be used in harsh environments



02

### **TRANSPONDERS**

- » LF transponders (125 and 134.2 kHz) and UHF transponders
- » Packed in special housing for various application fields
- » Robust design and long service life



03

### **ANTENNAS**

- » Antennas for LF or UHF identification
- » Application-specific housing and shapes
- » Robust, designed for long-term use



04

### **HANDHELD READER BTR-2**

- » Straightforward reading of transponders and bar codes
- » Wireless data transmission to on-board computer
- » Simple one-button operation
- » Handy and compact



05

### **ON-BOARD PRINTER**

- » Create receipts and other documents on site
- » Enables immediate payment collection



06

# MUNICIPAL WASTE DISPOSAL

## MAWIS – LESS EFFORT, GREATER PROFITABILITY

The reliable, fully automatic container identification system MAWIS has proven its worth across Europe for over 20 years. The rapid, straightforward identification and weighing of waste containers of all types optimises the disposal process and provides crucial advantages for both municipalities and waste disposal companies.

Fees can be charged for containers that are provided illegally and at the same time, costs can be saved in the case of needs-based provision of containers. The increased transparency in the disposal process saves considerable time because of efficient route optimisation for the vehicles and effective complaints management.

### ADVANTAGES

- » Transparency in collection processes
- » Options for intervention, by means of block lists, etc.
- » Optimisation of routes and services
- » Improved service thanks to prompt provision of information
- » Option of changing to billing by individual container provision
- » Greater flexibility, as the system can be upgraded at any time thanks to open CANbus interface

## SOFTWARE APPLICATIONS

THE PERFECT SOLUTION FOR ANY APPLICATION

### SERVER-CLIENT SOFTWARE SOLUTION

- » Container management
- » Route planning
- » Fleet management
- » Vehicle tracking
- » Incident management
- » For various reporting tools

The software is based on the fee schedule, can be used for stationary applications with usage-based billing.

### WEB-BASED SOFTWARE SOLUTION

Billing documents can be accessed at any time from any location in any browser.



# BACKEND SOLUTION FOR WASTE MANAGEMENT



# COMMERCIAL WASTE DISPOSAL

## CIAS - MAKING BUSINESS PROCESSES MOBILE

Our automation solution for commercial waste collection enables on-board computer-assisted order processing on the vehicles and therefore a closed electronic process chain with semi-automatic and error-free data acquisition. The orders are sent directly from the existing

ERP system to the vehicles and can then be processed by the driver and sent back to the ERP system. Matching the container-related services to the corresponding users precisely is supported by additional identification technology. Where possible, the identification process is fully automated.

The driver is supported by various assistance systems such as lorry navigation, and the display and sorting of orders by various filter and search criteria. The driver enters data on the basis of predefined selection menus, which minimises entry errors.

### ADVANTAGES

- » On-board computer-assisted, electronic order processing
- » Minimisation of workload and data acquisition errors
- » Automatic matching of services and orders
- » Greater transparency in collection processes thanks to driver assistance
- » Improved vehicle management and route optimisation
- » Greater flexibility, as the system can be upgraded at any time thanks to open CANbus interface







# MOBA MINI-OPERAND

## MOBILE DATA ACQUISITION DEVICE (MDA) AND VEHICLE COMPUTER **IN ONE**

With the Mini-Operand, it is now possible for the first time to fulfil all requirements for on-board computers permanently installed in the vehicle as well as those for mobile data acquisition devices (tablets) in one device.

### IN THE VEHICLE

The Mini-Operand is fixed in the vehicle in a cradle holder. Two CAN bus connections enable direct connection and simultaneous use of, for example, CleANopen devices (identification system, weighing scale) and access to FMS chassis data or data from a digital tachograph. The usual driver assistance applications are available as apps, such as order display/processing, truck navigation and replacement driver guidance.

### FOR MOBILE USE

For mobile use, the functions photo capture, signature recording, transponder identification (LF and, for example, 'production data acquisition transponder' and UHF) and bar code identification can also be used as part of order processing.







## MOBA MINI-OPERAND

### OEM-SUPPORT

For software vendors and computer re-tailers, a software development kit (SDK) is provided for all installed scanners and the CAN support.





# MOBA SOFTWARE

## WASTE MANAGEMENT MADE EASY

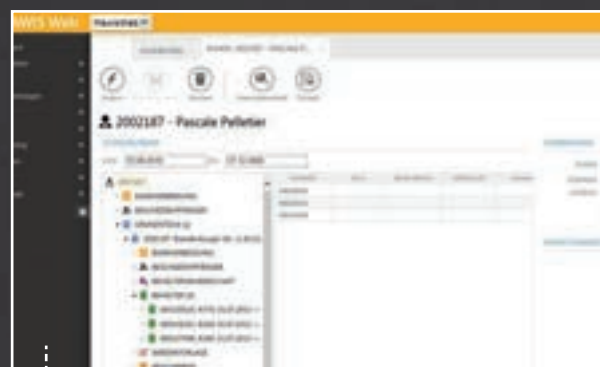
### OVERVIEW OF MODULES

- » Container management
- » Route planning in table and graphic form
- » Fee assessment
- » Container change service
- » GIS functions and evaluations
- » Statistics
- » Bulky waste management
- » Organising large residential complexes
- » Animal carcass disposal
- » Waste calendar
- » Remote access
- » Incorporation of MS Office applications

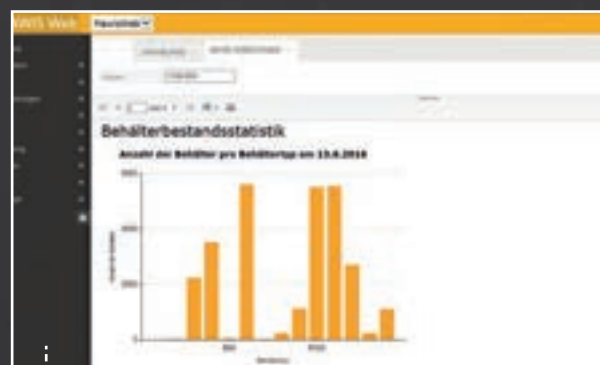
#### CONTAINER CHANGE SERVICE

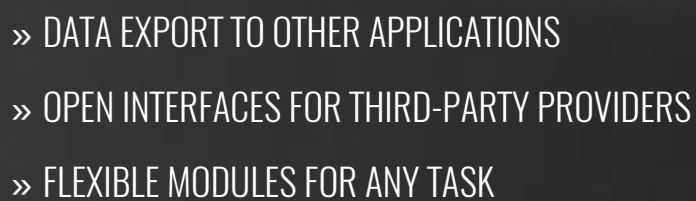


#### CUSTOMER DATA MANAGEMENT



#### STATISTICS





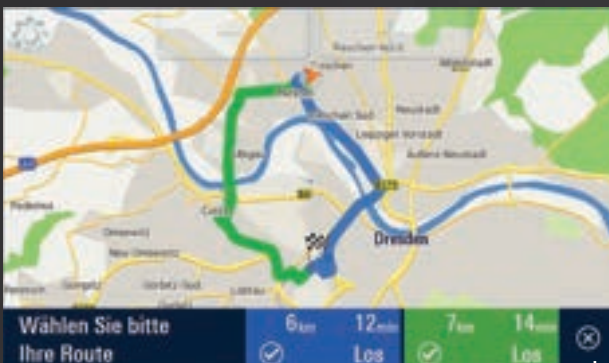
## Silver Data Platform

# TELEMATICS

## A SCHEDULE FOR SUCCESS

### OVERVIEW OF FUNCTIONS

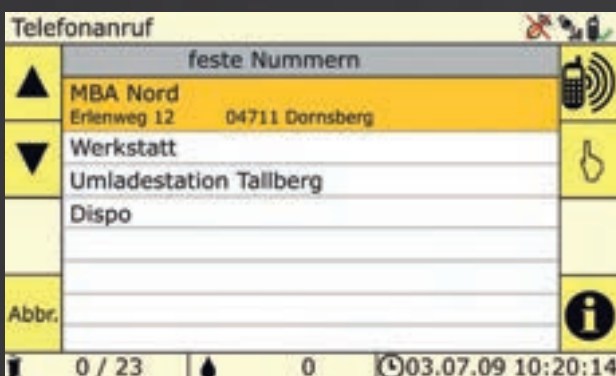
- » Order display and processing
- » Recording of routes
- » Truck navigation and driver guidance by means of master routes
- » Vehicle data acquisition and recording
- » Radio data transmission & telephony and camera integration
- » Integration of assistance systems from other vendors



NAVIGATION



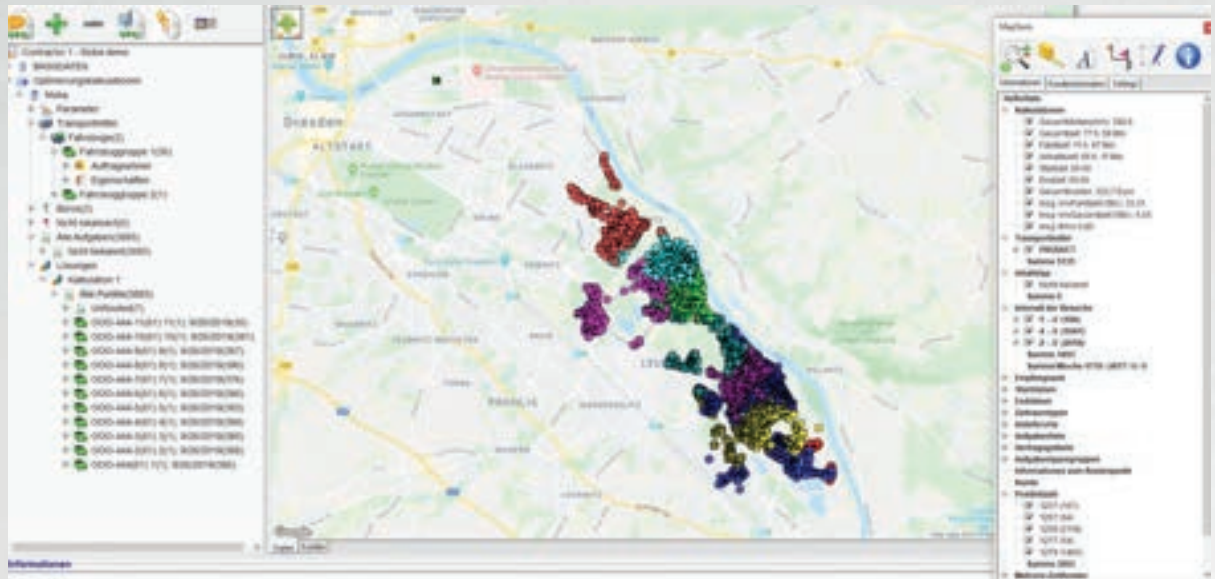
RECORD ROUTES



TELEPHONING



# INTELLIGENT REGION AND ROUTE PLANNING



## THIS KNOW-HOW CAN BE ACQUIRED BY MEANS OF VARIOUS MODELS

1

### **Service and support package:**

ideal for one-off planning of a new disposal area

2

Once the parameters have been jointly defined, they can be used together with the software as a web solution for regular and sporadic corrections to planning (region and route)

3

Software licences for permanent use

# YOUR EXPERTS WORLD-WIDE

//// MOBA HEADQUARTER  
//// MOBA SUBSIDIARY



## MOBA GROUP

The **MOBA GROUP** is a leading global player in the world of mobile automation. Close collaborations between the headquarters in Limburg an der Lahn and subsidiaries all over Europe, Asia, North and South America create new perspectives for recent and future developments.

Superior technical know-how and more than 40 years of experience combined with an international dealer network guarantee a premium support – **worldwide. INSPIRING MOBILE AUTOMATION** - this is what the **MOBA GROUP** stands for since more than **40 years**.

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