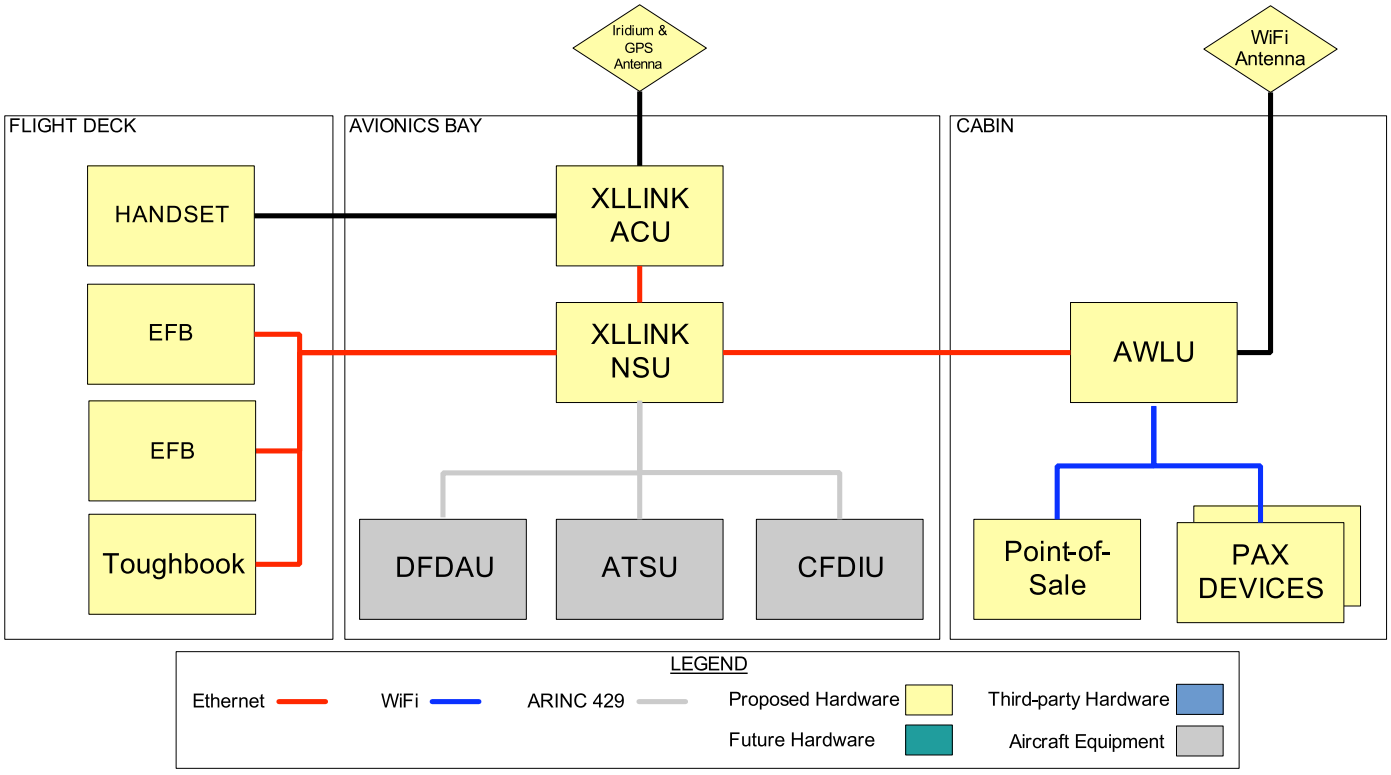
Improved Operating Margins through Technology

The airline manager with a vision of improving operating margins through the exceptional use of technology in every aspect of their business need look no further than the Wingspeed XLLink™ Flight Information Architecture (XFIA™). The XFIA™ will help the manager to ruthlessly eliminate every barrier to short turn-around times and high asset utilisation through the elimination of paper from flight operations, whilst also providing the opportunity to drive revenue in the cabin.

To achieve a paperless operation, and become a cost leader in the industry, the airline can implement the XFIA™ to manage automated paperless operations, Performance Calculations, Weight & Balance, Technical Log, electronic Charts, and voice and messaging communications along with any other application that requires a computer platform and a real-time connection between the aircraft and the ground. In order to increase cabin revenue the airline can leverage the XFIA™ platform to conduct real-time in-flight credit and debit card authorisations that will open up an array of revenue opportunities.

The XFIA™ is a modern network centric architecture built around the most powerful airborne Network Server Unit (NSU) on the market today, and an intelligent communications hub in the Aircraft Communications Unit (ACU). A high-level overview of the architecture is illustrated below and further details on each component of the system can be found on the following page.



The sample architecture illustrated above is an Airbus aircraft but the XFIA™ can be configured for any other aircraft type.
The XFIA™ NSU is a central node through which the computer terminals, including the Electronic Flight Bags (EFB) are able to communicate with the avionics systems, and access data and applications stored in the NSU. The NSU includes a file server, data processing, mass storage, and interface capabilities to a number of computers via an onboard aircraft Local Area Network (LAN). The NSU also provides a bridge between the computer network and the aircraft systems through a range of ARINC 429 transceivers.

The XFIA™ ACU intelligently manages communications between the aircraft and the ground, transparently switching communications between the Wireless and Iridium sub-network depending on the aircraft position, whether it's in-flight or on the ground, and depending on the application in use at the time.

The NSU, which is a 4 MCU box, and its companion unit, the ACU which is a 3 MCU box, are pictured left.

The flight crew interact with the system through a pair of class 2 EFB devices mounted in the cockpit. A portable terminal is docked in the rear of the cockpit, or in the galley and can be used by the cabin crew and the maintenance crew to access airline, aircraft of flight information, and it is also used by the flight crew as a spare EFB should either of the class 2 EFB devices fail. The flight crew have access to voice capabilities through the Iridium handset or by integrating the Iridium voice channel into the cockpit audio system. The Iridium network is also used to send and receive data from any of the devices on the aircraft. A Wireless sub-network is provided by a combined Cabin and Terminal Wireless LAN Unit (CWLU/TWLU) and this is used to connect the aircraft to a ground network whilst the aircraft is on stand, and also to connect portable devices, such as the point-of-sale system, to the network whilst the aircraft is in flight. The system requires two external antennae; the ACU uses a dual Iridium and GPS antenna which is a small device weighing less than one kilogram, and the TWLU also has a small external antenna, which can be combined with a VHF antenna.

Wingspeed are one of very few companies that can provide the airline with a complete turn-key solution to mitigate implementation risk. The service includes management of the Supplemental Type Certification (STC) process, installing the hardware, and integrating the software applications. Projects are typically completed in less than nine months from contract signature, with each additional aircraft brought on-line in a matter of days. The XFIA™ is today operational on a range of Airbus and Boeing aircraft, and a complete list of current STCs can be provided by your account manager.

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About Wingspeed

Wingspeed Corporation, headquartered in Concord, MA, USA is dedicated to providing an open and scalable communications and computing platform that can host a range of solutions.

The XLLink™ Voice & Data Communication System provides aircraft operators with a global communications link to the aircraft that enables optimal decision making through the real-time exchange of information between the aircraft and ground operations.

The XLLink™ Flight Information Architecture (XFIA™) comprises a computer network platform onboard the aircraft that when coupled with the XLink™ Voice & Data system are capable of hosting any solution including messaging, voice, Technical Log, electronic Charts, In-flight credit card authorization, or complete automated paperless operations.

If you want a connected aircraft that works right, do it with Wingspeed"

– Ron Mallard, Director of Operations, AStar Cargo

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