

Kraemer, Janine

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**From:** Chris Waechter [cwaechter@perma-fix.com]  
**Sent:** Monday, November 22, 2004 8:02 AM  
**To:** Kraemer, Janine  
**Cc:** Lubozynski, Tom; Burson, Lu; Albrecht, Lucy; Bradner, James  
**Subject:** [\*] FW: PESI-Orlando Barcode implementation

Janine,

Please review the attached document as to the status of our Bar Code solution. We have had our IT department working diligently on it for a couple of months. Currently we are still a few weeks out on the full working solution. Based upon their project outline we will have a FULL working barcode system in and working by Christmas (All I want for Christmas is my barcode system), Ha.

Please review and give me a call to discuss any issues.

Thanks!

Christopher R. Waechter  
Facility Manager

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-----Original Message-----

**From:** David Centofanti [<mailto:dcentofanti@perma-fix.com>]  
**Sent:** Thursday, November 18, 2004 5:03 PM  
**To:** Chris Waechter (E-mail)  
**Cc:** Michael Cupp Jr. (E-mail); John Zawacki (E-mail)  
**Subject:** Barcode implementation

Chris,

Here is the current project plan, status, and system design. Based on the

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issues with the EW barcode application, I have determined that it will be better in the long run to build it ourselves. You will see the design specs that will go out today in this as well, so look over it and give me a call if you see any issues. I have the WiFi router setup and ready to go, but still need to test the scanner (Lowery has loaned us) with it. I expect to get the printer spec this week and will need to wrap up the label and barcode format choice as well.

David  
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## BARCODE IMPLEMENTATION – PFO

### Project Definition

This document describes a portion of the implementation of the EW Barcode system at Perma-Fix. The intent is to capture business process and map the automation of those processes and clearly define the solution.

### Primary Objectives

- Meet compliance requirements set by the state of FL for tracking daily real-time inventory
- Improve data accuracy and availability
- Reduce operating costs associated with data entry
- Speed the waste tracking process (IE real time inventory)

### Proposed Solution

1. Define the workflow and configuration of a barcode system
2. Develop the BarCode logic in SQL procedures
3. Acquire BarCode devices that meet the EW software requirements
4. Pilot the devices and configuration in Atlanta
5. Utilize the existing hardware, software, and configuration (printers, ReportSmith, etc...)

### Project Plan

1. Project Definition – Outline requirements through implementation – **Complete 11/2/04**
2. EW Application Pilot test – **Completed 11/3/04**
3. Solution Design – **Complete Nov 18**
4. Hardware and Label test (ISDH) – **Est. Nov 23**
5. Development – Est. 40 hrs of application development (Est. Dec 10)
6. Install of WiFi devices at PFO - (Est Dec 3)
7. Report Development – Real Time Inventory Report - (Est Dec 17)
8. Production implementation and training Est. Dec 24

### Cost Estimate

• 2 Scanners	\$2500 ea	\$ 5,000
• Oracle DB License	DB One (2 proc)	\$10,000
• Changes to the software	40hrs @\$100/hr	\$ 4,000
• Wifi Setup	Access Point, Installation, etc..	\$ 8,000
• Thermal Printer	\$500 ea	\$ 1,000

<b>EST TOTAL:</b>	<b>\$28,000</b>
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## EW Barcode Application Evaluation

**Hand.exe** – C program written by CTi that provides linear processing of key operations functions. This application will be run on the Server (ntflorida) and accessed via a TELNET session on that server. Any VT emulation device on the network can access the application (hand.exe) in this configuration. This application requires a \$5000 per facility license + 25% annual maintenance fee.

### Installation

1. Run the following scripts on the Oracle DB in the EW schema:  
create\_customized\_object\_error\_log.sql, hand.sql, create\_barcode\_pkg\_s.sql,  
create\_barcode\_pkg\_b.plb
2. Update the License key with the correct value for the BarCode system

### Pilot results

1. Move – Basic functionality will work for moving inventory with minor changes
2. Decant – Several significant bugs (proper update of location and history, drum disposition)
3. Weigh – Significant level of change required (update and Weigh/Volume)
4. Ship - Untested

### Next Steps

CTi acknowledges the hand.exe is old and needs much work to be a usable solution for Perma-Fix. The following design has been presented to CTi and several 3<sup>rd</sup> party vendors for estimates. Building the application custom for Perma-Fix will enable Perma-Fix to modify, enhance and support the Barcode system for future sites as well as additional operational tasks at the same or less initial investment.

## Solution Design

### Barcode Server

The NTFLOIDA Server will be used to run the BarCode application in a terminal window using Win2000 Telnet server. The Application runs on the server and requires installation of the Oracle Client (per EW Client install procedures).

#### Win2000 Telnet configuration

1. Install the 2000 Server Telnet system
2. Set telnet service to automatic startup
3. Configure telnet server to use a custom login script (Ewlogin.cmd). This script will set the drive, directory, and executable for the BarCode application.

### Barcode Client

The Barcode Client is a Hand held computer terminal with the following capabilities:

- Scan capability for bar codes
- Durability for industrial use
- WiFi capability (802.11b standard with multiple access point negotiation capability)
- Telnet capability (Terminal emulation of DOS or VT100) The application actually runs on the server via a telnet (DOS mode) window session. The pilot system is an Intermec Trakker 2425, approx. \$3000 each.

### WiFi Setup

Bar Code hardware vendors insist that custom WiFi access points are preferred / recommended for setup and installation of a solution due to many factors. Some devices do support standard networking access points (The pilot system is a Cisco Aironet 1200 series – Approx. \$900). We expect 1 access point in the Haz warehouse at PFO.

## PESI Barcode Application Design

Perma-Fix will build a custom application that will operate as a Telnet (DOS mode) application and perform all database updates and transactions directly.

### Architecture

- The application will operate from a DOS prompt and will run in a Telnet session
- The application will prompt the user for login information and establish a persistent connection to the Oracle DB
- All DB updates will be performed by calls to Oracle Stored Procedures
- If possible, make the main program a PLSQL procedure

### Stored Procedures

- **PF\_BCMENU** – Main routine that reads menu items from VALIDATION. The VALIDATION entries control what user has permissions to each menu item and limits the application to those menu items.
  - Open Connection, login (user id and password)
  - Initialize variables
  - Select from VALIDATION where .... And USER = \$USERID
  - Case select menu items, call procedure
    - WEIGH ITEMS – PF\_BCWEIGH
    - INVENTORY – PF\_BCINVENTORY
    - DECANT ITEMS – PF\_BCDECANT
    - SHIP ITEMS – PF\_BCSHIP
    - EXIT
- **PF\_BCWEIGH** – Weigh items that have been received into inventory. This will remove the use of the Weigh screen for most weigh operations.  
Procedure  
Begin transaction  
    Prompt for Location  
    If location not in select valid locations  
        then PF\_BCERROR('bad\_loc'), return  
    Prompt for Document and item  
    If item is NULL return else  
    If item.received = NULL or item.disposed <> NULL or item.destroyed <> NULL  
    or item.inventoried = NULL then PF\_BCERROR('bad\_item'), return  
    Prompt Amount and UM  
    If UM = GAL then compute WT, else if UM=LBS, then compute VOL  
    If UM = EA, then compute WT and VOL  
    If neither above, PF\_BCERROR('bad\_UM'), return  
    Location does NOT exist  
        Insert Location, wt, vol, um, etc....  
        Insert History "WEIGH"  
        Return  
    Location does exist  
        Update Location, Wt, and Vol  
        Insert History "WEIGH UPDATE"  
End transaction  
If transaction fail then PF\_BCERROR('wt\_tran\_fail'), return  
Commit, return

- **PF\_BCINVENTORY** – Inventory reconciliation. This operation will remove the need to use the Move screen and will enable fast and efficient update of inventory at any time.  
 Procedure  
 Begin transaction  
   Prompt for Location  
   If location not in select valid locations  
     then PF\_BCERROR('bad\_loc'), return  
   Prompt for Document and item  
   If item is NULL then return  
   If item.received = NULL or item.disposed <> NULL or item.destroyed <> NULL  
   or item.inventoried = NULL then PF\_BCERROR('bad\_item'), return  
   Location does NOT exist  
     PF\_BCERROR('no\_location'), return  
   Location does exist  
     Update Location, time and date  
     Insert History "INVENTORY"  
 End transaction  
 If transaction fail then PF\_BCERROR('inv\_tran\_fail'), return  
 Commit, return
- **PF\_BCSHIP** – Add item to Shipment. This requires a shipment with profile lines. This operation only places items onto the shipment line.  
 Procedure  
 Begin transaction  
   Prompt for Shipment and Shipment Line (document and document Line)  
   If Shipment and line not valid  
     then PF\_BCERROR('bad\_ship'), return  
   Prompt for Document and item  
   If item is NULL then return  
   If item.received = NULL or item.disposed <> NULL or item.destroyed <> NULL  
   or item.inventoried = NULL then PF\_BCERROR('bad\_item'), return  
   Else  
     Delete Location, time and date  
     Insert into History "SHIP"  
     Update item: Outbound Manifest, Sets Facility #, Disposal. Facility,  
     Creates Ship History  
 End transaction  
 If transaction fail then PF\_BCERROR('ship\_tran\_fail'), return  
 Commit, return
- **PF\_BCERROR (?)** – User to handle all errors and calling of the e-mail procedure.
  - Function
  - Input: Error Code, procedure, document, item, location
  - Process: Select Error Message from validation, fire e-mail notification
  - Output: Display message and values and send e-mail, or fail
- **PF\_BCEMAIL** (template exists) – Handles send of notification to the Receiving dept for errors in the data.
  - Function
  - Input: To: email address list, subject, body, ....
  - Process: Generate a notification e-mail
  - Output: success or fail

# Barcode Workflow

v 1.2 rev. 11/16/2004

