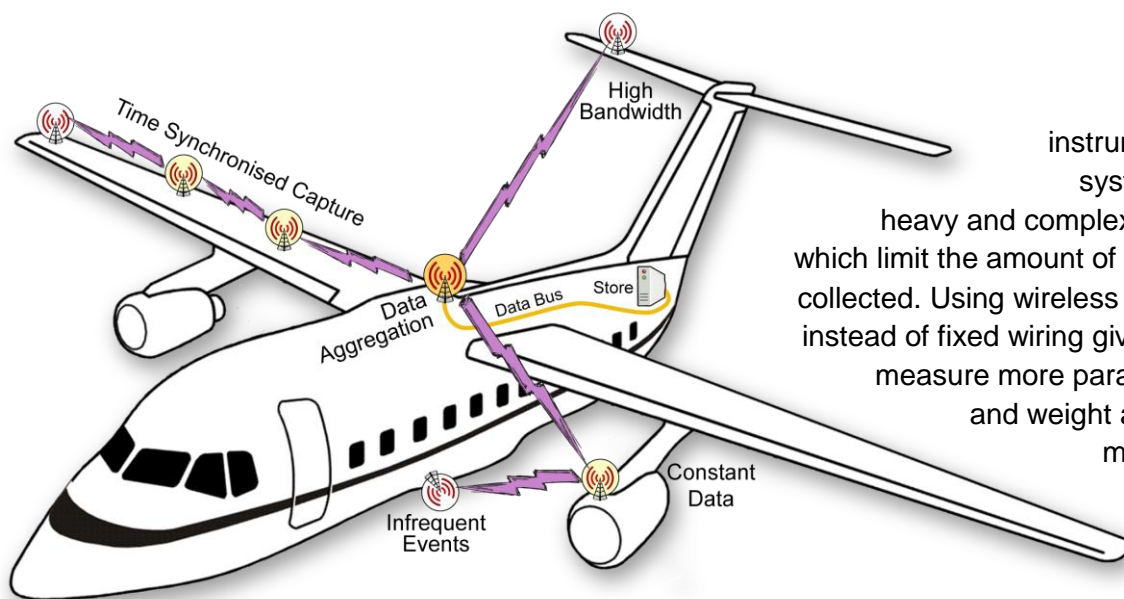


# Applying Wireless Sensor Networks to Aerospace

ISLI is working with the key players from the UK aerospace industry within the WiTNESSS (**W**ireless **T**echnologies for **N**ovel **E**nhancement of **S**ystems and **S**tructures **S**erviceability) collaborative project, to research and de-risk wireless data transmission technology for key testing and structural health monitoring applications in aero engines, helicopters and fixed-wing aircraft.



Current aircraft instrumentation and test systems are linked by heavy and complex wiring harnesses which limit the amount of data which can be collected. Using wireless (radio) technology instead of fixed wiring gives the potential to measure more parameters, save cost and weight and lead to lighter, more efficient future aircraft designs and quicker time-to-market.

Although wireless devices are already common in the computer, video game and mobile phone sectors using technologies such as WiFi and Bluetooth, these are not designed to operate reliably in the harsh physical and electromagnetic environment found on an aircraft. The project will therefore find solutions to the challenges which currently prevent deployment on aircraft and, through a phased testing and demonstration programme, will prove the performance of the new wireless systems developed.

ISLI is delivering expertise in **wireless systems architecture, design and implementation** to meet the needs of complex, often competing, requirements and constraints in a highly challenging and regulated environment. We will be delivering **platform independent embedded network software** which will provide coordination of widely differing data streams over the underlying ultra-wideband MAC and PHY. We will be taking these elements forward to exploitation in further system implementations and are actively seeking partners for further application development.

The WiTNESSS consortium comprises AgustaWestland, Airbus in the UK, BAE Systems, Bombardier Aerospace, GE Aviation Systems, HW Communications, QinetiQ, QM Systems, Rolls-Royce, System Level Integration and TRW Conekt (lead). The collaboration is supported by a grant of £1.6M from the Technology Strategy Board.