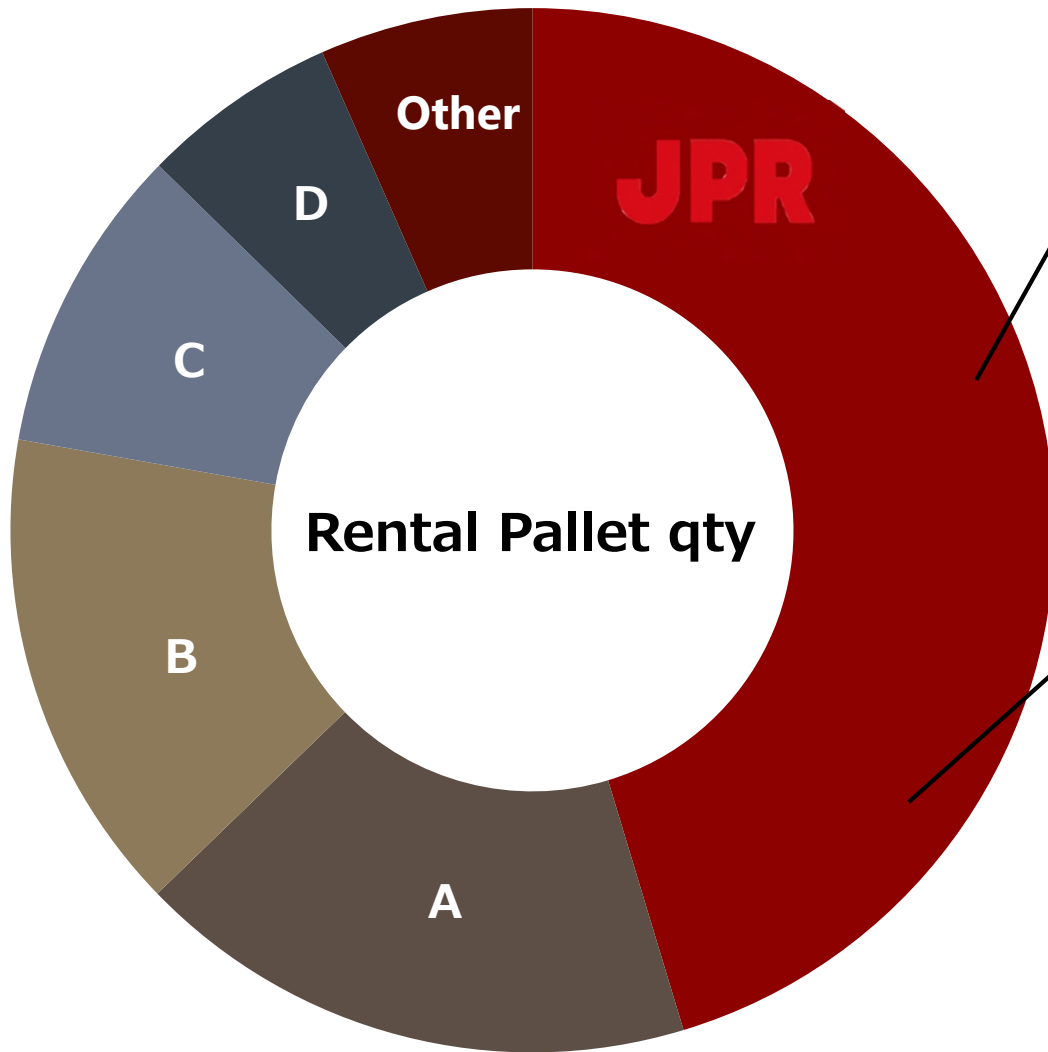


RFID pallet as a key device for logistical efficiency

December 4th 2018
Japan Pallet Rental Corporation
Takuya Kinoshita



Pallet Rental Business



We own
10M pallets

Ownership ratio in
the rental pallet
sector
around **45%**

(一般社団法人日本パレット協会 調査)



Business partners

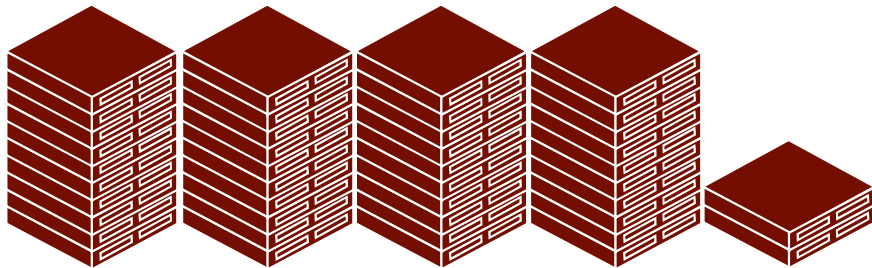
3,300 companies

Processed food, Consumer goods etc.



Customer's factories & warehouses

60,000 bases



Total rental pallets

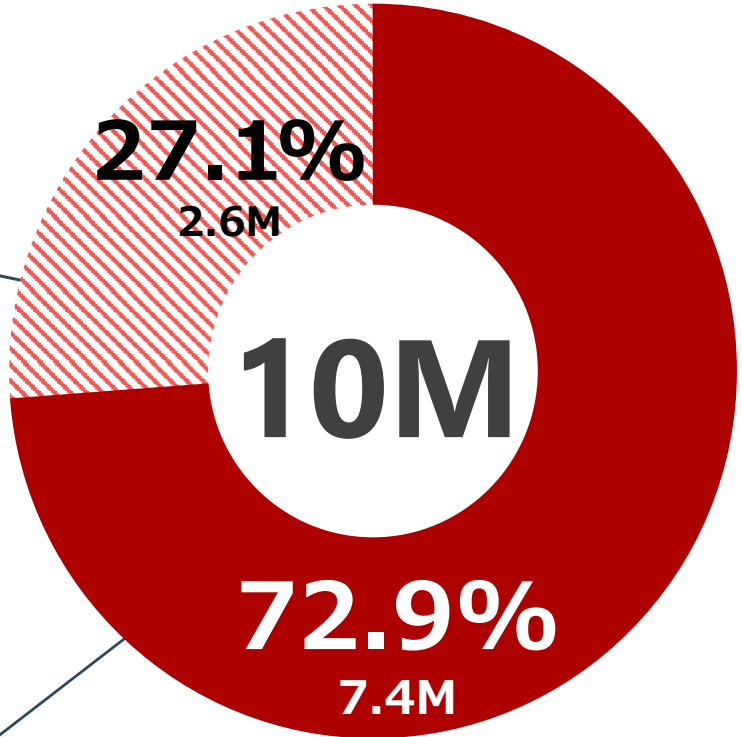
42M pallets

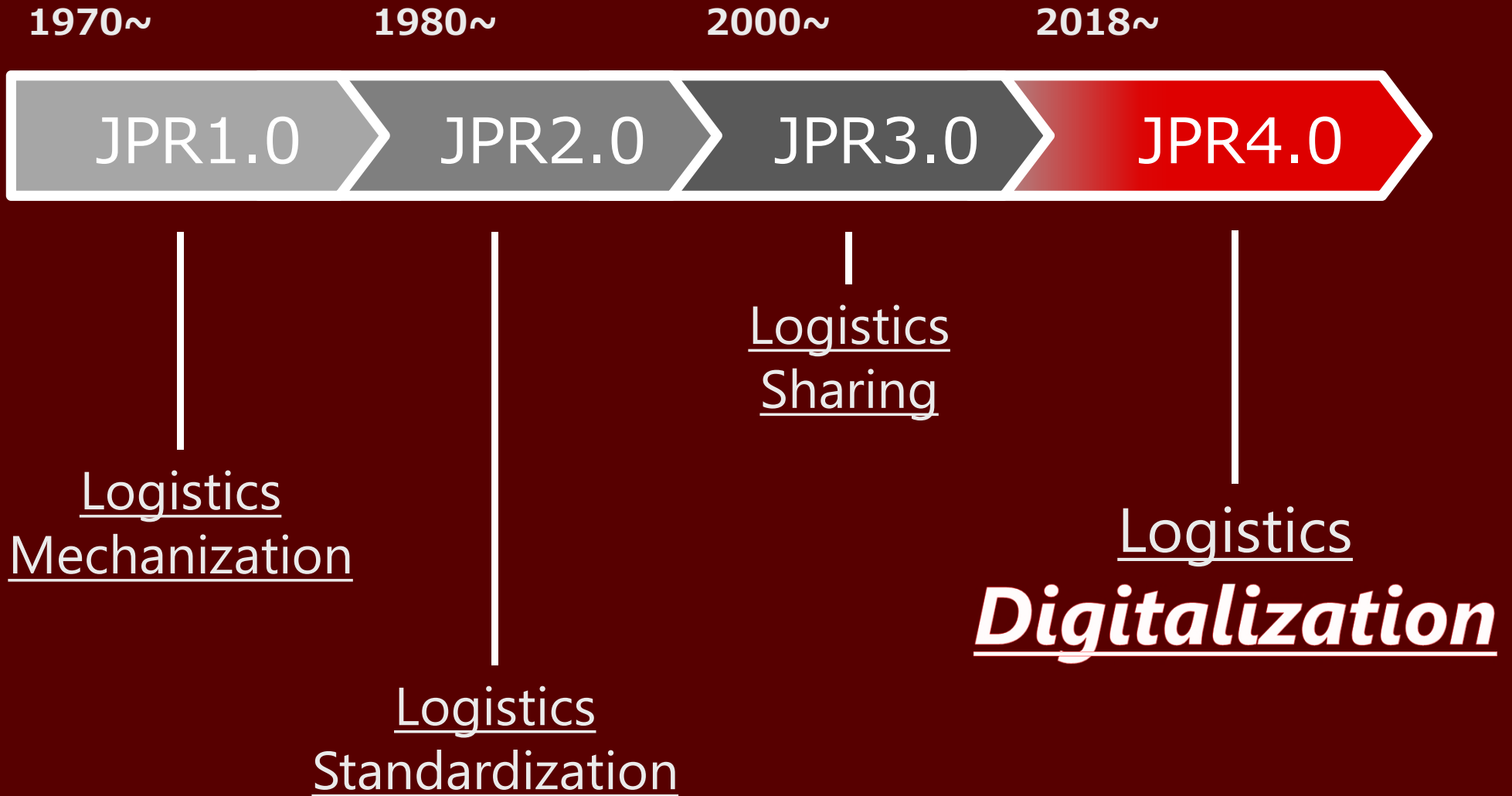



**Wooden Pallet
Type T-11**
SIZE : 1,100×1,100×144mm (L×W×H)



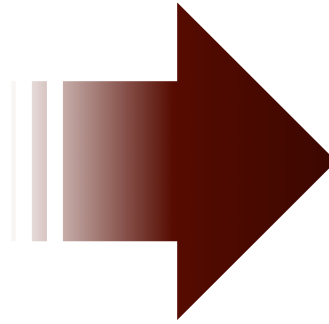
**Plastic Pallet
Type PT-11**
SIZE : 1,100×1,100×144mm (L×W×H)



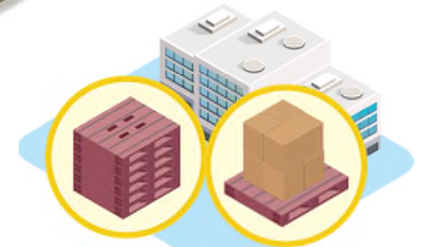




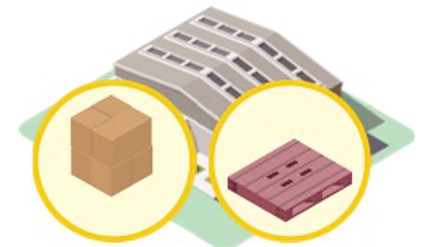
Logistics Mechanization



JPR depot



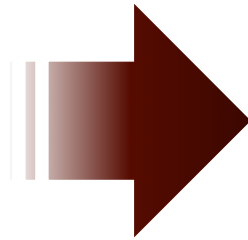
Maker



Wholesaler



Logistics Standardization

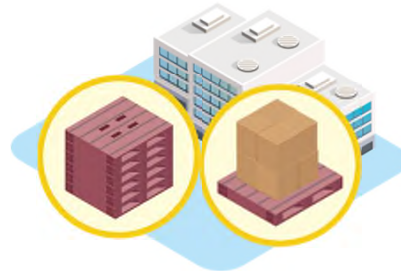


By consolidating the pallets among companies, it is possible to reduce the work of replacing items

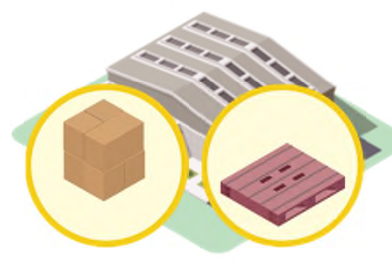
- Improve efficiency of delivering products
- Improve efficiency of pallet management



JPR depot



Maker



Wholesaler



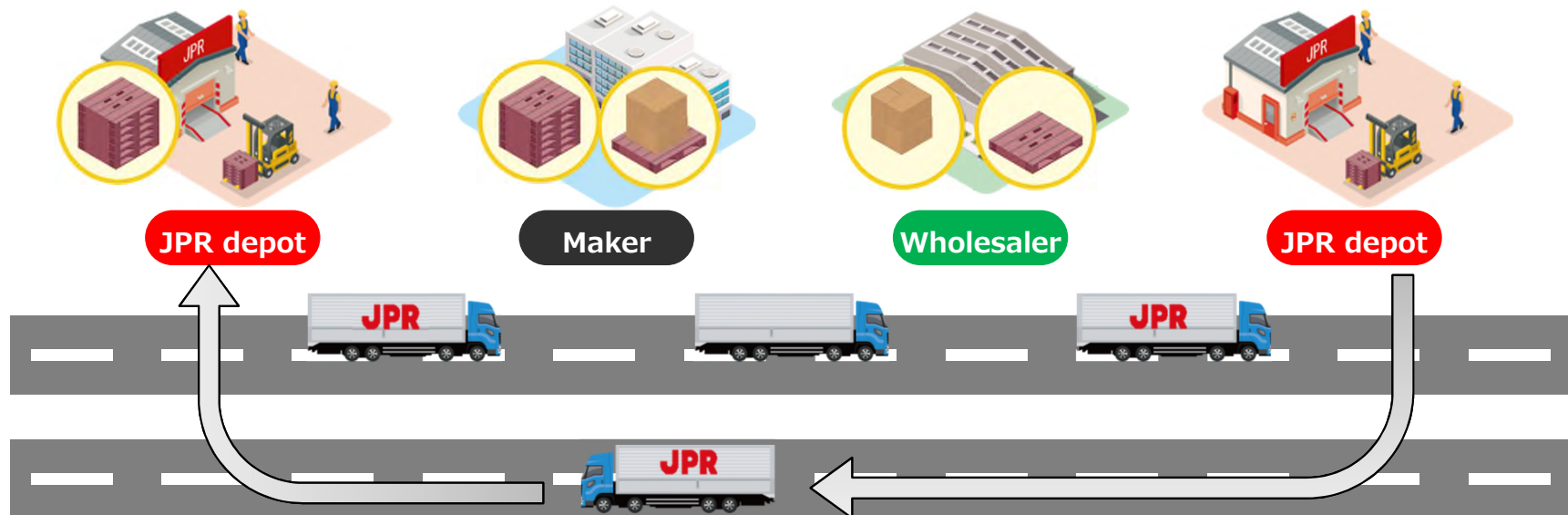
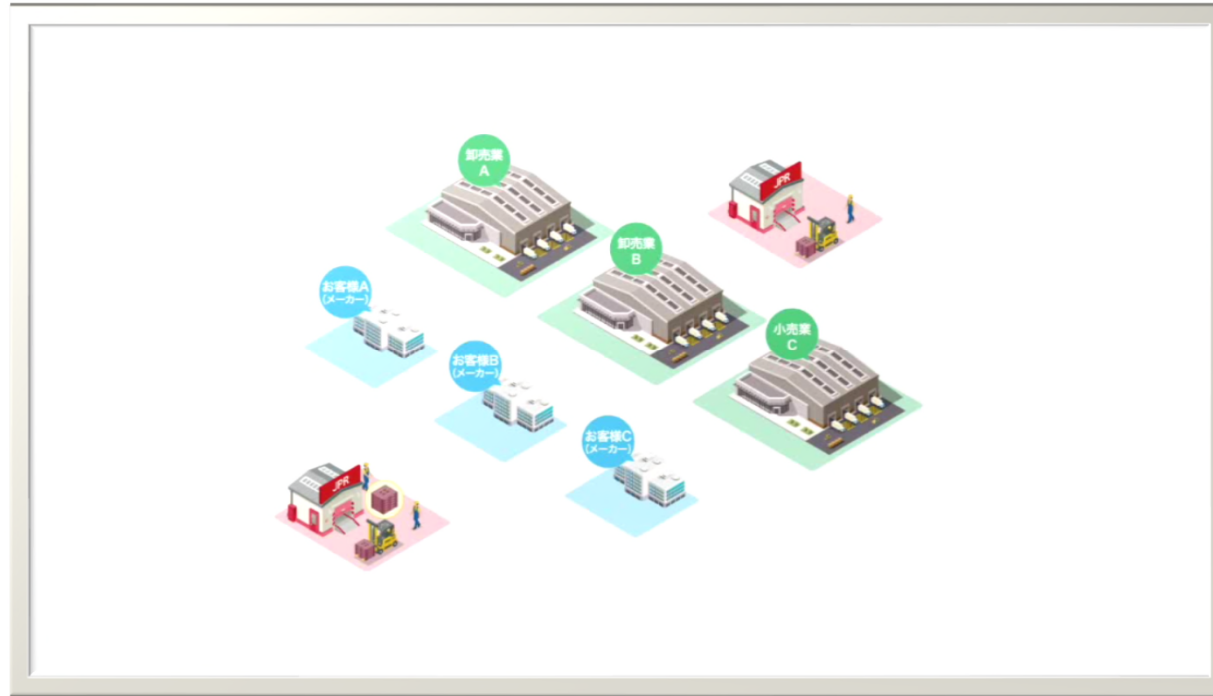
JPR depot





Logistics Sharing

Improve inefficient pallet return
JPR reduces number of trucks by
undertaking collection work.





Logistics Digitalization

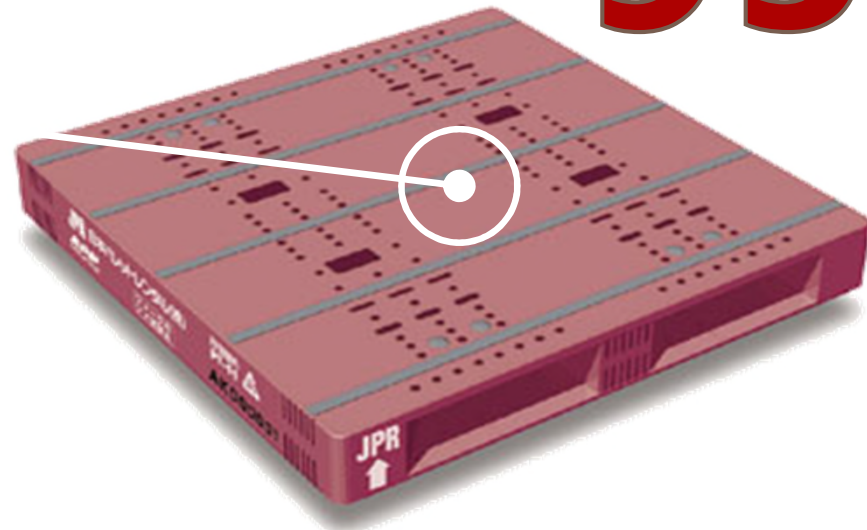


RFID tag attachment rate

95%

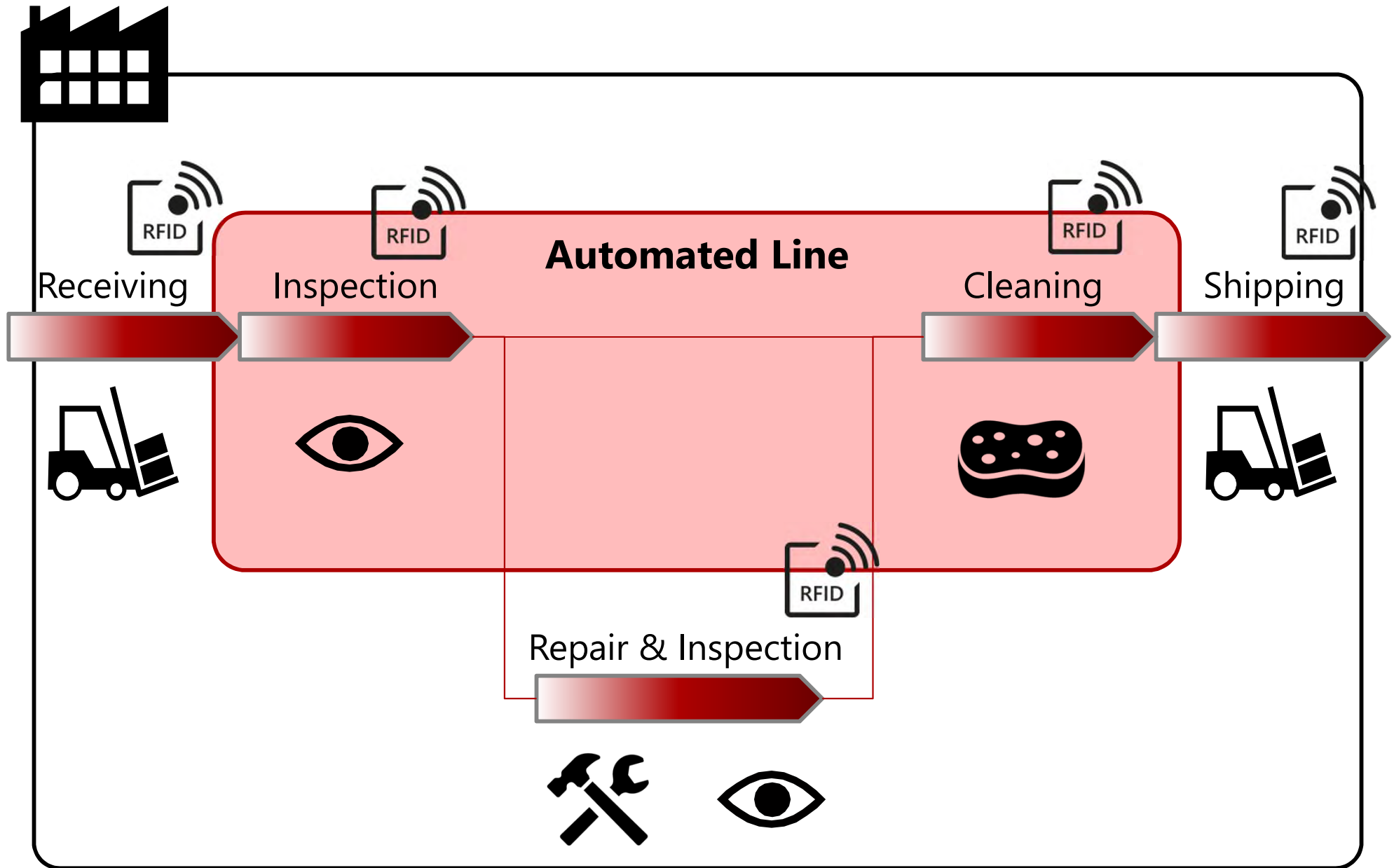


Implemented RFID tag

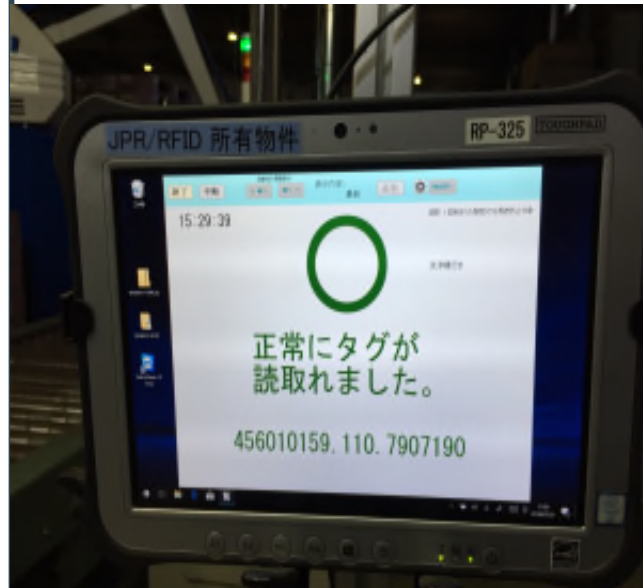


Implementation machine

Pallet tagging started in 2009. Regarding the current plastic pallets, tag installation is carried out in the manufacturing stage.

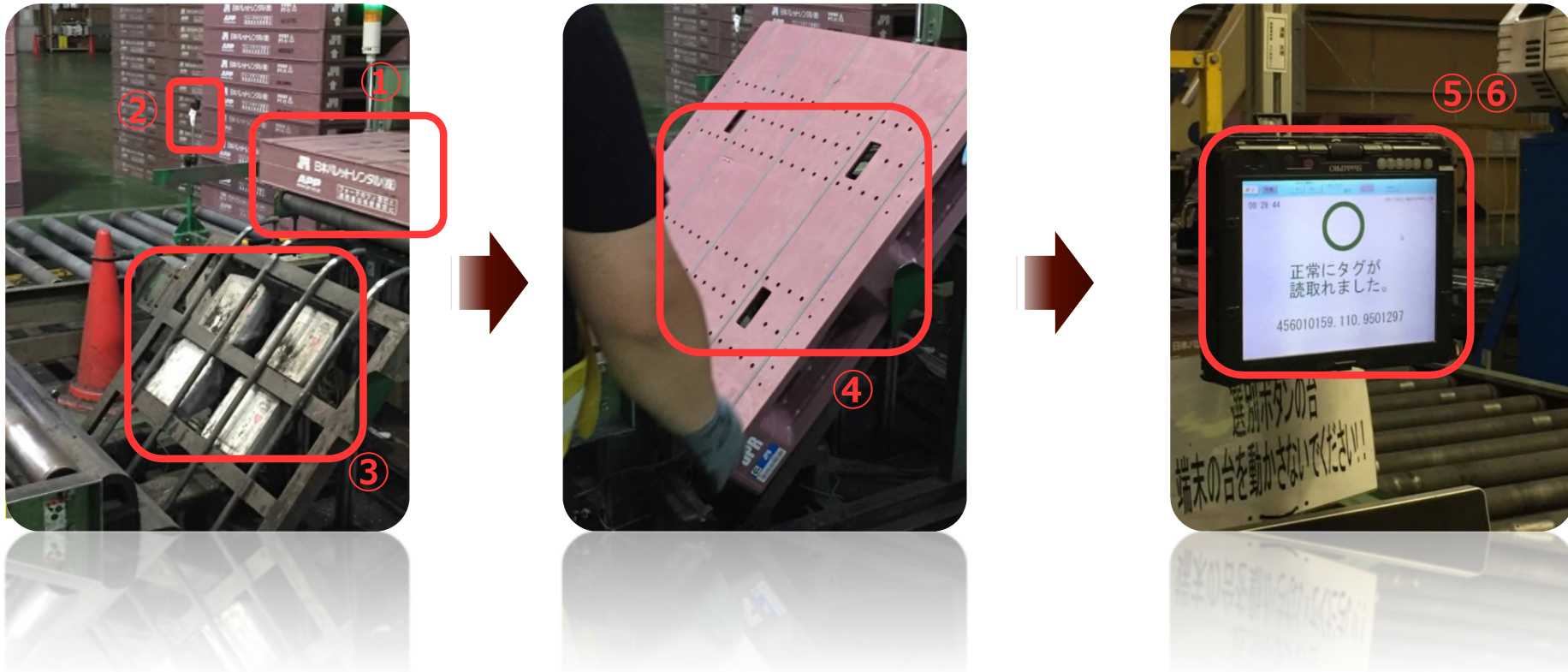


Tag performance checker





Tag Performance Checker



- ① A pallet is discharged.
- ② the pallet cuts the sensor and radio waves are emitted from ③
- ④ Read the pallet tag and judge "normal", "RSSI shortage (weak reaction)" "multiple tags (paste two or more)" and "no tag" .
- ⑤ The judgment result is indicated by screen and sound, and the sorting the pallet to the specified line
- ⑥ The result goes up to the cloud service.



Video Tag Performance Checker



Tag Performance Checker







Judgment time

Type1	Type2
17sec	8sec



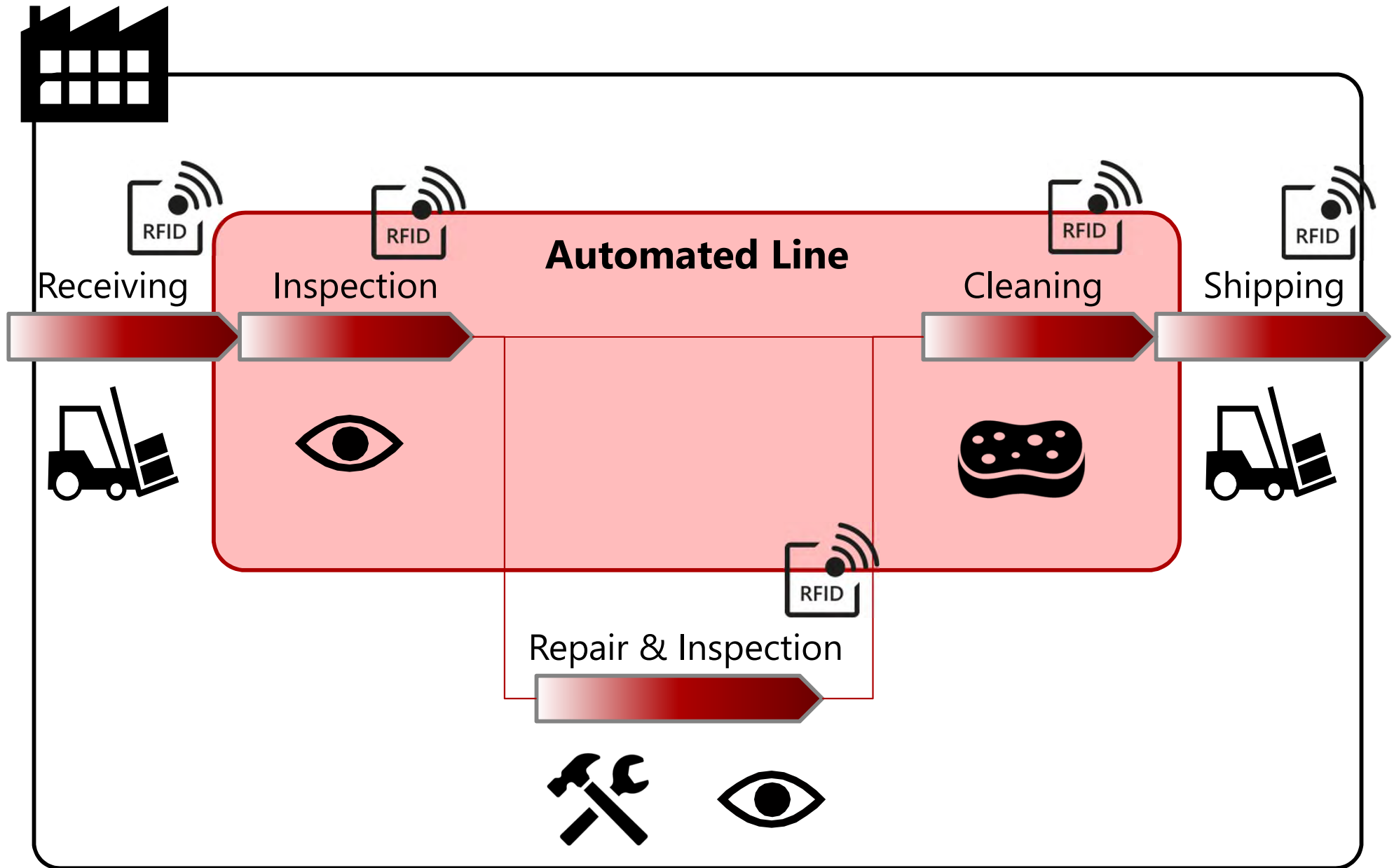
RFID antenna & reader



Video Tag reading forklift



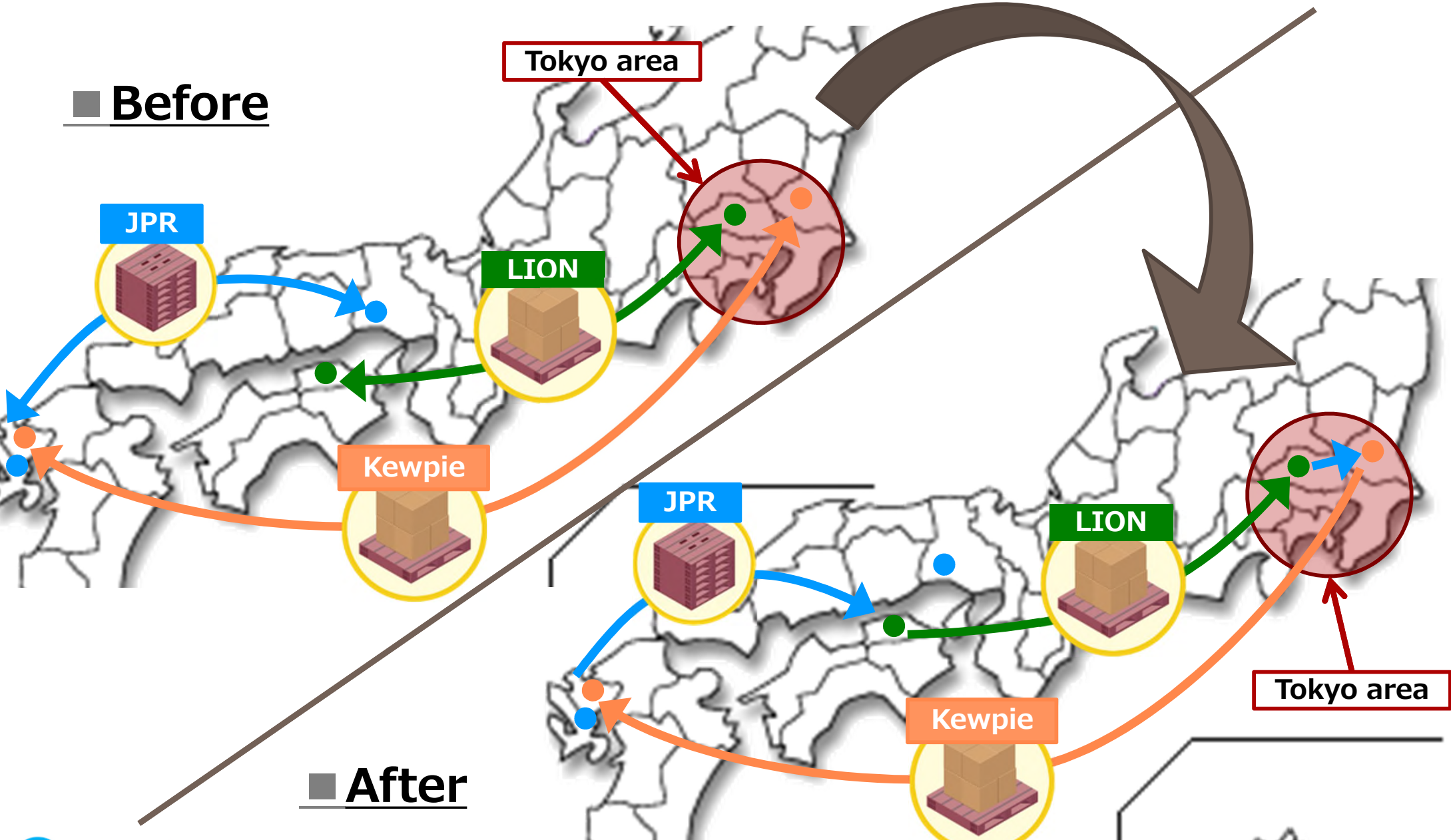
Tag Reading Fork





Joint trunk line transportation

■ Before



■ After



Logistics Digitalization

Reduce customer's management of rental pallet, further improve efficiency of on-site work

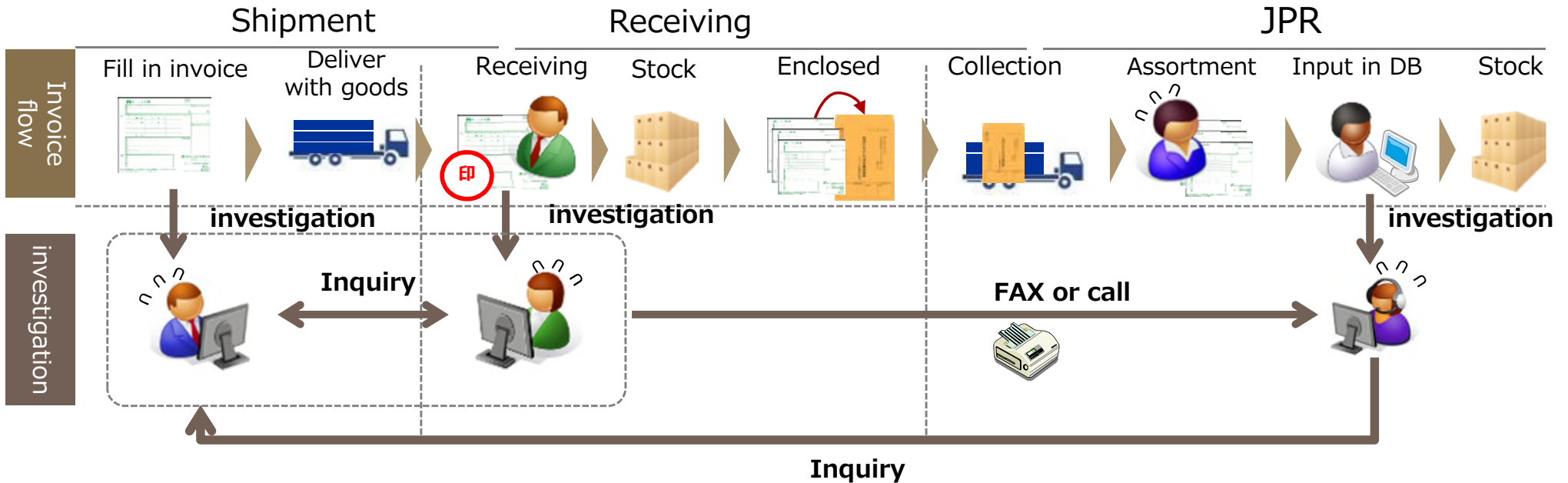


Automation of pallet management work

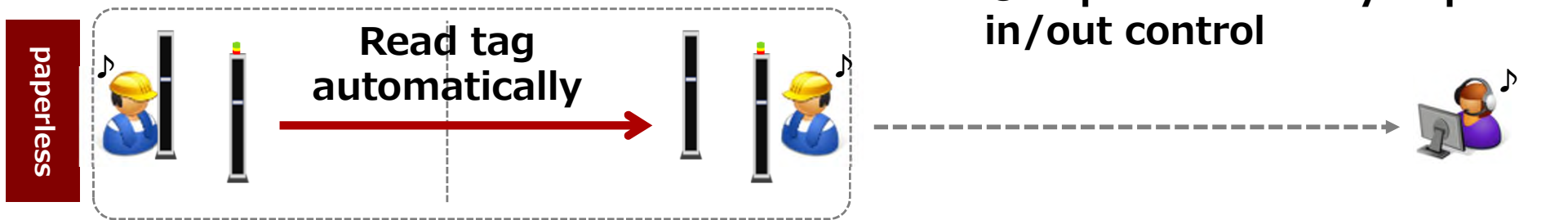
- Data collection during shipping / receiving work
- Gate chassis offers rental



Current flow



Paperless with RFID





RFID gate use case



Manufacturer



Wholesaler

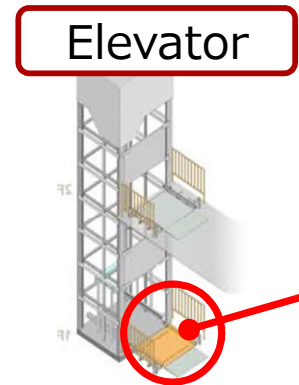


③ barcode scanner

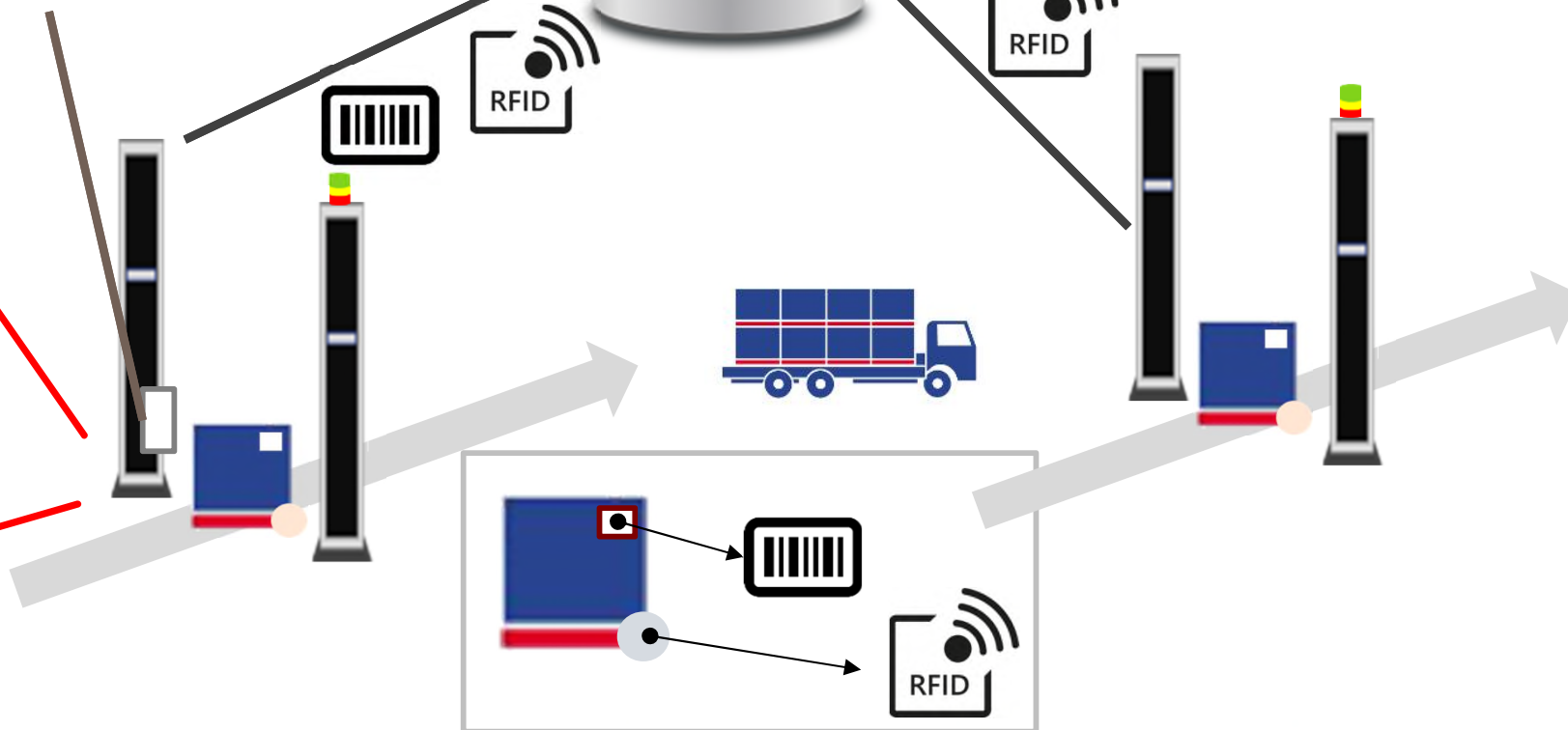
Read the pallet label



Conveyer



Elevator





Video RFID gate



撮影協力:ヤマサ醤油株式会社様

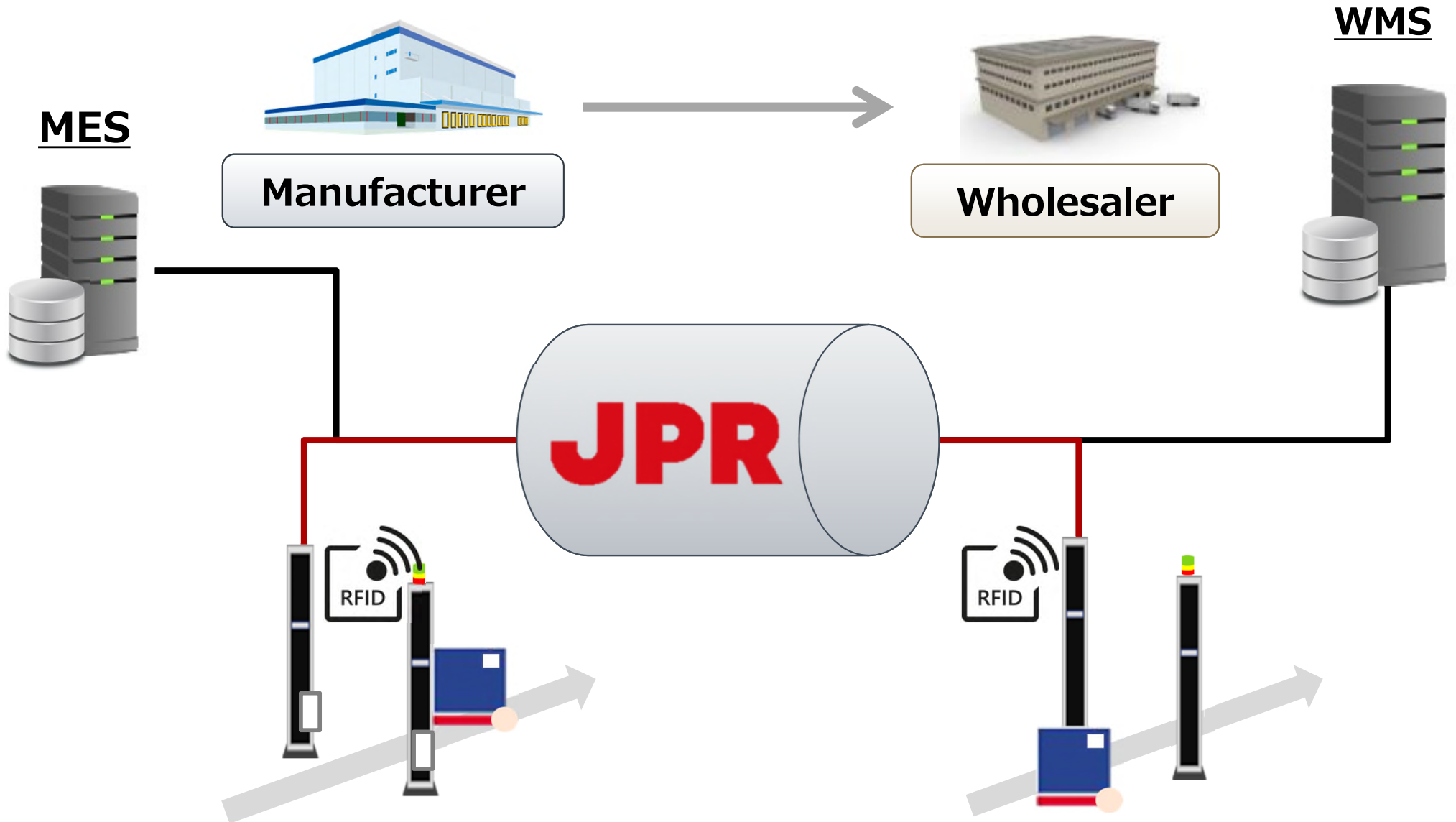


RFIDタグ



Logistics *Digitalization+*

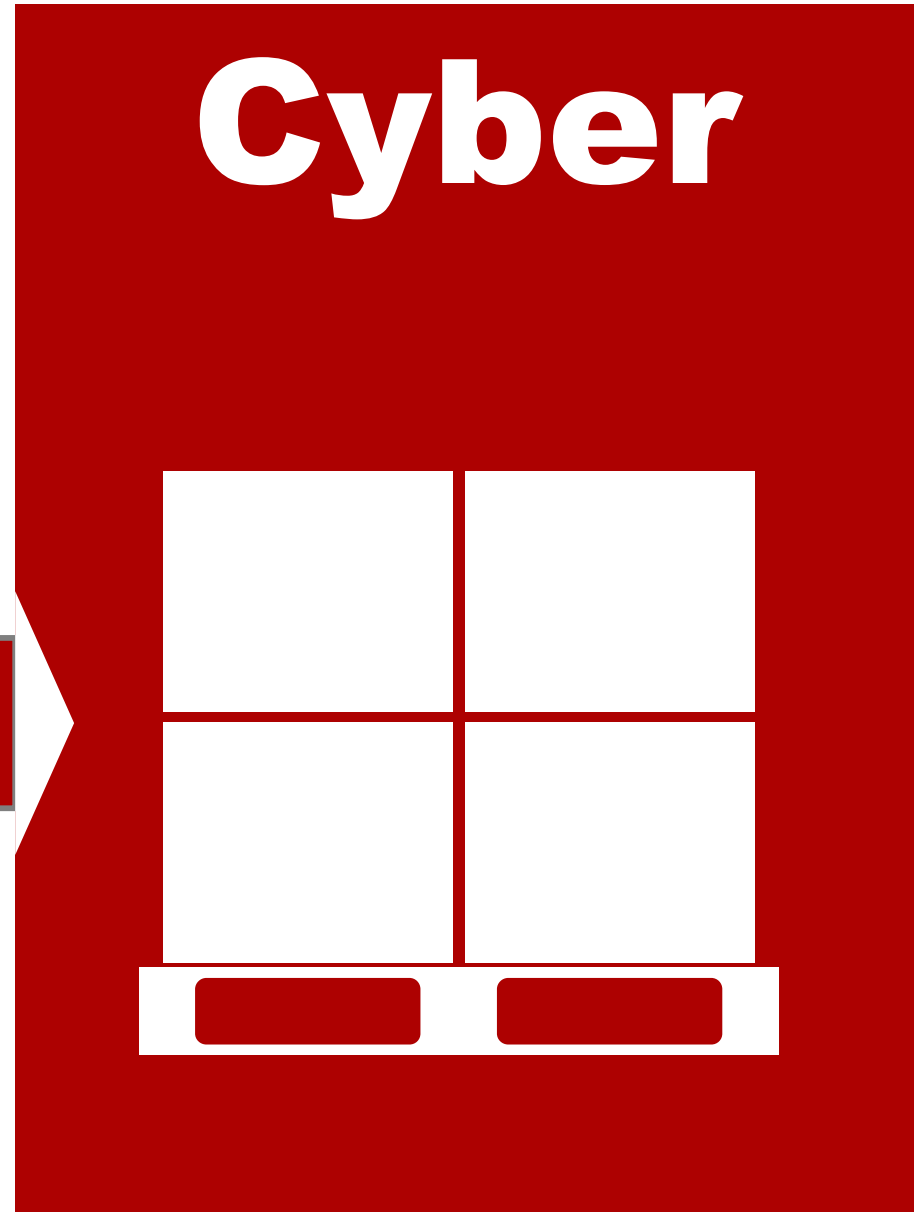
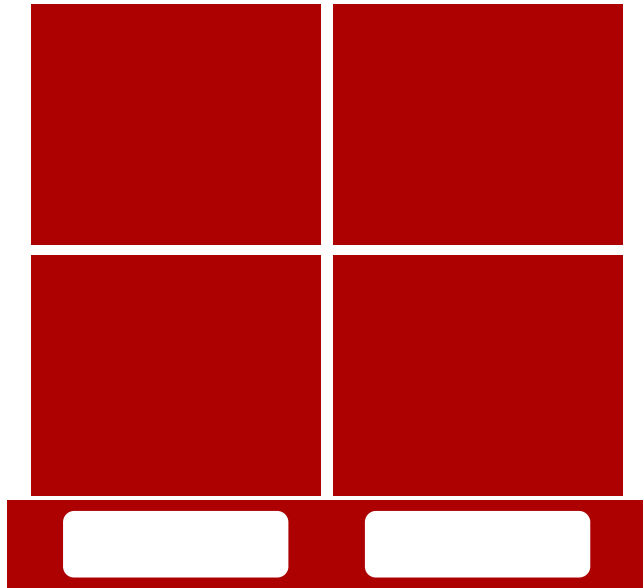
The next goal is to connect RFID pallet and customer's product.
and reduce the arrival and shipping work





Physical

Cyber





Thank you!

 **JPR** Japan Pallet Rental Corporation 

