



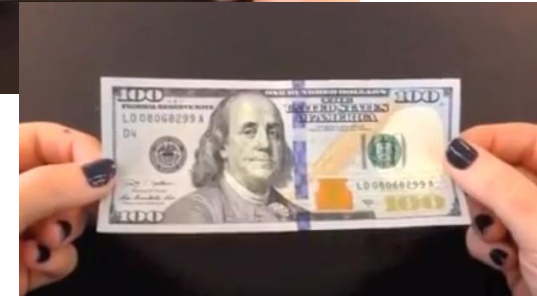
Brand Protection with BlockChain Technology

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President, Asia Pacific, DSS Inc.

Who We Are

- Over 30 years in product protection and document security space
 - Initial technology invented by Ralph Wicker in 1987
- Develop technologies, software and products that deter counterfeiting, product diversion, and warranty fraud
- We secure the world's most important brands
 - Including projects with:
 - US Government Agencies
 - Foreign Governments
 - Fortune 500 Companies
 - Small and Medium Businesses



DSS Prism Viewer
Technology Employed By US
Government



Corporate Mission

To help companies, financial institutions, & governments eliminate fraud

Document Fraud

- Anti-copying/scanning technology
- Hidden image
- Authentication technology

Product Fraud

- Digital authentication
- Data analysis
- Hidden image technology

Credential Fraud

- Secure identification
- RFID credentials
- Advanced access control



DSS Digital's Solutions

1. Product Fraud Technology

Two factor solution to guarantee authenticity of products to fight counterfeiting, product diversion, & warranty fraud



2. Document Fraud Technology

Prevent & detect copying of documents, packaging & other printed media to fight fraud and counterfeiting

AUTHENTIGUARD

SMARTPHONE AUTHENTICATION



- Embedded code is protected with DSS Prism technology; a technology that resists counterfeiting on copiers, scanners, & photography
 - AuthentiGuard mark is applied to surface during the printing process
 - Can be produced using a variety of printing processes including; Offset, Flexo, Gravure and Digital
 - The mark is embedded into the artwork during the pre-press printing stage
- Once the AuthentiGuard mark is scanned, encrypted information becomes available to the user through smartphone application.
 - Each mark can be associated with various amount of information i.e.: origin, destination, expiration and serial number etc.
- Customizable in shape, size and location

A Data-Centric Approach

- Mobile App Authentication
- Backend Dashboard



In-field Authentication

Aggregated Data

Data record can help identify problem actors, regions at risk, retailers who are targeted, & other important “markers” which can be found through analysis

| ID | Product | Origin | Destination | Status |
|----|-----------|--------|-------------|---------|
| 1 | Product A | Zone 1 | Zone 2 | Valid |
| 2 | Product B | Zone 3 | Zone 4 | Invalid |
| 3 | Product C | Zone 5 | Zone 6 | Valid |
| 4 | Product D | Zone 7 | Zone 8 | Invalid |
| 5 | Product E | Zone 9 | Zone 10 | Valid |

Data Capture

Archiving of data from authentication activities is saved which strengthens the overall analysis so accuracy improves over time

| ID | Product | Origin | Destination | Status |
|----|-----------|--------|-------------|---------|
| 1 | Product A | Zone 1 | Zone 2 | Valid |
| 2 | Product B | Zone 3 | Zone 4 | Invalid |
| 3 | Product C | Zone 5 | Zone 6 | Valid |
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BACK-END LOG

Internet Explorer
<https://ag.dssecure.com/reports/activityReport.aspx>
 Reports

Authentiguard™ Reports Options

Report Center

Filter by:

Valid Expired Invalid Location No M Timeout

| Code Read | Product | Location | Status |
|------------|----------------|---------------|---|
| ▼ 1/5/2017 | | | |
| AB,CD | AG Sales Sheet | Zone | Valid Read More Information |
| AB,CD | AG Sales Sheet | Zone | Valid Read More Information |
| ▼ 1/4/2017 | | | |
| AB,CD | AG Sales Sheet | Zone | Valid Read More Information |
| ▼ 1/3/2017 | | | |
| N/A | | John Bobocchi | 12/22/2016 9:19:15 AM Timeout Scan |

GPS Location

Map Satellite

Export

Generate

.....INCLUDES FULL TRACKING OF ALL FIELD SCANS



**DSS BlockChain Solution – Joint Research Project
with LSCM**



A Global Challenge

- Supply chains have gone global over the last 30 years
- China now makes 80% of the world's air conditioners, 70% of its mobile phones, and 60% of its shoes
- 50% of world's manufactured goods are made in Asia
- Outsourced manufacturing is a major driver of economic growth for the AP region
- The dark side of the outsourcing is the loss of control & the exposure of intellectual property
- Counterfeiting has grown at a tremendous pace
 - Counterfeit market is now estimated at \$1.7 trillion per year up from \$200 billion in 2005



The Cause

- A major cause of counterfeiting is the lack of control over the new supply chain
- Systems integration can help solve the problem but it is difficult to achieve across a large group of partner companies
 - Example: One client of DSS has approximately 20,000 companies in its supply chain
 - Integrating systems also significantly increases security vulnerability
- When do the problems of outsourcing outweigh the benefits?
- A new approach suited for interoperation of a decentralized supply chain is an imperative



Using Blockchain in Supply Chain

- A decentralised and transparent system that doesn't need trusted third parties
- Establishes trust via secure and traceable transactions with an immutable IT infrastructure
- Everyone (brands, production, logistics, distribution and consumers) can participate in a peer-to-peer network ecosystem allowing for more efficient, less expensive & highly secure interoperability
- A non-disruptive and integrative approach to remedy the existing fragmented supply chain infrastructure



Value to Brands

- Anti-counterfeiting – unique identification to verify the authenticity of goods
- Visibility and Traceability – Track movement of goods in supply chain giving brands much greater visibility into their network, markets, and customers
- Efficiency – Massive improvements in transactions and interactions which will benefit all participants, not just the brands



LSCM – DSS Joint Research Project

- Joint research for Blockchain deployment within supply chain
- Using Blockchain for secure data transaction across multiple channels, including manufacturing, logistics, retail and online distribution
- DSS to license LSCM RFID Product Authentication Technology as an integral party of DSS AuthentiGuard Product
- To develop API for supply chain partners to participate in the Blockchain as a Service ecosystem



The Architectural Considerations

- Performance – supply chains are generating a massive amount of data with high volume products and interaction from far flung stakeholders
- Interoperability – APIs are critical to connect disparate systems which also means easy integration with core DSS authentication technology and extension to different “touch points” such as RFID, barcode, data matrix code, etc.
- Scalability – Effective execution of smart contracts allows us to incorporate dynamic user engagement programs

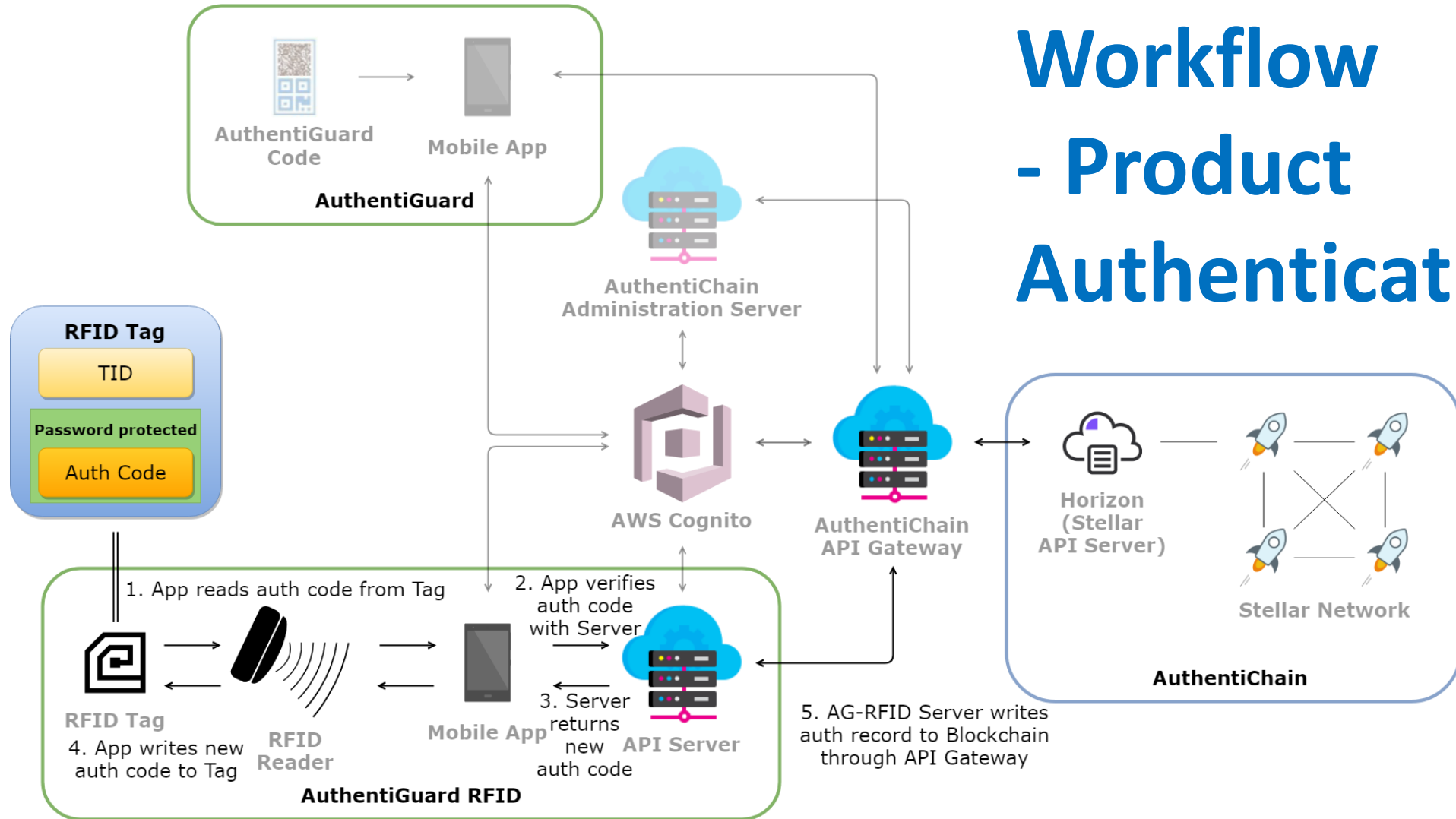


AuthentiChain – Blockchain as a Service






Workflow - Product Authentication







Region : U.S ▾

- Dashboard
- Statistic and Report
- Products Registry
- Users Management
- Token Management
- System Maintenance
- Feedback
- Logout

Overview

Monthly

Overall Invalid Scan

1,435

View Detail

Monthly

Overall Valid Scan Rate

97.8%

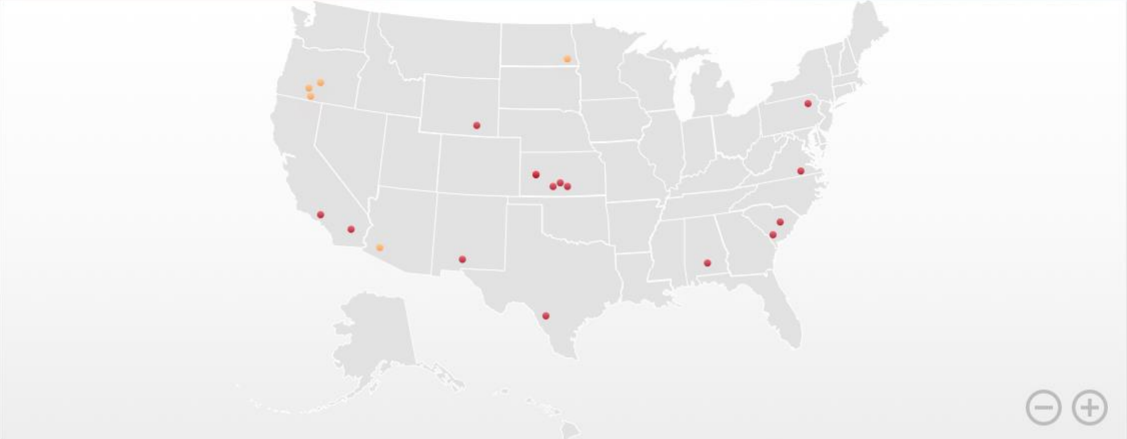
View Detail

Monthly

Total Scan Count

65228

View Detail



View Detail

Registered Product

30,000

View Detail

Authentiguard Code Register

200

View Detail

AuthentiTick Register

18,000

View Detail

Registered Investigator Account

53

View Detail

Registered App User Account

2,308

View Detail

Avalible Scan Token

234,772/300,000

Private AuthentiChain block number: 831,818 (Average : 34/tps)
16 nodes Running
View Detail

Notifications

Counterfeit Alert

Invalid serial number found in unregister area

SKU : AB000001
Serial : 123000101
Region : Gotham city

Counterfeit Alert

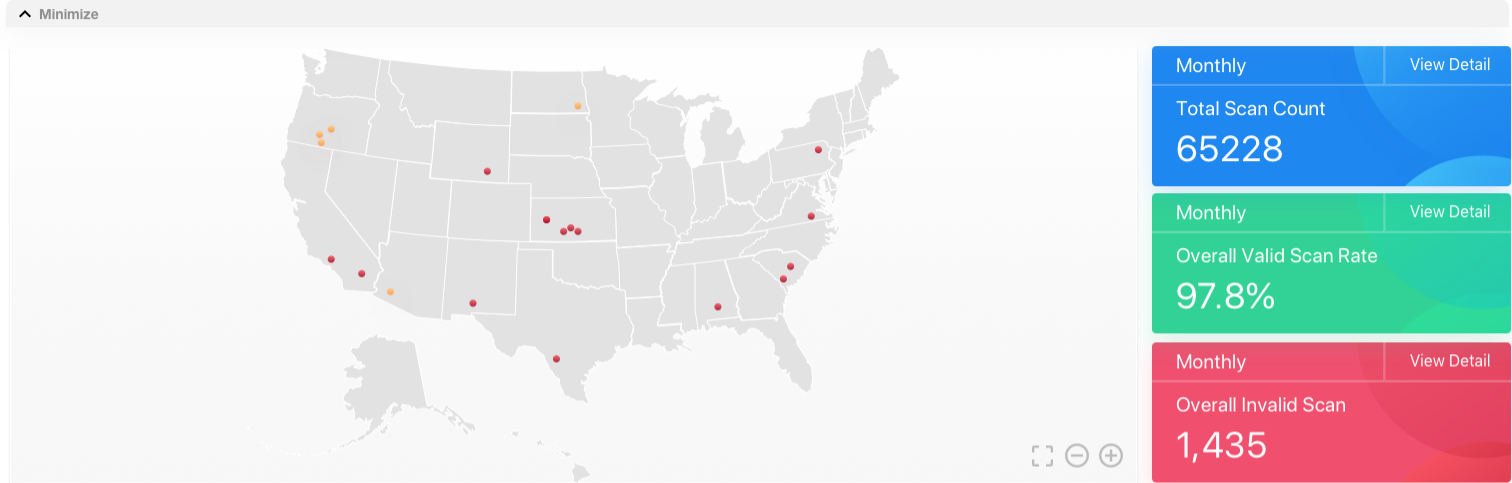
Invalid serial number found in unregister area

SKU : AB000002
Serial : 123000102
Region : Gotham city

Dashboard

Statistic and Report

Region : U.S

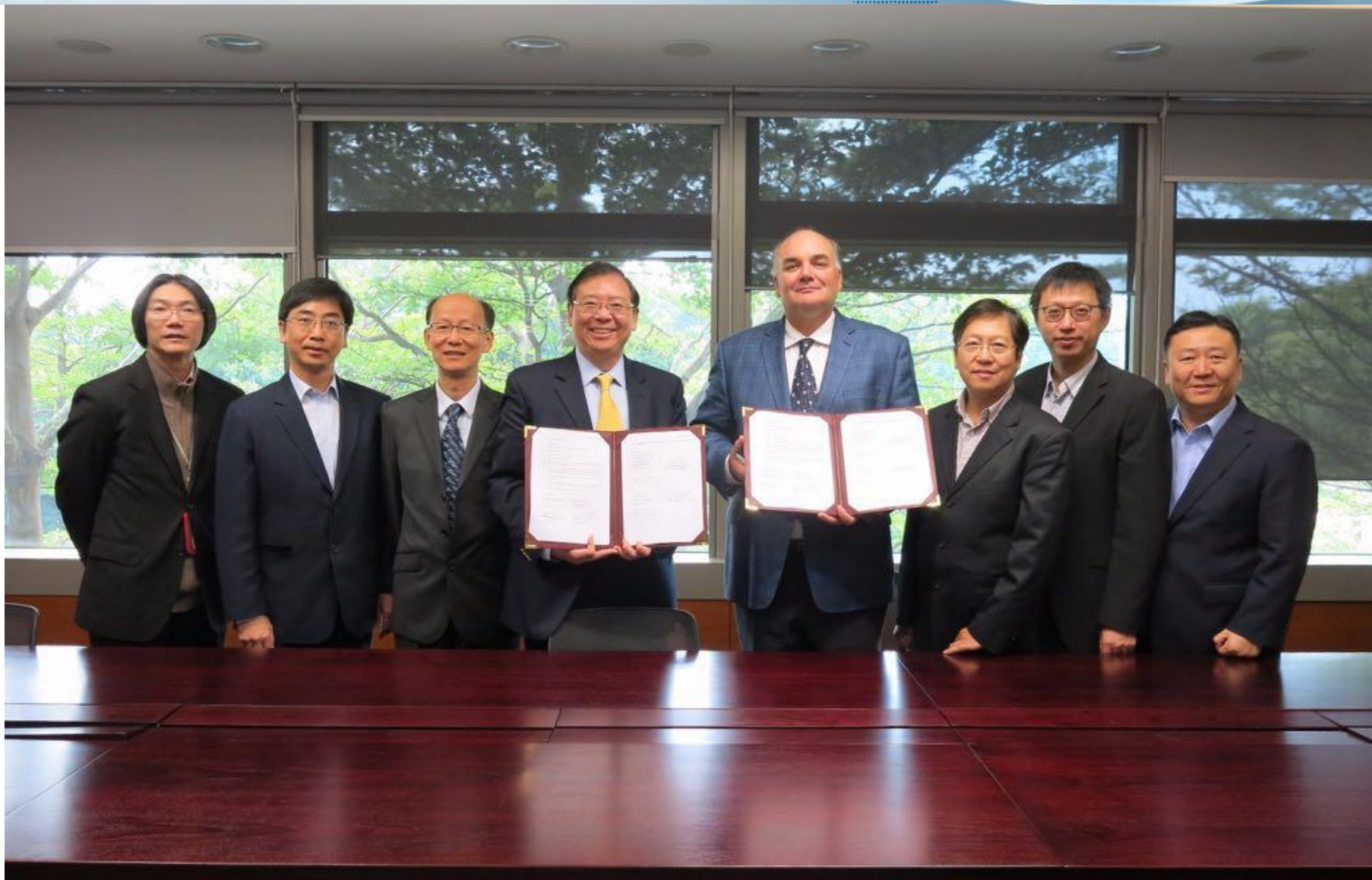


Search by product sku and product serial

Show Invalid result only

| Status | Product Serial | Code Read | Location | Scanned By | Scan Time | Transaction Id | Blocknumber |
|----------------|-------------------|--------------|-----------------------------------|-----------------------|------------------------------|----------------|--------------|
| Valid | 30103411292 | AE,XE | New York (24.163 , 27,314) | App (U10291) | 5th May 2018 12:00:00 | t-11992 | 19002 |
| Valid | 3091901023 | XE,IE | New York (24.163 , 27,314) | App (U10291) | 5th May 2018 12:00:00 | t-11993 | 19003 |
| Valid | 3091901023 | TE,TY | New York (24.163 , 27,314) | Reader (R0131) | 5th May 2018 12:00:00 | t-11995 | 19005 |
| Invalid | 3091909999 | EE,EU | New York (20,31, 98.109) | Reader (R0139) | 5th May 2018 12:00:00 | t-11999 | 19008 |
| Invalid | 3091909999 | AE,XE | New York (24.163 , 27,314) | Reader (R0139) | 5th May 2018 12:00:00 | t-11999 | 19008 |
| Valid | 3091901023 | IE,UI | New York (24.163 , 27,314) | Reader (R0139) | 5th May 2018 12:00:00 | t-11997 | 19007 |
| Invalid | 3091909999 | AE,XE | New York (24.163 , 27,314) | Reader (R0139) | 5th May 2018 12:00:00 | t-11999 | 19008 |
| Valid | 3091901023 | AA,KL | New York (24.163 , 27,314) | Reader (R0139) | 5th May 2018 12:00:00 | t-11997 | 19007 |

Export Reort





Actions in the Belt and Road Initiative
with Innovation and Technology
貢獻大灣區創新科研
實踐多元化一帶一路



Thank you

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