

The truck and bus manufacturer is using EPC Gen 2 tags to process the receipt, picking and shipping of replacement parts, and to guarantee their authenticity.

By Rhea Wessel

Jan. 27, 2010—[Iveco](#), a commercial truck and bus manufacturer owned by the [Fiat Group](#), plans to expand the RFID system it uses to process the receipt, picking and shipping of replacement parts, as well as guarantee their authenticity. The application, which has been in operation at Iveco's distribution center in Turin, Italy, for approximately one year, will be installed at a DC in Madrid during the few next weeks.

Iveco works closely with logistics company [Kuehne+Nagel](#), which runs the 190,000-square-meter (2-million-square-foot) Turin facility on Iveco's behalf. The two partners, cooperating with supply chain consulting firm [Alfaproject](#), developed the RFID-based system as part of the so-called PARTS.iD project.



Stefano Fantini, Iveco's customer service supply chain director

Paolo Guidi, Kuehne+Nagel's sales and marketing director, says the project was the first in Europe to employ radio frequency identification to manage spare parts in the automotive industry.

Iveco, which reported sales of 192,000 trucks in 2008, supplies spare parts for its trucks and buses through its network of nearly 3,500 authorized repair shops in 100 countries. When vehicles need to be fixed, the company's repair shops place orders for the necessary parts, if they are not already available on site. Many orders must be filled overnight and arrive the next morning. Iveco could experience errors with its shipping process, however, due to the time pressure placed on workers and the number of parts it supplies. That's why the company launched the PARTS.iD project, which is focused on seeking ways in which to improve its picking and shipping processes.

Parts availability is a key factor to guaranteeing profitability for transport operators, says Stefano Fantini, Iveco's customer service supply chain director. His company's goal, he indicates, is to offer customers a complete catalog of original parts via fast and reliable distribution.

In January 2008, during the project's first phase, Alfaproject conducted a feasibility study and proposed the use of RFID to improve the incoming goods, picking and shipping processes. Iveco agreed to the idea, but saw an additional use for the technology—to further assure customers that the Iveco parts used to repair their vehicles are authentic, and not counterfeit.

At that point, Iveco decided to implement RFID, together with Kuehne+Nagel, at the Turin distribution center. The partners began to review suppliers' tenders for the project in March 2008, and in May

installed a pilot version of the system at the DC.

At the Turin distribution center, Kuehne+Nagel receives parts shipped by suppliers, and moves them to an incoming-goods area. A worker then uses an [Intermec](#) printer-encoder to produce an adhesive label containing a passive RFID tag complying with the EPC Gen 2 and ISO 18000-6c standards. The label is encoded with an ID number and printed with a bar code and other information. The bar code replicates the tag ID number so that dealers can utilize the same tracking number.



*Paolo Guidi,
Kuehne+Nagel's sales
and marketing director*

The employee attaches the label to the exterior of the box that holds the incoming part or parts. The company tags some parts at the item level and others at the container level, depending on how valuable the parts are, as well as the specific process for managing those components. Iveco reports that it is tagging 50 percent of its parts to develop and refine the RFID-based processes within its business before expanding the application.

"In 2010, the company will tag all the packages shipped from Turin," says Alessandro Dandolo, Alfaproject's managing partner.

"We are not asking suppliers to tag at the moment," Fantini adds, "because we are tagging enough by ourselves to develop the process."

Once multiple boxes are tagged, they are placed on pallets loaded onto carts. A truck driver pulls a train of carts through an Intermec RFID portal, which reads the tags' ID numbers. A green light indicates the driver is moving the intended parts to the facility's warehouse, where they are then stored in stacks on the floor.

When a customer places an order, the system generates a picking list, and a forklift driver uses a handheld bar-code scanner to retrieve the requested parts. The driver then moves the parts to a scale, to be weighed and identified by RFID. Iveco and Kuehne+Nagel opted against using the technology to pick goods from stacks on the warehouse floor, since the items must be weighed anyway before being shipped to a repair center, and stationary RFID interrogators could be installed on the scales. Once goods are identified and weighed on one of the four scales, the RFID system confirms that the proper items were picked. If not, then a new picking order is sent to the handheld bar-code scanner. Once proper picking has been confirmed, an RFID shipping label is generated, and the worker applies that label to the box—or, in some situations, to the parts themselves.

Next, the forklift operator loads the parts onto trucks, passing through a dock-door RFID portal, which reads the RFID shipping tag (the portal is instructed to search for only that particular tag, rather than those on parts or boxes of parts). A green light indicates the operator has placed the correct parts on the truck bed.

Iveco to Expand RFID System for Managing Replacement Parts

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By the end of 2008, the RFID system was fully operational. Only two dock doors were outfitted with portal readers during the first phase of the project, in order to reduce expenses. The dock doors are used for goods shipped to southern Italy. The system's designers wanted to test dock-door portal readers, so they randomly chose two doors to outfit with RFID.

For parts headed to other regions, the company reads the RFID tags for the last time once the shipping label is attached. At the dock door, a worker reads the bar code on the label, and the system confirms that the correct goods are being sent to the proper locations.

During the next several weeks, Iveco plans to install interrogators at its facility in Madrid, so it can begin identifying tagged parts moved to that location from the Turin facility.

Additionally, Iveco is considering employing RFID to track parts in reverse logistics—that is, when a used engine must be returned to Iveco from repair shops for rebuilding.