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Patmos Engineering Services, Inc.

CERTIFICATION OF HARDWARE (DO-254) & SOFTWARE (DO-178C)

This three-day course is tuned for the engineer facing compliance with DO-254 & DO-178 for the first time or simply wanting to refresh their understanding of today's airborne software compliance processes – now including a comparison of the changes from DO-178B to DO-178C.

Understand the context *of DO-254 & DO-178C with respect to the FAA, EASA, and other regulatory agencies/policy*

Explore the life cycle and objectives *and learn what is applicable to your project*

Review real examples *and* ***obtain free templates*** *for project use*

Examine the changes in "C" *versus DO-178B*

Understand the new supplements *and how and when to use them*

See what is pertinent for Military *and UAS applications*

Compare DO-278A and DO-248C *to DO-178C*

KNOWLEDGE
INTEGRITY
EFFICIENCY

Since 2000, Tammy Reeve, President of Patmos Engineering Services, has been helping applicants with DO-254 and DO-178 compliance. In 2008, the FAA awarded Patmos Engineering Services the contract for developing and delivering the "Complex Electronic Hardware" training course that was taught at the FAA Academy to DO-254 program auditors.

From both her DO-254 and DO-178 DER auditing experience and FAA training experience, Tammy developed this course offering for anyone needing to ensure compliance to these standards. Today, Tammy has taught this course to over 40 companies around the globe. The feedback has been overwhelmingly positive.

"Tammy delivers tailored training and certification support to her clients that is hands-on and practical. She is effective in helping the recipient define a usable and compliant process."

Karen Brack, Airborne Electronic Hardware Engineer, The Boeing Company

Patmos offers this and several other industry leading compliance training courses, which can be delivered on-site or on-line, and can be tailored to your specific needs. You can also pair these classes with any other Patmos offering (such as a process "Gap Analysis") for a fully customized services package.

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Three Day
DO-254 and DO-178C Training Outline

Day 1- overview (DO-254 and DO-178C)

1. Certification Related Information
   - Regulation and Policy
   - Safety Analysis and Deriving DALs
   - FAA Means of compliance
     - DO-178C- FAA AC20-115C and EASA AMC 20-115C
     - DO-254 - AC20-152
   - Other important FAA/EASA material
     - EASA CM SWCEH – 002
     - Order 8110.49 chg1
     - FAA Order 8110.105
     - CAST Papers
     - FAA Job Aids
     - Issue Papers & CRIs

2. Where DO-178B/C & DO-254 Fits in the Certification Process
   - System and Software Process Relationship; Design Assurance level (DAL)
   - How to use DO-254 and DO-178C and adjust for Design assurance level
   - Objectives and Appendix A
   - DO-254 Appendix B
   - Software & Hardware Approval Process
3. Similarities and differences between the two RTCA standards
   1. DO-254 Process Assurance and DO-178C Quality Assurance
      1. Independence
   2. DO-254 and DO-178C configuration Management
      1. Problem reporting
      2. Change Impact Assessment
      3. Release and Baselines

Day 2- DO-254 and DO-178C Planning phases and objectives

1. Planning
   - PSAC/ PHAC
   - Additional Considerations
     - Reuse
     - Tool qualification
     - Major vs Minor changes
     - Software Additional considerations
     - Hardware additional considerations
   - Development/Design Plan
     - Transition Criteria
     - Baselines
     - Traceability
     - Standards
   - Verification and Validation Plan
     - Reviews, Analysis, Test
     - Independence
   - Configuration Management Plan
     - Open Prs
     - Categorization of PRs
   - Quality Assurance Plan
     - Independence
   - Certification Liaison
   - FAA Job Aids
     - SW SOI-1 (Planning)
     - HW SOI -1 (Planning)

No Better Choice than Patmos.

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Three Day
DO-254 and DO-178C Training Outline

Day 2 & 3 (based on questions and discussions)
Development Life cycle DO-254 and DO-178C

1. Requirements Capture
   - High
   - Low
   - Derived
     - What is a Derived Requirement?
     - Examples of Derived requirements.
   - traceability
2. Design Capture
   - Description
   - Coding& Integration
   - traceability
   - SOI-2 (Development)
3. Verification, Analysis and Test
   - Verification & Validation Activities
   - traceability
   - Robustness
   - DO-178C Structural Coverage Methods
   - DO-254 Elemental Analysis Coverage Methods
   - DO-254 Appendix B additional Verification topics for DAL A/B
4. Certification Liaison
   - Conformity
   - Production transition
   - Activities
   - Hardware Accomplishment summary (HAS) and Software Accomplishment Summary (SAS)
   - SOI #4 (Final Review)
6. Changes from DO-178B to DO-178C
7. Overview of DO-178C Supplements
   - DO-330 – Tool Qualification
   - DO-331 – Model-Based Design
   - DO-332 – Object Oriented Technology
   - DO-333 – Formal Methods
8. DO-278A and DO-248C
9. Wrap up and questions

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