



IT solutions for logistics

Solvo.WMS

streamlined warehouse management



Solvo.WMS

- comprehensive and reliable solution for the warehouse of any size

Solvo.WMS is an out-of-the-box warehouse management system providing real-time control and optimization of even the most specific processes at any type of site. Solvo.WMS is operational at more than 300 warehouses of various size and specialization spread across different regions.

The WMS relies on the popular technologies such as address-based storage, rules-based putaway/picking, bar-coding, RFID, voice-picking, AS-RS integration, CLOUD and many more.

The solution can be customized to suite specific needs of a customer. Available in four industry-specific variants: retail and Dcs, manufacturing, 3PL and pharmaceuticals.



Confirmed efficiency figures*

500 000 order lines per day;

400+ simultaneous user sessions;

Up to 99.9% inventory stock accuracy;

60-70% decrease in mis-picks and excess loads;

5-15% increase in storage capacity;

15-20% increase in personnel productivity;

>99.5% picking accuracy;

15-20% decrease in operating costs;

Up to 50% increase in picking speed;

10-20% reduced MHE empty runs.

Based on the official stats gathered upon projects completion since 1999.

Functionality highlights

Receiving

- Pre-advised shipments;
- ASN receipts;
- Automated receipt from production lines;
- Transits;
- Receiving returns;
- Tracking of received goods in different units of measure, e.g. units, boxes, kg (pounds), meters (feet), etc.;
- Receiving bulk goods in parts;
- Receiving unpacked goods;
- Receiving surplus and mis-classified goods.

Order picking, packing, assembly

- Order planning by FIFO/LIFO/FEFO/shelf life/expiration date etc.;
- Replenishment optimization and forward picking and load displacement;
- Support of various picking methods: pick-by-order (discreet), pick-by-article (batch), wave, reverse order;
- Support of various group-picking strategies: multi-order picking, put-to-store, etc.;
- Support of various picking technologies: paper pick-list, RFID/bar-code scanning, Pick-by-light, pick-to-cart, pick-to-belt, Voice-pick, Pick-by-vision.



- Kitting;
- Pick and pack optimization;
- Assembly of special orders (possible reservation for specific order);
- Order assembly optimization.

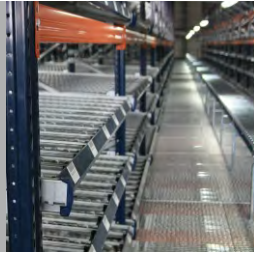
Storage and inventory management

- Supports various storage types and modes including racks, bulk, block, flow storage, automatic high-bay, mobile racks, sorters, trays, carousel, cassette, cantilever, silo (tanks), gravitation racks, narrow aisle and more;

Conventional racks



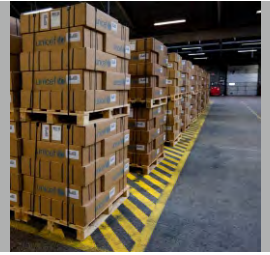
Gravitation racks



Narrow aisles



Pallet stacks



Cantilever racks



Drive-in racks



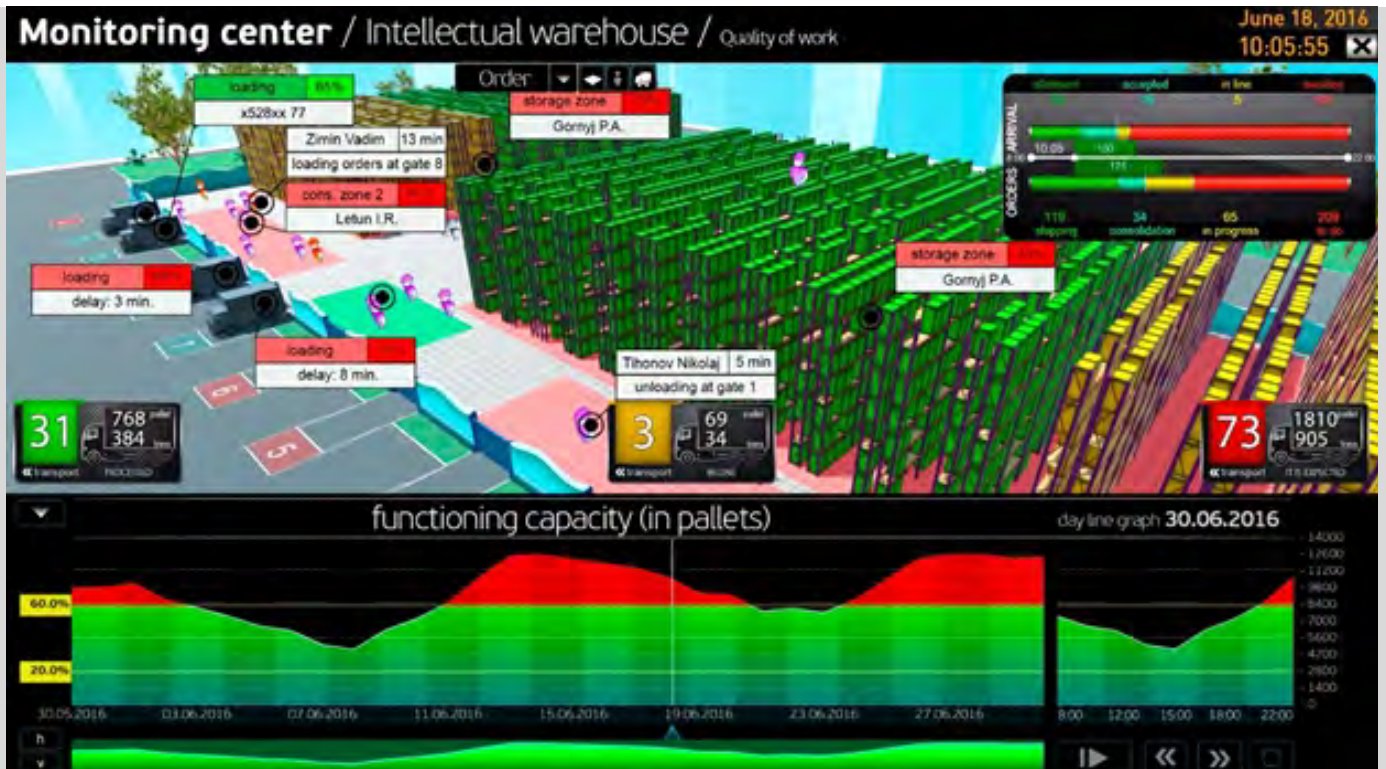
Automated warehouse



Frame storage



- Graphic warehouse monitoring tool: displays all warehouse layout and processes in 3D, showing statistical info and much more.



Putaway

- Putaway rules (e.g. taking into account such parameters as ABC-classification, RSL of a product);
- Storage location search strategies;
- Load transfer and routing;
- Load merging;
- Sorting;
- Job optimization;
- Load storage and intra-warehouse operations;
- Storage rules;
- Expiration date control (RSL);
- Load status control;
- Intra-warehouse transfers;
- Write-offs;
- Correcting information and lost load management.

Inventory and materials management

- Inventory management in order assembly zone by FIFO/LIFO or expiration date;
- Inventory management in defect zone;
- Inventory counting without stopping the warehouse operation;
- Physical recount;
- Cyclical recount.

Order shipping

- Order shipping during assembly;
- Shipping of pre-assembled orders;
- Truck-loading optimization;
- TMS and YMS integration;
- Order replanning;
- Cancelling and modifying orders;
- Resolving problem situations;
- Scrapping goods management.

RFID: "Smart shelves"

"Smart shelves" or racks equipped with RFID antennas.

Racks are made of a special dielectric material to shield from radio signals. Smart shelf technology makes it possible to automatically record staging and load grabbing events in the WMS, while freeing up the hands of the operator.



Personnel management

- Real-time panels personnel productivity monitoring tools with the ability to display each worker's performance on LCD panels across the warehouse to boost motivation;
- Productivity analysis;
- Reports on all warehouse operations by time period.

Cross-docking

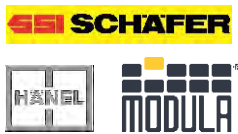
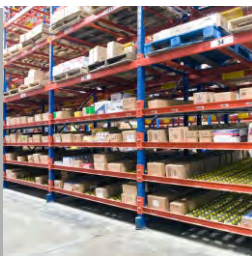
- Manufacturing Cross Docking;
- Distributor Cross Docking;
- Transportation Cross Docking;
- Retail Cross Docking;
- Pick-by-line.

Additional functions

- Weight control ;
- Goods certification;
- Quality control;
- Production control;
- Scheduled control;
- One-time control;
- Interacting with production;
- Load compatibility rules during storage;
- Special order processing;
- Creating order by transport route;
- Oversized load support;
- Color-matching;
- Goods marking;
- Applicator support;
- Transport loading optimization.

Solvo's 20 years' experience in WMS integration projects covers all kinds of automated storage and retrieval system (ASRS or AS/RS) such as Fixed Aisle and Carousels/Vertical Lift Modules as well as cantilever racks, radio shuttles, conveyors, flow racks and much more. Among our technology partners:

Flow racks



Automated warehouses



Conveyors

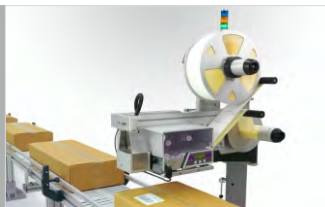


Radio shuttles



Solvo.WMS can be directly integrated with packaging, labelling and weighing equipment both at the warehouse and at production facilities. As part of all-in-one solution Solvo can supply universal controllers and communication modules with label printer applicators, automated palletizers (robots), weighing, wrapping machines and more.

Labeling, print and apply equipment



Weighing equipment



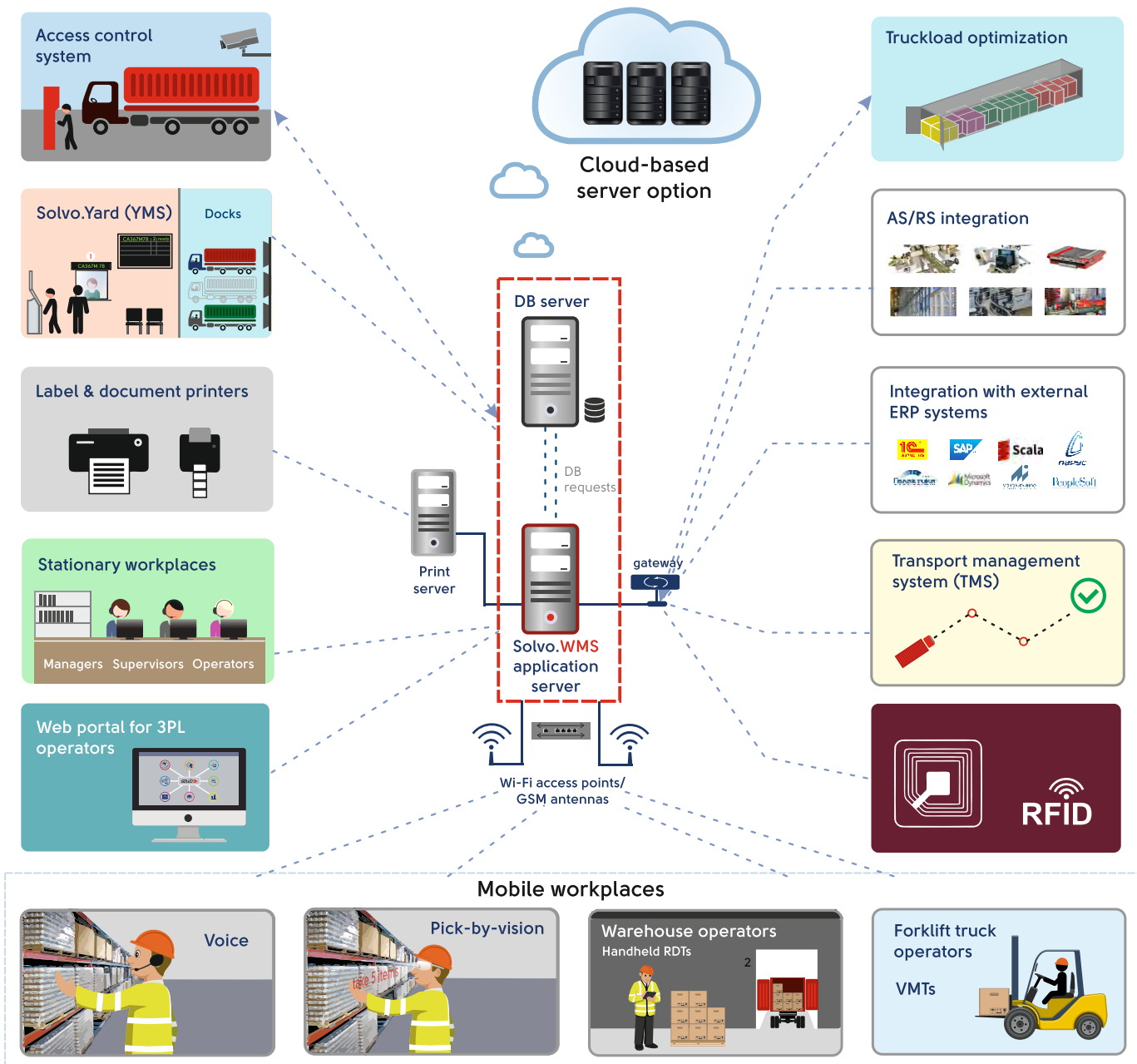
Dimension Weight Scan systems



Video monitoring and OCR



Solvo.WMS system architecture



Non-functional highlights

- SOA-architecture;
- CLOUD (IAAS) capability;
- Mobile Windows or Android interface for operators;
- Support of different modes of wireless communication: Wi-Fi, GSM;
- Integration with ERP, TMS, MES, etc.;
- Fail-safe recovery: dual server back-up and cluster configuration capabilities;
- Multi-site management availability.

More than just a WMS

- Yard management
- WEB-portal for 3PL customers
- Billing for 3PL customers
- KPI dashboards
- Labor management

WMS for manufacturing warehouses



Solution highlights

- Automated and semi-automated receiving from production;
- Product marking during receiving;
- Various methods for organizing storage - floor (bulk) storage in rows and tiers, storage in various types of racks, including gravitational;
- Supports large cargo turnover;
- Catchweight goods management;
- Tracking of empties;
- Lot and batch tracking;
- Expiration date control;
- Quality control for ready-made goods;
- Expanded gateway for corporate system;
- Packet processing and order shipping;
- Congested WH management (FIFO slot extension, etc.);
- Limiting bin capacity depending on product type.

"A manufacturing warehouse, mainly finished goods warehouses are characterized by a high turnover, larger order volumes, and a 24x7x365 work schedule. Pallets arrive at the warehouse from each production line at a rate of 1-2 times per minute, i.e. even at a medium-sized warehouse with 4-5 lines, pallets are received every ten to fifteen seconds. The same applies to the turnover during shipping. Such work intensity requires a high degree of WMS system adaptability and fault tolerance.

One of the key functions of a WMS is to ensure streamlined delivery of goods from production facility to the finished goods warehouses as well as supply of materials from the raw materials warehouse to production. As part of our turn-key solution Solvo can implement both semi-automated and fully automated receiving of goods from production introducing and integrating bar-code label printer applicators and optical sensors on the conveyor line with WMS server to make sure load information is automatically entered into the system.

The implementation of the solution makes it possible to increase the speed and accuracy of warehouse operations while minimizing the number of errors. The system's flexibility enables modifications of the given solution to a specific facility and its idiosyncrasies."

Vladimir Nikitin, Manufacturing Warehouse Expert, Solvo

WMS for pharmaceutical warehouses



Solution highlights

- Quality control and sample picking during receiving;
- Weight control;
- Certificate management;
- Lot tracking;
- Storage condition control (temperature, humidity, expiration dates etc.);
- Expanded rule set for putaway, storage compatibility and merger of goods;
- Unit picking;
- Repacking;
- Conveyor integration;
- Top-Off replenishment mechanisms;
- GMP & GDP Requirements Support (Support in carrying out warehouse validation, including project specifications in accordance with international standard requirements).

Pharmaceutical warehouses are probably one of the most complex facilities to manage, since they are highly automated from the jump. At these warehouses, the system must not only manage personnel, but also integrate with conveyors, carousels and automatic picking systems.

Other specificities include tracking goods by serial number at every stage and certificate management. These warehouses are also characterized by unit picking and require an effective automated inventory management mechanism in picking zones. Solvo is actively developing services to complement WMS deployment such as assistance in passing GMP and GDP validation. We have a stellar track record in this field and are ready to help our clients to pass validation.

All of these requirements are supported in the industry-specific solution tailored for pharmaceutical warehouses based on Solvo.WMS.

WMS for distribution and retail warehouses

"Distribution warehouses present many demands for a warehouse management system, namely a high turnover of goods and the need to quickly and accurately pick and assemble orders, therefore one of the main optimization focuses for a WMS is case and piece picking. To achieve best results in piece picking it is essential to make use of the most advanced technologies such as voice-picking, as well as group picking methods such as multi-order picking, put-to-store and more.

Also cross-dock is widely used to achieve the main goal of distribution warehouses: to receive and store goods from various producers or wholesalers for subsequent consolidation of orders. It must be possible to work with a large volume and SKUs, ship orders on the same day they're received, and process special types of orders.

Efficient usage of warehouse space, maintaining an optimal inventory level and timely replenishment are just some of the key goals of the given solution.

We have extensive experience working with various industry-specific distribution warehouses – anything from food, office supplies, household goods, auto parts, and clothing to footwear. Each one has their own specific requirements for the business-processes at the warehouse.

Alex Smirnov, WMS Deputy General Director, Solvo



Solution highlights

- ASN receiving support;
- Voice-picking support;
- Multi-order-picking, put-to-store;
- Intra-warehouse transfers;
- Kitting, packing and repacking optimization;
- Supports high turnover and large number of orders;
- Packet processing and order shipping;
- Transport routing for order (TMS integration);
- Cross-loading;
- Processing orders of multiple clients (multi-warehouse);
- Remote warehouse technology;
- Differentiation of client orders (any document format, counting and inventory with various productivity).

WMS for 3PL operators



Solution highlights

- Working with goods of multiple owners;
- Intra-warehouse transfers;
- Inter-warehouse transfers;
- WEB-portal for cargo-owners;
- Billing and real-time tracking of rendered services;
- Warehouse space quotas;
- Transit load management;
- ASN (advanced shipping notice) support;
- Added value services: kitting, packing and repacking;
- Putaway optimization;
- Packet processing and order shipping;
- Universal gateway with ERP system.

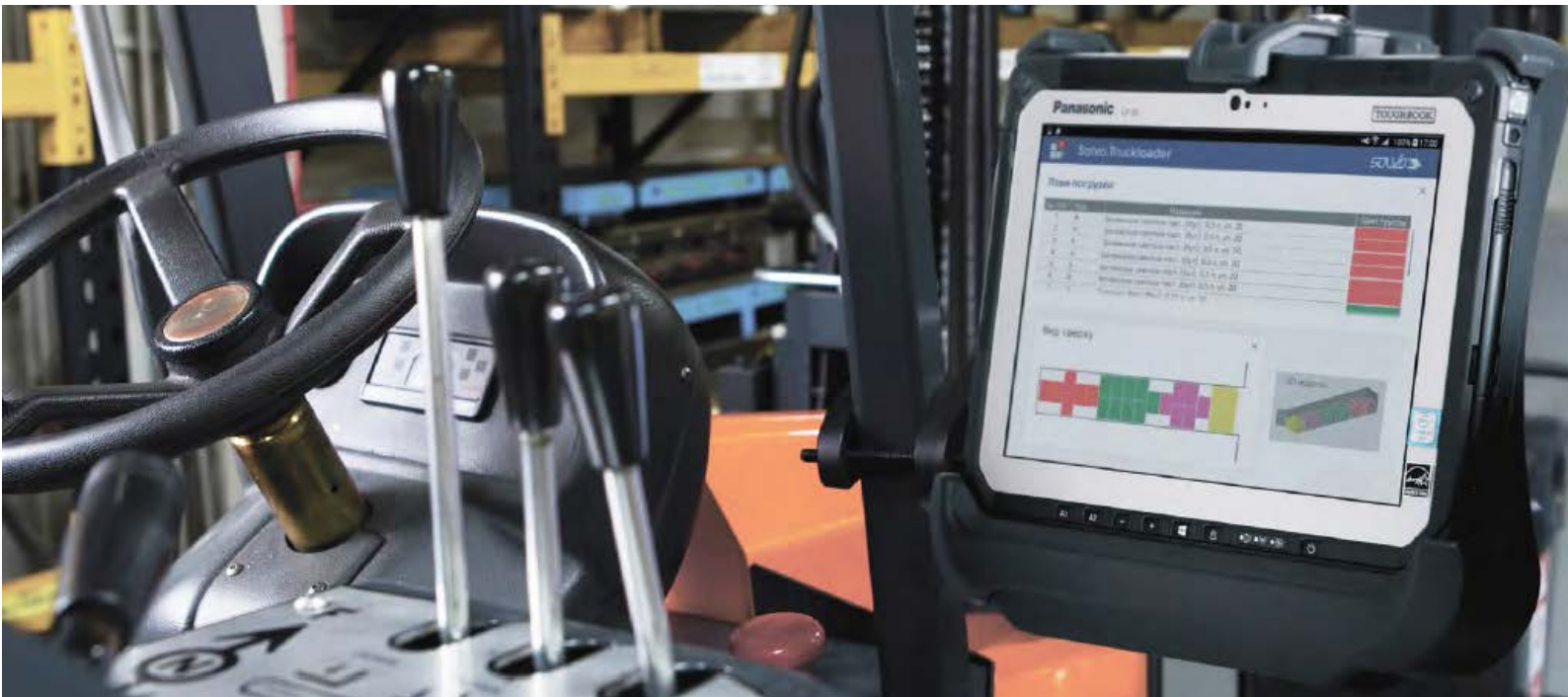
"One of the factors to consider when working with secure storage warehouses is uncertainty, in relation to both prospective clients, as well as their requirements to the services provided. In order to satisfy any potential requirements, the system must be, firstly, universal, i.e. cover the entire spectrum of warehouse operations, and secondly, customizable, so that a new warehouse client can be serviced as quickly as possible.

An important aspect of Solvo.WMS is its "Additional operations" feature, which supports the creation of any type of new operation and their on-the-fly "integration" into the existing processes at the warehouse, as well as a universal contracts and billing module Solvo.WEB and Solvo.Billing, which enable commercial warehouse clients to monitor the status of their cargo handling requests online and in real-time."

Iliya Rubinchik, Head of Implementation, Solvo

Truckload optimization

- Automated calculation of optimal distribution of pallet loads inside the truck taking into consideration the maximum axel weight;
- Automated calculation of optimal pallet configuration (optimal order of piling up a pallet load);
- Predefined scenarios depending on the type of truck/rail-car;
- Multiple predefined calculation algorithms;
- Real-time display of pallet configuration on handhelds and vehicle-mounted data terminals;
- Reporting tool.



Solvo - an experienced systems integrator that offers a wide range of services beyond WMS implementation

- Systems integration;
- Warehouse planning;
- Warehouse process audit;
- Supply of rugged mobile computers (RDTs);
- Wireless network design and installation;
- Infrastructural networks design and installation and more.

SOLVO

IT solutions for logistics



350+ implementations



25+ years in operation



200 employees



5 international offices



50+ partners worldwide

Among Solvo.WMS users



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350+ projects

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