

Smarter maintenance strategies

Ahead of this year's Predictive Aircraft Maintenance (PAM) Conference in Dublin in November, *MRO Management* asked **Cameron Byrd**, from event sponsor AIXI, his thoughts on the landscape of predictive maintenance



“The challenge today isn't just about predicting failure events – it's knowing how to stop the expected failures from happening”

CAMERON BYRD

chief executive and founder, AIXI

► **What's your perspective on how predictive maintenance is evolving in aviation, and where do you see the biggest opportunities or gaps still to be addressed?**

To baseline, let's define 'predictive maintenance' as an entire maintenance operation that reduces unplanned downtime and improves reliability by predicting and correcting failures before they occur. This includes operations such as collecting, cleaning, storing and parsing data, predicting events, taking corrective actions and creating learned associations.

The current focus in predictive maintenance remains heavily focused on using sensor data to predict failures. Hardware solutions exist to collect and store data, but adoption has mostly been limited to the leaders in this space. These same leaders have shown real ROI by reducing unplanned downtime, extending asset life and improving reliability. However, this is only part of the equation.

In addition to predicting failures, a fully realised predictive maintenance programme also needs a prescriptive maintenance tool that identifies risks and advises technicians on the most efficient, cost-effective actions to mitigate the chance of the predicted failures from actually happening. Unfortunately, many airlines are either ignoring or are unaware of the need for a prescriptive maintenance tool, leaving a hole in their predictive maintenance aspirations and a large opportunity for clever solutions.



▲ Southwest Airlines is using AIXI's AI-enabled tools to improve its fleet maintenance operations

► **How does AIXI's technology or approach differ from what's already available in the predictive maintenance market?**

AIXI is intensely focused on the prescriptive half of the predictive maintenance problem which, in and of itself, differs from the norm. We take things further by beginning with the fundamental part of any data-driven system – the data. An effective prescriptive maintenance solution requires information stored deep inside an airline's historic maintenance logs. Hidden within those logs is the combined knowledge of every technician who has ever maintained an aircraft in that fleet. It's an untapped, data-rich and authoritative source on how to best fix any failure.



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◀ AIXI creates AI-enabled solutions that improve reliability and asset uptime for the aviation industry

“AIXI’s tools can accelerate the shift away from reactive maintenance by doing the hard work of making predictive maintenance effective and scalable”

AIXI’s foundational product has been in production since 2022. It extracts, cleans and normalises the airline’s historical maintenance logs so that they are consistent, structured and easy to dissect. Our specialised, industry specific language models (ILMs) understand the nuanced, often informal, jargon-filled language of aviation mechanics and pilots transforming maintenance logs faster, cheaper and with far greater accuracy than any human possibly could.

The cleaned maintenance data becomes the foundation on which our other tools are built. This ensures that the information provided by our tools is accurate and trustworthy, allowing users to confidently make informed decisions.

► What stage is AIXI currently at in terms of product development, partnerships or airline engagement?

AIXI has radically expanded its products in the last year. Our ATA AutoCoder™ continues to provide the foundation for all our robust AI-enabled MRO products. We recently introduced two new tools into production – Prescriptive Maintenance and Repeat Defect Identification. Those, along with our Ask OTTO chatbot, enable users to work more efficiently and make

data-driven decisions that improve their performance.

We’re excited about extending partnerships with an industry leading hardware company that’s changing how sensor data is collected and shared along with a disruptive start-up improving communication within maintenance teams. Being able to seamlessly integrate into these tools will help extend AIXI’s reach and help airlines use mountains of historical maintenance data to make real-time decisions.

On the sales side, we’re on track to exceed our goal for proof-of-concept pilots with new customers. We’re delivering results that help reduce the delta between planned and unplanned maintenance and identify repeat/chronic defects in ways that fix planes faster, improve maintenance dispatch reliability and reduce the number of AOGs.

► Looking ahead, how do you see start-ups like AIXI contributing to a wider shift away from reactive and scheduled maintenance towards more data-driven, proactive strategies?

AIXI’s tools can accelerate the shift away from reactive maintenance by doing the hard work of making predictive maintenance effective and scalable. The challenge today isn’t just about

predicting failure events – it’s knowing how to stop the expected failures from happening. This requires turning massive amounts of maintenance records, logs and real-world events into models that can be trusted and reused.

That’s where AIXI comes in. By automating things like ATA coding, normalising data across fleets and applying AI at scale, AIXI can move airlines past one-off models and into a system where insights are repeatable and transferable. The impact is fewer unplanned events, faster troubleshooting and, ultimately, a transition from reactive scrambling to proactive strategies that improve reliability and safety, while reducing costs. ●

PREDICTIVE AIRCRAFT MAINTENANCE 2025

On November 11-12, *MRO Management’s Predictive Aircraft Maintenance (PAM) Conference* returns to Dublin where leading airlines, OEMs, MRO specialists, data experts and technology providers will come together to explore how innovation is reshaping and streamlining aircraft maintenance.

Thank you to our Start Up Sponsor, AIXI, for supporting PAM 2025.



For more information and how to register to attend, scan the QR code above or visit predictiveaircraftmaintenance.com

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