# Digitalisation in Waste Logistics

Pay-As-You-Throw solution / 13.07.2021

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*Think Tomorrow.*

# AGENDA

**Virtual Information Trip Romania**

**01** CURRENT SITUATION

**03** Romania PayT solution

**02** DISPONDO SOLUTIONS

**04** Outlook into the future

# CURRENT SITUATION

# New environmental directives lead to a change in waste management

**01** **Ongoing contracts with collection companies**
- Need of contractual changes and/or additions to existing contracts
- Adaption of collection capacities (bins, vehicles)

**02** **Monitoring of service and new way of invoicing**
- Precise, reliable monitoring of collection data
- Transparency of waste streams
- Individual, fair and measurable basis for calculation of costs for each household

**03** **Change of residents' behaviour and mind set**
- Marketing campaigns for residents
- Providing transparency to residents
- Introduction of incentive systems to encourage people to do better segregation

# DISPONDO SOLUTIONS
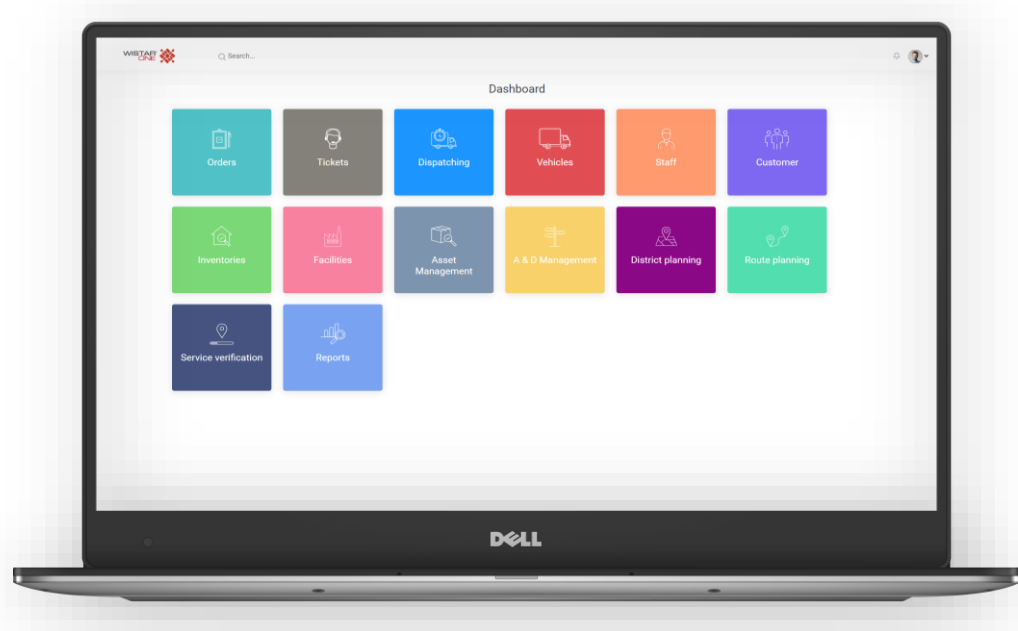
# The System

**DISPONDO**

- Digital waste logistics solution (hard- and software)
- Process reliable recording of collection data
- High process reliability
- Transparent waste collection data
- Measurable and fair data basis for Pay-as-you-throw solutions
- Complete operational waste management solution for disposal companies.

# User Friendly

The simple user interface of the DISPONDO Operations Cloud:

- Minimal onboarding avoiding down-time
- Low resource utilization for training
- Commercial & residential service verification
- Live View of Vehicles
- Ticket system to streamline communication to residents
- Reports to increase transparence of collection
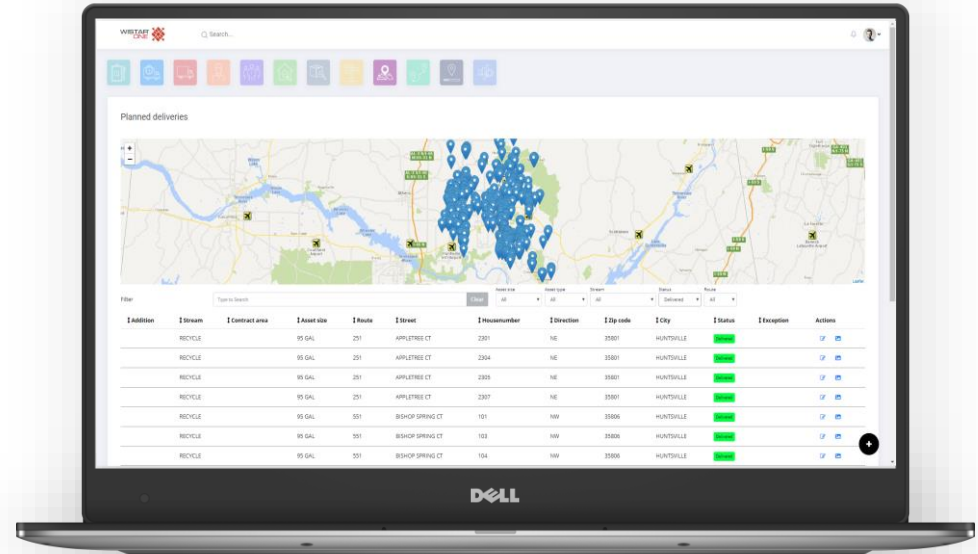- Marketplace for integrating third party solutions

# Assembly and Distribution

**Precise planning, combined with live processing.**

- Comprehensive A&D planning tools
- Managed delivery process
- GPS / RFID tagging
- Barcode tagging
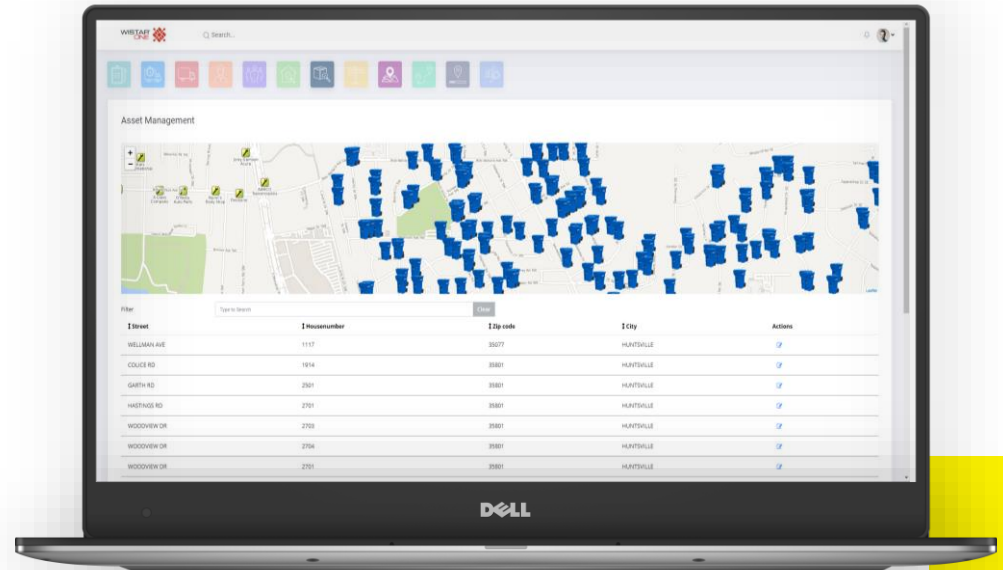- Real-time performance monitoring via DISPONDO Web

# Asset Management

Intuitive Asset Management with integrated mapping functionality to visualize deployed assets.
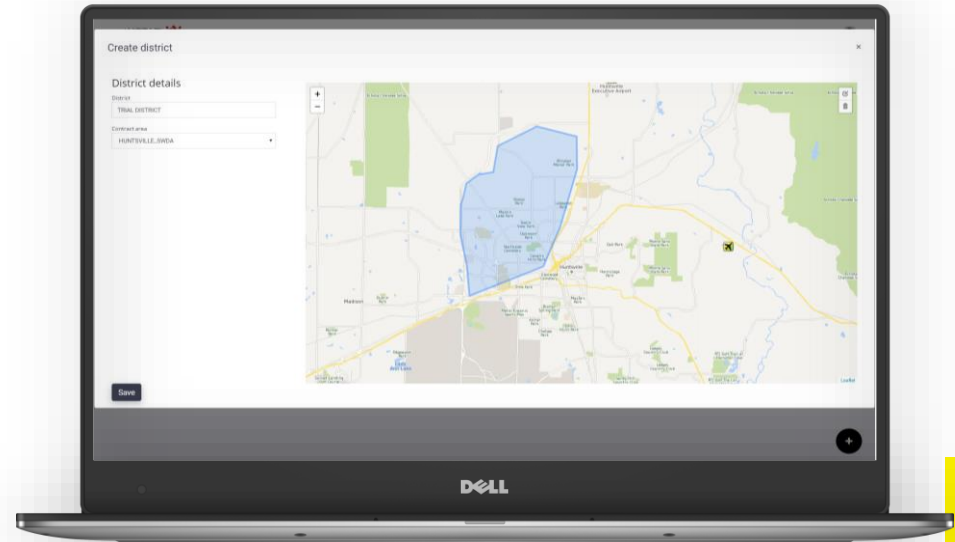
- Modify existing assets
- Add work orders
- Asset specific collection & service history
- Move assets from inventory to field
- Connected customers and addresses
- Modify routes and contract area assignment
- Smart Sensor Integration

# Districts & Routes

✓ Create collection and service routes on the screen by the help of the integrated district drawing tool.

✓ Filter existing collection districts, and visualize assets on the map.

✓ Optimize the route for your districts with intelligent truck based optimization algorithms – also taking into consideration speed and road limitations.
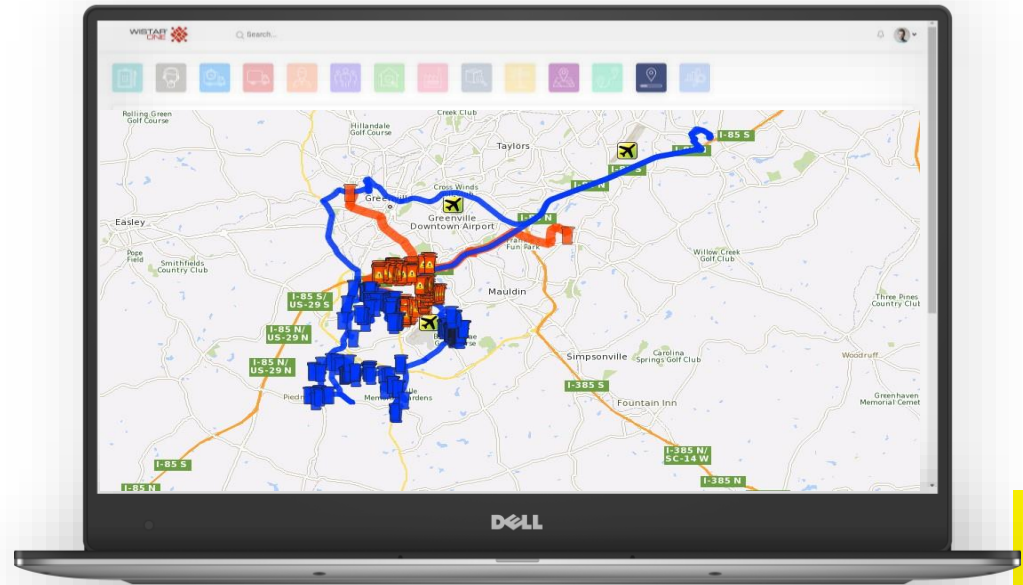
# Service Verification

With our service verification feature successful and missed collections are visible with a few clicks.

- Filter and sort collections
- Show exceptions
- Reverse Geocode collections to next logical address from the database
- Collections assigned to existing assets
- Commercial & residential service verification
- Live View of Vehicles



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DISPONDO
# HARDWARE

Vehicle Equipment

Mobile Devices

# Smart Bin



**Waste Management Company**

**UHF RFID**
Label to Identify the bin by the truck Servive verification, route planning and trecking. Pay as you throw schemes

**Citizen**

**Order based QR-Code** (order number) with link to specific Website of the service company or municipality for Service on Demand, Discharge calender, citizen portal, Webshop

**Municipality**

**Plain text Number**
for visual plain text communication between Citizen, Service company and municipality

Scanner

660 166 6999

1937 2018 01

# Romania PayT solution

# Ready to use PayT solution

**Solution for the local Romanian market**



- > 160.000 households
- 8000 economic units
- Both LF and UHF identification solutions
- 60 vehicle equipments

# Ready to use PayT solution

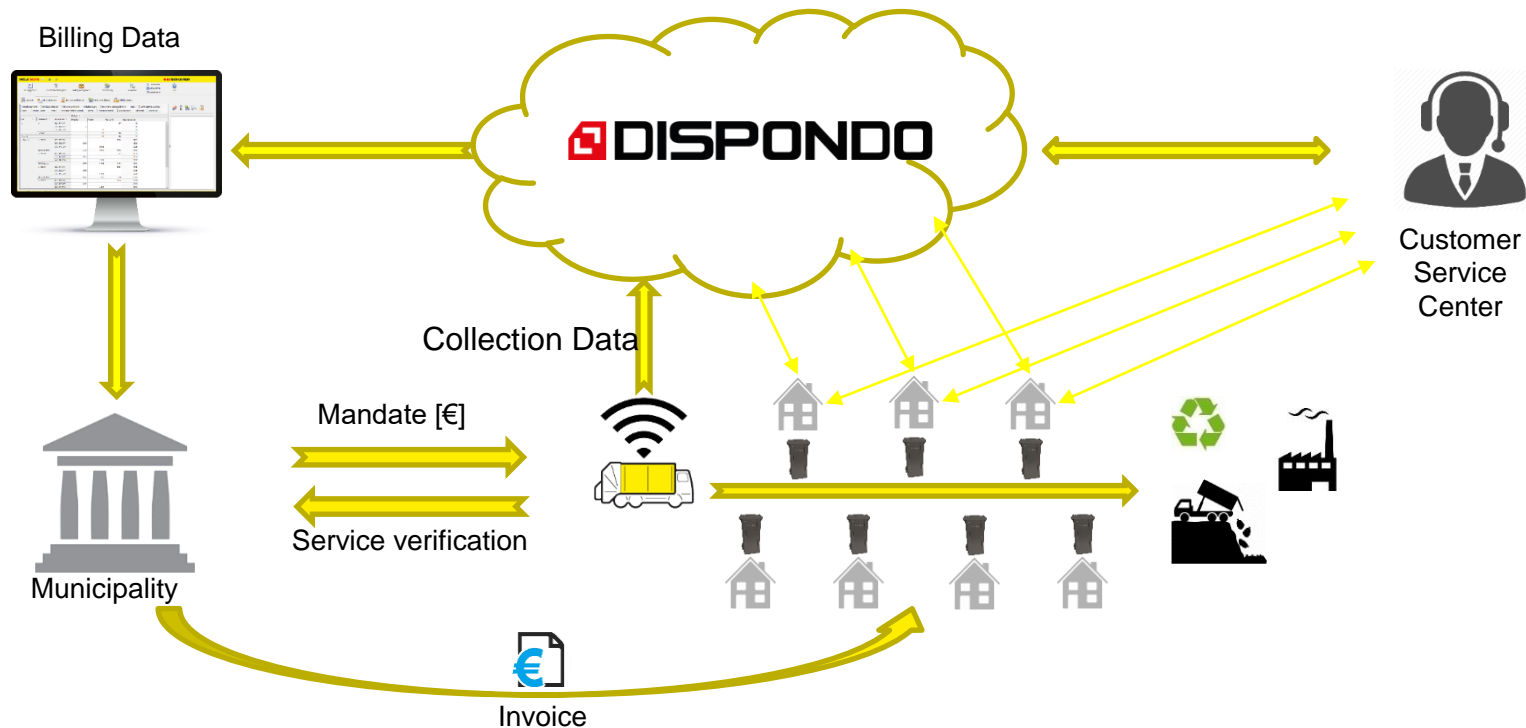**Pay-As-You-Throw Based on Frequency**



- Regular collection tours
- Bin identification system (RFID)
- variable amount of emptying per tour

- Standard volume per resident
- Pick up on demand by presenting bin on curb side
- Fee depending on amount of emptying

# Ready to use PayT solution

**Infrastructure of solution**



Billing Data

DISPONDO

Customer Service Center

Collection Data

Mandate [€]

Service verification

Municipality

Invoice

# Outlook into the future

# Future improvements

- Success control (reporting) of incentive systems and/or marketing campaigns

- Ordered collection on demand → dynamic tour planning

- Workload balancing depending on seasonal fluctuations

# Copyright

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