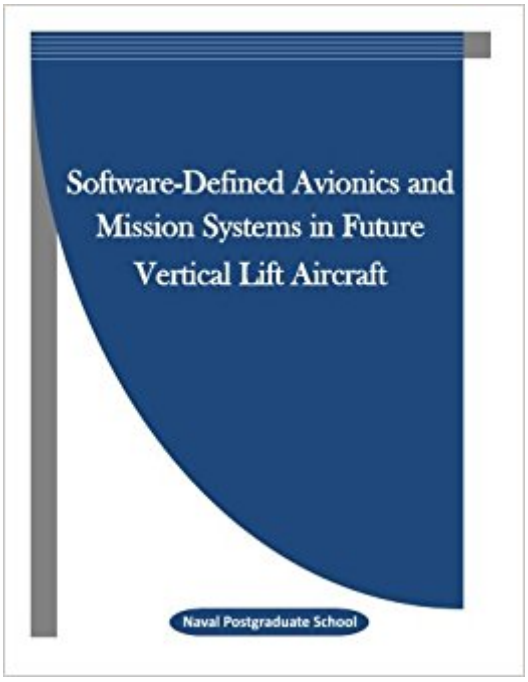
Software-Defined Avionics And Mission Systems In Future Vertical Lift Aircraft



Synopsis

Integrated Modular Avionics, or IMA, has been a notable trend in aircraft avionics for the past two decades, promising significant size, weight, and power-consumption (SWAP) gains, radically increased sensors fusion, and streamlined support costs. Despite the demonstrated success of IMA systems in commercial airliners such as the Airbus A380 and the Boeing 787, military rotorcraft in the service of the United States Joint services have yet to benefit significantly from this technology. At long last, that may be about to change. The Future Vertical Lift Family of Systems (FVL) initiative was launched in 2008, with the aim of re-inventing the entire U.S. rotary wing fleet. Within the FVL programÃ¢â ¬â„¢s projected timeline, many signs point to the emergence of a second-generation IMA technology (IMA2G), which will leverage extensive virtualization and software-defined functionality to deliver further SWAP gains, fault-tolerance, and system capability. Development efforts are indeed already underway to integrate such advanced IMA features into the FVLÃ¢â ¬â„¢s Joint Common Architecture. This book assesses the maturity of IMA2G critical path technologies, validates the alignment between IMA2G benefits and desired FVL attributes, and describes the operational impact that software-defined avionics and mission systems might have on future rotary wing aircraft.

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