

THE MAGAZINE FOR LOGISTICS PLANNING

LOGISTICS

magazine

www.logistics-mag.com

NOVEMBER/DECEMBER 2008 VOL. 11 NO. 6

Are You At Risk?

The new generation of workers:

> Will companies have to change
to adapt to the Millennials?

> **Also:** *The Obama Mystery*



RFID in Cold Chain Management

BY NICOLAS HIEN

When distributing refrigerated products, cold chain management represents a fundamental logistics goal and a major operational constraint for organizations. To confront such challenges, many companies are turning to RFID (Radio-Frequency Identification) which offers interesting solutions for improving the traceability and tracking of temperature.

WHAT IS COLD CHAIN MANAGEMENT?

Cold chain management can be defined as the set of measures taken to maintain products at an appropriate temperature throughout the supply chain. A break in this chain, which takes the form of a rise in temperature above the acceptable upper limits for the product transported or stored, can generate a deterioration of the product and even lead to contamination by creating an environment favourable to the development of bacterial strains. The risks of danger to public health explain why the transport and storage of food or pharmaceutical products, subject to cold chain requirements, are governed by a set of regulations submitting different links of the supply chain to rigorous control.

RFID APPLICATIONS FOR MANAGING THE COLD CHAIN

Currently, a number of proven solutions exist for control of the cold chain: electronic temperature sensors, or thermochromic ink indicators. But RFID is likely to significantly increase the effectiveness of cold chain management because of its ability to provide much more detailed information than the previously mentioned solutions.

Although RFID technology is still in a growth phase and may not attain maturity until around 2012, RFID applications for cold chain management are currently functional and should experience a significant expansion in the number of implementations in coming years. In particular, the pharmaceutical industry should be a leader in the sector since new regulations on traceability, the need for refrigeration of certain products, combined with their high added value make this sector an ideal candidate for deployment of this technology. The food industry, however, is not far behind, and many initiatives are currently in process both in the United States and Canada.



A rise in temperature above the acceptable upper limits for the product transported or stored, can generate a deterioration of the product and even lead to contamination.

In the context of refrigerated products, the RFID microchip, with its emitting and receiving functions and its own power source (or active microchip), associated with a temperature control system, collects a set of data on product temperatures and transmits it to an information system through an RFID antenna. The user can thus precisely track the temperature day by day, hour by hour and even minute by minute through the information system. The challenge then becomes

RFID offers interesting solutions for organizations that want to apply the five "R's" of logistics "the Right product, at the Right time, to the Right place, at the Right price, in the Right condition" while accepting the challenge of a 6th R: at the Right temperature!

the management, processing and evaluation of this information flow. The system must, for example, be able to reconstitute the temperature history, generate alerts if the temperature exceeds a pre-established limit, and provide all necessary management reports to the organization. Many modules specialized in cold chain management provide all of these features, for example, ColdStream from

Sensitech or Arvato Services Healthcare.

The benefits of deploying this technology are multiple: It makes it possible to identify disruptions of the cold chain and facilitates the determination of responsibilities for the problems through its ability to reconstitute the temperature variation history. It also provides the necessary tools for the implementation of a quality assurance system by detecting unacceptable temperature variations, helping to identify the causes and thus making it possible to take appropriate corrective actions.

In conclusion, with the increase of legislative pressures intended to strengthen control of the cold chain, organizations are tending to increase their investments in the sector in order to be able to better track temperatures throughout the supply chain. From this perspective, RFID offers interesting solutions for organizations that want to apply the five "R's" of logistics "the Right product, at the Right time, to the Right place, at the Right price, in the Right condition" while accepting the challenge of a 6th R: at the Right temperature! ■

Nicolas Hien is project director for the 4L2 Group
You can reach him at: (514) 758-4328 or nhien@groupe4l2.com