



BellHawk Material Tracking System (MTS) Data Sheet

Introduction

The BellHawk Materials Tracking System (MTS) is an industrial materials tracking solution that, in addition to tracking inventory by location and lot-number, also uses License-Plate-Number (LPN) container-based tracking methods to track a wide variety of materials in containers and assets at multiple different locations.



These same LPN methods are used by Amazon, FedEx, and UPS and form the foundation of the GS1 Global Standards One supply chain materials tracking and traceability standards.

MTS can track containers of materials by location and lot number. If the materials are in containers or are individually serialized items, such as assets, then MTS can track many other parameters such as expiration date, dimensions as well as user defined parameters.



MTS is used to track raw, intermediate, and finished goods inventory, as well as floor stock and work-in-process, in manufacturing companies and is used in industrial distribution applications, especially where secondary operations, such as kitting, are performed.

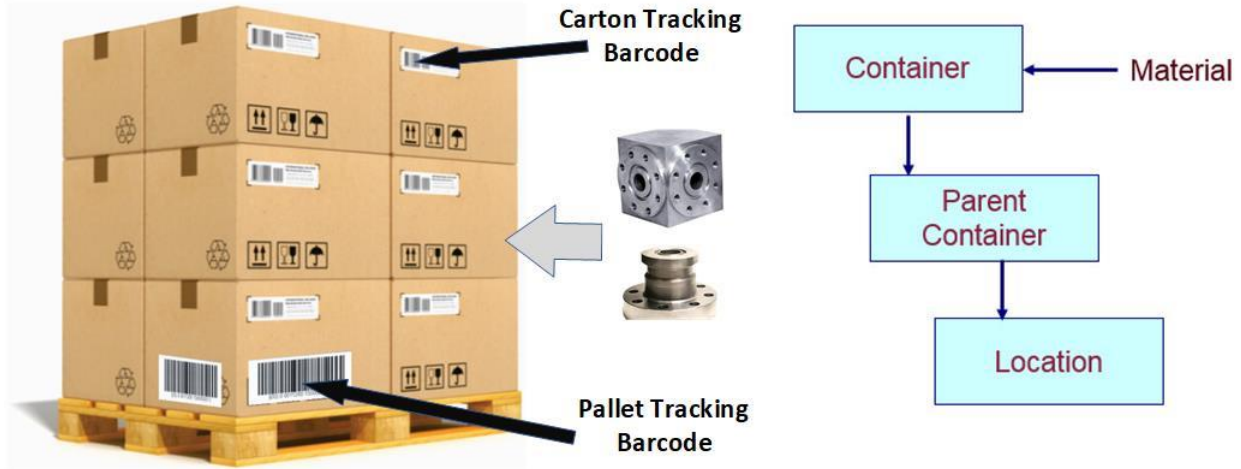
As MTS is CFR21 Part 11 compliant, it can be used for FDA regulated applications, such as tracking food, medical and pharmaceutical materials and the traceability events in their processing, manufacture, and distribution.

In License-Plate-Number (LPN) container tracking, a unique tracking barcode is placed on each container or materials or serialized items that we wish to track. This barcode is then scanned when the container is received, moved, or shipped and also when materials are added or withdrawn from the container.



Like conventional inventory tracking or warehouse management systems which track the quantities of materials at each location in a warehouse. In addition, MTS is able to track materials in containers as they move dynamically within warehouses, as well between warehouses and to and from a production floor. This gives MTS the ability to give its users a real-time view of their inventory at multiple different locations, including work-in-process, materials in-transit and at field locations.

This use of LPN methods gives MTS the ability to track a mixture of materials on each pallet, as materials are added to the pallet in boxes and as individually tracked, serialized items. Movement and shipment of pallets can then simply be recorded by scanning the barcode on the outermost pallet.



Nested container data, captured by MTS, enables compliance with materials tracking standards, such as that of the Department of Defense and the FDA. It also enables MTS to provide and use Advanced Shipment Notice (ASN) data for supply-chain data exchange purposes.

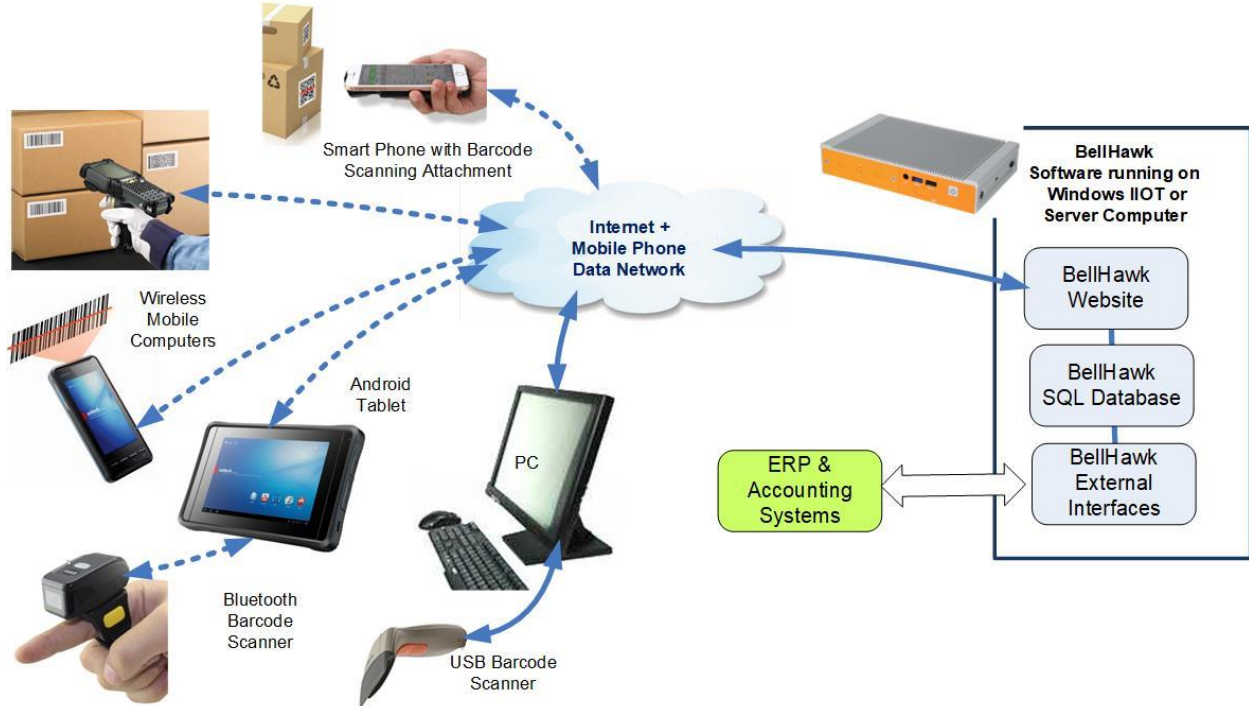
This nested container tracking capability, also enables the tracking of multiple parts on totes or carts that have their own tracking barcode. It enables tracking the movement of all the parts on a pallet or cart or on a tote to be recorded by simply scanning the “parent” barcode on the pallet, cart, or tote.

Similarly, MTS can record the shipment of all the materials on a pallet or in other shipping container by simply scanning the pallet barcode on the pallet.

Please note that, while MTS can simply record the receipt and shipment of materials, to record the receipt of materials against lines in a Purchase Order or the shipment against lines in a Ship Order, then the appropriate Warehouse Management Modules need to be licensed in addition to MTS.

Please see the separate BellHawk data sheet on License-Plate-Number Container Tracking Methods for more details on LPN methods.

MTS Technology



The BellHawk MTS software consists of a specialized website and a SQL server database, which run on a Windows IIOT or Windows Server computer.

With MTS, data can be collected using any web-browser based device with an integral or attached barcode scanner. No special software is required to be installed. Just point the device's web-browser to the URL of the client's MTS website and start collecting data.

Information collected in the SQL Server database can then be viewed from any web-browser based device, including mobile phones, over a secure encrypted data link, anywhere a user has an Internet or Intranet connection.

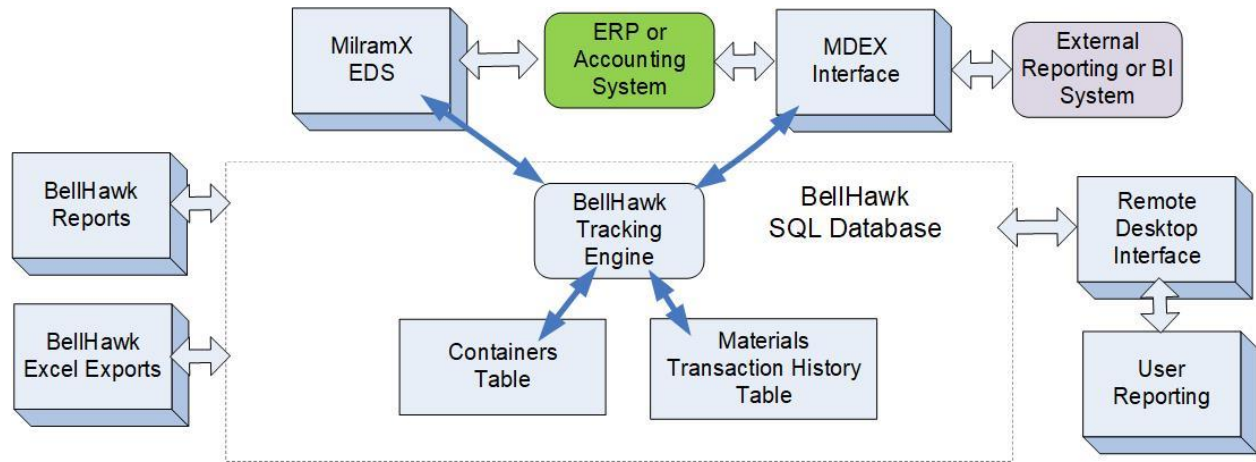
The MTS software is based on a rules-based expert-systems engine that enables the MTS system to be readily configured and customized for a wide-variety of applications by clients importing rules in the form of Excel spreadsheets.

MTS does not need the use of a barcode label printer as barcoded picking sheets can be printed out using an office laser printer. MTS can also use preprinted rolls of LPN tracking barcodes to track containers of material.



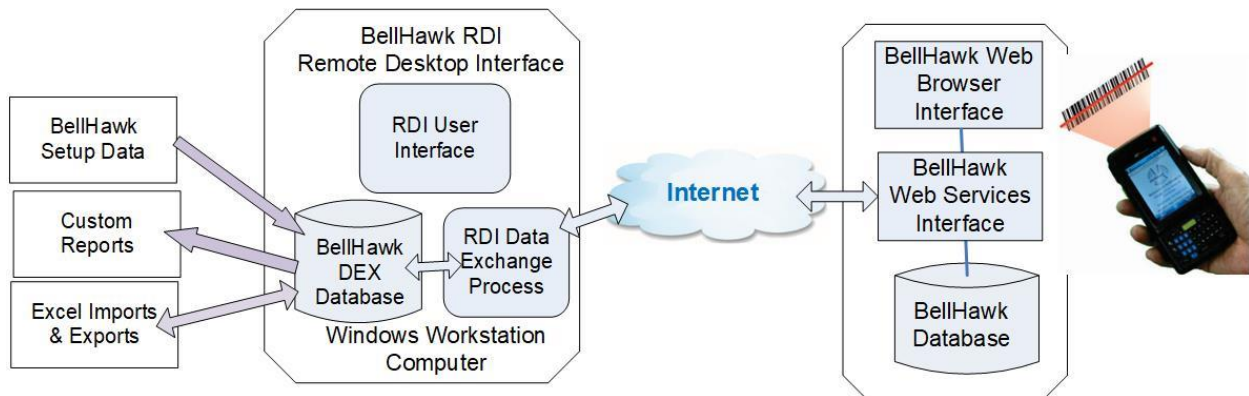
Where printing of custom barcode labels is required, clients may use the optional TAG Barcode Label Printing software in conjunction with barcode label printers to print out barcode labels where needed. Please see the data sheet on TAG for details.

MTS comes with a set of standard reports, in the form of PDF or Excel exports, which are accessible through its web-browser interface.



For those MTS users who want to create their own custom reports, a Remote Desktop Interface (RDI) is available.

The RDI software uses the free Microsoft SQL Server Express database server to create and maintain a copy of selected tables within the BellHawk database on a local data exchange database (DEX) on a user's desktop PC. Users can then use Excel to create their own exports from this database or can use third party reporting software, or programs written in a language such as Python, to generate their own custom reports from the DEX database.

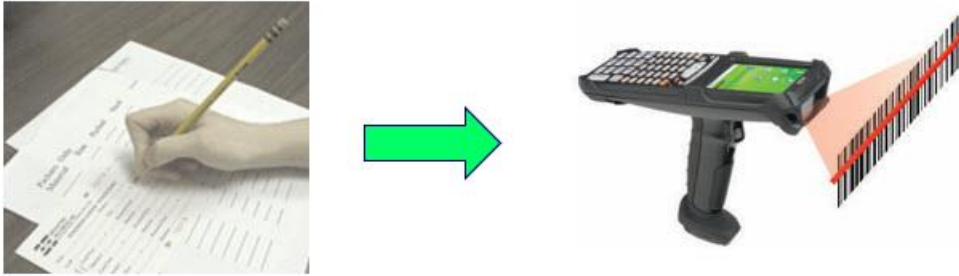


With the RDI, data written into the DEX database is exported to BellHawk enabling the transfer of setup data as well as work orders into the BellHawk database from Excel spreadsheets.

Please note that the RDI transfers are run under control of a user program on the user's PC desktop. As such, the RDI is not intended for 24x7 unattended operation. For this, the MilramX-based MDEX system, which runs on a Windows Server computer, should be used.

MTS can be run stand-alone or can automatically exchange data with a variety of ERP, accounting and other enterprise systems, as well as will systems belonging to supply-chain trading partners. This is typically performed using the MilramX Enterprise Decision Support System (EDS) system which runs on a separate Windows Server computer.

Benefits of MTS



1. Easy to use software saves the labor of manually writing data down on paper forms and manually keying it into a computer program and replaces it with rapid barcode scanning.
2. Gives real-time status of materials in multiple locations and warehouses, including materials at field and construction sites and on shop-floors.
3. Tracks materials at multiple locations, in multiple warehouses or on production floors, in-transit, or in the field or at a construction site.
4. With the warehouse management system (WMS) option, prevents mistakes in picking and shipping the wrong materials or in loading materials onto the wrong trucks/trailer.
5. With the project tracking option, prevents mistakes in picking or using materials purchased for one project on another project. Also helps prevent mixing-up materials for different projects or belonging to different customers.
6. With the warehouse management system (WMS) option, prevents picking or shipping materials that have expired or not yet passed QC inspection.
7. With optional interfaces, can automatically exchange data with a wide-range of ERP and accounting systems.
8. With the TAG barcode labeling option, can automatically print GS1 barcode labels in customer specific formats and use these as the basis of sending ASN data to customers and their distribution centers.
9. With the warehouse management system (WMS) option, can receive ASN data from supplier and use this to simplify and speed check-in of incoming materials.
10. Can track the contents of pallets containing many different materials with a single pallet tracking barcode on each pallet.
11. Suitable for use in food and pharmaceutical warehouse and stock room applications.

Commentary

Commentary

The MTS software is an excellent starting point for implementing an automated data collection and inventory control system, because it is affordable and easy to use.

Subsequently MTS can be upgraded, with a simple license change, to become a full Warehouse Management System (WMS). Also job tracking and Manufacturing Execution System (MES) capabilities can be added, when needed, all within the same integrated system.

For more information, please see www.BellHawk.com.

For more information

Please see www.BellHawk.com for more details.