



RFID in Health Care

Produced by RFID Journal

Co-Located Health Care Supply Chain Management Summit

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RFID: Patient Safety and Business Value

Michael Manley

Sr. Director, Health & Life Sciences RFID

Impinj, Inc.

Impinj Company Overview

- Leading Technical Innovator in Developing UHF Gen 2 Solutions for Item-Level and Supply Chain
 - Semiconductor and systems engineering expertise
 - First to Market with Gen 2 tag chip products
 - Established new industry benchmarks for quality, reliability, and delivery
 - Choice for healthcare and major pharmaceutical companies that require absolute accuracy and high throughput
- Products
 - Tag Chips, Readers, Reader Chips, Reader Antenna's, and focused services



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Strength and Experience in Healthcare

- First UHF Gen2 deployment on pharmaceutical packaging line (2007)
- Winner of the Frost & Sullivan Pharmaceutical Security Technology Innovation of the Year Award (2008)
- Focus
 - RFID enabling **packaging lines and healthcare solutions** through partners
 - Commercializing system components for reliability and scalability

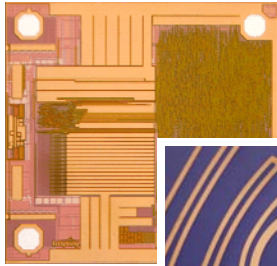


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Impinj RFID Components



Monza Tag Silicon Chips



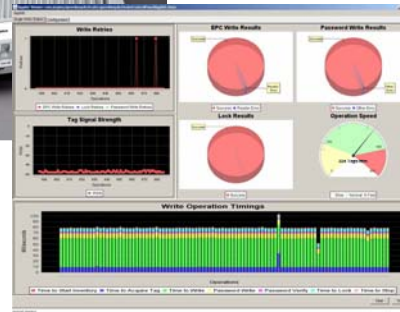
Tag Inlay Designs



Reader Antennas



Fixed Reader/Encoder



Software

↑ Impinj RFID "Subsystem"

↓ Impinj partners provide the complete system



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Real Applications

Passive RFID



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RFID | Packaging Line

Problem

- Brand protection, recalls
- Diversion & re-importation
- Anticipated regulatory action (serialization, FDA mandates, e-pedigree)
- Customer demands

Current protocol

- Lot control
- Established SOP's
- Fear serialization will ruin line Operating Efficiency



“The FDA revealed yesterday that the death toll from counterfeit heparin rose from 19 to 62 over the last 15 months starting in January 2007.” (FDA website)

The Washington Times

Indian firm probed over counterfeit medicine

Ranbaxy supplies drugs to U.S., Bush's AIDS initiative

Amy Fagan, Friday, August 1, 2008

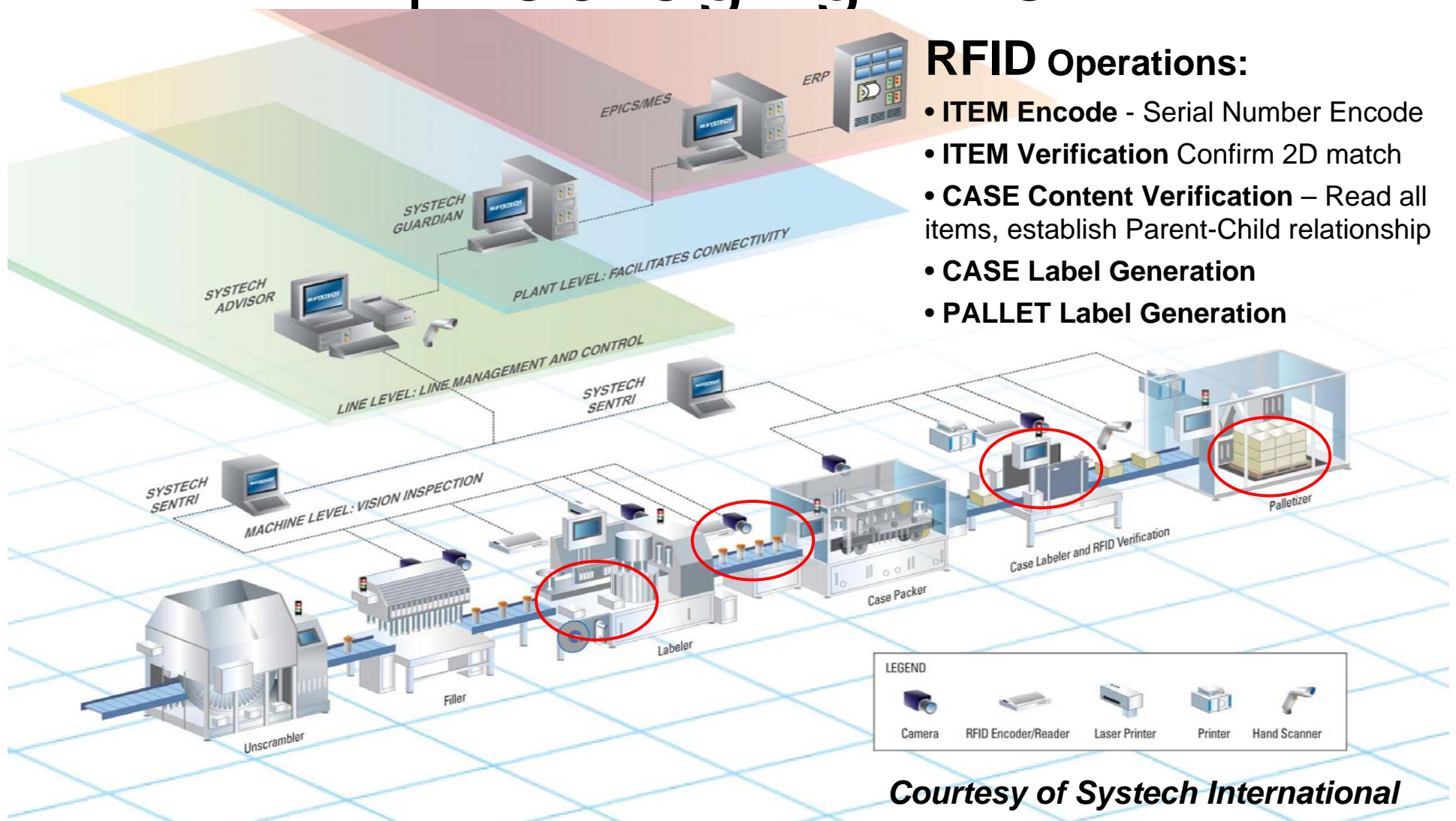


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RFID | Packaging Line RFID



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RFID | Business Value

Business Value

- Meet regulations while *improving* business processes
- Speed up line while serializing product: **Do not impede the speed!**
- Differentiate product with trading partners (generics)
- Diversion, serialized product enables visibility to diverted product, increase in revenue results

Quality Assurance

“RFID will simplify their In-Process Checks as they will no longer need to perform Case Content Verification as the RFID Tunnel ensures that the quantities within the cases are accurate.”

“With RFID you can pack-out your cases as normal and simply run them through an RFID Tunnel to capture the contents of the case and RFID case label to establish Parent-Child Relationships. This is also extremely beneficial downstream at our DC's and Wholesalers as their processes (i.e. Mixed Totes) would suffer from Line of Sight requirements.”

Diversion

“our product is re-imported and we believe we are losing ~ \$20M in annual revenues as a result, we look for serialization with RFID to help close that loop.”



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RFID | Operating Room

Problem

- Retained surgical items
- Among most common items, sponges
- Retention associated with correct sponge count in 88% of cases
- Detection is difficult

Current protocol

- Manual counts
- OR time is costly
- Liability, CMS reimbursement rules



764 Medicare incidents in 2006



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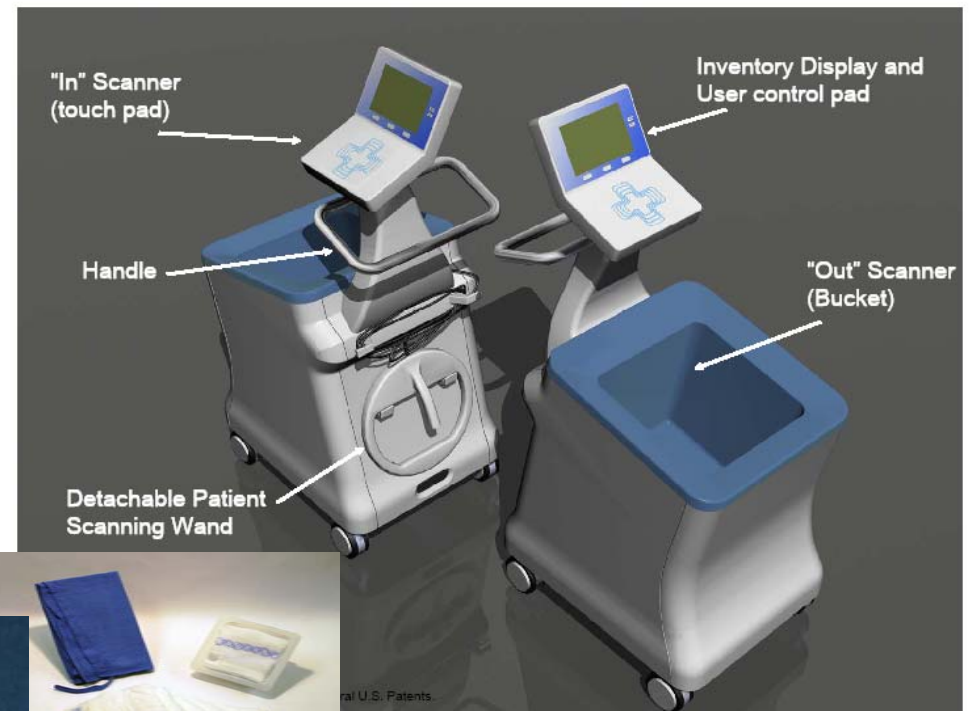
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RFID | SmartSponge System

RFID enabled solution

- Pre-tagged sponges & towels
- Reader counts dispensed sponges
- Reader counts discarded sponges
- Wand reads through patient – detects RFID

FDA Approved in 2007



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RFID | Business Value



Business Value

- Increased patient safety
- Minimize liability
- Improved OR efficiency
- Eliminates unnecessary X-rays
- Reduces biohazard exposure
- Piece of mind? Priceless



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RFID | Hospital or Lab

Problem

- Tracking high value and/or secure accessed goods
 - Orthopedic, Cardiovascular supplies, Surgical implants
 - Reagents
 - Class II pharmaceuticals
 - Bio-samples
- Security
 - Chain-of-custody
 - Secure storage
 - Government regulations



Current Protocol

- Personnel resource intensive
- Logs, computer check out, etc.



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RFID | Intelligent Enclosures



TERS O
SOLUTIONS, INC.



Network enabled
RFID cabinet is
placed at the point of
use



Pre-authorized users
access the cabinet
with RFID cards



RFID tagged
inventory is added
and/or removed from
the cabinet



System automatically
records transactions;
monitors environment
(eg. temperature)



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RFID | Business Value

Business Value

- Increased revenue
 - Reduced “out of stock”
 - Auto-reordering
 - Sales trend analysis
- Reduced inventory costs
 - Write-offs
 - Shrinkage
 - Management overhead
- Improved
 - Recall management
 - Government compliance



Ambient



Freezer

Take Aways

- UHF Gen2 passive RFID, robust and flexible platform
- Production deployments, real data
- Impinj are subject matter experts on UHF Gen2 and near-field



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Thank You

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Additional Information



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Why UHF Gen2?

- Standards Based
 - Supports GS1 data format
 - Interoperable
 - Air protocol is fast
- UHF is versatile
 - Items, cases, pallets
 - Near-field (liquid, metals, blister packs)
 - Far-field (cardboard, wood, plastics)
 - Both! (across the supply chain)
- Lower cost
 - Tags are less complex to manufacture
 - 40 + OEM's offer devices in all form factors
 - Single infrastructure for all passive RFID needs
- Industry adoption (supply chain)
 - Mckesson, ASB, Cardinal, WM, DoD



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