AEROSPACE SHORT COURSES

Complex Electronic Hardware Development and DO-254 – ONLINE (AERO0205)

Instructor: Jeff Knickerbocker

Course Description

This course reviews the fundamentals of developing and assessing electronic components to the standard RTCA/DO-254 Design Assurance Guidance for Airborne Electronic Hardware. The course also provides insight into the FAA's review process and guidance along with practical keys for successful development and certification. Practical exercises and in-class activities further enhance the learning process.

Course Highlights

- The course addresses RTCA/DO-254 as applied via FAA Advisory Circular AC20-152
- FAA Order 8110.105 is addressed as are current standard EASA certification review items and FAA issue papers
- Potential deficiencies in current regulatory guidance material is addressed versus the current state of practice verification techniques
- Best practices for requirements capture and subsequent verification methodologies are discussed
- White papers will be provided—some out-of-class reading will enhance the participant's experience

Who Should Attend?

Designed for developers, avionics engineers, systems integrators, aircraft designers and others involved in development or implementation of complex electronic hardware and programmable devices (application specific integrated circuits, field-programmable gate arrays, etc.).

Learning Objectives

- Develop and document efficient RTCA/DO-254 compliant processes
- Generate and adhere to effective validation and verification strategies
- Evaluate compliance to RTCA/DO-254
- Understand FAA's policy and guidance

Course Outline

- Introductions and background
- History and overview of DO-254
- FAA's advisory material
- Complex electronic technology
- Framework of DO-254
- Configuration management
- Development process
- Validation and verification
- Process assurance (a.k.a. quality assurance)
- Certification liaison process
- Additional Considerations - tools, Certification Review Items, Issue Papers, etc.
- FAA Order 8110.105 including simple vs. complex
- Elemental Analysis
- Planning Process

Classroom hours / CEUs

21.00 classroom hours
2.1 CEUs

Certificate Track

Aerospace Compliance
Avionics and Avionic Components

Course Fees

Early Online Registration fee: $1,795***
Regular Online Registration fee: $1,895
Early registration fee is available if you register and pay at least 7 days prior to the course start

Registration is open until the first day of the course; however, early registration is encouraged. The online course fee includes individual access to the Zoom course meetings and to course materials, readings, videos, and resources in Blackboard, the University of Kansas Learning Management System. No additional textbook purchases are required outside the course fee.

U.S. Federal Employee Discount

This course is available to U.S. federal employees at 10% off the registration fee. To receive the federal employee discount, you must enter the code **FGVT116** during the checkout process. Please note that you must validate your eligibility to receive this discount by entering your U.S. government email address (ending in .gov or .mil) when creating your online registration profile. This discount is available for both the early registration and regular registration fees.

Netherlands Defence Academy Discount
This course is available to Netherlands Defence Academy employees at a discounted registration fee. Please contact the NDA Procurement and Contracting department for details. Please note that you cannot register using our online system when requesting this discount.

Instructor Bio
Jeff Knickerbocker is a consulting DER with 30+ years of experience as a systems/software engineer. He has led technical teams in designing, developing and verifying real-time embedded software and AEH devices. In addition to industry affiliations, he also provides consulting and training services to the FAA and other non-U.S. regulatory agencies. In 2002, he and his wife started Sunrise Certification & Consulting. Knickerbocker has a B.S. in physics and an M.S. in software engineering.

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