

LTWMS Warehouse Management for the Steel Industry

This tagged accessible reading edition presents the approved brochure content in a linear text format. Image descriptions summarize the informative visuals in the original brochure.

Page 1 - cover

Source reference: original brochure, page 1.

LTWMS Warehouse Management

Warehouse Management System for the Steel Industry.

Image description: A steel-coil warehouse and overhead crane are combined with a 3D LTWMS yard view. The software view contains material labels. The LogoTek wordmark is a logo, not the OCR string "We goTe."

Source reference: original brochure, page 2.

Warehouse Management for the Steel Industry

LogoTek warehouse management systems LTWMS are suitable for material management in steel plants. These systems can be used in various areas of a factory, for example in coil yards, slab yards, heavy-plate yards or billet yards. The main task is the administration of storage-yard contents.

The operator can obtain data about material movements, storage-yard occupation and crane operational status. Work orders for cranes and other means of transport are generated on the basis of production-planning data. Statistical information on storage-yard status is available.

A crane-tracking system for transport monitoring, or a complete automation system, can be integrated into the WMS. In this case the storage-yard image is updated from process data received from cranes. Storage locations are selected using configured optimization rules and restrictions.

Key features listed in the source

- Modular client/server architecture.
- 3D warehouse visualization.
- Transport management for cranes, trucks, wagons, transfer cars, pallets and other equipment.
- Configurable yard layout.
- Multilingual interface.
- Functions for fully automatic crane systems, including routing and operation zones.
- Configurable storage rules and restrictions.
- Customized reports with an integrated report generator.
- Clients for PCs, vehicles, cranes and mobile devices.
- High-availability solutions with hot or cold standby.
- Turnkey supply with hardware, software and engineering.

Image description: Large LTWMS software screen showing a 3D coil yard, work-order and material tables, material-detail fields and occupancy charts. Small values and material IDs are intentionally not transcribed; the description focuses on the screen function.

Page 3 - benefits, modules and connectivity

Source reference: original brochure, page 3.

Benefits stated in the source brochure

- Always transparent material flow.
- Optimized storage-yard occupancy with minimal access time to material.
- Higher production throughput due to optimized transport management.
- Minimized crane travel distance.
- Reduced maintenance cost due to integrated system monitoring.

Modules

LTWMS consists of the following software modules:

Database. The WMS database is the central storage for information managed by the WMS, including material data, transport-management information, communication queues and status data. The source says stored procedures are used for fast response under heavy load.

WMS processes and services. Independent processes and services support communication, transport management, system monitoring and temperature calculation. Server-monitoring tools start and stop services and check WMS function.

WMS client. A PC client with 3D visualization, user-management and customization functions.

Crane client. A client for vehicle and crane operators with 3D warehouse visualization and work-order and status displays.

Mobile client. A reduced-function client for yard operators, including material inquiry, transport management, dispatch, scanner and RFID support.

Connectivity

The source says a WMS connects to production facilities and Level 1-3 systems in the steel plant. Interfaces can be configured for an application area. Its examples are:

- Level 3: PES and MES, with TCP/IP and MQS listed.
- Level 2: Furnace, caster, rolling-mill and skin-pass-mill computers, plus sampling units.
- Level 1: Vehicle tracking, roller-table control, charging and discharging beds, scanners and identification systems (OCR, RFID and barcode), with TCP/IP, OPC and SNMP listed.

The source says LTWMS includes tools to configure and monitor communication.

Image description: Three photos depict a coil yard, industrial equipment and stacked slabs.

Page 4 - WMS and vehicle-tracking components

Source reference: original brochure, page 4.

WMS client

The source describes the WMS client as a warehouse-operation interface combining real-time 3D visualization with warehouse-management functions. It says configuration features support customization and commissioning, and role-based user management provides access levels for different user classes.

Dialogs and functions listed:

- 3D warehouse overview.
- Material details and history in table and detail views.
- Transport management with automatic work orders.
- Truck and train management and work-order groups.
- Production-schedule management.
- Reporting and report generator.
- System messages, including operational messages, warnings and failures.
- Graphical communication overview.
- Warehouse statistics with configurable charts.
- Telegram queues and messages in filterable tables.

Settings and configuration listed:

- Warehouse layout; storage rules; restrictions; safety zones.
- Crane working areas and storage strategies.
- User-interface language and user access rights/management.
- Material colors based on material properties.

Vehicle Tracking System CTS

The source says LTWMS integrates a crane-tracking system with a client for overhead cranes, forklifts and heavy-load carriers. Positioning systems detect material location. Weighing systems and scanners can be integrated for material recognition. Its turnkey description includes sensor hardware, PLCs and software.

CTS functions listed:

- 3D warehouse overview with dynamic view control.
- Filterable work-order list and work-order status.
- Hardware and interface status.
- Material correction and manual input; material details.
- Vehicle assignment and survey.
- Load-handling-device selection, such as tong type.

CTS hardware and interfaces listed:

- Panel PC with Atom four-core processor; Siemens S7-300/S7-1500 PLCs; Wago 750 controllers.
- OPC/OPC-UA interface to crane control.
- Analog and digital interfaces to weighing units, magnetic systems and tong contacts.

1D positioning systems listed: LRF-series laser sensors; Symeo LPR 1D sensors (LPR 1D24/LPR 1D); RFID; absolute encoders; barcode positioning.

2D positioning systems listed: Symeo LPR 2D systems and real-time kinematic GPS.

Image description: A WMS 3D yard screenshot and a CTS vehicle-tracking interface contain material and location data.

Page 5 - storage rules and automatic cranes

Source reference: original brochure, page 5.

Storage rules and restrictions

The source says the WMS automatically creates work orders based on storage rules and restrictions. It checks arriving material properties, selects a storage location and creates a work order. Operators can modify, activate and deactivate the rules.

Its example concerns hot-rolled coils in a cooling yard. A temperature model calculates coil temperature. The source says a work order for further processing is automatically created after a coil cools below 100°C.

Storage-rule examples listed: rolling sequence for slab yards; minimum crane travel; minimum number of transports; grouping material by customer ID; delivery plan; steel grade; coil-yard packing type; diameter.

Restriction examples listed: maximum overlap width and length; maximum weight or coil-diameter difference; maximum temperature for further processing; delivery-plan number and date; ready and quality flags.

Functions for fully automatic cranes

The source says LTWMS includes control functions for automatic cranes in steel-plant warehouses. It describes sensor processing and routing that divides a work order into drive jobs between geometric coordinates while accounting for machines and safety zones. Its examples of auxiliary jobs include scanning trains and detecting material position on transfer cars.

Software functions listed: splitting a work order into drive jobs; safety-zone management; automatic control of 2D scanning for trains, trucks and piles; crane selection.

Hardware configuration listed: redundant positioning system / "SIL 3 Positioning"; frequency-inverter control; anti-sway systems; coil-tong sensors for width, coil-eye detection and coil presence; slab-tong sensors for width and gripper-bit position; load sensors/pins; 2D scanners for slab piles and wagons; safe-access systems; remote operation from a control room; camera monitoring.

Image description: Storage-configuration software screens and a photo of an overhead crane over coils.

Page 6 - applications and company

Source reference: original brochure, page 6.

For all kinds of material

The source lists these application areas:

- Coil yards: Scheduling for skin-pass mills, packing lines, sampling lines and quality control; truck/train delivery planning; management of telescopic tongs and C-hooks.
- Slab yards: Sorting for hot rolling; scarfing, cutting and sampling; transport by roller tables and transfer cars; train-delivery planning.
- Billet and bloom yards: Billet groups and long-product-mill schedules; group handling with crane magnets and C-hooks; OCR-identification interfaces; delivery planning.
- Plate yards: Tracking on roller tables and cooling beds; magnetic handling with position detection on magnetic crossbeams; OCR-identification integration.
- Roll management: Rolls for hot or cold rolling mills, including crane transport and RFID identification.

About LogoTek GmbH

The source describes LogoTek as a supplier of steel-industry automation, focused on material tracking, warehouse management and optical identification. It also claims a network of technical offices and sales partners and turnkey systems supplied worldwide.

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Image description: Five product photos depict steel coils, hot slabs, plate stacks, glowing long products and rolls.