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Middle Eastern Aircraft Services Company Gains Efficiency With RFID

While Airbus and other aircraft manufacturers have been taking a leading role in deploying radio frequency identification for the management of airplane parts, one aviation company has

leveraged Airbus' knowledge to create its own solution. Abu Dhabi Aircraft Technologies (ADAT)—a third-party provider of maintenance, repair and overhaul (MRO) services—has deployed an RFID system at its facility to manage work-in-progress for the parts it services for its customers, which include Airbus and other aircraft manufacturers. The system has helped ADAT reduce turnaround times, and has provided information that the firm can employ to further improve efficiency.

ADAT developed the solution at Airbus' RFID Centre of Excellence, a site at which the aircraft maker displays, demonstrates and tests RFID systems for its own internal use, and to assist its customers in deploying RFID technology. ADAT's RFID system is designed to track components from their reception at a dedicated receiving area—the company's Component Control Center—through to numerous repair stations (also known as workshops), and to the dispatch area from which those parts are then shipped back to the customer. By reading the tags during these multiple processes, ADAT attains a real-time view into the progress of each MRO service being provided for every component, and can thus identify if a delay occurs. In addition, personnel at the multiple service areas can use the technology to view the parts that may be en route to their station.

The company's facility, located in Abu Dhabi, United Arab Emirates (UAE), encompasses 88,000 square meters (947,000 square feet), and includes the Component Control Center receiving area, as well as workshops for component overhaul and repair, including airframe and technical support. Because of Airbus' knowledge of RFID technology deployment, ADAT approached the company to establish a customized RFID design that would reduce the turnaround time of component repairs. The technology is aimed at benefiting not only ADAT, but also its customers—including Airbus.

The company first met with Airbus in November 2010, recalls Abdul Khaliq Saeed, ADAT's CEO, in order to learn more about

the aircraft manufacturer's own RFID installation projects and how they are being used, or are planned to be used. At that meeting, he says, Airbus invited ADAT to visit its RFID team at Airbus' showroom in Toulouse, to receive a firsthand look at the technology and how it works. ADAT's executives conducted that visit the following month.

"Seeing the RFID technology demonstrated in Toulouse," Saeed says, "it was immediately clear that RFID had much to offer in our quest to improve business processes and performance." ADAT realized that the technology could aid its efforts to improve the efficiency of the services it provides to customers, he adds, and also ensure that delays did not occur. What's more, both the company's management and its staff—as well as customers, if requested—would know, in real time, what work-in-progress was underway.

ADAT and Airbus discussed implementing a pilot RFID project at the Abu Dhabi facility to identify the best use cases in an actual production environment. "The team identified several use-case opportunities," Saeed explains, and then established a project that tracked specific components through several of the company's repair workshops or stations. The team, consisting of staff members from both ADAT and Airbus, began designing and developing the RFID tracking system and software, and also built an interface with ADAT's Oracle Complex Maintenance, Repair, and Overhaul (cMRO) software. In addition, the team tested and selected the appropriate readers, tags and LCD screens on which data would be displayed. This initial phase took place following the 2010 meeting, while phase two—the system's actual deployment, as well as training ADAT's staff on its use—commenced during the second quarter of 2012. By early 2014, the solution was fully rolled out and had been taken live.

When a component arrives at ADAT's facility, a worker inputs the order into the system and related paperwork is printed. At that time, a Zebra Technologies RZ400 RFID printer generates

an RFID label made with an Alien Technology ALN-9649 EPC Gen 2 passive ultrahigh-frequency (UHF) tag. The worker affixes that label to the paperwork, which then travels with the component throughout the repair process until it is shipped back to the customer.

At multiple workstations, staff members are equipped with Motorola MC9190-Z handheld readers. As an aircraft component arrives at each station, the worker at that location uses the handheld to capture the unique ID number of the label attached to the part's paperwork. The date and time of that component's arrival is then forwarded to the software, which stores the item's description, along with order details linked to that ID number. The read event is also displayed on LCD screens mounted at the workstations.

With the RFID system in place, ADAT's operators now spend less time entering data into the system at each workstation, thereby reducing the amount of time required for each component repair process. The system also enables operators to better manage the allocation of time for parts as they view which will arrive at each station, and when, on the LCD screen.

Not only can ADAT view the data at any given time to identify where a part is located, and which step it has reached in the servicing process, but the company can also analyze historical data in order to further improve processes. For example, it could use the information to pinpoint where delays may occur, and which components, employees or processes might be contributing to the delay, thereby enabling management to resolve any potential bottlenecks.

The technology reduces turnaround times, Saeed says, which means customers get their components back faster for use aboard their aircraft. "Reduced turnaround time improves production throughput, as well as customer satisfaction," he

states. Moreover, the system helps to ensure that no errors are made while workers key in details, such as the serial number of a part that a staff member is working on.

While the pilot had consisted of reading tagged component paperwork at a limited number of repair stations, the RFID system has been fully rolled out at ADAT's Component Control Center, and to all workstations served by the Component Control Center.

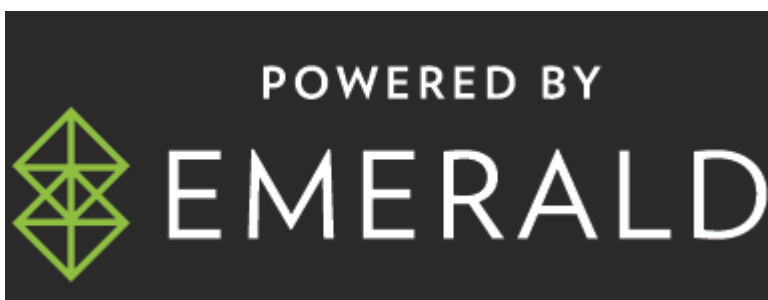
Additionally, the company has recently launched another RFID-based project with Airbus, in which ADAT will tag the parts used at its Engine Center—where engines are repaired and maintained—thus enabling the firm to monitor which parts were installed into the engines it services. According to Saeed, ADAT is also exploring the possibility of using RFID technology to track tools.



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