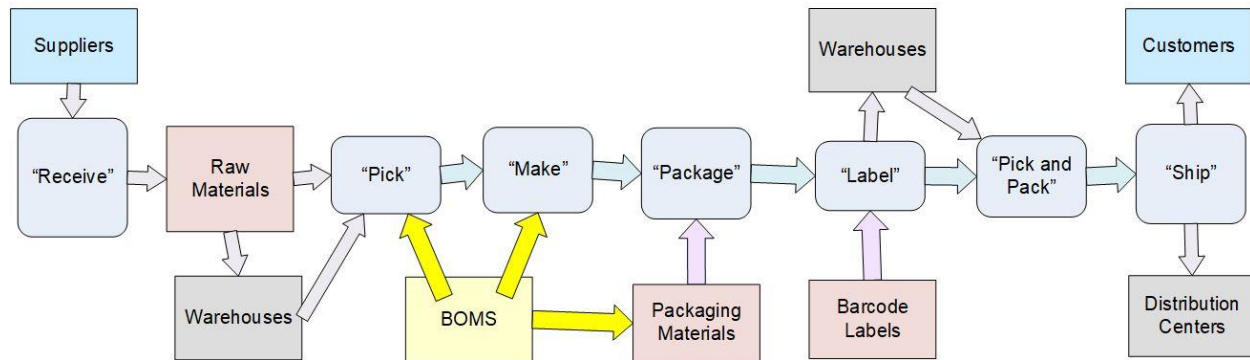## BellHawk Data Sheet
Materials Traceability (TRACE) Module

The BellHawk's Materials Traceability (TRACE) module is designed specifically for manufacturers, food processors and other industrial organizations that are required to maintain complete lot and/or serial number traceability throughout their operations. This option enables users to rapidly access all the materials tracking and traceability data captured by BellHawk.

BellHawk uses License-Plate-Number (LPN) container tracking methods to track the receipt and put-away of raw materials, their conversion into intermediate and finished products, including tracking containers of work-in-process materials. BellHawk then uses LPN methods to track the labeling, picking, packing and shipping of materials to customers or distribution centers. BellHawk can also track materials in multiple warehouses, at field sites, and on vehicles.

BellHawk stores all the data required for tracking and traceability compliance in a computer database so that it can quickly be accessed to provide the one-step-forward and one-step-backward recall data as required by ISO standards, the Food Safety Modernization Act of 2011, the Bioterrorism Act of 2002, HAACP, HIPAA and similar requirements. BellHawk enables organizations to minimize recalls when they have problems. This not only can save human lives but minimizes the cost and legal exposure from such incidents.

The FDA and similar agencies now have the right to shut down organizations that do not have good traceability and recall mechanisms in place. They can insist on draconian recall policies that can cause bankruptcy. BellHawk helps clients ensure that they have all the traceability data they need when, and not if, problems occur.

BellHawk provides a cost-effective solution that enables mid-sized manufacturers, food processors and other industrial organizations to track their inventory and production operations, including automatically collecting materials traceability data. BellHawk includes all the materials traceability capabilities required by the FDA, USDA, and HACCP. It also includes traceability capabilities required by aerospace, automotive and similar organizations.

BellHawk was designed to comply with the FDA's 21 CFR Part 11 regulations for software compliance and, as a result, can be used in Pharmaceutical and Biotechnology material tracking applications.

BellHawk, as standard, captures all the needed tracking and traceability data in a series of history databases for materials, jobs, employees, and machines if BellHawk is used with the equipment tracking option (ETO). These can be accessed by clients who wish to generate their own materials traceability reports from BellHawk.

TRACE provides a set of screens that enable users to rapidly trace forward from defective raw materials to all the effected containers of products and the customers to whom they were shipped. This option also enables users to rapidly trace back to all the materials, people and equipment that were used to make a suspected product or defective intermediate materials.

A special feature of BellHawk's materials traceability capability is the automatic assignment of internal lot numbers to any material that BellHawk determines to be the same. This can be for a set of materials received at the same time, with the same item number, supplier lot number, parameters, expiration date, and serial number. It can also be for materials made at the same time from the same materials by the same people and equipment.

These internal lot numbers are generated and assigned to containers of material irrespective of whether an external lot number, such as a Julian date or a supplier lot number, is applied to the same materials. BellHawk can generate multiple internal lot numbers for each external lot number and tracks the relationship between them.

BellHawk internal lot numbers are invariant in space and time. Once issued these internal lot numbers do not change. They are permanently carried along by material, even though this material may have been split into multiple different containers in many different locations at multiple different times.

BellHawk also tracks which internal lot numbers of material are used to make which internal lot numbers of WIP, intermediate, or finished products. This enables BellHawk to maintain materials traceability records for products made at some time in the past using materials that are no longer in stock, including WIP materials in reusable containers such as Vats and Silos.

Also, when materials are received in bulk, such as a pallet load of materials received in separate containers such as bags or cans, the internal lot number assigned to the pallet at time of receipt is automatically assigned to each container as it is withdrawn from the pallet and receives its own LPN tracking barcode

A key feature of TRACE is that users do not have assign and record lot numbers to all materials they use in their manufacturing or distribution process. BellHawk automatically assigns these and then the TRACE module provides a convenient way of finding, tracking, and tracing all the internal lot numbers that belong to a specific shipment, were made on a work order operation, or were received from a specific supplier on a specified purchase order.

TRACE can also start with a supplier's item and lot number for defective material and quickly generate an Excel export of all possibly effected containers of products, showing where they are located or who they were shipped to, thereby minimizing the risk of an expensive recall.