January 26, 2023

Top Reasons Why Track and Trace is Your Best Bet for Inbound and Outbound Applications

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- Your questions will be queued up for me.
- I will present them to the speaker at the end of each presentation.

Presentations

- We will send you an email in a few days with a link to the recordings of this presentation and PDFs of the slides.
- You can review the on-demand recording of this event and all RFID Journal virtual events and webinars by by going to: www.rfidjournal.com/rfid-journal-videos/
- You need to be a registered user of RFIDJournal.com
- Registration is free.

More RFID Journal Events!

- Registration will be open soon for **RFID Journal LIVE! 2023**, taking place May 9-11 in Orlando Florida - https://rfidjournallive.com/ You can visit **SICK in booth 923**.

RFID Solutions for Track and Trace Applications

Bryan Ferguson

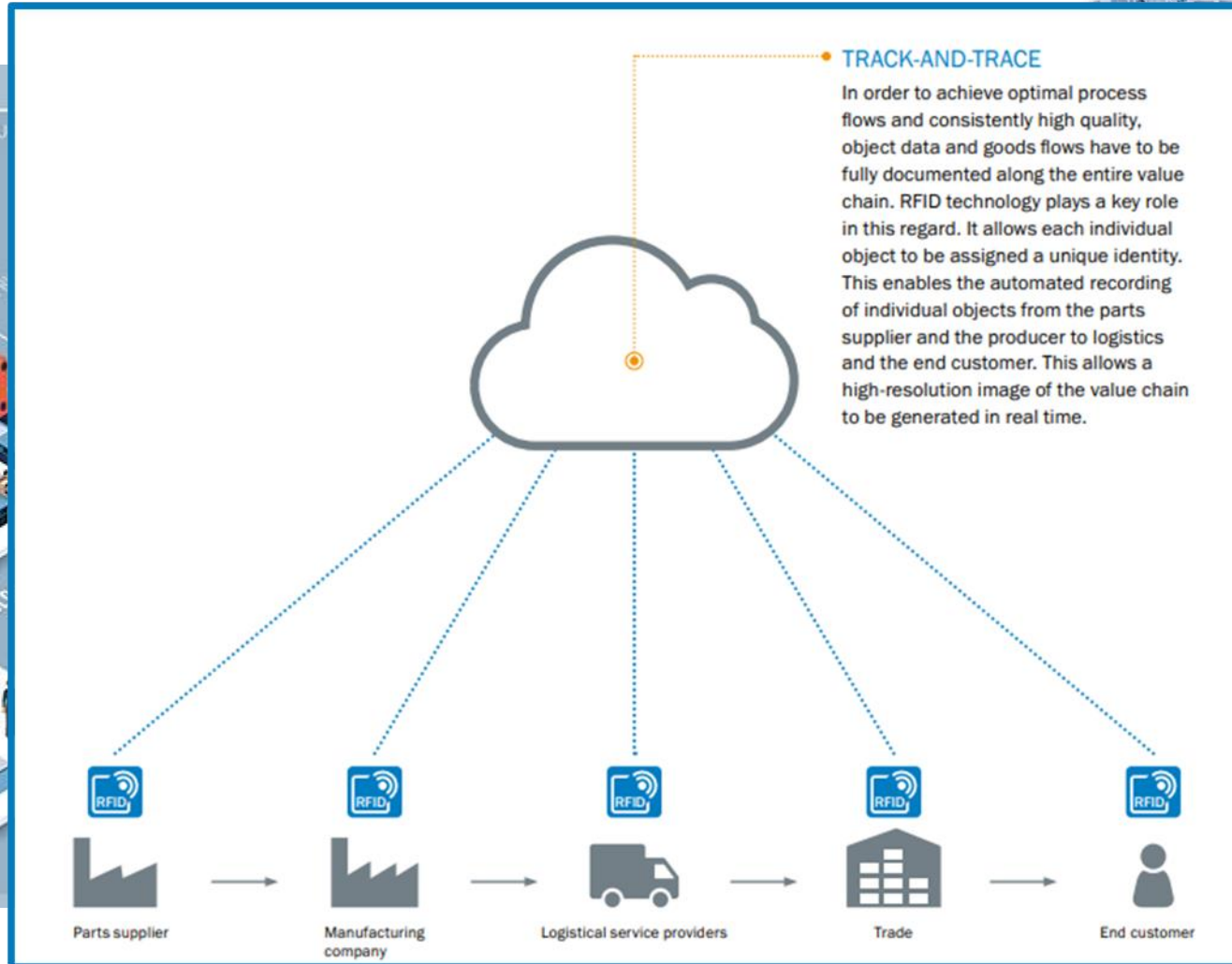*Market Product Manager*

SICK Flexible Identification Portfolio

Agenda

- **I 4.0 & RFID**

- **Basics Technical Overview**

- **RFID Application Benefits for Track & Trace**

- **Track and Trace Applications**

I4.0 is changing the Industrial World

Tracking and Traceability is a must

TRACK-AND-TRACE

In order to achieve optimal process flows and consistently high quality, object data and goods flows have to be fully documented along the entire value chain. RFID technology plays a key role in this regard. It allows each individual object to be assigned a unique identity. This enables the automated recording of individual objects from the parts supplier and the producer to logistics and the end customer. This allows a high-resolution image of the value chain to be generated in real time.

RFID — Parts supplier → RFID — Manufacturing company → RFID — Logistical service providers → RFID — Trade → RFID — End customer

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RFID - Radio-Frequency Identification:

- **Basic Components - Reader and a transponder or tag**

- **Wireless, non-contact use of radio waves**

- **Two main functions of the radio waves**

› Carrier frequency for communicating with the RFID tag

› Energize the tag for communication in passive tags
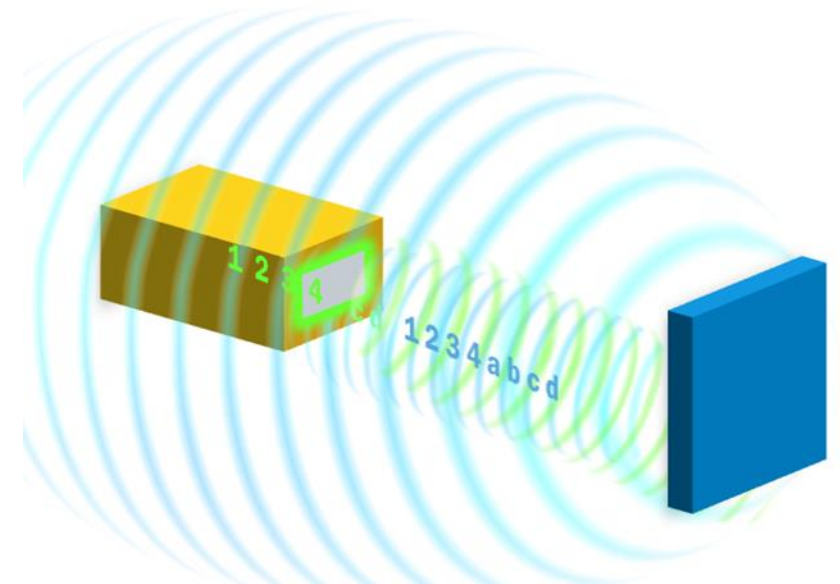
Screw / Rivet	Adhesive	Adhesive	Clip

Insert	Cable tie	Magnet	Sew	Welding

RFID

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RFID Reader

- **Antenna, controller and connectivity for power and communication.**

- **Converts decoded information into output signals and/or communication protocols.**

- **Self contained or remote antennas**
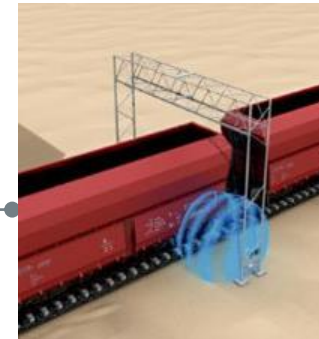
- **Intelligent device**

RFID
Application Benefits
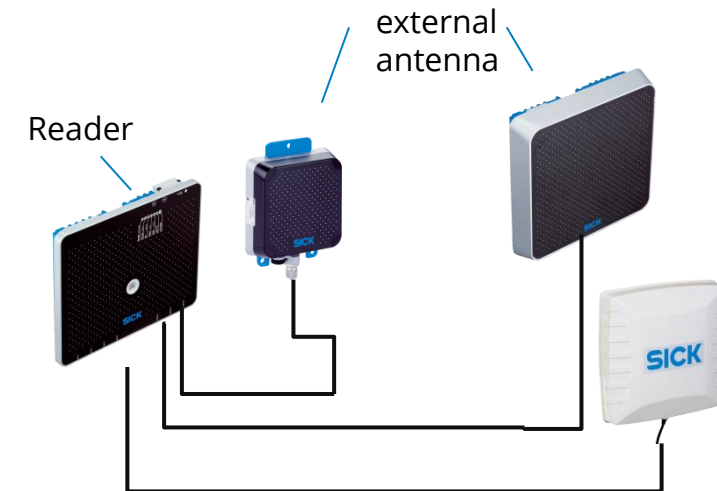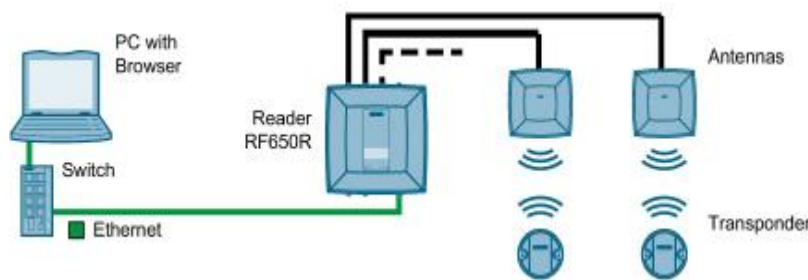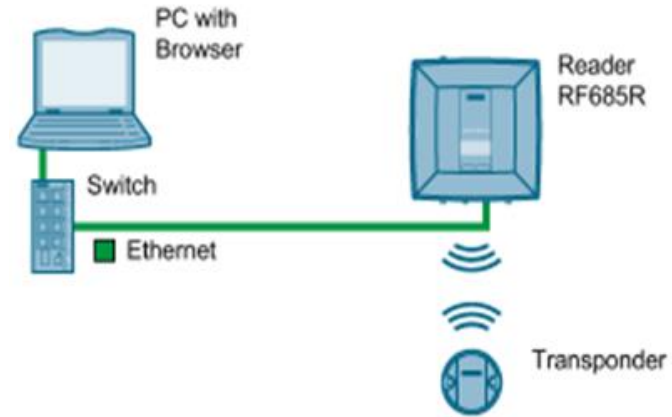
High speed
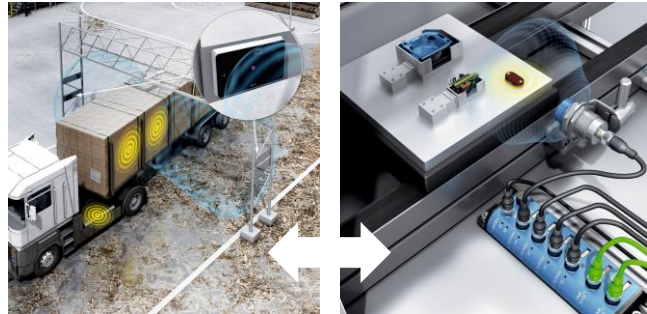
› Up to 200 km/h

Flexible reading

› Long Range 0 - 10m

› No line of sight required

› No interference from ambient lighting

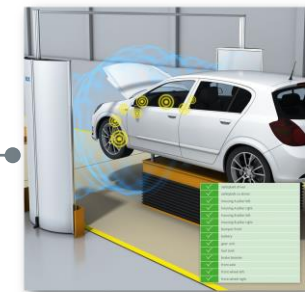**Radio Frequency Identification Application Benefits**

Resistant to wear & tear
› Maintenance free

› Support chemical, hi-temp and IP69K applications
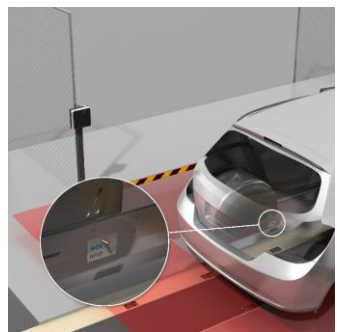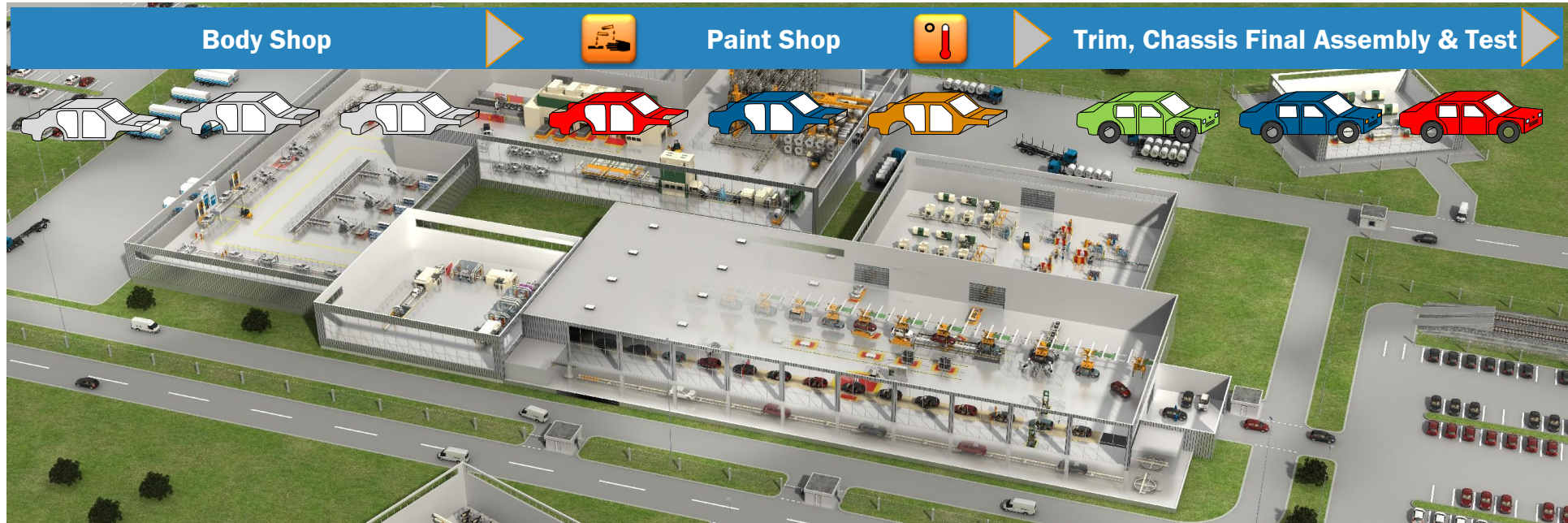
› Paint applications
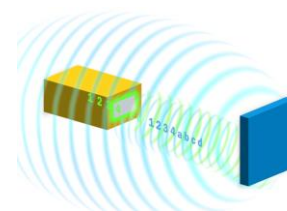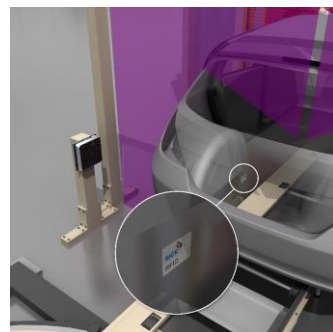
Read/Write

› Store process data

› Save test data

Bulk Read

› Multiple tags

Track & Trace in Automotive Applications with RFID

Body Shop → Paint Shop → Trim, Chassis Final Assembly & Test

Body In White

Paint Shop

Final Assembly

Testing and Rework

Factory Grounds and Shipment

Track & Trace with RFID

Car Distribution

Car Distribution

› Tag from Body ID or the final car ID tag
› Directional readers to check the direction of movement mainly on factory grounds

RFID Benefits

› Long Range
› High Speed
› Writing Data
› Harsh Environment

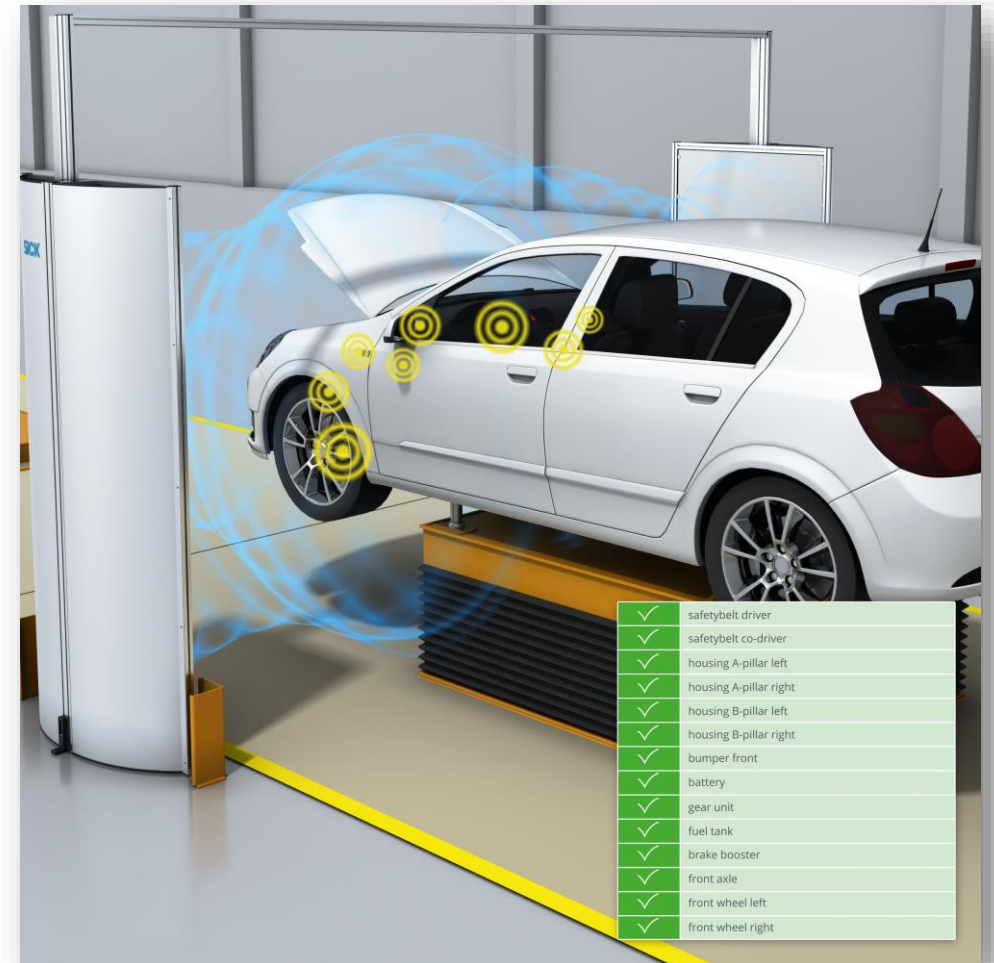Further information here.

Track & Trace with RFID

Vehicle Assembly Documentation

Vehicle Assembly Documentation

› Documentation of parts in car when passing RFID Gate in Final Assembly

› Reducing of manual reading positions throughout the whole plant

› Standard identification method also at various suppliers (Tier 1, 2, n)

RFID Benefits

› Bulk read

› Flexible Reading

› UHF Standards

safetybelt driver
safetybelt co-driver
housing A-pillar left
housing A-pillar right
housing B-pillar left
housing B-pillar right
bumper front
battery
gear unit
fuel tank
brake booster
front axle
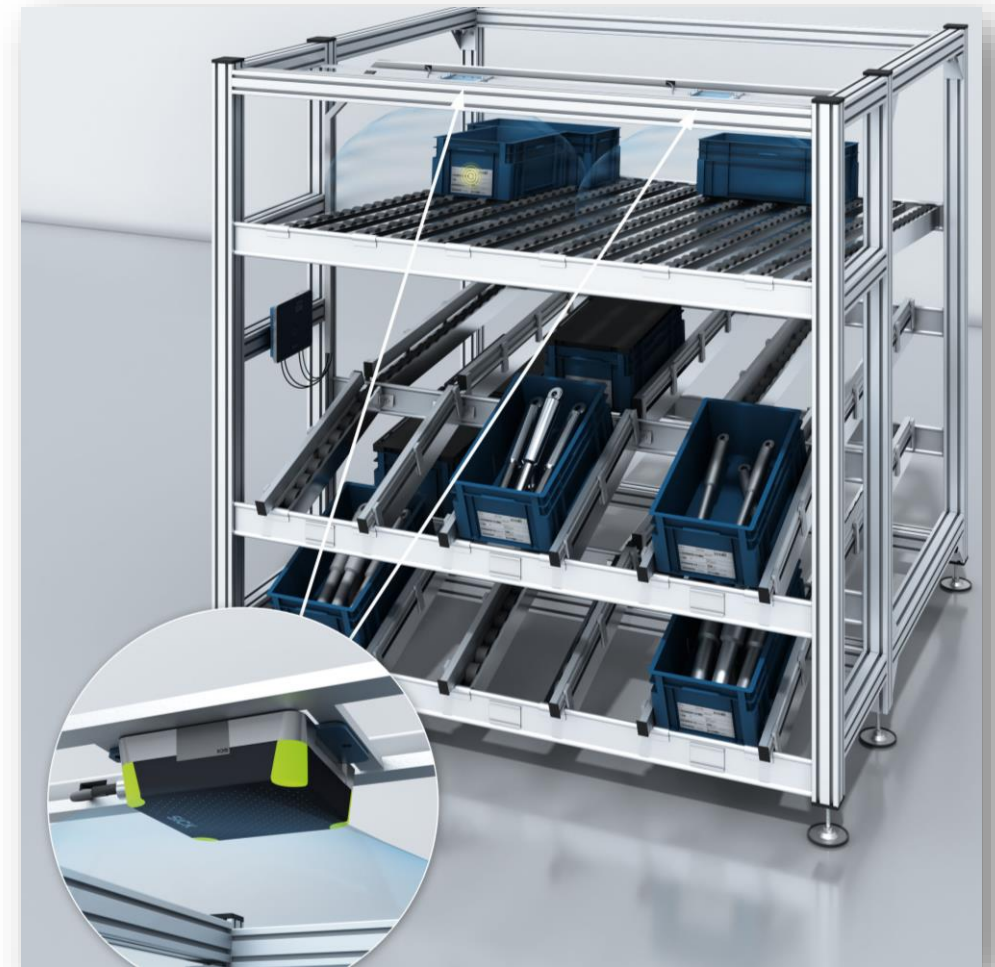front wheel left
front wheel right

Track & Trace with RFID

E-Kanban

E-Kanban Shelf

› RFID antennas directly on self layers
› Empty boxes are identified automatically
› Information is instantly sent to the ERP system

RFID Benefits

› Reading and writing to tag
› Reader or antenna per shelf
› Durable tags

Further information here.

Track & Trace with RFID

E-Supermarket

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E-Supermarket System

› Identifying boxes when entering or exiting the FIFO Lanes
› Position and lane is identified
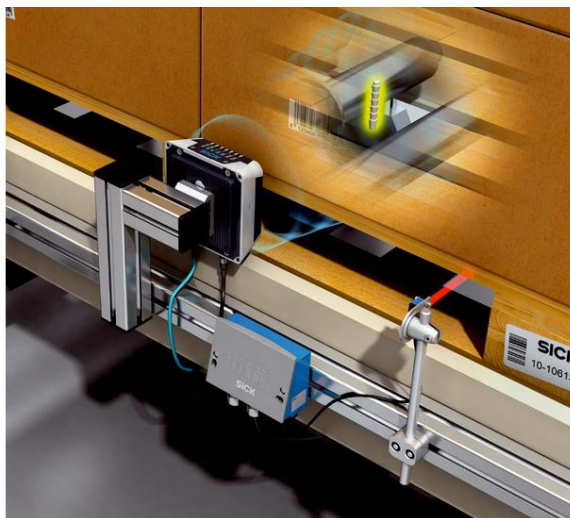› Supermarket is transparent to the ERP system at all times

RFID Benefits

› Directional Reading
› Long range
› Bulk reading

Further information here.

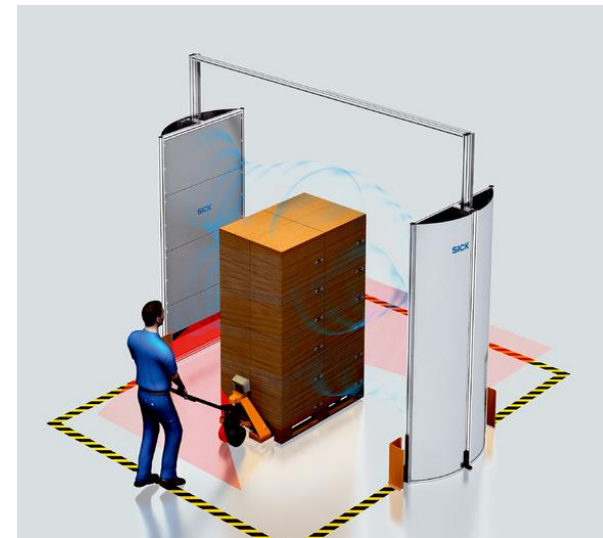# Track and Trace with RFID

Conveyor Applications

RFID Benefits

› Durable tags
› High Speeds
› Bulk reading

Track and Trace with RFID

Warehouse

Position or Localization

Pallet Confirmation
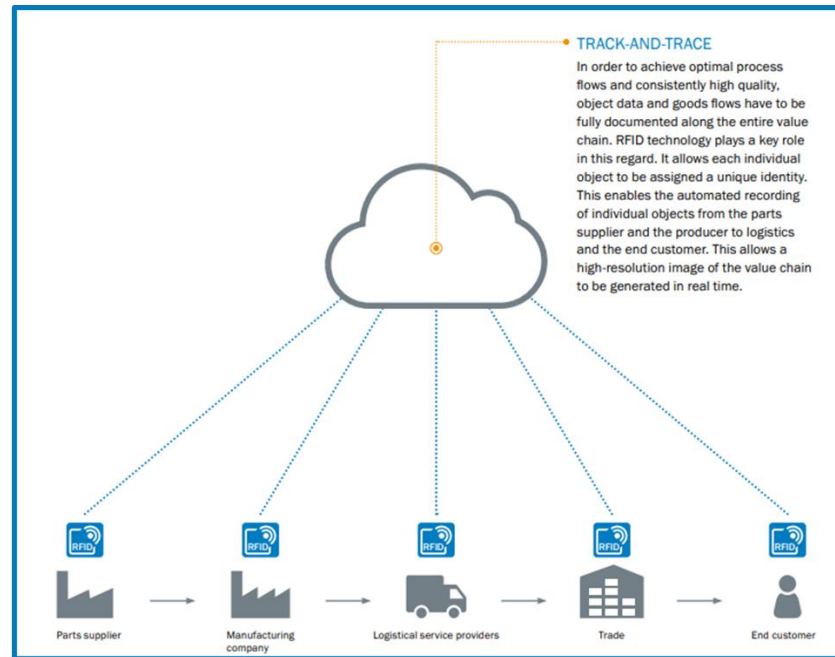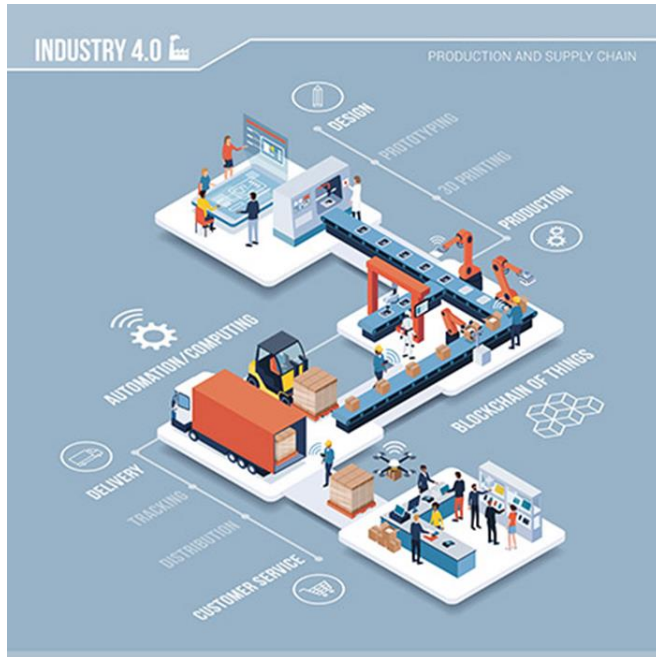

Autonomous Inventory

RFID Benefits

› Durable tags
› Long range
› Bulk reading

Summary

RFID Benefits

› Flexible Reading

› Bulk reading

› Read n Write

› High Speed

› Durability

Thank you!