

Speaker: Isabelle LACAZE, Head of DragonFly Demonstrator at Airbus | France

With **Fabien GUEZ**, Cardiologist and Consultant at BFM Business Check Up Santé | France

Artificial Intelligence (AI) can enhance the safety of the aerospace sector

Over the past several years, Airbus has been actively delving into the realm of AI. Although aviation is considered the safest mode of transportation in the world, with less than one accident occurring per 33 million flights, safety remains a crucial area in which Airbus invests heavily. Despite the promising outcomes achieved in various piloting assistance technologies, the broad adoption of these systems will require several more years. This is because AI-based functions, such as image processing, voice recognition, and decision-making, are not yet developed, and the aerospace sector's regulations are notably stringent. While other manufacturers are making progress in the field of AI, DragonFly stands out as the first demonstrator to have evaluated automatic diversion to landing.

DragonFly, an autonomous pilot support system designed to prevent emergency situations

Autonomy in this context does not mean replacing the pilots. Rather, it is a decision-supporting tool that improves collaboration between the pilots and the on-board system, as well as with external players such as air traffic controllers, airlines, and other aircrafts. Pilots retain the decision-making responsibility, but the system assists them by alerting them to collision risks through piloting aids provided to the crew.

DragonFly focuses on two areas of improvement:

- Diversions: these decisions can be prompted by a pilot's or passenger's illness, equipment malfunction, or adverse weather conditions. This situation can be particularly stressful for the crew. Under such circumstances, AI addresses various technological challenges through an assistance function, aiding the pilots in making the right decisions: where to divert, how to plan the trajectory while avoiding natural impediments on the landscape, and how to account for the weather. The system can also switch the aircraft to autopilot mode if necessary.
- Taxi phase: in airports with heavy traffic like Paris, New York, or Los Angeles, the taxi phase represents a significant mental load for the crew. During this phase, the aircraft must quickly vacate the runway to allow others to land and navigate to the gate while listening to air traffic control instructions. DragonFly functions as a similar assistance system to what is currently found in the automotive sector. It provides route guidance and translates air traffic control instructions through voice recognition. Additionally, visual recognition allows the aircraft to maintain the runway alignment, detect obstacles, and warn of collision risks.