Omni-ID®

CUSTOMER SUCCESS STORY
Pick

Auto supplier eliminates paper, cuts labor in half, and training time by 90%, using Omni-ID's Pick application

Introduction

To thrive and grow as a Tier 1 global manufacturer of auto seating systems and components requires precision production … and very quick turnaround times.

To support the need for time and material precision, one of the most critical parts of the process is ensuring the right parts are picked, kitted and delivered to the assembly line for production. Historically this process had been managed by paper lists and pick tickets — inefficient and prone to manual error. This manufacturer was looking to automate the process with a visual RFID system (ProVIEW) from Omni-ID.

> *"We often get an order in the morning and ship the finished product on the same day. That's the expectation, and technology makes it possible."*
>
> *– Project Manager*

There were five primary goals for the project:

1. **Standardize** the picking process globally across all locations
2. **Increase system flexibility** to manage changes and the ability to deliver
3. **Improve operational efficiency** and accuracy
4. **Remove printing** of paper pick tickets (cost)
5. **Support** the corporate continuous improvement culture

To get started, the manufacturer's Center of Excellence team researched RFID applications for multiple different development projects. The team came directly to Omni-ID for a solution to tracking incoming materials and containers. Ultimately, Omni-ID was engaged as both the consultant and systems integrator.

ProVIEW®

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Challenges

There are a number of challenges that ProVIEW and the corresponding integration helped the customer to overcome and address to develop a truly flexible and hands-free, paperless system — without completely changing the process:

- **Timing.** A critically important issue with picking is ensuring it is timely and accurate. The efficiency of an entire manufacturing operation depends on having the right materials to start. The goal was to ensure tablets used for the pick lists (based on wi-fi) were downloading quickly and accurately. Equally important was ensuring that the View tags on each shelf changed fast enough to accommodate the picks.
- **Tablets.** The tablets trusted for pick lists were selected to ensure performance levels and support the firmware in the tags. The upgrade was important to be sure tablets communicated with the system quickly.
- **Control and Confirmation.** It was critical to be able to control the timing sequence required in communication for when a new list was available. Furthermore, positive acknowledgment that the correct part was picked — or when the prior pick was completed — helped automate and accelerate the whole process.

Solution

To make this RFID implementation happen on an aggressive 15-month timeline, this Tier 1 Auto supplier established a cross-functional team, including:

- Advanced manufacturing engineers
- Continuous improvement engineers
- IT and Operations team members
- Plus, project management, systems engineering, and professional services specialists from Omni-ID

The whole team met regularly from the initial conceptual design to the physical site survey, and throughout the development of the project, implementation and today for ongoing support.

Test and Refine

First, during the product development and QA cycles in the Omni-ID Labs, the system was thoroughly tested. Next, it submitted for User Acceptance Testing (UAT) by the customer. Then, the application was deployed in stages, as a pilot in the manufacturing environment.

The customer has multiple facilities in the heart of the auto industry. Field trials included a small pick line in each facility where the paper "pick list" was replaced with a wifi-enabled tablet, and the paper pick tickets were replaced with View Tags on each of the racks and shelves to indicate visually what to pick and where to pick it from — completely automating the process.

Learnings Along the Way

During this process, several important things were learned and incorporated in the final installation:

1. **Software/Firmware Mods.** Minor changes were made to the software and firmware to better accommodate the customer's process and manufacturing execution systems for integration.
2. **The Tablet Makes a Difference.** Changed/upgraded the ruggedized tablet to ensure fast connectivity and list downloading.
3. **Process Flexibility.** Recognized that pick process workflows were different in each facility, so the process and software was adjusted to accommodate.

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How It All Works

- Readers are Omni-ID gateways that are connected to the customer's network, with static IP. Gateways communicate with the "pick here" view tags and customer systems.
- View Tags are active tags based on 433 MHz, automatically and constantly communicating with readers. Optimized algorithms help balance need for quick communication response and maximize battery life.
- ProVIEW software sits on customer's server. Their MES system sends ProVIEW the pick list.
- ProVIEW queues the order sequentially and sends them to the correct pick zone.
- Based on the sequence of pick requirements, ProView lights the tags, providing visual instruction for operators.
- Data on pick times is utilized for reporting to gauge efficiency by operator.

Products Included in Solution

The customer environment is a conditioned manufacturing/warehouse space with 24×5 operation and 99.9% uptime required. View tags were installed on the pick carts (paper list replacement) as well as the shelves ("pick here" visual) to communicate with the gateway readers installed in the pick zones. Specific Omni-ID products included:

- Link Network Gateway Readers
- View 3, 4 and 10 Tags
- Omnidirectional Antenna
- ProVIEW Software — Pick Module
- ProVIEW Software to drive information from and to the proprietary MES system

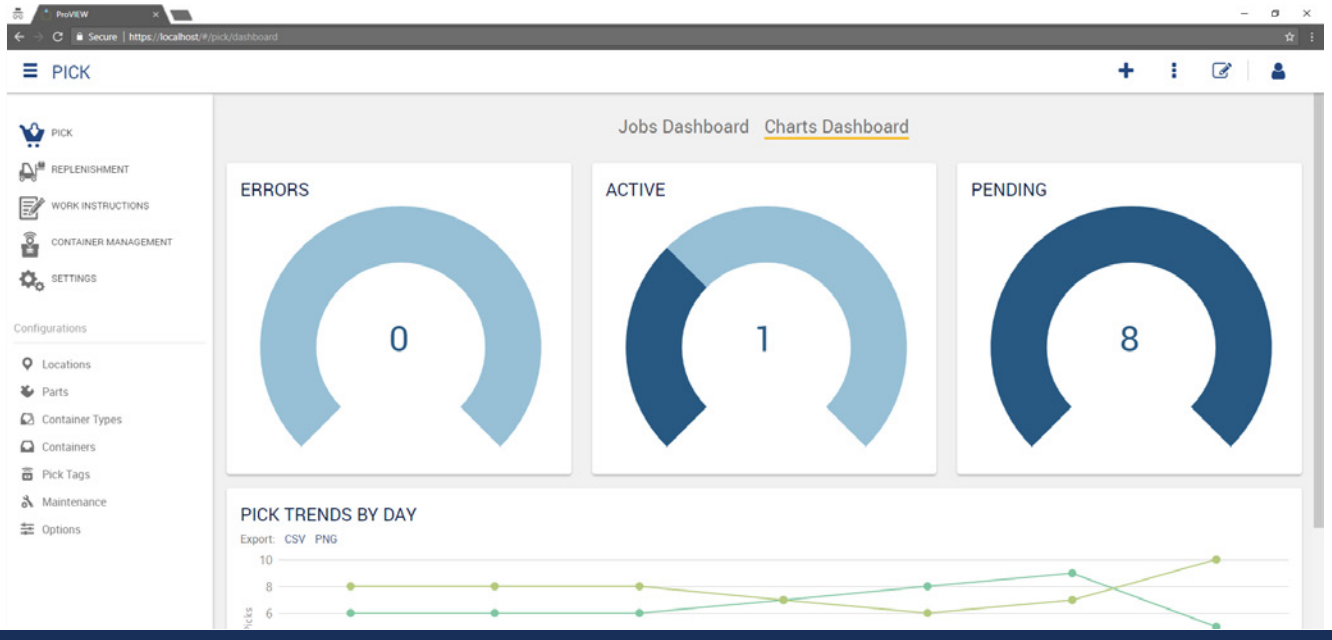
Link Network Gateway


View 3 Tag

View 4 Tag

View 10 Tag


Omnidirectional Antenna



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Customization Creates Transformation

Several customizations were necessary on the software side to accommodate the interfacing to the customer's proprietary MES system. Like most manufacturers, this customer runs multiple workflows, so the ProVIEW software was able to be modified to accommodate each of these workflows now and in the future.

Some hardware/firmware revisions were also made to support the process modifications, optimizing communication. And, to ensure global standardization, adjustments were made to the solution for connectivity and data flow from their MES system in every environment.

Results

No more paper and printing. Cost savings are being tracked and measured, but the impact of eliminating paper and printer supplies is being felt already.

50% labor reduction. Pick efficiency improvements enable one operator to handle the work of two.

Improved pick accuracy. Significantly fewer wrong picks, approaching 99.8% accuracy.

90% reduced training time. New operators can be trained and capable with the automated system in approximately three hours vs. five or more days.

Kazian support. Data and efficiency of the new automated system can now drive quality improvement initiatives with no additional research or infrastructure modification costs.

Moving Forward in the Auto Industry

> *"We are currently implementing the ProVIEW Pick system to multiple locations based on current success. Based on this success, we've also added the ProVIEW Replenishment application for automated bulk material replenishment."*
>
> *– Project Manager*

About Omni-ID

Based in Rochester, NY, Omni-ID has developed original, patented technologies for on-metal and visual tagging to enable a broad range of applications to improve asset tracking, supply chain management and work-in- process. Omni-ID is the leading supplier of RFID tags and visual tagging systems for Manufacturing & Logistics, Energy, IT Assets and Tool Tracking. Omni-ID's versatile family of products provides a complete range of tags and auto-ID solutions for tracking and identification challenges, with unprecedented accuracy, in any environment.