

## Ubisense RFID tags, readers and software will make it easier for the aircraft manufacturer to track production of key components for its A380 double-decker planes.

By Claire Swedberg

Feb. 19, 2010—Furthering its initiative to employ radio frequency identification technology to improve its efficiency in the manufacture and maintenance of its aircraft, [Airbus](#) is installing a real-time locating system (RTLS) provided by [Ubisense](#) at some of its assembly plants in Europe. The system, expected to go live by the end of this year's second quarter, will enable the company to track the production of large components for its A380 commercial passenger airliners, as the double-deck, wide-body, four-engine planes move from one zone to another within those facilities.

A Ubisense battery-powered RFID tag transmits a unique ID number via an ultra-wideband (UWB) RF band between 6 and 8.5 GHz. Readers (which Ubisense calls sensor units) capture that ID number and send it to a server via a cabled connection, along with location data. Software running on that server compares the tag signals as received from several readers, and then calculates the tag's location based on time difference of arrival (TDOA). Tags typically can be read at a distance of up to 160 meters (525 feet). The system can pinpoint each tag's location within 30 centimeters (12 inches), says Richard Green, Ubisense's CEO.

Currently, manual data entry is required to track the progress of a specific component in assembly. However, with the RFID system in place, the component's location would become automatically visible and in real time.

Once the system goes live, a tag will be affixed to the core of each large component before the assembly process begins. Within the facility, Ubisense sensor units will read the unique ID number of every tag as it moves through the plant. The Ubisense software creates zones based on locations within the assembly area in which each sensor unit is located, Green says, and can thereby determine when a given component has moved into a new zone, thus indicating it has begun a new procedure.

Internet-based Ubisense software can then send an alert if, for example, a component has remained too long in a specific location or zone, or issue a notification when a part passes from one process to the next. Once a component is fully constructed, its tag is removed for reuse on another item undergoing assembly.

Airbus began seeking an RTLS solution for large-parts assembly in 2009, and tested several technologies on component assembly for the A400M, a military transport aircraft. The company then determined that the Ubisense system provided the best solution, because it could allow for expansion of the system (scalability), and because it provided high levels of accuracy when tested.

"The use case is to track large aircraft sections and have a more real-time view of our industrial flows," says Carlo K. Nizam, Airbus' head of value-chain visibility and RFID. "Real-time information can help us

better support increased production rates quicker and more accurately."

Although Airbus chose to launch the system with the A380, Nizam says, the company will consider using it elsewhere as well. "If it works as we anticipate it will," he states, "we will certainly consider scaling it across other aircraft programs."

Airbus has embarked on a number of other RFID technology projects (see [Airbus Trials Showing Strong Results](#)). Recently, the firm announced how it intends to use EPC Gen 2 passive RFID tags with as much as 8 kilobytes of memory to track the maintenance of repairable parts for its new A350 XWB planes (see [Airbus Signs Contract for High-Memory Tags](#)).

According to Nizam, all RFID-related data is collected by what the aircraft manufacturer calls the Airbus Business Radar—an automatic data-collection network fed by multiple auto-ID technologies. The information collected by this internal system is then forwarded to the company's corporate auto-ID middleware platform. "This," he explains, "is the equivalent of an internal air-traffic control system that can track, in real time, the location of assets, tools or other data related to the production of our aircraft." Any authorized Airbus employee could then access this information, either at the plant where the assembly is taking place, or at the company's office in Toulouse, France.