Trac-Ware Summary

Trac-Ware is a "Turn-Key" warehouse management system for the purpose of tracking product inventory that is received, accepted, stocked and then depleted through order fulfillment. Inventory is to be tracked through the use of barcode information that reflects either the vendor's product identification (UPC) code or a system generated in-house product identification code. Products may be received in multiple counts on a pallet and are stocked in POP (point-of-purchase) units. Datum is collected by warehouse personnel with a portable data unit (PDU) installed on forklifts. The PDU is programmed to accept barcode entry or manual entry of any necessary datum. This datum is stored and maintained on a central warehouse server through a wireless interface between the PDU and the warehouse server. This permits real-time inventory tracking to support simultaneous multiple order fulfillment. Inventory records can be utilized to produce snap-shot reports as product is processed and is periodically reformatted for importation into the company information management system.

Receipt of inventory products:
Individual product items delivered to the warehouse for storage and re-distribution are initially placed into a quarantine area pending quality inspection. Before relocating product items to the warehouse, items are inspected for acceptable barcode identification and broken into POP packaging.

Relocation to warehouse storage:
Products are relocated to appropriate storage locations with PCU equipped forklifts. The destination location may be pre-selected or selected by the forklift operator at the time of relocation. The PDU is used to automatically record the product code, quantity and destination location. This information is transferred to the warehouse server as an inventory receipt record and the "inventory by location" information is updated appropriately.

Intra-warehouse product movement:
Products that are relocated within the warehouse (location-to-location) are moved with a PDU equipped forklift. When products are removed from a specific location, the product code, quantity and source location are recorded. A matching record is created when the items are placed in the destination location. This information is transferred to the warehouse server as an inventory movement record and the "inventory by location" information is updated appropriately.

Order fulfillment and inventory depletion:
Simultaneous multiple order fulfillment is accomplished much like inventory movement, except that it is controlled by a pick-ticket document created by the company information management system. The pick-ticket is captured by the warehouse server, automatically reformatted and made available to the warehouse manager for final review/edit and then dispatched to the warehouse staff for fulfillment. The final pick-ticket is selected for fulfillment by a forklift operator via the PDU. As each line item is picked by the operator, 'to-pick' quantities and warehouse location quantities are adjusted and displayed. When each skid is filled with order product, it is weighed to confirm appropriate total weight and set aside for final skid-wrap and closing. Once the order is completely filled and weight verified, skid re-packaging may be

preformed to optimize the skid loading. The pick-ticket is then 'closed' and each skid is 'final wrapped'.

When the pick ticket is closed, skid labels are generated for each associated skid and attached to the respective skid. The skid label includes the order reference number, skid count number, total skids in the pick ticket and a listing of products included on the skid. A final document (or text file) is created for the respective order that reflects order status by line item. Information includes item quantity orderd, picked and recommended for back-order. This report or file is used to make appropriate adjustments to the order in the company information management system. Where possible, this information is formatted for direct import into the company accounting system.

System Components

Warehouse server:

The warehouse server maintains the warehouse management data records in a SQL database and provides integration services to the barcode printer, optional scales, wireless and wired clients, and Portable Data Units. Network connectivity is provided by TCP protocol over Ethernet. Optional connectivity to the scale is via the second serial port. The server is connected to the internet through a secure portal to permit remote service and software support by Unified Data Systems.

Demand barcode printer System:

The barcode printer is a Zebra Barcode printer supplied by YOUR COMPANY and is used to print any system required barcode labels 'on-demand'. This printer may be shared for access by network users.

Demand skid weigh station:

The skid weigh station scale is provided by YOUR COMPANY for determining the total skid weight and verification of the total product weight on the skid. If the integrated weigh scale option is implemented, the scale is interfaced to the server via a RS-232 serial port.

Wireless Ethernet network:

The warehouse management network connectivity is accomplished throughout the warehouse with an array of strategically placed antenna nodes installed high above the floor operating area and away from any high objects that may preclude signal penetration. The determination of the optimal location for each antenna requires a detailed analysis of the coverage area and normal traffic movement throughout the area. This antenna array forms a wireless network to connect the portable data units with the warehouse server.

Portable Data Units (PDU):

The Portable Data Units are installed on forklifts used for inventory movement. These units are specialized computers designed to withstand the harsh warehouse environment and provide system interface for the operator. Application software specific to the operation is installed on the PDU that permits the operator to expediently enter the necessary inventory movement information and take appropriate action when required. This software records all necessary information on the warehouse server while providing selective information and entry prompts for the operator.