

# Detroit Replaces Paper KANBAN System with ProVIEW™ for Parts Replenishment



## Customer Background

A subsidiary of Daimler Trucks North America (itself a subsidiary of Daimler AG), Detroit manufactures heavy-duty commercial truck engines and chassis components for customers such as Freightliner and Western Star. The Michigan-based company has produced over 5 million engines since its inception in 1938.

As part of their manufacturing process Detroit uses paper labels and instructions that have been relied on for decades as signals in the implementation of Kanban in manufacturing operations worldwide. However, advances in technology have made manufacturers aware of the limitations of paper labels: expensive, inefficient, manual, and static.

In Detroit's HDE Engine Assembly Area they are producing 170 engines per shift or a new engine every 2.5 minutes. This has the plant working at capacity, thus driving the operations team to seek ways to find where efficiencies could be added to the production process. One of the areas identified was parts replenishment.

## The Challenge

Like many manufacturers Detroit was using the decades old paper-based system to manage their parts replenishment cycle, in this case Kanban tickets along with orange signal flags.

The drawbacks to this system are many:

- Manual announcement and recognition of a part request
- Expensive paper and print materials
- Limited ability to gather meaningful metrics
- Lack of real-time updates to manage process exceptions

Such a system is inherently limited and if parts are not replenished in a timely manner the production lines are interrupted, leading to lost productivity and money. Therefore, when management identified the parts replenishment process as an area of improvement, it was for two reasons:

1. **Eliminate parts outages** — Increase up-time of the line by reducing interruptions
2. **Balanced workflow** — drivers' responsibilities can be evaluated using system data.



The biggest challenge, of course, is how to replace a decades-old system with new technology and train over 200 employees on multiple shifts while not interfering with the line operations.

## The Solution



Seeking a solution to improve their material handling practices and collect metrics that allow them to optimize the replenishment process,

Detroit found the answer with a Parts Replenishment Solution powered Omni-ID's ProVIEW™ Solution. This system incorporates Omni-ID's View 3 tag — a rugged e-paper visual tag — to replace the use of printed Kanban cards and signal flags, providing Detroit with the real-time ability to place part order requests on the production floor electronically instead of manually.

As a full service provider, Omni-ID deployed its expert field teams to conduct on-site testing and to assist with implementation. Site visits were conducted to study floor layout, traffic flow, operations, logistics and eventually on-site product testing. Additionally, a full spectrum analysis was conducted to ensure system functionality, regardless of tag placement or location on the mobile carts.

Omni-ID installed a View 3 tag on each parts car on the production floor and on the tugger trucks that transport the carts from the floor to the warehouse and back. System communication is handled using the Ethernet IP network connected through several Omni-ID Link Gateway devices throughout the facility and managed by Omni-ID's ProVIEW software. The operator signals for parts by simply pushing the button on the tag. A signal is sent to the tugger through the gateway and visual instructions are sent to the tugger via the View 3 tag. Events are received and recorded by ProVIEW and stored in a database for either real-time or historical querying.

Designed specifically for the manufacturing and logistics industries, ProVIEW is a complete solution that allows operations managers to build intelligent supply chains:

- "Smart Container" tracks its own history!
- Increases process visibility (tracks, instructs, reschedules dynamically)
- Human readable instructions improve material flow
- Automates inventory management
- Eliminates lost containers and improves compliance
- Replaces paper labels and their associated costs
- Only e-paper solution on the market created for rugged environments

Omni-ID led a coordinated implementation with Detroit and Lowry Computer Products, a certified Detroit IT vendor. This harmonized approach allowed for the installation and deployment to be handled as efficiently as possible for the customer to reach benefits realization in the least amount of time.

## The Results

The system was designed to collect data that would allow the Detroit team to optimize the replenishment process. By incorporating advanced metrics into their operations, the production team recognized significant benefits within just the first three months of operation:

- Visual communication of part status
- Improved communication between departments and shifts
- Real-time WIP information
- Ability to reallocate drivers to different lines, resulting in annual cost savings
- Less interruption of lines due to improved capacity and reduced overtime
- Flag system now acts as a redundant system to ensure line up-time

*To learn more about Omni-ID's manufacturing solutions, contact us today!*