

# [Integrated modular avionics](https://assignbuster.com/integrated-modular-avionics/)

Airbus A380 is a four-engined, double deck airliner that was manufactured by EADS. It has 22 wheels. On April 27, 2005, Airbus A380 took its first flight from Toulouse, France. It could seat up to 800 passengers, there are two available models for A380, the A380-800 and the A380-800F.

The A380-800 was a passenger airliner while the A380-800F was a freight aircraft. A380-800 has a design range of 15, 200 kilometers with a cruising speed of 0. 85. Commercial flights for A380 are expecting to begin in the fourth quarter of March 0f 2007.

Airbus A380 was certified as an airline in December 12, 2006. And as of August 2007 there is already an existing Airbus of its kind. Each unit costs US $296-316 million as of 2006 as expected value (Wikipedia, 2007).

Airbus A380, picture by Wikipedia, the free encyclopedia

Its architectural designs and concepts use Integrated Modular Avionics or IMA. Same modular avionics that was use on advanced military aircrafts. It uses software that are placed in processor modules and servers. By having this, it reduces the number of parts and costs of power computations. Network Systems Server (NSS) is the main system server of A380. It makes the aircraft’s cockpit become a paperless cockpit.

The aircraft has 5000-psi hydraulic system the higher the pressure hydraulics becomes, the better it was because it reduces the sizes of pipelines actuators and components. The pressure hydraulics was supported by eight clutchable hydraulic pumps. Its pipelines are made from titanium. The hydraulic pumps of A380 are supplied by Eaton is a leading supplier of hydraulic pumps, generators, and integrated systems.

Before , airplanes has direct hydraulic like on cockpits down to its steering but now in modern times for the A380 , it’s hydraulic steering stick was replaced by digital steering stick. Computer does the reading based on the input of the pilot and then computes accurately the appropriate values for steering components.

Digital steering stick may become too risky especially if it should work within specific time bound. That is why the manufacturer of A380 got AbsInt, a software developer does the time control software of the aircraft.

In terms of electrical Power System of a380, its power cables are made from aluminum. They used aluminum for power cables instead of copper because aluminum is much lighter. Power system was computerized fully. Instead of using light bulbs, they used LED or Light Emitting Diodes as the lighting system. LED’s are much brighter than the ordinary bulb used by other airlines. Outside A380, the lightings that they used are HID’s. The HID’s are much brighter and whiter in color than LED’s (Wikipedia, 2007)

In terms of Technical concerns of the aircrafts, there are several of these. Some critics says, the A380 might damage surfaces and taxi ways as well. But the manufacturer of A380 insists that the pressure that its wheels exerted is lower that the Boeing Aircrafts, the second largest airline after A380. During the testing, A380 failed to meet the requirements of 150%. It has only gained 147% of limit load. After that failure on their part, A380 manufacturers decided to add 30 kilograms to the wing to meet the strength requirement of the wing.

One of the most important systems that the A380 uses is the Meggit Safety Systems. In this, product monitors are installed to detect even the slightest changes of condition. It could detect fire, landing gear failures, overheat and many other. Meggit Companies has so many products installed inside and out of the A380 and these are the wheels and brakers, engine monitoring systems, oil separators and air frame seals and many others. (Figg, 2005)

To ensure the future operations of the aircraft, the entire frame should also undergo some acid tests to ensure that it could stand and operate without any problem that might meet upon the used of the aircraft.

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