EPCglobal Singapore Newsletter

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1) EPCglobal/RFID Singapore Forum 2008

GS1 Singapore continues to promote the adoption of EPCglobal at the 5th EPCglobal/RFID Singapore Forum 2008 organised by GS1 Singapore, Singapore Manufacturers' Federation and EPCglobal Singapore.

The 5th EPCglobal / RFID Singapore Forum 2008, held on 23 April 2008 was a success on every front. Themed "Enabling Supply Chain Visibility", the forum gathered 80 prominent global SCM experts, members, business partners and guests in attendance. The event was well supported by IDA, SPRING Singapore, IE Singapore, Information Technology Standards Committee, A*STAR Exploit Technologies, National RFID Centre, ECR Singapore and Spartan System (S) Pte Ltd. Mr Edwin Khew, Chairman of GS1 Singapore and EPCglobal Singapore delivered the welcome and opening address.

Topics presented were:

Product Lifecycle Management - Activities of Japan RFID Consortium of Consumer Electronics (JRCCE and EPCglobal Consumer Electronics Industry Action Group (CE IAG) by Mr Tatsuya Yoshimura - RFID Standards Promotion Section, Global SCM Planning Department Sony Corporation, Japan & EPCglobal CE IAG Co-Chair

EPCglobal – The Sato Experience by Mr Colin Phua - Product Manager, SATO International Asia Pacific Pte Ltd

Visualization of Logistic Operation using EPCglobal Network – EPC Information Services (EPCIS) by Mr Isao Kimata - Assistant Manager, 2nd System Software Division NEC Corporation, Japan

Media Cart - Enabling Store-of-the-Future Retail Concept by Ms Angela Chee - General Manager, Media Cart Asia Pte Ltd

The EPCIS – The Secured Way To Exchange Data – The Hong Kong Experience by
Mr Goh Eng Koon - Business Development Director, APAC (TED) BEA Systems

RFID Security: From Unawareness to Vigilantness by Dr Li Tieyan - Principal Investigator Cryptography and Security Department Institute for Infocomm Research
A*STAR Singapore

EPCglobal Implementation Experiences by Mr Didier Chenneveau - Executive Vice President /Chief Supply Chain Officer, LG Electronics

ISO Standard Development of Mobile Item Identification and Management under ISO/IEC JTC1/SC31/WG6 by Mr Tan Jin Soon - Executive Director of GS1 Singapore & Member of ISO/IEC JTC1/SC31/WG6

The HP RFID Experience by Mr Tim Wilkinson - Practice Manager Asia Pacific RFID & Supply Chain Center of Expertise, Hewlett Packard

Enabling Innovations with RFID by Dr Gan Oon Peen - Research Scientist, Singapore Institute of Manufacturing Technology Technology Lead, National RFID Centre

2) EPCIS (Electronic Product Code Information Service)

2.1 What is EPCIS?

"EPCIS" refers to Electronic Product Code Information Service. It is a standard that defines interfaces to enable the sharing of data among trading partners. This sharing of data in the supply chain is aimed at enabling participants in EPCglobal Network to gain real-time visibility into the movement, location and disposition of assets, goods and services throughout the world. EPCIS allows for the seamless secure exchange of data at every point in the lifecycle of goods and services.

The EPCIS approach defines a standard interface to enable Electronic Product Code (EPC) related data to be captured and queried using a defined set of service operations and associated EPC-related data standards, all combined with appropriate security mechanisms that satisfy the needs of user companies. In many or most cases, this will involve the use of one or more persistent databases of EPC-related data, though elements of the Services approach could be used for direct application-to application sharing without persistent databases.

With or without persistent databases, the EPCIS specification specifies only a standard data sharing interface between applications that capture EPC related data and those that need access to it. It does not specify how the service operations or databases themselves should be implemented. This includes not defining how the EPCIS should acquire and/or compute the data they need, except to the extent the data is captured using the standard EPCIS capture operations. The interfaces are needed for interoperability, while the implementations allow for competition among those providing the technology and EPC Information Service.

EPCIS is therefore a standard that defines the interfaces to enable the sharing of data between trading partners and is not a service. It is a new breakthrough for trading partners to share information as it creates a new dimension in collaboration.

EPCIS is a standard-based approach to securely share product movement information that will provide visibility and improve businesses processes in an unprecedented manner. It is the foundation for increasing visibility, accuracy, and automation throughout the supply chain and is driven by end user needs to
share event related information.

EPCIS is industry and application neutral. It is a cross-industry framework with cross-industry and industry-specific vocabularies EPCIS and Its Applications Mr Tan Jin Soon Executive Director, EPCglobal Singapore Council Chairman, Automatic Data Capture Technical Committee under IT Standards Committee Dr Shin-ichii Ishii Senior Consultant Nomura Research Institute Ltd, Japan and extensions. It is user-extensible. It allows each trading partner to keep their data.

EPCIS enables secure information exchange where each company controls their data and shares it only with those partners they choose to share it with. EPCIS leverages on established security mechanisms. Its unique feature is that it is a supplement to and not a replacement for, existing enterprise information systems. It is complementary to EDI.

2.2 The EPCIS Standard

Product identification that can be captured by EPCIS may come in any of the following formats:
- Passive RFID Tag - UHF Gen 2, HF
- Barcodes - Linear, Data Matrix
- Active RFID Tag
- Human Readable Number
- And more in the future!

The EPCIS specification Version 1.0 is a ratified global standard. It has been widely deployed across industries. Some examples are:

- Retail Supply Chain (RSC) for Promotional Visibility and Electronic Proof of Delivery were successfully implemented in the phase 1 pilot completed in February 2007 from Hong Kong Port to Japan Kobe Port. A total of nine RFID read points in China/Hong Kong and three RFID read points in Japan were deployed with data captured and shared among the trading partners through four EPCIS. For details, please refer to the EPIC pilot described in the second part of this article.

• The second phase of the EPCIS pilot is scheduled for completion in February 2008. It is set to reinforce the EPCIS dimension. Information will be exchanged between potential end users, such as customs administrations for automatic customs clearance. The trade lane to be used in this phase is Shanghai Port to Long Beach Port in California. Both sea and air transportation modes will be used.

• Other areas for deployment of EPCIS are:
- Healthcare Life Sciences (HLS) for Product Authentication/ Pedigree;
- Transport and Logistics (TLS) in a global pilot; and
- Consumer Electronics for product life cycle management and waste recycle of electrical, electronic equipment (WEEE) management which is mandated in Europe.
GS1 Singapore is an active member in the planning of the above mentioned 2 EPCIS pilots.
- Media and Entertainment use of EPCIS for Value Chain Testing.

2.3 Why is EPCIS valuable?

EPCIS is already in use today in Retail Supply Chain (RSC), Healthcare Life Sciences (HLS) and Transport and Logistics (TLS). It offers various benefits, among which are:

• It provides standard data model, capture, and query interfaces to enable track and trace, product authentication, diversion detection, and other use cases across supply chain partners across multiple industries.

• Security is a core concept - Each trading partner gets to keep their data and partners only move/share data they wish to share on an on-demand basis.

2.4 EPCIS VP (Validation Portal)

At the Joint Action Group (JAG) plenary session in Bonn, Ron Moser (WalMart) and John Duker (P&G) together with Nicholas Fergusson (EPCglobal) gave a live demonstration of the EPCIS Validation Portal highlighting the online software tools ease of use and benefits it brings to trading partners in assessing and ensuring the correctness of data content when implementing EPCIs systems. One of the key benefits of EPCIS VP is that it has proven to be a simple, easy-touse tool that helps validate EPCIS data prior to sharing the data with trading partners. This will minimize data sharing failures and ensure uniform vocabulary among trading partners, thus allowing for more effective exchange of information.

3) The Pilot on Shipments Using EPCIS

The Pilot on Shipments Using EPCIS

The EPCglobal pilots for shipments using EPCIS is funded by the Japanese Government, Ministry of Economy, Trad & Industry (METI) and managed by the pilot Task force team under the EPCglobal Transportation & Logistics Industry Action Group. GS1 Singapore, GS1 Hong Kong and GS1 Japan are active members of this working group and have actively participated in this pilot together with shippers, importers, logistics providers, forwarders and shipping companies.

The objectives of the Phase 1 and Phase 2 Pilots are as follows:
Phase 1 Pilot
• Demonstrate how EPC/RFID and EPCIS can be applied in transportation and logistics from HK to Japan port.
• Interoperability among multiple trading partners and service providers.
• Proof of concept using active RFID technologies serving as foundation for Phase 2 Pilot.
• Prepare and investigate shipment info used for import/export declaration.
• Only Ocean Transport.

Phase 2 Pilot
• Utilise EPC/RFID and EPCIS technology components and EPCglobal standards.
• Enable visibility at critical events in the supply chain.
• Test and develop requirements for Active RFID and integration with associated technologies.
• Identify standards opportunities for transportation and logistics providers.
• Open results and information sharing for the EPCglobal member community.
• Both Air and Ocean transport.

The phase 1 Pilot and phase 2 Pilot were very successfully carried.

Conclusion:
The phase 1 Pilot and phase 2 Pilot validated the value of EPCglobal standards and technology. Through EPCIS, it demonstrated.

4) GS1 Hong Kong Launches onlines track-and-trace platform

On 6 July 2008, GS1 Hong Kong officially launched ezTRACK, an online Track-and-Trace platform that enables end-to-end supply chain visibility anytime, anywhere.

This new community service can effectively track and trace the flow of goods and products information from point-of-origin to point-of-sale by an Electronic Product CodeTM (EPC) standard-based globalized platform, enabling real-time information transparency starting from production floor and warehouse, through to logistics distribution and finally retail shops.

Aiming at providing a powerful solution to enterprises in Hong Kong and Pearl River Delta (PRD) region, this reliable and robust platform enables businesses to gain "first-mover advantage" in the global market through sharpening their supply chain edge and staying connected to trading partners around the world for supply chain information exchange.

With this web-based application, which is fully compatible with various technologies such as RFID, bar code, GPS, other sensors and fully interoperable to ERP, WMS system, ezTRACK can be configured flexibility to improve the accessibility of business-critical information including work-in-progress status, product inventory data and delivery schedules. The high scalability of EPC standards-based network infrastructure will fully bring tremendous benefits to companies to sustain business growth.

5) Sharing valuable learnings and experiences from the European Union funded EPC/RFID projects

BRIDGE – Promoting the deployment of RFID in Europe

After 2 years into the project, BRIDGE has gained a wide recognition as the most important EU funded project on RFID. With 30 partners including major universities, users and solution providers, BRIDGE has delivered significant results in the R&D on RFID, but also by implementing pilots in various industry sectors and by developing innovative dissemination and training tools to raise awareness of the technology.

The technical working groups

The technical work packages have developed highly innovative features complementing the existing technology, such as miniature tags, high read rate tags and low cost readers. They have also developed infrastructure components around the technology by proposing a high level design for Discovery Services, track and trace solutions based on RFID and a security framework that will enable a safe implementation of the technology.

The business applications

The business application working groups have been very active over the last year of the project, finalising their business cases and starting the pilot phases.

Among others, the pharma traceability pilot presenting a full supply chain traceability from the manufacturer to the hospital pharmacy is already presenting interesting results that will very likely impact the deployment of RFID in the healthcare sector.

Other business applications including anti-counterfeiting, pilots in the textile industry, reusable asset management, manufacturing processes, products in service and item level tagging are all in the process of delivering final outcomes for the last year of the project.

Education & Dissemination material

As part of the education work package, BRIDGE also delivered a complete range of E-Learning material, which includes 3 EPC/RFID courses: Basics, Advanced Technical Aspects and Advanced Business Aspects.

The training material for each course is available in classroom format consisting of a PowerPoint deck and a student syllabus and in web-based format consisting of text, illustrations/animations and voice over (sound files).

If you want to learn more about the BRIDGE results and consult the public deliverables, please visit http://www.bridge-project.eu or contact info@bridge-project.eu

BRIDGE will be represented at the following forthcoming events organised:

- The Internet of Things conference organised in Nice on 6 and 7 October 2008
- The EPC in Europe conference organised on 4-6 November 2008 in Prague
- The ICT 2008 event in Lyon from 25 to 27 November 2008

6) The Transportation and Logistics 3 Pilot Program

The third phase of the GS1 EPCglobal Transport and Logistics RFID Pilot Program will use EPCIS to track the progress of physical products on cartons, pallets, and containers across the supply chain using the trade lane of Tokyo to Amsterdam. EPCIS is the GS1 EPCglobal standard which will provide a common set of data elements, a common language for communication, and a set of defined messages for trading partners to use for storing, accessing, and communicating data on objects moving in the supply chain. It is a critical link to providing the supply chain visibility the pilot is set to achieve.

The pilot will also test the use of active EPC/RFID (Extended Conveyance Asset Tag (XCAT)) and e-seal tags on sea containers. These tests will serve to drive the development of standards for conveyance asset tags and passive e-seals. Through the use of GS1 EPCglobal standards like UHF Class 1 Generation 2, Reader Protocol, Application Level Events (ALE) for Filtering and Collection and EPC Information Services (EPCIS), the transport and logistics companies, interested governmental agencies and others that are authorized will be able to track events throughout the supply chain.

The first shipment of goods from Tokyo, Japan is scheduled to depart in the second week of January 2009. There will be 50 containers shipped to Amsterdam over a 4 week period of time.

Value Delivered

The Transportation and Logistics 3 Pilot Program will demonstrate how organizations across a global supply chain can exchange real time event data and track shipments from the third party logistics provider in Japan to the distribution warehouse in Amsterdam. Supply chain partners and governmental agencies will have real-time access to information about products and shipments as they travel along the supply chain.

7) Editors Note

We welcome contributions from companies in Singapore and overseas on activities related to implementation of EPCglobal in your organization. Should you have any comments or feedback, please email them to EPCglobal Singapore, Mr Andy Siow at email : sanc1@gs1.org.sg