

Airplane Industry Looks at UHF

At a meeting of the ATA being held today, Boeing and Airbus will propose amending the specification for tagging airplane parts.

By Mark Roberti

Mar. 31, 2005—At a meeting being held by the Air Transport Association today in Orlando, Fla., Boeing and Airbus will propose amending the ATA's Specification 2000 to include the use of ISO 18000-3 and 18000-6, two air-interface protocols ratified as international standards by the International Organization for Standardization. Such an amendment would be significant because, if adopted, it would enable suppliers to use UHF tags to satisfy RFID tagging requirements by the U.S. Department of Defense, as well as those by the two airplane manufacturers.

An industry task force formed by the ATA developed the Spec 2000 to create a single standard for identifying airplane parts by means of bar code and radio frequency identification technologies. The spec provides a common tracking ID, using a part number, a serial number and a manufacturer code, to enable airplane makers, suppliers and airlines to share information through secure databases that contain information about each unique part's history. Twice a year, the ATA meets to look at whether the specification needs to be revised.

ATA originally chose to use ISO 15693 as the international RFID standard for tracking parts. ATA chose ISO 15693, a standard for 13.56 MHz tags, because 13.56 MHz tags work more effectively around products made of metal, and most airplane parts are metal.

There are several reasons that Boeing and Airbus would like to amend the spec now. One goal is to switch from ISO 15693 for 13.56 MHz tags to ISO 18000-3, which is part of a series of protocols covering all of the commonly used RFID frequencies. The ISO 18000 protocols were designed as the global standard for using RFID in open supply chains.

The inclusion of ISO 18000-6 is more significant because it would allow suppliers to use tags that offer a longer reader range in their supply chain. Delta Air Lines, for instance, wants to use tags on engine parts to facilitate that quick gathering of information on parts for maintenance, but it would like to use the same tags for tracking the parts in its maintenance depots and needs the longer reader range in these facilities.

Boeing and Airbus have been told by their suppliers that they would like to use single type of RFID tag on the parts they supply to both the airplane manufacturers and the DOD. That means they can buy tags in bulk and don't have to use two different types of RFID systems within their own facilities and maintain separate inventories, based on their customers' needs.

The DOD has said it plans to use UHF tags based on the EPCglobal standards. EPCglobal has submitted its Gen 2 standard, ratified in December, to ISO for approval as ISO 18000-6C (there are two other versions of 18000-6 known as A and B). If ISO 18000-6C is accepted, it could include EPCglobal's Gen 2 standard after it becomes an ISO standard, which is expected sometime in the first half of next year.

Boeing and Airbus also will propose that Spec 2000 require that a UHF tag have 64 kilobits of data so that it can store not just a serial number but also the manufacturer number, date of manufacture, and the most recent history for that part (for example, who used it, on what plane and for how many flights or cycles). The extra data stored on the tag would give maintenance crews quick access to data even in remote locations.

The ATA meeting will also begin to look at issues regarding the sharing of RFID data. One issue is how to synchronize data on the tag with what's stored in airline databases. There could be confusion if, for instance, a tag says a part was recently refurbished but the database says it hasn't been.

Another question is how to share data about parts among manufacturers, suppliers and airlines. At the 2005 Global Aviation RFID Forum, which was held in Orlando on Mar. 29-30, Jens Heitmann, the senior manager for system/equipment standardization process and methods at Airbus, told the attendees that Airbus currently communicates with each partner on a one-to-one basis. He said Airbus would like to work with its suppliers, customers and Boeing, to create a network where all players could share information securely. It will likely take months for ATA to develop standards for data sharing in the industry.

Copyright ©2005 RFID Journal, Inc. All Rights Reserved