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9 - 10 December 2020

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A-1 PACKAGING SOLUTIONS, INC.

# 75,000 Truckloads Shipped Without a Single Error

## Using Forklift Mounted RFID & the System Directed Workforce

**“Going from Barcodes to LivePoint-SDW is like going from Typewriters to Computers…It is a Quantum Leap in Technology!”**

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# “We Must Accept Human Error as Inevitable and Design Around that Fact!”

Donald Berwick

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# Customer Results

- **Shipping** - *Went from shipping **70 to 138 Trucks/day** without any additional resources.*
- **Errors** – *Shipped over 75,000 Truckloads (and counting) with **ZERO Errors**. This is **beyond 6 sigma**."*
- **Training** - *"We can now train a driver in **Less than 2 Hours**, before it was 4-6 months"*
- **Inventory Accuracy** – ***99.99% Accurate***

# Ken Schoening
# President & CEO

- Extensive Cost Reduction initiatives throughout manufacturing/supply chain
  - Managed $350 Million Business Unit
  - 10 years in Distribution
  - 20 years in Manufacturing
  - 15+ years in Packaging
  - 12+ years in RFID
  - Married 2 Children Enjoys Hunting, Fishing, Football
  - MBA General Business, BS Marketing SIU-Carbondale

**"Going from Barcodes to LivePoint-SDW is like going from Typewriters to Computers…It is a Quantum Leap in Technology!"**

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# Customer Challenges

1. FIFO
2. Cycle Counts
3. Shipping Errors
4. Productivity - Wasted Time Hunting for Items
5. Training New Hires
6. Safety

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# How to Accomplish?

- RTLS (Real Time Location Service)
  - Didn't Work so we looked at other options
- Forklift Based RFID
- Floor Tags Throughout
- Dock Portals

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# Current Floor Tags

½”

- Costly to Install
- Must remove Concrete and Epoxy
- Permanent – Can’t move Lanes
- Hard to Replace
- Shutdown areas while Epoxy cures

# New LivePoint Floor Tag

**So we developed a new Floor Tag**

- **Clean Floor**
- **Peel and Stick like a Band-Aid**

**4”**

**1”**

**0.5mm thick**

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# Dock Door Portals/Systems

- Costly
- NO Vision into Warehouse
- Single Purpose & Application
- Not Expandable into Facility

# Traditional Dock Door System

- **Costly**
- **$6-12k/door**
- **Easily Damaged**
- **Cross Reads**

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# Aerial Systems

## Ceiling RFID

- Costly
  - $12,000 / 2 Doors
- Not Very Accurate
- Difficulty reading Tags on Flat Surfaces

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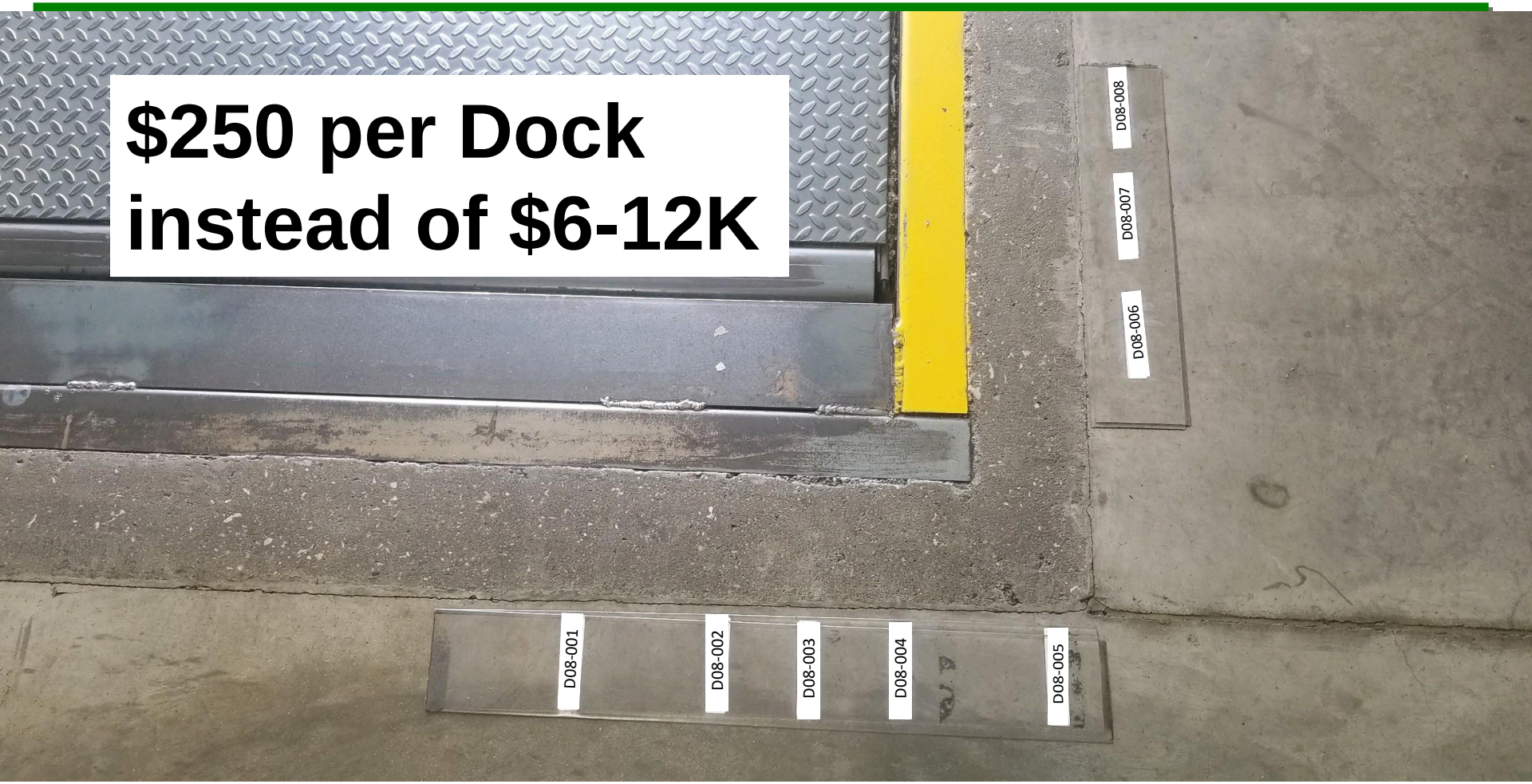
# LivePoint Dock Tags




"Going from Barcodes to LivePoint-SDW is like going from Typewriters to Computers…It is a Quantum Leap in Technology!"

# Solution: LivePoint “SDW”

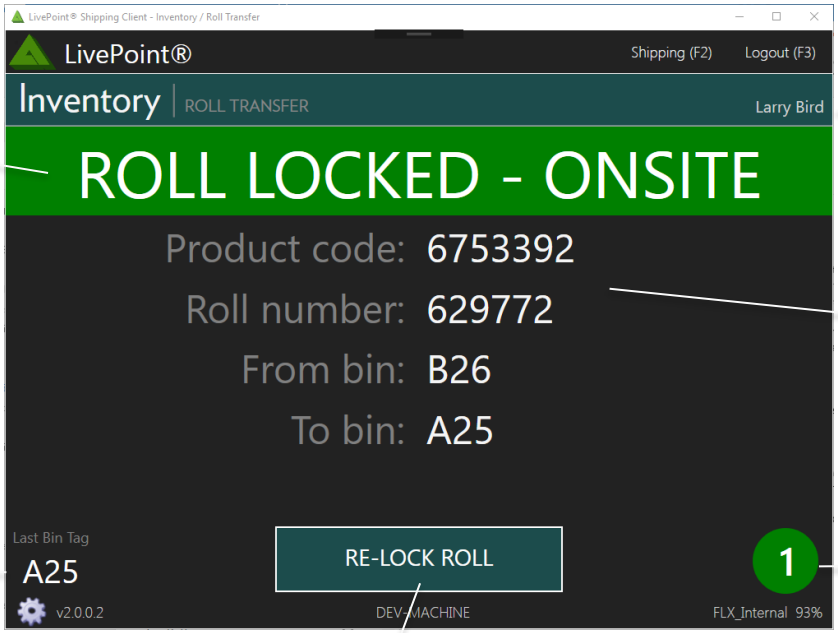
- LivePoint “SDW” – System Directed Workforce was born
  - **Forklift based Realtime System** that keeps track of Every Movement
  - Allows **Employees** to be **Managed by System**
  - Utilizes “**LivePoint” RFID Floor Tags**
  - **Notify Drivers of Mistakes/Forces to Correct Errors**

# Forklift Driver Sign-in for Traceability & Accountability

"Going from Barcodes to LivePoint-SDW is like going from Typewriters to Computers…It is a Quantum Leap in Technology!"

# User Interface Cues

Data and Colors and Sounds!




**Status**

**Operator**

**Product Data**

**Current Forklift Location**

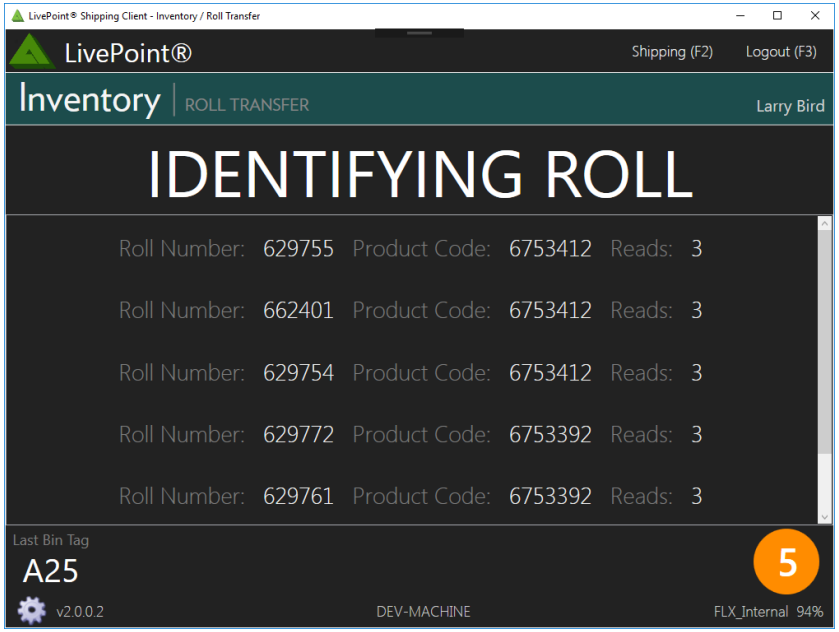
**RFID Indicator**

**Potential Actions**

# UI Cues

Data and Colors and Sounds!  Forklift is reading 5 Products

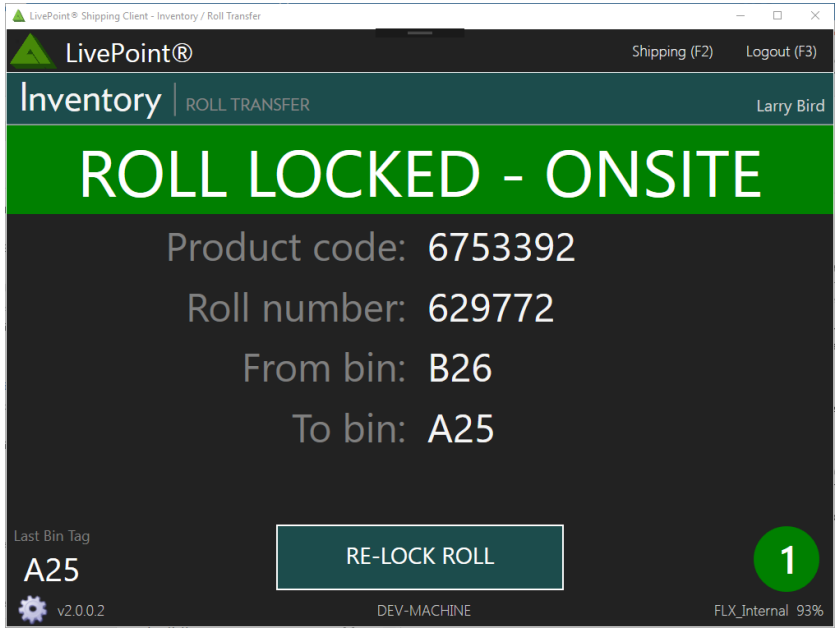
- Orange Indicator
  - Products Detected



# UI Cues

Data and Colors and Sounds!  Forklift "Locks" on 1 Product that the LivePoint system indicates is Good

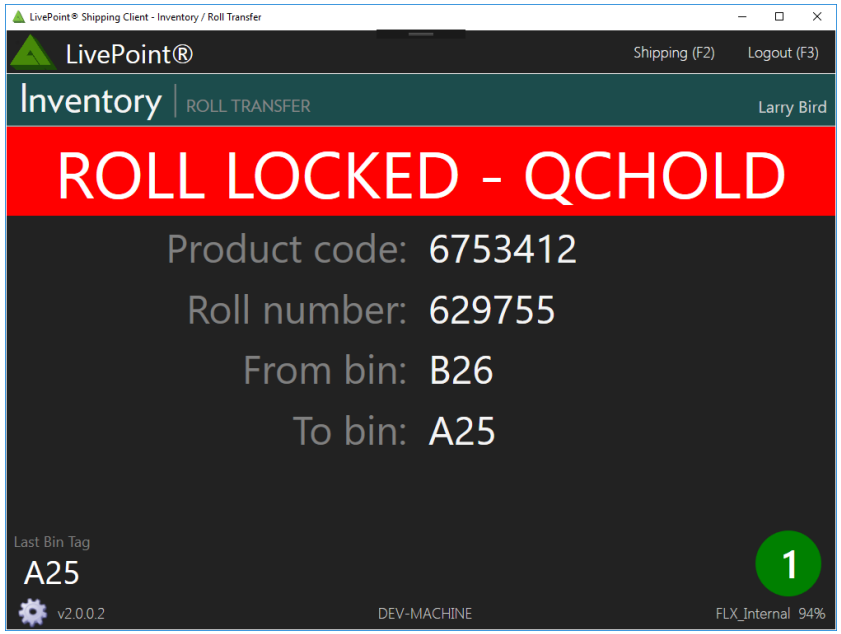
- Green Banner
  - Good Product



# UI Cues

Data and Colors and Sounds!  LivePoint determines the Product "Locked" is on Quality Hold

- **Red Banner**
  - Bad Product
  - QC Hold
  - Error
  - Other Disposition



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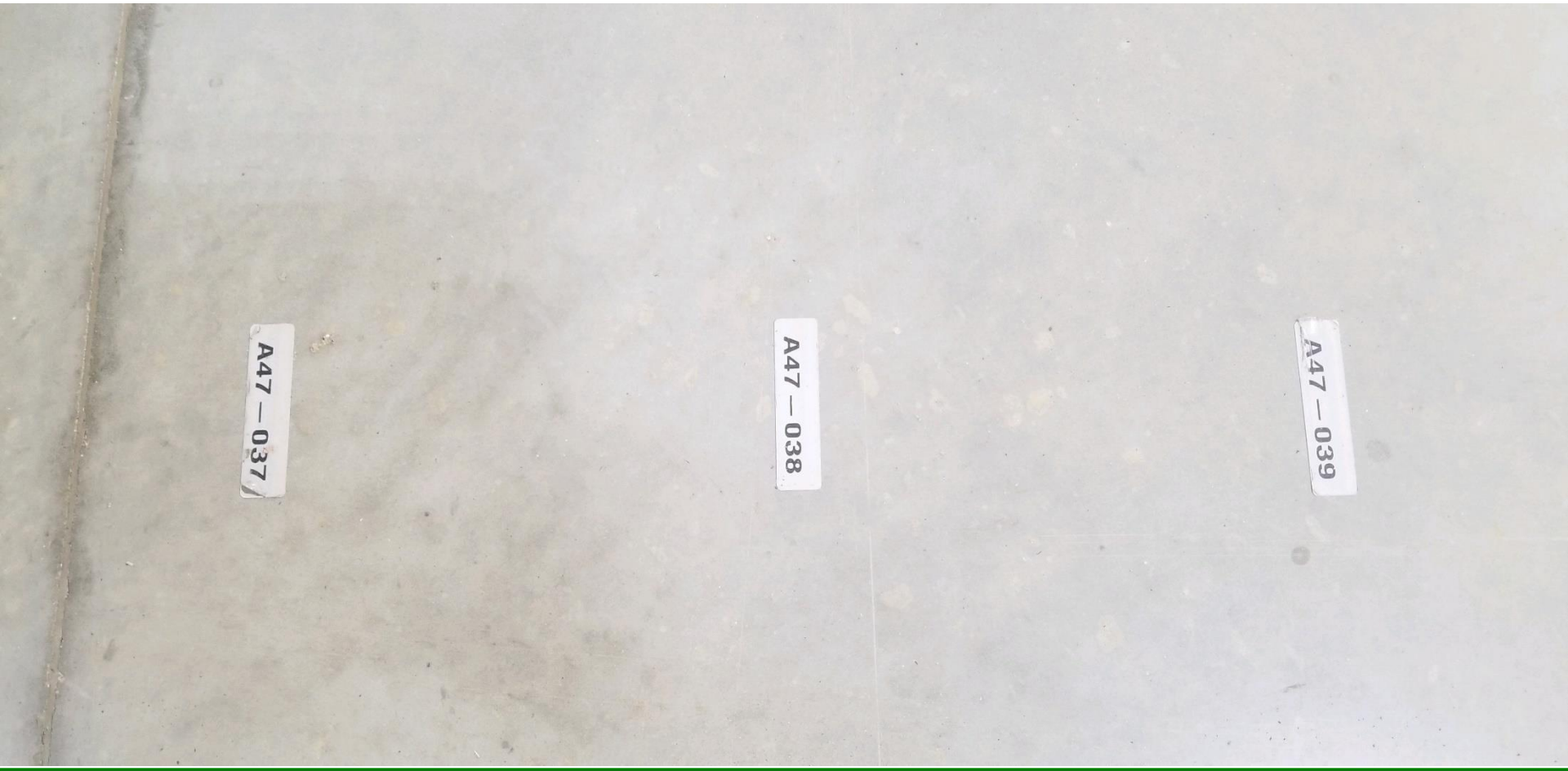
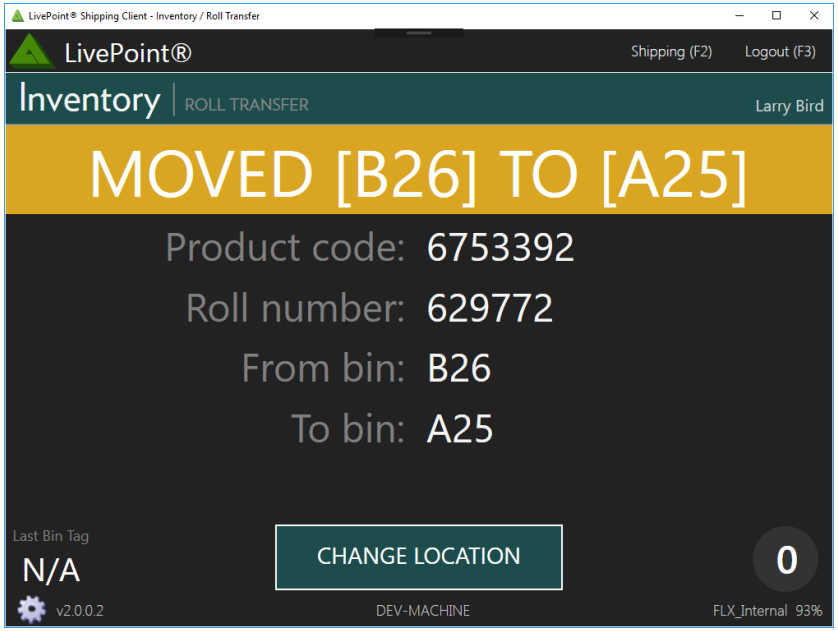
# Bin Tags



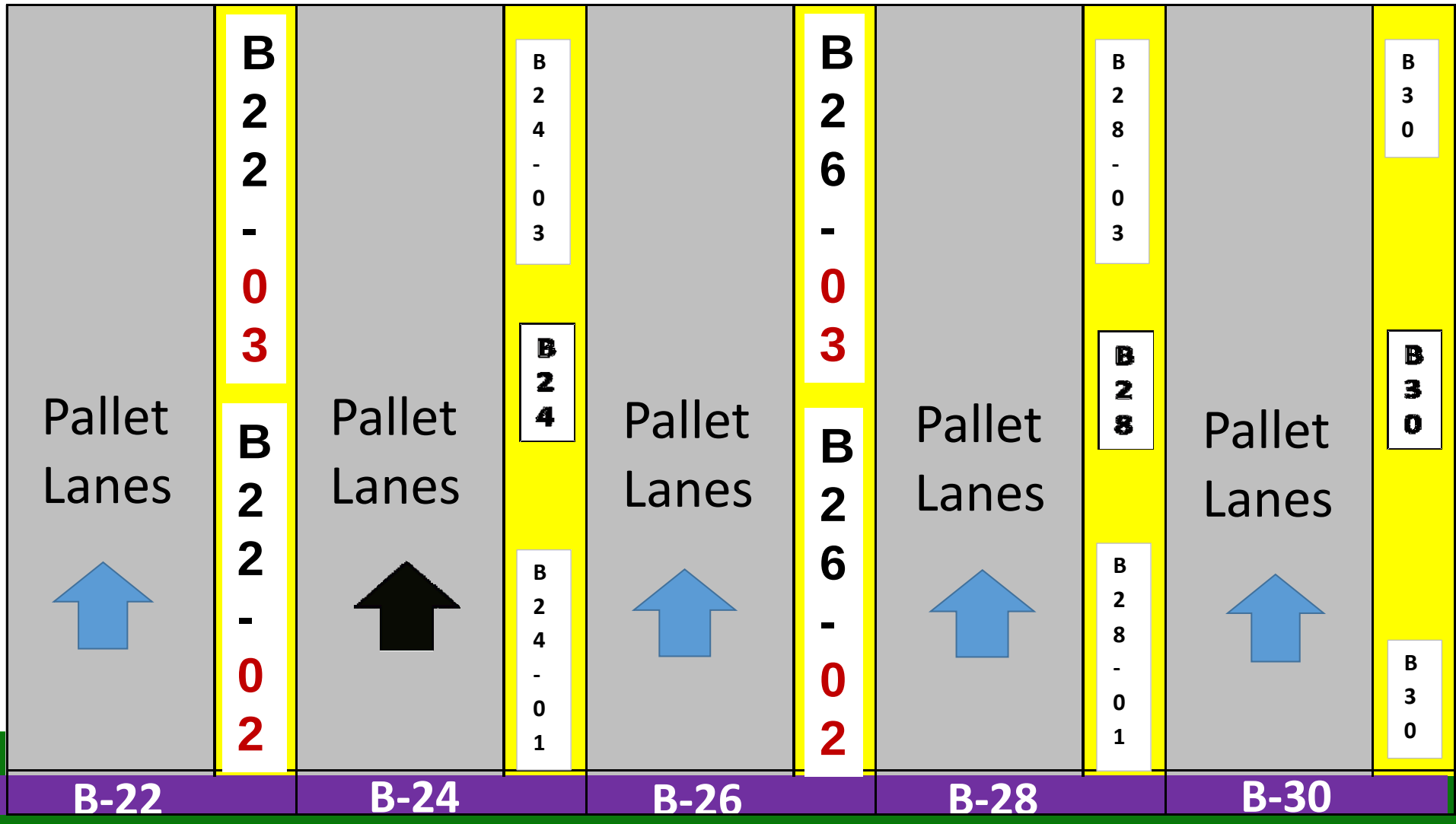
# UI Cues

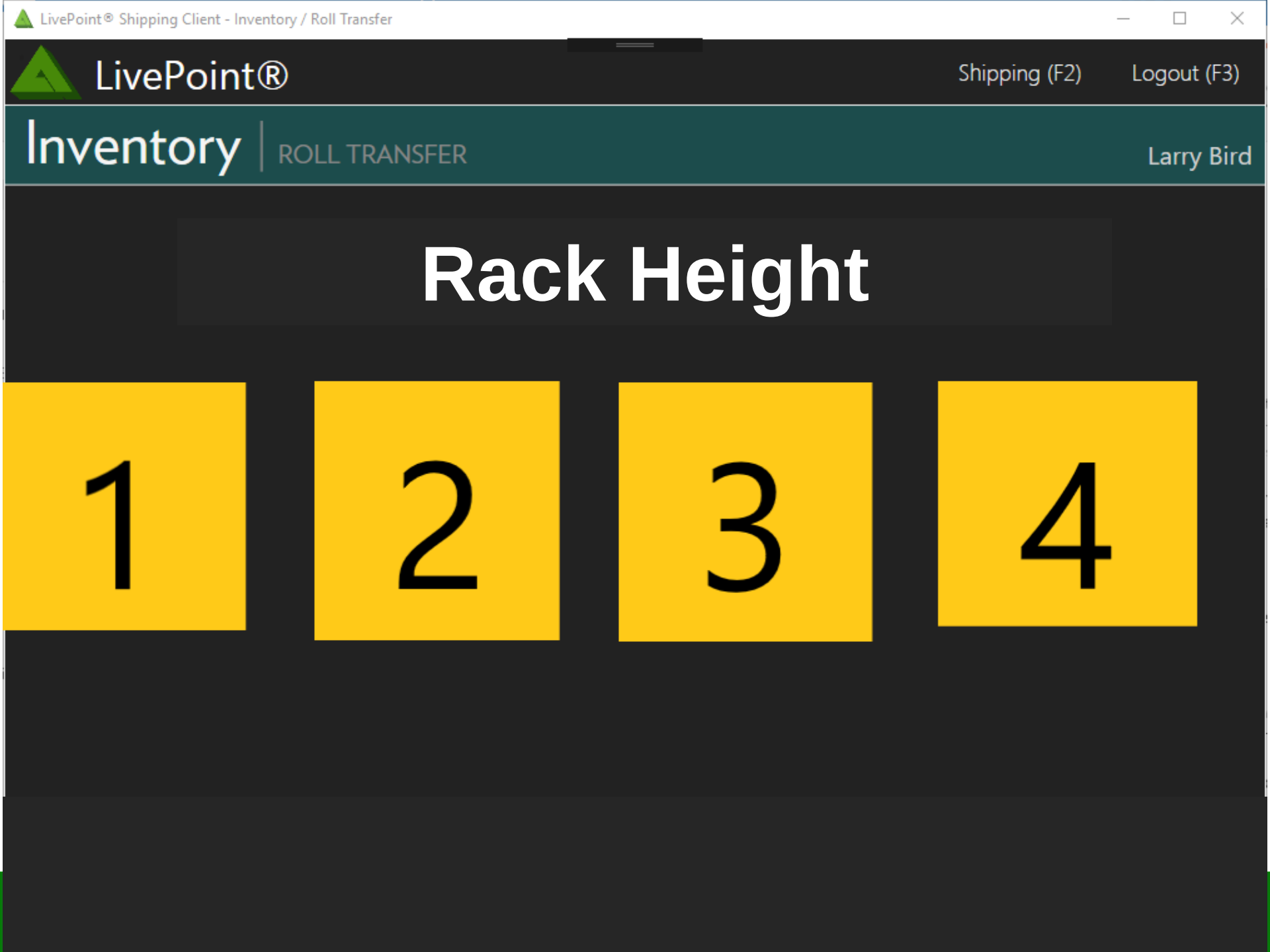
Data and Colors and Sounds!  Product was moved from bin B26 to A25

- **Gold Banner**
  - **Moved Successfully**



# Our Floor Tags allow for Lane Lines with "Depth Tracking"




LivePoint® Shipping Client - Inventory / Roll Transfer
LivePoint®
Shipping (F2)
Logout (F3)
Inventory
ROLL TRANSFER
Larry Bird
Rack Height
1
2
3
4

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# Old Shipping Dispatch

DATE _____

| SHIPMENT # /ORDER # | DESTINATION / PRODUCT | CARRIER / DRIVER | TIME IN | FEB 23 AM 9:29 |
|---|---|---|---|---|
| 850148455l | Brookville | Transcorr | TIME OUT | FEB 23 AM 10:31 |
| 122352 | 685/34 | Paul Gibbs | 12 | V15091 |
| SHIPMENT # /ORDER # | DESTINATION / PRODUCT | CARRIER | TIME IN | FEB 23 AM 9:42 |
| 525059 | IKO w/c | FSG | TIME OUT | FEB 23 AM 10:30 |
| | | | 4 | 80 |
| SHIPMENT # /ORDER # | DESTINATION / PRODUCT | CARRIER | TIME IN | FEB 23 AM 10:01 |
| 122012 | Sumaj | CN 40 | TIME OUT | FEB 23 AM 10:39 |
| | 195/70 & 1203941 | Jerry Conley | 10 | CBHU 883027 |
| SHIPMENT # /ORDER # | DESTINATION / PRODUCT | CARRIER | TIME IN | FEB 23 AM 9:55 |
| 525058 | IKO w/c | Raven | TIME OUT | FEB 23 AM 10:59 |
| | | | 3 | 66288 |
| SHIPMENT # /ORDER # | DESTINATION / PRODUCT | CARRIER | TIME IN | FEB 23 AM 10:19 |
| 122103 | Sylacauga | Truck Corp | TIME OUT | FEB 23 AM 11:22 |
| | 185/53 | | 4 | 15453 |
| SHIPMENT # /ORDER # | DESTINATION / PRODUCT | CARRIER | TIME IN | FEB 23 AM 10:19 |
| 122013 | Sumas | CN 40 | TIME OUT | FEB 23 AM 10:49 |
| | 185/70 & 1203941 | Hunt VC159 2-23-6 | 8 | TCLU 793792 |

LivePoint® - Create Order Dispatch

# Create Order Dispatch

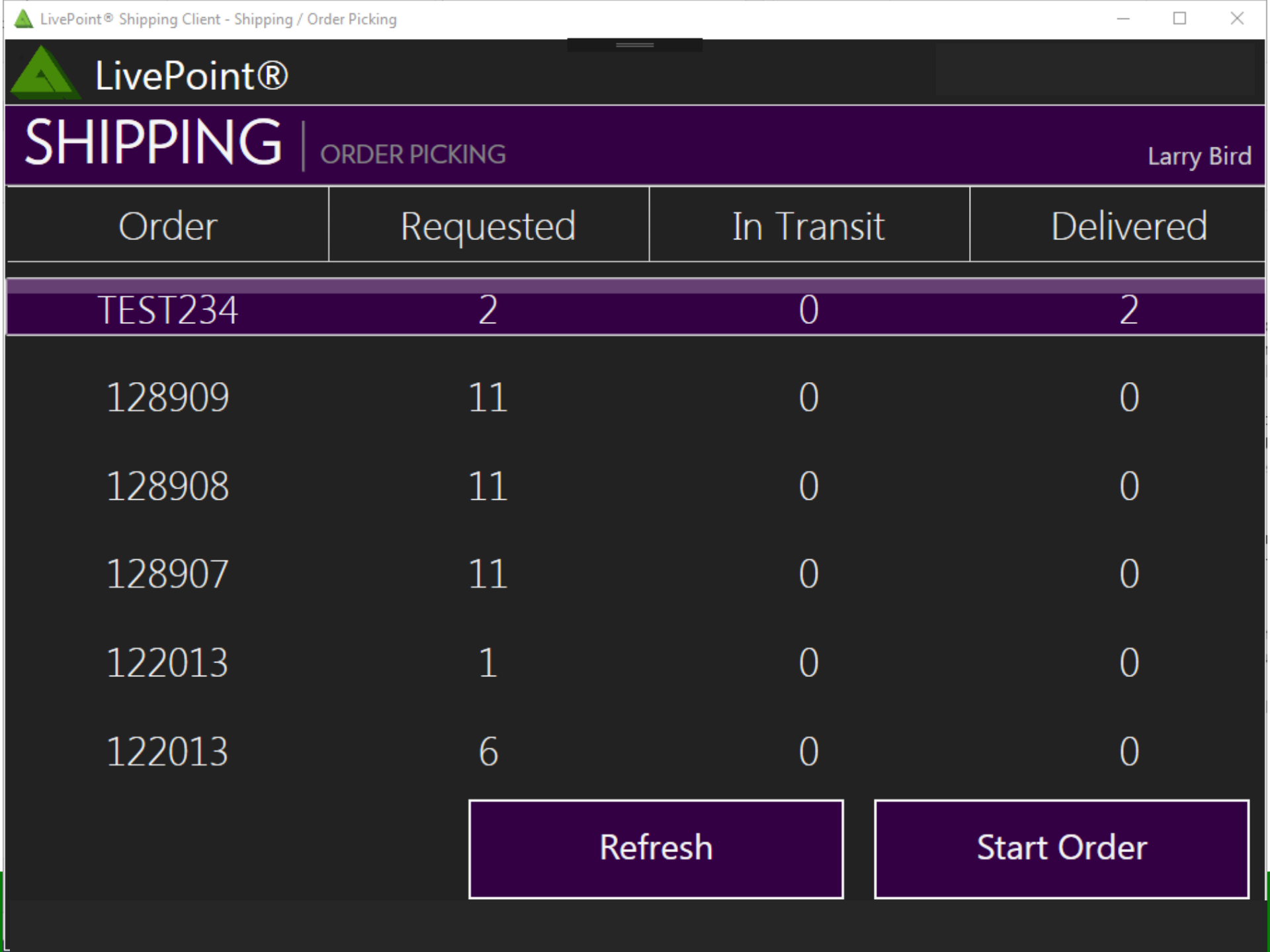
Trailer:

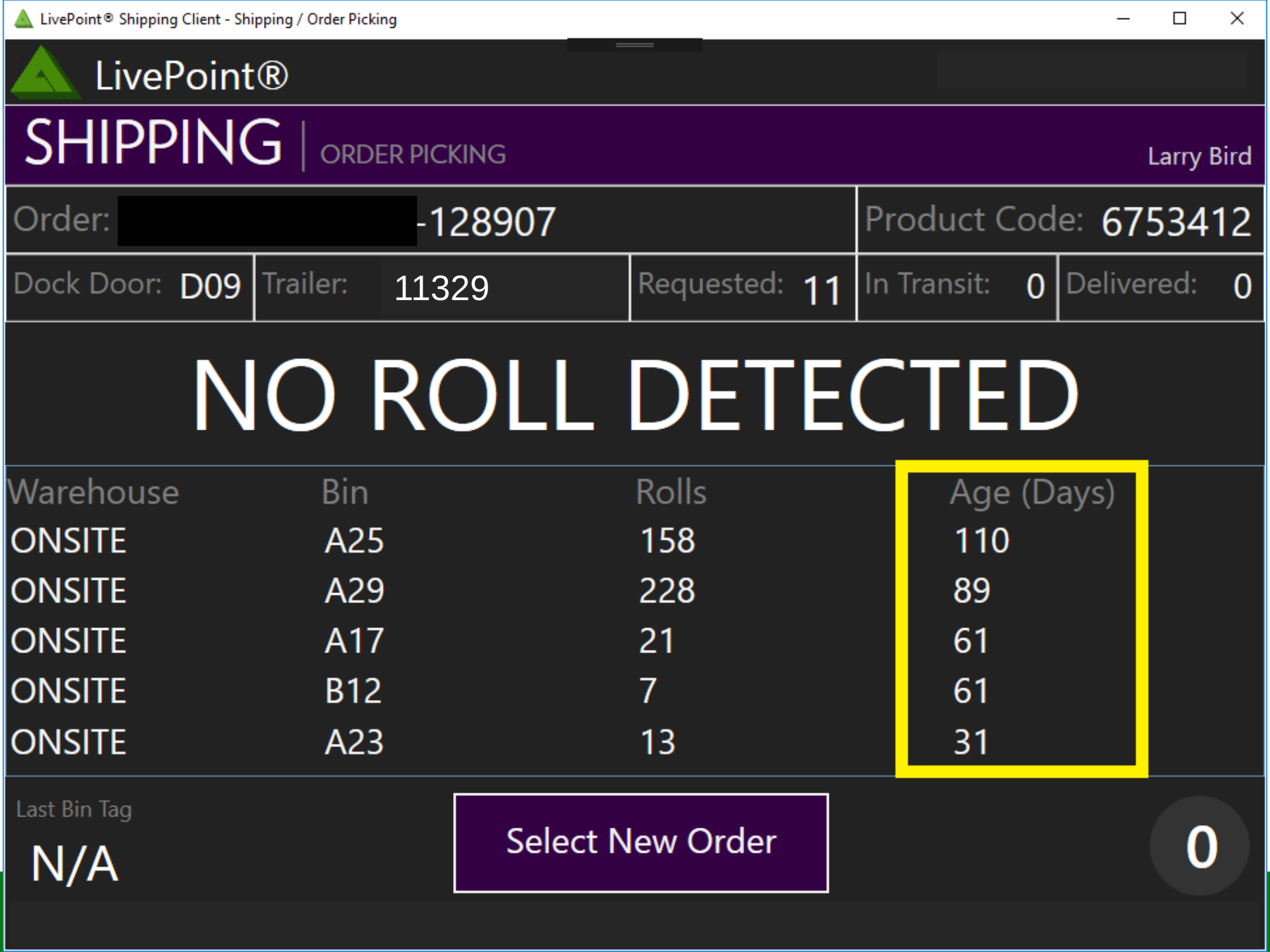
Driver:

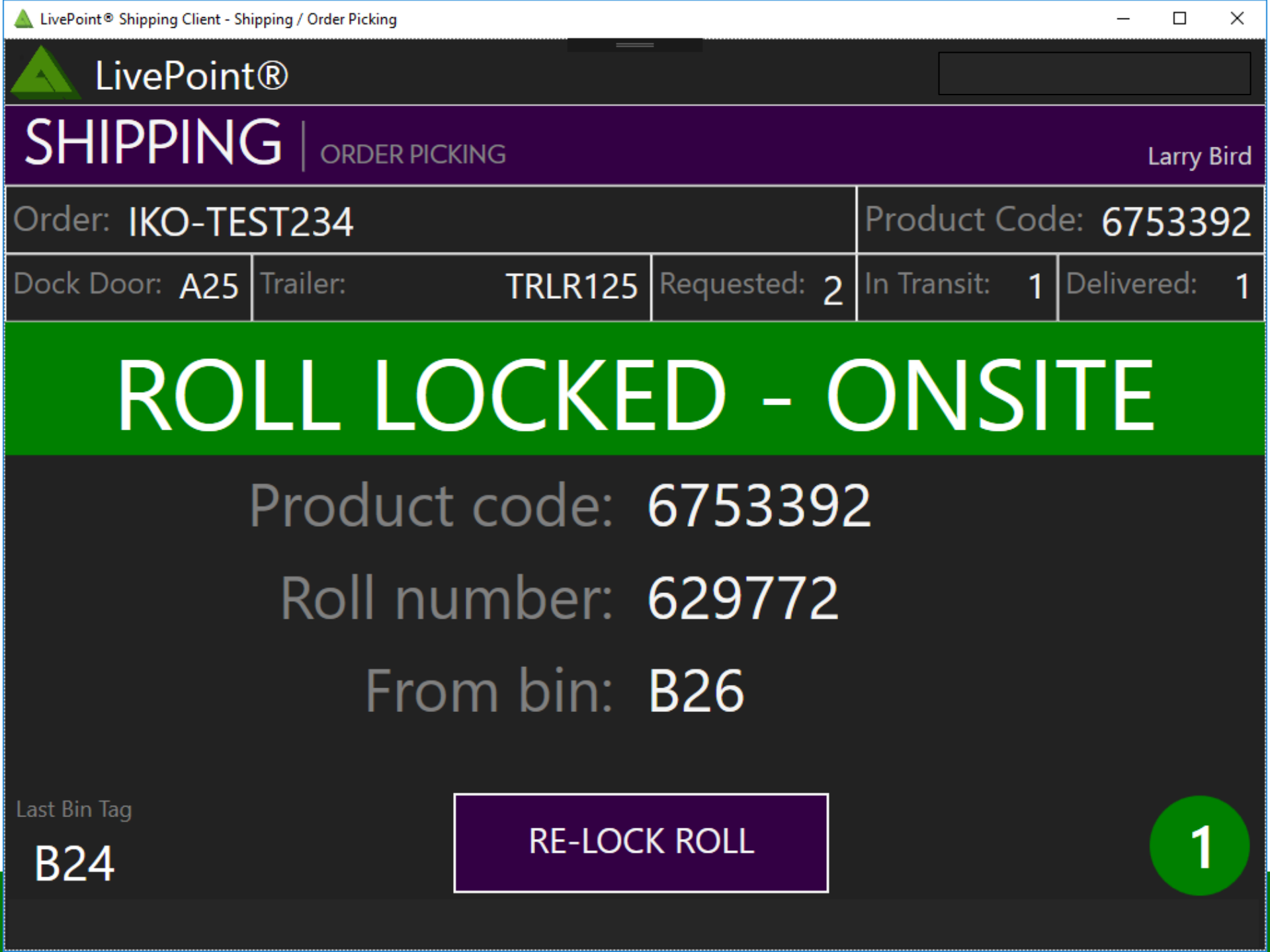
Dock:

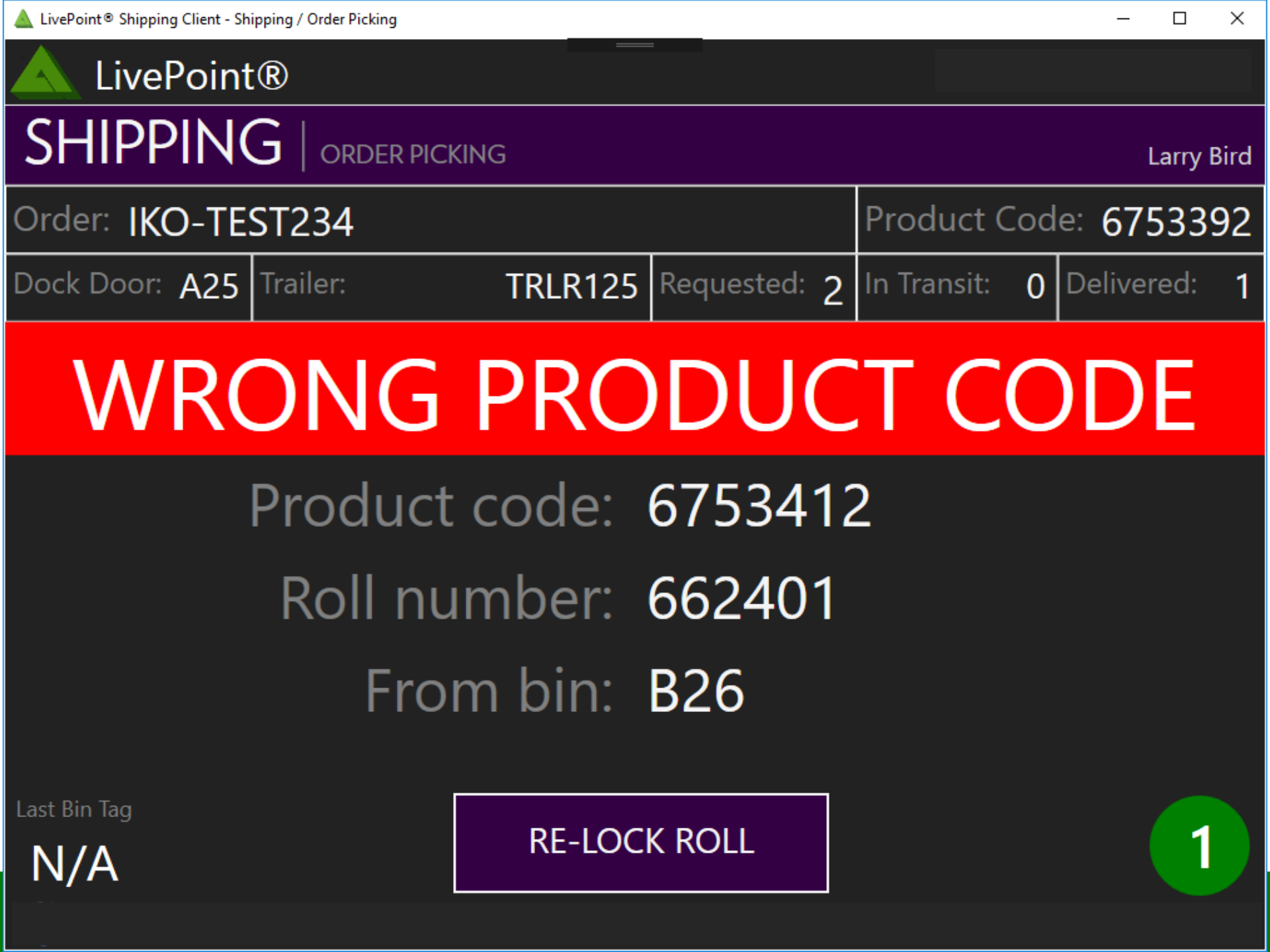
Sales order number:

Cancel | Dispatch Order


LivePoint® Shipping Client - Shipping / Order Picking
LivePoint®
SHIPPING | ORDER PICKING
Larry Bird
Order
Requested
In Transit
Delivered
TEST234 2 0 2
128909 11 0 0
128908 11 0 0
128907 11 0 0
122013 1 0 0
122013 6 0 0
Refresh
Start Order


LivePoint® Shipping Client - Shipping / Order Picking
LivePoint®
SHIPPING | ORDER PICKING
Larry Bird
Order: [redacted]-128907
Product Code: 6753412
Dock Door: D09
Trailer: 11329
Requested: 11
In Transit: 0
Delivered: 0
NO ROLL DETECTED
Warehouse
Bin
Rolls
Age (Days)
ONSITE A25 158 110
ONSITE A29 228 89
ONSITE A17 21 61
ONSITE B12 7 61
ONSITE A23 13 31
Last Bin Tag
N/A
Select New Order
0


LivePoint® Shipping Client - Shipping / Order Picking
LivePoint®
SHIPPING | ORDER PICKING
Larry Bird
Order: IKO-TEST234
Product Code: 6753392
Dock Door: A25
Trailer: TRLR125
Requested: 2
In Transit: 1
Delivered: 1
ROLL LOCKED - ONSITE
Product code: 6753392
Roll number: 629772
From bin: B26
Last Bin Tag
B24
RE-LOCK ROLL
1


LivePoint® Shipping Client - Shipping / Order Picking
LivePoint®
SHIPPING | ORDER PICKING
Larry Bird
Order: IKO-TEST234
Product Code: 6753392
Dock Door: A25
Trailer: TRLR125
Requested: 2
In Transit: 0
Delivered: 1
WRONG PRODUCT CODE
Product code: 6753412
Roll number: 662401
From bin: B26
Last Bin Tag
N/A
RE-LOCK ROLL
1

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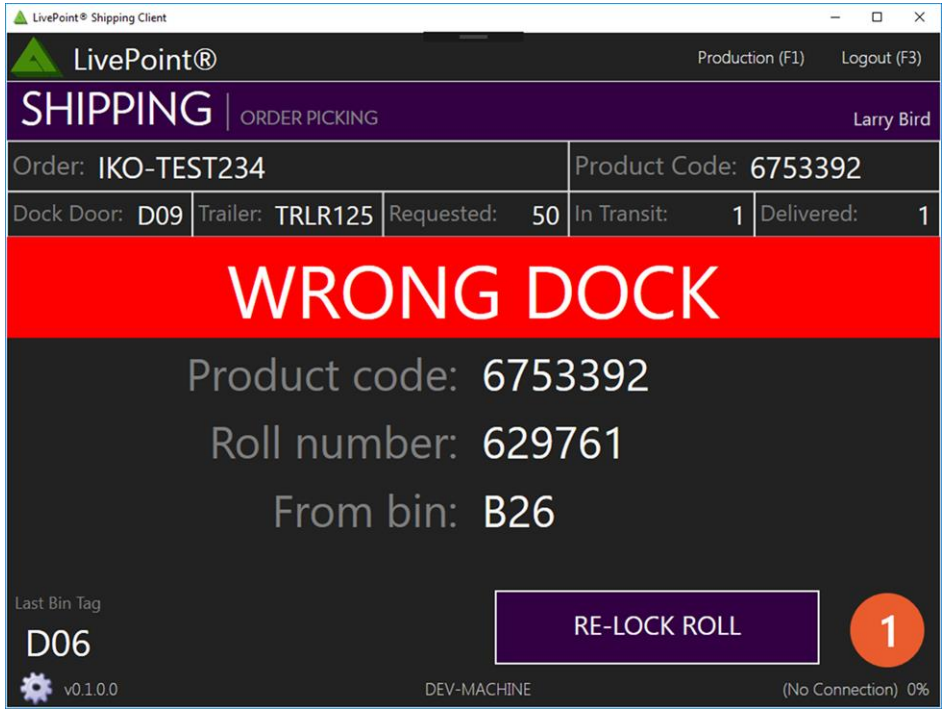
# LivePoint Dock Tags

"Going from Barcodes to LivePoint-SDW is like going from Typewriters to Computers…It is a Quantum Leap in Technology!"

# UI Cues

Data and Colors and Sounds!  Driver has Correct Product but went into Wrong Dock Door!

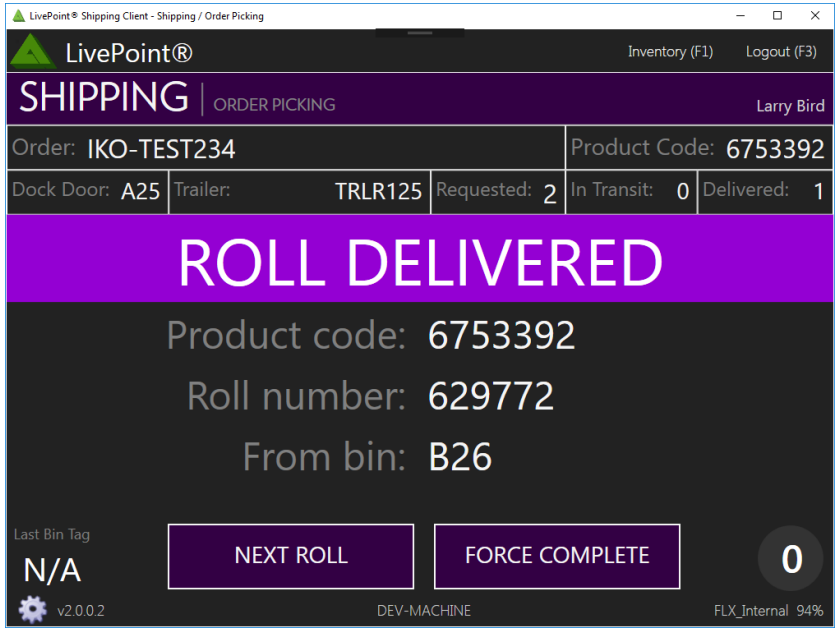
- Red Banner
  - Wrong Dock



# UI Cues

Data and Colors and Sounds!  Shipping – Correct Product was Delivered on Correct Order and Dock Door

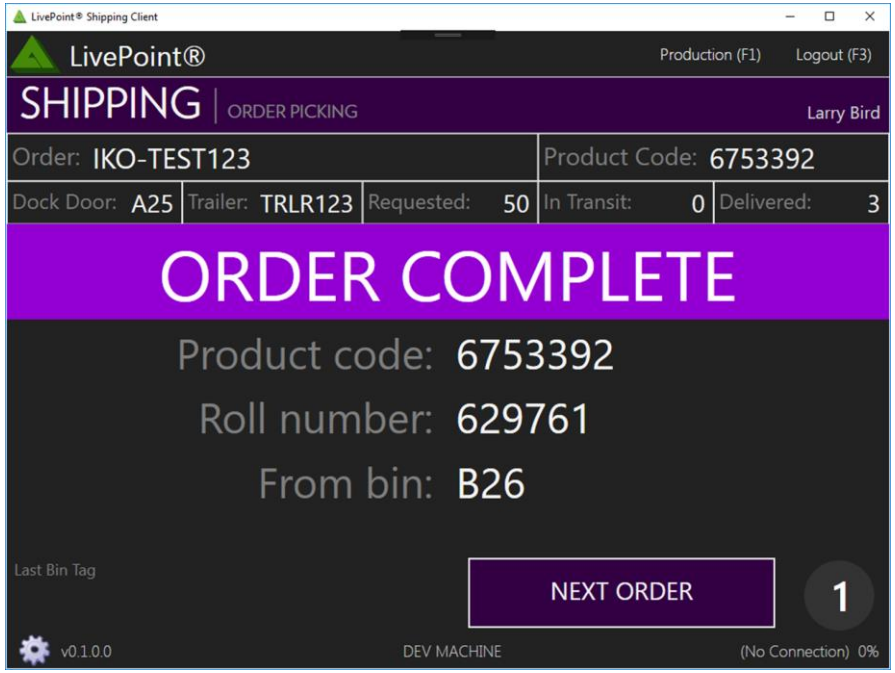
- Purple Banner
  - Delivery Success



# UI Cues

Data and Colors and Sounds!  Order was complete with Correct Products.

- Purple Banner
  - Order Complete!



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# 3 levels of Error Protection

- Wrong Product – RED/Alarm
- Wrong Dock Door – RED/Alarm
- Loads RED Product on Truck – Shipping Can **NOT** process Paperwork.

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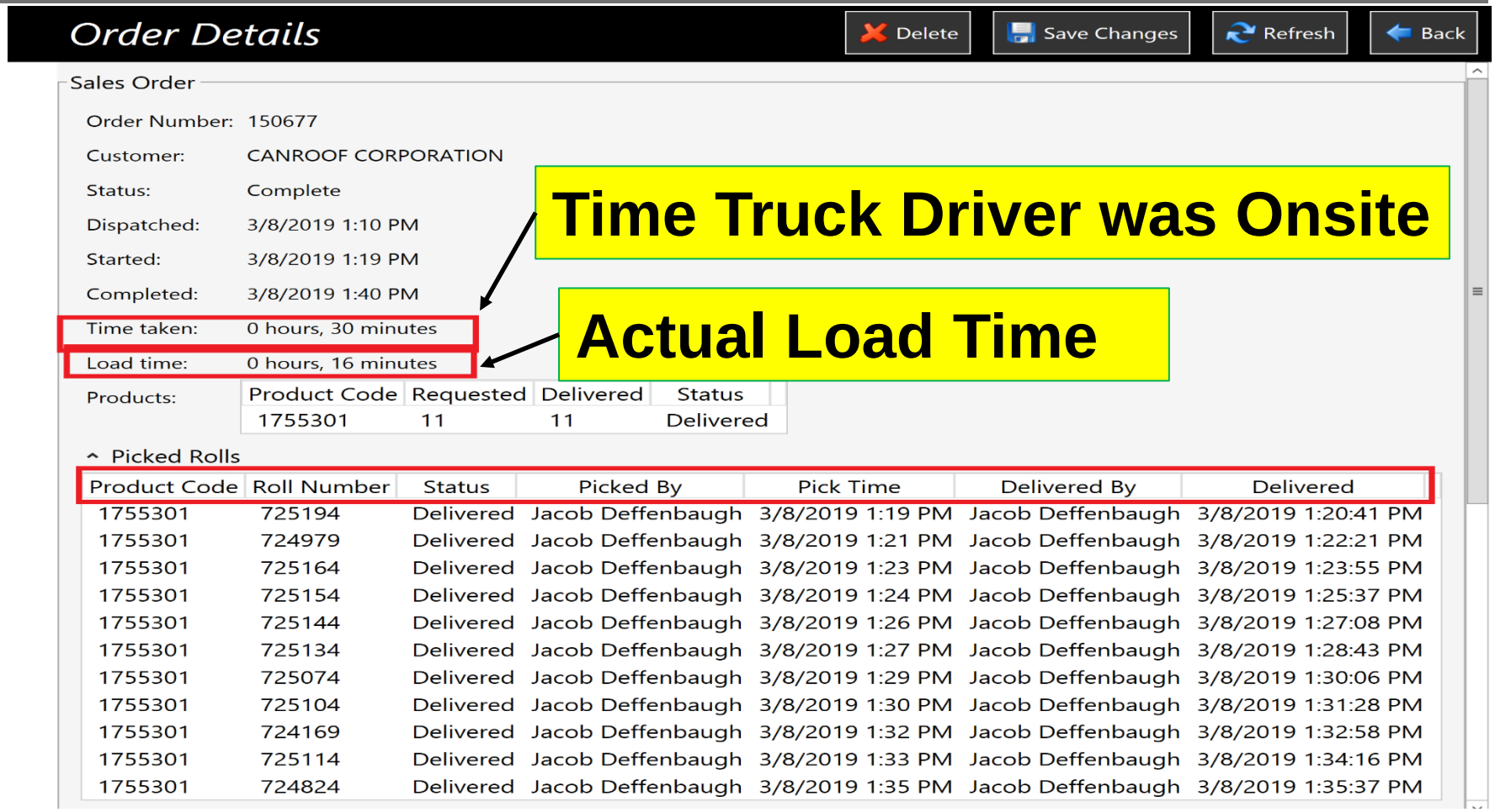
# Complete Traceability & Accountability! What product was Shipped, Date, Time, Forklift Driver(s) Name

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# LivePoint "SDW" - Results

- Training - Reduced time from 4-6 months to 2 hours
- Shipped 75,000 Truckloads (and Counting), ZERO ERRORS
- Shipping Capacity went from 70 T/L's per day to 138
- Ergonomics
- Safety – OHSA - VPP recognized as "Best Practices"
- FG Inventory Accuracy 99.99%

"Going from Barcodes to LivePoint-SDW is like going from Typewriters to Computers…It is a Quantum Leap in Technology!"

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**Presentations will be available on-line soon. You will receive an email with a link when they are available.**