



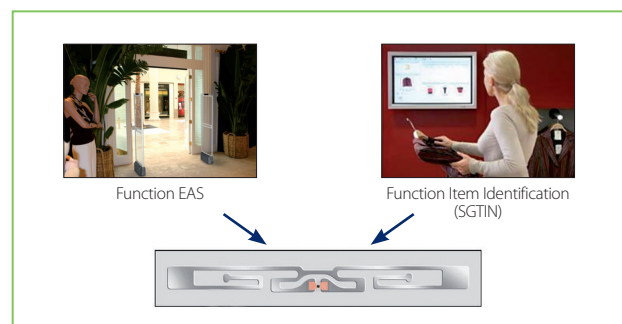
# GS1 EPCglobal RFID-based Electronic Article Surveillance (EAS)

Creating actionable visibility by combining the advantages of EPC/RFID and EAS technology

## What is RFID-based Electronic Article Surveillance (EAS)?

RFID-based Electronic Article Surveillance (EAS) is a technological method for deterring and detecting theft of consumer goods. RFID-based EAS tags, based on the GS1 EPCglobal Gen 2 standard, are fixed to an item's packaging or to the item itself. These tags can be removed, reused and/or disposed by consumers or sales associates after purchase.

The goal of RFID-based EAS is to combine the known advantages of EPC (Electronic Product Code) and RFID (Radio Frequency IDentification) with EAS functionality. One of the primary benefits of RFID-based EAS is the combination of theft deterrence with visibility - retailers can now answer both the questions of when a theft occurs and what was stolen. It enables retailers to gain high-resolution visibility into what is happening inside their stores. In this sense, it takes Electronic Article Surveillance to the next level - offering a deeper level



of surveillance (item level insight) inside a retailer's stores. This insight enables them to re-stock the shelf in order to maintain on-shelf availability, reduce the incidence of out-of-stocks and, most important, avoid the high cost of missed sales opportunities. By reducing out-of-stocks, retailers ensure that goods are on the shelf when customers want to buy. This increases sales, both of the items that would have been out-of-stock as well as ancillary items.



With the globalization of business, optimizing processes become central to an organization's success. Companies of all sizes are now forming partnerships and alliances in order to gain greater access to customers on domestic, cross-border, and global markets. As a result businesses are now beginning to take advantage of the new supply chain efficiencies possible through EPC and RFID.

### Benefits of RFID-based Electronic Article Surveillance (EAS)

As the EPC/RFID is expanding from pallet and case level towards item-level tagging, this technology has the potential to help business partners as well as consumers worldwide. It helps businesses improve supply chain efficiencies and visibility, which improves consumer shopping experience by providing increased product availability, speed of service, quality assurance and customer savings.

Considering limited capabilities of traditional EAS systems, RFID-based EAS will provide increased inventory visibility and the information needed to enhance a supply chain management system. A common guideline is designed to increase source tagging as only one tag type is needed.

With the agreement among the different stakeholders on one particular standardized approach, the integration of EAS and RFID technology create multiple advantages:

- Enable Supply Chain Partners to eliminate multiple inventories by having one standardized RFID based EAS tag instead of competing technologies
- Use RFID-based EAS to deter and to detect theft with the added benefits of RFID visibility throughout the supply chain
- Provide a single tag type with both EPC/RFID and EAS functionality by just reading its EPC serialized number

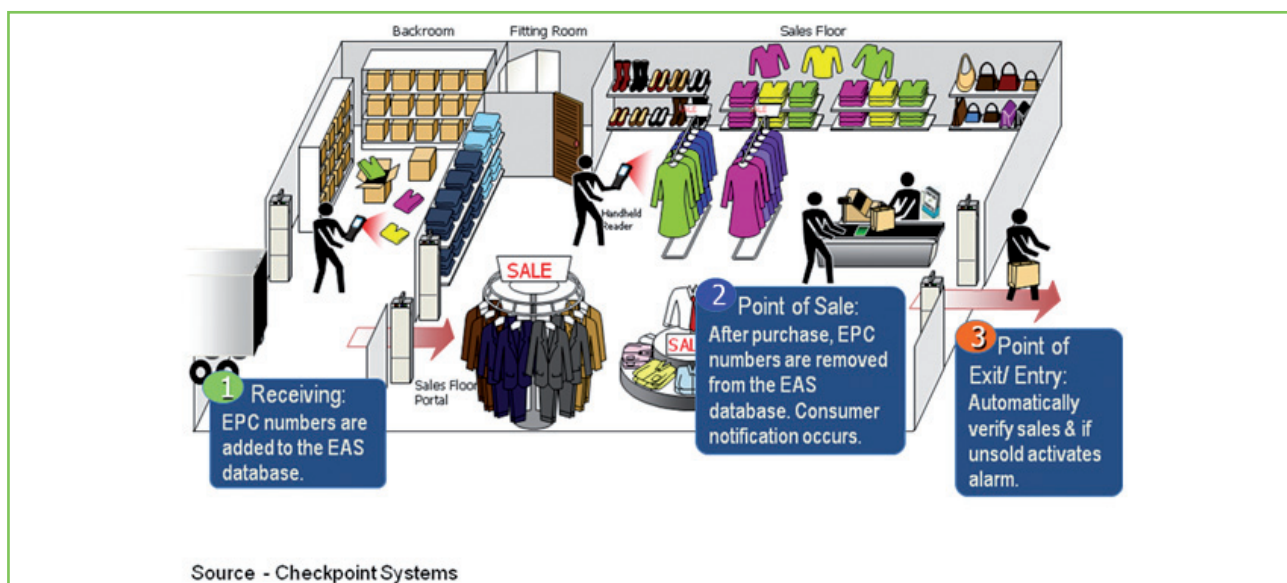
- Secure, identify, and protect more items
- Use identification of the object in combination with EAS (example: understanding exactly what has left the store illegitimately)
- Use identification/track and trace to prevent or to detect shrinkage during the logistic chain to the shop floor
- Improve the consumer shopping experience by increased product availability and customer savings

By implementing RFID-based Electronic Article Surveillance, an opportunity is created to take significant cost out of the supply chain for both retailers and suppliers. In addition, manufacturers would no longer need separate inventories. This is a major business improvement for the retail community by streamlining the POS process and validating return merchandise. It provides the retail industry with the business benefits associated with serialization. RFID-based Electronic Article Surveillance will help drive the adoption of EPC item level tagging while offsetting the cost and can be leveraged for other applications.

### How GS1 EPCglobal Standards support RFID based Electronic Article Surveillance (EAS)

There is the need for standards behind EPC/RFID technology enabling the secure sharing of real-time information between trading partners, which allows businesses to monitor the location and state of individual items as they pass through the supply chain thereby increasing visibility, safety, security, efficiency and traceability.

GS1 EPCglobal Standards, which are applied to provide functionality in support of RFID-based Electronic Article Surveillance, permit businesses to maximize efficiency and profitability by allowing for real-time reaction to problems within the supply chain, reducing complexity, lowering inventory and costs, and increasing ROI. It's this





unique ability to have in-depth visibility on what is really happening in a company's operations that gives them the opportunity to establish trends, identify problems and subsequently resolve them resulting in improved key performance indicators.

As RFID technology adoption becomes more prevalent, it is increasingly becoming a focal point for policy makers around the world, who want to assure sound policies for the implementation of RFID in general and consumer facing applications at item level, in particular.

GS1 EPCglobal shares this goal and continues to position EPC/RFID Technology for EAS in the context of its own policy initiatives, including implementation guidance for its community. GS1 EPCglobal has published its "Guidelines for Consumer Products" to protect consumer privacy and enhance consumer confidence. Other implementation guidance tools include the Retailers Tool Kit and detailed guidance on the recent European Commission Recommendation on Privacy and Data Protection, available at [http://www.epcglobalinc.org/consumer\\_info/home](http://www.epcglobalinc.org/consumer_info/home). In addition, GS1 EPCglobal continues to help inform policy makers and the public in general about how RFID and EPC benefit society (see our Consumer Awareness website at <http://www.DiscoverRFID.org>).

## About the RFID based EAS Phase 2 Joint Requirement Group

### - Mission and Goal:

The objective of the EAS 2 JRG is to develop a Strategic Overview Guide and a Technical Implementation Guide that can be used by any company implementing GS1 EPCglobal standards based RFID capability identified for electronic article surveillance and loss prevention capabilities for reusable or disposable tags. These capabilities include those defined by end users during the first phase of the EAS JRG and those developed in the EAS 2 JRG. The guides clearly illustrate where EAS implementation is possible and approaches to enabling the business use cases outlined using existing GS1 and GS1 EPCglobal standards.



### - Target audiences

The target audience for the strategic overview guide includes:

- Project Managers with some understanding of what RFID is (including Gen 2) and who want to implement an RFID-based EAS solution in retail operations. This retail operation does not necessarily have an existing RFID or EAS program in place
- Loss Prevention department leaders
- Store operations
- Internal design teams
- Systems integrators and technical project leaders in retail operations.
- Suppliers providing merchandise to a retailer

The technical implementation guide was written for systems integrators and technical project leaders in retail operations.

### - Strategic Overview Guide

The Strategic Overview Guide shows the retailer how to use RFID-based EAS functionality based on current GS1 EPCglobal standards for reusable and/or disposable tags. The guide concentrates on goods receiving, points of entry and exit, and points of sale. These points of entry and exit can be retail store doors, break rooms, rest rooms, etc. Upon receipt of goods an inventory check occurs with all items' serialized EPC numbers are added to a database. Upon an item being sold, the number is removed from the database prior to it leaving the store. At the exits of the store, a detection system sounds an alarm or otherwise alerts the staff when it senses tags that have not been removed from the inventory database.

### - Technical Implementation Guide

The purpose of the Technical Implementation Guide is to provide the reader a technical guideline to adopt and/or implement RFID-based Electronic Article Surveillance in a Retail environment for reusable and/or disposable tags. The guide clearly illustrates how to implement an RFID-based EAS solution using existing GS1 and GS1 EPCglobal standards.



The proposed solutions depend on using either a reader with a simple database or access to a network database to determine whether an item has been sold or not. EPCglobal RFID-based EAS Technical Implementation Guide provides guidelines on how to technically implement RFID-based EAS using current GS1 and EPCglobal standards.

The Strategic Overview Guide and Technical Implementation Guide for GS1 EPCglobal RFID-based Electronic Article Surveillance (EAS) can be downloaded at no cost by accessing the following link: [http://www.epcglobalinc.org/standards/implementation\\_guidelines/](http://www.epcglobalinc.org/standards/implementation_guidelines/)

**- Why Walmart Stores, Inc., METRO Group, C&A Group, Sensormatic / ADT, Checkpoint and Avery Dennison are involved in the RFID-based EAS initiative**

*"By using RFID technology for multiple purposes, such as EAS and inventory visibility, we can further integrate supply chain processes and the potential to have distributed benefits for all partners involved is significantly enhanced."*

Dr. Gerd Wolfram  
Head of CIO-Office - Metro AG

*"By combining the advantages of EAS and EPC/RFID technology, we potentially realize the benefits of visibility throughout the supply chain together with the capability of deterring and detecting theft."*

Brand L. Elverston  
Director Asset Protection Systems and Analysis  
Walmart Stores, Inc.

*"RFID based EAS is from our point of view crucial for the introduction of item level tagging. The solutions should be easy and built on existing standards to avoid unnecessary complexity and costs."*

Joachim Wilkens  
Program Office and IT Logistics  
C&A

*"Greater item level visibility, operational efficiencies, profit improvements and customer satisfaction continue to be key focus areas of our technology development activities for retailers. As a founding member of GS1 EPCglobal, Sensormatic continues to support the industry's efforts of standards-based RFID solutions. The guidelines for RFID-based EAS solutions are a natural progression of item level intelligence for retailers as they continue to invest in new technologies."*

Scott Clements  
President  
Sensormatic Retail Solutions

*"Retailers need to reduce shrink, reduce out-of-stocks, reduce on-hand inventory, and increase sales today more than ever; RFID-based EAS is an exciting extension of RFID-based merchandise visibility, and a way to achieve these objectives."*

*As retailers increasingly look to deploy RFID-based solutions to meet their business needs, they will be well-served by the GS1 EPCglobal guides."*

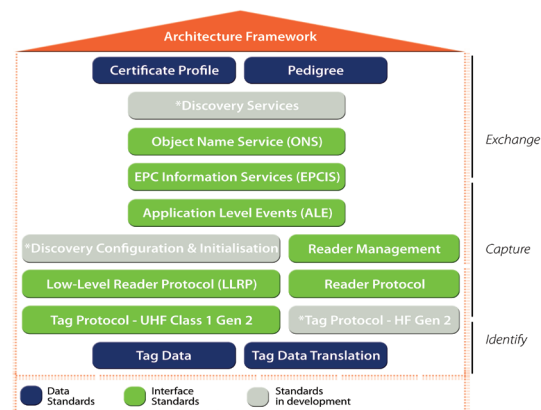
Per Levin  
President, Shrink Management and Merchandise  
Visibility Solutions - Checkpoint Systems

*"The business case for adopting RFID will be further enhanced though the development of these standards that will allow retailers and vendors to have a common platform for using EPC Gen2 RFID as a tool for providing EAS functionality. As an industry leader with deep RFID and RF-based EAS experience, we are proud to have contributed to this important industry milestone."*

Paul Chamandy  
Vice President, New Business Development - Avery Dennison

**About GS1 EPCglobal Standards and EPCglobal Inc**

GS1 EPCglobal Standards are a set of integrated industry-driven standards which have been developed to meet user's requirements enabling the identification of objects, data capture and sharing of information among partners throughout the supply chain. These standards are developed within the framework of EPCglobal Inc.



EPCglobal Inc is a subsidiary of the global not-for-profit standards organization GS1, and supports the global adoption of the Electronic Product Code as industry-driven standards to enable accurate, immediate and cost-effective visibility of information throughout the supply chain.

**How to Join the GS1 EPCglobal Community**

In order to find out more about the GS1 EPCglobal community, including becoming a subscriber, and to participate actively in the development and implementation of global standards to create visibility and improve efficiency throughout the supply chain, please visit <http://www.epcglobalinc.org/home>.

For more information regarding the guides, recommendations, outcome and deliverables of the RFID based EAS Phase 2 Joint Requirement Group, contact Karl Van der Spiegel at [karl.vanderspiegel@gs1.org](mailto:karl.vanderspiegel@gs1.org).