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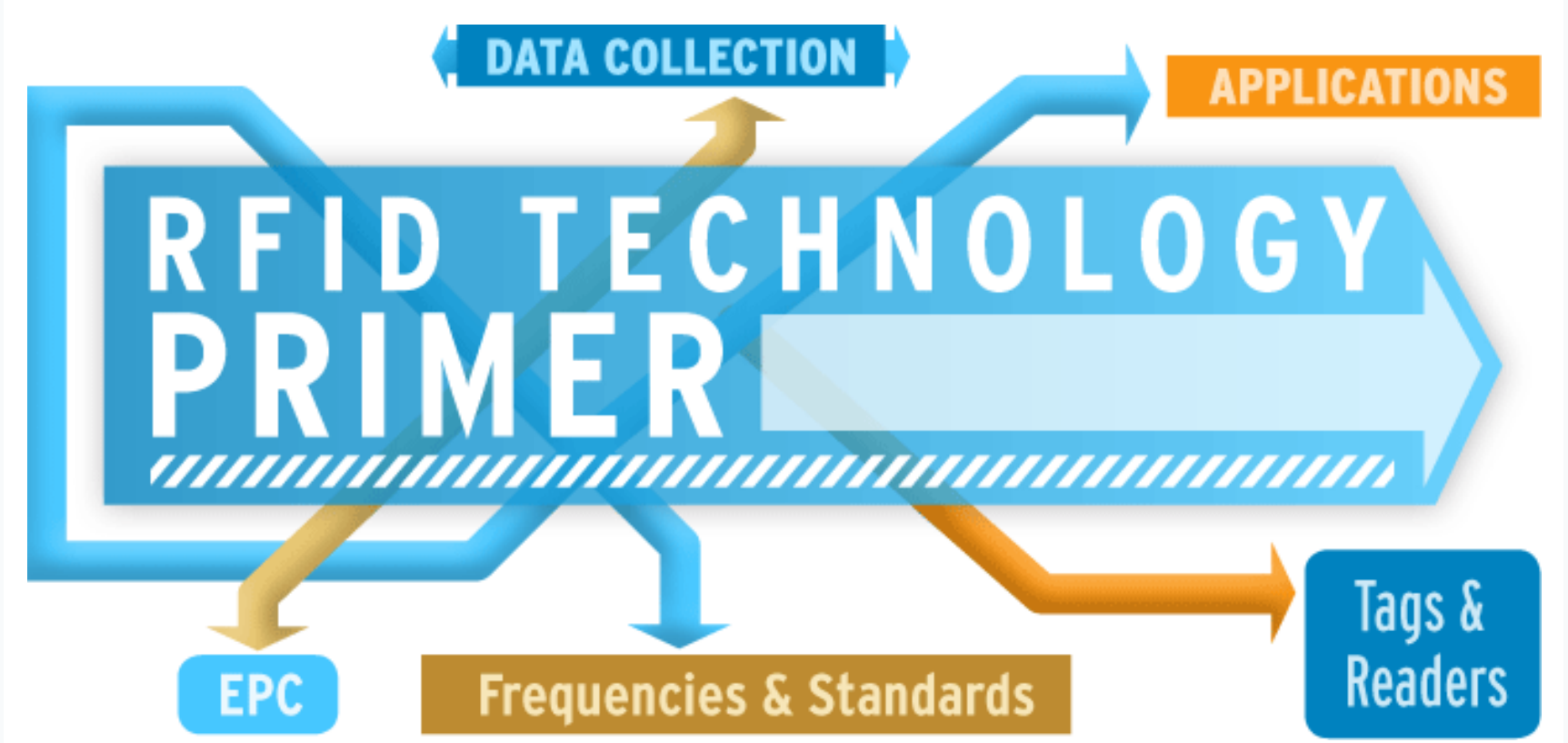

New to RFID? Looking to brush up on your knowledge? The RFID Technology Primer provides background on RFID technology, including how RFID works, the many types of RFID systems, and the ways people are using RFID today.

CHAPTER 01

What Is RFID?

Radio frequency identification (RFID) is a form of wireless communication that uses radio waves to identify and track objects. RFID takes the barcoding concept and digitizes it for the modern world providing the ability to:

- Uniquely identify an individual item beyond just its product type
- Identify items without direct line-of-sight
- Identify many items (up to 1,000s) simultaneously
- Identify items within a vicinity of between a few centimeters to several meters

RFID FACT

RFID can identify individual objects at rates of over 1,000 tags per second

An RFID system has *readers* and *tags* that communicate with each other by radio. RFID tags are so small and require so little power that they don't even need a battery to store information and exchange data with readers. This makes it easy and cheap to apply tags to all kinds of things that people would like to identify or track.

Why Use RFID?

RFID technology has the capability to both greatly enhance and protect the lives of consumers, and also revolutionize the way companies do business. As the most flexible auto-identification technology, RFID can be used to track and monitor the physical world automatically and with accuracy.

RFID can tell you what an object is, where it is, and even its condition, which is why it is integral to the development of the Internet of Things—a globally interconnected web of objects allowing the physical world itself to become an information system, automatically sensing what is happening, sharing related data, and responding.

RFID use is increasing rapidly with the capability to "tag" any item with an inexpensive communications chip and then read that tag with a reader. Endless applications range from supply chain management to asset tracking to authentication of frequently counterfeited pharmaceuticals. Applications are limited, in fact, only by the imagination of the user.

RFID Applications

RFID can help:

- Automate inventory and asset-tracking in healthcare, manufacturing, retail, and business sectors
- Identify the source of products, enabling intelligent recall of defective or dangerous items, such as tainted foods, defective toys, and expired or compromised medication
- Prevent use of counterfeit products in the supply chain
- Improve shopping experience for consumers, with fewer out-of-stock items and easier returns
- Provide visibility into the supply chain, yielding a more efficient distribution channel and reduced business costs
- Decrease business revenue lost to theft or inaccurate accounting of goods
- Improve civilian security through better cargo monitoring at ports
- Wirelessly lock, unlock and configure electronic devices
- Enable access control of certain areas or devices

Whatever the application, RFID has the potential to increase efficiency of operations, improve asset visibility and traceability, decrease reliance on manual processes, reduce operations costs, and provide useful data for business analytics.

GO TO CHAPTER 2

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