

# THE AI REVOLUTION

**Cameron Byrd**, CEO of ILM platform AIXI answers our questions about artificial intelligence

## ► Can you tell me about AIXI?

We got into AI very early. We were established in 2019 and were just about to start before COVID hit.

I'm a pilot for fun, I was a computer science engineer in college. One day I was going to fly my plane, but instead of flying, I diverted into a conference room where there were people talking about AI. I asked a bunch of questions, and they said 'who are you? Why are you here? We didn't invite you!'. I gave them my background, and they hired me on the spot!

That was 16 years ago. That company was bought by Intel, so we've had the last 16 years to become AI experts.

We started in 2019 with an industry language model (ILM) that understood aviation maintenance-speak. That was a good two to three years before ChatGPT came out.

## ► There's a lot of hype around AI at the moment. What practical real-world use can it be put to?

There's absolutely something real, because we're doing it and airlines such as Southwest are using it. In general airlines are 'behind the 8-ball', they are trying to catch up with problems in their fleets. AI is going to give them the tools to get ahead of those problems.

So in predictive or prescriptive maintenance they are going to be able to fix a problem with optimal times, identifying the optimal location with the optimal mechanic therefore giving the optimal fix for any given situation.

In addition, it can place parts in the right location. You can augment work forces with AI, so you don't need as many people because the AI can cover a lot of



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**CAMERON BYRD**

CEO, AIXI Systems

the knowledge base, so you can reduce the staff or put them into new jobs that didn't previously exist.

You can see this as AI touches society. There are a bunch of jobs that are going away, but there are also jobs in totally new functions that are way above what we were able to do previously, and AI is going to enable that.

## ► Most MROs are not awash with staff, how can this tool help?

Where it helps is it captures the knowledge base of all of the technicians

that came before you. It gathers all of that and puts it on the screen, so if you are a new technician and you don't have the knowledge base of thirty years, you can see it in front of you.

Our system is industry specific to aviation, and we know how people speak, including the technicians and how they spell some words incorrectly and part numbers etcetera.

As an analogy, you could go to a someone with good general knowledge and ask them something like: "What are some basic measures I can take to reduce my chance of a heart attack?" They'd likely say that that you should eat healthy and get some exercise.

However, if you are having a heart attack and you need surgery, then you need to see a specialist, someone with the most specific knowledge and expertise for that situation.

ChatGPT and those other models are generalised. Our model is specialised. To continue the analogy, we are the best model for that aviation surgery.

## ► Anything in the pipeline?

We're in the process of launching a full platform. Our first tool was this autocoder that cleans all of the data. However, we found that wasn't enough. Airlines didn't know what to do with the data once it was clean.

So, we have created tools on top of that data that are specific to areas within the airline, so we have a tool for reliability, a tool for technicians on the ground, and one for maintenance controllers.

There's another tool that automatically does SDRs and sends them to the FAA, which is a kind of an annoying thing, but it was easy, low-hanging fruit for us.



◀ Southwest has been using the AIXI system since 2022

Comments that we've had about the new tools are that there's nothing like this in the industry today.

► **Do people 'get' the product once it is demonstrated to them?**

Getting the product in front of them sparks their interest, and they love the product. I think with AI in general, there is a certain lack of trust, and we have to learn how to earn that trust [from clients].

You get one chance with a person. If they find the answer given is totally wrong, they are not going to use it again, at least for a couple of months.

So we have staged roll-out programmes that get the right people at the right time to make sure it is perfect for everybody so that there is widespread adoption.

Our tools allow you to do it the old-fashioned way, so they say; 'hey, this is the new AI way, but if you want to do it the old way, its OK, you are allowed to'.

► **Is there a concern over the safety of using AI in aviation?**

We don't invent processes or go against regulation. We show you the data and give you the direct link to the piece of the maintenance manual that you need. So you are still doing all the work off the maintenance manual and following all the regulations. We do not try and circumvent the regulatory processes.

► **What operational efficiencies has the product been able to bring?**

We're still trying to quantise everything. There's a reduced headcount for coding and the accuracy of the data has done

things like allow customers to save hours in diagnostic time by using our tool and I've had a maintenance engineer say that they can catch trends in their fleet six months ahead of where they would normally see them. Now they know where the trends are because the data is there in real time.

Ultimately it should increase the uptime of all aircraft. We project by one or two percent, which for an airline with 50 aircraft could make savings of up to \$22m with that kind of increase in efficiency.

► **How do you approach partnerships with airlines, tech OEMs, or MRO providers?**

The answer is: With open arms! Our fundamental theory is that cooperation is better than competition. Of course, we need competition, but we have made all the pieces of our platform able to be moved into other platforms. We're very open to partnership.

► **What is the greatest misconception about AI in the market right now?**

The maturity of technology. We created the model in 2019, it has been installed since 2022 and it has continued to function exceptionally. There's no lack of maturity at this point, but we get a lot of pushbacks with people claiming that the company is too young and the technology isn't ready. It is ready. 🟢

## AIXI AT A GLANCE

### Industry Language Model

AIXI has developed an industry-specific language model (ILM) and a suite of AI tools that:

- Standardise and structure MRO data, especially ATA codes (used to classify aircraft systems and components).
- Enable predictive and prescriptive maintenance, helping airlines anticipate and address issues before they cause delays or safety concerns. Automate reporting, such as FAA-required Service Difficulty Reports (SDRs).

- Identify rogue parts and prevent them from re-entering the fleet. Analyse fleet-wide trends to detect reliability issues early.

### Product Range

- ATA AutoCoder: Converts technician shorthand into complete, accurate ATA-coded entries with 98% accuracy.
- SDR Tool: Automatically generates FAA-compliant Service Difficulty Reports.
- Prescriptive AI Tools: Recommend the most likely fixes and required parts based on historical data.
- Rogue Part ID Tool: Detects unauthorised or faulty parts.
- AIXI Analytics: Provides early warnings of reliability issues.

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