



## SUCCESS STORY



# Enabling Information Exchange between CHEP™ and its Customers using PLUS ID (RFID-enabled) Pallets



## PARTNER PROFILE Solution Summary

### *Industry*

Supply Chain Services

### *Challenges*

Develop a capability to share information between trading partners using RFID technology for CHEP and its customers. The solution needed to be cost-effective, while delivering significant benefits to businesses through advancements in pallet-level data capture and information sharing.

### + Introduction

Leading retailers and manufacturers throughout the world are implementing Radio Frequency Identification (RFID) in an effort to further improve supply chain efficiencies. To maximize the benefit of RFID, companies will collect and share RFID-generated event information in order to track their products, as well as returnable assets throughout the supply chain. The EPCglobal Network™ is the system that allows companies to effectively and securely share that information with their trading partners.

Demonstrations of real business value created through RFID technology and the EPCglobal Network help companies understand how these technologies can benefit them and their customers. One such example is a recent pilot at CHEP's Innovation Center in Davenport, Florida.

### + Global Infrastructure to Meet Global Pallet and Container Needs

As the global leader in pallet and container pooling services, CHEP serves customers in a wide range of industries. Pallet and container pooling is a strategic business option for leading manufacturers and retailers that involves the shared use of pallets and containers.

Today, CHEP utilizes over 265 million reusable pallets and containers to provide equipment-pooling solutions for more than 300,000 customers in 42 countries. CHEP's customers include some of the world's leading manufacturers and retailers.



Where it all comes together.™



## SUCCESS STORY

### Solution

CHEP developed a pilot program demonstrated in March of 2004 to further enhance its PLUS ID RFID-tagged rental pallet service offering. The pilot program brought together industry-leading offerings from RedPrairie,<sup>™</sup> GlobeRanger,<sup>™</sup> Franwell,<sup>™</sup> and VeriSign<sup>®</sup> to showcase information sharing between trading partners through the entire supply chain. Through the EPCglobal Network, companies using the Plus ID Service can exchange information about their products in real-time and with improved accuracy.

### Results

The pilot program demonstrated that RFID tracking at the pallet level and data exchange through the EPCglobal Network can be efficiently implemented now.

*“We did this pilot to demonstrate that the main benefit of RFID technology is in information sharing. It is not just using tags or having the right readers. It comes from the ability of partners to share information across the supply chain. A lot of this information flows on the EPC registry that has been designed by VeriSign. Through this pilot, we were able to demonstrate that this is not just a pipe dream or vaporware—this is something we have put into action and has now been showcased to hundreds of our customers.”*

Puneet Sawhney, Program Manager for RFID, CHEP

The large-scale nature of CHEP's business made streamlining its systems through RFID and the EPCglobal Network an obvious business opportunity. Additionally, many of CHEP's largest customers are on the leading edge of RFID. CHEP was committed to developing products and services that could deliver the benefits of RFID technologies to their customers' supply chains. Having played a leading role in RFID development for the last five years, CHEP firmly believes the value of RFID lies in real-time data capture and sharing of this asset-level information between its customers. By introducing an RFID-tagged pooled pallet service offering called PLUS ID, CHEP provided its customers the capability to achieve 100 percent read rate at the pallet level.

### + Leveraging RFID Technology and the EPCglobal Network for Pallet and Container Pooling

RFID technology uses Electronic Product Codes (EPCs) to provide businesses with a view of individual products and materials as they travel through the supply chain. An RFID tag can be attached to individual products, cases, or pallets. To reduce costs, the RFID tags only hold an EPC that corresponds directly to the product, case, or pallet on which it is placed.

CHEP saw an opportunity to use RFID to allow companies to quickly and efficiently implement the power of pallet tracking into the supply chain. But they realized that success would involve more than just RFID tags and readers.

By experimenting with a system that would also give its customers access to information concerning product movement and location in the supply chain, CHEP demonstrated the true business value of RFID technology. As part of the pilot, CHEP teamed with VeriSign, Inc., RedPrairie, GlobeRanger, and Franwell.

### + Developing the Plus ID Service Pilot

As a global leader and an essential part of many supply chains, CHEP recognized that their customers needed a way to quickly and cost-effectively gain benefits from RFID. In response, they set out to develop a solution that would deliver improved supply chain administration through real-time sharing of RFID information with all the trading partners.

CHEP brought together a group of forward-thinking companies to help in the development of an innovative pallet tracking system that would leverage both RFID and the EPCglobal Network.

“We presented our problems to the technology vendors with very high expectations,” said Puneet Sawhney, Program Manager at CHEP. “They were able to respond to our needs. It was a collection of the best minds that led to an implementation with the potential to truly improve business processes.”

In order for the system to provide maximum benefit, the information that comes off of RFID readers needs to be organized, shared, and utilized. Each of these steps is accomplished through diverse applications that are designed to respond to each specific need.

For the CHEP implementation, the edge application that provided device, data, and process management was developed on GlobeRanger's innovative Edgeware<sup>™</sup> platform, iMotion.<sup>™</sup> The product enabled the control of all RFID readers, tags, and antennae and the integration of RFID data with the multiple backend systems as well as VeriSign's EPC Services. The flexible nature of the platform allowed the project developers to quickly build the required solution—a key component in getting the program up and running fast.

### *CHEP Plus ID RFID-Enabled Pallet Service*

The Plus ID Service offering is based on extensive and rigorous research work that CHEP has undertaken in the past five years. This research includes an aggressive pilot program launched in March of 2004. It is founded on “best-of-breed” tagging technology that has been proven in real operational environments. The constituent elements of the service offering are:

- Provision of EPC tagged reusable wooden pallets to a given customer location.
- Each pallet is shipped with a read/writeable EPC tag, compliant with the UHF protocol of EPCglobal and is operable under local radio communications regulations.
- Tags are designed in a form factor and affixed to the pallet to provide 100 percent read in normal operational conditions in the supply chain.
- All tagged pallets are fully operational for RFID tracking and tracing across supply chains via the EPCglobal Network.

Sharing of data was accomplished utilizing the EPCglobal Network through several VeriSign services. An important part of VeriSign's involvement included the Object Naming Service (ONS). In early 2004, VeriSign was selected to oversee the ONS for the EPCglobal Network. Similar to the Domain Name Service (DNS) of the Internet, the ONS provides an identifiable network location where information on specific EPCs is stored. This allows authorized partners to access information on corresponding EPCs instantly.

In addition to ONS, VeriSign EPC Information Services (EPC-IS) were utilized for the storage and retrieval of detailed product information on each unit as it travels through the supply chain. VeriSign EPC Discovery Services were employed to manage partner-specific EPC data, creating the ability to create a track and trace history of the pallet's movement. Discovery Services are essential for delivering the real-time supply chain views promised by RFID-enabled pallets.

From the enterprise systems perspective, CHEP employed warehouse management software from RedPrairie and Franwell. At the manufacturer level, Franwell provided an automatic identification data capture (AIDC) system that delivers real-time inventory visibility and fundamental business management and control systems. At the retail distribution level, RedPrairie's innovative LENS<sup>®</sup> product was employed. With this application CHEP was able to integrate granular information from a diverse group of sources with a wide variety of legacy and third-party systems, giving customers a truly global, end-to-end view of inventory, orders, and shipments across the supply chain.

The ability to incorporate both of these software applications demonstrates the benefit of interoperability across multiple systems enabled by standards-based sharing and use of information.

#### **+ The Technology in Action**

Once put in place, the pallet-level RFID tracking system developed by CHEP brought together technologies that tackled complex RFID issues to deliver a system that functions seamlessly and offers true business benefits. Here's how the service works.

**Step One:** CHEP ships RFID-tagged pallets to a manufacturer. The pallets are read as they leave CHEP's Service Center. CHEP's inventory system and EPC-IS are automatically updated with this information.

**Step Two:** The pallets enter the manufacturer's warehouse and are read at the dock door. This read, captured by GlobeRanger's edge application, provides a receipt confirmation to CHEP enabling responsibility transfer to the manufacturer.

**Step Three:** The manufacturer loads the pallet with RFID-tagged cases that are then associated with the tagged pallet, creating what is known as a “unit” load. Read information is captured by the edge application and sent to the warehouse management system to update inventory and to the manufacturer's EPC-IS to update the EPCglobal Network. From here on, the unit load can be tracked by simply scanning pallets rather than individual cases.

**Step Four:** The pallets are shipped to the distributor, as purchase orders are received. As they leave the manufacturer's facility, RFID readers scan the pallets. The edge application automatically updates the manufacturer's EPC-IS with unit load information. An advance shipping notice is sent to the distributor.



## SUCCESS STORY

### *Overcoming Limitations of Accurate RFID Case Reading*

One of the implementation challenges of RFID is to achieve accurate tag reads of the cases on a pallet, especially if the cases contain water or metal. Jennifer Mao, VP of Marketing at GlobeRanger explains how the Plus ID Service provides a creative work-around to the constraints posed by the physics of RFID.

“One hundred percent read rates of cases on a pallet are difficult to achieve for a variety of reasons. For the CHEP implementation, individual case tags are read on the conveyor during the picking process, then associated with a pallet tag as the pallet is being built. So as long as you can read the pallet tag, you will know all the tagged cases through association. At CHEP, we leveraged the EPC Network Services to communicate pallet and associated cases between trading partners.”

**Step Five:** When received by the distributor, the pallet is read and validated by the edge application. VeriSign services are once again engaged as the ONS directs queries to the manufacturer's EPC-IS, which supplies the unit load information associated with the pallet. The information is used to update the distributor's warehouse management system. Finally, the workflow updates the distributor's EPC-IS, confirming the receipt of the pallet and its associated cases.

The data captured through the use of pallet-level RFID tracking enables companies to gain visibility into shipment movement. At the end of the process, the complete supply chain path of the pallet, including associated case information, is visible. This valuable information helps in business decision making, including forecasting and replenishment of goods. Reductions in labor can be achieved thanks to more “touchless” product handling. Dispatch, receipt, and picking processes can be more fully automated.

The approach demonstrated by CHEP also helps to overcome some of the limitations currently facing RFID technologies. By creating unit loads that relate cases to a pallet, companies are not required to achieve 100 percent read rates at the case level in order to track shipments. Once all the case information has been associated with a pallet, that information can be accessed simply by reading the pallet and accessing information from the manufacturer's EPC-IS.

### **+ The Results**

The innovative program demonstrated that pallet-level RFID tracking is a viable technology that can be implemented today. It can automate many supply chain requirements such as delivery of shipping notices and receipt confirmations. The approach allows for improved sharing of information across the supply chain, as well as streamlining of business processes. Ultimately, this pilot program led to a clearer understanding of the information sharing mechanism which delivers real business benefits in several key areas:

#### Improved Supply Chain Administration

- More accurate invoicing
- Fewer order processing and delivery errors
- Streamlined equipment and product management
- Increased throughput for capacity-strained warehouses

#### Improved Product Management

- Greater visibility of stock movement
- More accurate and faster stock turns
- Reduced product waste
- Improved sales through on-shelf availability
- Traceability for more effective product recall

Additionally, companies have opportunities to expand their supply chain collaborations as more and more businesses begin to implement RFID and EPCglobal Network technologies.

## + The Plus ID Development Partners



- **CHEP.** As a leading supply chain company, CHEP has been a pioneer in the development and implementation of RFID technology. Its PLUS ID pallet solution is the outcome of five years of dedicated research and real life supply chain piloting activity across the globe. As a founding member of Auto-ID Center, CHEP has partnered with large companies to understand RFID and test its application outside of the laboratory in a real supply chain environment.

On the Web at [www.chep.com](http://www.chep.com).



- **Franwell.** Franwell is a leader in the research, development, and implementation of RFID technology that targets supply chain operations with special emphasis on the perishable foods industry. Franwell engineers have more than 20 years' experience providing software solutions for a variety of suppliers, with more than ten years focused on the use of RFID for the purpose of providing real-time inventory visibility. Franwell expertise extends beyond research and development to the practical engineering of radio frequency applications for diverse business requirements. Franwell RFID systems demonstrate the company's commitment to provide the best available resources to help businesses reduce supply chain costs today.

On the Web at [www.franwell.com](http://www.franwell.com).



- **GlobeRanger.** GlobeRanger is the leading provider of RFID and mobility software solutions. Its innovative Edgeware platform, iMotion, provides the critical infrastructure layer for managing devices, networks, data, and processes at the edge of the enterprise, enabling real-time response. iMotion serves as the foundation for GlobeRanger and its partners to rapidly develop, deploy, and manage RFID and mobile solutions.

On the Web at [www.globeranger.com](http://www.globeranger.com).



- **RedPrairie.** RedPrairie is a global leader in supply chain technology solutions that help customers achieve measurable logistics results, end-to-end across their extended supply chains. These solutions strive to drive down costs, improve customer service, and create competitive advantage. RedPrairie's RFID-enabled suite of supply chain execution solutions provide the industry's leading transportation, productivity, and distribution management capabilities, integrated with process management components for real-time visibility, event management and resolution, quality control, supplier collaboration, and performance measurement.

On the Web at [www.redprairie.com](http://www.redprairie.com).



## SUCCESS STORY



- **VeriSign.** VeriSign delivers Intelligent Infrastructure Services that make the Internet and telecommunications networks more reliable and secure. VeriSign EPC Starter Services™ is a bundle of hosted network services that will help you learn first-hand about the EPCglobal Network in a low-risk, low-cost way with a trusted, experienced partner. The EPC Starter Service provides a piloting environment that ensures data integrity and continuity making it suitable for enabling information sharing in multi-partner pilots.

### + Learn More

For additional information on EPCglobal Network implementations, contact a VeriSign representative at 1-866-372-7343 or visit [www.verisign.com/epc](http://www.verisign.com/epc).

**Visit us at [www.Verisign.com](http://www.Verisign.com) for more information.**

© 2005 VeriSign, Inc. All rights reserved. VeriSign, the VeriSign logo, "Where it all comes together," and other trademarks, service marks, and designs are registered or unregistered trademarks of VeriSign and its subsidiaries in the United States and in foreign countries. CHEP is a trademark of CHEP its affiliates or related companies or its licensors. Globoranger, iMotion, and Edgeware are trademarks of GlobeRanger Corporation. RedPrairie and LENS are trademarks of RedPrairie Corporation. EPCglobal Network is a trademark of EPCglobal, Inc.

00018979 04-25-2005