

# RFID ... this time for real

Philipp Behrends - SICK AG  
Global Industry Manager CEP



# SICK IS ONE OF THE WORLD'S LEADING AUTOMATION COMPANIES

- › Over 50 subsidiaries worldwide
- › Headquartered in Waldkirch, Black Forest, Germany
- › EUR 2.3 billion sales in 2023
- › Almost 12,000 employees
- › 3,987 patents, re-investing 12% of the turnover into Research & Development
- › More than 40,000 products



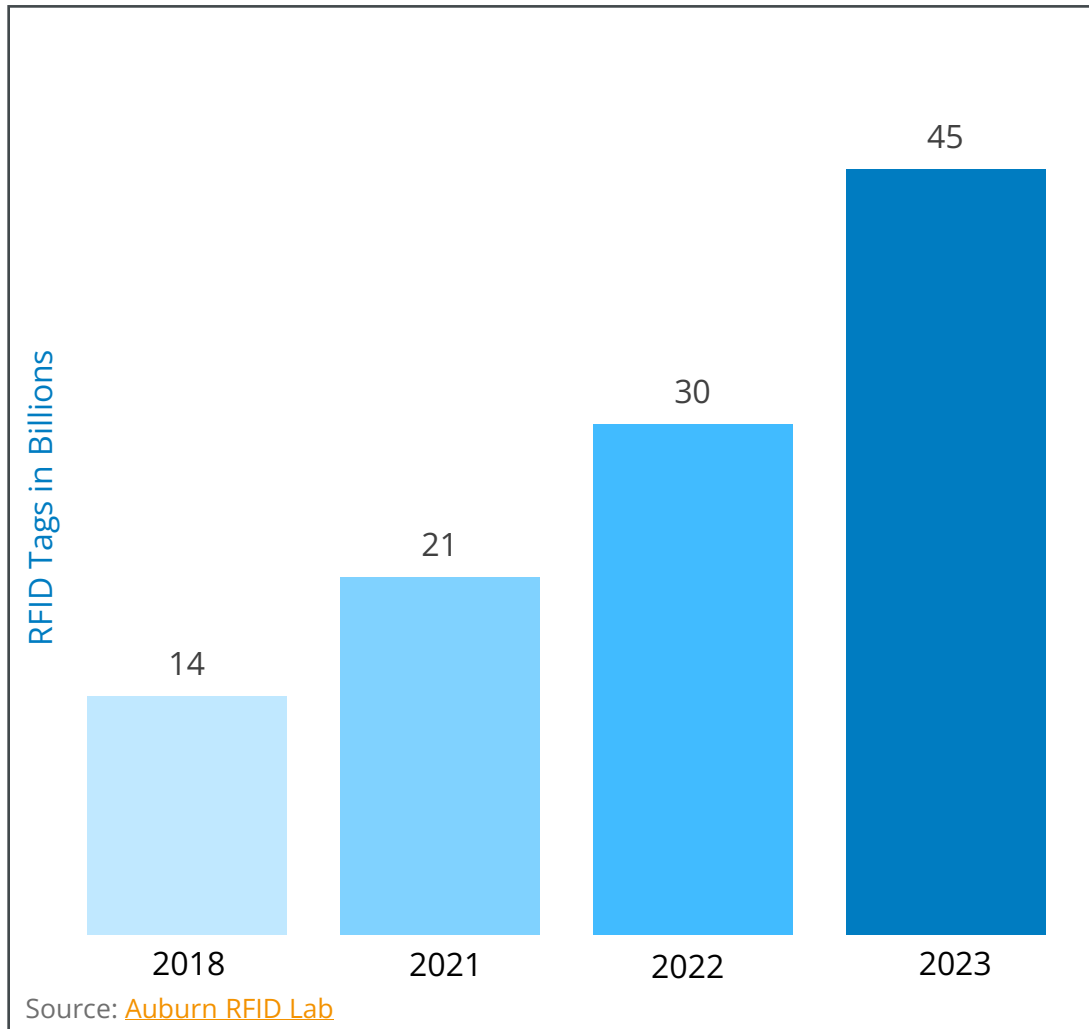
# RFID Market

Philipp Behrends, SICK AG



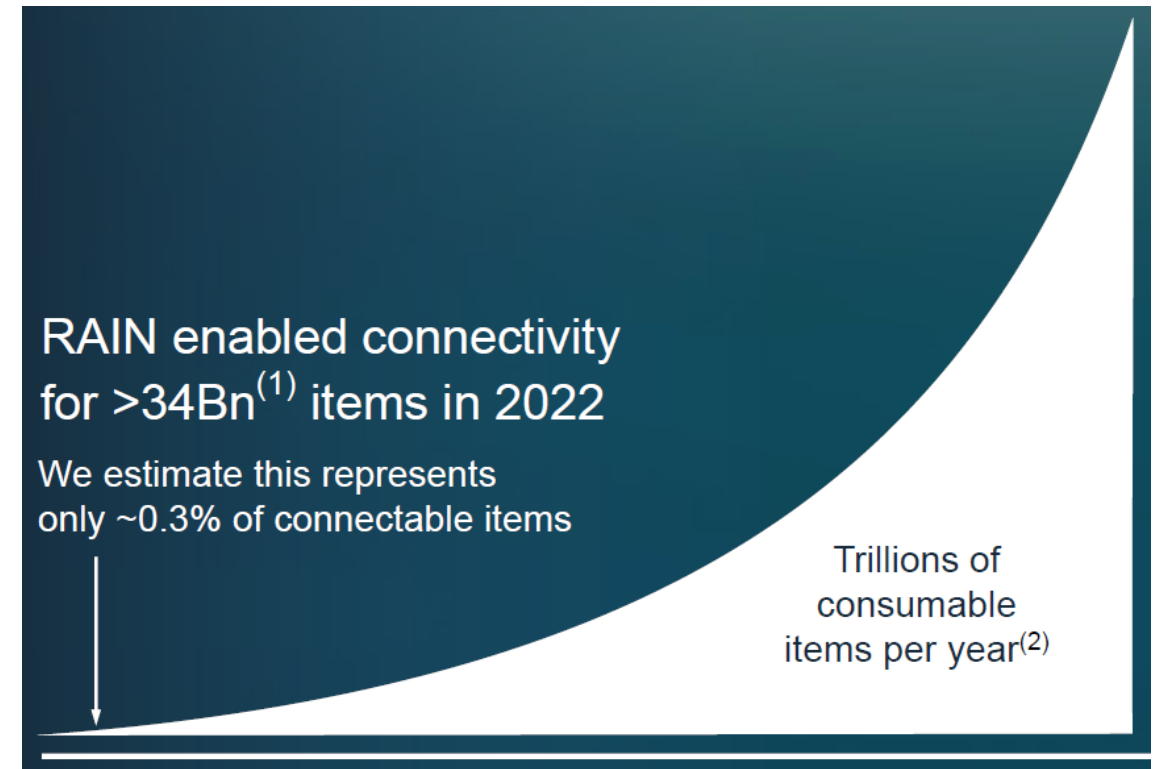
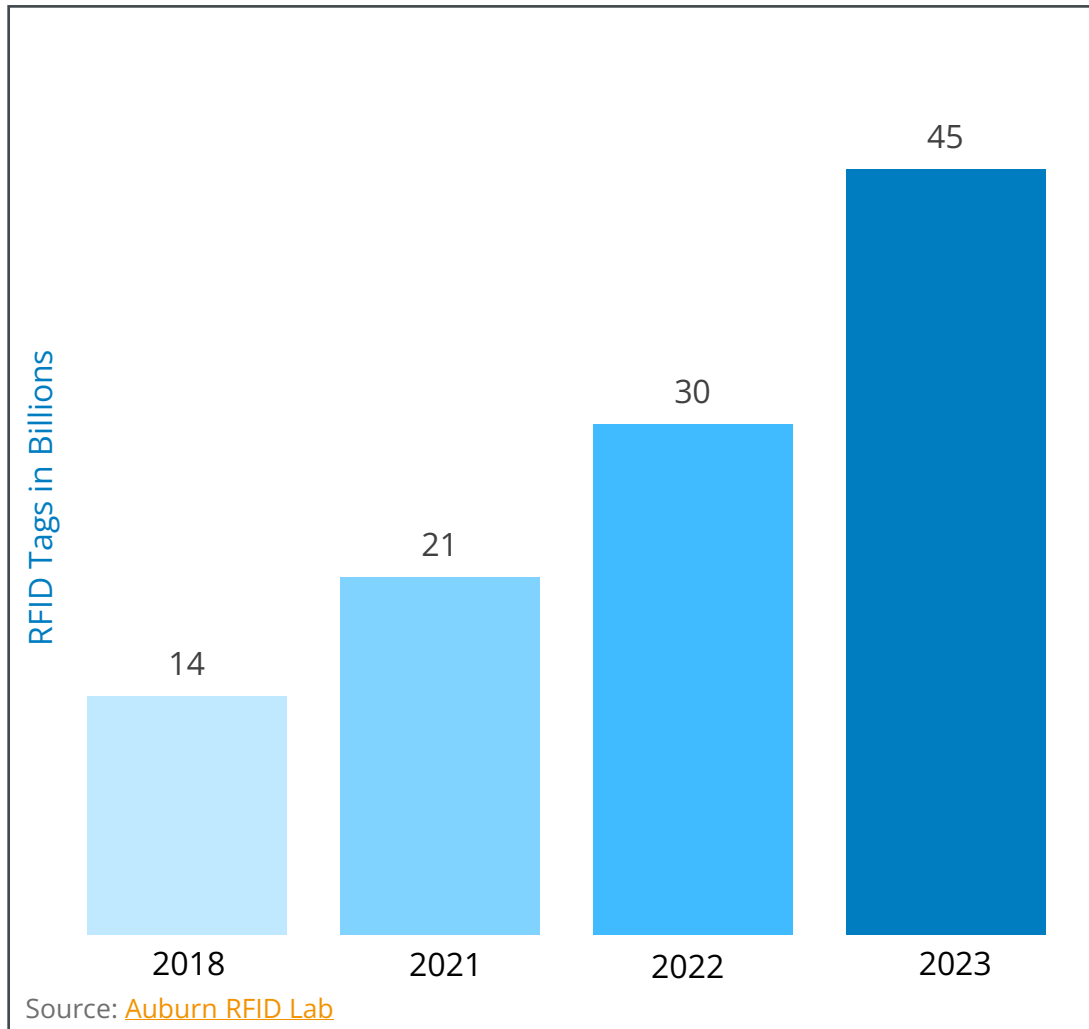
# RFID technology is on the rise.

## RFID Market Overview



# RFID technology is on the rise.

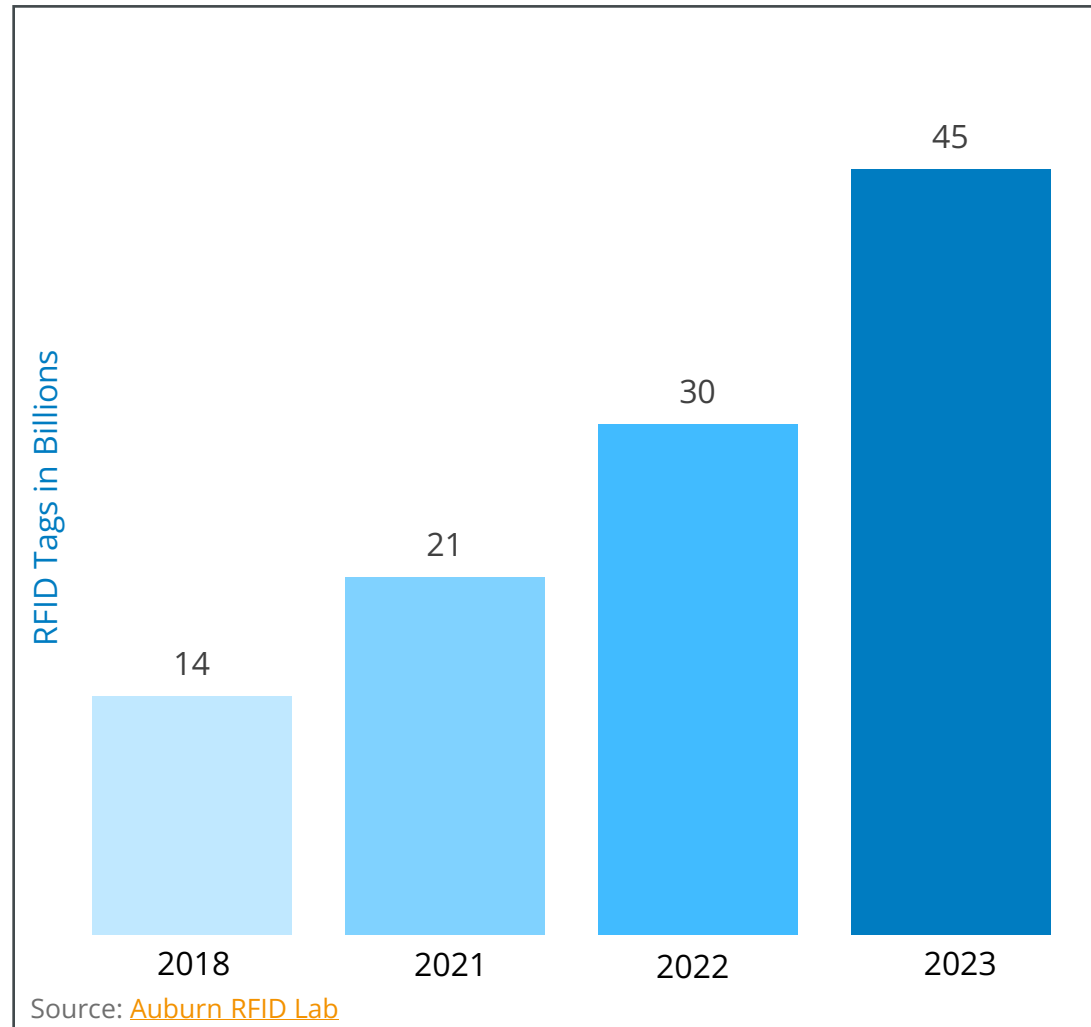
## RFID Market Overview



Source: [Impinj](#)

# RFID technology is on the rise.

## RFID Market Overview



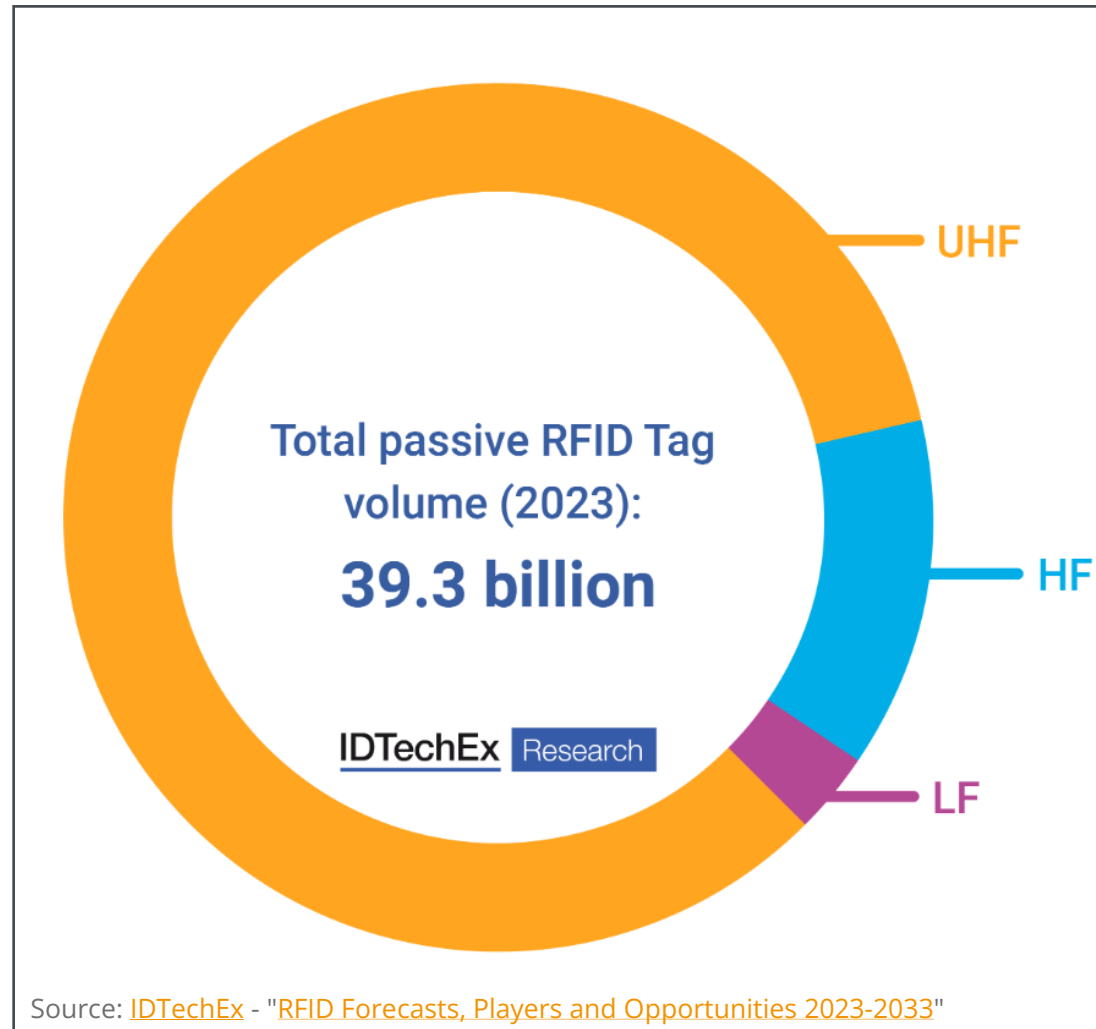
Other Everyday Items	
3Tn	Food & Drink Packaging
600Bn	Auto Parts
400Bn	Parcels & Postal
325Bn	General Merchandise
80Bn	Beauty and Personal Care
80Bn	Apparel
9Bn	Pallets
4Bn	Airline Baggage
3Bn	Tires

Source: [Impinj](#)



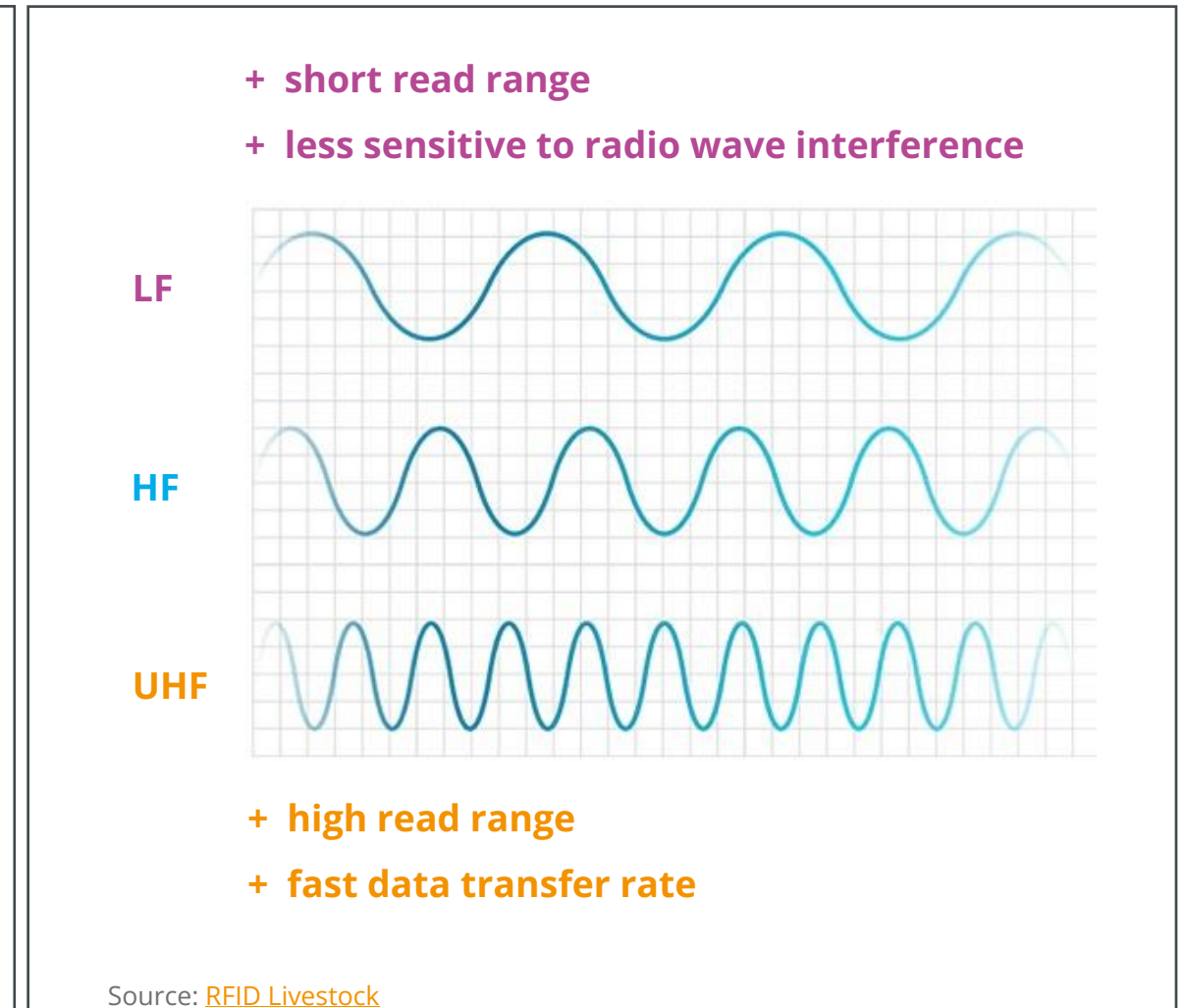
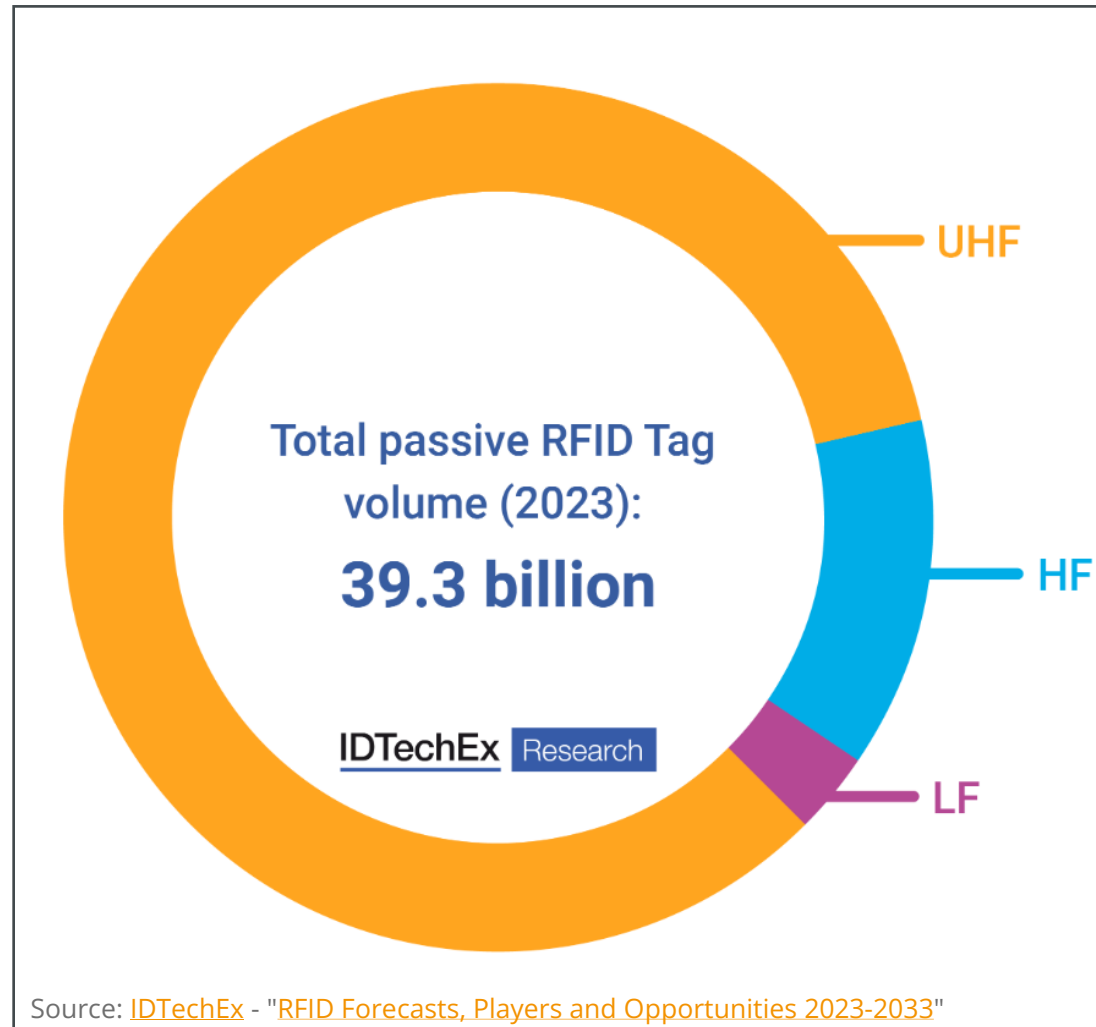
# Passive UHF RFID Tags dominate the market.

## RFID Market Overview



# Passive UHF RFID Tags dominate the market.

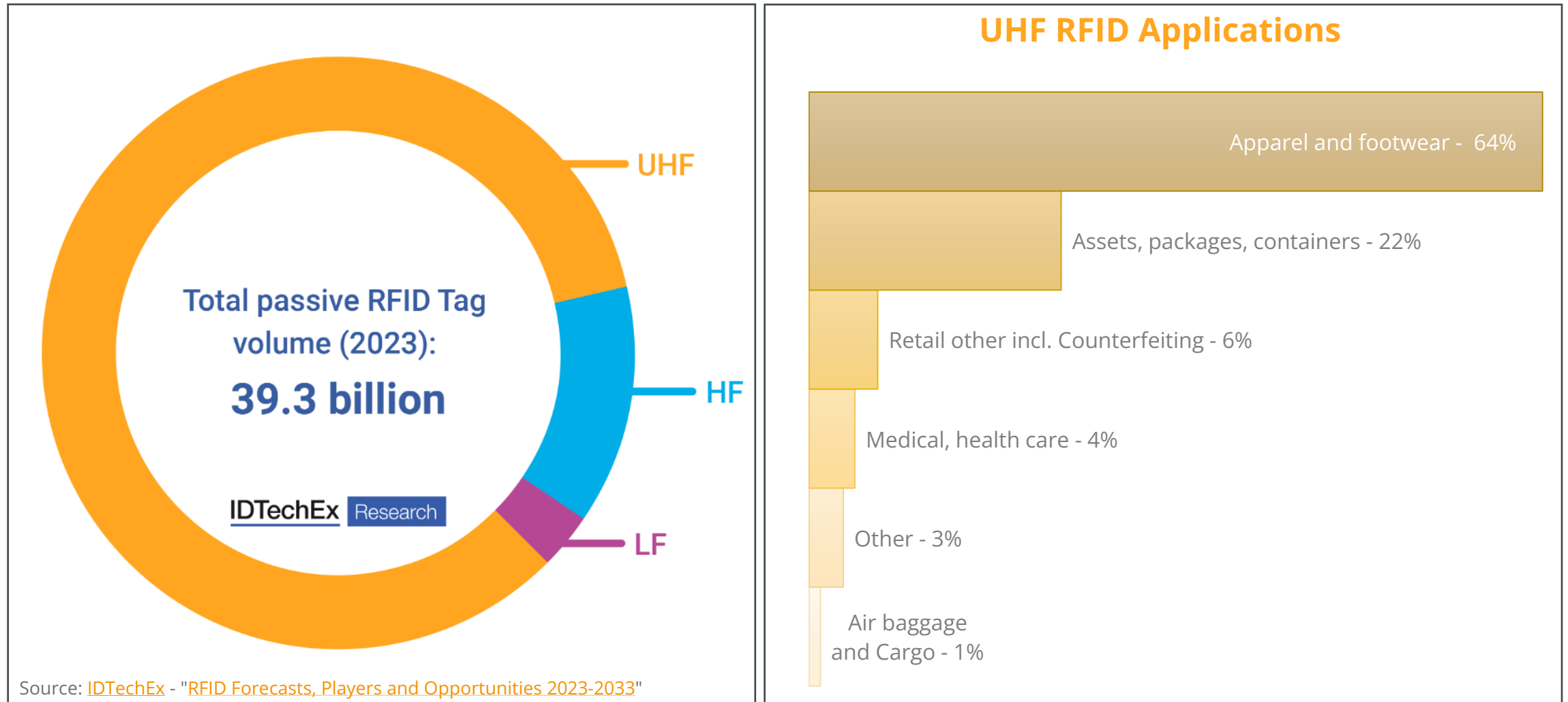
RFID Market Overview





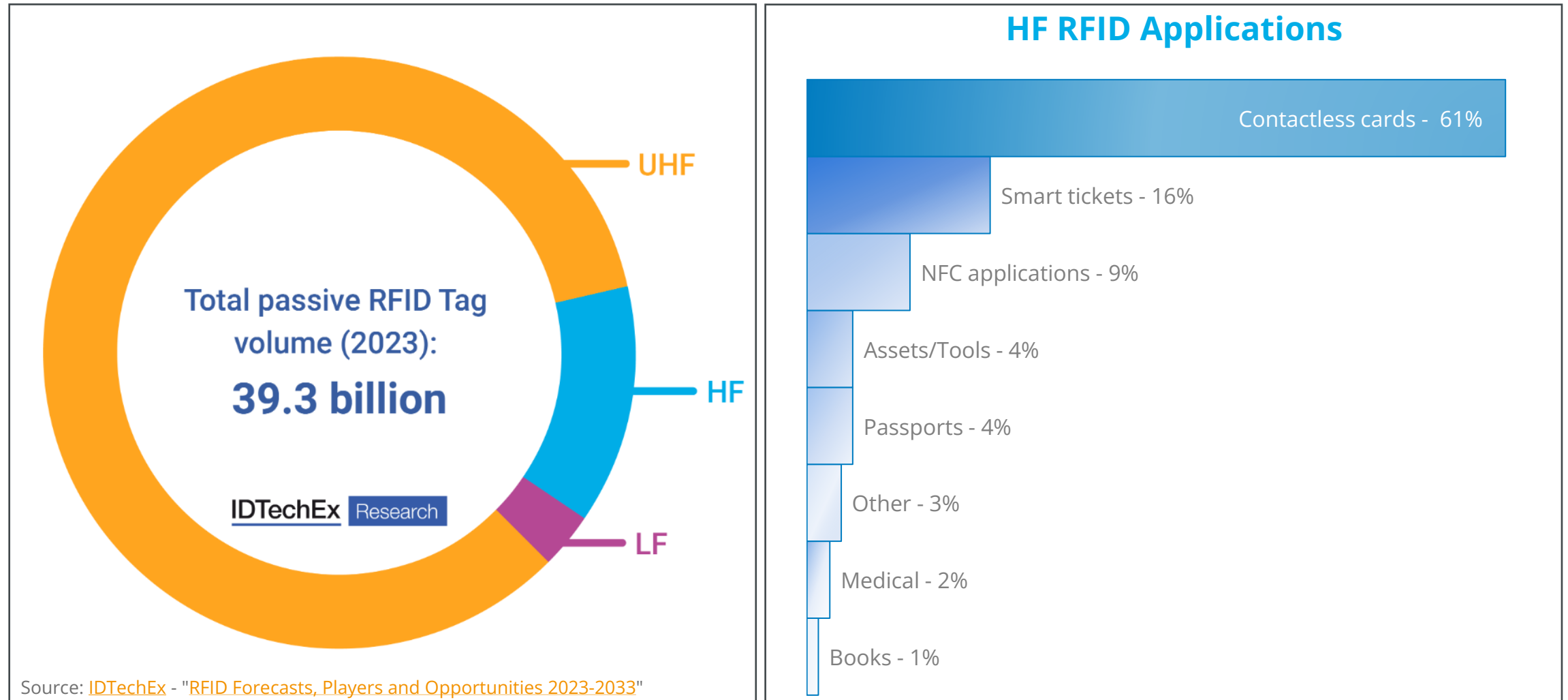
# Passive UHF RFID Tags dominate the market.

RFID Market Overview



# Passive UHF RFID Tags dominate the market.

## RFID Market Overview

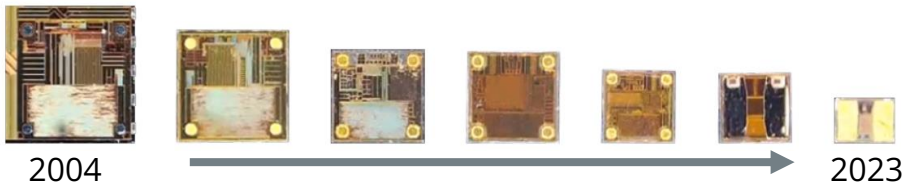


# RFID Tag performance improved, whilst size & cost went down.

## RFID Market Overview

### Tag / Transponder

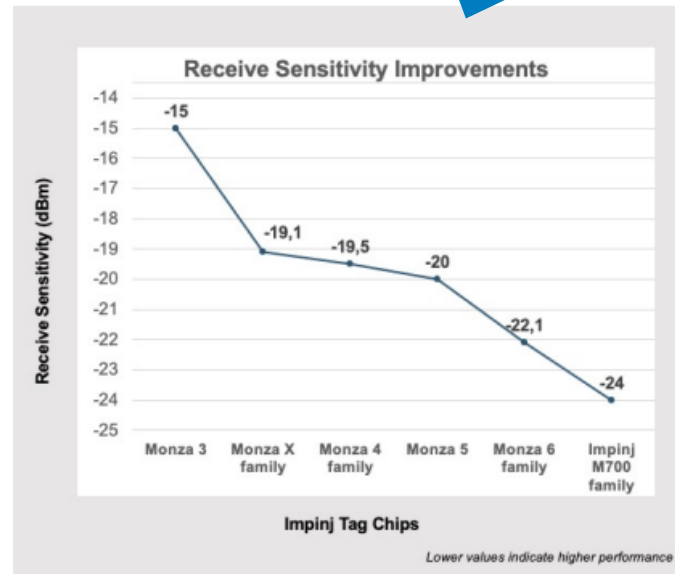
- IC size development



- new processes brings higher quantities per wafer

1/8 energy  
required to  
power a tag

- Improved sensitivity
- 9dB less power required



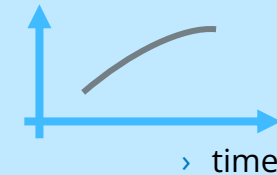
### Results in

- Reduced transponder pricing

› cost



› performance



- More reading / writing range or less transponder size



Philipp Behrends, SICK AG

Philipp Behrends, SICK AG





# RFID Conveyor Systems Update

## RFID Use Cases

### CEP – Single Tag Reading



### Retail – Bulk Reading



# RFID Conveyor Systems Update

## RFID Use Cases

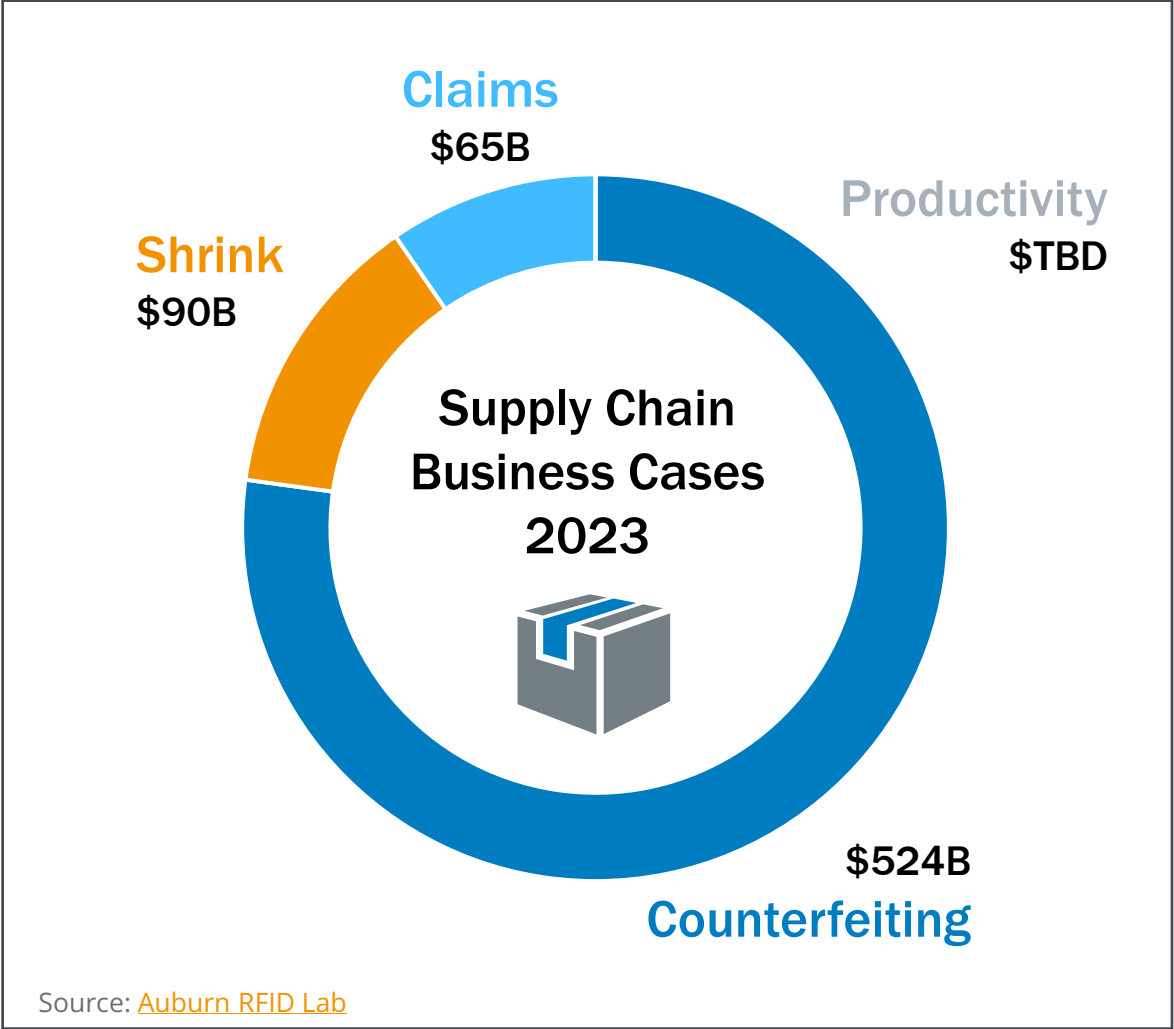
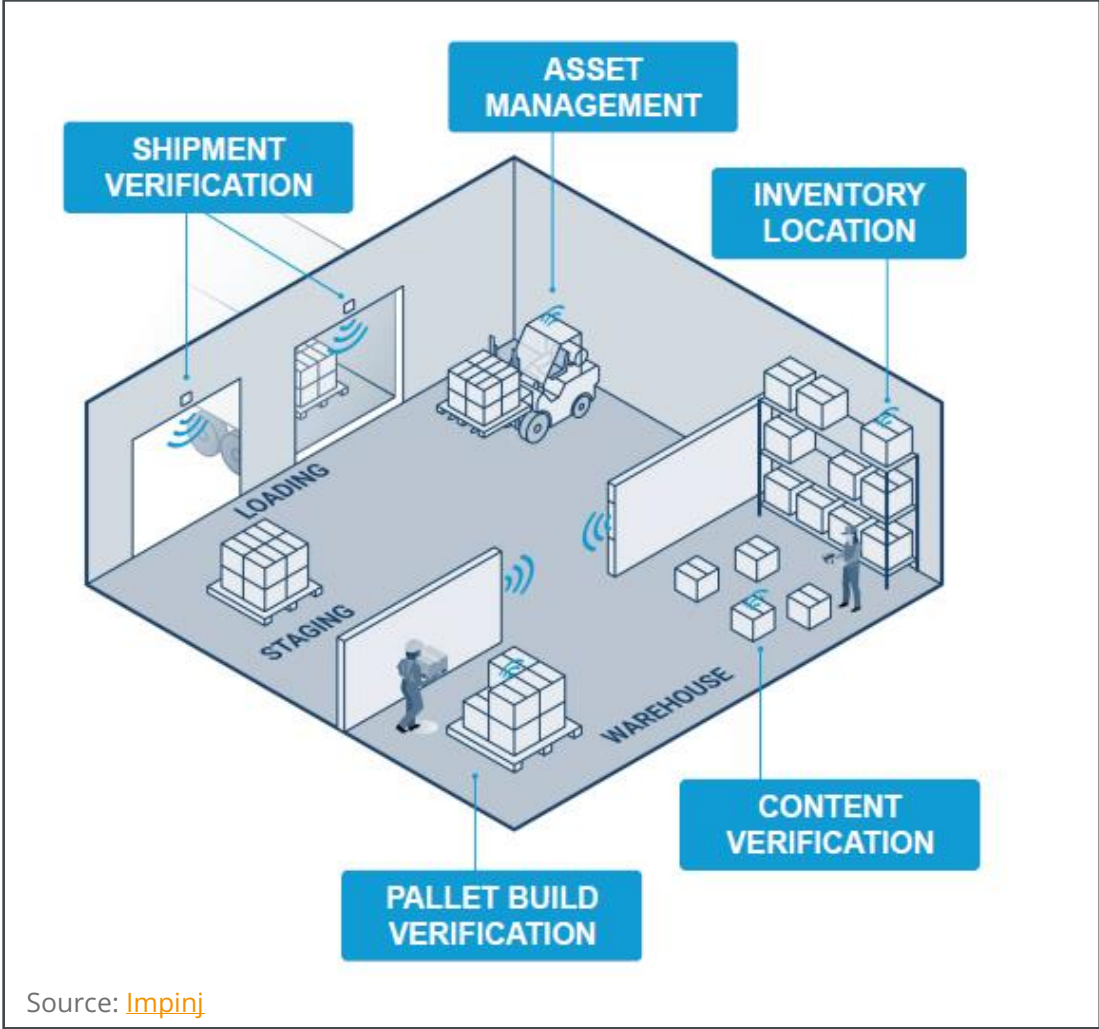
### CEP – Single Tag Reading



- 100% Barcode read rate  
Today's barcode cameras/scanners are 98-99%
- Prevent misloads
- Less manual scans
- Speed up load process
- Reduce claims
- Reduce fraud
- Reduce lost items

# Verifying and location shipments are the core applications.

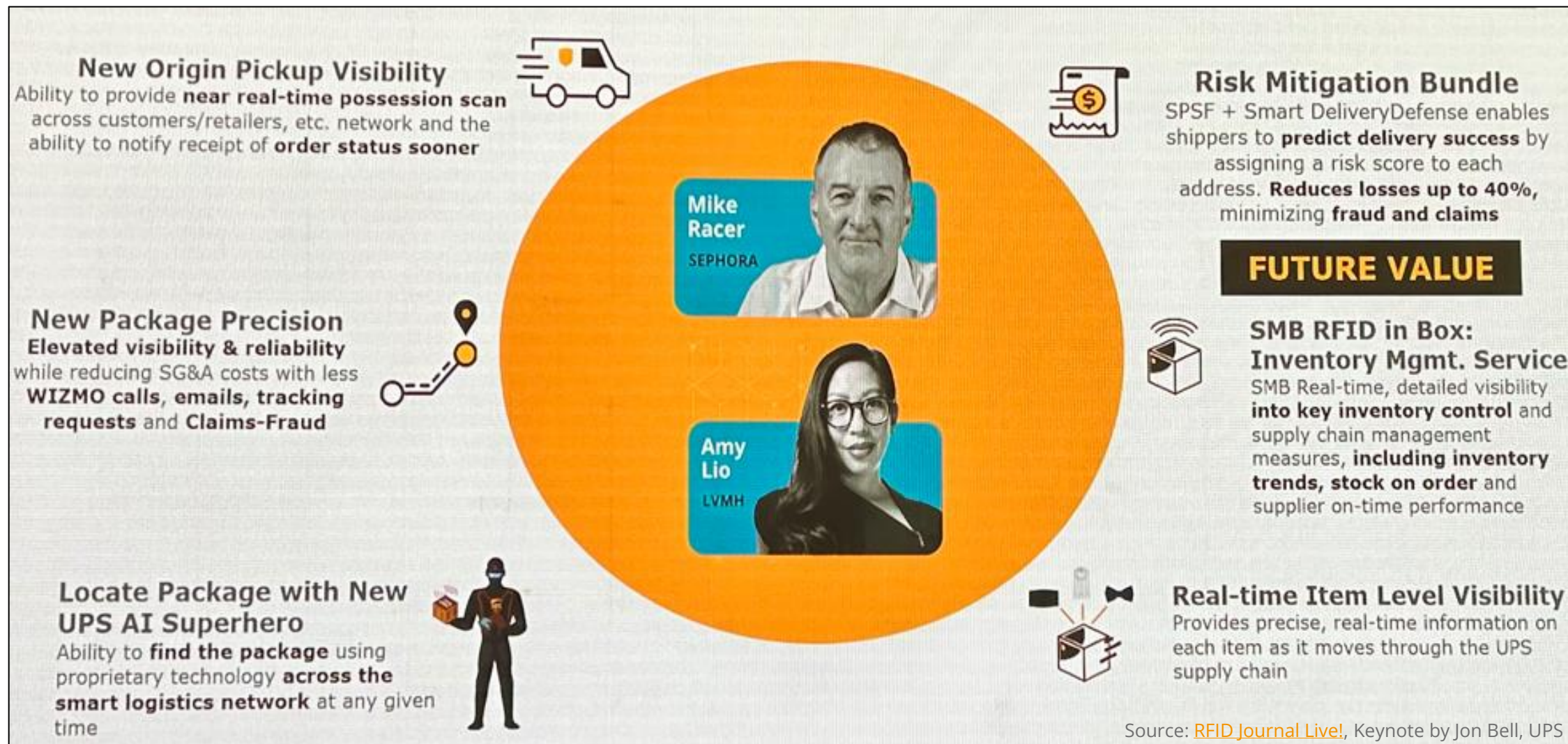
RFID Use Cases





# UPS is catching the RFID wave.

## RFID Use Cases



Source: [RFID Journal Live!](#), Keynote by Jon Bell, UPS

# RFID Product Portfolio

Philipp Behrends, SICK AG



# Sick RFID Product Portfolio

## RFID Product Portfolio

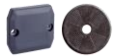
### Transparency at it's best



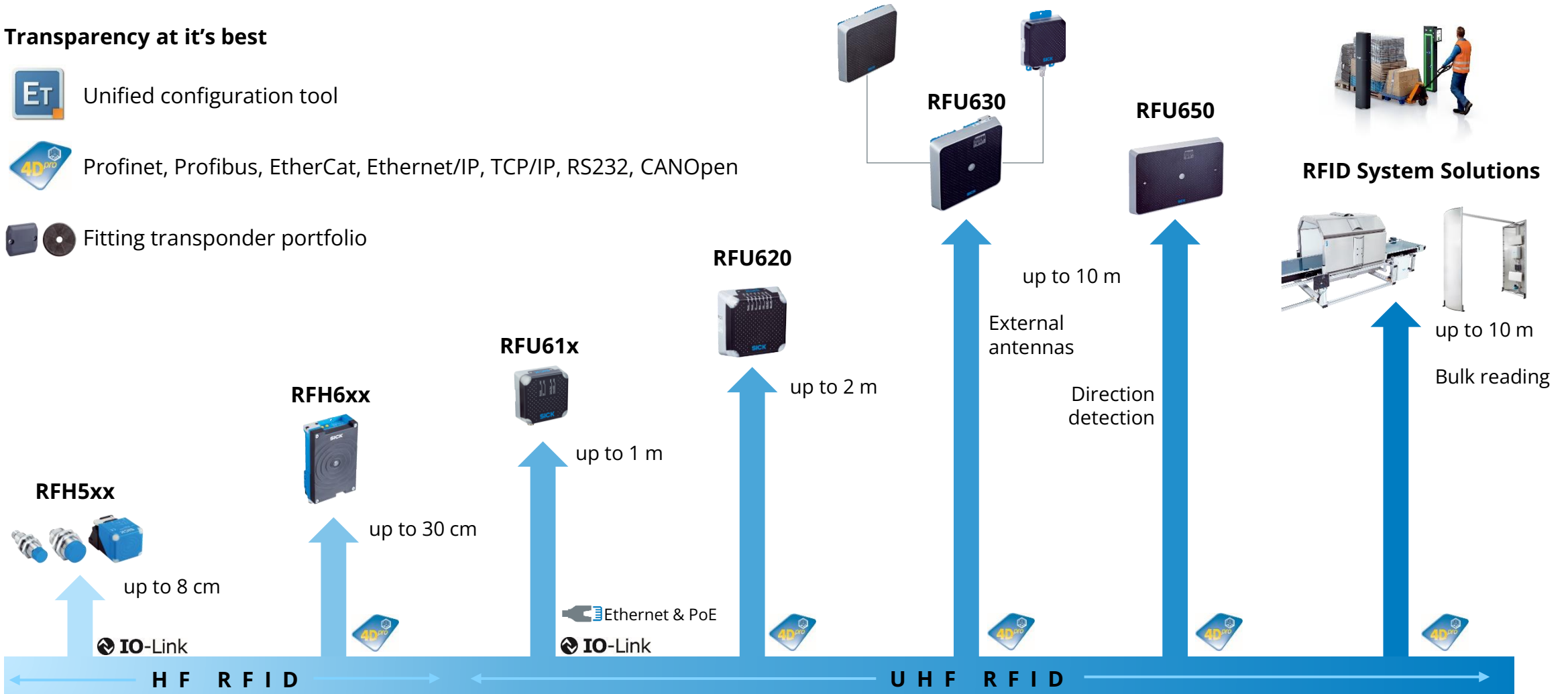
Unified configuration tool



Profinet, Profibus, EtherCat, Ethernet/IP, TCP/IP, RS232, CANOpen



Fitting transponder portfolio





# Radio Frequency Conveyor System High-Performance

RFID Product Portfolio

## Intelligent algorithm & powerful reader

- Correct assignment at small gaps and high speed



- Bulk tag reading



Quick and easy installation

**Modular approach/ building block principle**

Optimal use of storage and conveying space

**Filtering of static tags**

Read tags at low power

**Reading more tags and better assignment**



# Ident Gate System

## RFID Product Portfolio







# SICK RFID References

## RFID Product Portfolio



FLEXIBLE DESIGN AND HIGH THROUGHPUT IN A SINGLE SYSTEM

### THE MARRIAGE OF TRANSPONDERS

first launched a project for optimizing its entire international value chain back in 2009. As part of this project, RFID was employed for optimizing logistics work-flows and retail processes, as well as

gate system RF-GOH for hanging garments and the RFID tunnel system RFMS Pro were designed in conjunction with the conveyor system manufacturer and integrated into the new GERRY WEBER

To achieve fully-automated returns processing and order picking for hanging products that keeps order throughput times as short as possible and picking accuracy as high as possible, the



MARCCAIN

GERRY WEBER

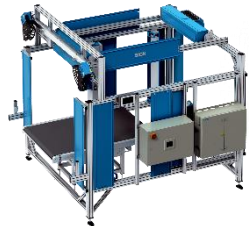


# SICK products in a sortation center

## SICK Product Portfolio



Identification systems  
with CLV, Matrix cameras  
Identification of shipments on  
Pre-sorter



DWS systems, incl. scales,  
dimensioning, line cameras  
Dimensioning, weighing,  
scanning of shipments



Service Contract  
Maintenance,  
Troubleshooting



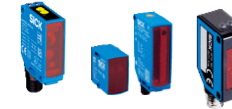
Matrix Cameras  
Read 1D and 2D barcodes  
and take images



Dimensioning Systems  
Volume measurement



Photoelectric sensors (G6,  
Zone Control, ...)  
Detect objects



RAY, WL12, W26, W100 and other  
retro-reflective photoelectric  
sensors  
Object detection with reflectors



SimpleSense  
Presence detection on  
induction lines



Distance sensors  
Fill Level Monitoring



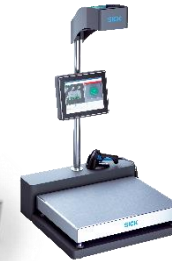
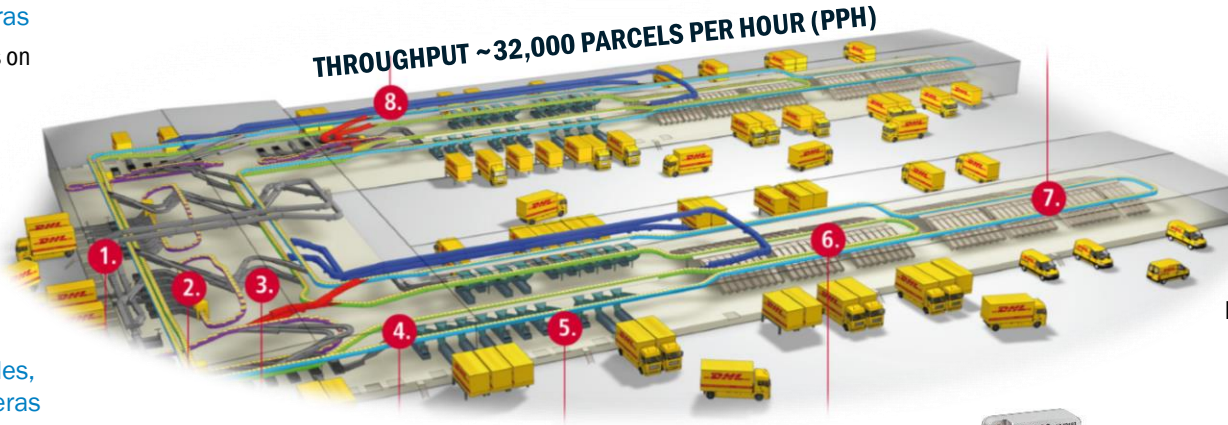
Encoders  
Object tracking and  
speed measurement



WF Fork sensors  
Measure sorter speed



IME - inductive proximity  
sensors  
Bag / bin replacement



MDA Vision  
Master Data Capture



Handscanners  
Scan non-conveyables



Multi-Physics Box & Field  
Analytics  
Condition Monitoring



TiM, picoScan, 2D LiDAR  
Monitor bulk stream, small  
shipment singulation



deTem, M4000, S300 mini  
Safety solutions to prevent collisions,  
access control, emergency stops ...



Package Analytics, Track &  
Trace Analytics Lite  
Master Data Recording



Vision Software  
Object classification



Light grids (MLG-2, SLG-  
2, HLG)

Focusing

as well as Reflectors, Mounting, Cables, Middleware ...



# TAKE A TOUR THROUGH THE VIRTUAL WAREHOUSE

[www.sick.com/tools/warehouse/](http://www.sick.com/tools/warehouse/)



**VISIT US AT  
BOOTH 11.128**

