



Register

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## CORE TOOLS

APQP+PPAP+AMEF+SPC+MSA

### OBJECTIVE

The participant will understand the fundamentals of the automotive Core Tools and will be able to apply them through practical examples following the AIAG latest guidelines.

### PARTICIPANT'S PROFILE

Professionals in charge of the new products introduction process, quality engineers responsible for the integration or revision of PPAPs, internal auditors and all those interested in the analysis, control and improvement of processes within the automotive industry.

### DATE

September 19, 20 & 21, 2018 (24 hours)

### PLACE

Dallas, Tx.

### TIME

9:00 to 18:00 hours

### INCLUDE

- Manual
- Coffee break
- Half day food
- Certificate

### Day 1: APQP – Advanced Product Quality Planning

- Introduction to APQP.
- Relation to IATF16949:2016.
- Product Quality Planning Cycle.
  - + Phase 1. Plan and define program.
  - + Phase 2. Product design and development
  - + Phase 3. Process design and development
  - + Phase 4. Product and process validation.
  - + Phase 5. Feedback, assessment and corrective action.
- Feasibility commitment.

### Day 1: PPAP – Production Part Approval Process

- Introduction to PPAP.
- Relation to IATF16949:2016.
- Submission of PPAP.
- Significant Production Run.
- PPAP requirements.
- Submission levels.
- PSW - Part Submission Warrant.

### Day 2: FMEA – Failure Mode and Effects Analysis

- Introduction to FMEA.
- Relation to IATF16949:2016.
- FMEA model.
- Failure modes, Effects and Causes.
- Severity, Occurrence and Detection.
- Prevention, Detection and Containment.
- RPN - Risk Priority Number.
- FMEA practice.

### Day 2: Control Plan

- Introduction to Control Plan.
- Relation to IATF16949:2016.
- Controlling vs. Monitoring.
- Special product characteristics.
- Special process characteristics.
- Evaluation technique.
- Sample size / frequency.
- Control method.
- Reaction plan.

### Day 3: SPC – Statistical Process Control

- Introduction to statistical control
- Relation to IATF16949:2016.
- Basic statistics.
- Elements of Control Charts.
- Common and Special Causes.
- Establish control limits.
- Special cause criteria.
- Variables Control Charts.
  - + X-R Chart.
  - + I-MR Chart.
- Attributes Control Charts.
  - + p Chart.
  - + u Chart.
- Process Capability (Cp, Cpk).
- Process Performance (Pp, Ppk).

### Day 3: MSA – Measurement Systems Analysis

- Introduction to measurement systems analysis.
- Relation to IATF16949:2016.
- Elements of measurement systems.
- Repeatability and Reproducibility.
- Gage R&R Study - Guidelines.
  - + Range Method.
  - + ANOVA Method.
  - + Results Interpretation.
- Attribute Study.