ELECTRA IC
Design & Verification

DO-254 Workshop

⏳ **2 Days**

Objectives

- **Regulatory & Lifecycle Understanding**
- **Requirements Engineering & Review**
- **Traceability and Verification Planning**
- **Baseline & Configuration Management**
- **Change Control (CR/PR)**
- **Peer Review Engineering**
- **Impact Analysis & Regression Strategy**
- **Audit Readiness & Certification Mindset**

Who should attend?

- **Military or Avionics Hardware Project Leaders**
- **ASIC & FPGA Digital Design Engineers**
- **Quality Assurance Engineers**
- **All People Involved in System Design**

Detailed Agenda

Day 1

Introduction & Certification Context
- Workshop objectives
- Certification mindset vs engineering mindset
- Overview of DO-254 hardware lifecycle

Requirements Capture Process
- Requirement hierarchy
- Writing verifiable and testable requirements
- Common requirement defects
- Requirement Peer Review Process
- Transition of Requirement Capture Process

Detailed Design Process
- HDL Coding with Respect to Requirements
- Hardware/Software Data Preparation
- Static Code Analysis
- RTL Peer Review & Change Review
- Transition of Detailed Design Process

DO-254 Lifecycle & Configuration Framework
- Planning phase to product transition phase
- Lifecycle data definition
- Configuration Index concept
- Baseline Definitions

Traceability & Verification Planning
- Forward trace (Requirement → Test)
- Backward trace (Test → Requirement)
- Traceability matrix construction
- Mapping verification methods
- Verification Plan Peer Review Process

Implementation Process
- Optimization and Generation of Programming File
- Implementation Peer Review & Change Review
- Transition of Implementation Process

Day 2

Test Process
- RTL Simulations
- Verification Report Generation
- Peer Review of Verification Report
- Transition of Test Process

Impact Analysis & Regression Strategy
- Direct vs indirect vs potential impact
- Requirement impact
- RTL impact
- Verification impact
- Traceability updates
- Full regression vs partial regression
- Coverage delta analysis

Baseline Evolution After Change
- From Baseline_1.0 to Baseline_1.1
- Certified configuration update
- Documentation update control

Full Lifecycle Audit Simulation
- Quality Team
- RTL Team
- Verification Team

Change Management Overview
- Why change control is critical
- CR vs PR distinction
- Change classification principles

Product Transition
- FPGA Final Bitstream for Production
- Hardware Accomplishment Summary Preparation
- Peer Review of Hardware Accomplishment Summary
- Transition of Process Closure

CR (Change Request) vs PR (Problem Report)
- Feature change scenario
- Implementation defect scenario
- Requirement ambiguity scenario