GS1 Australia

THE GREAT AUSTRALIAN TAST

FOUR'N TWENTY

**Patties to Montague EPC/RFID Pilot -
Case Study**

The Patties Foods to Montague Cold Storage EPC/RFID Pilot project originated from discussions between the various participants at GS1 Australia's Impetus conference in Melbourne, July 2005.

Above: Project scope illustration.

Background

Patties Food's, a GS1 Australia and EPCglobal member, were keen to learn more about the business benefits emerging EPC/RFID standards could deliver, after having successfully implemented GS1 eMessaging and bar coding standards across their business.

Montague Cold Storage, a strategic third party logistics partner of Patties, were invited to participate in the pilot project, as were Patties provider of bar coding and print solutions, Matthews Australasia. VeriSign were selected by GS1 Global Office to host the EPCIS database, while GS1 Australia's Professional Services team were assigned to manage the pilot.
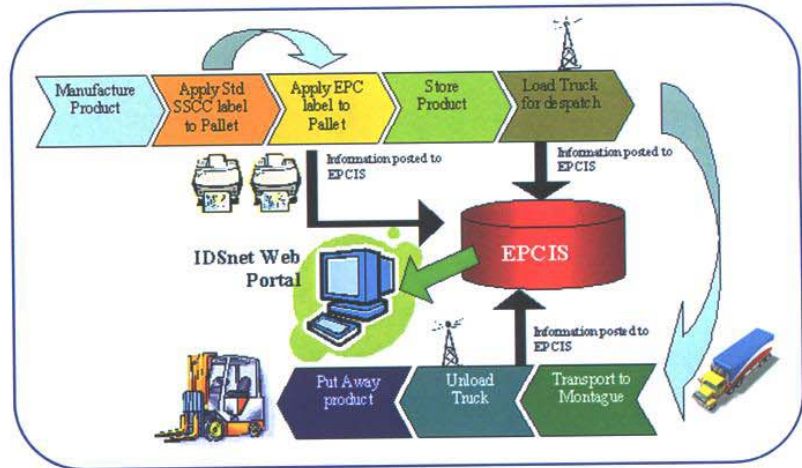
Pilot Objectives

The pilot project set out to test an RFID Class 1 Gen 2 implementation in a real world environment using the EPC Network™.

The primary objective of the trial was to determine the reliability and ease of integration of RFID Class 1 Gen 2 EPC technology into a production environment, in a true business-to-business setting.

The pilot project was set-up and completed in a production environment that is characterised by sub-zero temperatures, frozen product, frozen water and condensation. The pilot was seen as a world's first for testing the EPC/RFID standards in such a low temperature environment.

GS1 Australia's John Hearn, General Manager - Business Development and Professional Services, said "We saw this initial EPC/RFID pilot project as a great opportunity to gain valuable implementation experience with these new and emerging standards.

"Based on the international momentum EPC/RFID was gaining, a key objective was to use this pilot as foundational learning, which we would then build on and share with our GS1 members, customers and business partners."

Project Scope

Four'N'Twenty Pies and Jumbo Sausage Rolls, both manufactured at Patties Foods in Bairnsdale, Victoria, were chosen to be tracked at pallet level between Patties production facility to Montague in Narre Warren, approximately 300 kms away.

EPC/RFID labels were applied to the pallets and 'read' when loaded onto a truck at Patties, then 'read' again when being unloaded at Montague Cold Storage.

The project aimed at trialling all facets of the EPC Network. The information generated was transferred from the shop floor directly into the VeriSign hosted EPCIS database and made available through Matthew's web portal IDSnet.

Challenges

Whilst the physical design and set-up of the project was simple in concept, the project generated a range of challenges for the project team.

Owen Baker, Software Delivery Manager at Matthews and responsible for the design and implementation of the software explained, "We had to develop new software and hardware interfaces for the newly released RFID Class 1 Gen 2 Technology. After the design phase, our next challenge was to integrate the software and hardware components into the existing shop floor networks, and link these back to the EPCIS via the Internet."

All end-to-end testing of the pilot system was carried out whilst working in a 'live' production environment. Initially EPC/RFID tag read rates did not achieve a high level as was first anticipated, with varying results from a low 22 per cent at the beginning to 100 per cent at project end.

GS1 Australia's John Szabo, Senior Advisor - Professional Services, who project managed the pilot said, "Factors that may have impacted read rates ranged from local RF interference, environmental interference, data over-filtering, systems being unavailable, and even the positioning of the label in close proximity to products on the pallet."

Key Learnings

The project team gathered valuable learnings that could be shared with other organisations ready to embark on their own EPC/RFID pilots or full implementations.

- "Ensure the length of the pilot duration is adequate," said Szabo. "We extended the pilot to ensure enough data was collected to draw truly representative conclusions."

- Minor changes to system set-up, label placement, and software modifications were made from one production run to the next, leading to improved read rates.

- Every implementation of an EPC Network will have its own unique set of challenges and design requirements. Ensuring uninterrupted power supply to readers and other supporting equipment may seem trivial, but in an environment that requires 24 hours per day 'up time', you can't take any chances. EPC/RFID implementations should also incorporate system monitoring to ensure that all components of the EPC Network are functioning.

- The number of readers and antennas required is unique to every EPC implementation; their placement depends on the most appropriate locations to ensure information is captured. Environmental factors such as high metal, high moisture and solid walls will also impact on where readers and antennas should be placed.

- Label locations on assets, pallets or cartons will depend on product composition, physical environmental factors and antenna read ranges.

- The most important learnings to come out of the project related to tag confirmations and the level of EPC tag assignment (pallet versus carton).

- "We had no way of knowing if a tag had been read or not as it passed through the dock door," commented Szabo. "A visual notification or an audible 'e-tag' beep that sounded every time a tag was read would easily solve that problem."

Szabo also noted that, "whilst we decided to assign EPC tags at pallet level for the pilot, an alternative, once implemented into production, would be to also assign the EPC tag at carton level. With the appropriate software logic, a number of carton tags read through the dock door could represent a full pallet read without the requirement to read all carton tags on a pallet, removing the necessity for 100 per cent tag reads on all pallets."

Identifying the business benefits of RFID implementation

Whilst the scope of the pilot was limited, considerable benefits were identified.

"By eliminating manual bar code scanning of pallets or cartons before they are physically loaded or moved, the chances of the wrong product being loaded or dispatched is greatly reduced," said Patrick Leckning, Information Services Manager, at Montague Cold Storage. "Applying a unique EPC number at carton level will eliminate the issue of double scanning the same item as the system would recognise each individual carton uniquely."

"Increased efficiencies at both receipt and despatch are also anticipated with a full EPC implementation, as no line of sight is required to read pallet or carton tags, eliminating the current manual tasks of scanning individual bar coded pallets or cartons," said Leckning.

In addition, a full scale EPC implementation will enable monitoring of warehouse activities, such as time to load and unload deliveries and delivery times between sites.

"This additional information available will allow us to identify and reduce bottlenecks in our extended supply chain," said Joe Rettino, Patties General Manager, Purchasing and Supply. "In addition, the elimination of manual scanning will lead to an improvement in Occupational Health and Safety (OH&S) practices, which benefits everybody."

Another key benefit identified was the ability to simultaneously read pallets and containers (returnable assets), pallet contents (logistics units) and cartons (product units) by application of RFID technology.

"Beyond the RFID Pilot project, we have identified key areas within our business to apply this technology in the future: supply chain efficiencies, OH&S, and asset tracking," says Leckning.

Conclusion

The Patties to Montague EPC/RFID Pilot Project provided valuable learnings for all participating organisations, proving the technology does indeed work and offers many benefits.

The pilot additionally established that EPC tags can be reliably read in sub-zero temperatures and that these tags also remained operational after spending extended periods in sub-zero temperatures.

"The pilot trial has given us an insight," said Rettino. "Patties can see enormous benefit from EPC/RFID technology, particularly the visibility of bringing new products to market."

"Definitely contact GS1 Australia to find out what's been done with other businesses, and plan a way forward with their Professional Services team and Alliance Partners. GS1 are the experts, I only wish I had engaged them sooner," concluded Rettino.

Montague Cold Storage Director, Peter Quinn, said, "We see great potential in RFID and we intend to be an early adopter of this technology. Montague Cold Storage views the introduction and use of innovative technologies such as EPC/RFID to be one of the crucial competitive differentiators in our industry."

Phillip Biggs, Matthews National Sales and Marketing Manager concluded, "The pilot was a great success. It proved that the current EPC Gen 2 standard is very robust and is ready for supply chain improvement projects. We were very pleased that our IDSnet software solution was well suited to this important application."

Below: Joe Rettino at Patties loading dock.

Patties
FOODS

MONTAGUE
COLD STORAGE

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INTELLIGENT IDENTIFICATION

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