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# **METALAG**

**Warehouse management and order picking**

**Logistics software and  
control system**



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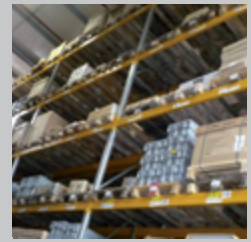
### **Metasyst Management**

#### **Mag. Karl Kaufmann MBA, Bc. Günther Laber**

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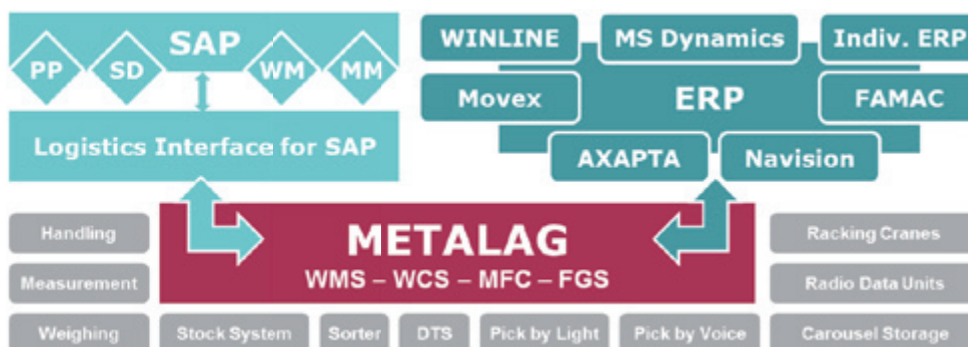
# METALAG



## Advantages of METALAG:

- Oriented toward customer process chain
- Multi user and client capability
- Multilingual
- Customer-defined menu, interfaces and report structure
- Graphical Windows user interface (JAVA)
- Supports customer-specific barcode formats
- Authorization concept
- Online-support
- Management batch and serial numbers
- Parameterizable
- Customizing capability
- Can be integrated into existing IT systems

## METALAG options of integration:



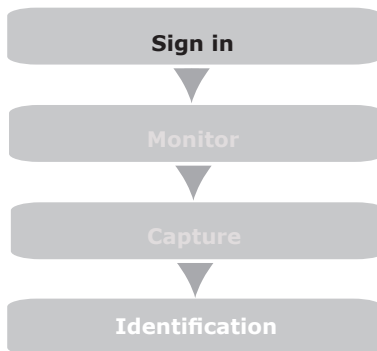


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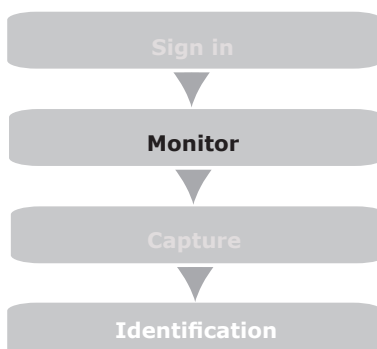


## Receipt of goods



### **Sign in**

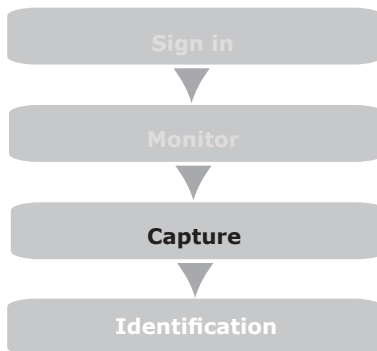
- Ramp allocation/Calendar
- Capture of telemetric vehicle data (status, number plate, temperature, etc.) - snapshot at scanner-terminal
- Announced delivery (for pre-existing orders from the ERP)
- Receipt of goods from the production
- Unannounced delivery (without order)
- Goods delivery with Aviso
- Selecting goods delivery by entering search criteria
  - delivery note no.
  - order no.
  - material no.
  - manufacturing order
  - etc.
- Management of partial deliveries, excess and deficit deliveries
- Planned/unplanned management of returned goods
- Supplier assessment



### **Monitor**

- Daily preview of expected goods inbound (Calendar with ramp allocation)
- Goods delivery deviations
- Evaluation of various criteria

## Receipt of goods



### Capture

- SSCC-Scanning
- Actual quantities/deviations
- best-by-date
- Transport unit/pallet
- Actual weight capture per pallet
  - e.g. EURO pallet, container
- Quality inspections -> inspection lot -> sample stock
- Supplier barcodes as alias
- Selecting goods delivery by entering search criteria
- Assembling pallets (homogenous/inhomogenous) with pallet ID (HU, SSCC) or storage units respectively
- Management special treatments at inbound
- Customer-specific labeling
- Temperature of the delivered goods

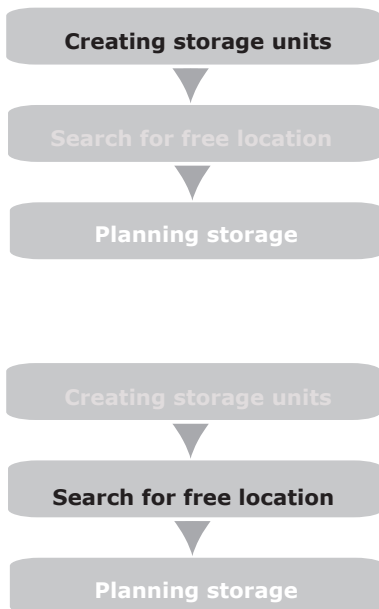
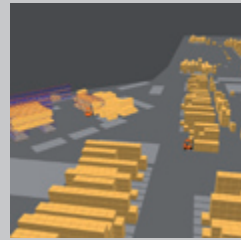
### Labeling

- HUM/LE-Labeling (SAP)
- Label printing per per transport unit
- Label printing for batch
- Printing of goods delivery covering note per unit
- Printing of goods delivery list per delivery
- Goods delivery answering signal to the ERP

### Supply

- Goods delivery zones management
- Automatic allocation as cross-docking-order on the basis of defined features:
  - customer reservation
  - order type
  - dispatch and packaging regulation
  - backlog notice
- Prioritised transfer of special goods (frozen or cooled goods etc.)

## Storage



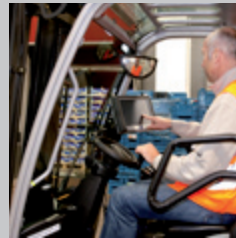
### Creating storage units

- Allocation of transport orders (man/autom.)
  - partial orders (split orders)
  - collective orders/Consolidate (double pallets, sandwich pallets)
  - cancel of transport orders
  - per transport unit (receptacles, pallets)
- Automatic storage planning for load pick-ups
- Automatic/manual creation of mixed pallets

### Search for free location

- Manual allocation into stock by 'visually'
- Selection of the optimal storage location based on user-dependent rules/strategies:
  - ABC-analysis
  - items/item groups
  - best-by date
  - quantity/volume per storage unit
  - shelf/stillage allocation
  - temperature and room conditions
  - classification of hazardous substances
  - entrance restrictions or storage stops
- Constant allocation (automated warehouse)
- Check adherence of rules (no overruling)
- Allocation of channels (Shuttle)
- Multiple-/double-positions (automated warehouse)

## Inbound



### Resource planning

#### Resource planning

- Automatic allocation of transport orders
  - to user groups (manual warehouse)
  - to vehicles, sorted by priority
  - to specific resources
- Load dependend
  - automated guided vehicle
  - conveyor system
  - lift
  - buffer locations
- Availability dependend

### Transport management

#### Transport management

- Automatic forwarding of transport orders
  - to MFC (automatic warehouse)
  - to mobile terminals (manual warehouse)
- Transport of fast moving parts
- Planning of transport route
- Multi stage transport orders
  - with fixed/flexible handover locations
- Prioritisation of transport orders
- Cancelling of transport orders
- Online status access

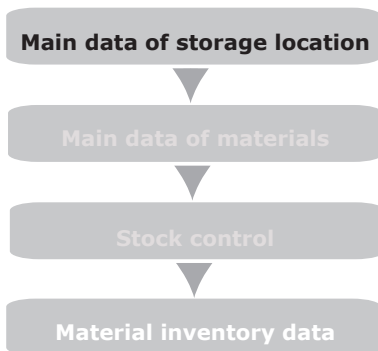
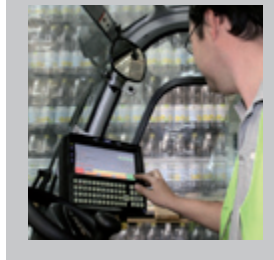
### Transport confirmation

#### Transport confirmation

- Manual warehouse:
  - storage location identification by barcode/check digit
  - verification of storage by scanning storage location ID
  - confirmation of storage at RF-Terminal
- MFC-confirmation or allocation of alternative storage locations

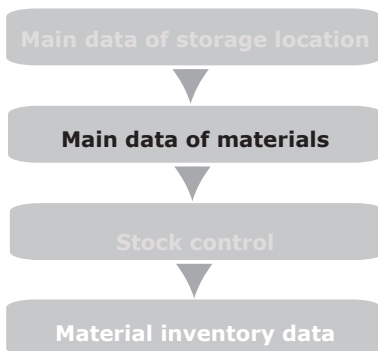


## Warehouse Management



### Main data of storage location

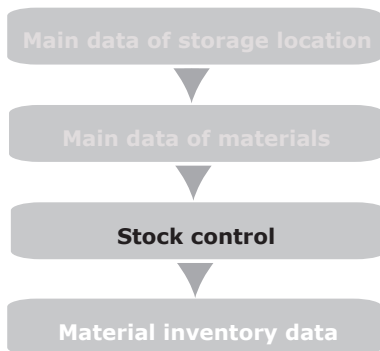
- Warehouse configuration
  - shelf classes
  - structure (warehouse/store/zone/aisle/level/shelf/space)
  - shelf types (rack/block/push-back pallet racking/etc...)
- Shelf-/rack weight limitations
- Manual warehouse:
  - identification of storage location by barcode
  - identification of storage location by check digit
- Dynamic reserve location management
- Handling of order picking location
  - fixed per item
  - flexible per order volume/control system/handling unit
  - 1 to n order picking locations
- Support of various storage location labeling systems
- Automatic warehouse:
  - double deep
  - multiple deep



### Main data of materials

- Minimum quantities of stock for fixed locations
- Order picking parameter
- Customer-specific product description
  - item group/product type
  - weight/volume
  - data of hazardous goods/materials
  - packaging parameter
  - unit for stock control
  - storage regulations (temperature/room conditions)
  - barcode types and formats
- Allocation of substitutes/follow-up items
- Special offer items
- Base price for inventory

# Warehouse Management



## Stock control

- Stock control
  - per item (piece/weight/batch)
  - per unit of quantity (liter, m<sup>2</sup>, etc.)
  - per packaging unit (barrel, sack, etc.)
  - per warehouse unit (pallet, container, etc.)
  - per store place
  - per number of reference
  - per best-by-date
- Article stock codes
  - free
  - quality
  - blocked



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## Warehouse Management



### Monitoring

#### Monitoring

- Error reports
- Recording of transactions (tracing)
  - transaction history (user/time stamp/type of transaction)
  - ad hoc transaction lists
  - archiving concept
  - trace-levels
- Complete booking control (logfile per transaction)
- Information management
  - reports on all main and movement data
  - data export to Office applications (XLS)
- Fast & slow - mover
- Lots (multiple level tracing)
- Best before (anticipated/expired)
- Financial inventory
- Web-access
- TRM/ rating (SAP)

### Optimization

#### Optimization

- Function of consolidation
  - in storage
  - cyclical according to defined parameters
  - consolidation suggestion and it's confirmation
- Automatic and manual replenishment function for fixed storage places
- Warehouse consolidation by automatic generating of re-positioning contracts between various warehouse locations and types
- ABC-analysis

# Warehouse Management



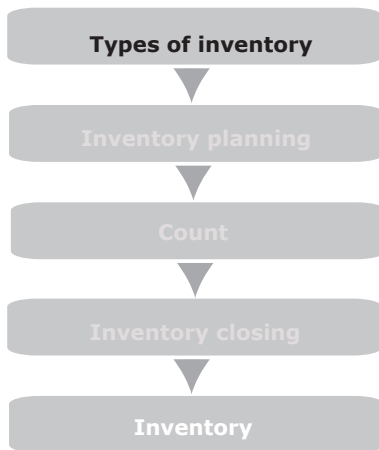
## Replenishment

### Replenishment

- Manual generating of replenishment directly to a picking area
- Automatic replenishment when
  - minimum stock level has been reached
  - an order has been releasedwith the option of manual correction
- Change of batch or date according to material master information
- Replenishment from
  - reserve space
  - goods delivery
  - transit area
- Replenishment of parts quantity
- Dynamic storage allocation

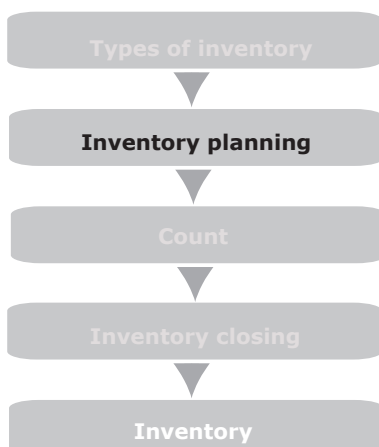


## Warehouse Management



### Types of inventory

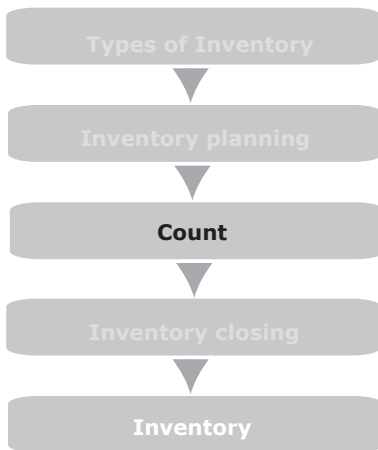
- Item inventory
- Storage location/space inventory
- Store inventory
- End-of-period inventory
- Zero crossing inventory
- Permanent inventory
- Certified sample-based inventory



### Inventory planning

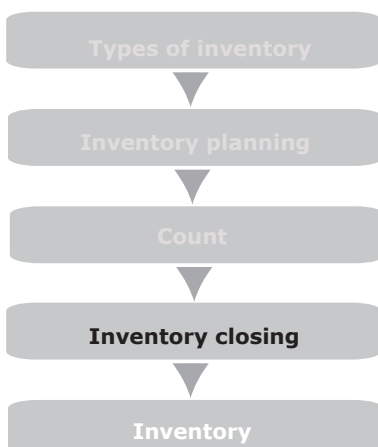
- Parameter-controlled
- With and without target quantity
- Sorted by space quantities
- Sorted by article numbers/space
- Max. amount of positions per count
- Generating count
  - items from/to
  - storage space from/to
  - spaces where no inventory has taken place since...
  - spaces or items every x days

# Warehouse Management



## Count

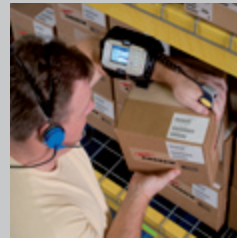
- Inventory online or count lists
- Tolerance value during count
- List of differences
- Updating of inventory status
  - date/time
  - inventory closing
  - absolute corrections of stock
  - inventory report (discrepancies, progress)
- Financial inventory (optional)



## Inventory closing

- Manual/automatic feedback to the ERP
- Update of inventory status
  - date/time
  - inventory closing
  - absolute corrections of stock
  - inventory report (discrepancies, progress)

## Order Picking



### Adoption of external transport orders

### Management of client orders

### Order picking strategies

#### Adoption of external transport orders

- From ERP
- External communication (XML, EDI)
- Mobile terminals

#### Management of client orders

- Manual/automatic reservation of quantities/items
- Manual/automatic order release and order blocking
- Small volume management
  - automatic allocation (allocation key)
  - article exchange (substitutes, follow ups, specials)
- Concentration of client orders
- Picking location check and allocation
- Volume splitting/fixing quota

#### Order picking strategies

- First-In-First-Out, First-Expired-First-Out, batchwise
- Order picking
- Multi-order picking
- Zone order picking
- Order picking of overlapping zones
- Order picking of whole pallets
- Collective order picking
- Multilevel order picking
- Client or branch oriented order picking
- Order picking by lists/labels
- Label order picking
- Online order picking
- Order picking by container
- Partial pallet order picking
- Weight/quantity oriented order picking
- Pick & Pack (volume oriented)
- Special storage order picking (Coldstore, etc.)
- Sequencing

# Order Picking



## Order picking deployment

### Order picking deployment

- Management of period of the order picking
- Backward scheduling
- Manual/automatic creating of picking groups according to:
  - order/type of order
  - location/part of firm/type of warehouse
  - product range – quantity/weight
  - shaft/time slice
- Resource planning
- Manual/automatic printing of picking lists and labels
- Priority of orders
- Updating of order picking status

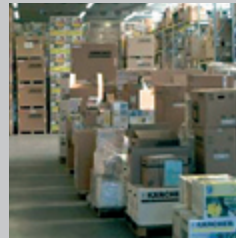
## Online Picking

### Picking

### Online Picking

- Automatic warehouse
  - automatic location check
  - automatic real weight comparison
- Manual warehouse
  - manual location check by scanning
  - article check by barcode
  - best-by-date check
  - real weight capture
- Customer defined tolerance value for weight check
- Updating of order picking status
- Temperature check
- Status codes
  - reserved
  - allocated
  - picked
  - provisioned
  - loaded
  - label printed
  - cross dock

## Packaging



### Packaging optimization

#### Packaging optimization

- Picking waves for sorting packaging
- Check: target container per client
- Calculation of number of containers
- Dynamic allocation of spaces
  - packing place matrix controlled by parameters
- Merging of orders
  - by dynamic allocation of global destinations to packing spaces

### Packaging

#### Packing

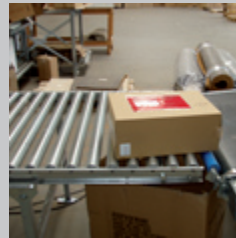
- Allocation of containers per order
- Packing of items into dispatch boxes/containers
- Pallet packaging
- Linking of heavy duty sorting systems and storage conveyor
- Display of specific packaging instructions by client and order
- Weight check and management

### Labeling

#### Labeling

- Printing of packing lists
  - per order
  - per trip
  - per loading unit
- Printing of dispatch list/dispatch label

## Packaging



### Shipping documents

#### Shipping documents / Start printer

- Delivery slip in ERP-system
- Packing lists/collies
- Delivery lables and -papers

### T&T-Data Exchange

#### T&T-Data Exchange

- Exchange of delivery- and collie-information



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## Loading



### Loading deployment

#### Loading deployment

- Allocation of loading platforms

### Loading processing

#### Loading processing

- Security scan of dispatch units
- Updating of loading status
- Controlled loading according to:
  - client
  - order
  - shipping agent

### Loading papers

#### Loading papers

- Loading list
- Packing lists
- Loading register
- Client-specific papers
- Automatically generated, event-controlled paper printout

## Clients who trust us



Our logistics solutions are being used in various sectors across Europe. Many of our clients appreciate our experience and flexibility.

We are customer oriented and have realized 250 projects at home and abroad. Here you can find an extract from our references:

## Contact visit of reference

You would like to view one of our references? Just contact us!

keyword "visit of reference" to:  
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*Günther Laber*



*Mag. Karl Kaufmann*

#### **About Metasyst Informatik**

Proven and internationally experienced experts merged to form METASYST Informatik in 1990. Longstanding experience in various areas and a multi-faceted IT-background form the basis. Flexibility, quality consciousness and sensibility to the clients' individual problems make the team at METASYST Informatik a competent partner.

As a company of LTW Intralogistics, consistency and safeguarding the future are at the foreground of company policy – so for the partners of Metasyst this represents a long-term security of investment.

## **Metasyst Informatik GmbH**

### **Automation & Integration**

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