Astro
WAREHOUSE MANAGEMENT SYSTEM

Centiro solutions
- Carrier support
- Transport documents
- Track & Trace

Version 1.0

2001-01-10
SECTION A: EXECUTIVE SUMMARY

This white paper is about the Astro Centiro solutions module for transport support that is supplied as an integrated warehouse management system module or stand-alone solution. For information about the standard Astro package please refer to other available documents from MA-system.

Real-time information is critical to supply chain execution systems and to their warehouse links. Manufacturers and/or wholesalers wants to be able to know what’s happening to the warehouse space, to the products, and to the equipment at all times. Astro is a standard Warehouse Management System (WMS) based on basic logistic principles, where the main focus is on time as the competitive factor. It has been designed and developed on this basis by people with knowledge and experience in warehousing, logistics, and supply chain execution. Astro handles and supports all processes that are used when managing operations in a warehouse.

Over time the area of transportation and carrier selection has become an integrated part of warehouse operations. Changes recognized in demands for logistics services includes:

- Modern distribution increases demands for specialized documents and labels.
- Customers ordering smaller quantities, thus specialized small parcel carriers with advanced services handle an increasing part of the distribution.
- Customers demanding visibility of the order flow all the way from placing an order to delivery.

The Astro Centiro Solutions module is extending the WMS to support activities linked to customer demands and new requirements for specialized carriers. A comprehensive view of some of the areas where the Centiro solutions module provide extended functionality is given below:

- Documents and labels for carriers – supported carriers have included documents and labels printed on laser printers or thermo transfer printers
- EDI-communication with carriers
- Consolidating orders in shipments
- Rating for carriers and reporting back to host system
- Usage and cost of packing materials reported
- Reporting cost for possible automatic invoicing of transport
- Track & trace – for visibility of orders, shipments, or customer number for warehouse activities and supported carriers. Presented for customers as a one-stop information center over the Internet.
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SECTION B: PRODUCT OVERVIEW

The Astro Centiro solutions module is fully integrated with the Astro standard WMS package. Through this module, Astro WMS is extending support for:

- Transport documents and labels
- Transport optimization through consolidating shipments
- Visibility of the order and shipment flow through track & trace for warehouse activities and under transport.

Under separate headings are also described currently supported carriers and a discussion about technological demands for installing this module.

Transport labels and documents

Goods are picked in Astro as normal with box labels printed and attached to the boxes. Packages are delivered to a packing station or, depending on working procedures, packing could be integrated on the forklift. When packing, weight and volumes are pre-defined through the article register in Astro or could be changed in a screen. From a packing station scales can be connected directly to Astro to automatically get the exact weight.

From a packing station carriers can be automatically or manually selected based on for example tariffs and destination. Carrier can also be pre-defined from the order system. The chosen carriers specially designed documents and labels are then printed for the shipment from the Centiro solutions module, for instance SIS bill of lading and EDI-documents. Documents are automatically printed when each order / shipment is finished at the packing station.

Transport optimization

In the Centiro solutions module orders can be consolidated from several different sources and included in one shipment. In many cases this can decrease cost if based on number of issued bill of lading.

EDI-messaging with carriers are supported in the Centiro solutions module.

The cost of transport and used packaging material is often hard to allocate to the correct point of use. Through the Centiro solutions module, Astro can report back actual cost to the order system for automatic invoicing or correct cost accounting.

Track & Trace

Visibility of activities and the flow of orders and shipments (track & trace) within and after they have left the warehouse is becoming increasingly important and is a much
desired customer service. Track & trace solutions are basically designed in two ways, either through accessing information controlled by the carrier companies or building a structure to collect and own all information by yourself.

Accessing carrier information is often possible through Internet web sites, the customer then having to visit different web sites depending on Carrier company. The Centiro solutions module includes a one-stop web interface accessing all supported carriers having track & trace services. This service can be included and designed into your other services on the Internet providing transparency for orders, shipments and customer numbers. Using this function order status through the distribution center, for instance order released for picking, picked, loaded etc, can be used as tracking information.

**Wider solution outside module standard**

It is also possible to build up a web-enabled application collecting and controlling all the information about goods transport flows and warehouse activities. This includes carriers reporting actions to your hosted system. Controlling the information open up possibilities to send delivery notifications and messages when goods are not following the expected path.

**Supported carriers** (2001-01-01)

**Swedish national carriers**

**Small parcel carriers**
Posten Logistik  
Posten Express  
Posten Consignment  
ASG  
Schenker  
Privpak

**LTL carriers**
SJ / SJ Express  
HIT  
Fraktarna  
ASG  
Schenker

**System carriers**
HIT  
Tommys
International carriers

National Postal services
Norwegian post
Danish post
Swedish post
Finnish post

Courier services
TNT
UPS
FedEX US (planned)

Other carriers
Linjegods
Tollpost
HSD
Norcargo
DPD (deutsche PaketDienst)

Additional carriers can be added on request, as the system is truly carrier independent.

Technology and communication

The Astro Centiro solutions module is preferably installed on a separate server using Windows NT/win 98 operative system. The module is installed with Oracle or Microsoft SQL Server as database. The application is built as client/server and has a graphical user interface.

The module is fully integrated and communicates directly with the standard Astro modules through a standard communication interface using FTP or TCP/IP.

Contacts

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