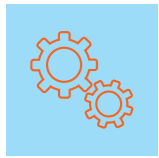




# SUPPLY CHAIN PROFESSIONAL SOFTWARE



# xTrack PRD (MES/MRP/APS) Production Optimization

The production software solution, **xTrack PRD**, is based on a uniquely integrated approach and it has been created from a perspective that is more operational than financial. It has naturally evolved from the **xTrack WMS** software solution to efficiently link workflows in raw materials warehouses, semi-finished products warehouses and finished products warehouses in production facilities. Using **xTrack PRD** technologies, Axes Software provides manufacturers with new methods of efficiently capturing data related to their current activities.

The **xTrack PRD** software solution covers the well-known MRP (Manufacturing Resource Planning), MES (Manufacturing Execution System) and APS (Advanced Planning and Scheduling) functionalities independently of an ERP application, which ensures enhanced implementation flexibility and allows Axes Software to fulfil the requirements of its manufacturing customers.



## xTrack PRD Benefits

- Connection to stocks in warehouses
- Only one person's (shift supervisor) monitoring of operations carried out by workers/machinery and equipment
- Identification of scraps (reusable or not)
- Full traceability (from raw materials to finished products) per batch/pallet
- KPI - Calculation of bonuses depending on productivity
- Estimation of completion times for production orders
- Prioritization of production orders
- Implementation of MTO (make to order) and MTS (make to stock) production strategies
- Graphic representation of planning and production stages
- Elimination of machine/equipment downtime
- Automatic feeding of necessary materials to machines
- Automatic production scheduling
- Automatic management of raw materials/semi-finished products movement from one production stage to another
- Elimination of data entry errors

- Interfacing with equipment/machinery
- Intuitive graphical user interface
- Automatic generation of batch numbers
- Item/box/pallet labelling
- Workflow management: from trucks straight to production lines
- Workflow management: from production lines straight to trucks



## xTrack PRD Functionalities

### AUTOMATIC PRODUCTION SCHEDULING

- Coordination of production activities, taking into account machine calibration and maintenance periods as well as uptime scheduling per machine and per shift
- Weighting of production time depending on machinery performance
- Graphic representation (GANNT) of production stages and their sequence
- Machinery/equipment allocation for each production stage
- Prioritization of production orders depending on the scheduled completion dates
- Manual or automatic adjustment of parameters

### PRODUCTION LAUNCH AND AUTOMATIC PRODUCTION STAGE REPLENISHMENT

- Automatic creation of replenishment tasks for equipment/machines
- Depending on their priority, the execution of replenishment tasks by moving the materials from shelves to machines
- Accurate monitoring of scraps (reusable or not)
- Tracking of all raw materials / semi-finished goods in the production area

### MANUFACTURING BY EXECUTING SIMPLE TASKS ON MOBILE COMPUTERS

- Control over material consumption and production
- Checks on whether the production recipes are strictly followed
- Identification of deviations from expected times and quantities (consumed or produced)
- Intuitive simplified data collection
- Control over movement of raw materials / semi-finished goods from one machine to another
- Addition of data extracted from machines to data entered by human operators
- Coordination of operations by production batches

### RAW MATERIALS INVENTORY MANAGEMENT

- Allocation of materials to production orders
- Selection of materials based on quality
- Management of quality certificates (QA)

### WIP (SEMI-FINISHED GOODS) INVENTORY MANAGEMENT

- Semi-finished goods to be further processed in the next production stages
- By shelf or pallet location
- Full automation of WIP inbound/outbound processes
- Scrap management

### MANAGEMENT OF FINISHED GOODS INVENTORY

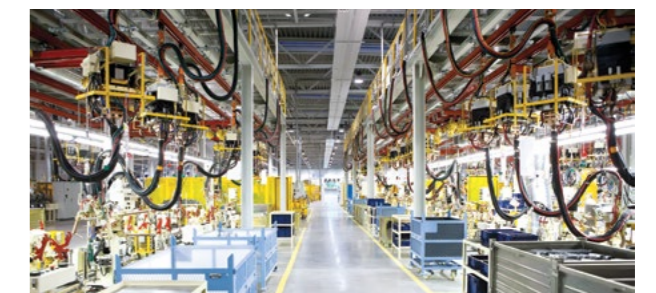
- Pallets reserved by customer orders
- Delivery scheduling
- From shelves straight into the truck

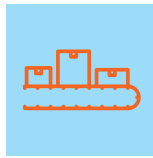
### HUMAN RESOURCES MANAGEMENT

- Shifts as working time
- Abilities to operate certain machines
- Work schedule for each employee
- Real-time performance evaluation

### MACHINE/EQUIPMENT MANAGEMENT

- Servicing periods (overhauling and repairing)
- Availability of human resources
- Interfacing with machinery/equipment





# xTrack WMS Warehouse Optimization

The **xTrack WMS** application is successfully used in various fields, demonstrating its applicability by ensuring the optimization of warehousing activities which lie at the foundation of distribution, courier, 3PL, production and online commerce activities. It also brings numerous benefits, such as:

- reduction of operation processing time
- elimination of human errors
- minimization of operating costs
- real-time display of information (stocks, orders, inventory, etc.)

**xTrack WMS** is an innovative application by the very concept it promotes, that is SDS (System Directed Solution), which significantly reduces the human interaction regarding the decisions needed to be made for the carrying out of tasks in a warehouse or elsewhere.



## xTrack WMS Benefits

- Flexible reporting
- Automatic assignment of tasks
- Flexible label creation module
- Advanced management of stock discrepancies
- Multilingual menus
- Graphical user-configurable interface
- Document management
- Possibility of adding new functionalities without upgrading the application
- Automatic printing of labels and reports
- Notification module (e-mail, SMS, in application)
- Very short learning time required by warehouse workers
- Integration with RFID, pick-by-light, pick-by-voice, pick-by-vision systems, conveyor belts, etc.
- Human resources management
- Reduction of receipt, picking, inventory (and other) errors
- Optimization of warehouse workflows by over 30%
- Optimization of storage space (improved cube utilization)
- Prioritization of warehouse activities

- Tools to identify and rectify possible errors
- Real-time operations performance measurement
- Automatic generation of delivery papers
- Real-time item traceability
- Configurable Wave Picking and/or Batch Picking
- Real-time inventory status
- Configurable delivery criteria for each partner
- Complex integration with AWB label generator applications for couriers
- Complete elimination of paperwork within the warehouse
- Creation of warehouse 3D maps



## xTrack WMS Functionalities

### INBOUND LOGISTICS

- Inbound orders = orders to suppliers or customer returns
- Possibility of splitting or cumulating inbound orders
- Orders - two types: standard and cross docking
- Quantity - three types: ordered, received and specified in documents

#### More steps may be configured for the processing of an inbound order:

1. Pre-receipt
2. Receipt
3. Discrepancy check
4. Put-away after receipt
5. Receipt document and attachment of documents to an order

### OUTBOUND LOGISTICS

- Outbound orders = orders placed by customers
- Import or manual back office (BO) entry of outbound orders
- Possibility of including more deliveries in an outbound order, according to the configurations
- Automatic processing, with mobile computers, or manual processing, based on a pick ticket (picking list)
- Export of delivery result to ERP

The following steps may be configured for delivery processing:

1. Picking
2. Verification and Packing
3. Consolidation
4. Loading / delivery

### INVENTORY COUNT

- By areas, by item
- Partial and full count

### REPLENISHMENT

- For picking area
- Between warehouses

### PURCHASING

- Generation of purchase proposals
- Linkage with inbound orders

### QUALITY

- Possibility of product delivery blocks (quarantine)
- Documents certifying quality (QA)



### STOCK CONTROLLER (STOCK VERIFICATION)

- Verification of stock discrepancies reported during other activities
- Fully automated verification

### TRANSPORT

- For inbound and outbound operations
- Generation of packing and loading lists

### REPORTING

- Flexible reporting
- Different ways of displaying information (including pivot table and charts)
- Access to module by customers



# xTrack TMS Transport Optimization

**xTrack TMS** has been created to meet all the requirements of transporters which use different types of vehicles. This software application is an excellent choice for freight forwarders, transport and haulage companies as well as delivery companies.

It is an application that employs the latest programming and data management technologies, with a high level of standardization that allows its use in different configurations. The interfacing with various WMS, ERP and POD applications has turned it into a powerful tool that optimizes transport.

**xTrack TMS** has proved its usefulness in the management of large fleets of vehicles and the processing of a great number of expedition orders (customer) and transport orders, with the integration of advanced criteria of KPI calculation.



## xTrack TMS Benefits

- Configuration for any transport workflow
- Flexible reporting
- Complex access rights
- Merger of the results of the standard optimization algorithms with operational workflows and increasingly complex business requirements
- Generation of documents (contracts, CMRs etc.)
- Management of workflows for goods purchasing and delivery
- Optimization algorithm with different parameters
- IOD (Information On Delivery) functionalities
- Real-time information
- Simultaneous benefits of the optimization module:
  - Reduction of the number of vehicles by 20% on average
  - Reduction of the number of kilometers by 15% on average
  - Reduction of the number of hours the drivers spent working by 10% on average
- What-If analysis based on the past record of deliveries and simulation of different scenarios
- Transport scheduling based on the past delivery record

- Algorithms ensuring simulations of possible logistics facilities' locations to obtain minimum distribution costs
- Automatic manual or combined scheduling of deliveries
- Monitoring of the transport cost billing
- Scheduling of loading docks
- Reports on transport profitability
- MultiHUB management
- Product traceability by pallet, box, item



## xTrack TMS Functionalities

### FREIGHT FORWARDERS

- Management of expedition orders from customers
- Management of transport orders sent to transporters
- Measurement of profitability by transport, customer, trip
- Possibility of using HUB warehouses for cross docking operations
- Automatic route creation and route optimization per real kilometers
- IOD (Information on Delivery) functionalities
- Automated document processing
- Groupage

### TRANSPORTERS

- Fleet Management
- Minimization of costs when no freight is transported
- Automatic creation of vehicle log sheets
- Estimation of fuel consumption
- Automatic pricing and billing
- Automatic generation of invoices for delivered services
- Vehicle availability forecasting
- GPS interfacing

### DISTRIBUTION FLEET

- Route optimization
- Route scheduling
- Advanced management of tasks for drivers
- Scheduling of loading operations
- Management of delivery areas

### ROUTE OPTIMIZATION

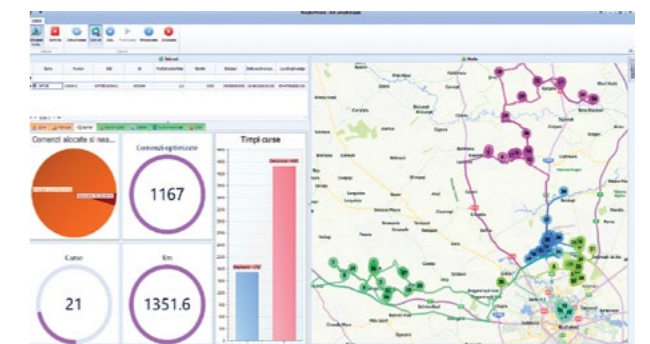
- Automatic optimization at scheduled times
- Prioritization of loading/offloading operations
- Different optimization criteria
- Algorithms for the calculation of loading/offloading times
- Speed weighting for road segments
- Interfacing with different types of maps

### ROUTE SCHEDULING

- Determination of repetitive routes based on past record data
- More simulations depending on various parameter values
- Possibility of distributing transport routes by zone and subzone
- Determination of the period of time when schedules apply
- Possibility of different scheduling by day or by delivery time

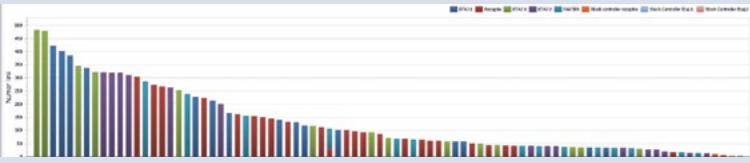
### WHAT-IF ANALYSIS

- Estimation of transport costs for a new distribution contract
- Identification of the best locations for logistics facilities (locally or regionally)
- Organization of transport among warehouses that are part of a wider network





## xTrack DSB Dashboard – KPI Charts



**xTrack DSB (Dashboard)** is an application which ensures real-time monitoring of all the information in a database and offers the possibility of visualizing any selected key performance indicator in different graphic representations.

**xTrack DSB** is a supplementary tool as compared to the reporting modules available in xTrack software applications. It runs independently on screens installed in warehouses or offices, showing KPI performance via successive suggestive displays. Data related to bonuses that warehouse workers may receive at the end of each month could be shown as well.

**xTrack DSB** is an solution ideally suited for the connection to databases of applications running in real-time and continuously collecting data. It is suitable for

production, warehousing, transport or delivery activities, taking into account the speed at which these activities are processed by operators.

### xTrack DSB Benefits

- Configurable displays
- Unlimited number of indicators
- Possibility of defining several successions of displays for various areas of interest
- Configurable refresh time
- Various display formats (numbers, tables, gauge charts, pie charts, bar charts)
- Possibility of using color codes
- Possibility of connection to any database (WMS, TMS, POD)
- Optional manual intervention due to the automatic succession of displays
- Real-time clear view of activities
- Running independently of data source
- Operation without additional licenses at user level (connection)
- Running on any operating system, Smart TV, PC, etc.
- Intuitive display methods
- Easy configuration



## xTrack FIN Calculation for Logistics Service Billing

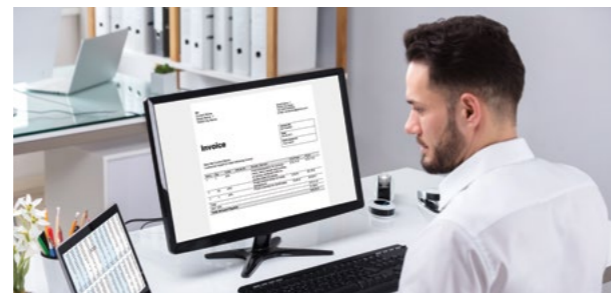
This application has been created to satisfy the increasingly complex requirements for invoicing logistics (and other) services. Axes Software has developed a solution for the calculation of any type of price lists for provided services. Price lists can be configured in the **xTrack FIN** application for courier companies, transporters, warehousing and distribution service providers as well as companies that provide services of a different nature (telecommunication services).

Calculation of the provided service is made according to price lists saved for each customer, or to general list prices, depending on different parameters, such as, in the case of transport, tonnes-km. All the calculated values are then periodically invoiced, automatically, according to the contract.

### xTrack FIN Benefits

- Multi-level customizable price lists
- Management of contracts with third parties for provided services (deadlines)
- Mechanisms of some service cancellations
- Possibility of introducing corrections, keeping a clear record (traceability) of the changes that have been made
- Elimination of the risk of having a service invoiced twice
- Automatic imports from WMS and TMS applications
- Price lists for service purchasing and price lists for services provided to third parties
- Flexible reporting
- Management of spot financial offers for transport
- Monitoring of payments and collections on due dates according to the contracts
- Clear record of the value of provided services
- Possibility of making financial analyses

- Real-time generation of profitability reports
- Automatic generation of periodical or spot invoices and their transmission to an ERP application or, via email, to the customer
- Workload reduction in accounting departments by streamlining invoicing processes
- Simultaneous interfacing with WMS, TMS and CRM applications
- Easy friendly mechanisms for inputting price lists



## Other Mobile Applications Management of Field Services

These applications are designed for field activities and they may integrate with WMS, TMS and ERP applications, being able to run independently as well. To implement these applications, Axes Software uses its own technologies developed while designing the xTrack PRD, xTrack WMS and xTrack TMS applications. The most important is the technology of “tasks” which lie at the foundation of all supply chain operations. All these mobile software solutions integrate with Waze or Google Maps type of applications.

### The functionalities of the mobile applications cover the requirements for the following concepts:

- POD (Proof Of Delivery)
- FSM (Field Service Management)
- HMS (Healthcare Management System)
- FAM (Fixed Assets Management)



### Mobile Applications' Benefits

- Portability on any platform (operating system)
- Flexible interface with the user
- Supervision of field activities through a BO module, or in an integrated way, in one of the xTrack WMS or xTrack TMS applications
- Route optimization for xTrack POD, xTrack FSM or xTrack HMS
- Differential synchronization with the database through mobile computers, automatically or to order for applications that can and should run offline
- Connection to mobile printers (receipts, item labels)
- Offline or online functionality
- Application updates on mobile computers, using websites such as App Store or Market
- Possibility of connection to the xTrack DSB application for real-time reporting
- Integration with xTrack WMS, xTrack TMS or xTrack PRD
- Elimination of unnecessary paperwork
- Automatic creation of documents whenever they are required by law
- Document management, PDF or JPG archiving
- Possibility of changing the order in which tasks are to be carried out in real time, without there being a need for verbal communication
- Possibility of scheduling operations over different time periods

## Mobile Applications' Functionalities

### xTrack POD Functionalities (Proof of Delivery)

- Proof of delivery (scanning of invoices, items, batches, etc.)
- Optimization of delivery routes
- Cash collection for deliveries
- Cash collection documents
- Reverse logistics operations
- Flexible reporting
- Interfacing with WMS and ERP applications
- Integration with xTrack TMS and xTrack WMS
- Integration with Waze, Google Maps
- Interfacing with cash registers and mobile printers

### xTrack FSM Functionalities (Optimization of field activities)

- Takeover of materials from storage
- Scheduling of interventions
- Control over the execution of intervention tasks
- Management of company's stocks of materials
- Document creation
- In-field emergency interventions
- Takeover of tasks for emergency interventions communicated by the dispatcher
- Calculation of budgets for interventions

### xTrack FAM Functionalities (Fixed Assets Management)

- Fixed assets and inventory management
- Inventory checking by location and by owner
- Real-time supervision of inventory checking
- Issuance of inventory documents
- Appointment of inventory team members for each location
- Interfacing with ERP applications

### xTrack HMS Functionalities (Healthcare Management System)

- Issuance of medical prescriptions
- Validation of the administration of the right medical treatment
- Off-site record of medical examination results
- Issuance of invoices to health insurance houses or patients
- Optimization of medical practitioners' routes

## About us

Founded in 2005, **Axes Software** is the oldest Romanian company specialized in the development and implementation of software solutions exclusively for **Supply Chain** processes.

We innovate in all that we do and we invest in new technologies. We use EDI modules interfacing with any of our customers' complex software systems. The software licensing may be either standard (up-front) or SaaS (Software as a Service), the application running either On-Premise or in Cloud.



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