



New Zealand

Technology Prevents Theft

Erik Sundermann – Senior Consultant
Connecting The Dots 2009, 26.02.2009, Auckland

The global language of business

www.gs1.org



New Zealand

Electronic Article Surveillance

Electronic article surveillance (EAS) is a technological method to prevent shoplifting, mainly from retail stores





New Zealand

Source Tagging

Benefits:

- More discreetly-placed tags that will not adversely affect product presentation
- More tamper-proof if integrated in the product packaging
- Reduction in manpower time spent applying security labels in the store

NZSTA – New Zealand Source Tagging Alliance

- formed in 2008 to encourage more source tagging of products with RF-EAS
- www.nzsta.co.nz



New Zealand

Shrinkage vs. Theft

Four broad categories of shrinkage:

- Customer theft
- Supplier theft
- Internal theft (staff & “sweethearting”)
- Process & data quality



New Zealand

Supply Chain Visibility Using RFID

Anti-counterfeit / brand protection

- Was my product sold and distributed via the expected channels?
- Have counterfeit products entered the supply chain?
- Has the product been authenticated?



Chain of custody

Inventory visibility

Maintenance records / warranties





New Zealand

Supply Chain Visibility Using RFID

Anti-counterfeit / brand protection

Chain of custody

- Where did my product come from?
- Can the chain of custody be trusted?
- Where is my product located now?
- Was the shipment received securely as it moved across the ocean?

Inventory visibility

Maintenance records / warranties





New Zealand

Supply Chain Visibility Using RFID

Anti-counterfeit / brand protection

Chain of custody

Inventory visibility

- Have the displays reached the needed intermediate locations yet for next month's promotion?
- Where are the units in the lot that need to be recalled NOW?
- Where are the items with an expiration date of today?

Maintenance records / warranties





New Zealand

Supply Chain Visibility Using RFID

Anti-counterfeit / brand protection

Chain of custody

Inventory visibility

Maintenance records / warranties

- How long ago was this part on this machine/aircraft maintained?
- Who performed and where were the last 3 repairs?
- When is this component due to be inspected?





New Zealand

RFID As EAS: Feasibility Assessment

- Recent Research by the University of Arkansas (08.08.2008)
- Purpose: to determine the feasibility of Class 1 Gen 2 UHF RFID as a potential sales floor level theft deterrent system.
- Comparison of the technical performance capabilities of standard UHF RFID with common existing EAS technologies
 - acousto-magnetic (AM-EAS)
 - radio frequency (RF-EAS)



New Zealand

RFID As EAS: Feasibility Assessment

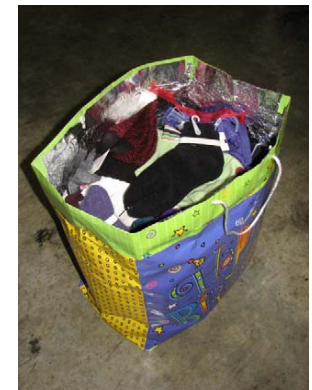
Baseline Scenarios

- One Tagged Item Along Six Paths
- One Tag At Three Orientations
- One Tagged Shoebox
- Fifty Tagged Items in a Shopping Bag Along Six Paths



Shoplifting Scenarios

- Fifty Items in a Booster Bag
- One Tagged Shoe, Worn
- One Tagged Shirt, Worn
- One Tagged Item Under Hat
- Ten Tagged Items, Running Through Portal
- One Tagged Item Held Close To Body
- One Tagged Item in a Bag of Untagged Clothes





New Zealand

RFID As EAS: Feasibility Assessment

FINDINGS:

- **Baseline Scenarios**
 - Overall, RFID performed very well, especially for reading single tags
 - General insensitivity to the path travelled through the read portal and the orientation of the tag
- **Shoplifting Scenarios**
 - Overall, RFID fared well during most of the testing scenarios
 - Body proximity demonstrated an adverse affect on read rates
 - Clothing was not found to be a significant RFID interferer
 - Height / speed of movement did not affect the results significantly
 - Different tag types (item-level vs. general purpose) lead to different performance characteristics



New Zealand

What about Standards?

EPCglobal EAS JRG

- Articulate functional requirements for the use of RFID as an EAS technology
- Completed its work in 2008
- Concerns about tag deactivation / privacy need to be addressed
- Catalyst for TA JRG



New Zealand

What about Standards?

EPCglobal Tag Alteration JRG

- “The requirements developed for Tag alteration will result in providing standardized approaches to disabling EPC tags in a manner that meets retailers’, manufacturers’ and consumers’ needs.”
- TA JRG will look at ways a retailer may alter a tag at Point Of Sale (POS). Such modifications may include, but are not limited to:
 - Hiding or destroying the contents of user memory
 - Altering, anonymising, or overwriting the EPC
 - Reducing the tag’s read range
 - Hiding the tag’s TID
 - Killing the tag
 - Other changes that may arise from the work of the JRG
- Call for participation in TA JRG: January 2009



New Zealand

Summary

- “Can RFID do what EAS does?”
 - Initial study indicate it can
 - Standards development work is underway
- “Can it do more?”
 - Source tagging will lead to increased visibility
 - Addresses shrinkage, not only theft
 - Theft prevention typically only a “by-product” of RFID
- “Will it cost more?”
 - Short/medium term: yes
 - Needs to be balanced against the additional benefits
 - Cost-effectiveness will depends on supply chain characteristics, product volumes, etc.



New Zealand

GS1 Contact Details

Erik Sundermann

Senior Consultant
Professional Services

T +64 9 820 3785

F +64 9 820 3789

M +64 21 433 002

Erik.Sundermann@gs1nz.org

<http://www.gs1nz.org>

GS1 New Zealand Inc.
Level 2 The Woolstore Design Centre
262 Thorndon Quay
Wellington