QR Codes / Authentication Technologies - a Scalable Solution

ARC World Industry Forum 2012

February 8, 2012

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Who is Sekuworks?

- NASPO Class 1 Certified High Security Printer and Technology Company
- Unique Product Authentication Technologies
  - High resolution flexographic printing and converting
  - Provide both web & sheet intaglio print capability (currency printing)
  - Single stream printing in combination with multilayered technology application
  - Labels, Seals, Tapes & Documents - Track & Trace Software
  - Patented and proprietary authentication and tracking technologies

- Facility
  - 41,000 Sq Ft Production operation based near Cincinnati, OH  USA
  - Class 5 - 18,000 Cubic Foot Vault: Storage of ALL finished product
  - State of the art surveillance and supply chain procedures

- Customers: Governments and Major corporations & Small Businesses
  - Electronics / Software / Pharma / Chemicals / Wine & Spirits / Consumer Products
The Problems / The Needs

- Identify individual asset units
- Verify unit is genuine
- Track & Trace unit throughout supply chain
- Link information to the unit code
- Simple interface
- Leverage gathered data in system
- Connect directly to end user (Consumer)
Unit Identification

• One Asset – One Fingerprint
  — Creates a unique license plate
    • Assigns identity, not just a number
  — Facilitates verification
  — Supports Track & Trace
  — Links to “How to Tell”
  — Support bridge to additional data

Assigning a unique number allows the interface with an informational system linked to a specific asset.
A Successful QR Code Format

Printed QR & human readable number

TP12345678

Data content of the code

HTTP://SEKQR.COM/091/000000TP12345678

Secure server link / Project code / Unit Identifier

Specifications of the code

• Number of modules: 25 x 25
• Capacity: 38 characters (Alpha caps, numeric, specials)
• Error correction level: Medium
• Randomized Serial number size based on fixed data requirements: 16
• 1.9 Trillion unique codes per project
What the System Provides

The QR system can support a wide variety of programs:

- Brand protection
- Verification of genuine product
- Diversion and gray market control
- Inventory control
- Pick & Pack efficiency
- Sales tracking
- Warranty return control
- Recall program control
- Information dissemination
- Marketing tie-in
- Consumer tracking and loyalty programs
The Downside

• Codes can be:
  — Copied
  — Removed, Altered so as unreadable
  — Parallel systems implemented
    • Codes generated sending user to fake website - all codes Valid!

The Solution
- Link QR to Authentication Technology
- Utilize system functionality to identify and address breaches
Comprehensive Brand Security Program

- Successful programs involve all stakeholders
  - Management
  - Brand Protection Team
  - Design, Sales & Marketing
  - Warehousing and Distribution
  - Authorized Contractors
  - Secondary Distributors and Retailers
  - Consumers

- Program includes: Authentication, Tamper Indication, Verification, Track & Trace and Education

- Additional components: Web Monitoring, Investigation, Take down, and Litigation.
One Solution Set – Authentication + Verification

Layered Physical Security Coupled with Code

Secure Data Interface

QR Verification Tracking Module

Code: 000000324BD55AD4

Verification Status: The code is Valid / Genuine

Your authentication label includes the Security Anti-Counterfeit features listed below. Please examine your label to complete the Authentication.

Intaglio print - Latent “Hidden” key image - High security key line security pattern

Micro text in security pattern

Human Readable Code

QR Tracking - QR 2D Matrix Code - Camera Phone or Scanner readable

If your code is not valid or you do not see the listed security features please call: 1-888-XXX-XXXX

Powered by: SEKUWORKS
A Scalable System

- **System design dependent on Goals**
  - Simple verification to integration with ERP (Enterprise Resource Planning)
    - **Simple system** – Verification only
      - Valid or non valid code
      - Link to Brand ID and limited data
      - Limited Reporting
    - **Full Integration** – Track & Trace
      - Brand Protection
      - Finance / Accounting
      - Manufacturing / Supply chain management
      - Customer Relationship management
      - Access Control (User privileges at multiple levels)
• **Checking the code**
  - Unique QR code scanned by smart phone (scanner)
  - QR App links to secure database via web
  - Information linked to code is downloaded to phone
Verification Benefits

- Provides unique code for each unit
- Checks for “Valid” or “Not Valid” code
- Links unit code to assigned asset data
- Provides “how to tell” authentication data
- Web links to additional information / marketing
- Out of bounds identification
- Expiration notification
- Subcontractor unit audit
Adding Data Input for Track & Trace
Tracking Data Management System

Secure Web based interactive system
Tracking Data Management System

Packaging Facility Main Page

Packout Facility Module

- Activate Labels on Product
- Associate Cases to Pallet
- Reconcile Activated Labels
- Finished Goods Shipping
- Barcode Rework/Editing
- Search Database
- Field Table Management
Unit / Case / Pallet

Associate Many to One

Manufacturing

UNIT

CASE

WAREHOUSING & DISTRIBUTION

PALLET and/or CONTAINER

OR Connect to RFID
Tracking Data Management System

Supply Chain Main page

Supply Chain Module

- Receiving
- Shipping
- Scrapping & Reporting
- Search Database
- Upload Transaction File
Moving Through the Supply Chain

Re-Assignment of Units

Warehousing & Distribution

Assign to Ship Point #1

Assign to Ship Point #2

Receiving

Retained or Damaged

Retail #1

Retail #2
Supply Chain Interaction

- Brand Protection, Sales & Marketing
  - Secure Web based Program
  - End Users
    - User Authentication
    - Data Reconciliation
  - Consumer
- Sekuworks
  - Label Manufacturing
  - Code Activation
  - Secure Fulfillment
- Secure Transport
  - Spot Check
  - Take Down Support
  - Legal Support
  - Investigators
  - Warehousing & Distribution
    - Data Association
  - Customs Officials
    - IP Enforcement
- Product Manufacturing
  - Label Application
  - Data Association
  - Transport
Information Access /Rights Management

Web Based Brand Protection Information System

Authorized Information Access

System interaction dependent on level of authorization:

1. View only
2. Add only
3. View and Add

Tie-In to Marketing Programs
Report Generation

Data only useful if you can mine it!

- Country of register does not equal country of scan
- Production summary
- Inventory on-hand
- Transaction Summary
- Generic Query
- Custom specific
Authentication Technologies

• **Intaglio Print**
  - Currency grade printing – Raised and variable line, Latent image, Micro text

• **High Resolution Flexographic Print**
  - 500 line screen, Micro text, Security patterns

• **Taggants**
  - DNA, IR, UV, Custom

• **Custom Void Patterns**

• **Holograms**
  - Security or Visual, Film & Foils

• **Substrates**
  - Papers, Plastics, Filmic, Teslin™

• **Specialty products**
A Solution Set

Authentication / Tamper Indication / Verification / Track & Trace

**Intaglio print**
- Latent “hidden” key image
- High tactility

**Fine line security pattern**

**Micro text in security pattern**

**Human Readable Code**

**QR Tracking**
- QR 2D Matrix Code
  - Camera Phone or Scanner readable

**UV read “invisible” lock**

**Key intaglio tactile motif**

**Fine line fade red to blue**

**High security hologram**

**VOID Tamper Indicating pattern**
Program Benefits

• **Leverages Popular QR code format**
  - Utilizes multiple interfaces
    • Smart phones (worldwide growing public infrastructure)
    • Industrial scanners

• **Scalable system**
  - Simple Validation
  - Full Track & Trace

• **Supports Brand Protection**
  - Authentication Technologies
    • Overt
    • Covert
    • Forensic

• **Supports Marketing Programs**
THANK YOU!

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