

AEROSPACE

SHORT COURSES

Integrated Modular Avionics and DO-297 (AERO0350)

Instructor: Jeff Knickerbocker

Course Description

This course provides the fundamentals for developing and integrating IMA systems, using TSO-C153 (Integrated Modular Avionics Hardware Elements), FAA Advisory Circular 20-170 (Integrated Modular Avionics Development, Verification, Integration and Approval Using RTCA/DO-297 and Technical Standard Order C153) and DO-297 (Integrated Modular Avionics (IMA) Development Guidance and Certification Considerations). Discussions and in-class activities further enhance the learning process.

Course Highlights

- What is IMA?
- What are the benefits of IMA?
- History of IMA
- Overview of IMA guidance material
- TSO-C153 (Integrated Modular Avionics Hardware Elements)
- FAA Advisory Circular 20-170 (Integrated Modular Avionics Development, Verification, Integration and Approval Using RTCA/DO-297 and Technical Standard Order C153)
- Purpose of the advisory circular (AC)
- Technical highlights from the AC
- Roles and responsibilities
- DO-297 (Integrated Modular Avionics (IMA) Development Guidance and Certification Considerations)
- ARINC 653 Usage in IMA Systems
- SAE ARP 4754A aspects in IMA Systems
- Using TSO-C153, AC 20-170, DO-297 and ARINC 653 together
- Common challenges in IMA development and certification
- Practical tips for IMA development and certification

Who Should Attend?

This course is designed for developers and integrators of integrated modular avionics systems. The focus will be on identifying challenges with IMA and satisfying the regulatory guidance.

Learning Objectives

- Gain valuable insight into the IMA development and certification processes;

- Understand the importance of IMA design assurance;
- Obtain practical insight into how to address some of the common IMA challenges;
- Understand FAA's IMA policy and guidance

Course Outline

- Introductions and background
- What is IMA?
- What are the benefits of IMA?
- History of IMA and supporting certification guidance
- Overview of the IMA guidance material
- TSO-C153 (Integrated Modular Avionics Hardware Elements)
- FAA Advisory Circular 20-170 (Integrated Modular Avionics Development, Verification, Integration and Approval Using RTCA/DO-297 and Technical Standard Order C153)
- Purpose of the advisory circular (AC)
- Technical highlights from the AC
- Roles and responsibilities
- DO-297 (Integrated Modular Avionics (IMA) Development Guidance and Certification Considerations)
- ARINC 653 Usage in IMA Systems
- SAE ARP 4754A aspects in IMA Systems
- Using TSO-C153, AC 20-170, DO-297 and ARINC 653 together
- Common challenges in IMA development and certification
- Practical tips for IMA development and certification

Classroom hours / CEUs

7.00 classroom hours

.7 CEUs

Certificate Track

Aerospace Compliance

Avionics and Avionic Components

Course Fees

Early registration course fee: \$995 if you register and pay by the early registration deadline (45 days out).

Regular registration course fee: \$1,045 if you register and pay after the early registration deadline.

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.

Canada Department of National Defence Discount

This course is available to Canada DND employees at 10% off the registration fee. Please contact the DND Procurement Authority (DAP 2-3) for details. Please note that you cannot register using our online system when requesting this discount. 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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