



The long way to RFID

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agenda

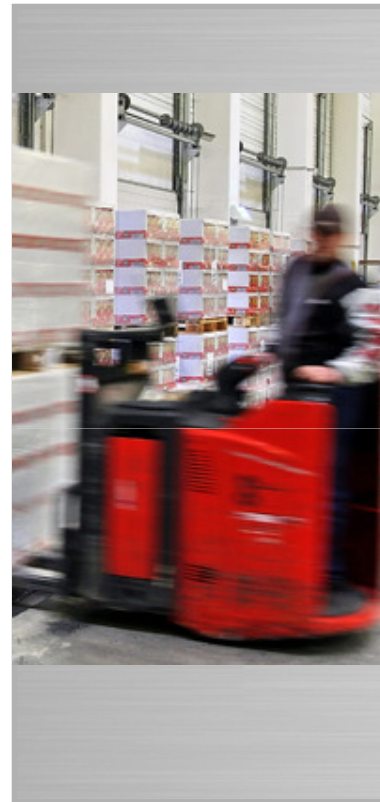
- pilot project BLG Logistics
- scope
- use case CKD
- result
- use case Tchibo



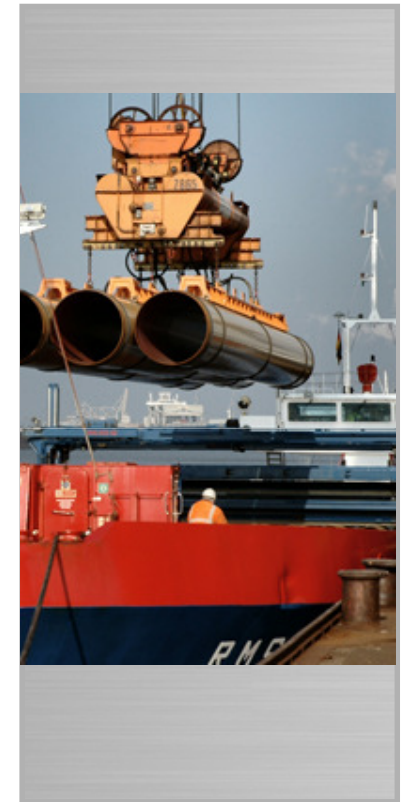
Automotive Logistics



**Industrial &
Production Logistics**



**Retail &
Distributions Logistics**



Port Logistics



Pilot project at BLG Logistics

*RFID-aided process-control within the automotive-supply-chain
using the example of the CKD-business for Daimler AG.*

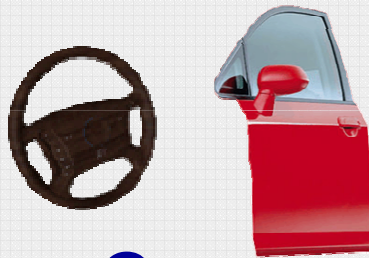
*In collaboration with BLG Logistics
and the **ITA**
(Information **T**echnology for the
Automotive industry.*





CKD Project – Daimler AG

**CKD (completely
knocked down)**



6 x



- *worldwide supply of automotive-parts to the OEM-plants*
- *Assembly and bodyshop parts*
- *Repackaging of the parts into sets according to the packinginstructions*
- *repackacking in relation to the linestation or gate in the plant*
- *Containerization*
- *Approx. 350.000 one-way-pallets*



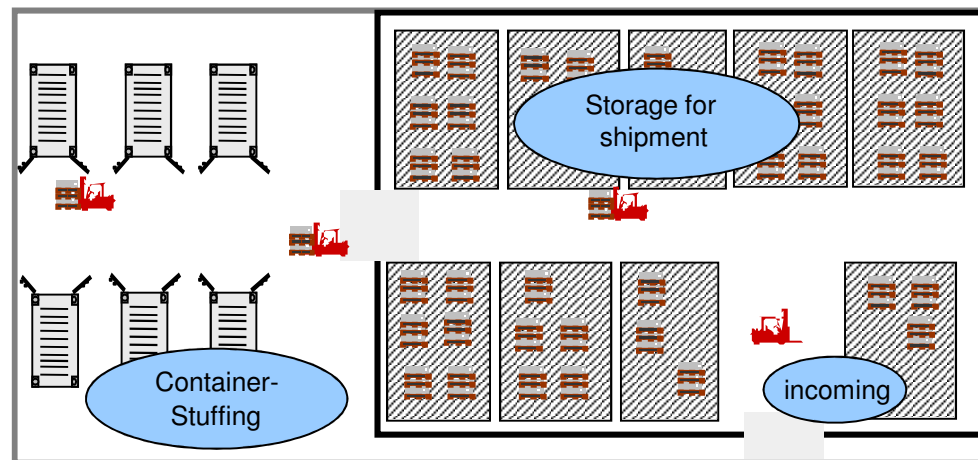


scope

RFID-based solution for warehouse-handling and automated control



- *simple identifcation of the pallets*
- *cleary identification of the stuffed pallets in a sea-container*
- *provide proof of the technical feasibility*

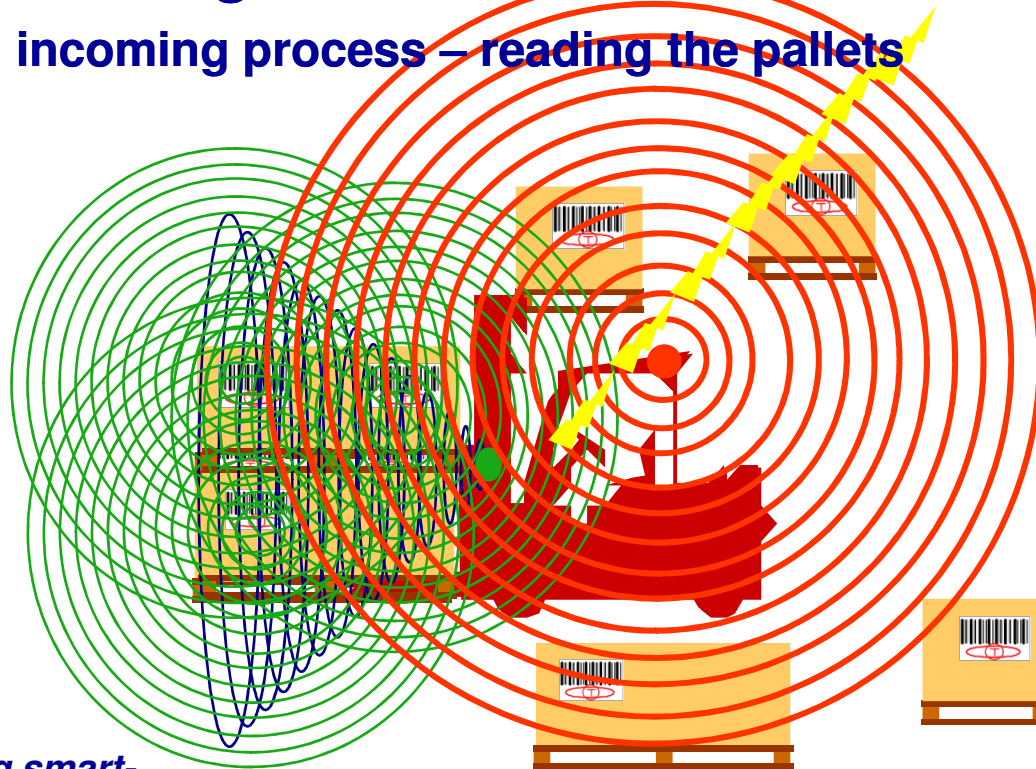




*Case: bulk registration of the
pallets by the forklift*

locating of the forklifts

Step 1 — incoming process — reading the pallets



*Unloading the trucks and fixing smart-
label at the pallets the forklift reads the
pallets*

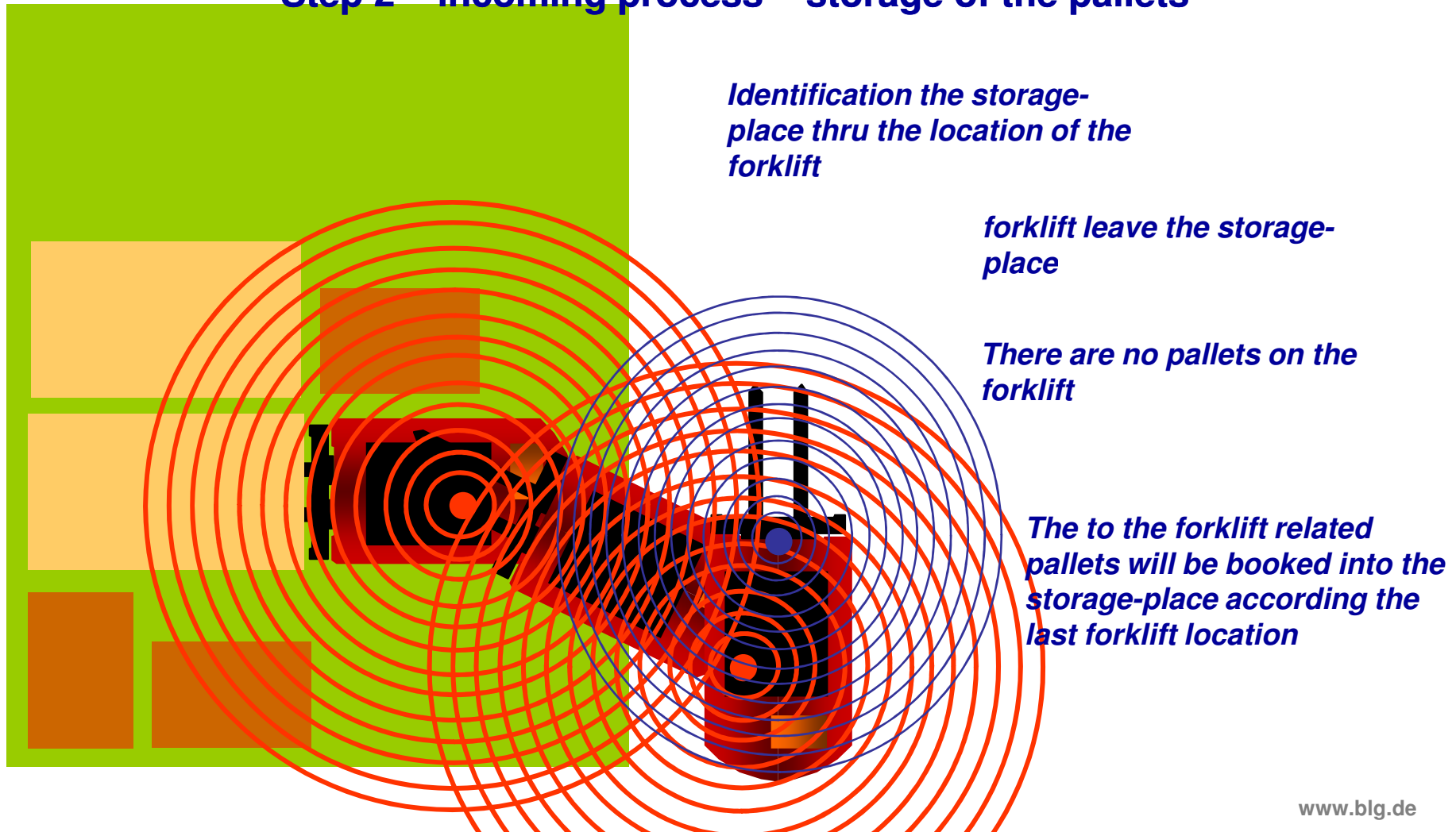
*.... And relate these pallets to a specific
forklift*



*Case: forklift is in / out
of the store location*

Locating of the forklifts

Step 2 – incoming process – storage of the pallets





*Case: forklift is inside /
outside of the sea-container*

locating of the forklifts

*Reading the transponder and
identificate the container*

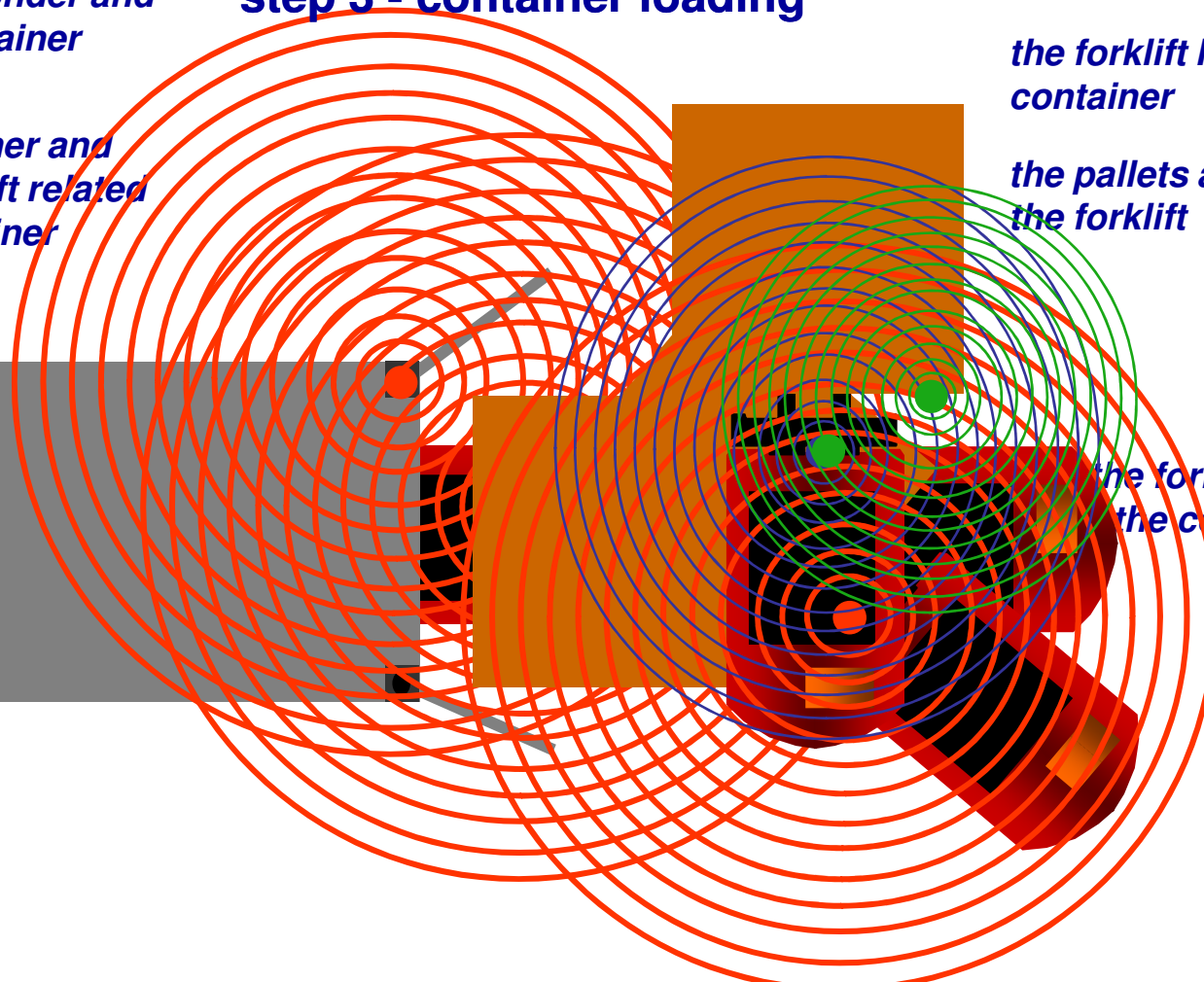
*Loading the container and
link the to the forklift related
pallets to the container*

step 3 - container loading

*the forklift leaves the
container*

*the pallets are read by
the forklift*

*the forklift will not
the container*







RESULT



technical feasibility to read the smart-label at the pallets and locating the forklift

Testscenario:				Transponder: T1 = T1 T2 = n		
Packstücktyp:	Durchlauf Nr.	diagonal, ohne Hindernis	diagonal durch Packstück	Be		
E59 Motoren	Firma	Tricon				
	Frequenz	915 MHz (UHF)				
	Transponder	T1	Transponder länglich, 15 x 1,9 cm (Bild 78)			
		T2	Transponder quadratisch, 9 x 9 cm (Bild 79)			
	Antenne	Sender und Empfänger in einem Gehäuse, optimal zueinander ausgerichtet				
	Reader					
A75						
Packstück	Inhalt	Verpackung	durchgeführte Tests	Tag- Typ	Bild	Ergebnis
LSL10	Stoßdämpfer	Pappe	Tags rechts; Packstückbreite ca. 1,12 m; Gabelstapler fährt mittig an	T1/T2	75 76	Tags im Abstand von ca. 3,6 m gelesen
		Pappe	Stapel mit 5 Packstücken jeweils mit Tag vorne versehen; Gabelstapler fährt mittig an	T2	80 81 82	alle 5 Tags im Abstand von 3,6 m gelesen
		Pappe	Stapel mit 5 Packstücken jeweils mit Tag seitlich versehen; Gabelstapler fährt mittig an	T2		Tag seitlich in der Mitte gelesen
G18406	Benzintanks	Pressspanplatten	3 Tags seitlich angebracht (vorne T2v, Mitte T2m, hinten T2h); Stapler fährt mittig an	T2	85	T2v später, dann stetig gelesen T2m sofort, dann stetig gelesen T2h teilweise gelesen
G18407	Antriebswelle	offene Holzpalette	3 Tags von oben; Gabelstapler fährt mittig an	T2	86	alle werden gelesen

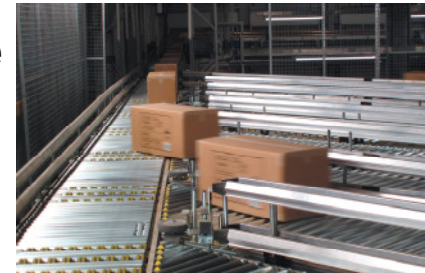




Tchibo - Logistics Center Central Warehouse



„Every week a new world“: Central warehouse and distribution centre for Non-Food and coffee. Dispatch of coffee and Café service-supply worldwide



Facts & Figures:

- Total area: 150.000 m²
- Roofed warehousing area 70.000 m²
- Pallet storage units in 3 HBW silos: 200.000
- Multifunctional storage area: 30.000m²
- Dimensions of HBW silos (each)
 - Height 42 m
 - Length 146 m
 - Width 70 m



RFID – technology in the high bay warehouse Tchibo

- use-case1: forklift transports in the dispatch area
- use-case2: docking of swap-bodies at a gate



tag



port



Access Point



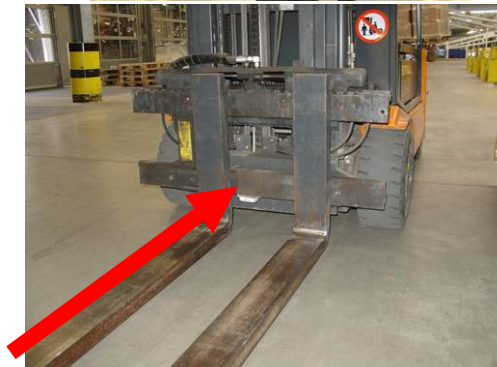
**Case1: forklift transports in
the dispatch area**



data-terminal



port at conveyance



forklift with a tag

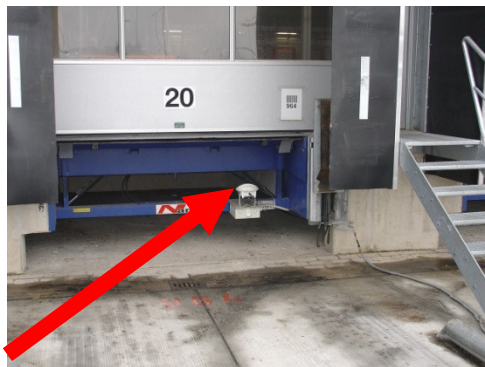


ports at the gates

- *each move of the forklift from the conveyance to the gates will be controlled*
- *the forklift driver has a transport-order from conveyance to a gate*
- *both ports are sending a clear magnetic signal*
- *the transponder at the forklift reads and sends e.g the gate-no to the WMS-system.*
- *the WMS checks the correct gate-no for this transport-order*



**Case2: docking of swap-
bodies at a gate in the
dispatch area**



ports at the gates



data-terminal



Swap-body with mobile
tag



mobile tag

- *each incoming swap-body will be furnished with a mobile active transponder*
- *when docking the swap-body at the gate the transponder sends e.g the gate-no to the WMS-system*
- *the WMS checks the correct gate-no for this transport-order*



Thank you very much for your attention.

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