How RFID technologies unlock the value in
logistics

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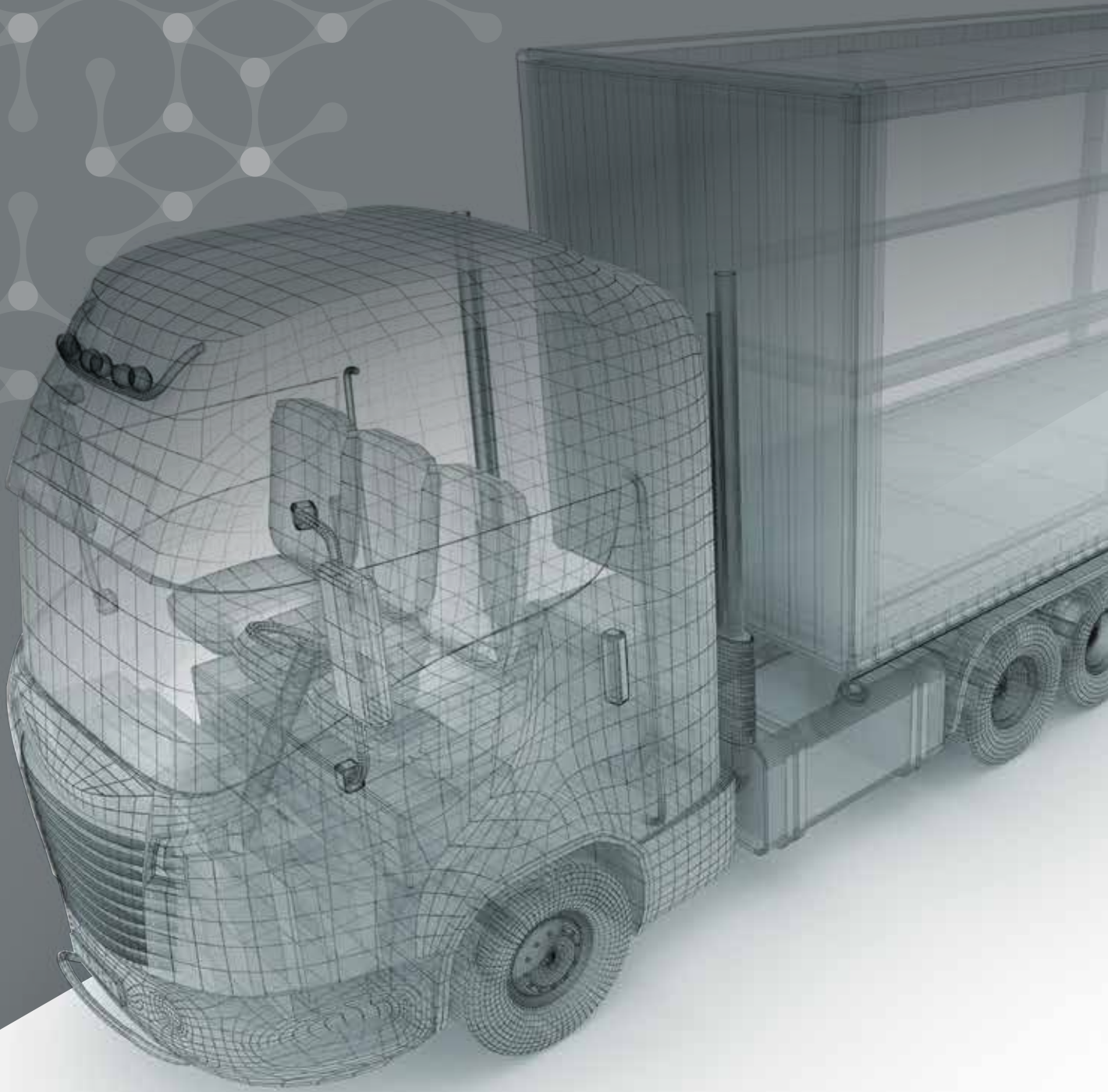
At **Murata ID Solutions** we know how to create real value in distribution and logistics through RFID

End-to-End Visibility

Keep track of your material at all times

Real-time visibility of goods improves the efficiency of the whole supply-chain process. Regardless the industry, tagging every box, pallet or shipping crate with an RFID label enables manifold opportunities in the DC as well as during transportation.

Detailed RFID tracking and transparency can help save valuable time and operational costs.

Warehouse & distribution center management

The deployment of RFID in the DC enables:

- **Inbound flows optimization**
  with RFID goods received while unloading trucks without additional times.

- **Inventory counts accuracy and productivity**
  RFID boosts counts productivity by 90%+ and accuracy to almost 100%.

- **Product location and findings**
  items can be found thanks to handheld geiger location features. Real time location can be achieved thanks to fixed readers.

- **Shelf life management**
  from FIFO (first in first out) to FEFO (first expiring first out).

- **Packing accuracy and productivity**
  orders are cross checked while packing cases or filming pallets without additional times.

- **Outbound flows optimization**
  no more shipping the wrong product to the wrong customer on the shipping dock door.

- **Trim shrinkage and errors**
  RFID flattens shrinkage in all DC processes and consequent inventory adjustments.

Freight transportation management

During transport, the application of RFID technology allows:

- **Loading/unloading time reduction**
  thanks to RFID, idle time for loading and unloading operations at the dock doors is halved, increasing truck utilization.

- **Automatic issuing of shipping documents** the bill of lading and an advance shipping notification can be issued in real time based on RFID reads.

- **Shrinkage reduction** thanks to punctual temperature and humidity values in the truck and at the product core gathered with RFID sensors.

- **Optimized cargo loading and unloading** loading/unloading sequences can be monitored and controlled through RFID.

Distribution center processes optimization

RFID enables the distribution centers not only to optimize inbound and outbound flows, but also to reduce errors and shrinkage.

By increasing the inventory accuracy and optimizing the product flow the DCs significantly improve their service level. The errors related to the shipment of the wrong product to the wrong customer can be notably reduced meaning improved efficiency and customer satisfaction.

Increased transparency for the whole supply chain

For the buyer, the supplier and for 3PL the entire logistic process is completely transparent. It is possible to track the current status of all tagged products in transport and in the warehouse. All replenishment processes and inventory levels are optimized.

Handling of logistics assets and RTIs

Reusable containers, equipment and machinery (transporting goods from one place to another) can be tracked and managed in order to optimize their utilization and maintenance. The punctuality of outgoing and incoming assets are accurately recorded, and losses, misplacement and inventory differences are easily reduced.
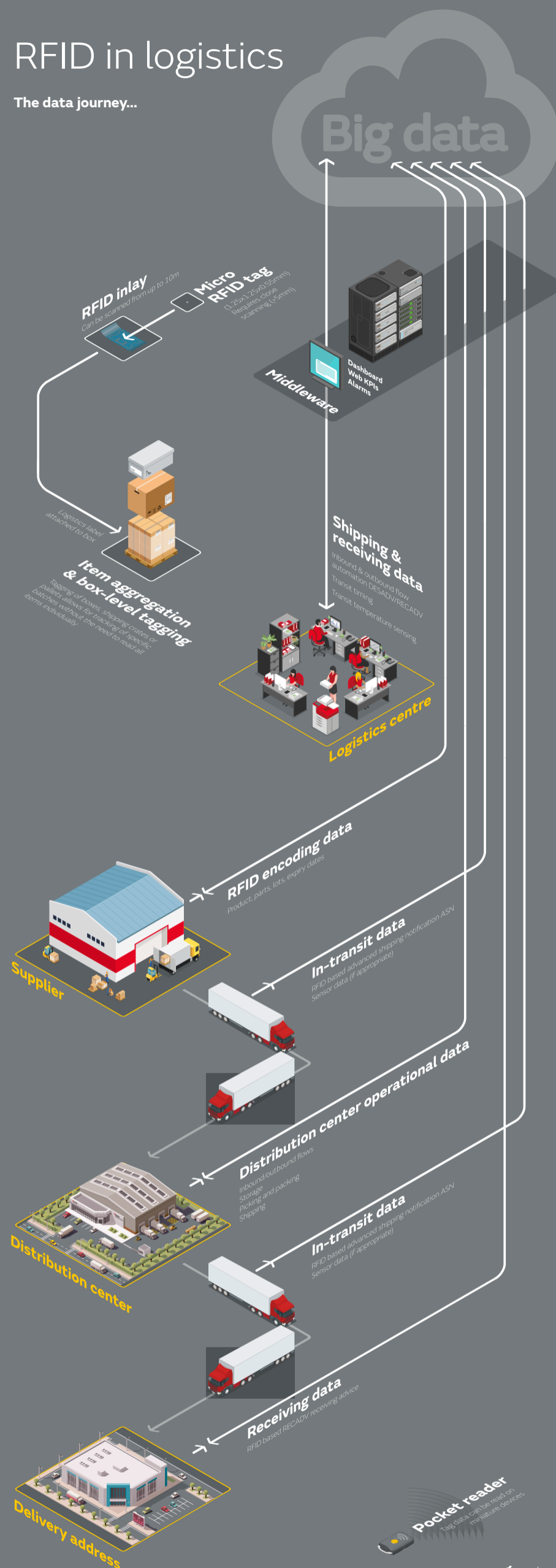
Transportation

Automatic Goods Receipt drastically reduces the loading and unloading time, allowing the vehicles to increase their rotation and use.
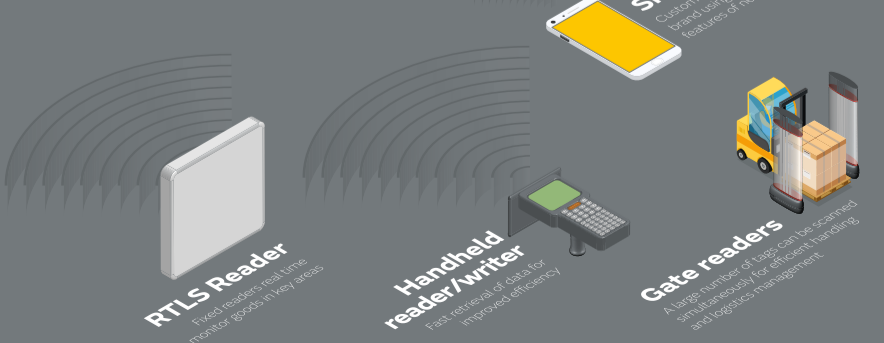
RFID allows complete information about loading and unloading sequences of the truck. This is particularly the case of milk run deliveries where unloading is based on LIFO loading policies. This avoids unnecessary handling of goods and errors.

RFID in logistics

The data journey...

Big data

RFID inlay
Can be scanned from up to 10m

Micro RFID tag
1.25x1.25x0.3mm
Provides close scanning (10mm)

Dashboard
Web KPIs
Alarms

Middleware

Item aggregation & box-level tagging
Tagging of boxes, shipping crates or pallets allows for tracking of items but not without the need to read all items individually

Shipping & receiving data
Inbound & outbound flows
Automated DESADV/RECADV
Transit timing
Transit temperature sensing

Logistics centre

RFID encoding data
Product, parts, lots, expiry dates

In-transit data
RFID based advanced shipping notification ASN
Sensor data (if appropriate)

Supplier

Distribution center operational data
Inbound/outbound flows
Storage
Picking and packing
Shipping

Distribution center

In-transit data
RFID based advanced shipping notification ASN
Sensor data (if appropriate)

Receiving data
RFID based RECADV receiving advice

Delivery address

Readers...

Pocket reader
The data can be read on feature devices

Smartphone reader
Customer interaction with the product and/or brand using NFC features of the tag or the features of next-generation smartphones

RTLS Reader
Fixed readers real time monitor goods in key areas

Handheld reader/writer
Tag vehicles of data key improves efficiency

Gate readers
A wide number of tags can be scanned simultaneously for efficient handling and logistics management

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id-Bridge
SUITE 4.0

About Murata

Murata is a global leader in the design, manufacture and supply of advanced electronic materials, leading-edge electronic components and multi-functional, high-density modules. Murata innovations can be found in a wide range of applications from mobile phones to home appliances, and automotive applications to energy management systems and healthcare devices.

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