

**VOLKSWAGEN**

AKTIENGESELLSCHAFT



## How RFID changes the Processes

K-P

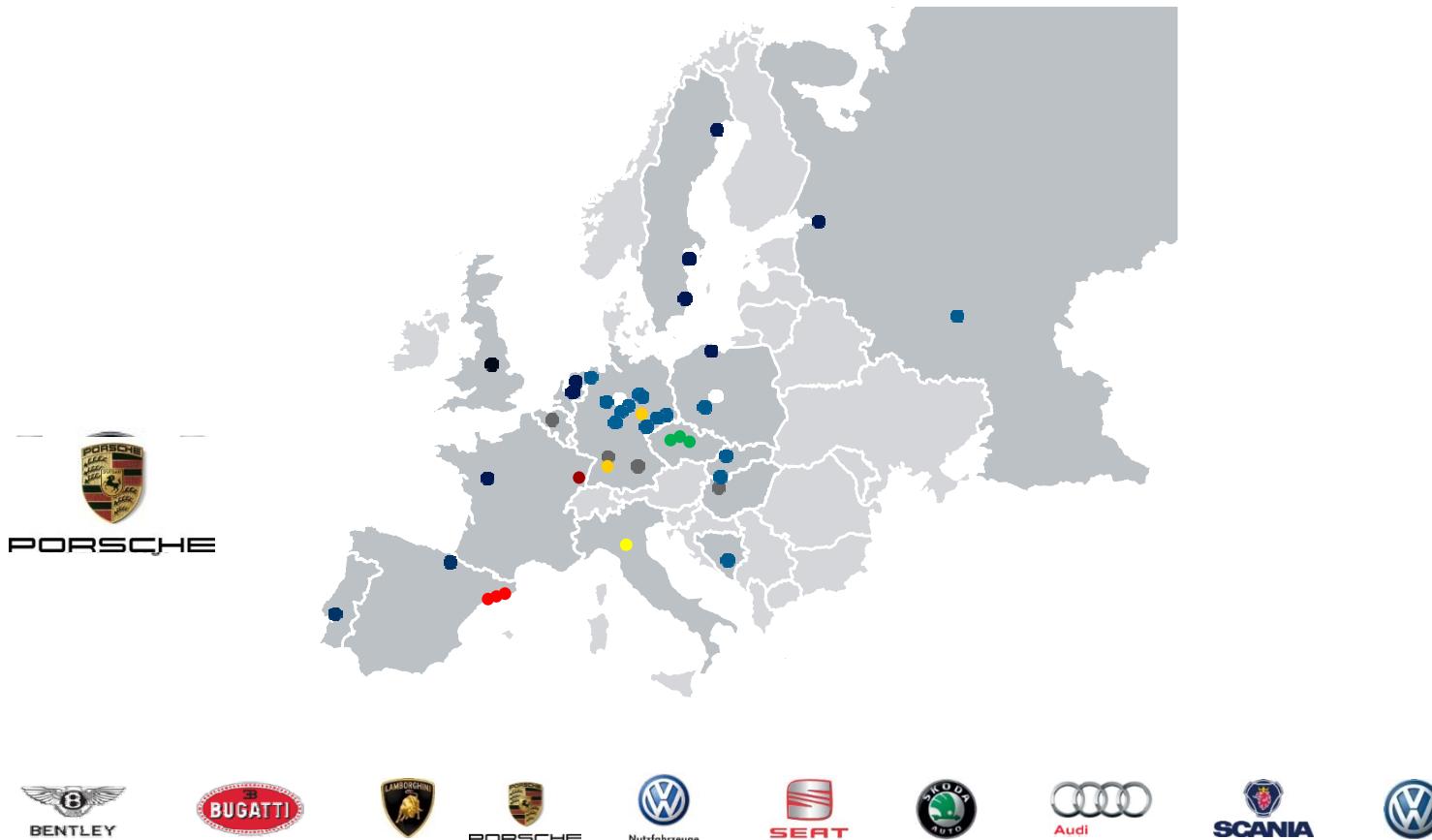
KONZERN-PRODUKTION

Volkswagen Konzernlogistik

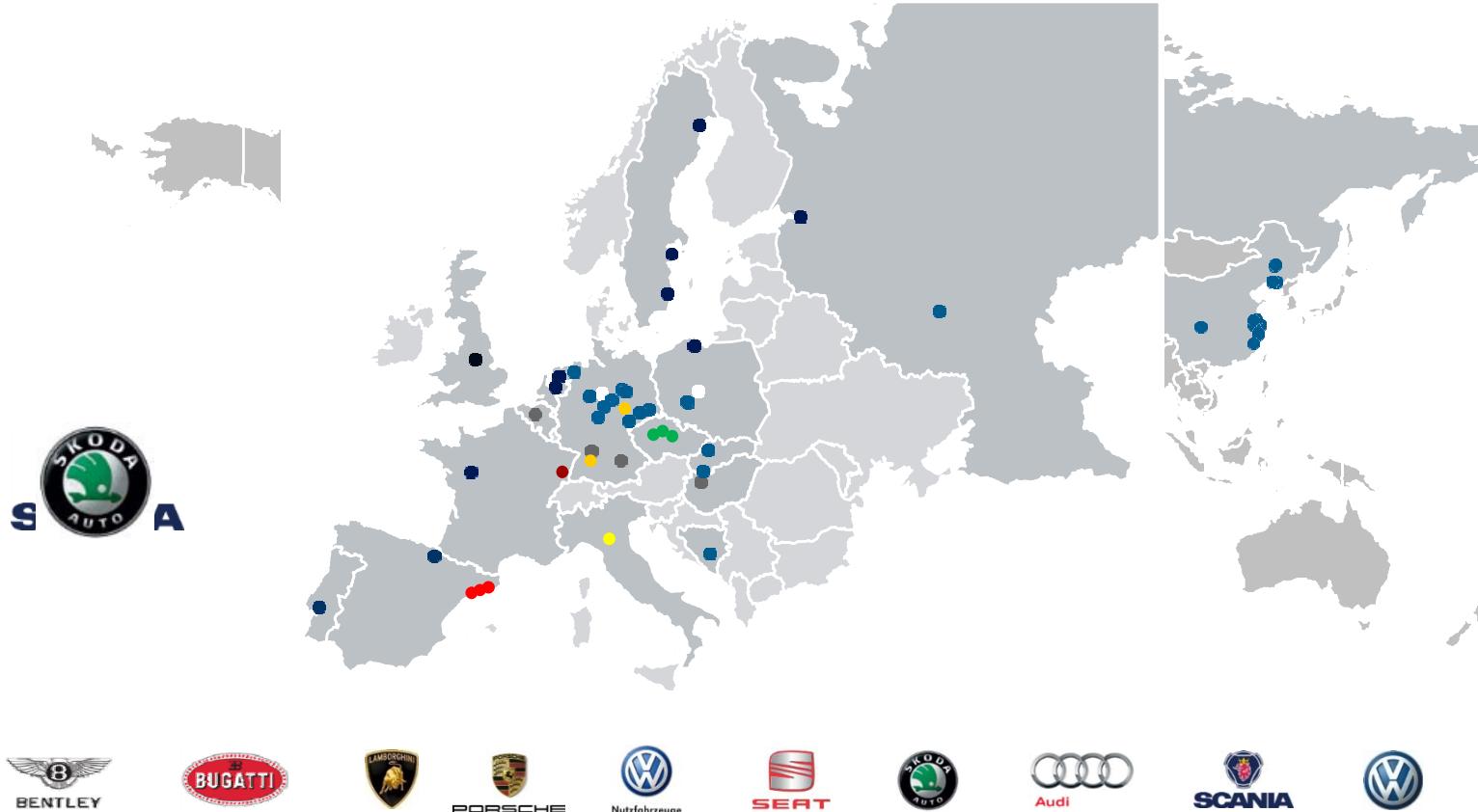
**VOLKSWAGEN Logistics**

K-PLL/R | M. Sprafke | October 2010 | Seite 1

# 67 location's in 10 brands and region's



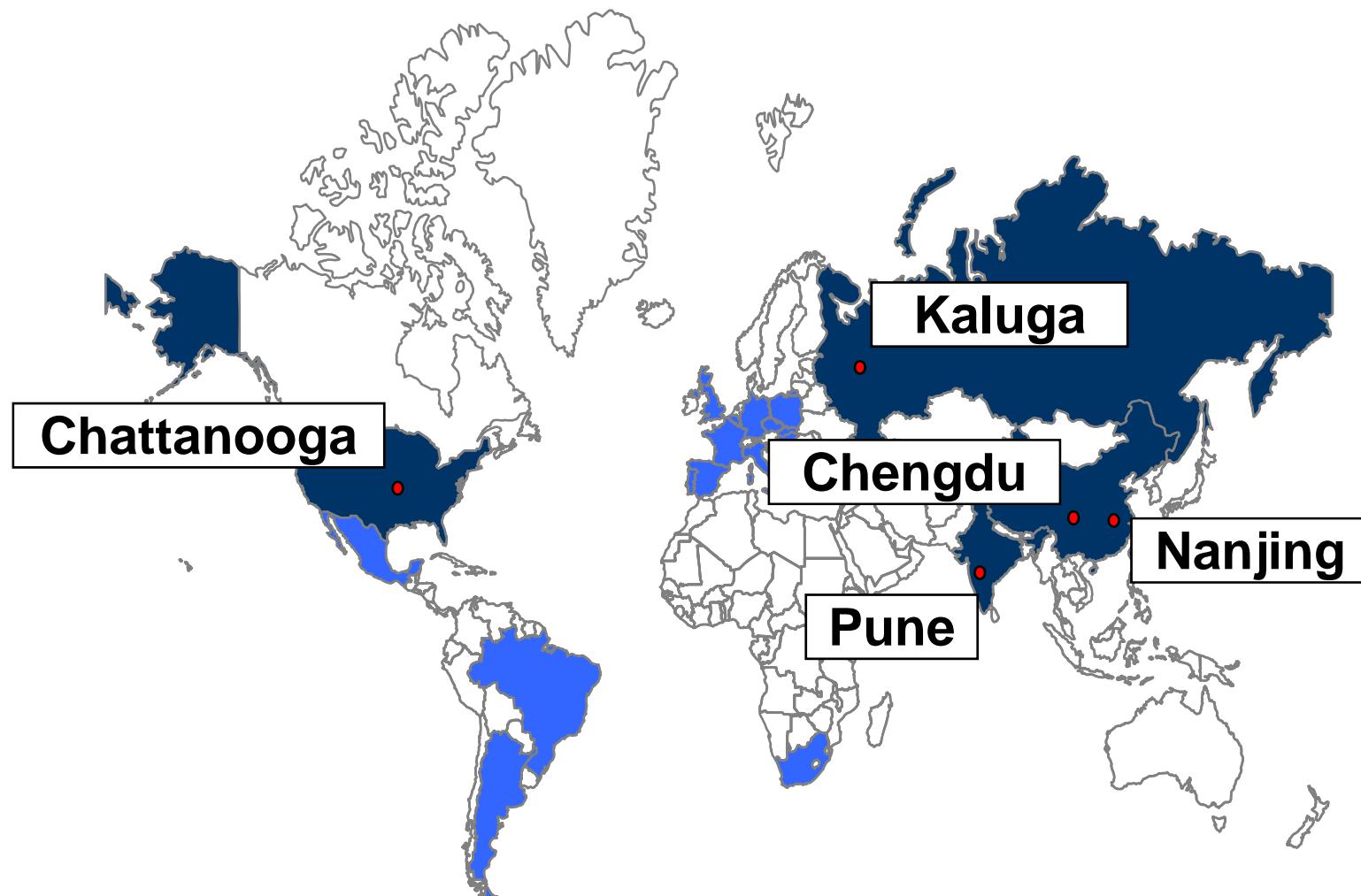
# 67 location's in 10 brands and region's



## Key economic figures - Volkswagen Group January - December 2009

<b>Volkswagen Group</b>		<b>2009</b>	<b>Changes</b>
			<b>last year in %</b>
Delivery to customers	Mio. car's	6,310	+ 0,6
Workforce (31.12.)	Tsd. employees	368,5	- 0,4
Annual turnover	Mio. €	105.187	- 7,6
Operational result	Mio. €	1.855	- 70,7
Result after tax	Mio. €	911	- 80,6
<b>Global market (passenger car's)</b> Mio. car's. approx.		50	- 10,0

## The Volkswagen Group - new Production Plants

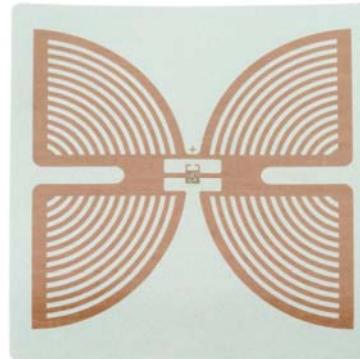


## RFID- Radio Frequency Identification

A radiobased object identification with chip technology  
(Transponder, mobile Datamemory...)

Volkswagen expects the following:

- optimized part handling
- more efficient logistic
- decentralized production control
- support of the new VW- Production System
- therefore we worked at:
  - Standards,  
and tested the technology with two pilot projects
  - LeoPARD, LAENDmarKS



VOLKSWAGEN Logistics

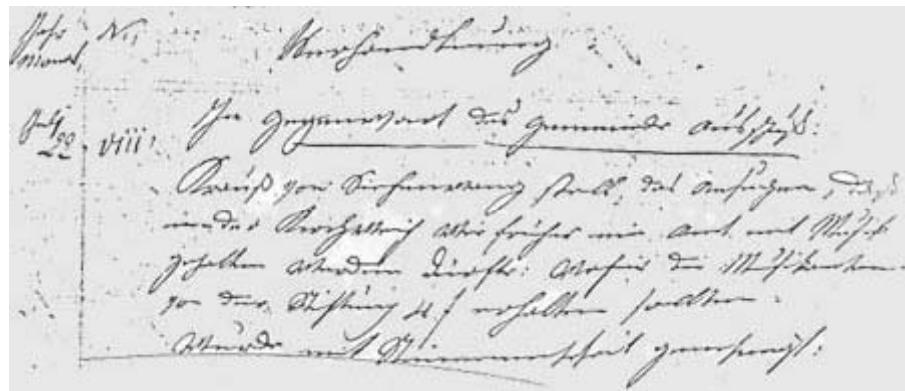
## RFID – advantages

Technology for



bulk reading of  
max. 500 parts

## Ware registration until 1981



## Ware registration since 1981



## Ware registration in future



## Potential of RFID

	assembly control	logistic	quality	authentication
scopes	<ul style="list-style-type: none"> <li>• body shop</li> <li>• paint shop</li> <li>• assembly</li> <li>• production control</li> <li>• Finish-Centre</li> <li>• service process</li> <li>• ...</li> </ul>	<ul style="list-style-type: none"> <li>• container</li> <li>• material flow</li> <li>• parts</li> <li>• CKD container</li> <li>• truck tracking</li> <li>• vehicle distribution</li> <li>• ...</li> </ul>	<ul style="list-style-type: none"> <li>• incorrect installation</li> <li>• installation documentation</li> <li>• quality risks</li> <li>• prevention of plagiarism</li> <li>• ...</li> </ul>	<ul style="list-style-type: none"> <li>• worker</li> <li>• facility</li> <li>• ...</li> </ul>
potentials	<ul style="list-style-type: none"> <li>• automatic registration of bodies</li> <li>• reduction of failures</li> <li>• automatic registration of vehicles</li> <li>• more efficiency in processes</li> <li>• ...</li> </ul>	<ul style="list-style-type: none"> <li>• reduction of container inventory</li> <li>• reduction of manual scanning</li> <li>• prevention of fixing new labels</li> <li>• reduction of material stocks</li> <li>• ...</li> </ul>	<ul style="list-style-type: none"> <li>• automatic control of quality</li> <li>• reduction of failure consequential costs</li> <li>• red. of recall-costs</li> <li>• ...</li> </ul>	<ul style="list-style-type: none"> <li>• increase of utilised capacity</li> <li>• automatic documentation</li> <li>• ...</li> </ul>

# RFID for Production, Distribution and Car Lifecycle

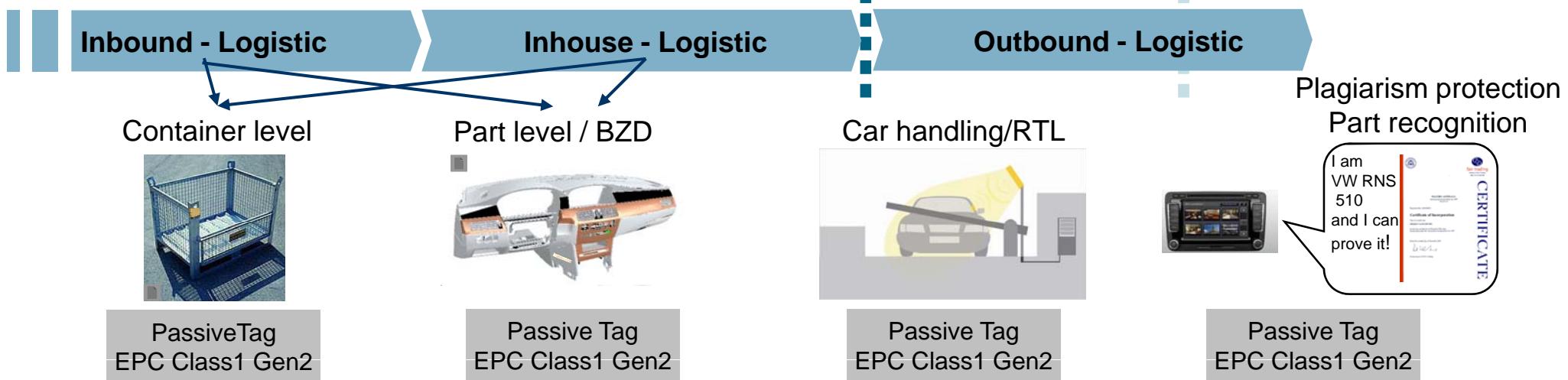
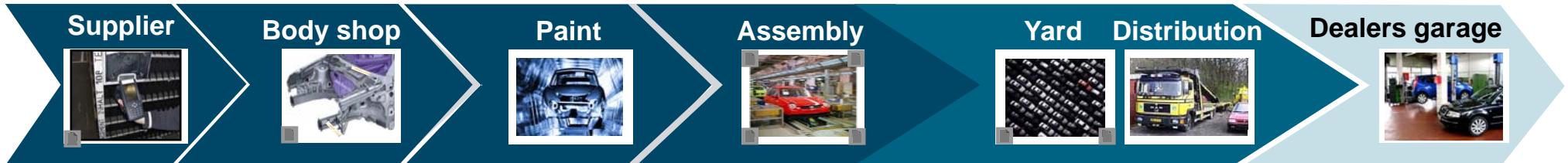
## Production

## Distribution

## Aftersales

### Vision: 1. Step

Integrated, automatic central production control  
passive RFID Tags, only ID-number ( 1 KBit)



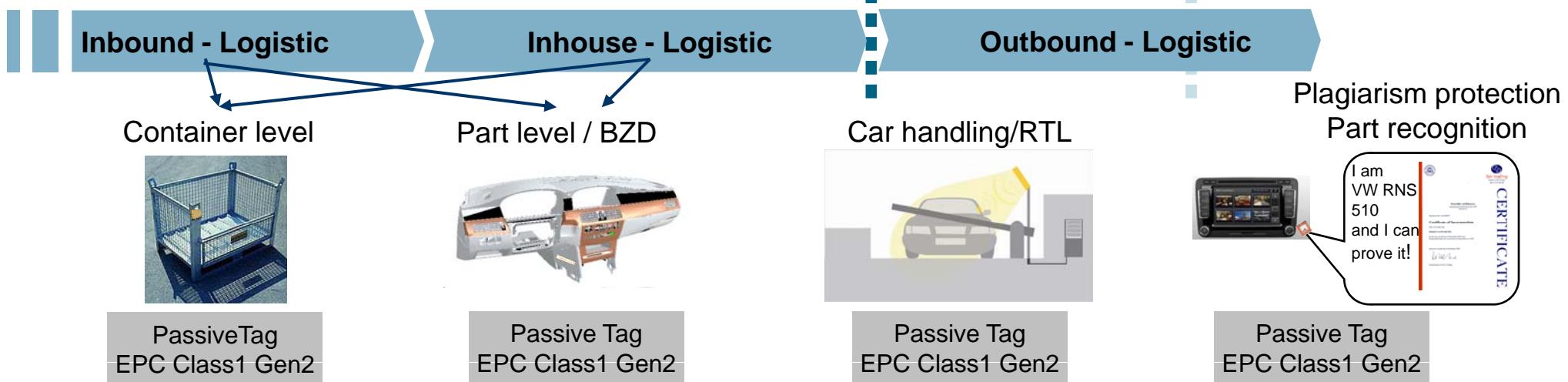
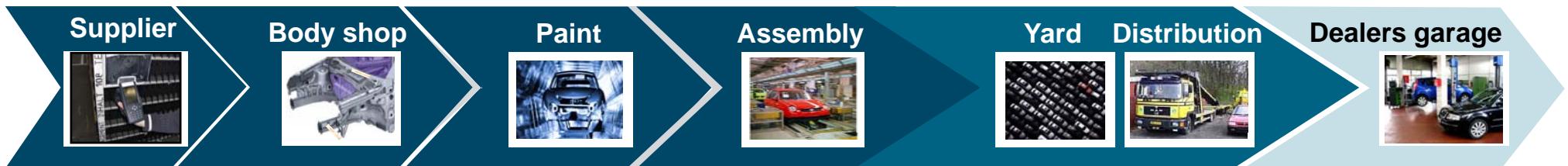
# RFID for Production, Distribution and Car Lifecycle

## Production

## Distribution: Aftersales

### Vision: 2. Step

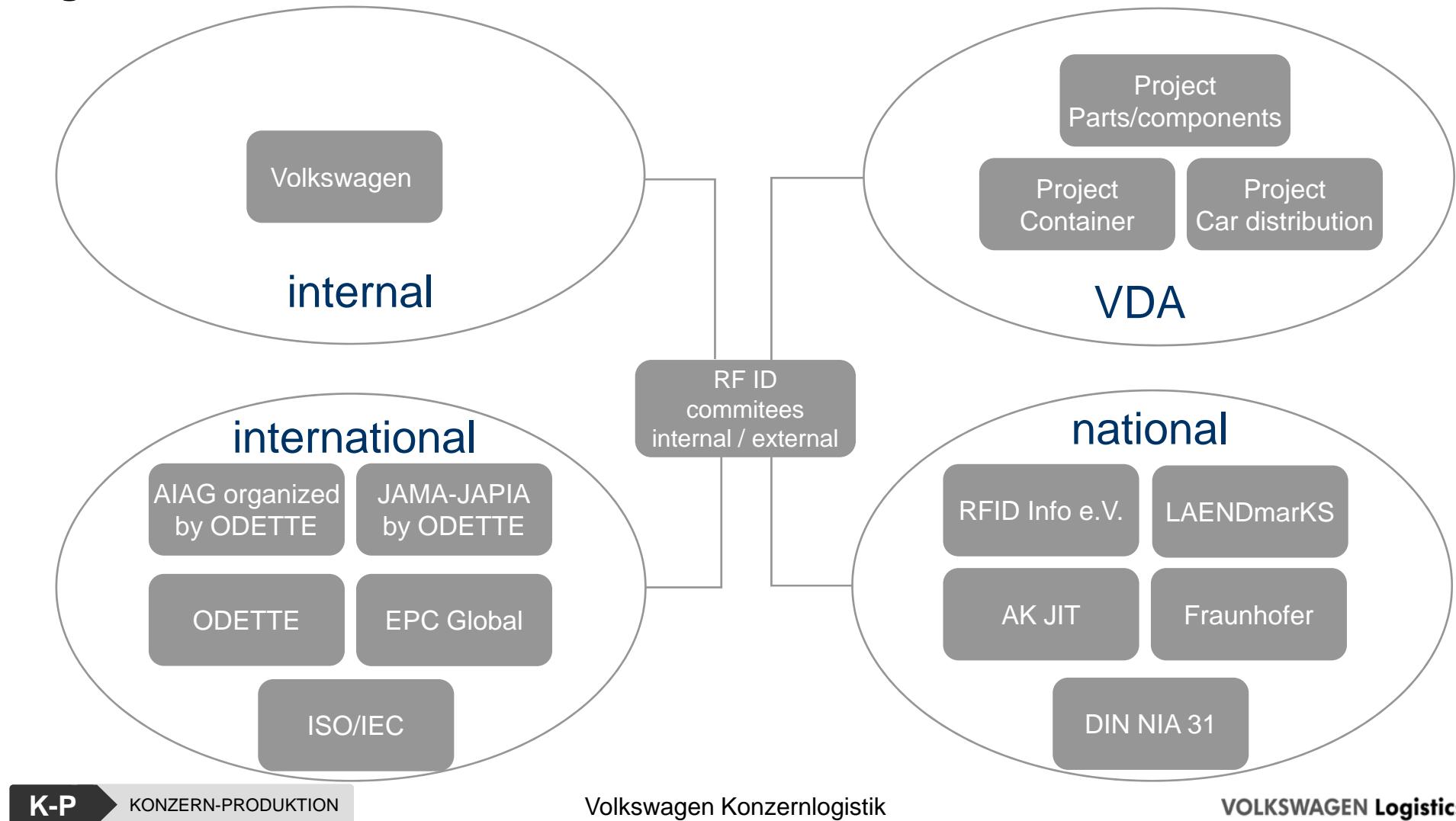
Integrated, automatic decentral production control  
passive RFID Tags, ID-number plus process data( 4-8 Kbyte )



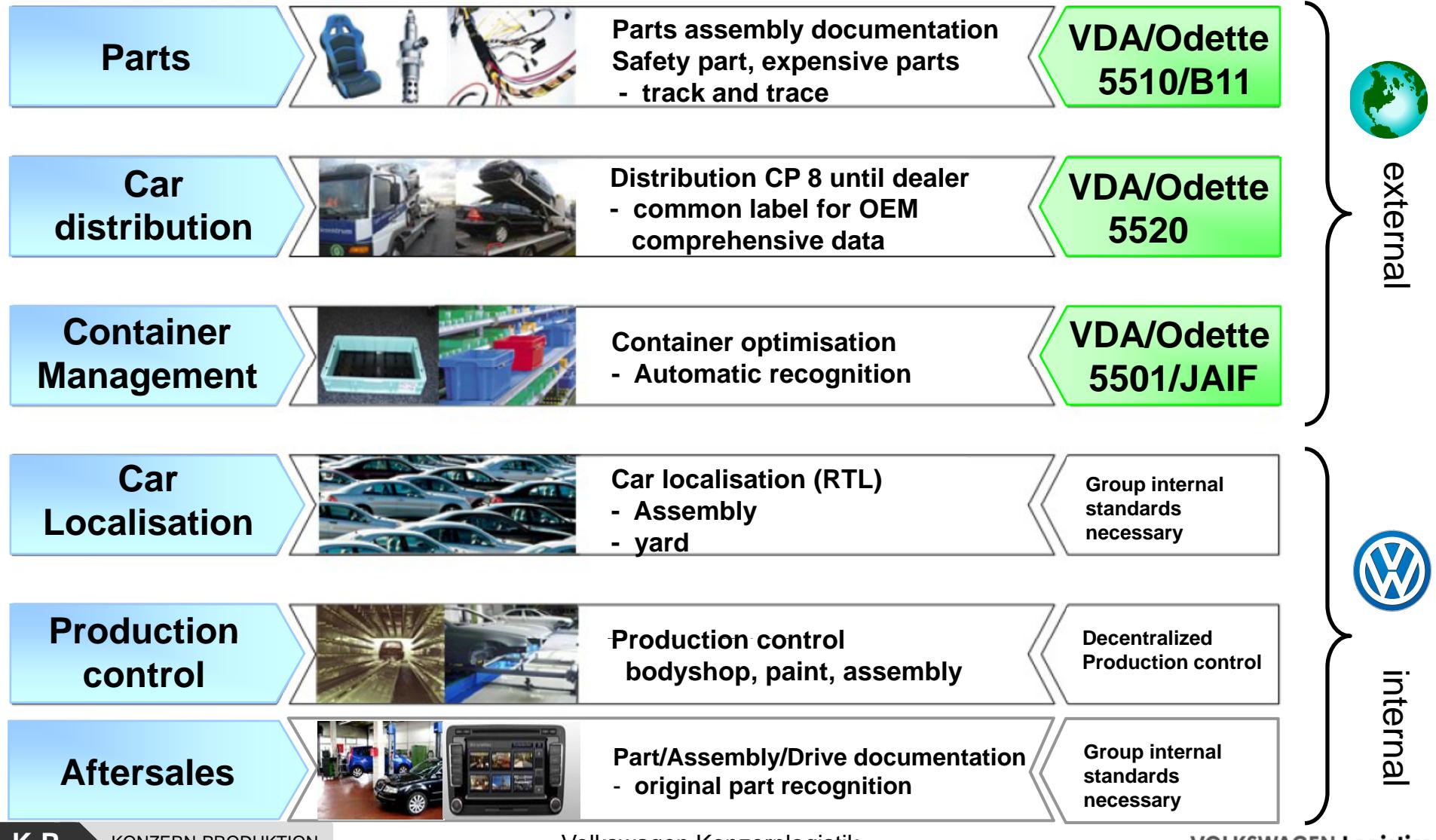


## RFID Standards

## How automotive RFID standards are made? Organization scenario



## RFID application area's - standardisation





## Pilot project LeoPARD

## Strategic objectives of the Project LeoPARD

### RFID- Supply Chain

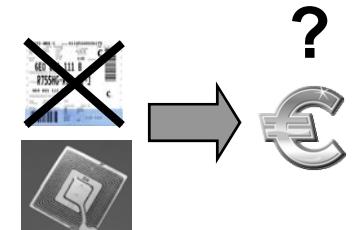


- RFID-test within the supply-chain together with 2 supplier

### Process changes

#### Investigation:

- Widely elimination of manual handling
- Increase of transparency



### Technical feasibility



#### Check up of :

- Valuation of suitability
- Reliability

### Best-Practices

- To design Best-Practices for the Group



## LeoPARD - Supply-Chain Volkswagen AG

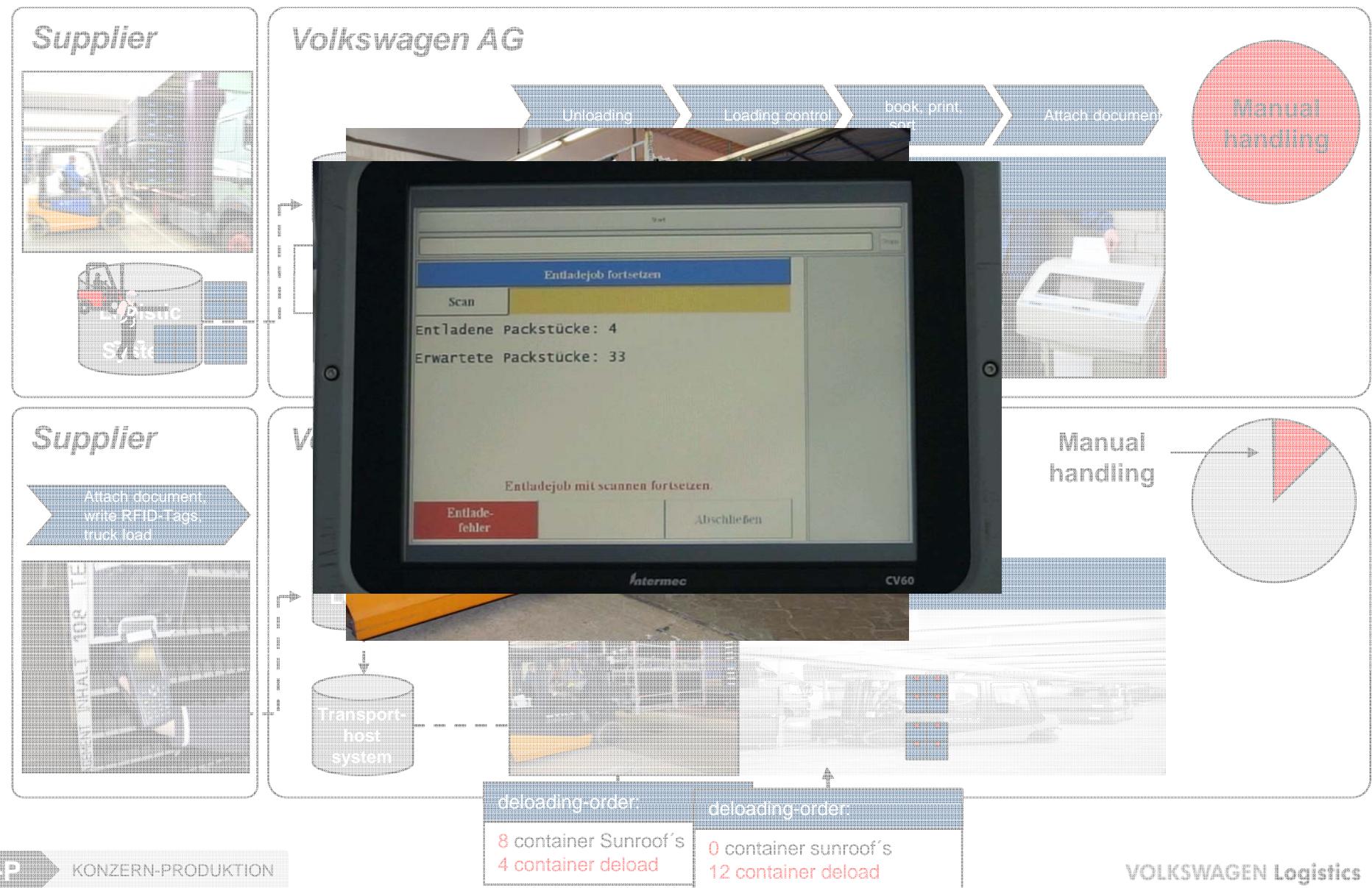


# RFID-Process

## Actual-Process

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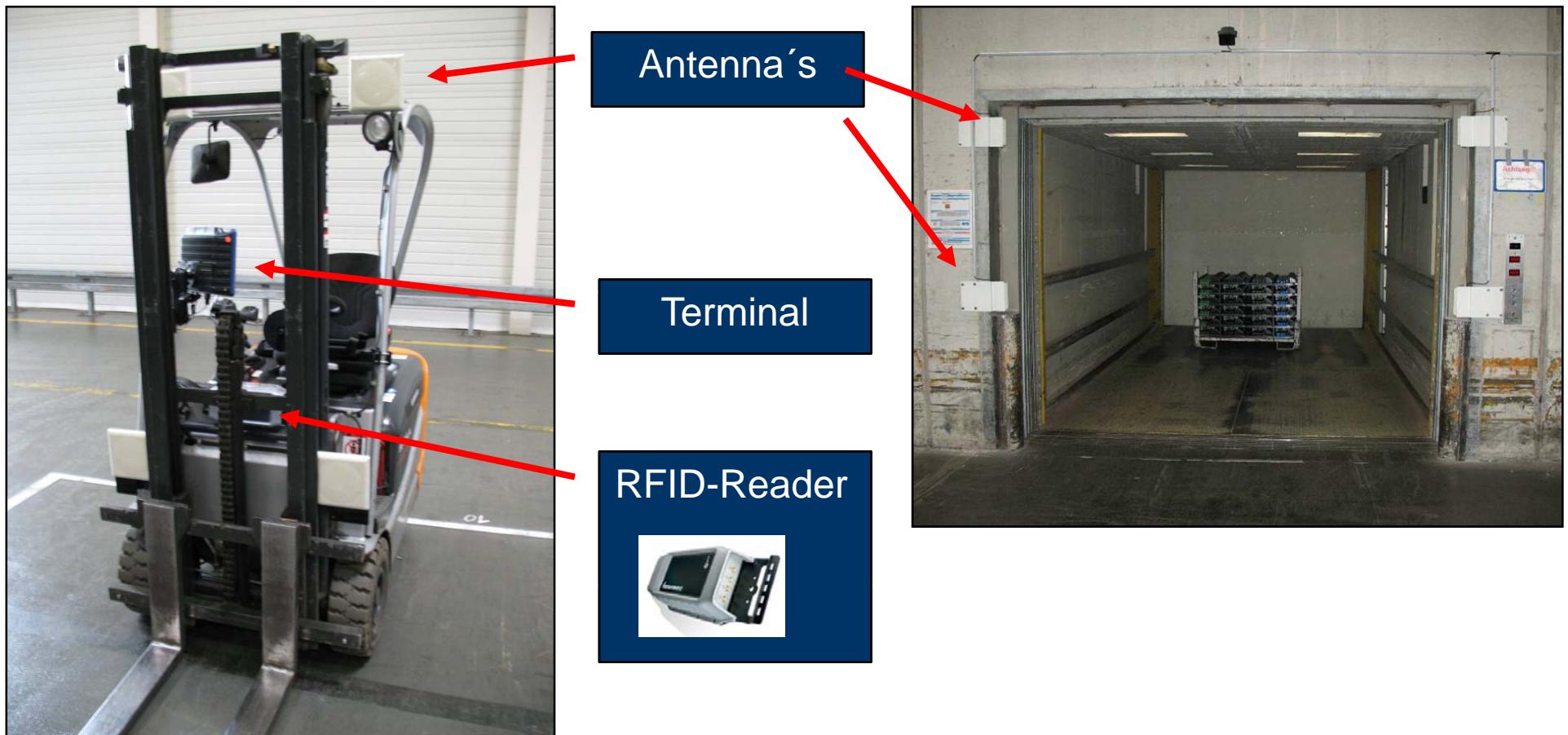


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## RFID- forklift / RFID- Gate



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Tanks for your attention

