Course Title

AIAG-VDA DFMEA (Design Failure Mode and Effects Analysis)

Overview

FMEA has been re-written to accommodate the new requirement of the industry to both fulfill the AIAG (Automotive Industry Action Group) & VDA (Verband der Automobilindustrie) requirement, which supersedes AIAG 4th Edition FMEA and VDA. Volume 4. The intention is to provide a common foundation for FMEA across the sectors of the automotive industry which are represented by these 2 organizations.

In the new edition, a supplemental FMEA for Monitoring and System Response (FMEA-MSR) has been added to the traditional method. These provide the mean for the analysis of diagnostic detection and fault mitigation during customer operation.

In this training, participants will understand the difference between the new AIAG-VDA FMEA and the classic FMEA.

Learning Outcomes

This course is designed for participants to:

➢ Be aware of the new AIAG-VDA FMEA 1st edition 2019
➢ Understand the 7 steps methodology in AIAG-VDA FMEA
➢ Conduct FMEA studies as per the new requirement which supersedes the 4th Edition of AIAG FMEA
➢ Understand the supplemental FMEA-MSR
➢ Comply with the new AIAG-VDA FMEA requirement for new product design and development

Who must attend

Managers, supervisors, team leaders, and other professionals involved in planning, design, or implementation of a system or product and want to improve their ability to lead a proactive change and improvement to their operations.

Methodology

Case studies, small group practical exercises, small group discussion, facilitator presentations, skill practices, application planning and walk-through simulations. **Pre-test and post-test will be used to measure effectiveness.**

Course Outline

- AIAG-VDA DFMEA vs. Classic DFMEA
  - Significant difference and impact compared to the current DFMEA
- The FMEA 5 T's
- Executing the FMEA (Design) - The 7 steps process
  - 1st step – Planning and Preparation
    - DFMEA project identification and boundaries
    - DFMEA project plan
    - Identification of the baseline for DFMEA
    - Basis for structure analysis
  - 2nd step – Structure analysis
    - System structure
    - Define the customer
    - Visualize system structure
    - Block / Boundary diagram
    - Interface analysis
    - Collaboration between customer and supplier
    - Basis for function analysis
  - 3rd step – Function analysis
    - Function

- - - Requirements
  - - P-Diagram
  - - Function analysis
  - - Collaboration between engineering teams (systems, safety, components)
  - - Basis for failure analysis
  - 4th step – Failure analysis
    - Failures Chain
    - Failure effects, mode and cause
    - Basis for risk analysis
  - 5th step – Risk analysis
    - Design control
    - Current prevention and detection controls
    - Evaluations
    - S,O,D, AP ranking
  - 6th step – Optimization
    - Assign of responsibilities
    - Status of actions
    - Assessment of action effectiveness
    - Continual improvement
  - 7th step – Result Documentation
- Supplemental FMEA for Monitoring and System Response (FMEA-MSR)
  - The difference between DFMEA and FMEA-MSR

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