# FUJITSU

# Case Study
## Airbus S.A.S

"Smart technologies like RFID can help us connect to our aircraft parts, and help create the Internet of Things for Airbus. This is where Fujitsu is helping us."

Carlo K. Nizam, Head of Value Chain Visibility and RFID, Airbus S.A.S


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### The customer

Country: France
Industry: Aerospace
Founded: 1970
Employees: approx. 55,000 direct employees worldwide
Website: www.airbus.com

### The challenge

Airbus S.A.S is becoming increasingly reliant on data in an already complex and expensive industry. Paper-based processes of handling this data are only adding to the complexity of day-to-day operations, and with further growth of the number of traceable parts predicted to more than double by 2017, the company faces a steep climb to ensure that data is managed effectively and an efficient supply line is maintained.

### The solution

Airbus S.A.S began digitizing its operations and introduced radio-frequency identification technology (RFID) across the full lifecycle of its operations. This required strict criteria to be met, and Fujitsu successfully qualified in all areas. The technology enables a wide range of information, from part numbers to maintenance history, to be electronically and digitally attached to individual aircraft components.

### The customer

Airbus S.A.S (Airbus) is a division of Airbus Group SE (formerly European Aeronautic Defence and Space Company NV) that manufactures civil aircraft. It is based in Blagnac, France, a suburb of Toulouse with production and manufacturing facilities mainly in France, Germany, Spain and the United Kingdom. Airbus has approximately 55,000 direct employees worldwide and has subsidiaries in the United States, China, Japan, India and Middle East.

### The challenge: Traceability of the entire process

Building and servicing modern passenger aircraft is a complex, challenging and expensive business. Like any business, Airbus uses IT systems to help manage their manufacturing operations. However, getting data into these systems in the past has relied on using paper-based processes. The growing complexity of their operations means handling this data is becoming a more difficult challenge. Forty years ago Airbus was building ten aircraft per year. In 2015 they built 629. In the coming years it will approach one thousand. In 2012, Airbus was tracing 1.2 million parts every year. By 2017 they expect this number to rise to more than double in just five years.

Aircraft parts have life cycles that can run into decades, from design and manufacturing through to repair and disposal. Each part requires careful management. Safety and security are the top priority for the aviation industry. So traceability of the entire process is essential. Managing and tracking components is a complex challenge. Faults clearly cannot be tolerated and error-free maintenance is absolutely essential. Data builds up continuously through the lifetime of the aircraft.

Production also represents a challenge. Airbus has geographically dispersed production lines. An A380, for instance, is made up of sub-assemblies – nose, fuselage, wings, tailplane - in factories across France, Germany, Spain and the UK. With each finished aircraft coming with a list price tag of $428m, inventory is a significant cost to its business. An efficient supply chain is essential to their business.

### The solution: Digitalizing its operations

In order to help address these challenges, Airbus began to digitalize its operations and radio-frequency identification (RFID) is an important piece of the solution. Airbus is using RFID technology across the full lifecycle of its operations to provide real-time automated visibility, streamline processes and reduce waste. With regards to aircraft parts, the technology enables a range of information, such as part number, serial number, date of manufacture and even maintenance history, to be electronically and digitally attached to aircraft components.

## The benefit

- Provides real-time automated visibility
- Streamlines manufacturing processes
- Reduces time spent entering data into systems from hours to minutes
- Vastly improves efficiency of on-site work
- Eliminates manual data-entry errors
- Increases time that aircraft can spend in the air
- Shortens lead times for parts supply and eliminates duplication in procurement
- Fewer problems and errors in assembly process due to better quality of data

## Products and services

- RFID and Sensor Solution

Airbus's next-generation aircraft, the A350 XWB, is delivered with over 2,000 components fitted with RFID tags. Airbus has further extended permanent RFID part marking to traceable parts for all its aircraft families and in 2014 launched a project to replace conventional name plate attached to these parts produced in-house with an RFID enhanced nameplate as standard. As Carlo K. Nizam, puts it: "The way we look at it is that it's no different than an aircraft. In the late 80s we built the first fly-by-wire commercial aircraft with the A320. And what we're trying to do today is exactly that. We're trying to build a fly-by-wire value chain. A digitalized value chain."

RFID tags for aircraft parts must be robust. They need to be resilient to the harsh environments that an aircraft encounters but they also must be light. Fujitsu tags successfully met all the severe qualification criteria, and Airbus selected Fujitsu as a supplier for a 'RFID Integrated Label' as well as a RFID data encoding and printing solution. Fujitsu was chosen on the basis of its strengths in semiconductor technology, RFID design and manufacturing, and global delivery capability.

### The benefit - Increasing productivity and lower cycle times

To perform a manual check of seats and other traceable items and record the serial numbers and locations used to take hours of work. On top of this, the data had to be manually entered into a system and cross referenced for discrepancies. Using RFID, the same process takes minutes. The efficiency of on-site work is vastly improved and manual data entry errors are eliminated. Moreover, information can be shared and checked instantaneously. The value of the technology goes straight to the bottom line: aircraft can spend longer in the air.

Production has seen even greater benefits. By using RFID, components are managed and tracked through the production line. As the storage locations of all types of parts and their statuses are identifiable, inventory control of parts can be fine-tuned, leading to shorter lead times for parts supply and elimination of duplication in procurement. There are significantly less backlogs and unnecessary delays.

The tangible benefits have been increased productivity and lower cycle times, meaning lower inventory and a better cash position. A better quality of data means fewer problems and errors in the assembly process. The technology is expected to reduce supply chain inventory costs alone by more than 20 percent. But the intangible benefits have been just as great. Airbus can now better visualize their supply chain, in real-time. This information generates new insights, which further benefit the business. As Nizam observes:

"Great things happen when things are connected. We can know what is where and when all automatically, in real-time and digitally."
Carlo K. Nizam, Head of Value Chain Visibility and RFID, Airbus

### Applying Fujitsu's RFID and Sensor Solutions to other industries
To promote the introduction of RFID to the aviation industry, a working group established by the Air Transport Association of America (ATA) has been leading initiatives to standardize RFID data format. Since joining this working group in 2007, Fujitsu has been involved in the collaborative process of establishing a RFID standard called ATA Spec 2000. Fujitsu's RFID and Sensor Solutions are supporting the supply chain in the aviation industry. Fujitsu offers RFID tags and other AIT devices, readers corresponding to the RFID frequencies of various countries, and middleware for ensuring data integrity. Fujitsu is a one-stop source of the solutions covering everything from development of systems attuned to customer needs to maintenance operations. Fujitsu's global support underpins distributed information infrastructure. Based on its track record in the aviation industry, Fujitsu is cooperating with partners and customers in major industries worldwide, now offering RFID and Sensor Solutions to other Industries.