

Wide-Area Passive RFID Integrates Supply Chains, Speeds W.I.P. and Tracks Vehicles in Real-Time

Unique extended range tracking of passive RFID tags increases visibility on the factory floor and in the yard

In the global economy, manufacturing has reached unprecedented levels of competition, and the automotive industry has not escaped. Lean manufacturing techniques are a necessary factor in maintaining competitiveness. Companies must eliminate wasteful buffer inventories and rely instead on just-in-time parts delivery systems.

This puts tremendous pressure on managers to keep track of parts as they move in real-time from the receiving dock to storage bins, or from kits to the manufacturing line. In addition to parts, companies must also track assets such as tools and set-up components, and even employees. The inability to locate critical parts, tools or personnel can shut down an entire production line. This kind of disruption can cost thousands of dollars per hour.

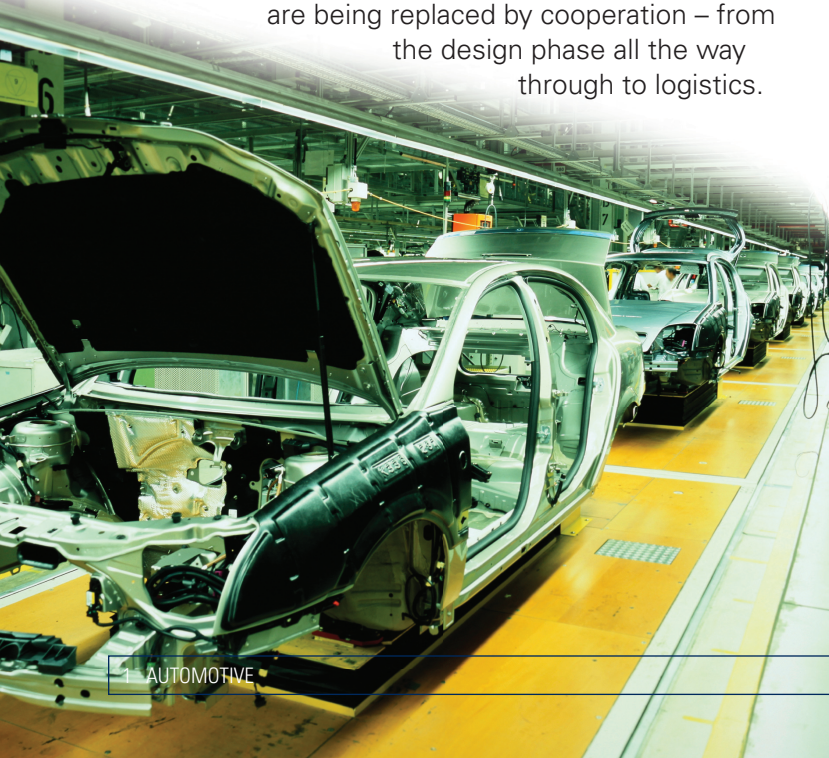
Along with increased competitive pressure, there is a trend towards consolidation among major brands and suppliers. With this consolidation there is tighter integration across the entire supply chain. Adversarial relationships between companies and their suppliers are being replaced by cooperation – from the design phase all the way through to logistics.

The Wide-Area RFID Solution.

The Mojix STAR System plays an important role in increasing efficiency and competitiveness, and promoting supply chain integration. RFID technology is hardly new to the automotive industry. Until recently, however, technology and economic limitations have restricted its use to high value assets such as tools, finished goods or major sub-assemblies. In order to track an item throughout a large factory, battery powered, active RFID tags are required, with a cost as high as \$50 per tag. When a car rolled off the assembly line, the tags needed to be reclaimed and recycled. Mojix has changed all that.

Wide-area RFID technology, now available from Mojix, provides the range of *active* RFID using *passive* RFID tags that range in cost from 5 cents to a few dollars per tag depending on the asset class. This breakthrough enables a whole new realm of possibilities for tracking at the bin level, and even the item level. Here are some examples.

Shipping and Receiving. "Source tagging" is the process of having second or third-tier suppliers tag components before they are shipped, either at the item or case/crate level. Tagging like this enables automated receiving at the next step in the chain, where the actual goods, identified by a Mojix STAR System, can be compared to data in an ERP system. The result is a more integrated supply chain. Source tagging is necessary for developing the superior economies of scale needed for working with large suppliers.



Staging. One of the core principles of lean manufacturing is to correct mistakes when and where they happen. With the Mojix STAR System, the entire staging floor is visible, not just the dock doors. If employees make a mistake – they place a case of parts in the wrong staging line, for example – the problem can be corrected before those goods ever reach a dock door or, even worse, get loaded onto the wrong truck.

Dock Door Discrimination. The Mojix STAR System radically improves the efficiency and functionality of dock door RFID readers. Due to a combination of factors, the reception of conventional dock door RFID readers is typically poor, which results in inaccurate data. Software applications exist that correct these inaccuracies with complex algorithms. However, this software is expensive and puts a burden on the enterprise system using the data. The Mojix STAR System excites and reads RFID tags in a way that eliminates this problem altogether, resulting in substantial CAPEX and OPEX cost reductions.

Re-work. Managing re-work is one of the most sensitive tasks in automotive manufacturing. RFID can help maximize the efficiency of this “necessary evil.” When a car that needs re-work comes off the assembly line, it can be tagged and tracked so that no one has to waste time searching for it. In addition to tracking location, each tag can be time-stamped to track the hours spent in re-work. This creates a simple way to prioritize problems in terms of cost-to-fix.

Work-in-Process. Work-in-Process (WIP) and Just-in-time (JIT) production go hand in hand to minimize inefficiency and waste while optimizing production. The Mojix Star system is being effectively applied in WIP to identify each item in a process flow. Mojix’s offering for WIP provides an ideal solution, acting as an instant business radar platform to provide key metrics and total visibility during the production process. Companies with global supply chains that integrate parts from multiple sources benefit greatly from the use of RFID in WIP to ensure that the right item is at the right place with the right quality, and to detect potential production problems prior to their occurrence.

Content Verification. In the case of high value specialty vehicles such as armored cars or ambulances, non-standard components that must be installed as the chassis moves along the line can be tagged. When the vehicle rolls off the line, these tags can be read to verify that the vehicle matches the customer’s specifications.

Lot Management. RFID technology makes parking lot management a simpler task. With RFID tags, any given vehicle can be instantly located. Furthermore, the tags can contain information, like VIN numbers, that can be checked at the time of shipment to verify they are being shipped to the right destination.

Active Performance with Passive Economics. Major auto brands are using the Mojix STAR System for dock door discrimination, to track vehicles that must undergo re-work and to monitor high-value assets – and these are only a few examples of the system’s capabilities. Mojix is the only company that offers real time location sensing (RTLS) with passive RFID technology, with a single system that can cover multiple business use cases across the automotive supply chain. The combination of low-cost tags, extreme range and compatibility with all major ERP and SCM applications makes the STAR system an ideal RTLS solution for automotive manufacturing applications.

For more information....



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