RELIABILITY TOOLS AND INTEGRATION FOR THE PROTOTYPE PHASE

OBJECTIVE

This course will look at reliability tools that are used in the prototype phase of a project in order to determine product robustness and margins through testing. These tools are used after a working prototype has been developed. This represents the first time a product will be tested. The focus here will be mostly at finding design issues that escaped the analysis performed during the design phase.

WHO SHOULD ATTEND

This course is intended for hardware, software, and reliability engineers involved in testing a product.

OUTLINE

- **Elements of a Reliability Program**
  - Basic Definitions
  - Reliability vs. Cost
  - Product Life Cycle Matrix
  - Integration Phases
    - Integration in the Concept Phase
    - Integration in the Design Phase
    - Integration in the Prototype Phase
    - Integration in the Manufacturing Phase
- **Integration in the Prototype Phase**
  - Highly Accelerated Life Testing (HALT)
    - What is HALT
    - Why HALT works

- Planning for a HALT
  - Using results from the Modeling and Predictions FMECA, and Derating Analyses to help develop the HALT Plan
- Executing the HALT
  - Using a FRACAS for root cause analysis on each failure
- Using the HALT results to help plan the RDT
- Using the HALT results to define the HASS profile

- Failure Reporting, Analysis and Corrective Action System (FRACAS)
  - How to set up a FRACAS
  - Different types of FRACAS tools
  - How to use a FRACAS in conjunction with a HALT
- Reliability Demonstration Test (RDT)
  - What is an RDT
  - How to set up an RDT
  - Different variables
  - How to use the results of HALT and Predictions in planning an RDT

- **Summary**
  - Reliability vs. Cost
  - Summary of Phases
  - Summary Tools within this Phase
  - Benefits of Integration
  - Next Steps
    - Implementation
    - Further Education in Integration
    - Related courses by Ops A La Carte
  - Contact Information