



Warehouse Management System Professional





WMS – warehouse management system



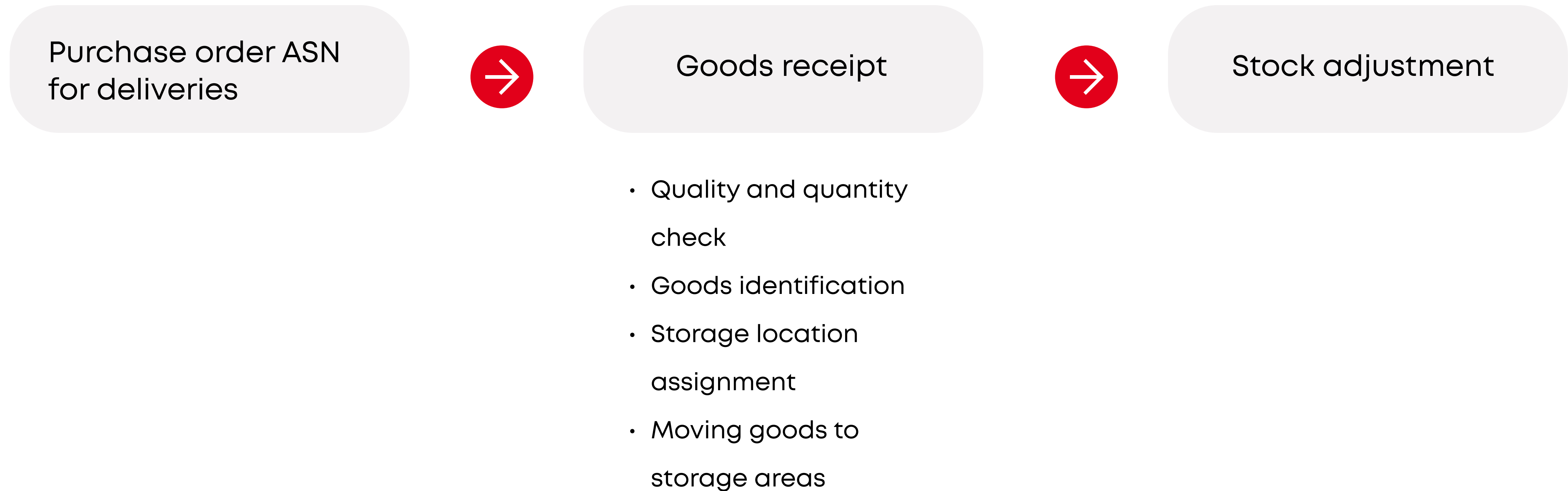
General QGUAR WMS flow-chart (split into main processes)

Warehouses

- Quality status change
- Locking of warehouse objects
- Goods movement
- Co-manufacturing
- Co-packing
- Reservation
- Stocktaking

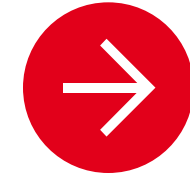


General QGUAR WMS flow-chart (split into main processes)

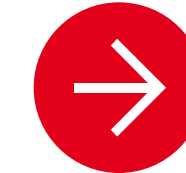


General QGUAR WMS flow-chart (split into main processes)

Goods issue order



Goods issue and loading



Stock adjustment

- Analysis and planning of orders
- Preparation of resources for picking
- Picking
- Quality and quantity check

QGUAR WMS - supported technologies



VOICE PICKING

Information passed on by voice



PICK BY LIGHT

Control over processes by luminous signaling



RFID

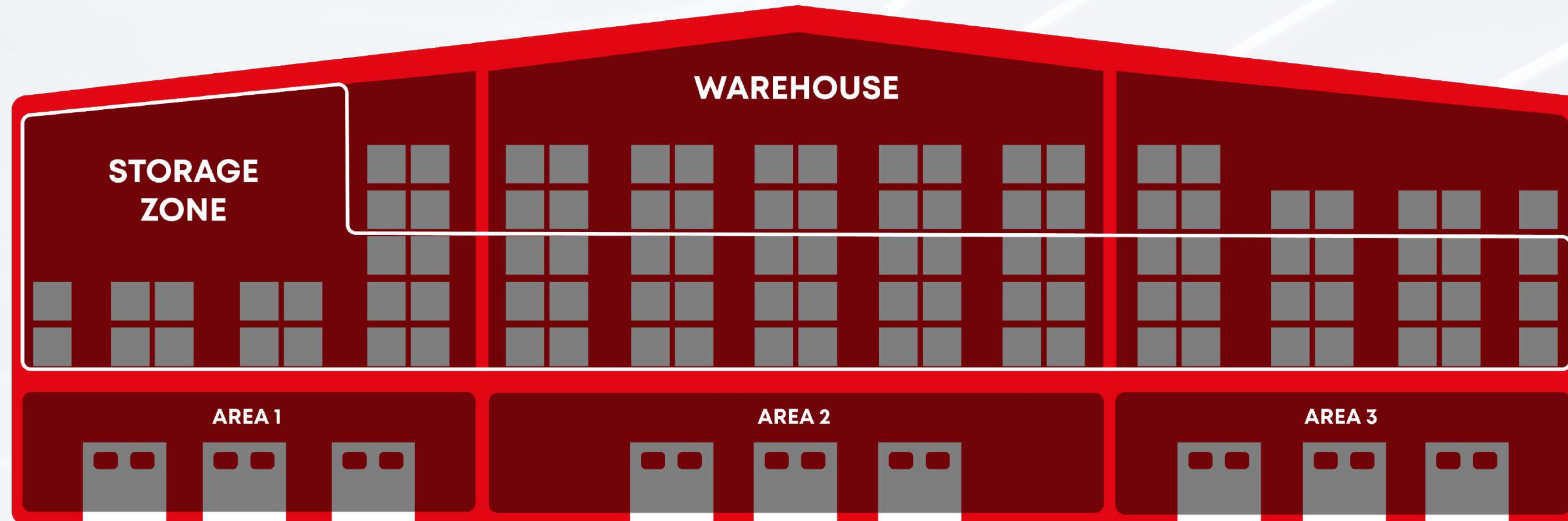
Electronic tags



GS1

Global system for bar coding of logistic units

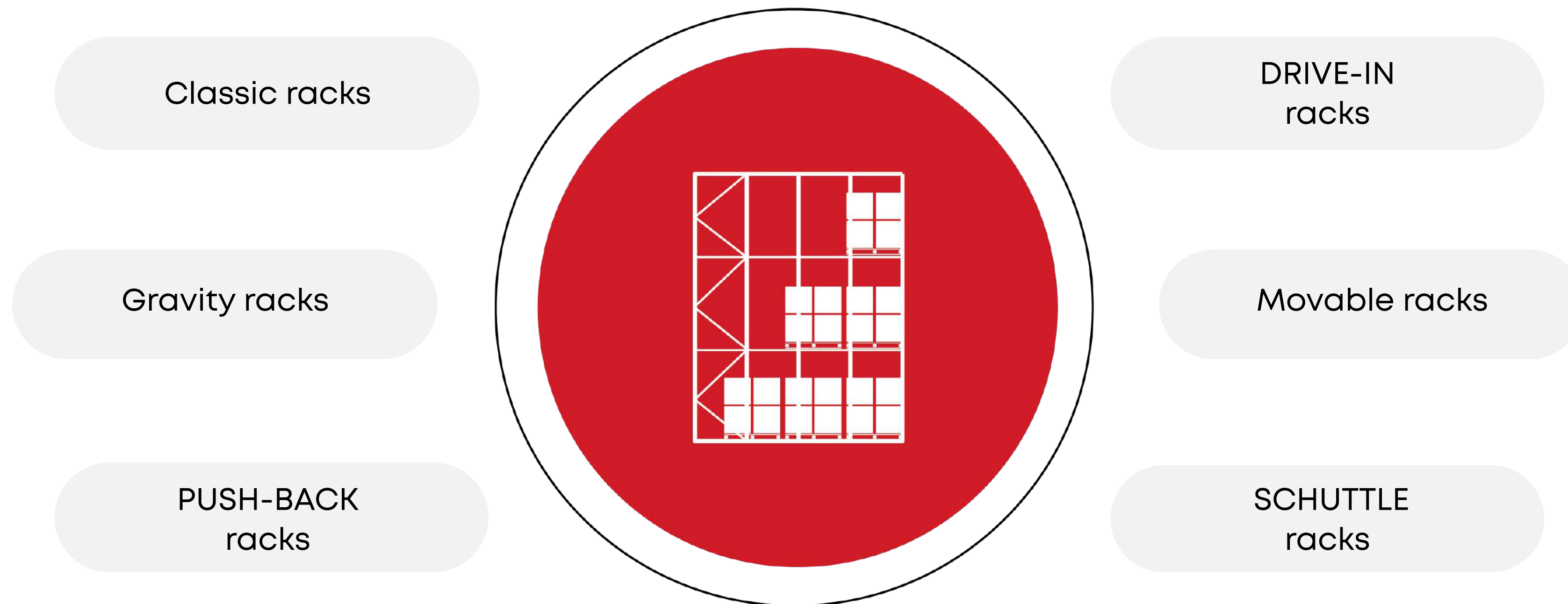
AREAS, ZONES, WAREHOUSE LOCATIONS



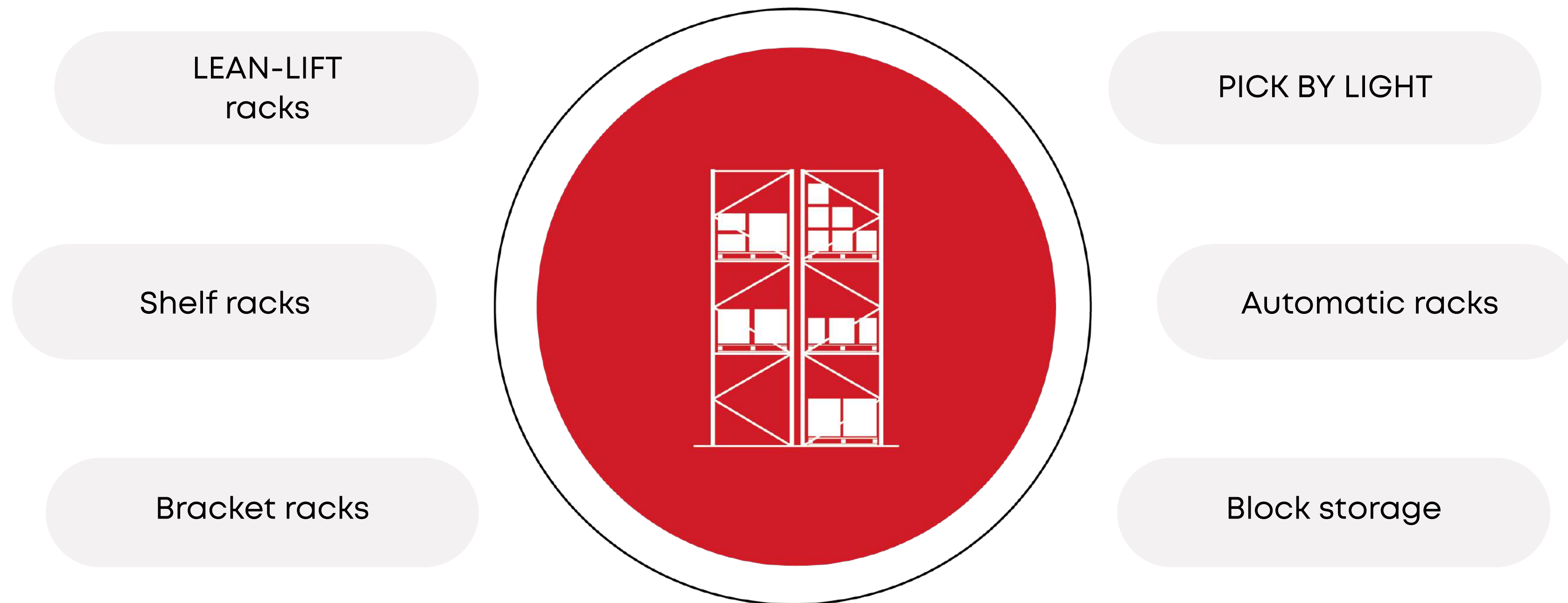
AREAS, ZONES, WAREHOUSE LOCATIONS




ARBITRARY METHODS OF STORING GOODS




ARBITRARY TYPES OF STORAGE OF GOODS




ARTICLES AND ITS FEATURES



Basic data



Logistic data



Packaging structure



ARTICLES AND ITS FEATURES



Basic data

- Article ID
- Name
- EAN code
- Basic measure unit
- ADR number
- Articles group
- Batch number
- Expiry dates, validity period
- Raw material, semi-finished or finished good



ARTICLES AND ITS FEATURES

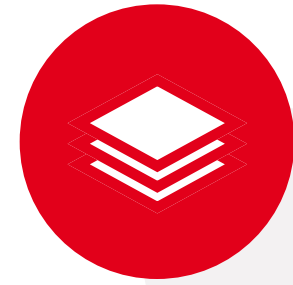


Logistic data

- Warehouse group
- Quantity rounding, e.g.: 0.1, 0.01
- Stockpile
- Storage location level
- Overhang
- Replenishment trigger
- Default quality status



ARTICLES AND ITS FEATURES



Packaging structure

Basic unit (e.g.: piece)



Packaging unit - lower level (e.g.: box)



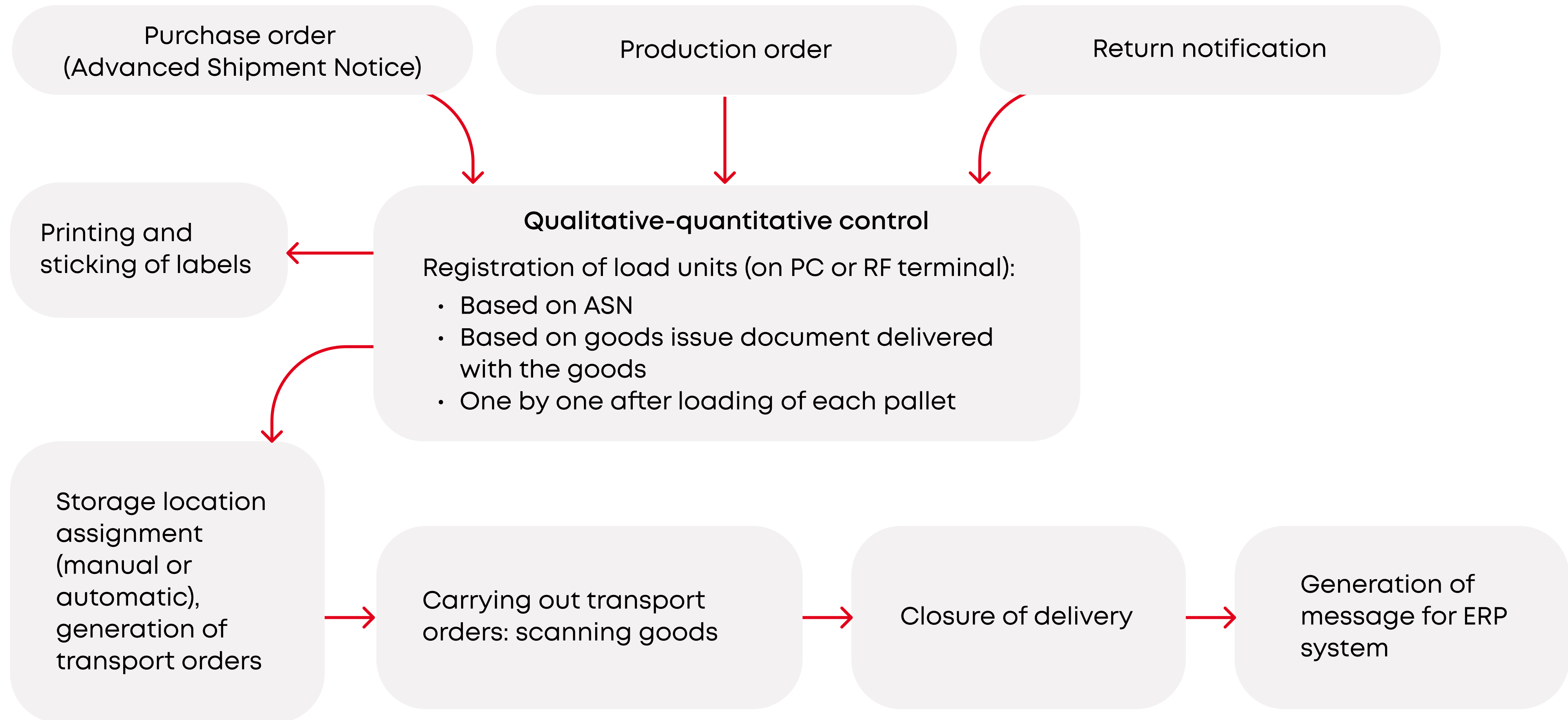
Packaging unit - higher level (e.g.: layer)



Load unit (e.g.: pallet)



GOODS RECEIPT PROCESS



STORAGE PLACE ASSIGNMENT PROCESS (simplified approach)

Delivered load unit

Quality status different than OK?

Zone for damaged articles

Does the good need to be shipped?

Crossdocking

Picking location replenishment

Is an article group assigned to a warehouse area?

Warehouse zone assigned

Other warehouse zones

STORAGE PLACE ASSIGNMENT PROCESS (simplified approach)

Additional criteria for storage place assignment

→ Nearness to picking location

→ Specific article features, e.g.:
long articles

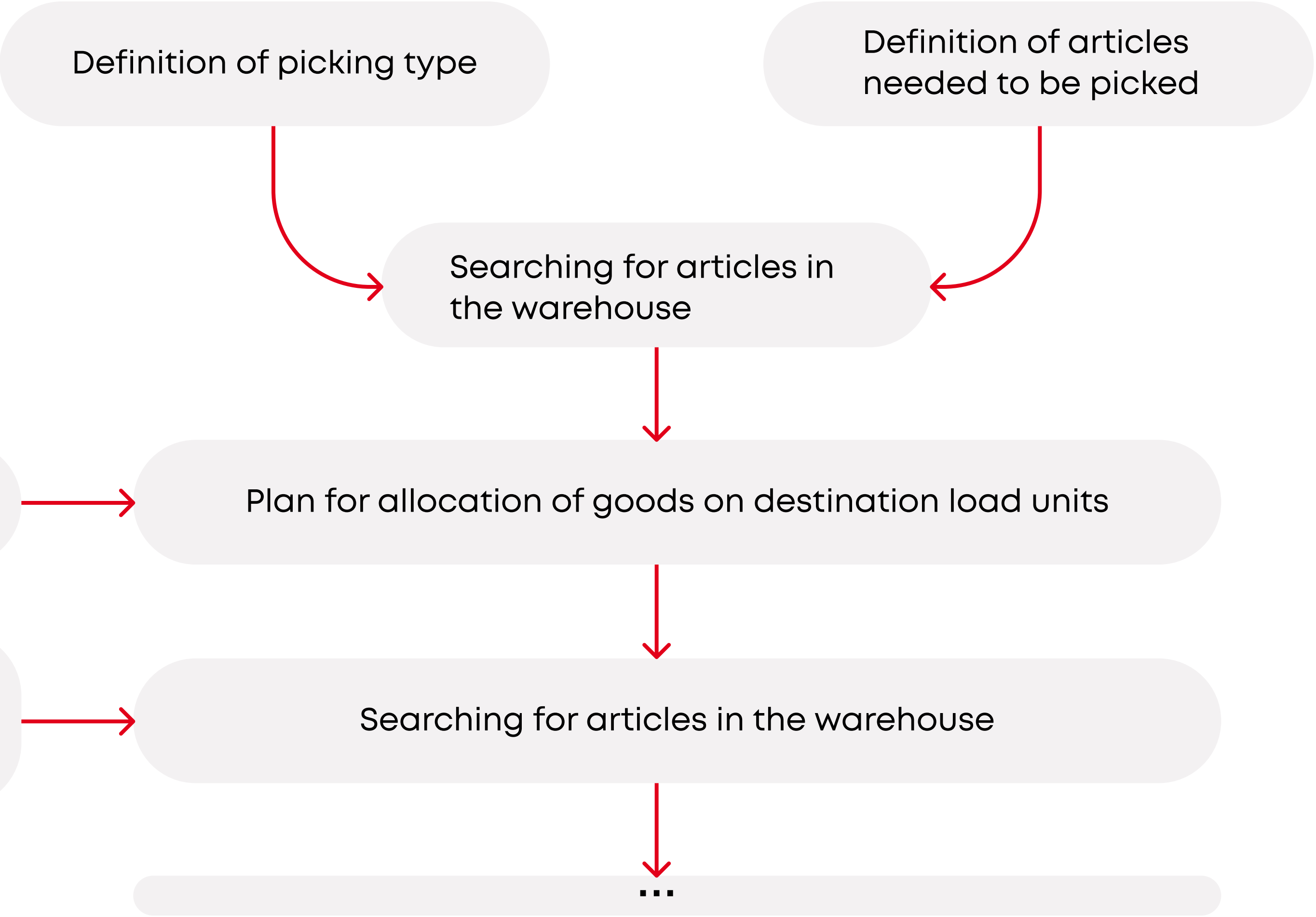
→ Requirements for ADR articles

→ Matching of LU dimension and weight
with storage place dimensions and
carrying capacity

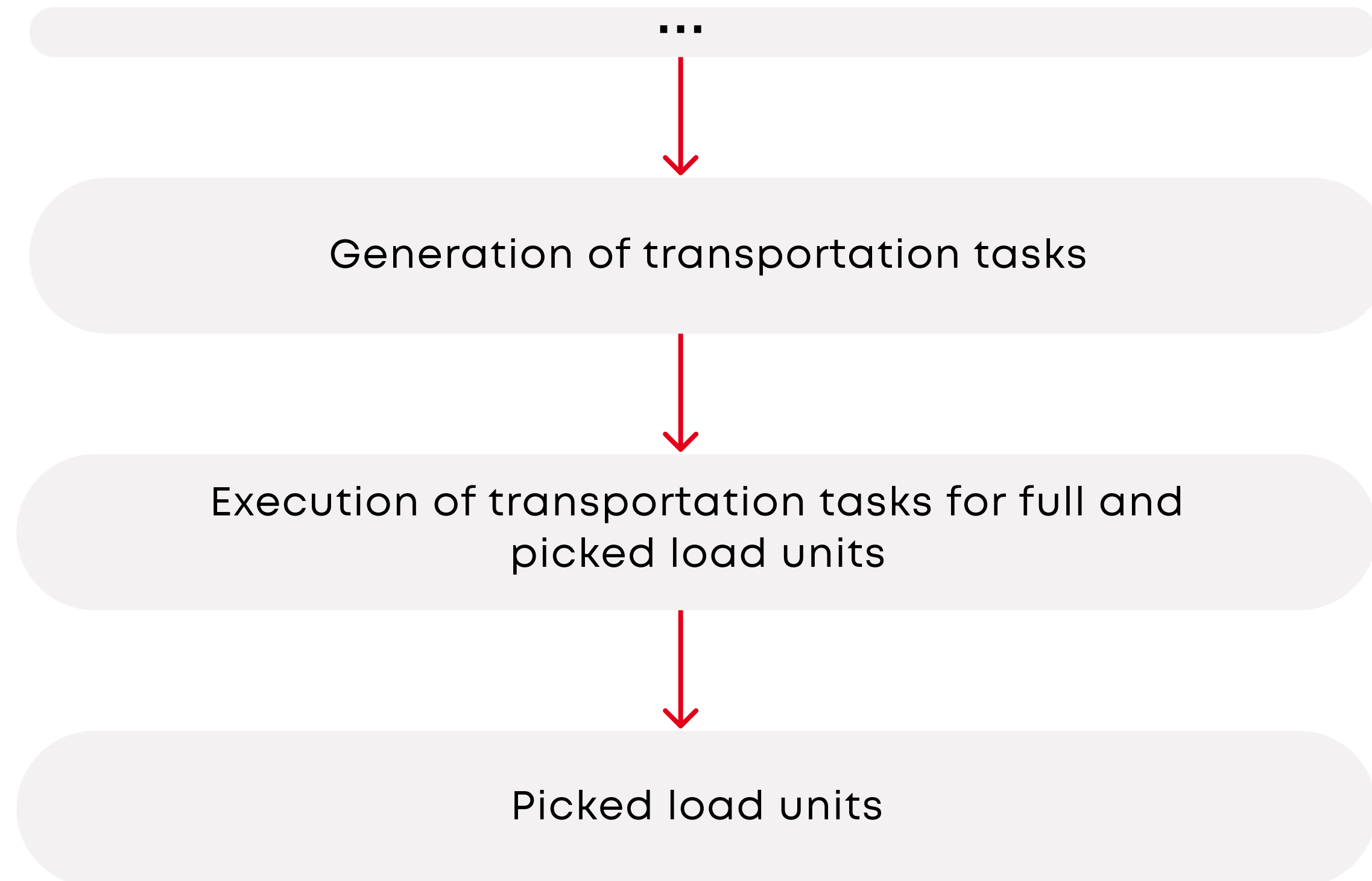
→ Steady arrangement of load units in
racks

→ Possibility of placing pallets one on the
each other

PICKING



PICKING



Examples:

- FIFO
- Picking of boxes
- Split into picking zones
- Each article on separate load units

SUPPORTED PICKING TYPES

→ For deliveries

→ For shipments and movements between warehouses:

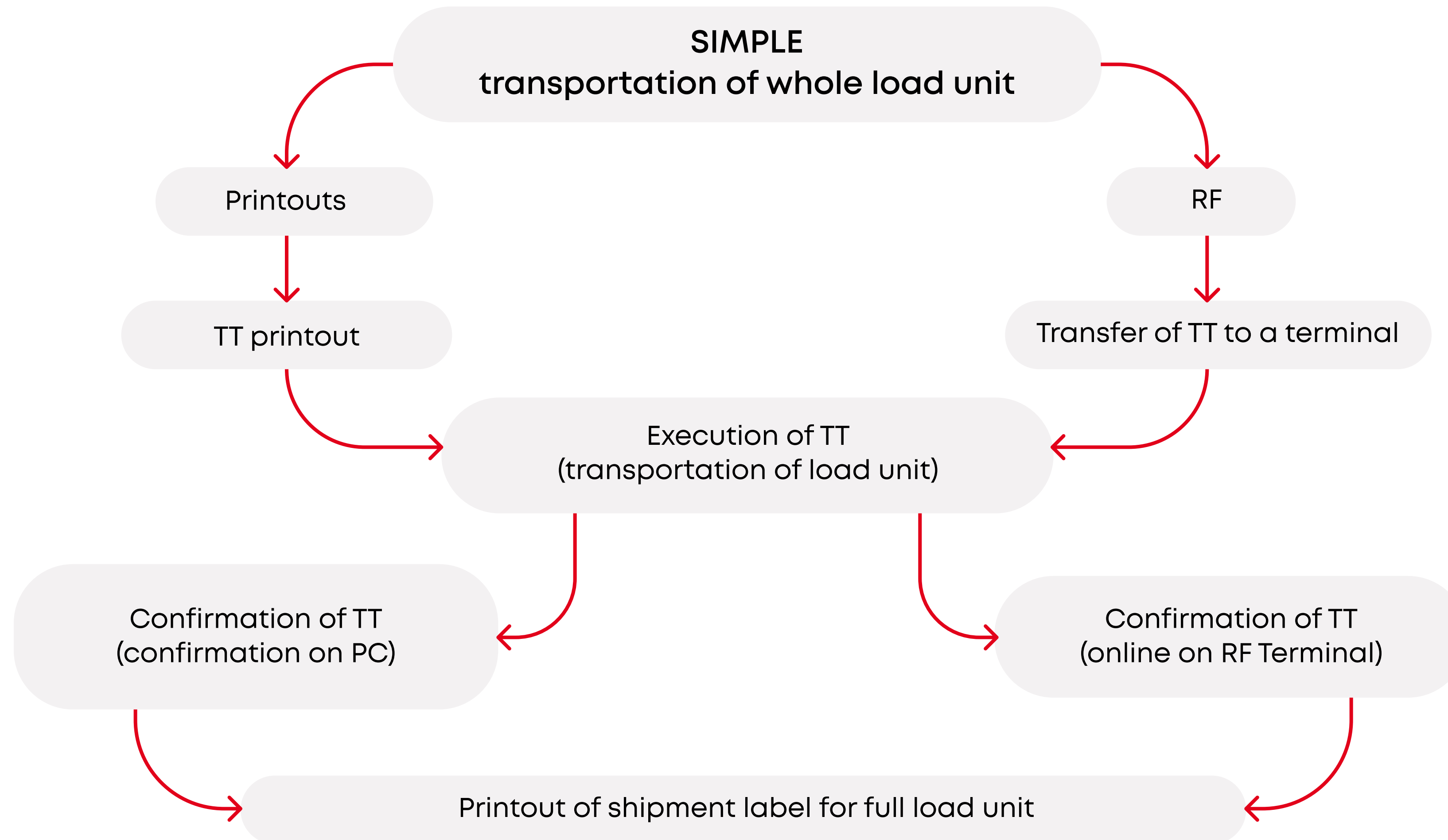
- Classic picking
- Picking of boxes
- Picking on one virtual load unit
- Picking in waves (waves of shipments)
- CrossDock shipment

→ For replenishment
(by taking into consideration many defined strategies)

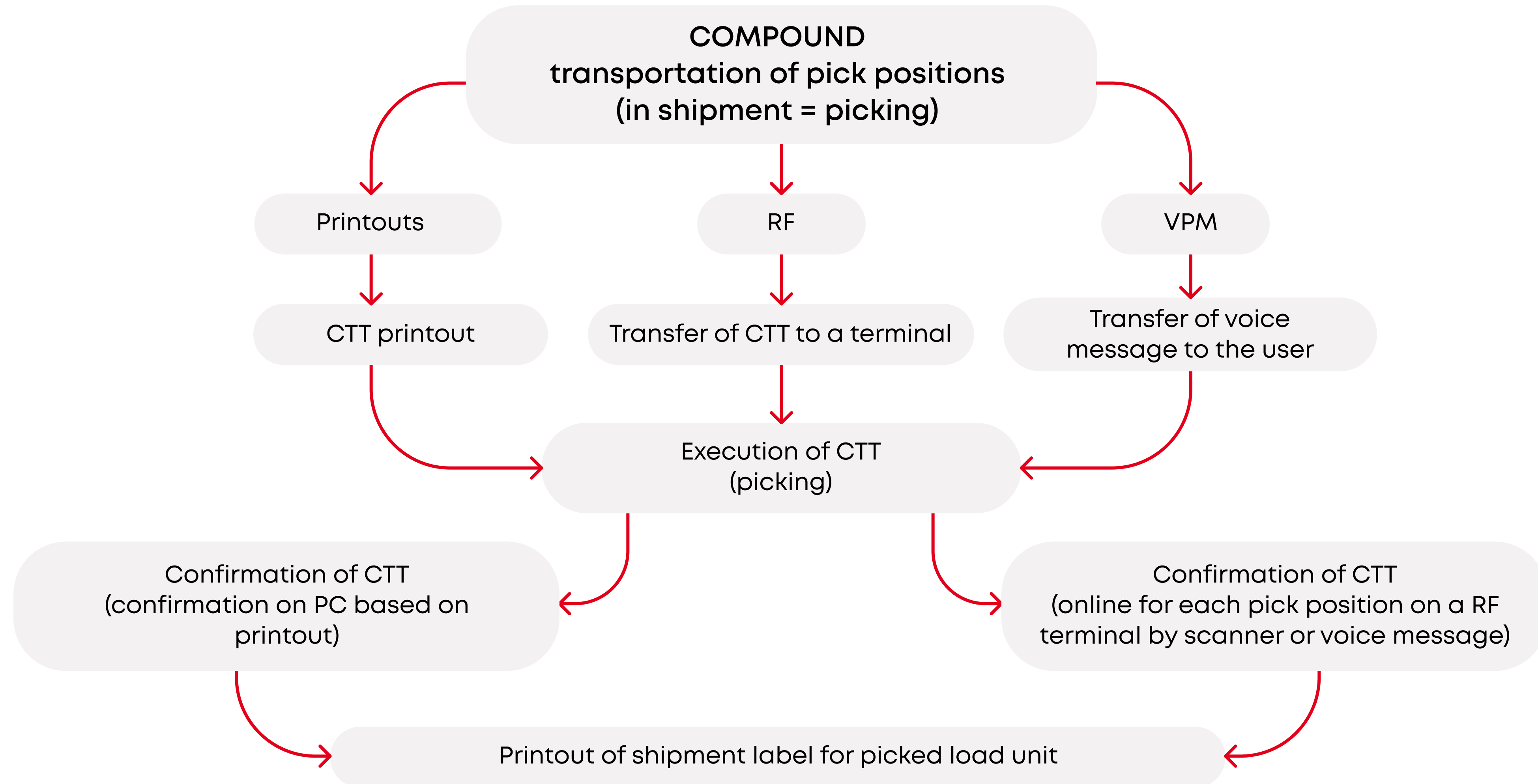
→ For rework of sets



EXECUTION OF SIMPLE AND COMPOUND TRANSPORTATION TASKS (in shipments)



EXECUTION OF SIMPLE AND COMPOUND TRANSPORTATION TASKS (in shipments)



STOCKTAKING

Main stocktaking

Definition of storage locations range for stocktaking

Assignment of stocktaking commissions



Generation of tasks to be performed by warehouseman within the stocktaking (on RF or counting sheets)



Physical counting of stock on locations and load units



- Existing stock level record in the system (RF – online, from counting sheets on a PC)
- Creation of discrepancy document
- Generation of message about stock discrepancies for ERP

STOCKTAKING

Selective stocktaking

Identification of discrepancy
by worker



Execution of location or stock adjustment

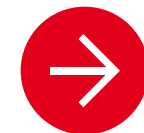


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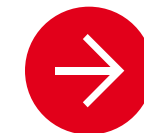
STOCKTAKING

Cyclic stocktaking

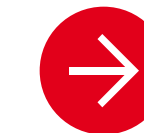
Fulfillment of requirement for stock count (e.g. 100 days from the last count)



Task on RF



Physical stock count



- Existing stock level record in the system (RF – online, from counting sheets on a PC)
- Creation of discrepancy document
- Generation of message about stock discrepancies for ERP

QGUAR WMS ADDITIONAL EMBEDDED SOLUTIONS

WMS



RPC

management of returnable packaging and load units clearing



NRF

utilization of RF terminals



IFC


configurable interface to external solutions

CONFIGURATION CAPABILITY (examples)

Deliveries



Automatic strategy definition of storage place assignment



Different options for goods receipt (purchase order, ASN, goods issue document, physically delivered LUs)



Printouts of labels in different sizes, types and quantity



For deliveries from production: configuration of production lines and articles being produced

CONFIGURATION CAPABILITY (examples)


Shipments



Definition of rules for orders merge



Automatic or manual shipments execution



Algorithms for splitting the shipments into picks




Algorithms of full pallets assignment



Algorithms for mixed pallets creation

CONFIGURATION CAPABILITY (examples)


Stocktaking



Assignment of users to counting groups



Exact definition of locations for stocktaking



Definition of the scope of data visible and confirmed during stocktaking



Configuration of automatic cycle count

CONFIGURATION CAPABILITY (examples)

Warehouse operations




Routing zones – assignment of forklifts to particular areas



TT configuration – way of assignment, execution and confirmation

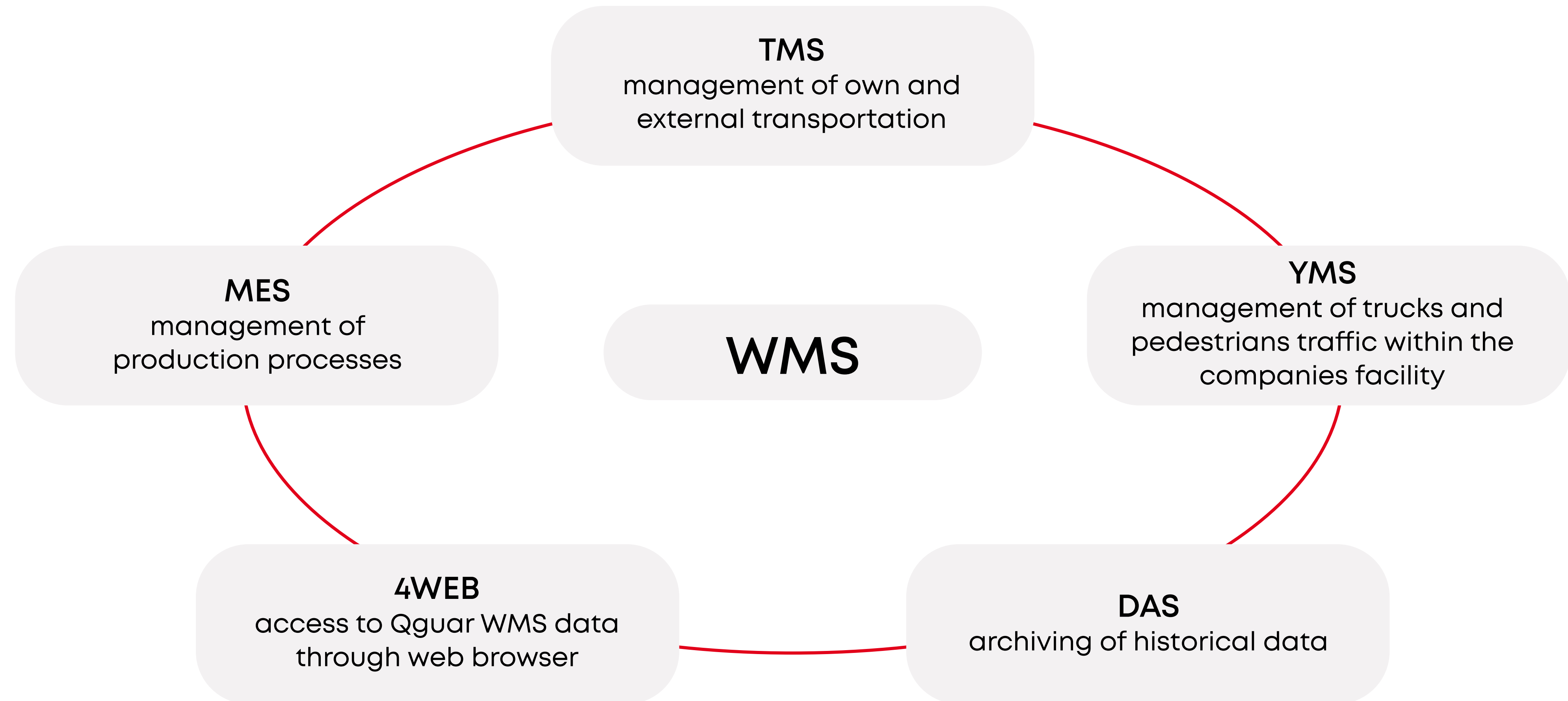


Work modes – scope of data visible for certain user



Configuration of warehouses, picking zones – different ways of performing the tasks in different areas

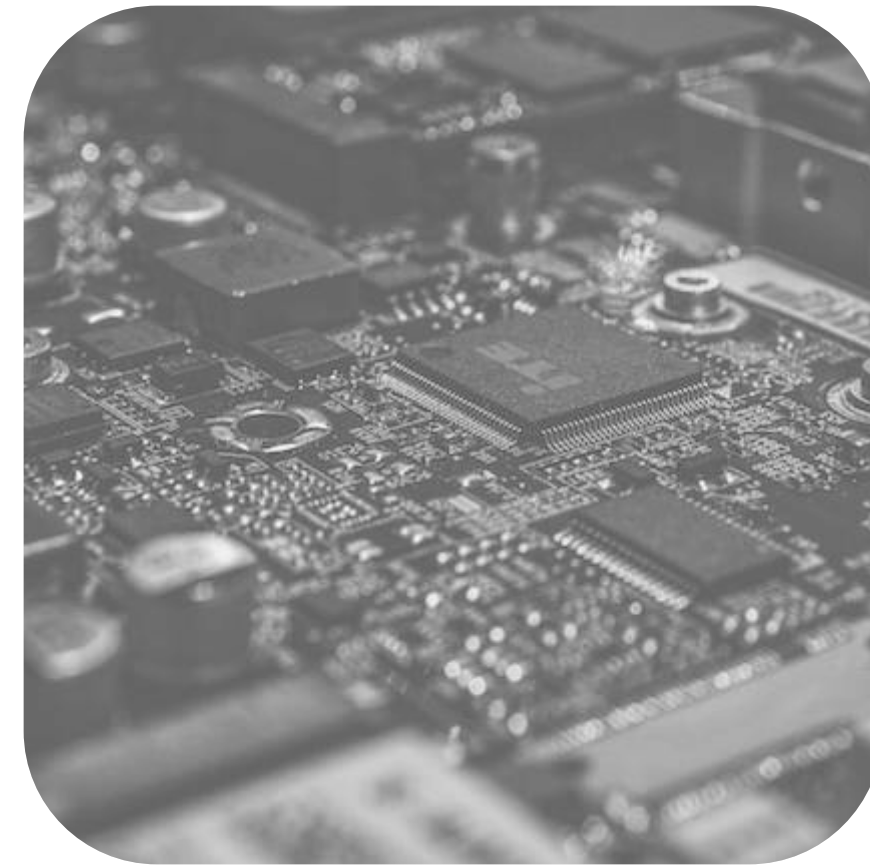
ADDITIONAL QGUAR SYSTEMS COOPERATING WITH WMS



QGUAR WMS - COOPERATION WITH WAREHOUSE AUTOMATION



Turn-key solutions



Adjustment of WMS
Qguar to specific
requirements of the
equipment



Possibility of work
in connection with
bright spectrum of
equipment and
technology



Experience in
national and
international
projects

REPORTING POSSIBILITIES

I-Net Crystal Clear

- documents
- labels
- current and statistics reports

Export of printout directly to the printer or with preview on the screen

Possibility to modify the existing printouts

Creation of own printouts by the client

REPORTING POSSIBILITIES

Control queries

Definition as a query in SQL

Fast speed of control query definition
on condition of knowledge about DB structure

Definition of own filters

Effect of CQ: classic table of Qguar system

Placing of own tables into menu

REPORTING POSSIBILITIES

Export to MS Excel



Export from any table available in the Qguar system



Definition of exported columns regardless of visible columns

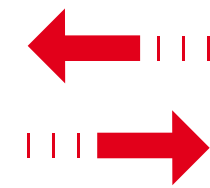


Further processing of data in MS Excel

EXCHANGE OF MESSAGES

Standard communication between ERP and WMS

ERP



WMS



Standard embedded interface

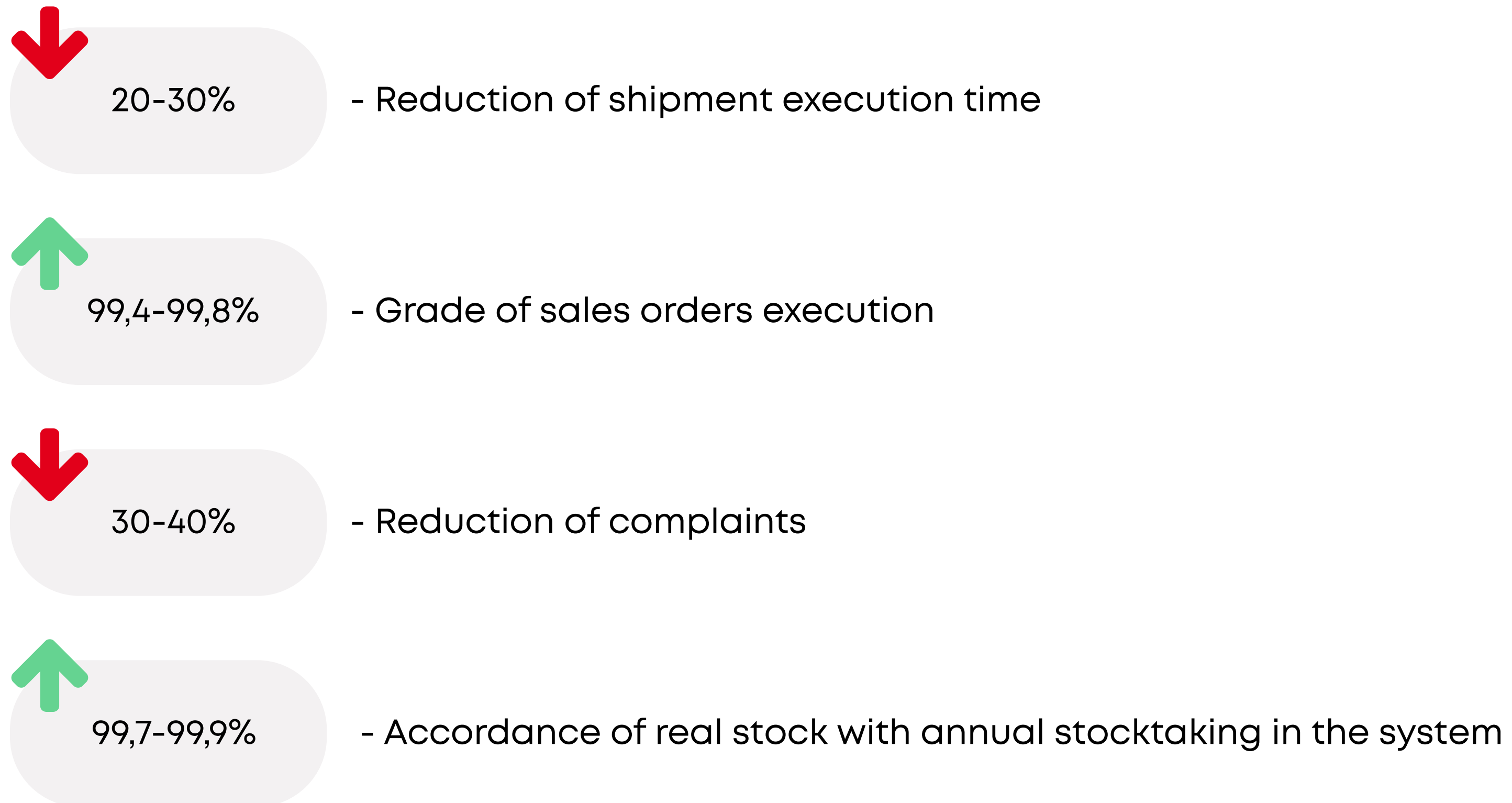
- text files - ASCII
- text files - XML structure
- direct database communication
- 7 standart massages to ERP



Individual interface

- utilization of application possibilities
- (e.g: remote procedure call)
- electronic telegrams (winsocket, rs232)
- number and content of messages, according to client's needs

WORK IMPROVEMENTS INDICATORS AFTER QGUAR WMS IMPLEMENTATION



WORK IMPROVEMENTS INDICATORS AFTER QGUAR WMS IMPLEMENTATION



70-80%

- Shortening of annual stocktaking by using RF terminals



up to
few hours

- Shortening of new warehouse employee training time



10-20%

- Utilization of warehouse personnel

ADVANTAGES RESULTING FROM QGUAR WMS IMPLEMENTATION

- Regular monitoring of processes
- Fast reporting in case if irregularity
- Possibility of fast reaction in extraordinary situations
- Management of work in the warehouse (split into tasks, definition of preferred task-performers)
- Improvement of time required for situation analysis

ADVANTAGES RESULTING FROM QGUAR WMS IMPLEMENTATION

- Graphical presentation of processes conditions
- Modern and user friendly GUI
- Storage of historical data
- Automatic update of presented information
- Adjustments of presented information's graphical form to client's requirements



Thank you for your time!