

AirVault and GE's Predix: *An Innovative New Route to Aircraft Records Management Supports NextGen Goals*

By Douglas E. Rodgers, Chief Executive Officer, FOCUS Investment Banking LLC

FOCUS Advises AirVault in Strategic Sale

In late March, we announced the sale of our client Critical Technologies, Inc.—doing business as AirVault®—to GE Aviation. AirVault provides patented electronic records management solutions to airlines worldwide. The combination of AirVault and GE further enables web-based fleet records management across the aviation ecosystem.

For nearly a decade, FOCUS has provided strategic advice to AirVault, resulting in this compelling transaction with one of the world's most well-known and highly regarded companies.

AirVault Chairman John Frick noted, “The strategic fit provided by this transaction is exceptional; our acquirer counts nearly every airline in the world in its customer base, which provides an exciting growth path for the business. The FOCUS team has been a valuable partner to us over the years, and we would not be celebrating this transaction without their help and guidance.”



AirVault and GE's Predix

An Innovative New Route to Aircraft Records Management Supports NextGen Goals

The FAA's mission to provide the safest, most efficient aviation system in the world is supported by the U.S. Next Generation Air Transportation System — NextGen — to improve safety, drive efficiency, reduce costs, and improve environmental impacts in aviation.



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NextGen, when fully implemented by 2025, will steer the transition from analog to digital data; from terrestrial to space-based navigation, surveillance, and communications; and from siloed, compartmentalized data to integrated Big Data sharing and analytics — dramatically changing the way the current aviation system operates.

Why Digital Aircraft Records Management Is Vital Now

The airline industry is one of the pillars of today's global economy and in the U.S. alone, drives \$1.5 trillion in economic activity annually and more than 11 million jobs. To maintain operational compliance of these high-value aircraft assets, a rigorous set of procedures governs how aircraft are maintained, repaired, and overhauled.

When an aircraft is leased or sold, the next operator must initialize a maintenance program, verify airworthiness directive (AD) compliance, and conform the aircraft to their specifications — all requiring flawless aircraft records management.

State-of-the-art digital aircraft records not only facilitate the transition from one operator to another — having a full set of records ensures the aircraft and engines retain their value. In the event of an accident or natural disaster, comprehensive, accurate, digital aircraft records are even more critical.

Bottom line: the benefits of digital aircraft records management are revolutionizing the industry:

- › Driving asset productivity, reducing maintenance costs, and improving ROI;
- › Supplying efficient digital aircraft lease return records;

- › Delivering continuity of maintenance process;
- › Leveraging Big Data intelligence with relevant records supplied in the right format at the right time.

AirVault and Predix Aim to Revolutionize Digital Aircraft Records Management

In March 2017, GE Aviation acquired Critical Technologies, Inc. — branded as AirVault® — the leading supplier of electronic records management solutions to airlines worldwide.

AirVault pioneered the transformation of aircraft maintenance records from paper to digital, developing a data repository to which analytics can be applied, and supporting ongoing use of accessible digital records.

Engine health and performance are critical factors driving safety and fuel efficiency, with manufacturers and operators leveraging vast amounts of data to seek improvements and advantages.

The combination of performance data managed in the GE Predix platform with AirVault's cloud-based platform for managing high-volume aircraft maintenance records will drive data availability across a network of stakeholders.

With Big Data analytics applied to both platforms, trends and patterns will emerge and better decisions will be the result. For example, the cost of fuel (which can be 20 percent of an airline's operating expenses at current fuel prices) has a high impact on margins; knowing that one of two identical aircraft weighs more — simply due to its maintenance history — might determine the better routes for that aircraft.

Analysis of route and on-condition airframe, engine, and systems data supports accurate prediction of optimal maintenance schedule options by both manufacturers and operators. AirVault's platform and fleet maintenance records coupled with the Predix industrial cloud





“The opportunity a connected aircraft presents could be one of the most significant changes in aviation history. The vast quantity of data across myriad parameters that a state-of-the-art aircraft generates could provide improvements in flight operations, reliability, maintenance, and safety.” –Aviation Week & Space Technology

platform will generate deep insights and optimize operations over a wide range of aviation applications.

AirVault’s success in this complex, large-scale and highly regulated industry is indicative of the platform’s potential in other data-driven environments where analytics are increasingly valuable. As aviation and other domains become increasingly connected, this value has increasing potential.

Predix Optimizes a Wide Range of Aviation Applications

Predix is the GE-built platform providing complete connectivity from the edge to the cloud, as a powerful enabler of what is becoming known as the industrial IoT (Internet of Things).

GE’s engine families have been migrated to Predix, where their sensors already generate millions of records every year to diagnose issues and, more usefully, predict them. Operators have lead time to fix issues before they become service disruptive issues.

As connectivity improves, Predix will be able to work with data streams in real time — in the cloud — instead of snapshots or post-flight downloads, by “sneaker-net.” The outcomes? Better uptime, better fuel efficiency, better safety — exactly what NextGen is all about.

The goal is to make Predix not only the best choice for companies using its systems at the edge, but also the best cloud to create industrial applications that act as a brain for any systems at the edge.

With Predix, new types of efficiencies that were never before possible will be created, and will have tremendous impact on increasing aviation safety and reducing negative impacts on the environment. Characteristics of Predix include:

- ▶ Creating transformation by extending industrial automation to the cloud;
- ▶ Adding a *brain with a massive memory and compute power to edge systems* for digital industrial transformation;
- ▶ Creating a *cloud with the needed security and high performance to safely interact with the edge systems* and critical infrastructure;
- ▶ Using *Cloud Foundry*, an open source framework, to create *future-proof services* to build industrial applications;
- ▶ Growing as a portfolio of related services; and
- ▶ *Creating an ecosystem of services for the Industrial IoT from third parties as well as from GE business units.*

GE believes Predix is a crucial next step that super charges industrial automation to achieve transformation to new levels of performance. Helping make the aviation industry more efficient by

a fraction of a percentage can mean a return of hundreds of millions or billions of dollars.

Supporting NextGen By Strengthening Aviation Maintenance

Combining AirVault’s innovative records management capability with GE’s domain expertise in flight analytics and engine diagnostics is bringing disparate data together to drive impressive operational efficiencies across the aviation ecosystem — making U.S. aviation safer and more efficient, by reducing delays and mitigating impacts on the environment. ■

About the Author

Douglas E. Rodgers has been CEO and Managing Partner of FOCUS since early 2002. He led the firm’s growth from one office in Washington, DC, to three offices across the US, and serves FOCUS clients across many industries emphasizing merger and acquisition opportunities.

Before joining FOCUS, Rodgers was President and CEO of Corcentric, Inc, an e-commerce spin off from Litton Enterprise Solutions. As President and CEO of Perfection Equipment Co., he was instrumental in the merger and IPO into a NYSE industry consolidation.

An active pilot with ATP and jet ratings, he was educated at the U.S. Air Force Academy and the University of Kansas, and has a BS in Aerospace Engineering.

“When combined with the robust enterprise content management (ECM) capabilities of AirVault and GE’s domain expertise in flight analytics and engine diagnostics, actionable insights to drive NextGen objectives becomes very real, very quickly.”

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