Universität Stuttgart

Institut für Luftfahrtsysteme

Human Factors Engineering in Flight Deck Design

Dr.-Ing. Gernot Konrad (Lehrbeauftragter)

16. bis 20. Dezember 2024
08:15 bis 16:15
Seminarraum V27 00.012 (CIP-Pool)

Seminar

About the Seminar

The goal of human factors engineering in civil flight deck design is to ensure that the pilot compartment and its installed systems and equipment support safe aircraft operation and comply with applicable certification regulations, are easy to use, maximise human-machine performance, and provide a superior pilot experience. Flight deck human factors engineers work to support a pilot-centred flight deck development process. They generate requirements by applying data-driven knowledge about the pilot's capabilities and limitations and validate them through analysis and structured evaluations/tests.

This seminar is intended to introduce aerospace engineering students at the University of Stuttgart to the required human factors engineering activities in flight deck design and certification. The seminar reviews flight crews' physical, physiological, psychological, and cognitive capabilities. It explores the limitations of pilots' performance and how they are impacted by systemic variables in the flight deck environment. It then examines how this affects crew workload and human error. The seminar builds the theoretical human factors engineering foundation to understand the specifics of the work of flight deck human factors practitioners. This includes typical design, analysis, and evaluation/test methods. The seminar provides flight deck design examples, accident analysis, and lessons learned from a human factors point of view. Theoretical concepts are supplemented with applicable certification regulations, design guidelines, industry standards, and means of compliance.

About the Instructor

Dr. Gernot Konrad is an aerospace engineer with extensive avionics and human-machine interface experience, demonstrated through over twenty years of designing and certifying highly integrated flight decks with complex systems for small and large aircraft. This includes over ten years of technical leadership, applying diverse skills for Agile technology development, and coordinating collaborative multi-level and multi-disciplinary teams. He holds an advanced degree (Dipl.-Ing) and a doctorate (Dr.-Ing) in Aerospace Engineering from the University of Stuttgart. He is qualified as an engineer (Ing.) in aeronautics by the Austrian Federal Economic Chamber (WIFO) and he is an accredited Human Factors Specialist by the European Association of Aviation Psychology (EAAP). Throughout his career, he was involved in recruiting and training flight deck Human Factors (HF) practitioners.

Dr. Konrad is the Chief Engineer for HF at Honeywell Aerospace Technologies, where he provides HF leadership and vision across multiple program platforms spanning current and future systems for the air transport, regional, business, general aviation, helicopter, and urban air mobility markets. He is the chairman of the EASA HF Collaborative Analysis Flight Deck Design and Certification Group and a member of the GAMA Flight Deck HF Working Group and was a member of the RTCA HF Training Steering Committee. He also lectures a seminar on Human Factors Engineering in Flight Deck Design at the University of Stuttgart.

Prior positions include Fellow for HF at Honeywell Aerospace Technologies, HF Engineering Group Head at Gulfstream Aerospace, Avionics and HF Engineer at Pilatus Aircraft, Research Associate at the Institute of Aircraft Systems at the University of Stuttgart, and freelance theoretical knowledge instructor at Lufthansa Flight Training and Swiss Aviation Training.

Begrenzte Teilnehmerzahl, Anmeldung über C@MPUS möglich.