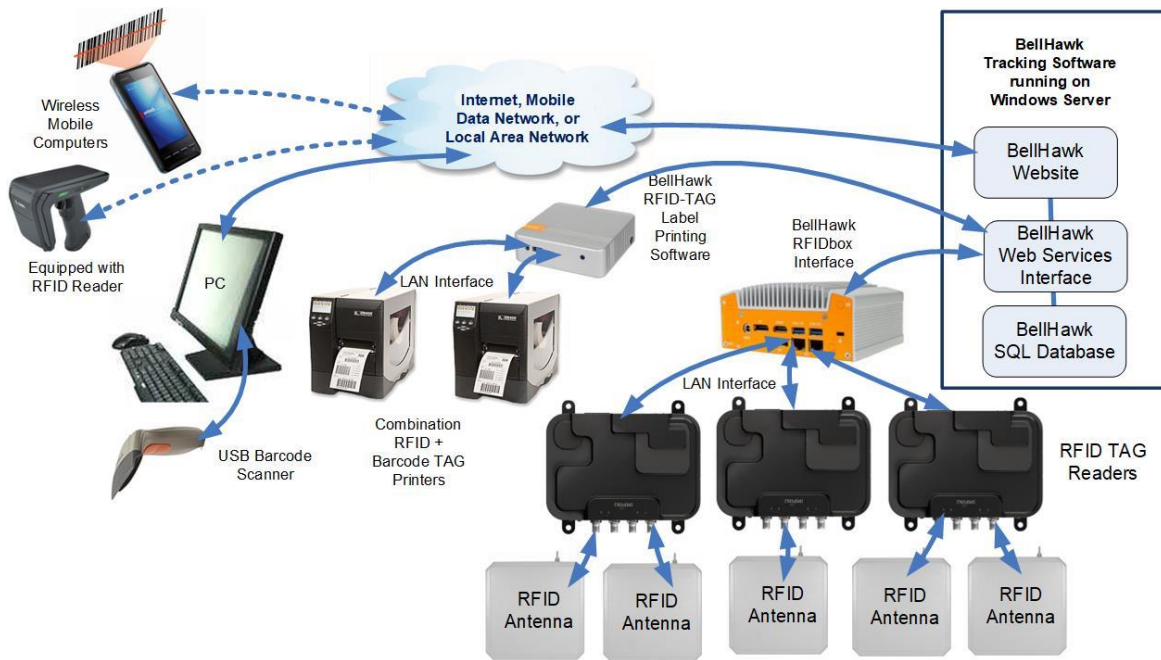## Using BellHawk for Asset Tracking

BellHawk can be used as an integrated barcode and RFID asset tracking system, which enables a wide variety of assets to be tracked in many different geographic locations, including inside manufacturing plants, warehouses, offices, laboratories, and in field locations such as at construction sites and field service locations.

Barcode Scanning

Assets scan start out being tracked as regular purchased materials, tracked by manufacturer, make, model and serial number when they are received in the stock room. Here we often attach a unique tracking barcode, which can be as simple as a barcode peeled from a preprinted roll and attached to the asset and scanned with a mobile computer or more frequently a tracking barcode with human readable information is printed out from BellHawk and attached to each asset.

Once an asset is placed into service, its owning organization is registered along with the project or job it was purchased for, when appropriate. This is to stop inadvertent use or issuance for the wrong job or project.

Barcode scanning can then be used to track the movement of the asset by scanning its tracking barcode and recording its new location. Alternately BellHawk can record the issuance of an asset to a person, job or project. This is done using container-based tracking methods just like those used by Amazon, FedEx or UPS.

In all these cases, barcode scanning is performed using a web-browser on a mobile device equipped with an integral barcode scanner, or a PC or tablet equipped with an external barcode scanner. The web browser communicates with the BellHawk website which runs on a Windows Server, at a client's own data center, or by subscription on servers managed by the staff of KnarrTek in the Cloud.

All the tracking data about the assets is stored in a private SQL Server database, in the server computer, from which the status of any asset can be securely viewed or reported on by using a wide variety of web-browser based devices, including smart phones.

Radio Frequency ID Tracking

In addition to barcode scanning, Radio Frequency Identification (RFID) can be used to automatically record the movement of assets. In this case, BellHawk is used to print out barcode tracking labels with a tracking barcode (2) and an embedded RFID tag (1).

In this way, barcode scanning can be used where precision is required, such as recording which stock room shelf an asset is stored on and RFID tracking can be used to record changes in location when an asset passes in the vicinity of an RFID antenna (typically embedded in the ceiling) or passes through a portal, such as that shown here:
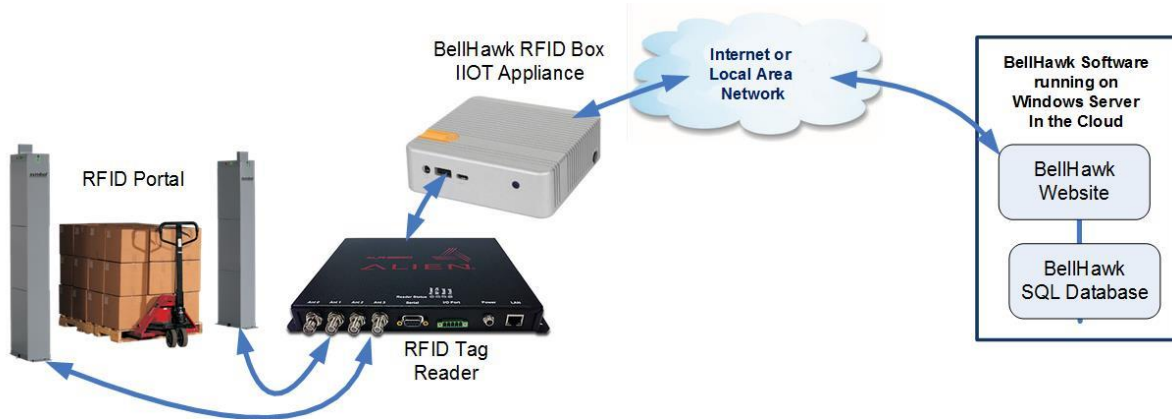
Irrespective of whether barcode or RFID scanning is used, the current location of each asset, or who it is currently issued to is tracked in the BellHawk database in near real-time. This enables people to quickly find needed specialized tools, jigs and fixtures simply by looking at the on-line database.

Inventory Auditing

BellHawk can perform auditing of asset inventory. This can be done using barcode scanning to record each asset tag in each room or area or a mobile computer equipped with an LLRP compatible barcode reader can be used to automatically read the tags of all assets in the vicinity of the RFID reader.

As a result of the audit, BellHawk builds a database table of assets that have been moved, are missing, or have been issued to someone else. This can be used by the Asset manager to find lost assets or to take appropriate action to replace lost assets, with full traceability as to disposition.

BellHawk also has a quick-check mode whereby a location barcode can be scanned and a list of the assets that should be there at that time can be seen on a mobile device. If the user is authorized, they can make any needed adjustments at that time.

A very useful feature of inventory auditing is automated move-matchup. Assets frequently are moved from the location to which they were issued to another location. BellHawk will automatically match up missing assets from one location with excess assets in another location and automatically move them in the database, with an appropriate note in the audit report.

BellHawk can also track assets that need periodically recalibrating or even replacing and can be integrated with test stands and test procedures to prevent the use of assets that have passed their recalibration date. BellHawk can also generate a report of assets whose calibration is about to expire and their current whereabouts.

User Defined Parameters

Asset tracking often requires more than the capture of the make, model and location of each asset. It can also require the capture of additional parameters such as the condition, color or size, or more detailed information such as the operating system and version installed on a computer. Certain parameters are standard, such as the initial value of the asset and the date on which the unit needs maintaining or inspecting but most are provided using the User Defined Parameter option in BellHawk.

This option allows the user to specify a set of parameters to be collected for each class of asset when the asset is first entered into inventory and then updated throughout the life of the asset. These parameters can be specified to only allow certain choices or numerical values such that data entry can be verified and, unlike free-form text fields, the resultant data used for sorting data in custom reports.

Asset Depreciation

One use for the user defined parameters is to specify asset depreciation parameters such as depreciation method, number of years, and rate of deprecation. These can then be used by the BellHawk MDEX interface to periodically update the asset values in an accounting or ERP system.

Decommissioning

When an asset has reached the end of its regular life, it can be decommissioned and treated as regular inventory, which can be sold or otherwise disposed of, without losing track of the material.

Commentary

BellHawk can be configured as a powerful stand-alone asset tracking system or used as a combined asset and inventory tracking system. This latter feature enables assets, such as computers or furniture, to be received against purchase orders as regular inventory and then to be

issued as assets to people or places. BellHawk also enables the recording of the shipment or delivery of these assets to customer sites as well as recording their return for repair and refurbishment.

BellHawk is ideal for asset tracking applications, especially those requiring the tracking of assets at many different locations. If needed, users can start out by using barcode tracking and then add the use of RFID as their needs expand.

BellHawk can also be used to track vehicles such as trucks, trailers, and fork-lifts using long-range RFID scanners.

In this case separate barcode labels and ruggedized RFID tags, such as that shown here are used, often with the tracking barcode attached to the top of the tag.

For More Information

Please see www.KnarrTek.com or contact client-support@KnarrTek.com or one of our reseller partners.