Data Sheet for BellHawk RTOPS
Real-Time Operations Tracking System

Overview

The BellHawk Real-Time Operations Tracking System (RTOPS) tracks the receipt and put-away of raw materials, their transformation into finished products through a sequence of operations, as well as the packing and shipping of products.

RTOPS integrates the ability to track the status of work orders in real-time and capture labor times with the ability to track raw, work-in-process, and finished materials plus adds the ability to track the materials consumed and produced on each work order operation. It also includes the ability to specify Bills of Materials (BOMs) for each work order operation and to use this to warn users if they are about to use the wrong materials for a job.

Applications of RTOPS

- Tracking the manufacturing, processing, transformation or conversion or assembly of materials into finished or intermediate products.

- Tracking repair and recycling of equipment and materials.

- Tracking make-to-order manufacturing as well as engineer-to-order, process-to-order, and repair jobs.

- Tracking batch processing of chemicals, food, beverages, pharmaceuticals and supplements including mixing and packaging.

- Tracking the testing of samples in laboratories as well as the reagents used in their testing.

- Tracking the status of work orders, customer orders, and work-in-process as well as raw, intermediate, and finished goods inventory in real-time, including materials being processed by subcontractors.

- Tracking inventory and labor usage on work orders.

- Tracking split batches and rework as well as scrap.

With the addition of the Warehouse Management System (WMS) option RTOPS functions as an integrated Production and Warehouse Management System that can automatically exchange data with a wide variety of ERP and accounting systems.

RTOPS can be used on a SaaS (Software as a Service) subscription basis on a Windows Server hosted at a secure data center in the USA or clients can install the BellHawk RTOPS software on their own Windows Server computer on a one-time purchase or rental basis.

Tracking one-piece flow of Serialized Work-in-Process Items

BellHawk offers three alternatives for tracking serial numbered parts or assemblies through a sequence of operations in which they are assembled, repaired, and/or tested:

1. Issue a work order for each serial numbered item and then track when work starts and ends on each operation for the item. This is beneficial when it is also necessary to track the amount of labor required.

2. Enter each item into the system and then scan its license-plate tracking barcode to record its new location/operation as it progresses from operation to operation. As part of this the locations will be given the same name as the work center/operation, such as "cutting" or "milling" so that it is easy to view or report on the status of each serialized item

3. Track each serialized item into and out of each operation, on an assembly or repair work order. This is beneficial when materials traceability is required relating all the parts used to each serialized item.
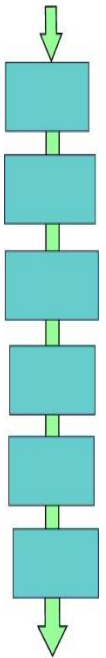
BellHawk RTOPS Technology

The BellHawk RTOPS software is comprised of a special website and a SQL database. All data capture is carried out using web-browser based devices, equipped with barcode scanners. These include PCs and Android tablets with external barcode scanners as well as ruggedized PDAs and

mobile computers with integral barcode scanners. Information stored in the BellHawk SQL Server database can be viewed on similar devices as well as on smart phones.

RTOPS can track materials using rolls of pre-printed "license-plate" tracking barcode labels. This makes it easy to track inventory and assets without the cost or complexity of using a barcode label printer.

RTOPS can be accessed over the Internet using any modern web-browser on a wide variety of devices including Windows, Android, Linux, and IOS based PCs, tablets, PDAs and smart phones. This makes it ideal for tracking inventory at multiple geographic locations, including in the field, such as at construction and maintenance sites.

RTOPS tracks materials by using license-plate containers tracking methods. This enables BellHawk to accurately track the location of materials, which can be in barcoded containers such as bins, boxes, barrels, and pallets. This applies whether the containers are on shelves, racks, or floor locations, in multiple geographic locations, or in barcoded totes, on carts, or in vehicles.

BellHawk can also track materials that have individual license-plate tracking barcodes, such as assets, tools, and jigs. All of this license-plate tracking can be performed using pre-printed rolls of license-plate tracking barcodes. Alternately BellHawk can print out barcode container tracking label with human readable information.

Initial setup and configuration, such as setting up parts lists and inventory locations can be performed using Excel spreadsheets or comma delimited files. This enables the easy use of data exported from other systems and can avoid duplicate data entry.

Production Tracking Capabilities

The production tracking capabilities integrated within RTOPS system include:

- Ability to see the real-time status of work orders and customer orders anywhere, anytime there is an internet connection using a wide-variety of web-browser equipped devices.

- Ability to specify routes, with bills of material for each step/operation, and to produce barcoded travelers with which to track labor, work orders, and materials.

- Ability to track work-in-process material as it flows from one operation to another, either in a batch or as individual pieces.

- Tracks labor consumed on work order operations as well as the elapsed time for each operation.

- Tracks the consumption of materials on each operation and the production of work-in-process materials or finished products, as well as unused materials returned to stock.

- Tracks depletion of floor stock based on auto-reduction as work products are reported out from each operation.

- Error detection and mistake prevention, including preventing the use of wrong or expired materials on operations.
- Tracks scrap and rework, plus secondary materials such as reusable scrap produced by operations.
- Tracks service, manufacturing/processing, assembly, and test/repair work orders.

Inventory Tracking Capabilities

The inventory tracking capabilities integrated within a RTOPS system include:

- Provides real-time view of the status of raw, intermediate and finished goods inventory.
- Tracks containers of material in multiple geographic locations, with the same materials being in multiple locations.
- Tracks inventory using "license-plate" tracking methods.
- Makes it easy to see the location of all raw, intermediate, WIP, and finished goods inventory in real-time.
- Tracks materials by lot-number, container, location, and expiration date.
- Tracks materials in nested containers, such as barcoded cartons on a barcoded pallet.
- Tracks individually barcoded items including serial numbers.
- Tracks receiving and put-away of raw goods materials.
- Tracks packing and shipping of finished goods.
- Tracks who handled each container of materials for traceability purposes.
- Tracks returns to stock as well as scrapped inventory and inventory adjustments.
- Performs "cycle-count" type inventory validation.
- Tracks assets and tools, including issuance to people

Mistake Prevention

The Bill of Materials (BOM) to be consumed for each operation to make a product can be stored within BellHawk and then used to generate the list of materials to be consumed on a work order. This BOM can be imported as a formula or ingredients from an external system or imported as a parts list from a CAD system.

When an assembly, mixing, converting, or other manufacturing process is recorded in BellHawk, the materials recorded into the work order operation are checked against the list of materials required and the user is warned if they are about to make a mistake by using the wrong materials.

Optional Modules, Configuration and Customization

While RTOPS provides a wide range of functionality working "out-of-the-box" a number of optional modules are available to provide additional capabilities, as described in a separate data sheet.

RTOPS can be configured for a wide-range of applications by importing data into its knowledge-base in the form of Excel spreadsheets. Where this does not provide the needed capabilities then BellHawk System's staff can customize the RTOPS software to meet the specific requirement of each client.

For More Information

Please see www.BellHawk.com.