

# Material flow management system Best for complex requirements



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The STILL Material flow Management System (MMS) is a full scale Warehouse Management System (WMS) to control, depict and analyse every flow of goods and information along the entire intralogistics chain – covering multiple sites of operation and a broad range of industries providing a solution for production, commerce and services. All the hardware and software components of the STILL system, including the STILL terminals, the warehouse management system and the order picking system, are designed in modules that are perfectly matched to each other.

# The STILL material management system comprises the following core modules:

- Warehouse management system (WMS)
- Transport/truck control system (TCS)
- Information system (IS)

- Interfaces to connect lower and higher-level systems systems
- Hardware for the operational level



Information about stock levels

The STILL warehouse management system individually and intelligently controls and implements every movement of goods in the warehouse, including warehouse management, order picking, provision for tours and loading for dispatch. The system provides information on load carriers, items, batches, expiration dates and serial numbers, and combines this information with data on warehouse strategies to

#### Goods received

- Acceptance and matching with orders from the higher-level material management system
- Consideration of fulfilment rates (excess deliveries, short deliveries or partial deliveries)
- Identification of goods by scanner or barcode

#### Warehouse management

- Consideration of article information such as batch, BBD, serial number, hazardous goods, etc.
- Flexible load carrier/storage place assignments
- Simple configuration of warehouse strategies

# Goods assignment

- Assignment of stocks to orders according to different strategies
- Consideration of allowable excess deliveries, short deliveries or partial deliveries

#### Order picking

- Definition of different strategies (e.g. individual picking, parallel picking or collective picking)
- Multi-level order picking
- Creation of order picking areas
- Optimisation of picking sequences according to various criteria

#### Replenishment

Demand controlled replenishment (e.g. by orders to pick)

ensure that goods are made available to the material flow on time and as required, and that the available storage space is used in the best possible way. In addition, the system enables optimised empties management and supports key data and permanent stocktaking. The STILL MMS also enables perfect interaction with automated vehicles.

- Stock level controlled replenishment
- Flexible assignment for special storage areas (buffer spaces, order picking storage bays)
- Automatic creation of multi-level replenishment chains (e.g. outdoor storage → buffer spaces → picking stations)

# Packing station

- Packaging and consolidating several orders for one recipient into a single shipment comprising several containers
- Use of packing schemes for despatch
- Printing of packaging labels and freight documents, packing lists (DPD, UPS etc.)

# Goods dispatch

- Consolidating one or several customer orders into a single tour
- Creation of basic schedules for regular tours
- Optimised lorry loading, taking the load characteristics into account (weight, quantity, loading sequence)
- Provision of respective documents such as loading list, freight documents etc.
- Documentation of empties accounts with customers and suppliers
- Interface with scales and imaging for documentation of goods dispatched
- Loading supervision

#### Printing documents

Printing of process documents such as pallet labels, bond notes, loading list etc.



Overview of the areas covered by STILL MMS

The transport/truck control system (TCS) controls the optimum operation of the fleet of trucks in the warehouse according to a defined set of criteria. STILL MMS TLS allows implementing complex strategies e. g. multi-level transports or internal transports with trailers. Paperless transport order processing and end-to-end material flow documentation

# Take over and generation of transport orders

- Take over of transport orders (movement of material) from higherlevel systems (WMS, PPS etc.) via various interfaces
- Generation of transport orders at the MMS control centre, the onboard terminal and other mobile devices
- Internal generation of repetitive transports e.g. to dispose of empties following preset criteria

# Transport control

Dispatch is to select the most suitable truck (means of transport) by technical and organisational criteria. This aims at optimum use of available resources. The STILL MMS TCS

- considers trucks, trailers and characteristics of load carriers for optimum allocation of load carries to trucks
- takes shift profiles and cyclic routes into account to select the trucks
- dispatches in narrow aisles with double work cycles, reduction of aisle changes, type of transport and order prioritisation

are the basis for seamless processes. Simple dialogues to exchange information with the drivers ensure quick handling of transport orders. The simple terminal dialogues can be individually modified to support the drivers according to the task at hand.

# Self learning truck control system

- Self learning method to calculate travel distances and to optimise travel routes
- Priority for optimised routes or for handling times can be configured as "fine tuning of transport control"
- Measuring and evaluation of times of completed transports with statistically smoothened results
- Automatic adjustment to changed warehouse topologies

#### Trailer operation and tugger trains

- Simple generation of transport orders per station with the STILL transport generator
- Consideration of free and occupied trailers in the system



#### Online flow of information paralleling the flow of material

# Integration of subsystems

- Integration of pick-by-voice
- STILL RFID-locator for logic tracing of material movements in the warehouse
- Preparation and transmission of data to driver assistance systems (e. g. STILL OptiSpeed 4.0)
- Preparation and transmission of transport jobs to automated STILL trucks
- Interfaces with existing warehouse installations (conveyors, shift rack systems etc.)

#### Additional functions

- Acquisition and evaluation of auxiliary work/external services for adequate cost assignment
- STILL MMS the operative level & IT

The term hardware in the context of the STILL material flow management system is a collective term for all components that form a system together with the software. Hardware comprises everything with respect to computers and networks and all the terminals e.g. onboard terminals of the trucks and handhelds.

The hardware also includes components like transponders (RFID) and mobile work places for goods received and for order picking. For example, the STILL touch terminal and the STILL pick-by-voice components are also referred to as hardware.

#### STILL MMS work space for the driver

STILL furnishes all the work places of the trucks to be integrated into the system with all the necessary components

- STILL touch terminal to display and enter data
- Barcode scanner for quick verification of load carriers and storage locations
- If required, mobile printers to print required documents
- RFID antennas for the functions of the STILL RFID-locator



Interface with higher and lower-level systems/devices

Depending on the requirements, STILL supplies the complete range of necessary hardware for order picking from picking trolleys with pick-by-

# Hardware and network

The hardware of the STILL MMS comprises:

- MMS server (physical and virtual servers are supported)
- Work stations for the control centre for administration work and for information purposes
- Printer/label printer, stationary and mobile printers to print process documents
- Network (Ethernet) & radio data (WLAN) for data transmission to and from system components
- Mobile terminals as interfaces between the system and the staff
- On-board terminals

Network

- Handheld terminals etc.
- VPN router for remote maintenance

light support to complete pick-by-voice equipment.

# STILL MMS information system

The information acquired by the MMS and the data collected during operation are the basis for the STILL information system. This data is processed for various means and purposes.

The available information is used to optimise handling of every-day business and to create an overview of the status of the warehouse and the system. Data records are used for evaluation and future optimisations

# Control stand

WMS and TCS display in the control stand of the MMS (overview of transports, stock level information etc.)

# Statistics and reports

- Logistics index figures, statistics and evaluations by the system (e. g. number of shipments received/dispatched per week, month, year etc.)
- Export of information from the MMS (e.g. by Excel data base access via SQL-Editor)



# Network STILL hotline for remote maintenance

IT infrastructure





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STILL is certified in the following areas: Quality management, occupational safety, environmental protection and energy management.



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