



GS1 EPCglobal Standards for Item-Level Tagging

What's in it for me?

Benefits of EPC technology in Item-Level Tagging

As the EPC 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 benefits consumers by providing improved product availability, speed of service, and quality assurance.

- **Improved Product Availability**

EPC helps retail keep better track of inventory so items can be restocked faster.
Products are on the shelf when you want them.

- **Faster Service**

EPC can help you easily find products in the store.
In the future, EPC can help speed check out.
In the future, EPC can allow for faster returns and improved return logistics.

- **Quality Assurance**

EPC can help protect you against counterfeit or pirated products including medicines, clothing, toys and electronics.
EPC can help make it easier to check how and when products move from manufacture to retail shelf.
EPC can be used to monitor goods delivery and expiration date.
EPC can provide a faster way to recall defective products.

EPC helps prevent counterfeit goods from reaching consumers by tracking products from its source and also helps manufacturers' ability to quickly and effectively recall damaged or defective products. The EPC allows retailers to track inventory more effectively, reorder products more efficiently, and get the products consumers want on the shelves at the right time.

RFID Technology UHF and HF

The benefits of UHF have been championed by retailers, consumer goods manufacturers, aerospace companies, airports, and government agencies, because the technology is based on its potential to improve business processes across the global value chain. Also RFID systems based on HF technology have been reliably used in pharmaceutical manufacturers, high technology, automotive, gaming, libraries, and other industries.

GS1 EPCglobal Item-Level Standards

Based on the specific needs of a particular sector or group of industries, EPCglobal Inc developed UHF and HF Item-Level Standards at the request of the community. The EPCglobal HF Gen2 V1.0.3 and EPCglobal UHF Gen2 V1.2.0 Item-Level Standards have similarities as well as differences.



Applications

- Tagging of DVD's at major retailer in North America
- Tagging of books at important retailer in Europe
- Tagging of baggage at major airport in Asia
- Drug counterfeit protection at a leading pharmaceutical company worldwide
- Tagging of medical devices in Asia-Pacific
- Food traceability at Ministry of Agriculture in Asia

Benefits

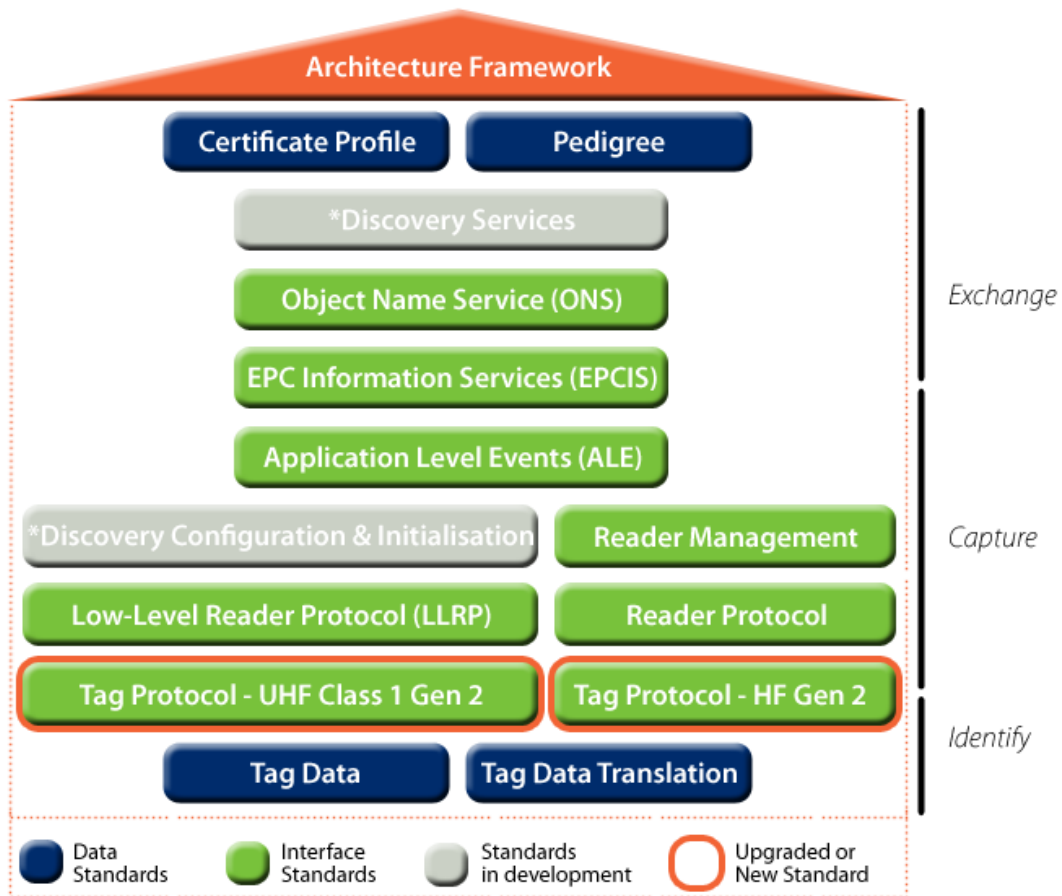
- Facilitates drive for globally harmonized regulations for UHF
- Offers privacy protection
- Usable throughout the supply chain from door portal to retail store self
- No issue with backwards compatibility with earlier versions of Gen2
- Read and write speed in operation of large tag populations
- Enables global use through world-wide harmonized RF regulations (ISM band)
- Compatibility with existing HF infrastructure

Specifications

- The UHF and HF specifications are logically similar. Consequently, the Low-Level Reader Protocol (LLRP) supports EPCglobal UHF Gen2 V1.2.0 and EPCglobal HF Gen2 V1.0.3.
- The data format, memory partitioning and essential functions (inventory, read, write, lock and kill) are identical for both standards. This implies that EPC based applications can treat UHF tags and HF tags identically.
- The signaling layer used by EPCglobal UHF Gen2 V1.2.0 and EPCglobal HF Gen2 V1.0.3 are different reflecting diverse ways of communicating with HF tags and UHF tags.
- Both the UHF and HF Standards implement the Item Level Requirements identically
- The EPCglobal UHF Gen2 V1.2.0 specification provides additional data security for large amounts of data
- The EPCglobal UHF Gen2 V1.2.0 specification enables determination of whether user memory has been written and whether it can be read
- The EPCglobal UHF Gen2 V1.2.0 specification enables recommissioning
- The EPCglobal HF Gen2 V1.0.3 specification combines the EPC Gen2 logical layer with a HF frequency, leveraging the speed and command set of the Gen2 protocol
- The EPCglobal HF Gen2 V1.0.3 specification has two physical communication layers; a mandatory ASK and an optional PJM
- The EPCglobal HF Gen2 V1.0.3 specification was designed taking into account particular Item-Level requirements



GS1 EPCglobal Standard Overview

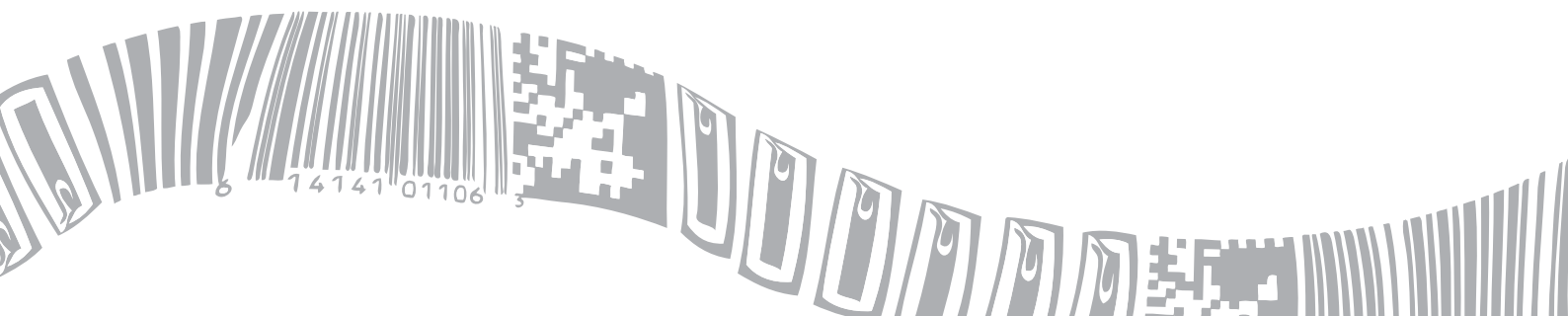


About EPCglobal Inc

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.

For more information, contact Karl Van der Spiegel at karl.vanderspiegel@gs1.org or your local GS1 Member Organization (contact details available on www.epcglobalinc.org).





Princeton Pike Corporate Centre
1009 Lenox Drive, Suite 202
Lawrenceville, 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