

NBAA CONVENTION NEWS

BUSINESS AVIATION

For Avionica, It's All About Big Data

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Avionica says that, pound for pound, its miniQAR and 4G module offer the best of all worlds in safety and data collection.

Avionica's partnership with mobile data provider GigSky, signed in late August, puts the Miami-based avionics company closer to its goal of becoming a conduit for "big data" to improve aviation safety. Another goal is to extend the service life of business aircraft and their components. Avionica's customers can thus use the GigSky worldwide 3G/LTE network to automatically upload safety data after every flight from their aircraft's Avionica miniQAR (quick access recorder) via a 4G module. Together, the two boxes are the about the size of a fist and weigh less than two pounds.

According to Avionica (Booth 3471), customers pay a yearly rate to send data securely over the GigSky cellular network and won't be charged roaming fees for data transmission while traveling in other countries. "Since data-transfer cost and security are no longer part of the equation, the data can be sent immediately upon reaching a destination, without the need to physically download information from the miniQAR," Avionica vice president of sale Tony Rios told **AIN**. "Business jets fly all over the world, and they can get into very costly roaming charges."

Transmitted data is forwarded to any third parties that customers have chosen. It can be processed, analyzed and turned into useful reports. According to Rios, many operators are already sending data to engine manufacturers, who then combine it with data from other operators—in other words, big data—to analyze. From this, the engine manufacturers can calculate predictive maintenance procedures to allow for full-life use of parts, as opposed to preventive maintenance performed at fixed calendar times, flight hours or cycles.

“With big data, engine OEMs can predict the full life of the part, which means it could be used for a longer period, reducing maintenance costs,” he said. “Another example is the engine vanes for oil distribution. They can get clogged, and the data can indicate this condition. So that allows customers to then be notified to do an engine wash—at the right time—to extend the life of the engine.”

The data can also be transmitted to companies such as Baldwin Aviation or GE Aviation for corporate flight operations quality assurance (C-FOQA)/flight data management (FDM) to improve aviation safety. NBAA has been championing for C-FOQA for several years, Rios pointed out.

“C-FOQA feeds so perfectly into safety management systems,” said NBAA vice president of safety, security and regulation Doug Carr. “It can be very important as a data point for an SMS, a needed element of feedback. Managers can see if SOPs are being adhered to, and use the information for training and education.”

Avionica’s miniature quick-access recorder has been installed on more than 8,000 aircraft, including most business jet types. It also supplies the avRDC data concentrator on the Gulfstream G650. This device samples data from a variety of data buses and concentrates the output into a formatted data stream on an Ethernet channel after processing the data according to specific Gulfstream dictated algorithms. The 1.1-pound box can also serve as an airborne dataloader, router and wireless airborne server.

The company also offers FANS 1/A+ retrofit solutions using the SatLink Max air traffic service safety-voice-certified Iridium satcom system.

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