Registration Overview

300+ Individuals Registered from 24 Countries
Webinar Overview

We are recording today’s webinar and will distribute the video link following the close of the webinar. It will also be posted on the AESQ website for free viewing.

We will take questions during today’s webinar using the Chat feature.

Please remain on Mute during the presentation to prevent background noise. We will also be muting all lines at the start of the session.
How to Contribute

Please answer the **Survey Questions** when asked (they are anonymous).

Use the **Chat Function** to ask a question at any time, or to make a comment.

---

Becky Lemon
Industry Program Manager
SAE ITC

Jim Wilson
Sr Manager, Supplier Quality & Development
Pratt & Whitney Canada
AESQ Supplier Forums

Typically held twice a year, rotating around North America, Europe and Asia

AESQ Supplier Forums provide an opportunity to:

- Provide updates on the work of the AESQ
- Share best practice
- Provide feedback to the AESQ
- Develop a network of practitioners and Subject Matter Experts
AESQ – Aerospace Engine Supplier Quality Strategy Group

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## Agenda

<table>
<thead>
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<th>Topic</th>
<th>Presenter</th>
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<tr>
<td>AESQ Overview, Vision &amp; Objectives</td>
<td>Barbara Negroe, Executive Sourcing Quality Leader, GE Aviation</td>
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<tr>
<td>AS13100 Standard Overview</td>
<td>Larry Bennett, Consulting Engineer, Global Sourcing Quality, Supply Chain Division, GE Aviation</td>
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<tr>
<td>Deployment Introduction &amp; Milestones</td>
<td>Elizabeth Pace, Supplier Quality Strategy, Associate Director, Raytheon Technologies</td>
</tr>
<tr>
<td>Deployment Plans:</td>
<td>• Hiroshi Yamamoto, General Manager, Quality System Dept., IHI</td>
</tr>
<tr>
<td>• MTU</td>
<td>• Michael Mrosewski, Quality Management Programs, MTU</td>
</tr>
<tr>
<td>• Safran</td>
<td>• Catherine Catarina-Graca, Supplier Management System Coordinator, Safran Aircraft Engines</td>
</tr>
<tr>
<td>• Pratt &amp; Whitney</td>
<td>• Paul Morgan, Sr. Director Quality &amp; Processing Engineering, Pratt &amp; Whitney</td>
</tr>
<tr>
<td>Deployment Dashboard</td>
<td>Elizabeth Pace, Supplier Quality Strategy, Associate Director, Raytheon Technologies</td>
</tr>
<tr>
<td>Deployment Survey Results</td>
<td>Jim Wilson, Sr. Manager, Supplier Quality, &amp; Development, Pratt &amp; Whitney Canada, &amp; Elizabeth Pace, Supplier Quality Strategy, Associate Director, Raytheon Technologies</td>
</tr>
<tr>
<td><strong>BREAK – 15 Minutes</strong></td>
<td><strong>BREAK – 15 Minutes</strong></td>
</tr>
<tr>
<td>Topic</td>
<td>Presenter</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>---------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Focus on APQP Deployment</td>
<td>Karl Evans, APQP Technical Project Manager, Rolls-Royce</td>
</tr>
<tr>
<td>Risk Based Audit System – Internal and Supplier</td>
<td>Lisa Stömer, Audit Management, MTU Aero Engines AG (Munich)</td>
</tr>
<tr>
<td>AESQ How to Get Involved</td>
<td>Jun Sakai, Chief Engineer, IHI Corporation</td>
</tr>
<tr>
<td>Questions</td>
<td>Jim Wilson, Sr. Manager, Supplier Quality, &amp; Development, Pratt &amp; Whitney Canada</td>
</tr>
<tr>
<td>Summary &amp; Close</td>
<td>Barbara Negroe, Executive Sourcing Quality Leader, GE Aviation</td>
</tr>
</tbody>
</table>
Use the Chat Function to Ask a Question...

... or just make a comment

be kind
POLL QUESTION #1:

What city are your calling in from today?
AERO ENGINE SUPPLIER QUALITY GROUP (AESQ) OVERVIEW

BARBARA NEGROE
EXECUTIVE SOURCING QUALITY LEADER
GE AVIATION
Aero Engine Industry Burning Platform

Aero Engine Manufacturers created a Collaboration working group to address burning platform in 2013 with key Global Suppliers

Used the Automotive example of QS-9000 with Ford, GM and Chrysler as the model

- Airline passengers set to double in size over the next 20 years
- Customers expect Zero Defects
- Increasing level of supplier made engine content
- Global Supplier Footprint
- Large number of common suppliers between engine manufacturers
- Wide range of Aerospace engine supplier businesses, from <$1M to >$2B
- Improving Quality, Cost and Delivery remains a key challenge
Defect Prevention Key Quality Tools for Zero Defects

Defect Prevention Tools Must Work as a System
Aero Engine Supplier Quality Group Principles

- Aero Engine Manufacturers created a Collaboration working group to address burning platform in 2013 with key Global Suppliers
- Used the Automotive example of QS-9000 with Ford, GM and Chrysler as the model
- Purpose is to:
  - Simplify and Standardize Aero Engine supplier requirements through the removal of duplication and waste
  - Create a common language for Quality
  - Build on existing industry standards, where they exist
  - Create Requirements that are simple, prescriptive, and auditable
  - Promote the use of standardized 3rd party training
  - Deliver results with pace
  - Focus on effective deployment and improving the capability of the shared supply chains
AESQ Vision

To establish and maintain a common set of Quality Requirements that enable the Global Aero Engine Supply Chain to be truly competitive through lean, capable processes and a culture of Continuous Improvement.
Aero Industry Requirements Flowdown 2012

Regulator Requirements → Customer Requirements → Industry Requirements

- NADCAP
- IAQG (AS9100, AS9145, AS9102, etc.)
- ISO (ISO9001, ISO19011, etc.)

AERO Engine Manufacturers

- Rolls-Royce SABRe
- GE S-1000
- P&W ASQR-01
- Safran SAFe

Aero Engine Supply Chain

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# Product Life Cycle & Current AESQ Document Interaction

<table>
<thead>
<tr>
<th>AS9145 (PDP)</th>
<th>Kick Off</th>
<th>End of Concept (PDR)</th>
<th>Design Release (CDR)</th>
<th>Initial Prod. Approval</th>
<th>Production Launch</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Planning</strong></td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td><strong>2. Product Design &amp; Development</strong></td>
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<tr>
<td><strong>3. Process Design &amp; Development</strong></td>
<td></td>
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<tr>
<td><strong>4. Product &amp; Process Validation</strong></td>
<td></td>
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<td></td>
</tr>
<tr>
<td><strong>5. Ongoing Production, use and Post Delivery Service</strong></td>
<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

## AS9145 APQP Phases
- **AS9145 Key PPAP Events**
  - Design Records & DRA
  - Process Flow Diagram
  - PFMEA
  - Control Plan
  - Packaging, Preservation & Labelling
  - MSA
  - ICS
  - FAI

## AS9145 PPAP Element Timing
- **Design Release (CDR)**
- **Production Readiness Review**
- **AS912 FAIR**
- **Production Process Run**
- **PPAP Approval**

## AESQ 2nd Level Documents
- AS13000 – Problem Solving Requirements for Suppliers - 8D
- AS13002 – Inspection Frequency Plans
- AS13003 – Measurement Systems Analysis
- AS13004 – PFMEA & Control Plans
- AS13006 – Process Control Methods

## AESQ Systems Documents
- AS13001 – Delegated Product Release Verification Training Requirements
Example Best Practice Stories

Sam Suzhou make Engine Mounts
16 Part Specific FMEAs using AS13004 created in 3 months
PFMEA led to the Introduction of error proofing and prevention controls
Defect Free since September 2017

Fan Case Delivered Defect Free at PPAP after applying AS13004, AS13003 and AS13006
70 consecutive parts now delivered Defect Free
Manufactured by GKN, Newington
PPAP completed in 6 months instead of the usual 18 months

IPT Turbine Blade machining using AS13006 Real Time SPC
98% of features Cpk >2, the other 2% Cpk >1.67
Zero Defect standard met since production start (5,000 blades)
AS13100 OVERVIEW

STRUCTURE & KEY HIGHLIGHTS

LARRY BENNETT
CONSULTING ENGINEER, GLOBAL SOURCING QUALITY
SUPPLY CHAIN DIVISION
GE AVIATION
Aero Industry Requirements Future Vision

- **Regulator Requirements**
- **Customer Requirements**
- **Industry Requirements**
  - NADCAP
  - IAQG (AS9100, AS9145, AS9102, etc.)
  - ISO (ISO9001, ISO19011, etc.)

**AERO Engine Manufacturers**

**AESQ AS13100 Quality Management Requirements**
(Supplemental Requirements to AS9100 & AS9145)

**AERO Engine Manufacturer Specific Requirements**
(e.g. SABRe, S-1000, ASQR-01, SaFE)

**Aero Engine Supply Chain**
AS13100 Creation Process

Starting Point
September 2018

Existing Engine Maker Supplier Requirements

Harmonized Requirements

Requirements

Existing & WIP AESQ Standards

Supporting Guidance & Best Practice Material

OEM Unique Requirements

Future Engine Maker Supplier Requirements

Overall Number of Requirements reduced by >50%

AS13100 Standard

AESQ Reference Manuals

AS13100 Creation Process

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## AS13100 Structure

<table>
<thead>
<tr>
<th>Clause Number</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>AS13100 Requirements</strong></td>
<td>AS9100 Rev D Supplemental Requirements</td>
<td>Chapter A</td>
<td>Chapter B</td>
<td>Chapter C</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>AS13100 Requirements</strong></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>10</td>
</tr>
<tr>
<td><strong>Chapter A</strong></td>
<td>AS9100 Rev D Supplemental Requirements</td>
<td>Chapter B</td>
<td>APQP &amp; PPAP</td>
<td>AS9145 Supplemental Requirements</td>
<td>Chapter C</td>
<td>Defect Prevention Quality Tools to Support APQP &amp; PPAP</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Chapter A</strong></td>
<td>DFMEA</td>
<td>Product KCs</td>
<td>Process Flow Diagrams</td>
<td>Process MEA</td>
<td>Process KCs</td>
<td>Control Plan</td>
<td>MSA</td>
<td>Process Capability</td>
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<td></td>
</tr>
<tr>
<td><strong>Chapter B</strong></td>
<td>DFMEA</td>
<td>Product KCs</td>
<td>Process Flow Diagrams</td>
<td>Process MEA</td>
<td>Process KCs</td>
<td>Control Plan</td>
<td>MSA</td>
<td>Process Capability</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Example Extract

9.3 Management Review

9.3.1 General Reference 9100D:09/2016 requirements.

9.3.2 Reference 9100D:09/2016 requirements.

9.3.2.1 Management Review Inputs - Supplemental Requirements

Management Reviews shall be conducted at least annually and consider the following performance topics:

- Cost of Poor Quality (COPQ).
- Manufacturing / Assembly Right First Time / First Pass Yield.
- Customer scorecards (where available).
- Human Factors reporting.
AS13100 Customer Specific Requirements

Designed to Include Customer Specific requirements that could not be harmonized within AS13100.

These documents shall:

- Require Compliance to AS13100
- Signpost to Customer Specific Documents (where required)
- Definition of customer specific acceptance thresholds called out in AS13100 e.g., Cpk, GR&R scope, etc.
- Additional Customer Specific requirements not defined within AS13100
- Defines company specific key roles and accountabilities for approvals
- Includes specific IT interface requirements
AS13100 Requirement Highlights

Table 1 provides a guide to the applicability of AS13100 Sections to Organization scope.

Table 2 defines an agreed set of Certification Requirements, matched to the scope of the supplier’s activities.
Section 4.3.5 requires the organization to conduct a Compliance Assessment of their QMS to ensure that it captures all of the requirements of AS13100 and customer specific requirements.

The results of this review are to be provided to the customer upon request.

Any compliance gaps must be highlighted to the individual customer and a resolution agreed.

Reference Manual RM13009 provides information to support this requirement.
AS13100 Requirement Highlights

AS13100 Section 8.3 includes common Requirements for Design & Development. Key Supplemental Requirements include:

- Specifies AS9145 APQP & PPAP for Managing New / Changed Product Designs
- Defines Design FMEA approach to meet Design Risk Analysis requirement
- Requires the use of Cross Functional Teams for Design & Development Activities
- Defines requirements for Design for ‘X’ (Manufacture, Assembly, Servicing, Disposal)
- Specifies the use of AS9116 to manage Design Changes

Reference Manual RM13008 Provides Guidance for Design Work
AS13100 Requirement Highlights

AS13100 Section 8.4.1, 8.4.2 and 8.4.3 define the additional requirements for Supplier Evaluation, Selection, Control and Performance Monitoring.

Reference Manual RM13007 Provides Guidance for Supplier Management
AS13100 Benefits

1. Single AESQ Standard aligned to AS9100 / ISO9001
   • Less Requirements for the Supplier (>50% less)
   • Lower cost (suppliers do not need to buy multiple standards)

2. Supported by Free Issue Reference Manual Guides

3. Will minimise the content of OEM Supplier Requirement Standards (SABRe, S-1000, ASQR-01 and SAFe)

4. Creates a common language for Quality, OEMs have adopted standard approaches within their own operations.

5. Aligns to relevant existing industry standards (ISO, AS9xxx, Nadcap, etc)

6. Supported by global approved training resources

7. Enables the AESQ OEMs to provide a harmonised approach to Supplier Development

8. Supplier Compliance continues to be assessed through Customer Audit

9. Allows AESQ to focus on Supply Chain Capability Development
AS13100 Core Writing Team: Thank you for sticking with it, every Wednesday, for two & a half years, even during the pandemic, to get it published.
Thank you to the 99 Subject Matter Experts who created the Reference Manuals

Aaron Stahl
Adam Rogers
Ake Winkvist
Andrew Stout
Anil Oenuer
Barrie Hicklin
Benoit Gottie
Björkälv Häkan
Brian Murphy
Carrie Sharkey
Catherine Belgacem
Catherine Catarina-Graca
Charles Barry
Chip Svoboda
Chris Bishop
Chris Craig
Dave Goldberg
Earl Capozzi
Ed Briggs
Erika Grimm
Frederic Vetil
Grant Braun
Helen Djäknegren
Hector Mata-Collado
Helmut Weitmann
Herelio Munoz-Morales
Ian Bentley
Ian Riggs
Inger Henström
James Kelly
Jim Barge
Jim Nelson
Jim Wilson
Jonas Nickel
John Calder
Jule Hegwood
Jun Sakai
Jun Teshima
Karen Scavotto
Karl Evans
Kristin Gantz
Larry Bennett
Lars Brander
Laura Hill
Lena Wendel Eckerbom
Lise Brox
Ludovic Chevet
Marc Boursicot
Marie Partridge
Marnie Ham
Mattias Eriksson
Maura Callahan
Melanie Deroo
Melanie Renault
Michael Cera
Michael Cosenza
Michael Fuehner
Michael Gerhmann
Michael Stock
Mike Cosenza
Nathalie Noblet
Nick Watling
Nicolas Reignier
Olivier Castets
Patrice Richen
Paul Gorg
Paul Hacker
Perr Rendell
Pete Bilbie
Pete Teti
Peter Papadopoulos
Phil Bamforth
Rebecca Lemon
Ricardo Banuelas
Rich DeMary
Richard Baker
Richard Bolingbrook
Rob Farndon
Robert Starcke
Roger Persson
Rudi Braunrieder
Simon Gough-Rundle
Song Gao
Stefan Gehring
Stefan Lund
Steve Christensen
Steven Finup
Susie Neal
Sverker Johnson
Thomas Herter
Thomas Schmitt
Tobias Kranz
Todd Angus
Tony Pailing
Vince Miller
Ward Baun
Wilibald Schoder
Wolfgang Wagner
Yvonne Mansson
AS13100 Supporting Reference Manuals

AS13100 Standard defines mandated requirements. The Standard is supported by free issue Reference Manuals from the AESQ Website:

→ https://aesq.sae-itc.com/content/aesq-documents

Reference Manuals provide industry best practice guidance and case study material on how to deploy quality tools effectively.

Reference Manuals are maintained and updated by the AESQ Subject Matter Interest Groups and may be updated at any time when new or revised information becomes available.
AS13100
DEPLOYMENT INTRODUCTION & MILESTONES

ELIZABETH PACE
ASSOCIATE DIRECTOR, SUPPLIER QUALITY
RAYTHEON TECHNOLOGIES
AESQ Released AS13100

A standard establishing supplemental requirements for 9100 and 9145 and applying to any organization receiving it as part of a Purchase Order or other contractual document

Released March 1, 2021 with a compliance date of December 31, 2022

AS13100 leverages the Reference Materials (RM13xxx) developed by the SAE G-22 AESQ committee over the last few years
Benefits of collaboration

Create a common language for Quality in the Aero Engine Supply Chain

Simplification of standards
a) Removal of duplicate / redundant requirements
b) Builds on existing Aerospace Industry Standards where appropriate

Setting higher standards for Quality
a) Adopt best practice from across industry
b) Standards written by industry practitioners
c) Challenging current acceptance thresholds – “raising the bar of quality performance’

Acceleration of Supplier Quality Capability Improvement
a) Aligned Supplier Development activities using Common Quality Tools
b) Availability of Global training and consultancy providers aligned to AESQ requirements
Committed to AS13100 Compliance on December 31, 2022
AS13100 Supplier Preparation Milestone Plan

Key milestones to achieve compliance to AS13100 by 12/31/2022

1. AS13100 Publication
2. SAE Press Release
3. Reference Manuals published
4. Virtual Supplier Forum 4/21/21
5. Amend AS9100 Compliance Matrix with AS13100 supplementary requirements
6. Perform Gap Analysis to AS13100 supplementary requirements Rm13009
7. Virtual Supplier Forum 10/6/21
8. Update QMS procedures to close gaps
9. Train employees in new requirements
10. Conduct Internal AS13100 Pre-Audit
11. Close Gaps with C/A's

Distribution / sharing of Information on AS13100 Training
Develop plan for adoption and deployment
Conduct internal stakeholder’s meeting on plan and deployment approach
Provide organization-wide awareness training on AS13100 to promote adoption and deployment

AS13100 Requirements now in effect
Supplier now subject to AS9100/AS13100 audit

Distribution / sharing of Information on AS13100 Training
Develop plan for adoption and deployment
Conduct internal stakeholder’s meeting on plan and deployment approach
Provide organization-wide awareness training on AS13100 to promote adoption and deployment

AS13100 – Aerospace Engine Supplier Quality Strategy Group

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IHI DEPLOYMENT

HIROSHI YAMAMOTO
GENERAL MANAGER, QUALITY SYSTEM DEPT.
IHI CORP.
1. Company profile of IHI Corporation

Year of establishment: 1853

Capital: 107.1 billion yen (8.3 million dollars converted to 115 yen per dollar)

Revenue (Consolidated): 1,112.9 billion yen (fiscal 2020) (8.6 billion dollars converted to 115 yen per dollar)

Number of employees (consolidated): 29,149

Works: 6

Branches in Japan: 8

Overseas representative offices: 14

Affiliated companies in Japan: 63 [Subsidiaries: 46 Affiliates: 17]

Overseas affiliates: 143 [Subsidiaries: 121 Affiliates: 22]

Revenue Compositions by business areas (Consolidated/fiscal 2020)

- Resources, Energy & Environment: 29%
- Social Infrastructure & Offshore Facilities: 14%
- Industrial Systems and General-Purpose Machinery: 34%
- Aero Engine, Space & Defense: 22%

Note: The total may not be 100% owing to the exclusion of “Other” and “Adjustments.”

Fiscal 2020: 1,112.9 billion yen
Fiscal 2019: 1,263.1 billion yen
Fiscal 2018: 1,483.4 billion yen
Fiscal 2017: 1,590.3 billion yen
Fiscal 2016: 1,486.3 billion yen

2. Profile of Aero-Engine, Space & Defense Business Area

---

**President of Business Area**  
Hideo Morita

**Managing Executive Officer**

<table>
<thead>
<tr>
<th>Employees (as of March 31, 2021)</th>
<th>(consolidated)</th>
<th>6,765</th>
</tr>
</thead>
<tbody>
<tr>
<td>(non-consolidated)</td>
<td></td>
<td>4,212</td>
</tr>
</tbody>
</table>

**Operation divisions**
- Defense Systems Div.
- Civil Aero-Engine Div.
- Space Development Dept.
- Research & Engineering Div.
- Manufacturing Div.
- Life Cycle Solution Div.

**Annual Sales (Unit: 100 million yen)**

(780 thousand dollars converted to 115 yen per dollar)

**Consolidated Sales Ratio (In fiscal 2020)**

- **Aero-Engine**: 74.6%
- **Space Development**: 21.4%
- **Defense Equipments**: 4.0%
We are confronting with great challenges to reform IHI Quality management system which is conformable to new or revised requirements.
4. Deployment Strategy Group dashboard

We have reached Milestone 4 so far.
We are aiming for completing remaining milestones by the end of this year.
We plan AS13100 deployment schedule for internal and supplier, respectively.
6. AS13100 Gap analysis

(Excerpt of AS13100 Gap analysis)

<table>
<thead>
<tr>
<th>AS13100 Requirement</th>
<th>Primary Gap analysis</th>
<th>(To be verified by each task team to clarify what kind of action we have)</th>
</tr>
</thead>
</table>

The result of AS13100 Gap analysis has been verified by each task team in order to revise or create internal procedures related to AS13100.
7. AS13100 Deployment strategy

We are organizing a team and promoting the creation of IHI quality management system based on AS13100 Requirement.

<table>
<thead>
<tr>
<th>Team No.</th>
<th>Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>TF01</td>
<td>General, Internal procedure</td>
</tr>
<tr>
<td>TF02</td>
<td>Human factors</td>
</tr>
<tr>
<td>TF03</td>
<td>Statistical quality control</td>
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<tr>
<td>TF04</td>
<td>DPRV</td>
</tr>
<tr>
<td>TF05</td>
<td>Design</td>
</tr>
<tr>
<td>TF06</td>
<td>Supplier control</td>
</tr>
<tr>
<td>TF07</td>
<td>APQP/PPAP</td>
</tr>
<tr>
<td>TF08</td>
<td>Process control / PFMEA / control plan</td>
</tr>
<tr>
<td>TF09</td>
<td>FAI</td>
</tr>
<tr>
<td>TF10</td>
<td>Problem solving</td>
</tr>
<tr>
<td>TF11</td>
<td>Audit</td>
</tr>
<tr>
<td>TF21</td>
<td>Education</td>
</tr>
<tr>
<td>TF22</td>
<td>Information and communication technology</td>
</tr>
</tbody>
</table>

Each progress has been monitored monthly.
8. AS13100 requirement flow down

We have been communicating with main subsidiary companies about AS13100 deployment status each other regularly.
IHI
Realize your dreams
MTU DEPLOYMENT

MICHAEL MROSEWSKI
QUALITY MANAGEMENT PROGRAMS
MTU AERO ENGINES
MTU AERO ENGINES AG – Michael Mrosewski

AS13100 Implementation Plan @ MTU
AS13100 Implementation Project Organization

**Steering Committee**
Quality (Systems, Inhouse production, supply chain)
Extended: Engineering, Quality inspection, Production

**Project leader**
Quality

**Core Team Members**
Design, Procurement, Production, Program office, ...
- Core team is extended where needed, depending on the relevant topics.

**Experts in Content**
Core Team is supported by experts in content as required
Project plan to achieve AS13100 compliance by January 1st 2023

AS13100 Supplier Preparation Milestone Plan
Key milestones to achieve compliance to AS13100 by 1/1/2023

MTU QMS assessment

MTU supply chain flow down

Project plan to achieve AS13100 compliance by January 1st 2023

AS13100 Publication

Project preparation

Project authorization

Delta identification

Definition of need for action

Gap closure and specification updates

Project Review

End of project

AS13100 Trainings

Deployment support through the technical supplier Management MTU

SQN Supplier Information

SQN Supplier Information

SQN Supplier Information

AESQ supplier forum - MTU implementation
### 4. CONTEXT OF ORGANIZATION

4.2.1 Understanding the Needs and Expectations of Interested Parties - Supplemental Requirements

The organization shall ensure on-site right of entry to its customers and their respective governmental and regulatory agencies, third parties mandated by the customer and contracting parties accompanying the customer’s representatives including access to documented information and the ability to conduct audits, review of quality investigations, and to verify product and processes.

Right of entry includes access to the applicable areas of organization facilities as well as related supplier and business partner facilities.

<table>
<thead>
<tr>
<th>AS13100 Requirement</th>
<th>Responsible Project Key Account</th>
<th>Responsible Expert</th>
<th>MTU Standard</th>
<th>PROJECT START AS13100 fulfilled? (yes/partial/no)</th>
<th>Necessary Action</th>
<th>Responsible Person</th>
<th>Due date</th>
<th>PROJECT END AS13100 fulfilled? (yes/no)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4. CONTEXT OF ORGANIZATION</td>
<td>N/A</td>
<td>N/A</td>
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<td>4.2.1 Understanding the Needs and Expectations of Interested Parties - Supplemental Requirements</td>
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</table>
Implementation Status and next steps

Achievements and Challenges

- Chapter A & C: Requirements allocated to MTU standards and processes. Actions are defined.
- Chapter B: APQP implementation requires definition and transfer into new processes.
- Supplier Flow Down established and communication about the implementation status

Next steps

- Complete action plan as defined
- AS13100 training of the MTU organization to establish the new standard
- Close contact to the supply base to support deployment and evaluation of the implementation status
SAFRAN AIRCRAFT ENGINES DEPLOYMENT

CATHERINE CATARINA-GRACA
SUPPLIER MANAGEMENT SYSTEM COORDINATOR
SAFRAN AIRCRAFT ENGINES
Safran, a world leader in aerospace
SAFRAN GROUP Activities

**Aircraft propulsion:** proven innovation and reliability to support aircraft manufacturers and airlines

**Aircraft equipment:** a complete range of products and services

**Aircraft interiors:** an extended range for all types of aircraft to enhance passenger comfort

**Defense:** protecting citizens through technology

**Space:** state-of-the-art technologies to drive progress
SAFe: A Safran Project

SAFe = A « ONE SAFRAN » project

SAFe = 3 main documents

- Activity Sector
- Activity Type

SAFe 2020 issued Dec 2020
One Safran Company leads the deployment for the whole group

GRF-0033
Compliance matrix to requirements

GRM-0123
Provider Handbook

GRP-0087
Procedure of quality requirements for external providers including CSR charter

SAFe = 3 main documents

- SAFe 2020 issued Dec 2020
- One Safran Company leads the deployment for the whole group

Activity Sector
- S1 Civil & Military engines
- S2 Civil & Military aviation and space equipment and systems
  Unmanned aerial vehicles (UAVs)
- S3 Cabin / Seats
- S4 Non-aeronautical defense
- S5 Automotive / Railway
- S6 Other sectors

Activity Type
- A Build-to-print Provider
- B Build-to-spec Provider
- C Dealer, Stockist, distributor
- D Aeronautical maintenance service Provider
- E Non production service Provider
- F Production Interoperations Service Provider
- G Manufacturer of catalog parts, Standard, Standardized (COTS)
Statements

AS13100 issued March 2021

AS13100 will be flown down to Only S1 Suppliers.

Few Safran companies are concerned:
mainly Safran Aircraft Engines

SAFe won’t Be modified before 2024 to prevent mixing messages -> Supply Chain

On Going Project since June 2021
Safran Aircraft Engines Deployment

**Milestones**

**Milestone 1:** GAP analysis being conducted. Member company committed to deployment by Dec 2022.

**Milestone 2:** Project Plan Identified and Approved by Member Executive.

**Milestone 3:** Communication plan executed internally

**Milestone 4:** Communication plan executed to supply base.

**Milestone 5:** Training plan executed internally

**Milestone 6:** Training plan executed to supply base

**Milestone 7:** AS13100 Flowed to supply base in accordance with Company plan
1. GAP Aircraft Engines
   - Review RM13009 for SAFRAN Aircraft Engines: Internally
   - Answer as supplier
   - Review main difficulties
   - AS13100 learning curves for those involved in GAP analysis

2. GAP with SAFe
   - Identify Supplemental requirements SAFe → RM13009
   - Identify Supplemental Requirements RM13009 → SAFe

3. Gap with suppl. Rqt with Aircraft Engines
   - Identify Safran Aircraft Engines specific supplemental requirements → RM13009
Chapter B:

APQP: Few GAPS
Action Plan launched and finalized
MILESTONE 1 – GAP with SAFe - EXAMPLES

Section 7.2.1 Requires organizations to provide On the Job Training that includes:
- customer requirements,
- Internal requirements
- regulatory requirements
This requirement also applies to contract and agency personnel. Persons whose work can directly affect quality shall be informed about the consequences on nonconformance to the customer.

Section 7.2.2 defines the Auditor Competence Requirements including;
- Qualifications
- Experience
- Maintenance (Ongoing professional development)
RM13005 will provide further details.

Section 7.2.4 requires the organization to ensure that Quality Leaders attend the AS13100 Requirements on-line course and the AESQ Quality Foundation Training Course. The course includes training in:
- Applicable Regulations
- Customer Requirements
- APQP & Process Control Quality Tools
This course is also recommended for other key personnel.

AS13100 defines the requirements for Supplier Evaluation, Selection, Control and Performance Monitoring. (Section 8.4.1)

The organization shall verify that the correct metallic raw material is used e.g. through the use of hand held spectrometry. (Section 8.5.1.4.1)
Organization's are required to include Human Factors within the scope of their QMS (Section 4.4.3, 5.1.1.1, 5.2.1.1 and 7.3.1).

Chapter B

APQP PPAP

Defines the use of 8D Problem Solving for customer escapes.

Compliance to AS9146 FOD Prevention
Section 4.3.5 requires the organization to conduct a **Compliance Assessment** of their QMS to ensure that it captures all of the requirements of AS13100 and customer specific requirements. The results of this review are to be provided to the customer upon request. Any compliance gaps must be highlighted to the individual customer and a resolution agreed.
Reference Manual RM13009 provides information to support this requirement.

**SAFe Compliance Matrix already exists:**

Part of communication kit is: comparison of these 2 excel files:

- If SAFe Matrix is completed  →  Excel file with missing requirements to fulfill AS13100
- If RM13009 is completed  →  Excel file with missing requirements to fulfill SAFe
Safran Aircraft Engines Deployment - **MILESTONE 2 ; 3 AND 4**

**Milestone 2**
- Project Plan...Member Executive.
- Approved June 29th 2021

**Milestone 3**
- Comm. plan internally
- In process For **main actors**; Communication preparation in process for whole « players » / all company → **OBJ 3rd Trimester 2022**
- Communication / training has been launched with main actors

**Milestone 4**
- Commun. Plan to supply base
- Communication preparation In Process : Few GAPs with our requirements – Training / Tools / communication KITs done for SAFe are common to AS13100 messages - Finishing Gaps with other Safran Aircraft Engines requirements → **OBJ Second Trimester**
Milestone 5: Training plan executed internally
- Already started with main Actors but will be extended during Summer 2022

Milestone 6: Training plan executed to supply base
- Starts September 2022

Milestone 7: AS13100 flow down to supply chain
- Will be flown down Summer 2022 with communication Kit and equivalences with SAFe / Safran Aircraft Engines specific requirements → Saves Time
PRATT & WHITNEY DEPLOYMENT

PAUL MORGAN
SR. DIRECTOR QUALITY & PROCESSING ENGINEERING
PRATT & WHITNEY
TRANSITION OF ASQR-01 -> AS130XX
ASQR JOURNEY HAS PROGRESSED, AND NOW IF INFLUENCED BY AS13100

**ASQR-01 Rev 9, 2/2/2015**
AS13000 – Problem Solving Requirements for Suppliers - 8D

**ASQR-01 Rev 10, 11/1/2016**
AS13001 – Delegated Product Release Verification Training Requirements
AS13002 – Inspection Frequency Plans
AS13003 – Measurement Systems Analysis

**UTCQR 09.1 Rev 6, 2/19/2019**
AS13004 – PFMEA & Control Plans
AS13006 – Process Control Methods

**ASQR-9.2 Rev 2, 1/28/2019 (Formatted based on AS9145)**
AS9145 – Requirements for Advanced Product Quality Planning and Production Part Approval Process
AS13100 GAP ASSESSMENT
UNITIZED RM13009 AND THE ASQR-01 NEW SUPPLIER CHECKLIST
TRANSITION OF ASQR-01 -> AS13100

ASQR JOURNEY HAS PROGRESSED, AND NOW IF INFLUENCED BY AS13100

AS1300X

ASQR-01 Rev 11
RTX Supplier Quality System Requirements

AS13100

ASQR-01 Rev 12
P&W SUPPLEMENT TO AS13100

ASQR-01
AS13000
AS13001
AS13002
AS13003
AS13004
AS13006

RTX Supplier Quality System Requirements

ASQR-01
Rev 12

AS13100

AS/EN/JISQ 9100 D

ISO 9001

AS/EN/JISQ 9100 D

ISO 9001
ASQR-01 Revision 12
Current requirements of ASQR-01 Rev 11 at 174 pages forecast to drop to 102 pages, a 41% reduction.

“Shalls” forecasted to be reduced by more than 23%

ASQR-01, Revision 12 based now on International Aerospace Standard AS13100

With the addition of:

✓ Human Factors
✓ Sub-tier Management
✓ Internal Audit and Auditor Competencies
✓ Design and Development
TRANSITION OF ASQR-01 -> FUTURE STATE
ENSURING PW SPECIFIC NEEDS ARE CAPTURED

Formatting will align with AS9100, AS9145, & A13100 paragraph sections
Will apply to PWA & PWC
Target release Q2
ASQR-01 / AS13100 COMMUNICATIONS

STANDARD AND HOSTED COMMUNICATIONS ARE BEING DEPLOYED

PW conducting multiple events to facilitate adoption of AS13100

Linkage to FAQs on AS13100 and ASQR-01 communicated

Material is hosted on the PW and PWC Supplier Portal.
AS13100
DEPLOYMENT DASHBOARD

ELIZABETH PACE
ASSOCIATE DIRECTOR, SUPPLIER QUALITY
RAYTHEON TECHNOLOGIES
## Deployment Strategy Group Dashboard

<table>
<thead>
<tr>
<th>Company</th>
<th>Milestone 1</th>
<th>Milestone 2</th>
<th>Milestone 3</th>
<th>Milestone 4</th>
<th>Milestone 4b</th>
<th>Milestone 5</th>
<th>Milestone 6</th>
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### Milestones

- **Milestone 7**: AS13100 compliance by supply base
- **Milestone 6**: Training plan executed to supply base
- **Milestone 5**: Training plan executed internally
- **Milestone 4b**: Flow down of the Standard to the supply base.
- **Milestone 4**: Communication plan executed to supply base.
- **Milestone 3**: Communication plan executed internally.
- **Milestone 2**: Project Plan Identified and Approved by Member Executive. (All have committed to deployment of Dec 2022 but plan to get there can vary.)
- **Milestone 1**: GAP analysis being conducted. Member company committed to deployment by Dec 2022.
Member companies in process of rolling out new flow downs

All member companies are working on flow downs over next few months (COMPLIANCE IS ALIGNED)

All members companies committed to AS13100 standard compliance December 31, 2022

Company specific requirements will be reduced

AS13100 is supported by free issue reference manual guides, LinkedIn Communities of Practice and Webinars

Common training requirements are being provided by 3rd party professionals and is available globally
# Subject Matter Interest Groups Status

<table>
<thead>
<tr>
<th>Subject Matter Interest Group</th>
<th>Team Leader</th>
<th>Deputy Team Leader</th>
<th>Team Size</th>
<th>Charter</th>
<th>Regular Meetings</th>
<th>Activity Schedule</th>
<th>Web Page</th>
<th>Linkedin/COP Page</th>
<th>Events</th>
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11 Communities of Practice (CoP) Launched - 1,532 Members Collectively (as of April 25)
# AESQ UPCOMING EVENTS

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<td>AESQ RM13000 Problem Solving Supplier Feedback Webinar</td>
<td>Virtual</td>
<td>April 20, 2022</td>
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<tr>
<td>AESQ Virtual Supplier Forum - May 4, 2022</td>
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AS13100
DEPLOYMENT SURVEY RESULTS

ELIZABETH PACE
ASSOCIATE DIRECTOR, SUPPLIER QUALITY
RAYTHEON TECHNOLOGIES

JIM WILSON
SR MANAGER, SUPPLIER QUALITY & DEVELOPMENT
PRATT & WHITNEY CANADA
Feedback and Survey Overview

August 2021: First survey of suppliers on the general knowledge of AS13100 and the AESQ

- 158 respondents
- Familiar with AESQ for existing AS13XXX documents
- Create a baseline for deployment well before the deadline
- Basic AS13100 familiarity
- Collected feedback to drive actions

April 2022: Follow up survey targeted to better understand the aero-engine supply base’s AS13100 implementation status

- 13 questions, both objective and open-ended
- 482 respondents to date
- 608 comments and suggestions being analyzed for actions
Respondent Demographics

**Respondent Location**
- North America: 69%
- Europe: 16%
- Asia: 15%

**Respondent Company Size**
- 0 - 99: 36%
- 100 - 499: 23%
- 500 - 999: 8%
- 1000 - 4999: 8%
- 5000+: 4%

Respondents Supply to Multiple AESQ Members

Respondents have an average of 3.75 AESQ customers.

Number of Respondents

<table>
<thead>
<tr>
<th>Company</th>
<th>Number of Respondents</th>
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<tbody>
<tr>
<td>GE Aviation</td>
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<td>Pratt &amp; Whitney</td>
<td>300</td>
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<tr>
<td>Safran</td>
<td>200</td>
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<td>MTU Aero Engines</td>
<td>150</td>
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<td>GKN Aerospace</td>
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<td>IHI</td>
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<td>Howmet Aerospace</td>
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<tr>
<td>PCC Structural</td>
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</tbody>
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Evolution of Implementation Status

- The organization believes we are now compliant with AS13100
- The RM13009 gap analysis has been completed and a gap closure action plan is in place
- The compliance gap analysis of RM13009 has been initiated and is in process
- We have purchased a copy of AS13100 and are reviewing it
- Compliance activities have not yet begun
Where Can We Help?

Percent of Respondents

0% 5% 10% 15% 20% 25% 30% 35% 40% 45% 50%

APQP/AS9145 Human Factors Sub-Tier Management AS13100 Training Control Plans Process Control Design FMEA Inspection
What You Told Us

AS13100 Implementation vs. Training Status

- The organization believes we are now compliant with AS13100
- The RM13009 gap analysis has been completed and a gap closure action plan is in place
- The compliance gap analysis of RM13009 has been initiated and is in process
- We have purchased a copy of AS13100 and are reviewing it
- Compliance activities have not yet begun
Launch Your Company Into a Good Position for Compliance

UNDERSTAND YOUR POSITION
Complete GAP Analysis and Document closure plan

GET INVOLVED
Sign up for webinars and communities of practice

FURTHER YOUR KNOWLEDGE
Reach out for training opportunities
Higher quality is synonymous with increased product safety.

The primary objective is to improve quality and reduce cost.

A common process up and down the supply chain removing wasted effort and mis-communications.

Products reach faster maturity with fewer engineering changes and defects in the early stages of production and product use.

Proactive toolbox to focus cross-functional teams on risk identification and mitigation early in the process.

Provides a foundation for successful ongoing change management – design modification, works transfers, changes to manufacturing method.
Application within Rolls-Royce of AS13100/9145 APQP and PPAP

**Ourselves**…Rolls-Royce Civil Aerospace is fully committed to APQP, PPAP and Cross functional working.

**Our Customers**…they are asking for this.

**Our Suppliers**…AS13100 APQP and PPAP means we have significantly reduced our Customer Specific Requirements.

**AS13100 APQP & PPAP Timing Chart**

- **Product Development Process (PDP)**
  - Kick Off
  - End of Concept (PDR)
  - Design Release (CDR)
  - Initial Production Approval (IPA)
  - Production Launch (PL)

- **Phases of Advanced Product Quality Planning (APQP)**
  - 1. Planning
  - 2. Product Design and Development
  - 3. Process Design and Development
  - 4. Product and Process Validation
  - 5. On-going Production, Use and Post-delivery Service

- **AESQ Production Part Approval Process (PPAP)**
  - CR
  - FA
  - PP
  - PRR
  - PA

- **Product Status**
  - Prototype/Pre-Production
  - Production trial
  - Production products

**Rolls-Royce Management System**
Our Journey to APQP

2010

Quality Improvement drivers

- Build in Quality
- No industry std
- RR Specifics (lots)

Quality Management Processes

- PPAP
- IPPR

Quality Planning Activities

- SPC
- CCF > KCF
- PFMEA
- DFMEA
- KPC/CI

2017

- APQP & PPAP
- AS9145
- RR Specifics (fewer)

2021

- APQP & PPAP
- AS13100/AS9145
- RR Specifics (min.)

2022

Quality Improvement drivers

- Zero Defects

Adoption of Industry Standards

- APQP and PPAP

SABRe

#1
- NPI Requirements
- No industry std
- RR Specifics (extensive)

#2
- APQP & PPAP
- No industry std
- RR Specifics (lots)

#3
- APQP & PPAP
- AS9145
- RR Specifics (fewer)

#4
- APQP & PPAP
- AS13100/AS9145
- RR Specifics (min.)
Self reflection on our APQP implementation

Pillars of success:

1. **Leadership** engagement, organisational commitment and management support

2. **Cross-functional teams** – it’s a team sport of more than one function/department

3. **Effective project planning and Managing** the project to ensure on-time completion of defined deliverables and outputs

**Leadership**
- Senior Sponsorship & engagement in concepts
- Business Plan Deployment alignment
- Novel learning practices:
  - APQP Games & simulations
  - Video bite size learning

**Cross Functional Teams**
- Launch framework
- Define RACI for activities and Elements
- Building “User Case” value streams (network diagram)
- Functional coaches (DE, ME, PM, Purchase)
- Adopting AS13100 (RM13145) tools:
  - APQP / PPAP Timing Plan
  - Application Matrix

**Project Planning & Management**
- Alignment of APQP and PPAP Events to business change management decisions
- RAPID Decision making for Events
- Visual Management / Kanban Boards for the teams.

**Foundations**
- Sponsor (right shadow), Champions (remove barriers), Function Leaders (develop their people) and Core Team (right practices & tools)
Your Winning Cards – Steps to Successful Deployment

**Project Planning & Management**

- Confirm decision makers – RAPID for each APQP & PPAP Event.
- Define practices for concern management

**Develop Leaders of Change**

- Est. Deployment Champion(s) – to remove barriers to success.
- Est. Functional Leads – to develop their people capability.
- Est. Core team – to ensure the right practices and tools are available.

**It’s a Team Sport**

- Clear cross functional accountability – RACI for each Planning Deliverable and APQP Element.

**People Process**

- Availability of capable people – Maintain Training plan and people planning process

**Each time you start**

- Upfront requirements capture – Establish and confirm these as early as possible with Customers & stakeholders

**Progress with a Plan**

- Utilise RM13145 – Applications matrix act as your menu… Events, deliverables & Elements
- APQP & PPAP Timing Plan gives you a Planning template.

AESQ – Aerospace Engine Supplier Quality Strategy Group

This document slide does not contain ITAR or EAR technical data. The content of this presentation slide is proprietary and confidential information of the AESQ. It is not permitted to be distributed to any third party without the written consent of the AESQ.
Let's Grow our Community

APQP & PPAP
- Zero Defects Tools
- Measurement System Analysis
- Problem Solving
- Human Factors
- Etc

Search LinkedIn “AESQ Community of Practice”

Use “RM13145” it contains a volume of good practices

Raise questions, share ideas & good practices
RISK BASED AUDIT SYSTEM – INTERNAL AND SUPPLIER

LISA STÖMER
AUDIT MANAGEMENT
MTU AERO ENGINES AG (MUNICH)
Agenda

Requirements of AS13100 in relation to „Risk“
Requirements of RM13005 in relation to „Risk“
Implementation of a Risk Based Audit System
MTU’s way to Risk Based Supplier Audits
Outlook – Challenges and Opportunities
Requirements of AS13100 in relation to „Risk“

Search for „risk“ results in 92 (AS13100) and 34 (RM13005) hits

**Risk (EN9000)**

= Effect of uncertainty

(Note 5 to entry: The word “risk” is sometimes used when there is the possibility of only negative consequences.)

AS13100

9.2 Internal Audit

[...] The frequency of audits shall be reviewed and be increased, if required, due to process changes, quality performance, or risk.

8.4.2.5 Supplier Surveillance - Supplemental Requirements

The organization shall perform supplier risk assessments, which, at a minimum, include evaluation of results of supplier’s internal audits, supplier’s current quality performance, and part complexity.

The organization shall establish and execute appropriate surveillance methods to monitor supplier systems, processes, and products based on the risk evaluations.
Requirements of RM13005 in relation to „Risk“

RM13005 – Quality Audit Requirements

Introduction

[...] This guideline defines the process requirements to be used by organizations to establish a procedure to implement, manage and perform effective and risk based internal and supplier surveillance audit program.

- Audit program based on risk assessments
- Use risk prioritization tools
- Based on the risk evaluation, mitigate the risks by an appropriate response
- One of the risk mitigation activities can be an audit
- Develop risk assessments that cover Quality Management System, Production Processes, Special Processes & Product Conformity
Implementation of a Risk Based Audit System

MTU intent is a „Risk Minimizing Audit System“

<table>
<thead>
<tr>
<th>Audit type</th>
<th>Mandatory requirements AS13100</th>
<th>Risk based approach</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality System Audits</td>
<td>Entire management system within 3 years</td>
<td>Element/area prioritized based on risk</td>
</tr>
<tr>
<td>Production Process Audits</td>
<td>Every production process within 3 years</td>
<td>Selection of part numbers, workstations etc. based on risk</td>
</tr>
<tr>
<td>Special Process Audits</td>
<td>All special processes annually</td>
<td>Selection of part numbers, workstations etc. based on risk</td>
</tr>
<tr>
<td>Product Audits</td>
<td>Annually</td>
<td>Selection of parts based on risk</td>
</tr>
</tbody>
</table>

**Definition of risk criteria**
MTU’s way to Risk Based Supplier Audits

Definition of risk criteria
  e.g. supplier’s internal audit system, quality performance and part complexity

Creating a supplier audit risk assessment tool
  guidance for supplier surveillance

Identification of “risk suppliers”

Developing an audit program based on risk assessment
  audit frequency, method, type, scope, focus, team
MTU’s way to Risk Based Supplier Audits

Implementation of the risk based concept for supplier audits

- 16 risk criteria
- Focus on product quality
- Different characteristics and weightings

- Result categories (audit methods):
  - No audit - Supplier Self Audit
  - Remote Audit – On Site Audit
- Audit focus related to identified risks

- Automatic summary of all risk assessments
- Use synergies, e.g. one supplier for two commodities
- Centralized and resource optimized planning
- Early involvement of experts
Overall goal: Reducing the audit burdens by strengthening and using the supplier audit system

Focusing on „risk suppliers“

Evaluation regarding ethical and soft facts

Bring an „element of surprise“ to the audit
Thank you for your attention.
AESQ
HOW TO GET INVOLVED

JUN SAKAI
CHIEF ENGINEER
IHI CORPORATION
How to Get Involved - Overview

- To achieve implementation target, entire OEM & Supply Chain are encouraged to get involved.

- There are many ways:
  - To be informed of interested topics
  - Join in a Community
  - To be a Member

SAE G-22 Standards Writing Committee

AS13100 Subject Matter Interest Group

Community of Practice (CoP)

SAE Trainsings

eNewsletter

SNS(Linkedin, etc)

Supplier Forum

Reference Manuals

(OEM & Supply Chain)

AS13100 Published 2021/3/1

2021

2022

AS13100 Implementation 2022/12/E

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AS13100 Implementation 2022/12/E
“Get Involved” with AESQ

- Go to AESQ Homepage
  https://aesq.sae-itc.com/
- Click “Get Involved”
“Get Involved” Options

1. Sign up to receive AESQ eNewsletter
2. Become an AESQ Member
3. Join the SAE G-22 Committee
4. Join a Community of Practice

Click on the appropriate link for additional information
POLL QUESTION #3: Have you already joined LinkedIn for any of the Communities of Practice? (Yes/No)

- Join a Community of Practice
  - Problem Solving Methods
  - First Article Inspection (FAI)
  - Defect Prevention Tools
  - Design Work & Production Repair
  - Quality Audit Methods
  - Sub-Tier Management
  - Measurement Systems Analysis (MSA)
  - Human Factors
  - DPRV
  - APQP & PPAP
“Get Involved” – Sign up to Receive AESQ’s eNewsletter

- Issued monthly
- Learn about AESQ’s current activities
- Complete online form to begin receiving
“Get Involved” – Become an AESQ Member

2 Membership Levels:

AESQ Strategy Group Member – specified in the AESQ Charter due to their critical support resulting in the establishment of the AESQ Strategy Group.

AESQ Member –

- Open to organizations engaged in the Aero Engine supply chain.
- Required to participate in the work of AESQ by providing resources to support AESQ working groups.
- Representatives shall be senior leaders from the organization or subject matter experts in a relevant area.

Complete Membership Application at bottom of page
“Get Involved” – Subject Matter Interest Groups

- Follow AESQ's Subject Matter Interest Groups
- Sign up for a Subject Matter Interest Group Webinar
“Get Involved” – Additional Options

- Attend AESQ Events (Supplier Forum, Webinar)
- Take a AS13100 Training Course
- Download Reference Manuals
- Watch the “Zero Defects” Video
- Listen to a Podcast
QUESTIONS?

JIM WILSON
SR MANAGER, SUPPLIER QUALITY & DEVELOPMENT
PRATT & WHITNEY CANADA
Question & Answer “Q&A” Ground Rules

We will now accept questions via the Chat function focused on but not limited to today’s presentations including:

• AS13100 Standard
• AS13100 Training
• AESQ Reference Manuals
• Deployment and Transition

Please avoid questions regarding:

• Commercialism
• Pricing
• ITAR
• Export Control
Use the “Chat” Function to Ask a Question..

... or just make a comment

be kind
SUMMARY & CLOSE

BARBARA NEGROE
EXECUTIVE SOURCING QUALITY LEADER
GE AVIATION
Summary

All resources will be available on the AESQ website within a few days.

An email will be sent to all registrants with a link.
AESQ – Aerospace Engine Supplier Quality Strategy Group

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AESQ Thanks You for Attending!

Stay in Touch: aesq.sae-itc.com