January 26, 2023

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

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 - 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
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

Flexible reading
› Long Range 0 - 10m
› No line of sight required
› No interference from ambient lighting

Resistant to wear & tear
› Maintenance free
› Support chemical, hi-temp and IP69K applications
› Paint applications

Radio Frequency Identification Application Benefits

High speed
› Up to 200 km/h

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**
- 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
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 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!