About EPCglobal

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1 INTRODUCTION

The AutoID Center, headquartered at MIT and working in conjunction with industry leaders and academic institutions around the world, designed a system for bringing the benefits of Radio Frequency Identification (RFID) to the global supply chain. That system is referred to as the EPCglobal Network™. Once EPC technology was developed in an academic setting, the AutoID Center sought an experienced, standards-making body to commercialise the EPC technology and work with the business world to develop the necessary standards to make the EPCglobal Network a global supply chain solution. They chose two premier standards-based organisations: EAN International (now known as GS1) and the Uniform Code Council, Inc.® (now known as GS1 US). Together, these two organisations formed the joint venture EPCglobal Inc™.

2 PURPOSE OF THIS DOCUMENT

This paper seeks to introduce EPCglobal Inc, and describe its role in the adoption and implementation of the EPCglobal Network.

3 EPCglobal INC

EPCglobal is an open, subscription-based, not-for-profit standards organisation. As a joint venture between GS1 and GS1 US, EPCglobal leverages a nearly thirty-year heritage of successfully partnering with industry. Neutral and consensus-based, EPCglobal is industry's trusted partner for driving the global adoption and implementation of the EPCglobal Network across industry sectors. The main focus of EPCglobal Inc is to facilitate a smooth transition and create a process for turning EPC technology into a standard that ensures interoperability between products from different vendors in the global supply chain. To that end, EPCglobal develops and oversees the standards for the EPCglobal Network. Additionally, EPCglobal assigns EPC Manager Numbers in order to ensure the uniqueness of electronic product codes in the supply chain and create the authoritative database for the Root ONS. Finally, EPCglobal serves as an implementation partner for Subscribers.

4 STANDARDS DEVELOPMENT

In order for the EPCglobal Network to reach its potential, it must be based on global standards that ensure universal applicability and optimal functionality across the globe for all industry sectors. Without such horizontal standards, industries and/or geographic regions would be left to develop their own standards, which would create diverse, incompatible systems that inhibit collaboration across industries, commercial sectors and geography. EPCglobal seeks to avoid such fragmentation by addressing systemic issues in a unified fashion.

4 - 1 TECHNICAL STANDARDS

Global technical standards ensure the universal applicability of EPC-related hardware and software products across the globe for all vertical sectors. In addition, unified global standards combine all sectors and geographic regions in the market for EPC-related hardware and software products, creating a critical mass that encourages competition among vendors and manifests economies of scale that drive down costs. EPCglobal is committed to developing horizontal technical standards for EPC-related hardware and software. To accomplish that, EPCglobal brings together Subscriber companies from every vertical sector from every corner of the globe, to develop universal, industry-driven technical standards.

As manager of the standards development process, EPCglobal Inc encourages members of all vertical sectors, as well as any standards organisations for those sectors, to participate in the standards process by becoming active participants in the EPCglobal Action Groups. The Action Groups assist in developing the foundational building blocks of the EPCglobal Network, and serve as the forum through which Subscribers can influence the process. By bringing operational, business and practical considerations to the table and working with researchers and vendors to ensure that each of those considerations are reflected in the network design, companies are investing in a standards format with the benefits of freedom of choice, interoperability and global applicability. In fact, the adoption of global standards is one of the main advantages of the EPCglobal Network, and the opportunity to participate in the development of those standards is one of the major benefits of subscription to EPCglobal Inc.

EPCglobal Action Groups	
Business Action Group (BAG) • Charged with providing end-user business requirements to the standards development process and driving adoption of the EPCglobal Network. • Organized into working groups focused on strategy, technical or implementation concerns. **Software Action Group (SAG)** • Defines the software functional and interface standards for the EPCglobal Network and how these elements interact with distributed enterprise systems. **Hardware Action Group (HAG)** • Develops specifications for element and interface standards for key hardware components of the EPCglobal Network, including RFID readers and tags.	Nearly 340 companies from around the world currently participate in EPCglobal Action Groups, including: • over 108 end user organisations; • numerous technology suppliers; and • various standards and research organisations. New Subscribers are encouraged to participate.

4 - 2 EPC STANDARDS

The Electronic Product Code (EPC) is the standardised number in the EPCglobal Network. Standards-based numbering systems are essential for efficient and effective communication of product information in the supply chain. Many industry sectors have long utilised their own standards-based numbering systems for product identification within their sector (e.g., EAN.UCC for consumer goods; UID for United States Department of Defense; VIN for automotive; ISBN for books; etc.). In order to facilitate the use of the EPCglobal Network by all sectors, the standards for the EPC data structure provide a flexible framework that supports multiple numbering schemes. This flexible framework enables each sector to incorporate its existing standards-based numbering system into its EPCs. The ability to incorporate the globally accepted standards of all sectors promotes the convergence of supply chains, a desirable goal for today's complex markets where supply chain lines are blurring and channels of distribution for various sectors are overlapping.

5 EPC MANAGER NUMBERS

In the EPCglobal Network, each EPC Manager assigns its own EPCs, owns the data associated with its EPCs, and controls access to that data. The ultimate vision of the EPCglobal Network is to tag all items moving through the supply chain in order to gather dynamic information about each item as it moves from the point of manufacture to the point of distribution to the warehouse to point of sale. The ability to gather that information requires a standardised numbering system capable of uniquely identifying every item moving through the global supply chain. The assignment and management of individualised numbers, known as serialisation, is a huge undertaking. Fortunately, EPCglobal utilises a framework to manage serialisation that is thin, distributed and pervasive, and that will be able to assign unique identifiers for the indefinite future.

In order to enable EPC Managers to assign new EPCs without the possibility of collision with EPCs issued by other EPC Managers, EPCglobal issues a unique identifier to each EPC Manager, called the EPC Manager Number. The structure of the EPC coding scheme is such that the EPC Manager Number appears as a distinct segment within the EPC string. Thus, by assigning an EPC Manager Number, the EPC Manager is in essence allocated a block of EPC codes (i.e., all EPCs that contain the assigned EPC Manager Number in the EPC Manager Number segment of the EPC string). By maintaining the uniqueness of EPC Manager Numbers, EPCglobal thereby ensures the uniqueness of EPCs. In addition, the database of EPC Manager Numbers provides the authoritative database that the Root ONS uses to direct EPC queries to the location where information associated with an EPC can be accessed by authorised users.

6 IMPLEMENTATION PARTNER

In order to promote the adoption of the network, EPCglobal serves as an implementation partner to its Subscribers by providing resources that facilitate implementation. First, EPCglobal provides education and training programs to its Subscribers. The education and training programs provide a jumpstart for learning about and testing the network. In addition, EPCglobal is developing certification and compliance programs for hardware and software vendors, as well as consultants and integrators. These programs will help assure conformance to standards as the development of EPCglobal Network hardware and software products progress. Finally, EPCglobal provides guidelines and "best practices" to share successful solutions with Subscribers as they proceed with implementation.

7 CONCLUSION

EPCglobal is a neutral, not-for-profit organisation dedicated to turning EPC technology into a standard that ensures interoperability between products from different vendors in the global supply chain and facilitates the global adoption and implementation of the EPCglobal Network. To that end, EPCglobal develops and oversees the standards for the EPCglobal Network, assigns EPC Manager Numbers to ensure the uniqueness of EPCs, and serves as an implementation partner for Subscribers. The main focus of EPCglobal Inc is to support the commercial world's effort to bring the benefits of the EPCglobal Network to the global supply chain.

Princeton Pike Corporate Centre
1009 Lenox Drive, Suite 202
Lawerenceville, NJ 08 648
T +1 937 291 3300
F +1 609 620-1200
E EPCglobalinfo@epcglobalinc.org
www.epcglobalinc.org

Blue Tower
Avenue Louise 326, b10
BE 1050 Brussels
Belgium
T +32 (0)2 788 7800
F +32 (0)2 788 7899
www.gs1.org