APQP 3rd Edition and Control Plan 1st Edition: What You Need to Know to Be Ready
Webinar Presenters

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- AIAG Participant in APQP and Control Plan revision workgroup
- Dave supports various projects & workgroups as AIAG quality staff

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- Experienced Trainer and curriculum developer specializing in core tools implementation and utilization.
- Jeremy specializes in small team development and risk based-thinking implementation strategy
Poll Time!

Q1
What area are you currently in with your organization?
- Program management
- Supplier Quality
- Plant/corporate quality
- Operations
- Manufacturing
- Other

Q2
What is your tier within the automotive space
- OEM
- Tier 1
- Tier 2
- Sub tier below 2
Why the Need for APQP and CP Update?

• It’s about time! (1st Edition 1994; 2nd 2008 – minor changes)
• Industry changes in program management cycles/methods
• Technology changes (product and processes)
• Supply Chain expansion (“New to Auto”, cross-sector suppliers)
• Opportunity to harmonize CSRs and suggest “best practices” based on Lessons Learned from past programs
• Alignment to IATF 16949 (2015), leverage related AIAG publications
• Customer expectations evolving (consumer, regulatory, etc.)
Why Separate Control Plan manual?

Flexibility and Agility
• Anticipate more frequent updates than APQP as technologies evolve
• Flexibility to revise/upgrade based on Lessons Learned, Best Practices, and alignment to other standards and harmonized expectations

Continuous Improvement
• Ford, General Motors and Stellantis collaboration to list frequent weak points and how to address
  ✓ Harmonized CSRs
  ✓ Clear Requirements related to top opportunities for improvement
  ✓ Increased guidance on process to develop and manage Control Plans
The core tools hierarchical structure

Alignment with the current model

- The breakout of the control plan is consistent with the way we have been teaching the core tools for years
- The measurement studies required for PPAP are driven by the control plan
- The control plan remains the operational expression of the FMEA
Changes to APQP

**Program Management**
- Risk Assessment and Mitigation
- Gated Management expectation and guidance
- KPIs related to APQP process

**Sourcing**
- Increase focus on Sourcing stage, just as important as “readiness”
- Checklist to assess & mitigate risk during Sourcing
- Gated Management includes sub-tiers

**Clarification/Detail**
- Change Management during APQP
- Capacity Planning using OEE
- Traceability
- Error-Proofing and Mistake-Proofing
0.5 Sourcing
• New AND Existing suppliers (sub-tier) require thorough vetting to ensure design and manufacturing capability
• Sourcing checklist should be completed to confirm supplier suitability (based on CQI-19 Sub-Tier Supplier Management Process)
• Scope for Sourcing ends with acceptable vetting results. All other APQP activities cascade to sub-tier.

0.5.1 High Risk Supplier Evaluation
• Organization must have a method to identify “high risk” suppliers
• Criteria to define high risk include:
  – New supplier to Organization
  – New location or site
  – New technology
  – History of poor quality
  – Supplied components have Safety or Regulatory requirements
  – No certification to ISO 9001 or IATF 16949
At a Glance: APQP Gated Management (App B)

New Gated Management Section

- Suggested documentation checklists for each “gate” review
- Aligned to typical Program milestones
- Supports expectation for “gate review” in 1.14 Leadership Support
- Includes review of Supplier (sub-tier) APQP activity, not just Organization’s
# Managerial vs technical aspects

## Technical
- An increase in number of tasks
- Change in the graphic to extend product development

## Managerial or Governance
- Increased number of gates
- More up-front planning
- Higher focus on lessons learned
- More focus on risk-based thinking
The governance framework

Update & monitor APQP program metrics
(APQP: Task 1.16)

Perform initial assessments: APQP risk, capacity, management support, technology requirements, facility readiness, resource readiness, sourcing, styling, and timing plan (APQP: Gate 0)

Perform risk management
(APQP: Task 1.17)

Update timing chart & Product Assurance Plan
(APQP: Task 1.12)

Apply lessons learned
(APQP: Task 5.4)
Perform and verify APQP tasks
(APQP: Task 1.12)
Implement changes, as needed
(APQP: Task 1.15)

Perform Gated Management using APQP checklists for Gate 1 to Gate 5
(APQP: Task 1.14)
Control Plan Manual Overview

Evolved from “how to fill in the form” in APQP/CP 2nd edition to:

• Chapter 0 Introduction
  – Clarify linkage to APQP processes; emphasize “Living Document”

• Chapter 1 Requirements and Guidelines
  – Clear requirements for key topics (common weak points, harmonized CSRs)

• Chapter 2 How to Develop Control Plan
  – Expanded guidance with emphasis on process approach

• Chapter 3 Control Plan Stages
  – Importance of each stage, harmonized CSRs for Safe Launch

• Chapter 4 Effective Use of Control Plans
  – Maximize Control Plan effectiveness in context of holistic QMS
Control Plan Key Content/Changes

**Characteristics Management**
- Special Characteristics identification and classification
- Pass-Through Characteristics identification and management

**Address Common Weaknesses**
- Error-proofing confirmation
- Volume-based sampling frequency (ensure containment)
- Reaction Plan documentation (action & responsible)

**Clarified Expectations**
- Directed Supply information gathering activity
- Safe Launch, including “exit criteria”
At a Glance: Control Plan Chapter 1

Requirements and Guidelines for 12 topics based on past problems

Key examples:

• Special Characteristics
  – Allow use of “correlation matrix” (correlate organization symbols to customer's)
  – Customer may also designate "key" or "critical" characteristics for special handling

• Pass-Through Characteristics
  – Organization must have a process to identify and ensure adequate control of PTC throughout supply chain, and must communicate control methods to customer
  – Recommended CQI-19 PTC Matrix to communicate control methods to customer

• Directed Supply
  – Organization must get necessary information from Supplier to develop Organization’s control plan unless otherwise specified by mutually signed agreement (MPA, etc.)
Control Plan Stages

- Addition of “Safe Launch” requirements
  - Typical Application (figure 3.1)
  - Pre-Launch: Customer may require during Pilot Stage and continued into launch; how to document
  - Production: Start of Production WILL include Safe Launch
  - Must establish judgment criteria to exit Safe Launch - typically 90 days no problems to customer and no problems identified by Safe Launch additional/enhanced controls/containment
At a Glance: Control Plan Chapter 4

Considerations for using QMS elements to maximize effectiveness

Key concept, why it’s important, what to do, and how to do it for:

- Reverse PFMEA
- Using Software to Develop and Manage Control Plan
- Layered Process Audit as Control Plan Verification
- Control Plans in Highly Automated Processes
- Using Family/Foundation Control Plans and FMEAs
- Control of Storage and Handling Related Risks
- Abnormality Management related to Control Plans
Poll Time Part Deux!

Q3
Given what you saw in the presentation how ready do you feel you are for the new version and the subsequent deadline to adopt it
- Very ready
- Somewhat ready
- We have a lot of work to do

Q4
When it comes to utilization how will you be using the new APQP and Control plan
- We will be adopting it for our own organization as an existing automotive supplier
- We will be driving through our supply chain
- We will be implementing it for the first time as an automotive supplier
Enabling Rapid Electrification of Industry

Framework Flexibility
- Quicker cycles of development
- Sequence and duration of actions may be flexible (consult customer)

New Suppliers to Auto
- Customers will still expect APQP and CP execution

New Technology
- Sector Specific guidance proposals can be made (process agreed)

Consistent Intention/Purpose
APQP manual: “The intent of APQP is to proactively assess and mitigate risk factors impacting product launch.”
CP manual: “The goal of a Control Plan is to facilitate communication with everyone involved to assure that all required controls are completed on time and in full, every time.”
Fast Feedback Team – accelerated development

• Suppliers/OEMs Consulted
  
  *Diverse demographics & opinions*
  
  − Bosch
  − Freudenberg-NOK
  − Geely
  − GKN
  − Honda
  − Rivian
  − Magna
  − Nexteer
  − NXP Semiconductors
  − Paccar
  − Shape Corporation
  − Panasonic Battery Solutions

• Key Contributions
  
  *Suggestions, best practices, concerns*

  ➢ APQP
    
    ✓ Gated Management guidance
    ✓ Traceability expectations
    ✓ Checklist expansion (best practices)

  ➢ Control Plan
    
    ✓ Special Characteristics classifications
    ✓ Pass-Through Characteristics assurance
    ✓ Reaction Plan details
    ✓ Directed Supply relationships
Implementation Timing Targets

Ford
• 6 months after publication

General Motors
• 6 months after publication

Stellantis
• 6 months after publication

All will ACCEPT immediately after publication
(Nothing new is contrary to current, positively enhanced new content is OK)
What Should You Do to Be Ready?

Learn the Content
• Get the new documents as soon as possible
• Utilize AIAG eLearning and training resources

Gaps? More Training?
• Assess gaps between current practices and the new APQP and Control Plan manual
• Knowledge and expertise gaps may require additional training

Implement & Reflect
• Pilot project with limited scope
• Reflect from your viewpoint and that of your customer
• Document and Implement Lessons Learned
AIAG Training Resources

- APQP and Control Plan transitioning
- Control Plan- Understanding and Implementing
- APQP overview
- APQP Control Plan and PPAP- Understanding and Implementing
- PPAP- How to review and improve the effectiveness of PPAP

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Thank you