



RFID & TELEMATICS SOLUTIONS

MOBA®
MOBILE AUTOMATION

RFID & TELEMATICS SOLUTIONS IN THE WASTE MANAGEMENT SECTOR

ECONOMICAL, EFFICIENT, TRANSPARENT



Since its implementation in 1992, the established pioneering system for the identification of waste containers has constantly been growing with new features that facilitate waste collection every day.

Whether through innovative advancements in the hardware or process-optimizing software upgrades, MOBA's RFID and telematics solutions are constantly changing in order to lay the foundation for future-oriented concepts, such as the Smart City.

The basic principle is simple: By means of transponders on the waste containers and RFID readers on the vehicles, the containers are automatically identified during the emptying. Data on the emptying are transmitted via telematics and immediately get available in the office for further administration.

The RFID and telematics solution can be extended anytime and without great effort with an additional mobile scale.

BENEFITS:

- » Legally certain emptying data acquisition thanks to the system certification by the Federal Office for Data Security in Information Technology (BSI)
- » Planning, preparation, supply, installation, maintenance and premium service from a single source
- » Experience of hundreds of successful projects guarantee a smooth system implementation
- » Modular design and expandability thanks to CleANopen-capable components
- » For the waste management market optimized solutions through full in-house development of all devices
- » High service standards through online remote maintenance and diagnostics

TO WHOM ARE **RFID & TELEMATICS SOLUTIONS** OF MOBA INTERESTING?

MUNICIPALITIES

- » Legally compliant and automatic detection of emptying
- » Quick locating of illegally provided containers and their justified exclusion from disposal
- » Absolute control over the proper discharge cycle and the multiple provision of containers
- » Transparency of the processes involved into the waste collection by online-transmission of the emptying data and by preventions detected by the driver
- » Improved service thanks to prompt provision of information on inquiries and complaints by citizens
- » Option to convert billing according to individual container provision

WASTE DISPOSAL COMPANIES

- » Increased raw material profits through increased recycling
- » Transparency of all transactions during the waste collection
- » Touring and performance optimization using recorded tours and reliable performance data
- » Exact and indisputable proof of performance thanks to automatic data recording
- » Significant time savings since a reworking of orders is omitted
- » No second rides caused by unjustified complaints

CITIZENS

- » Exact emptying proof with date and time
- » No co-financing of unlawfully provided containers
- » Accurate and prompt information on inquiries and complaints
- » Locking and fast retrieval of stolen containers
- » Billing models with special consideration of the polluters pays principle (pay-as-you-throw)

On the fast MOBA Operand with quad-core processor both order and measurement data are directly shown in the driver's cab for immediate processing. Thanks to the open operating system Windows CE the board computer is compatible with all current management softwares and can be straightforwardly and time-efficiently be integrated into any installation.

The considerable reduction of administrative expenses by the automatic digitization of data not only saves substantial amounts of paper but also guarantees significant time and cost savings. This includes a maximum reduction of time expenses for data entries and associated errors, further supported by the user-friendly setting of selection lists. Additional assistance systems, such as a truck navigation software or the sorting of orders according to time and distance, provide the driver with even more comfort and accelerate order processing.



BOARD COMPUTER MOBA OPERAND ONE FOR ALL

BENEFITS

- » Designed specifically for the use on waste collection vehicles
- » Proved component, used in thousands of vehicles
- » All relevant certificates on the waste collection market, like BSI, PTB and E1
- » Open operating systems allows external programming
- » Operation via touch-screen or illuminated and tactile keyboard
- » ASF typical bus interfaces CAN, supporting the CleANopen profile
- » Optimally prepared for the connection with a container identification system and a mobile scale

FURTHER SYSTEM COMPONENT

CAN-GATEWAY CG-1

- » Registration of GPS positioning and additional data
- » Online data transmission to a central data server
- » Connection with an identification system and a mobile scale possible
- » interfaces, such as 2 x CAN as well as digital input and output



01

TRANSPONDER READER IDC30

- » Reader for LF transponder (125 and 134,2 kHz) and UHF transponder
- » Connection of up to 4 antennas
- » Facilitates highest reading range
- » Applicable in harsh environments



02

TRANSPONDER

- » LF transponder (125 and 134,2 kHz) and UHF transponder
- » Packed into a special housing for different applications
- » Robust construction and exceptional durability



03

ANTENNAS

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



04

HANDHELD TRANSPONDER READER BTR-2

- » Quick reading of transponders and barcodes
- » Wireless data transfer to the board computer
- » Easy one-button operation
- » Compact and handy



05

ON-BOARD PRINTER

- » Creating receipts on-site
- » Facilitates immediate fee collection



06

MUNICIPAL WASTE COLLECTION

MAWIS – LESS EXPENSES, MORE PROFIT

The reliable, fully automated container identification system MAWIS has proven itself in more than 20 years of Europe-wide use. The quick, simple identification and weighing of all types of waste containers optimizes the waste collection and offers significant advantages for both municipalities and disposal companies.

By this means, fees can be charged for illegally provided containers and at the same time costs can be saved through a demand-driven provision of containers. The increased transparency of the disposal process saves considerable time since it enables an efficient route optimization of the vehicles and an effective complaint management.

BENEFITS:

- » Transparency of the processes involved into the waste collection
- » Opportunities to intervene via blocking lists, etc.
- » Tour and performance optimization
- » Improved service due to prompt access to information
- » Option to convert billing according to individual container provision
- » More flexibility since the system remains anytime upgradeable thanks to the open CANbus interface





INDUSTRIAL WASTE COLLECTION

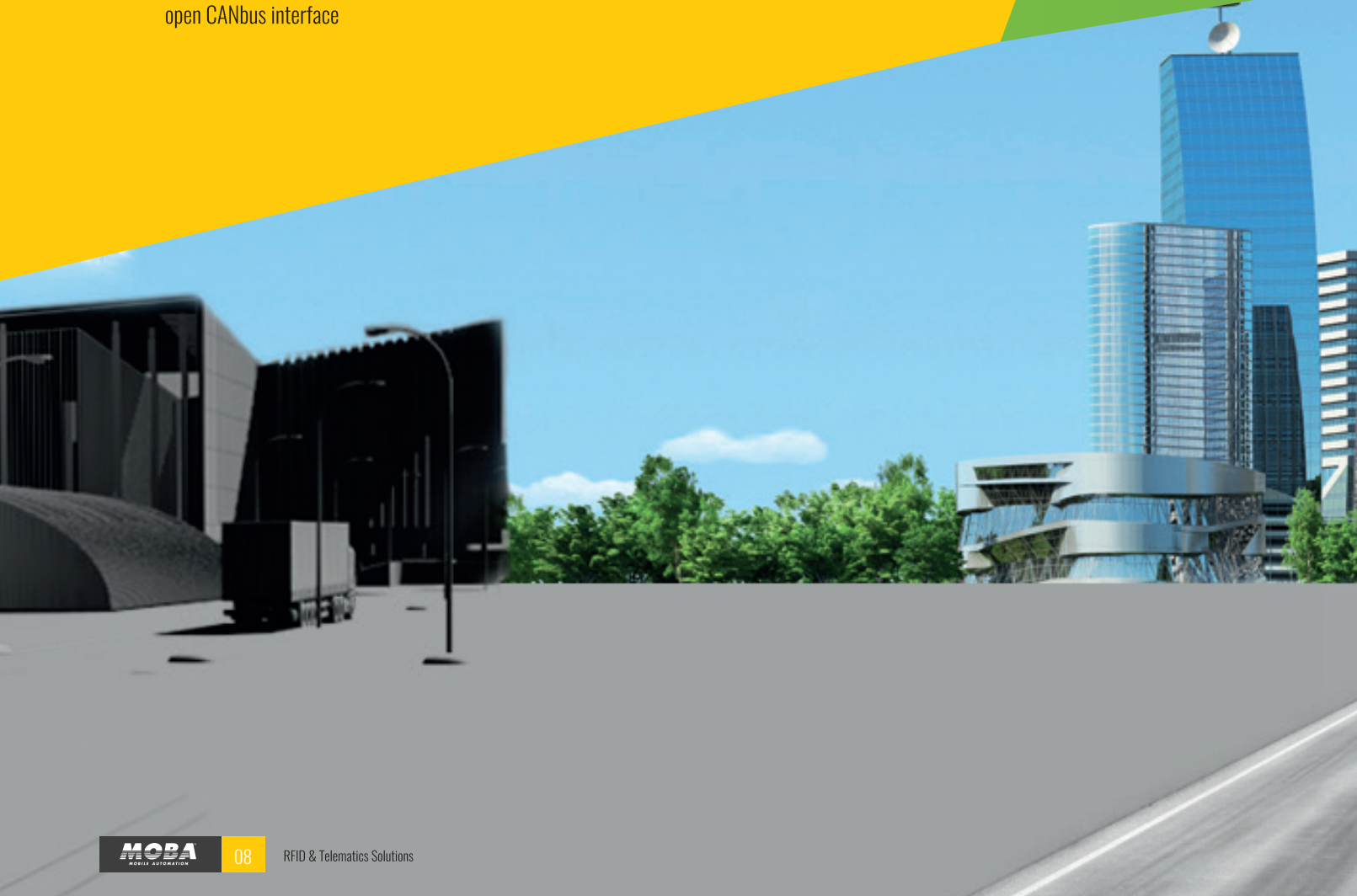
CIAS - MOBILIZING BUSINESS PROCESSES

Our automation solution for industrial waste collection allows an on-board computer-aided order processing in the driver's cab of the vehicle and thus enables a closed electronic process chain with largely automatic and error-free data acquisition. Accordingly, the orders are directly transmitted from the existing ERP system to the vehicles, can then be processed by the driver and sent back to the ERP system. The exact allocation of container-related services will be supported by additional identification technology. If possible, this identification is done fully automatically.

The driver is supported by various assistance systems, such as a truck navigation system or displays and sorting of orders according to a great variety of filters and search criteria. Data entries by the driver take place based on predetermined selection menus, in order to minimize errors.

BENEFITS:

- » Board-computer-aided, electronic order processing
- » Minimization of effort as well as errors in data collection
- » Automatic assignment of benefits to jobs
- » Increased transparency on the collection process due to driver assistance
- » Improved vehicle scheduling and tour optimization
- » More flexibility since the system remains anytime upgradeable thanks to an open CANbus interface





RFID SOLUTION FOR GARBAGE GATES

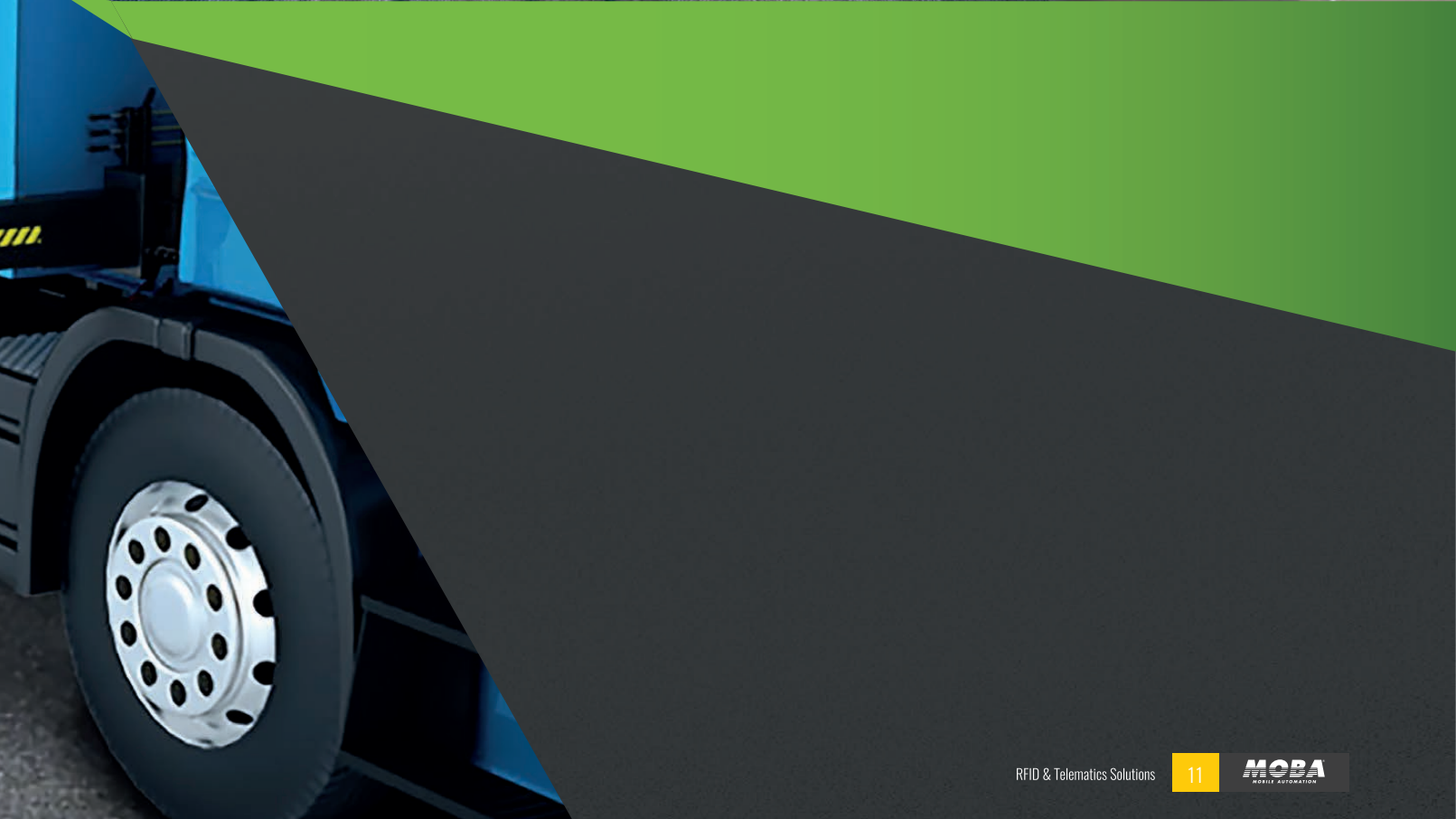
FAIR BILLING OF WASTE DISPOSAL COSTS

RFID solutions provide a meaningful evidence for economic considerations, waste accounting and a fair distribution of disposal fees since they capture and record the waste producer.

To protect the fee justice in residential complexes, refuse locks are equipped with RFID readers, the GWA-system, which require a user identification prior to the insertion of waste. Avoiding foreign use together with the clear documentation of waste origin allow a fair and user-based billing model of waste disposal.

For a central overview of the generation of waste within factories, trade centers, offices or airports, the RFID solution of MOBA records the polluter or cost center of the waste through transponders or barcodes on the waste containers. This supports both disposal companies and originators with keeping the overview.



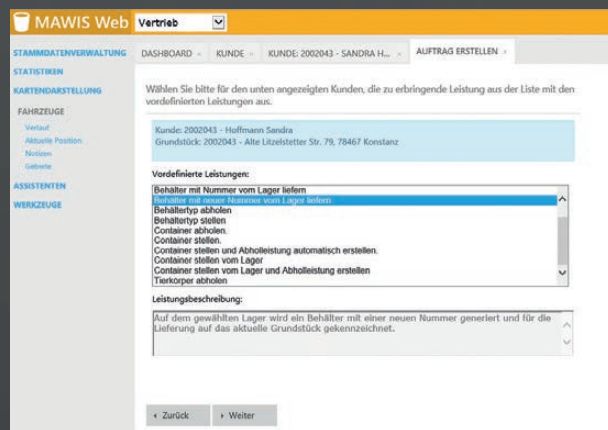


MOBA SOFTWARE

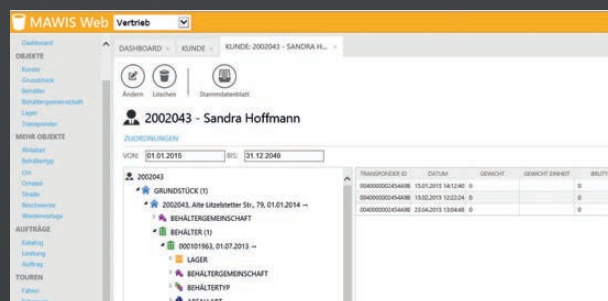
WASTE MANAGEMENT – THE EASY WAY

OVERVIEW OF ALL MODULES

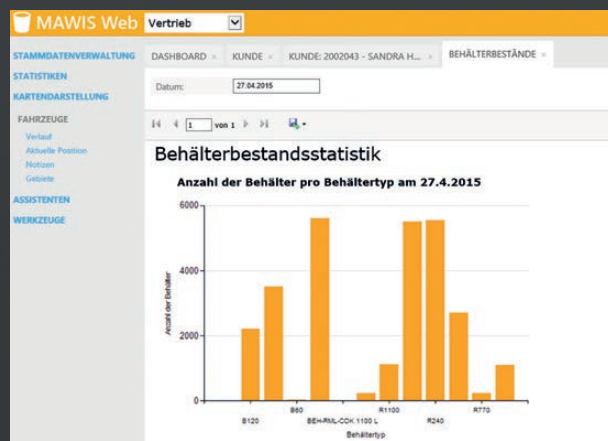
- » Container administration
- » Tabular and graphical tour planning
- » Fee assessment
- » Container change management
- » GIS functions and evaluations
- » Statistics
- » Integration of MS-Office bulky waste
- » Organizing large residential complexes
- » Rendering
- » Waste collection schedules
- » GIS functions and evaluations
- » Remote access



CONTAINER CHANGE MANAGEMENT



CUSTOMER DATA MANAGEMENT



STATISTICS

Microsoft Partner

Silver Data Platform

DATA EXPORT TO OTHER APPLICATIONS

OPEN INTERFACES FOR THIRD-PARTY-PROVIDERS

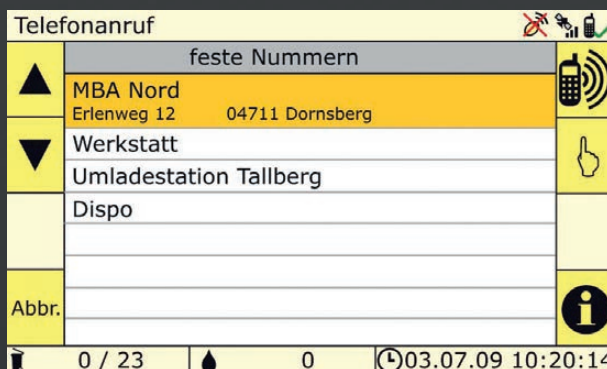
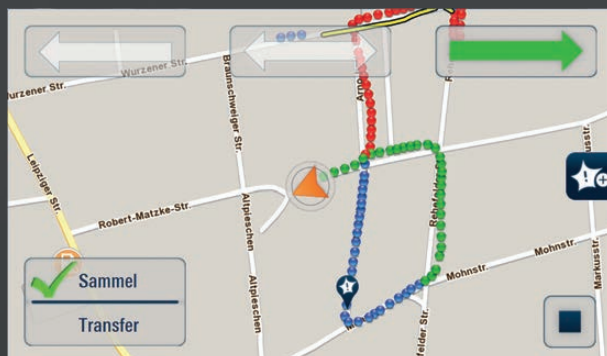
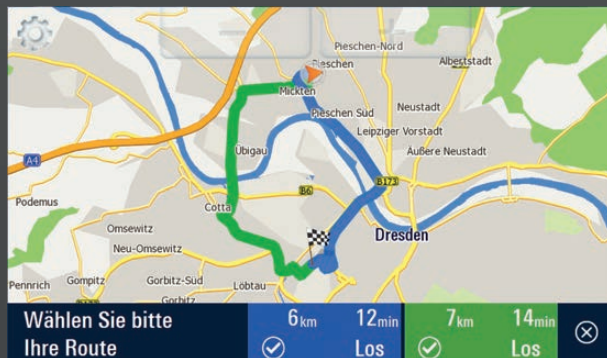
FLEXIBLE MODULES FOR ANY REQUIREMENT



TELEMATICS PLANNING SUCCESS

OVERVIEW OF ALL FUNCTIONALITIES

- » Order display and editing
- » Tour recording
- » Truck navigation and driver guidance by master tours
- » Vehicle data acquisition and recording
- » Data radio
- » Telephony
- » Camera connection
- » Integration of assistance systems of other manufacturers



TOUR RECORDING FOR RESERVE DRIVERS

DATA ACQUISITION FOR THE EXACT OVERVIEW

TELEPHONY VIA THE OPERAND



ONE GROUP - ONE RESPONSIBILITY



◆ HEADQUARTERS ● SUBSIDIARIES ● DEALER

MOBA GROUP

The **MOBA GROUP** is a leading global player in the world of mobile automation. Close collaborations between the headquarter 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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