

A Unified Approach to Product Serialization, Product Security, and Brand Awareness

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WHO IMPACT (International Medical Products
Anti-Counterfeiting Taskforce) Conference

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**A Unified Approach to
Product Serialization,
Product Security, and Brand
Awareness**

Hyperlabel Technologies, Inc.

Supplying Technologies from Silverbrook
Research Pty. Ltd.

**Background on:
Serialization
Product Security
Brand Awareness and
Brand Loyalty**

Track and Trace Background

- A need exists to provide robust track and trace capability to pharmaceutical labeling
- Robust pedigree verification increasingly becoming mandatory
- Secure authentication by supply chain participants is increasingly important
- Authentication by the patient is also desirable
- Item-level tag cost is an important factor
- Need to encode EPC and/or other open standards

Track and Trace using RFID

- The best known current contender for product serialization and track & trace, using EPCglobal standards
- Challenges include:
 - Cost
 - Packaging design issues (metals, water, etc.)
 - Readability
 - Privacy

Anti-Counterfeiting Background

- Counterfeiting, diversion and unauthorized parallel trade are huge issues that:
 - Put patients at enormous risk
 - Create financial losses for companies
 - Create tax revenue losses for government
 - Create a potential liability for supply chain participants
 - Make the industry look bad

Anti-Counterfeiting Approaches

- Current anti-counterfeiting approaches are implemented at multiple levels:
 - Overt (relied on by consumers)
 - Covert (relied on by professionals)
- Challenges with current approaches:
 - Overt: Often easily copied
 - Covert: Expensive and/or not consumer oriented, often require lab analysis

Brand Loyalty and Awareness

Background

- Retail brand loyalty is rapidly diminishing
- Lack of effective, creative approaches to drive customer brand loyalty through product packaging and labeling
- Consumers are not often drawn in by conventional packaging
- Manufacturers lack methods to engage with consumers post-purchase
- Product packaging and the internet are essential but distinct marketing channels

Hyperlabel

Hyperlabel

What is it?

Hyperlabel: A Unified Approach

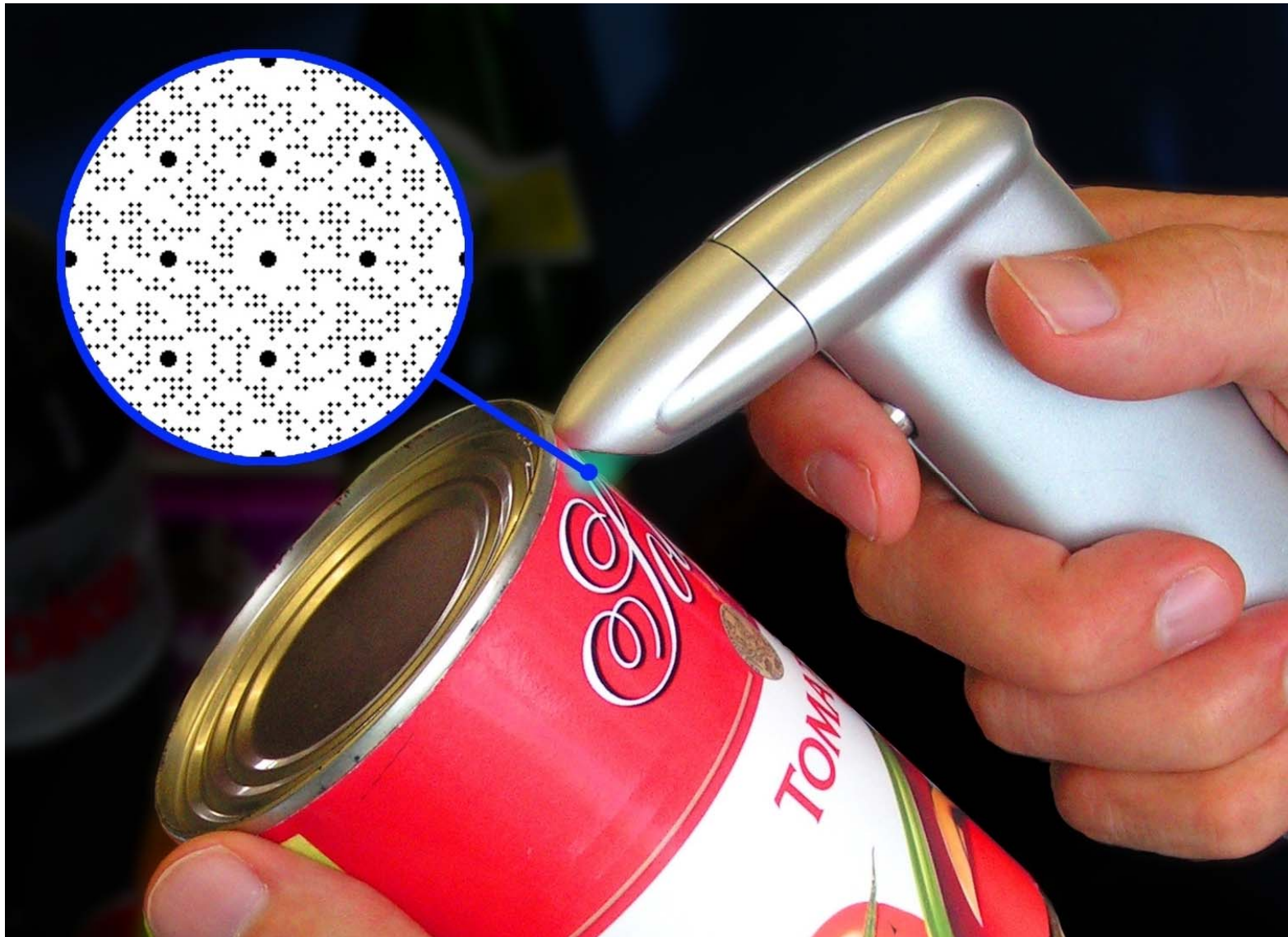
- Cost effective serialization and track & trace
- Robust anti-counterfeiting, including digital cryptography and authentication capabilities
- Brand awareness and brand loyalty through interactivity

Hyperlabel: What is it?

- Very small, invisible infrared tags
- Printed over the entire package or label
- Printed underneath colored ink
- Each tag encodes unique item ID (e.g. EPC)
- Unobtrusive: takes up no valuable real estate
- Can be scanned in any orientation
- Each tag in each x,y position is unique!

Hyperlabel

Hyperlabel Tags



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www.hyperlabel.com

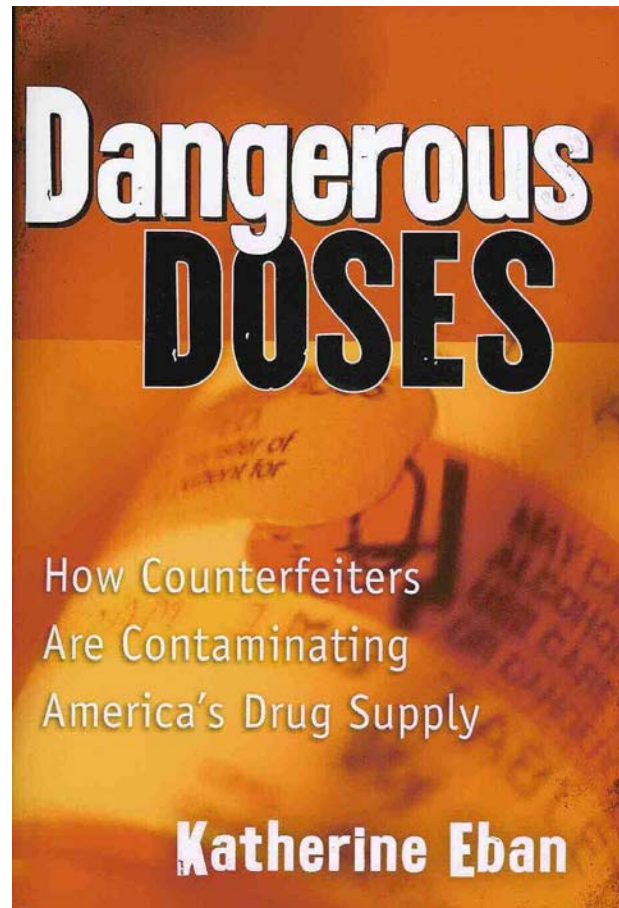
Hyperlabel

Hyperlabel Attributes

Serialization and Track & Trace

- Each tag encodes EPC, so each package or label is linked to a database for track & trace
- Hyperlabel uses the same emerging track & trace infrastructure as RFID
- Hyperlabel is functionally similar to RFID, but uses printing technologies rather than chip technologies
- Secure, digital authentication of product pedigrees

Anti-Counterfeiting



Florida ePedigree Requirements

- Florida required authentication using digital signatures from June 2006
- Hyperlabel supports NIST standard PKI digital signatures
- Florida's requirements are expected to be adopted by other states

Hyperlabel and RFID

- Hyperlabel complements RFID and promotes its adoption by enabling low cost, item-level tagging
- RFID will excel at pallet- and case-level
- Hyperlabel provides a cost effective solution at item-level where packaging and/or product contents are unfriendly to RFID (liquids and metals)

Hyperlabel: A New Option

Characteristic	2D barcode	EPC Gen2 RFID	Hyperlabel
Packaging design impact	Obtrusive	Can be high	Zero
Anti-counterfeiting	No	Limited	Yes
Supports full web interactivity	No	No	Yes
Low cost per item	Yes	No	Yes
Auto scannable	Manual	Automatic	Semi-automatic
Protects privacy	Yes	No	Yes

Anti-counterfeiting

- Invisible, so somewhat covert
- Printed underneath colored inks
- If counterfeited and passed, an alert would be triggered for multiple packages of the same item
- EPC tags can be copied or guessed, but forging a valid digital signature is intractable
- Can be verified by anybody in the distribution chain, including at/after point of sale by patient

Brand Loyalty

- Unique tags in each x,y position enable full web-like interactivity between the consumer and the manufacturer or brand owner
- Integrates packaging with online and 'over-the-air' marketing channels
- New ways of communicating with customers and building relationships (pharma examples):
 - direct re-ordering, or checking local availability
 - improve data on drug usage and patient compliance

Brand Loyalty: Pharma Applications

- Multiple 1-click opportunities on the same label:
 - Access product specs, history, expiry
 - Access info on drug interactions
 - Access info on side effects
 - Request text message (SMS) reminders to take medication on time
 - Direct product re-ordering
 - ... access all of this in your preferred language

Hyperlabel Interactivity

Hyperlabel-enabled **product authentication** by the consumer plus links to product specs, information on side effects, drug interactions, etc.



Hyperlabel Item Information



Your **Acme Pharma** Product

Made: Ireland

Batch: [XCB3451722]

Date: June 1, 2005

- ⚠ Go to **Drug Interactions**
- ⚠ Go to **Side Effects**
- 📱 Get **Text Message (SMS) reminders** to take your medication!

Hyperlabel

Printing Hyperlabel Tags

Printing Variable Tags

- Requires 600 dpi resolution
- Infrared Ink
- Other inks need to be transparent in the IR

Printing Variable Tags

- Memjet Label Printers designed to support Hyperlabel
- Memjet Label printers will have 5 ink channels that will give capability to print CMYKI
- Memjet Label Printers' printer controller chips have a code generator for generating Hyperlabel tags

New to Hyperlabel – High Speed Offset Printing

- Offset Infrared Ink Developed
- Tagged Labels and Packaging Printed at Offset Speeds
- So....., No Serialization and More Limited Anti-counterfeiting
- Allows Hyperlinking of Labels and Packaging

Hyperlabel: Tip of the iceberg for Interactive Paper

Interactive Paper

- Linking of publications to online content
 - Books
 - Newspapers
 - Magazines
- Paper initiated online search

Interactive Paper

- Linking of publications to online content
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- These very high volume consumer applications will provide the infrastructure to provide widespread, affordable Hyperlabel solutions

Hyperlabel

Hyperlabel Summary

Hyperlabel: A Unified Approach

Characteristic	Hyperlabel
Track and Trace	Full item-level support
Unique Item Identification	Low cost per item
Anti-Counterfeiting	Secure digital signatures
Supports web interactivity	Full support
Packaging design impact	Zero
Auto scannable	Semi-automatic
Protects privacy	Yes

Contact Details

Hyperlabel

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- For more information on Memjet Labels, visit www.memjetlabels.com.
- For more information on Silverbrook Research visit www.silverbrookresearch.com
- Also Silverbrook Research, Memjet Labels, and Hyperlabel have been invited to give presentations next week at the 30th Global Ink Jet Printing Conference, next week in Prague