



Executive summary

Upgrading a multi-mission research aircraft

Problem area

National Aerospace Laboratory NLR and Delft University of Technology, Faculty of Aerospace Engineering together operate a special aircraft for research purposes. Unlike other Special Purpose Aircraft, PH-LAB is truly a multi-mission aircraft, engaged in a wide variety of R&D in-flight research projects and often specially modified for each project. For this aircraft a significant upgrade of the aircraft avionics and data acquisition suite was designed, certified and implemented.

Description of work

The paper describes the mission spectrum of PH-LAB and the cockpit upgrade that was designed to support its operational role.

Results and conclusions

Operating a SPA can be done using different business models. NLR/TUD have chosen to adapt a modus operandus where the aircraft serves as a Multi Mission SPA. As a consequence the aircraft is modified frequently, changing the configuration of the aircraft on a regular basis. For this aircraft and its specific role it was possible to develop a business case for the development of a new flight deck and data acquisition system based on an integrated design.

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Report classification

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Knowledge area(s)

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Special Purpose Aircraft (SPA)
Special Purpose Aircraft (SPA)

Descriptor(s)

Research Aircraft
Aircraft Modifications
Cockpit Upgrade

