

LDRA



RTCA/DO-178C Training Program Two-Day Course Outline 10 - 11 Dec 2018, Bengaluru - India

Overview

The two-day training program is an initiative under LDRA Certification Mentoring Program (LCMP) catering to MSMEs/start-ups and is organized jointly by LDRA and Society of Indian Aerospace Technologies and Industries (SIATI).

The RTCA/DO-178C training program is specifically designed to provide participants with a deep insight into software considerations within airborne systems and equipment certification for civilian aircraft. This level of certification is in high demand from the private, public and government sectors of the avionics industry in Bangalore.

The training program aims to provide an understanding/interpretation of the DO-178C standard for OEMs/Tier 1&2, MSMEs, start-ups and certification authorities.

The RTCA/DO-178C guidelines are globally recognised and applied by both companies seeking to develop high quality safety-critical software applications and those seeking to regulate and certify such applications. Certification authorities such as the Federal Aviation Administration (FAA) in the US and the European Aviation Safety Administration (EASA) in Europe, have applied the guidelines for many years and hence it is very important for interested parties to ensure that they keep abreast of the latest developments and maintain a sufficient understanding of the guidelines as a whole.

Participation Fees

Participation Fee:

- For MSMEs/start-ups: Rs. 14,500/- per delegate inclusive of taxes.
- For other private companies: Rs. 23,600/- per delegate inclusive of taxes.

** This includes course material, lunch and refreshments for two days.*

Date, Time and Venue

DATE: 10 – 11 December 2018 || **TIME:** 09.00 – 16.00

VENUE: The Rolls Royce Hall, Aeronautical Society of India, Suranjan Das Road
(Off Old Madras Road), Bangalore - 560075

Who Should Attend?

- Program Directors
- Program Managers
- Project Managers
- Test Managers
- Project Leads
- Design Leads
- Modules Development Leads
- Module Test Leads
- Scientists, R & D Engineers from PSU, Govt. Organizations
- Software Designers
- System Analysts
- Software Architects
- Verification Leads
- Test Engineers
- Software Quality Assurance Engineers
- Any Hardware and Software Engineering Professionals in Safety Critical Embedded System Development/ Verification

Course Outline

DAY 1: Agenda

- 1) Introductions (15 min)
- 2) DO-178C *Software Considerations in Airborne Systems and Equipment Certification* (7 hrs)
 - a) Certification Overview
 - b) Purpose of DO-178C
 - c) The “V” Development Model
 - d) Software Planning
 - e) Software Development Processes
 - i) Requirements Development
 - ii) Software Architecture
 - iii) Software Design
 - iv) Software Coding
 - v) Parameter Data Item Files
 - vi) Software Integration
 - f) Testing Processes
 - i) Requirements-Based Testing
 - ii) Test Reviews
 - iii) Coverage Analysis
 - g) Integral Processes
 - i) Verification
 - ii) Software Configuration Management
 - iii) Software Quality Assurance
 - iv) Certification Liaison
 - h) Additional Considerations
 - i) Use of Previously Developed Software
 - ii) Tool Qualification
 - iii) Alternative Methods
 - (1) Exhaustive Input Testing
 - (2) Multiple Version Dissimilar Software
 - (3) Software Reliability Models
 - (4) Product Service History
 - i) Regulatory Reviews
 - j) Differences between 178B & 178C
 - k) Level D – Black Box Certification
 - l) When to Comply (AC 20-115C)
- 3) Day 1 Q&A (45 min)

DAY 2: Agenda

- 1) DO-330 *Software Tool Qualification Considerations* (2 hrs)
 - a) Introduction to DO-330
 - b) Tool Qualification Processes
 - c) Tool Qualification Data
 - d) Tool Qualification Additional Considerations
 - e) Tool Qualification Objectives
 - f) Tool Qualification FAQs
 - g) DO-178C Section 12.2
 - h) Areas of Special Interest
 - i) COTS Tools
 - ii) Multi-Function Tools
 - iii) DO-330 & AC 20-115C
 - i) DO-178B “Verification” tool vs. TQL-5
- 2) DO-331 *Model Based Development and Verification Supplement to DO-178C and DO-278A* (1.5 hrs)
 - a) Introduction to DO-331
 - b) Models in Software Development
 - c) A Tour of DO-331
 - d) Select FAQs & DPs from Appendix MB.B
 - e) Objective Differences
 - f) Data Differences
 - g) Certification Credit for Model Simulation
 - h) Significant changes under DO-331
- 3) DO-332 *Object Oriented Technology and Related Techniques Supplement to DO-178C and DO-278A* (1.5 hrs)
 - a) Introduction to OOT&RT
 - b) Linguistics
 - c) A Tour of the OOT&RT Supplement
 - d) Terminology
 - e) Type Consistency
 - f) Vulnerabilities
 - g) Objective Differences
- 4) DO-333 *Formal Methods Supplement to DO-178C and DO-278A* (1 hr)
 - a) Introduction
 - b) Formal Methods in Software Development
 - c) FM.4.0 Software Planning
 - d) FM.5.0 Software Development
 - e) FM.6.0 Software Verification
 - f) FM.11.0 Life Cycle Data
 - g) FM.12.0 Additional Considerations
 - h) Annex FM.A Objective Differences

Day 2 Q&A (1 hr)

Trainer



Steve Morton
FAA Level A DER
Consultant FAA DER, USA

Steve Morton is a consultant FAA Level A DER with extensive expertise in the development and use of aerospace tools. Steve was a member of SC-205, which developed DO-178C, DO-278A, and their technology supplements. Steve substituted as acting co-chair of subgroup 3, which was responsible for the Software Tool Qualification Considerations supplement to DO-178C and was an Editorial Subcommittee Member for DO-248C. In addition to his consultancy at TBV Associates, Steve was formerly a Software DER at Hawker Beechcraft Corporation where he had responsibilities across the spectrum of HBC's Part 23 and Part 25 aircraft line up. Steve has provided training on tool qualification at multiple FAA National Software and Airborne Electronic Hardware Conferences.

Registration and Payment Process

Register online at www.ldra.com/events-training or contact the organizing committee member.
Payment modes:

- Cheque/draft drawn in favour of 'LDRA Technology Pvt. Ltd.' payable at Bangalore. Please write your name and contact number on the reverse of cheque/draft.
- Online NEFT transfer.

** contact us for payment details and other information.*

Contact Us

Wing Commander Venugopal Menon (Retd)
Senior Director, SIATI
Email: offile@siati.org | v.menon@siati.org
Phone: 97422 79162 | 080 25275262

Aeronautical Society of India,
Suranjan Das Road, Off. Old Madras Road,
Bengaluru 560075
Tel: 080 25219951 | Website: www.siati.org

Aparna P S,
Account Manager- LDRA Competency Centre,
LDRA India
Email: aparna@ldra.com, Phone: 91485 95238

LDRA Technology Pvt. Ltd.,
Unit B-3, Third floor, Tower B, Golden Enclave,
HAL Airport Road, Bengaluru 560017
Tel: 080 4080 8707 | Website: www.ldra.com