

An aerial photograph of an airport tarmac. A large commercial airplane is parked on the left side of the frame. The tarmac is marked with yellow and red lines. The SITA logo is overlaid in the center of the image.

SITA

FLIGHTWATCHING
CHOOSES SITA
MESSAGING SOLUTION TO
EXCHANGE CRITICAL DATA
TO ENABLE PREDICTIVE
AIRCRAFT MAINTENANCE

In today's highly connected world, aviation companies share more significant and diverse amounts of business-critical and personally sensitive information with partners.

In particular, Aircraft Communications Addressing and Reporting System (ACARS) messages provide a digital data link system for transmitting messages between aircraft and ground stations. These messages are critical, enabling airlines to improve aircraft maintenance, costs and optimize turn-around time. A real-time messaging solution is vital to facilitate predictive aircraft maintenance.

THE BACKGROUND: AN INTRODUCTION TO FLIGHTWATCHING

FlightWatching, a French-based company recently acquired by Revima, specializes in predictive maintenance software and real-time solutions for airlines and maintenance providers.

FlightWatching's application tool, WILCO, provides significantly enhanced data analytics. It provides solutions to airlines such as Air Serbia, Qatar Airways, and maintenance repair and operations (MRO) companies such as Haeco and Revima.

It reduces the number of revisions and maintenance costs for airlines and engine MRO companies planning routine maintenance based on remote diagnostic algorithms that will detect early wear and repel aircraft alerts.

FlightWatching has developed a unique application to improve aircraft maintenance with active predictions that enable it to query detailed aircraft performance data and receive real-time results from the aircraft while it is in the air or on the ground.

With this data, FlightWatching significantly improves the aircraft maintenance process and costs. It also optimizes the turn-over time and reduces flight disruptions related to the part repair or replacement.

Its goal is to receive all the necessary data from aircraft to provide accurate predictive maintenance diagnostics to the operators. No aircraft modification is necessary to get the best out of the avionics installed onboard, no new equipment, or additional configuration.

THE REQUIREMENT: SENDING VITAL MESSAGES

FlightWatching sends ACARS messages to the aircraft it monitors. These ACARS messages can vary in size from less than 20 characters to over 1,000. SITA's solution accommodates a greater variety of message sizes to meet the requirements of a wide range of aircraft types.

The messaging solution needed to support large-sized messages such as Media Independent Aircraft Messaging (MIAM) or Passenger Name Recognition for Governments (PNRGOV), which can be several Mbs. Even more crucially, it was vital to be able to store messages for longer than three months.

The customer renewed the contact with SITA after reviewing its current solution, which was creating operational problems and making the platform challenging to use.

SITA worked on a proof of concept to support the need to use more characters within its messaging. It needed to be able to write more than 64 characters (technical application limitation).

FlightWatching required a robust messaging solution to exchange these important messages with DataLink Service Providers, responsible for sending this information to airlines in real-time.



THE SOLUTION: SITATEXONLINE

With SITATEX Online, SITA's market-leading web-based operational mail application, FlightWatching can efficiently send ACARS messages that are flexible, secure, interoperable, and backward compatible.

SITATEX Online is the ATI's leading operational mail solution to exchange ACARS messages, specifically Aeronautical Operation Control (AOC) messages, with DataLink Service Providers (DSPs).

The SITA account team worked with FlightWatching to provide specific message templates related to ACARS messages. The SITA solutions team then robustly tested the solution, successfully transmitting ACARS messages to aircraft through the DSPs. The solution also successfully received all expected ACARS responses sent by the aircraft through the same DSPs.

Additionally, SITA implemented SITA Data Connect, our messaging middleware that interfaces with SITATEX Online to send thousands of messages per day automatically. With this solution, SITA Messaging is fully integrated with FlightWatching's WILCO application allowing easier data exchange.

SITATEX Online is a web-based messaging application enabling airlines, airports and, governments to exchange large messages with rich media content. Together with SITA Data Connect, our solution will interface with any application using a file-based directory or Jakarta Messaging API (JMS) performance data and receive real-time results from the aircraft while it is in the air or on the ground.

With this data, FlightWatching significantly improves the aircraft maintenance process and costs. It also optimizes the turn-over time and reduces flight disruptions related to the part repair or replacement.

Its goal is to receive all the necessary data from aircraft to provide accurate predictive maintenance diagnostics to the operators. No aircraft modification is necessary to get the best out of the avionics installed on-board, no new equipment, or additional configuration.

THE BENEFITS AND RESULTS: SENDING VITAL MESSAGES

With SITA's solution, FlightWatching receives 15,000 messages per day from more than 300 aircraft and automatically manages them in its database. The application can then process the data to improve aircraft maintenance based on predictive maintenance alerts. FlightWatching has quickly realized substantial improvements and benefits to its new messaging operations. The improvements have enabled it to enhance real-time communication with Boeing B777s, requiring more than 64 characters. The queries on B777s allowed FlightWatching to monitor accurate and present time departure readiness controlling multiple aircraft parameters for an on-time departure.

"WITH SITATEX ONLINE AND SITA DATA CONNECT, WE CAN MANAGE REAL-TIME QUERIES WITHOUT SEPARATING MESSAGES LIMITED BY THE NUMBER OF CHARACTERS. THIS MAKES THE AIR-GROUND PROTOCOL MORE SEAMLESS TO OPERATE. OUR SOLUTIONS HAVE BECOME MUCH MORE STRAIGHTFORWARD AND RELIABLE."

JEAN-PHILIPPE BEAUJARD
GENERAL DIRECTOR, FLIGHTWATCHING

Today FlightWatching has successfully deployed this solution on all Airbus types from the A300 to the A350 and all Boeing types ranging from the B737 to the B787.

FlightWatching uses SITA's solution to successfully send Aeronautical Operation Control (AOC) messages with DataLink Service Providers (DSPs) and receive technical aircraft performance data on return, including abnormal aircraft status information, a function triggered automatically.

To learn more about SITA Messaging solutions visit: <https://www.sita.aero/solutions/sita-communications-and-data-exchange/sita-messaging/>

SITA AT A GLANCE: EASY AND SAFE TRAVEL EVERY STEP OF THE WAY

- Through information and communications technology, we help to make the end-to-end journey easier and safer for passengers – from pre-travel, check-in and baggage processing, to boarding, border control and inflight connectivity.
- We work with over 400 air transport industry members and 2,500 customers in over 200 countries and territories. Almost every airline and airport in the world does business with SITA, and nearly every passenger trip relies on SITA technology.
- Our customers include airlines, airports, ground handlers, aircraft, air navigation service providers, and governments.
- Our solutions drive operational efficiencies at more than 1,000 airports, while delivering the promise of the connected aircraft to customers of 18,000 aircraft globally.
- We help more than 70 governments to strike the balance between secure borders and seamless travel.
- Created and owned 100% by air transport, SITA is the community's dedicated partner for IT and communications, uniquely able to respond to community needs and issues.
- We innovate and develop collaboratively with our air transport customers, industry bodies and partners. Our portfolio and strategic direction are driven by the community, through the SITA Board and Council, comprising air transport industry members the world over.
- We provide services over the world's most extensive communications network. It's the vital asset that keeps the global air transport industry connected in every corner of the globe and bridging 60% of the air transport community's data exchange.
- With a customer service team of over 1,700 people around the world, we invest significantly in achieving best-in-class customer service, providing 24/7 integrated local and global support for our services.
- Our annual Air Transport and Passenger IT Insights reports for airlines, airports and passengers are industry-renowned, as is our Baggage IT Insights report.
- We are a certified CarbonNeutral® company, reducing our greenhouse gas emissions for all our operations through our UN recognized Planet+ program. We also develop solutions to help the aviation industry meet its carbon reduction objectives, including reduced fuel burn and greater operational efficiencies at the airport.

"OUR SITATEX ONLINE AND SITA DATA CONNECT SOLUTIONS WERE ABLE TO ADAPT TO THE CHANGING MESSAGING REQUIREMENTS REQUIRED BY FLIGHTWATCHING. OUR MESSAGING SOLUTIONS ARE UNIQUE. WE OFFER ONE MESSAGING SOLUTION TO EXCHANGE REAL-TIME ACARS MESSAGES WITH SEVERAL DSPS, SUPPORTING DATA INTEGRATION WITH ANY APPLICATION."

MARTIN SMILLIE
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