

# **CIVIL AIRCRAFT AVIONICS SYSTEMS AND TECHNOLOGIES - AN INSIGHT INTO ARCHITECTURE AND ITS CERTIFICATION**

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## **Abstract**

Desired functionality requirement of current day avionics is growing exponentially. Many of these requirements are driven by technology, ease of operation, reducing pilots workload, increasing safety and so on. However, it is most interesting that complexity is increasing equally with the increasing requirement of the avionics today. Technologies like Integrated Modular Avionics (IMA), Distributed IMA, Multi core IMA, Time and memory partitioning system are of critical and play a major role in the advanced avionics architectures. Avionics architecture is appreciably supported by the fast growing communication protocols in Kbps, Mbps and Gbps bandwidth. The paper presents the state-of-the-art avionics architecture for regional class of transport aircraft with indigenous Integrated Modular Avionics architecture and technologies, Merits and de-merits of federated versus integrated, world scenarios towards technologies, available technologies in India and the way forward. The paper also presents the present and future of civil aircraft avionics suite, technologies, bus protocols and their realization plan in India detailing current and future.

**Keywords:** IMA, ARINC 653, Federated, Integrated, DIMA