ELECTRA IC
Design & Verification

ARINC664 / AFDX Training

⏳ 2 Days

Program Overview

This comprehensive two-day training course is designed to provide participants with a thorough understanding of ARINC664 technology. The course combines theoretical concepts with practical demonstrations to ensure participants gain both knowledge and hands-on experience with this critical avionics' communication protocol.

Objectives

- Master the fundamental concepts and architecture of ARINC664 networks
- Understand the deterministic aspects of ARINC664 and how it differs from standard Ethernet
- Gain practical knowledge of Virtual Links and their role in ensuring deterministic behavior
- Develop proficiency in ARINC664 frame structure, addressing mechanisms, and protocol layers
- Learn redundancy management techniques and integrity checking procedures
- Understand switch architecture, filtering, policing, and forwarding mechanisms
- Apply knowledge through hands-on laboratory exercises and demonstrations

Who should attend?

- Entry-level Avionics Engineers beginning their career in aircraft systems
- Network Engineers transitioning to the aviation industry
- Electronics Technicians working with aircraft systems
- Technical Support Staff providing assistance for avionics systems
- Engineering Students specializing in aerospace or avionics

Pre-requisites

- Familiarity with general hardware concepts (e.g. cables, connectors)
- Familiarity with fundamental Ethernet principles
- Basic knowledge of binary number systems and data representation
- No prior aviation experience necessary

Course Details and Schedule

DAY 1

Foundations & Core Protocol Mechanics
- Registration, Welcome and Course Overview
- Introduction to AFDX and the Aviation Network Context
- Virtual Links - The Heart of AFDX Determinism
- AFDX Frame Structure and Addressing Deep Dive
- End System Architecture and Traffic Shaping
- Redundancy, Integrity Checking & Sequence Numbers
- Day 1 Practical Lab Introduction

DAY 2

Advanced Topics, Switch Operation & Implementation
- IP/UDP Profile, Communication Ports & Avionics Services
- Switch Architecture - Filtering, Policing & Forwarding
- Switch Configuration, Operating Modes & State Machines
- AFDX Data Format
- System Integration, Performance Analysis & Monitoring
- Final Practical Exercise - EIC -A664 Live Demonstration
- Final Questions, Open Discussion and Participant Feedback