



# Android Industries Shortens Replenishment Cycles

Well-respected for impeccable safety, high quality, and unmatched efficiency, Android Industries, LLC is a sub-assembler and sequencer of complex vehicle systems for automotive OEMs. Since 1990, Android has assembled over 100 million modules including engine, suspension, axle, tire and wheel, and instrument panels. Headquartered in Auburn Hills, Michigan, Android has assembled plants throughout the United States.

## RFID-BASED MATERIAL FLOW REPLENISHMENT DRIVES CONTINUOUS PROCESS IMPROVEMENT

Economic realities are forcing automotive OEMs and their suppliers to look for ways to cut costs while realizing the most efficiency from every process. New automotive model introductions, increasing sub-assembly complexity, and a relentless push to remove waste mean doing more with less – right now. More vehicle models, more options, and more complexity call for flexible, lean manufacturing at every level.

“We used to work in feet, hours and dollars. Now it’s all about inches, seconds and pennies. With Zebra’s solution, we took a week’s worth of data, and went from 85 percent utilization without waste to 89 percent. We are well on our way to 93 percent efficiency”.

**Rick Frey,**  
Global Control/Logistics Manager

Android Industries knew that they had to scrutinize every workflow to drive continuous improvement. Management identified material flow and replenishment tasks as burdened with non-value added processing and unnecessary motion – two key areas of waste in manufacturing processes. Material operators often had stock handlers pull containers long before they were needed, which caused congestion in warehouse aisles. In addition, forklift drivers often wasted time on poorly planned routes, slowing replenishment activities.

Rick Frey, Global Control/Logistics Manager, recognized that gaining deep visibility into workflows was essential.

“An Android, driving waste out of processes is key. However, you cannot improve what you cannot measure”, he said.

In fact, Android discovered what so many other companies are also realizing. To maximize labor and drive continuous process improvement, companies must have sensors in place to collect information in real-time, and feed the information to planning software that collects, analyzes, and presents the results for intelligent decision-making.

While Android already relied on a legacy enterprise resource planning (ERP) system, it required an execution system with deep visibility into manufacturing activities at any moment.

“Sensor-based control systems were the only way we could get that linkage, where visibility feeds into the execution system, giving us granularity of detail”, Frey said.

---

### Customer

Android Industries, LLC

---

### Goals

The company needed to improve material flow and replenishment processes while reducing manufacturing waste.

---

### Zebra Solution

Zebra Material Flow Replenishment System

---

### Results

Automated material flow and replenishment tasks. Provided deep visibility, enabling continuing process improvement. Increased replenishment efficiency to 89 percent and beyond. Flexible system that scaled as automotive complexity increased.

---

### About Zebra Material Flow Replenishment

Real-time visibility of material flow gives you the power to get LEAN.

## **VISIBILITY INTO THE ENTIRE FACILITY**

Android turned to Zebra's proven success and expertise in real-time location systems (RTLS) and radio frequency identification (RFID) technologies. Zebra's Material Flow Replenishment solution offered real-time visibility of material replenishment part demand throughout the entire facility, including point of storage, point of reduction, and point of return.

Handheld scanners and mobile terminals mounted in material handling equipment formed the hardware part of the system. Integrated with Android's legacy systems through Zebra Material Flow Replenishment message queue interface, the Zebra solution provides visibility into actual operations.

At each consumption location, when the work task reaches a predetermined reorder point, the operator either scans a barcode for the part to be replenished with their legacy handhelds, or pushes a wireless call tag, triggering a call for material. With each "ticket" task, the solution automatically requests and assigns a route to a forklift or material cart handlers.

Each replenishment task is color-coded based on priority, enabling material handlers to see which calls are most critical but also leaving them the flexibility to pluck and pick multiple components in parallel.

## **A FOUR-POINT INCREASE IN UTILIZATION WITHOUT WASTE**

The new system immediately improved the material handler's field of vision,

eliminating the need for the stock person to flag the container so the driver could see it. Now, the driver simply identifies the material location from an onboard terminal.

With visibility in real-time, Android captured key material replenishment metrics, allowing the company to provide clear work instructions to the material handlers, maximizing labor efficiency. The system refreshes every 60 seconds, providing operators right-now visibility into part numbers, priority, where materials are stored and where they need to go. Management can drill down into the data to optimize load leveling, share material and process management and make decisions about phased deployments.

The Zebra solution also helped Android determine the optimal cycle timing for replenishments so that operators could plan safety stock, while ensuring maximum assembly line throughput. Exception and alert management gives Android the flexibility to "hot shot" parts to their customer, while achieving data retention and cycle time requirements.

Android can now visualize the time replenishment movements. The Zebra solution provides traceability and time stamps to know when a call was placed, who received the call, who accepted the call and what time the material was delivered to the floor operator, which allows management to "understand" the status of every container specific to the process, the container's location and how long each process took vs. requirements.

From these metrics, Android can determine the distance for each replenishment cycle for each part, govern the amount of labor needed and then calculate the efficiency of each unit of labor. What's more, Android can leverage the solution for ongoing process improvement, efficiency gains and cost reductions – boosting the return on value, year after year.

"We used to work in feet, hours and dollars", Frey said. "Now it's all about inches, seconds and pennies. With Zebra's solution, we took a week's worth of data, and went from 85 percent utilization without waste to 89 percent. We are well on our way to 93 percent efficiency. We now have a tool to help drivers and replenishment operators fine tune their workflow tasks to a high caliber, which benefits everyone, especially our customers."

