

[silwaSUITE]

The Integrated Solution for **Warehouse Logistics** and **Production**.

[Logistics and Manufacturing]

silwa (Stesi Integrated Logistics & Warehouse Automation) is a comprehensive **Supply Chain Execution System (SCES)** that combines the functions of a **Warehouse Management System (WMS)** and a **Manufacturing Execution System (MES)**. It manages the entire internal logistics flow of goods within plants, from Receiving to Shipping, including production progress tracking and time collection.

By implementing *silwa*, companies can achieve:

- **Reliable inventory management**
- Reduced **reliance on operators** for task execution
- **Optimal** warehouse **space utilization**
- Complete and timely goods **traceability**
- **Lot and serial number management** aligned with business and regulatory requirements
- Fewer picking and **shipping errors**
- **Shorter receiving** and picking times
- Improved operator **safety**

[Application Features]

Silwa is:

- Adaptable to various business environments
- Configurable
- Scalable
- Highly customizable
- Multi-company
- Multi-site
- Multilingual

[Integration]

silwa is designed to **integrate with any ERP system** (e.g., SAP, IBM AS400 systems, Zucchetti, TeamSystem, Unix, Sistemi...) and with all control and management systems for automated material handling and production line operations.

It is also **Microsoft® certified** and natively integrates with Microsoft® Dynamics ERP solutions (AX, NAV, 365, Business Central).

[User Interface]

silwa offers a user-friendly interface with a Microsoft Outlook-style **Workstation** for desktop users, and an intuitive, ergonomic, full-touch **Mobile** interface available on Android, iOS, and Windows.

[Mapping]

silwa allows the plant to be subdivided into functional areas and supports the creation of storage units and locations using a user-defined tree structure.

[Lot Management]

silwa handles naming, logistics, status, and physical information for lots (batches). For every operational flow, the system tracks both used and generated lots, enabling inventory and allocation analysis and control.

silwa ensures **full lot traceability and genealogy from Supplier to Customer** and vice versa, monitoring all production and logistics flows across the supply chain.

[Logistics Flow]

MANAGING AND ORGANISING THE SUPPLY CHAIN CAN SEEM LIKE A NEVER-ENDING JOB

The application model used by *silwa* is the actual physical **flow of goods within the plant**:

- **RECEIVING**
All inbound logistics flows are managed: purchase orders, production output, subcontracting, returns, and consignment stock, including quality control and customs management.
- **PUTAWAY**
Goods are stored in the warehouse according to custom storage logic, maximizing space usage and ensuring traceability.
- **HANDLING**
Internal movements by Item or Load Unit are managed to handle in-transit products, optimize storage layout, and control replenishment from bulk to pick locations using different strategies.
- **PICKING**
Once shipments are accurately planned, picking operations are executed using optimized pick lists and routes based on configurable strategies, reducing picking time and eliminating errors.
- **SHIPPING**
The system simulates availability and generates the packing structure. *silwa* then produces the packing list, verifies loading through package confirmation, prints shipping labels, and sends delivery note and invoice data to the ERP.

[Production Process]

silwa manages the **production** layout integrated with **logistics mapping**, phase-based and level-based progress tracking, production order pick lists, time tracking, and production reporting.

- **PLANNING**
Production orders are assigned to lines, cells, or operators to validate upstream scheduling.
- **FULFILLMENT**
Based on the required time window, the system calls the materials needed for production and communicates with other systems to ensure demand fulfillment using standard models (kanban, batch, etc.).
- **PRODUCTION**
Material consumption, phase progress, and production output are recorded in real time or in batch mode within the production area.
- **REPORTING**
Production times, used resources, downtimes, and all relevant process data are automatically collected (where possible via machine interfaces) or manually declared via the user interface.
- **TRACEABILITY**
During production, lots and/or serial numbers are generated to ensure unit-level traceability of each produced item.



[Automation]

silwa enables **interconnection** between execution flow management and **handling systems, automated warehouses, and line-side and end-of-line equipment**. The system allows monitoring of ongoing operations and machine status, manages all material handling systems (conveyors, PLCs, etc.), and handles faults and anomalies.

[Forklift Guidance]

Through its **FGS (Forklift Guidance System)** module, *silwa* provides real-time automatic tracking of handling vehicle positions and assists forklift operators through a **navigation-style interface** with 3D warehouse visualization and graphical instructions for tasks and load units.

Transport missions are optimized by distance, significantly reducing travel time since **barcode scanning** of bins and load units is no longer required.

With *silwa* FGS, logistics costs related to the number of vehicles and operators are significantly reduced, while **environmental impact** is lowered and **workplace safety** and process reliability are improved.



[I Moduli]

[WMS]

Simplifies and optimizes space management, goods handling, and resource utilization

[MES]

Controls and supervises production processes, optimizing time, costs, and resource management

[WCS]

Monitors and manages automated handling systems

[Mobile]

Supports and assists operators in executing operational tasks

[Mission Manager]

Automatically organizes tasks to devices and operators, maximizing the efficiency of logistics and production activities

[BI]

Optimizes processes, makes informed decisions, and meets market demands by leveraging logistics and production flow data

[Yard]

Effectively manages the entry and exit of transport vehicles, schedules access efficiently, and maximizes automation

[Slot]

Coordinates and optimizes loading and unloading docks through planning and synchronization with warehouse activities

[Technologies, Devices, Platforms]

silwa is built using Microsoft .NET and .NET MAUI and supported by technologies including:

- Microsoft SQL Server Databases
- Supported Server Operating Systems: Microsoft Windows Server
- Client Operating Systems: Microsoft Windows, Microsoft Windows Embedded
- Supported Mobile Operating Systems: Microsoft Windows, iOS, Android

Supported devices include:

- Handheld and vehicle-mounted RF (radio frequency) devices
- Smart devices (smartphones, tablets, ...)
- Fixed workstations
- Cameras
- Sensors



[Connector]

Achieves exceptional efficiency by employing and coordinating automated devices and systems

[FGS]

Simplifies activities by optimizing vehicle routes, handling operations, and ensuring safety

[Batch]

Tracks lots across all operational flows and manages associated information.

[B2C]

Ships high volumes in a short time, ensuring maximum customer satisfaction

[Label]

Defines and prints customized labels

[3D]

Visualizes the facility in virtual reality to accelerate operations

[4ERP]

Accelerates logistics and production activities from order to shipment through integration between *silwa* and the company ERP.

[Safety]

Enhances site safety and creates secure working environments by leveraging innovative technologies



Preferred Partner
TOYOTA
MATERIAL HANDLING



Microsoft
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