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Identifying Items

Macy's Inc. recently announced that apparel suppliers to its Macy's and Bloomingdale's stores will be required to apply passive ultrahigh-frequency RFID tags to items that account for roughly 30 percent of the company's sales. Macy's joins Walmart and other retailers that are seeking huge gains in the efficiency and accuracy of in-store inventory management through RFID technology.

Apparel suppliers that will be RFID-tagging items at the point of manufacture need to understand “serialization”—the process of assigning a unique serial number to each item. That’s true whether the supplier is RFID-tagging its own goods or delegating the tagging to a contract manufacturer or labeler.



Typically, the unique identifier is a Serialized Global Trade Item Number (SGTIN). The SGTIN includes the same GTIN product identifier already encoded into the Universal Product Code or European Article Number bar code, identical for all instances of the same product. The “S” is a unique serial number, and with 96-bit RFID tags, there can be 274 billion serial numbers for each GTIN.

There are four ways to choose the serial number for each tag. If a product is tagged only in one place, the supplier or its designated third party can assign serial numbers one at a time. Tagging software keeps a counter with each GTIN, and advances it as each tag is programmed.

When the same product is tagged on two or more lines, or by two or more third parties, the supplier must ensure the same number isn’t used more than once. One method statically assigns large ranges to a tagging station or party—for example, it might reserve serial numbers 0 through 99,999,999,999 for plant “A,” and 100,000,000,000 through 199,999,999,999 for plant “B.” You don’t need special software to make these allocations, but you must keep detailed records of them.

Another option is to use number-management software that communicates with the tagging lines to assign small ranges on demand. A tagging line requests, say, 1,000 serial numbers for a given GTIN, and the software responds with numbers 5,000 through 5,999. When a second line requests numbers for the same GTIN, it gets a different range. The advantage of this scheme is that it creates fewer “holes” of unused numbers within the overall serial number space.

It’s also a good choice if the supplier makes many different products, or if there are frequent changes to where products are tagged.

The fourth method takes advantage of a unique “tag identifier” (TID) serial number burned into RFID tags by tag manufacturers, which ensures it is unique across all RFID tags worldwide. The apparel manufacturer merely copies the TID serial number into the SGTIN, so no recordkeeping is required. But there are two caveats: Only a portion of the TID serial number fits into the SGTIN-96, so there is a danger of duplicate numbers, and the supplier doesn’t control which serial numbers are used for each GTIN, making it difficult to change methods later.

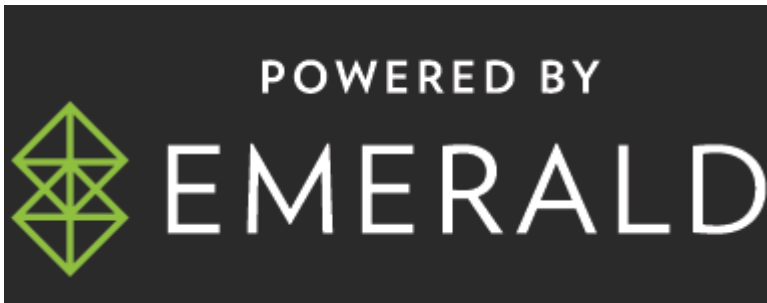
Ken Traub is the founder of Ken Traub Consulting, a Massachusetts-based firm providing services to software product companies and enterprises that rely on advanced software technology to run their businesses.



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