



What are the Benefits and Use Cases of the EPCglobal Network™?



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1 INTRODUCTION

The EPCglobal Network™ will enable the secured collection and communication of real time, product movement data about individual items as they travel through the supply chain. As a result, it will provide a history of product movement accessible to authorised users. Prior to the development of the EPCglobal Network, there were no globally recognised standards or methods for collecting and communicating such information. The EPCglobal Network will fill that void, serving as a significant advancement in product identification and providing many valuable uses that span industries.

2 PURPOSE OF THIS DOCUMENT

This paper discusses some of the practical aspects of the EPCglobal Network by describing the some of benefits and use cases for the EPCglobal Network.

3 BENEFITS OF THE EPCglobal NETWORK

The combination of RFID and Internet technologies in the EPCglobal Network provides three significant advancements to product identification in the supply chain.

- The creation of a unique identifier for individual items in the global supply chain enables the communication of item-specific information.
- The removal of line of sight requirement for reading product identification numbers. An EPC reader instantly detects all EPC tags passing through its radio frequency field. As a result, it is capable of reading in one glance the EPC of every EPC-tagged item in a container, pallet or case.
- A network of information that provides real time, product movement data for individual items to authorised users.

4 BUSINESS USE CASES FOR THE EPCglobal NETWORK

Using strategically placed readers throughout the supply chain, the EPCglobal Network makes the entire shipping route for any given EPC transparent. As a result, it provides a complete history of product movement in real time, a capability that has business use cases across industries. Examples of some of the business use cases developed for the EPCglobal Network are discussed in this section.

4 - 1 TRACK & TRACE

The EPCglobal Network revolutionises track and trace capabilities. As noted above, the EPCglobal Network provides the complete shipping history for an EPC-tagged pallet, case or individual unit in real time. This real-time information flow provides unparalleled access to up-to-the-minute tracking information (i.e. where is an item?), as well as detailed tracing information (i.e. where has this item been?), streamlining track and trace efforts for missing or partial shipments. In addition, complete shipping route transparency provides detailed information that can be analysed and used to improve shipping route logistics and identify areas for improvement and cost reduction in demand planning (e.g. built in lead times; safety stock; etc.).

4 - 2 PRODUCT RECALL

Because the EPCglobal Network provides detailed, historical data, it is an important resource in the event of product recall. First, it expedites the evaluation of the problem because it provides one, comprehensive source of information for each contaminated product. Secondly, if several contaminated products have been identified, a comparison of each product's EPC history might identify facets of manufacturing or shipping that the contaminated products had in common, which may assist in isolating the cause of the problem and assessing what other products might be affected. Thirdly, strategically placed readers can provide a tighter snapshot of the origin of a problem, reducing the cost and the impact of a recall. (For example, placing readers

at the end of each production line, as opposed to only the factory door, provides the ability to isolate the source of a problem at a much lower level, potentially reducing the number of products that need to be recalled.) Finally, the instance and history data provide an audit trail that makes it easier to find most, if not all, contaminated products in the supply chain.

4 - 3 COUNTERFEITING

With the EPCglobal Network, each legitimate item has an RFID tag with a unique EPC that is read at various points throughout the supply chain. As a result, counterfeit items can be more readily identified because such items would have either no EPC's, invalid EPC's, or EPC's that are duplicates of authentic products. Thus, the EPCglobal Network provides a valuable resource for

identifying counterfeit products in the supply chain.

5 CROSS-INDUSTRY USES

The ability to access information in real time about any EPC-tagged item, whether it be pallet, case or individual unit, is fostering the creation of new business paradigms across many vertical sectors. As a result, the EPCglobal Network has dramatic potential and business use cases that span industries. The table below lists some of those industries and the specific use cases identified in each sector.

Industry Sector	Specific Use Examples
Retail	<ul style="list-style-type: none"> • Track and trace • Product recalls • Streamlined shipping and receiving • Automated invoice reconciliation • Shrinkage reduction • Improved demand planning • Product authentication
Healthcare	<ul style="list-style-type: none"> • Red Cross: monitoring blood banks • Hospitals: monitoring medication routes from medicine cabinet to patient • Pharmacy: drug recall • Prescription drugs: providing pedigree; identifying counterfeit or falsely-labeled medications
Logistics	<ul style="list-style-type: none"> • Asset utilisation: asset (e.g. containers, trucks, etc.) management, tracking and maintenance • Improving operational efficiencies: volume planning and automated data capture through shipping route • Safety and security: shipment route tracing and positive identification of package contents • Automated customs
Automotive	<ul style="list-style-type: none"> • Capital asset management: container and tool management • Part tracking: inventory management; assembly; theft control; brand authentication; distribution; recall; recycling • Vehicle related: car identification; access control; tire pressure
Food Industry	<ul style="list-style-type: none"> • Mad Cow Disease/Bird Flu: cow/bird pedigree, herd/flock history and details about the release into the food chain • Restaurants: food poisoning
Department of Defense	<ul style="list-style-type: none"> • Supplies and materials management: track and trace; streamlined receiving; etc. • Military assets management: asset utilisation, tracking and maintenance
Airline	<ul style="list-style-type: none"> • Baggage handling

6 CONCLUSION

The EPCglobal Network combines standards-based numbering systems with RFID and Internet technologies to enable the secured collection and communication of real time, product movement data about individual items as they travel through the supply chain. The ability to access product movement information in real time about any EPC-tagged item optimises track and trace capabilities and enables greater automation of tracking procedures. The commercial world benefits from improved operations by reducing order fulfilment errors, speeding up sorting, and reducing inventory costs and shrinkage. Moreover, these capabilities provide an invaluable resource to public safety officials in product recall and public health situations, and can be used to enhance customs and port security as well. Because all of these benefits serve to reduce costs and enhance security, consumers gain as well. Serving as a major advancement in product identification at a significant point in history, the EPCglobal Network will provide considerable benefits for commerce, national security, public health and safety, and consumers alike.





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