IA9100
KEY CHANGE SUMMARY

November 2023
IA9100 Key Change Summary

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IA9100
Quality Management System

Introduction (change *activity*)
IAQG - General Information

The International Aerospace Quality Group (IAQG) is a cooperative global organization of aviation, space and defense related companies.

The IAQG was created in 1998 under the umbrella of the Society of Automotive Engineers (SAE).

The goal of creating “harmonized”, internationally recognized aerospace standards with the goal of eliminating redundant OEM and supplier audits.

In 2013, the IAQG became an independent International not for Profit Association (INPA) under the Belgium Law based in Brussels, Belgium.
The IAQG is a Global Team…

The IAQG membership is comprised of three global Sectors:

• AAQG – Americas Aerospace Quality Group – North, Central & South America;
• APAAQG - Asia-Pacific Aerospace Quality Group - Asia and Oceania
• EAQG – European Aerospace Quality Group - Europe, Middle East, Russia & Africa;
IAQG Standards, Certification and Support
IAQG Products and Services

Certification Oversight

Certification Standards
- 9100 QMS
- 9110 QMS Maintenance
- 9120 QMS Distributors

Certification Support Standards
- 9115 QMS Del Software
- 9125 QMS Non-Del SW
- 9137 QMS AQAP 2110

Improvement/Flow down Standards
- 9102 FAI
- 9103 Key Charact.
- 9107 DDA
- 9114 Direct Ship
- 9116 NoC
- 9117 DPRV
- 9131 Nonconform
- 9132 Data Matrix
- 9133 Std. Parts
- 9136 Root Cause
- 9138 Stat. Prod Ac
- 9145 APQP/PPAP
- 9146 FOD
- 9147 Unsalvage.
- 9148 Self
- 9162 Verification
- 9163 CoC

Primary IAQG Products and Services
- Standards
- OASIS
- SCMH
- AIMM

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9100 QMS Evolution – In the beginning

- **9000 New 1994-1997** – Americas 9100 (AS) developed based on Boeing D1-9000 supplier flow down quality requirements and ISO 9001 QMS
  - Major breakthrough in rival collaboration for common quality requirements
  - Expanded requirements for complex products (e.g., design, supplier management, test, build, delivery, post delivery)

- **9100 1999** – International Aerospace Quality Group (IAQG) established and a global 9100 is published with Europe (EN) concurrence

- **9100 2001** – International Aerospace Quality Group (IAQG) established and a global 9100 is published with Asia/Pacific (JIS Q) concurrence

- **9100 2004** – Structure change, no change in requirements
9100 QMS Evolution – Standing on its own

- 9100 2009 – Accepted by DCMA for supplier flow down requirements
  Significant changes in quality requirements including:
  - Special requirements, critical Items, key characteristics
  - Risk Management, configuration management, project management
  - Work transfer, expanded supplier management

- 9100 2016 – Taking quality requirements to the next level:
  - Product safety, risk-based thinking, software/data protection
  - Product conformity and on-time delivery performance measures, more focus on proactive measures, performance, conformance
  - Awareness (e.g., contribution to product or service conformity; contribution to product safety, the importance of ethical behavior), human factors

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9100 QMS Evolution – Looking to the future

• **IA9100 2026** – Elevating quality requirements based on industry needs:
  
  – Expanded product safety (linkages to Safety Management System), information security (e.g., cyber) & data protection
  
  – Quality culture, ethics
  
  – Linkages to Advanced Product Quality Planning (APQP)
  
  – Expanding counterfeit parts
  
  – Sub-tier supplier controls
Launch of the IA9100-Series 5-Year Review - Survey to voting members and IAQG teams
Gathered 247 voting member inputs to identify potential improvements
Established sector teams and meeting schedule

247 proposals for improvement reviewed and pre-dispositioned by each sector team
Proposals dispositioned by IAQG team
• 120 items of 247 met IAQG and scope criteria
• 14 concepts identified

Launch of the ISO Systematic Review and survey
ISO 9001 Systematic Review:
• 36 confirm the standard
• 32 in favor of revising it
• Survey similar results
ISO 9001 Member Body agreement to start Preliminary Stage – Review data sources for revision

Develop Preliminary Stage Leadership Report – Collectively the inputs indicate reason for review

IA9100-Series Standards Revision Status
Next Steps

- IA9100 Coordination Draft distributed by end of 2023
- Disposition Coordination Draft comments
- Balloting with publication of the new revision in 2026
IA9100
Quality Management System
Clause-by-Clause Comparison
Clause-by-Clause Comparison

**Rationale, Foreword**

**Intended application**

**Introduction**

- 0.1 General
- 0.2 Quality management principles
- 0.3 Process approach
- 0.4 Relationship with other management system standards

Explanation of single Standards Development Organization and new IA prefix

QMS implemented & correctly maintained using process approach, managing risk, & identifying opportunities = effectiveness

NOTE for supporting information in Annex C and improvement standards

Importance of organizational culture and ethical behavior to an effective QMS and its ability to achieve intended results

Importance of organizational culture and ethical behavior on the QMS

Implementation of QMS is a cornerstone to establishing a culture of quality

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Clause-by-Clause Comparison

Requirements
1. Scope
2. Normative references
3. Terms and definitions
   - Counterfeit part
     - Critical items
     - Key characteristic
     - Product safety
     - Special requirements

Examples of software and electronic device added to modified part.
4. Context of the organization

4.1 Understanding the organization and its context

4.2 Understanding the needs and expectations of interested parties

4.3 Determining the scope of the quality management system

4.4 Quality management system and its processes

NOTE to clarify the identification of processes is an organizational decision
5. Leadership

5.1 Leadership and commitment

Leadership promotes an ethical work environment with examples provided

5.2 Policy

Leadership ensures goals and objectives that build a quality culture are consistent with policies, vision, mission, values, and context

5.3 Organizational roles, responsibilities and authorities

6. Planning

6.1 Actions to address risks and opportunities

NOTE to clarify Operational Risk controls in clause 8.1.1

6.2 Quality objectives and planning to achieve them

6.3 Planning of changes
Clause-by-Clause Comparison

7. Support

7.1 Resources
- 7.1.1 General
- 7.1.2 People
- 7.1.3 Infrastructure
- 7.1.4 Environment for the operation of processes
- 7.1.5 Monitoring and measuring resources
- 7.1.6 Organizational knowledge
- 7.1.7 Information Security

7.2 Competence

7.3 Awareness

7.4 Communication

7.5 Documented information
- 7.5.1 General
- 7.5.2 Creating and updating
- 7.5.3 Control of documented information

Culture added an example in NOTE for human and physical factors. Examples of Culture include: quality, ethical behavior, product and personnel safety, quality of work life.

Measurement System Analysis (MSA) introduced in NOTE for analysing variation.

Clarifying that lists of monitoring & measurement equipment be placed on documented information that could be a register.

New requirement for information security to safeguard the QMS to achieve intended results.

Further refined requirements when documented information is managed electronically.

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8. Operation

8.1 Operational planning and control

8.1.1 Operation risk management

8.1.2 Configuration management

8.1.3 Product safety

8.1.4 Prevention of counterfeit parts

- 8.1a. Information security (IA9100 clause 7.1.5) and data protection added to the NOTE.
- 8.1b. MSA and control plans added to the NOTE.
- 8.1k. Operations to prevent, detect and mitigate the risk of foreign objects and debris.
- APQP is one method for operational planning and control.

Product Safety NOTE items now requirements, including identification of hazards, safety risks, change impact from safety risk, safety process effectiveness, training, communication and awareness, and reporting events.

Prevention of Counterfeit Parts NOTE items now requirements, including training, parts obsolescence monitoring program, traceability of parts, test methodologies, monitoring counterfeit parts, and segregation/containment/reporting of suspected or detected counterfeit parts.
8. Operation

8.2 Requirements for products and services

8.2.1 Customer communication

8.2.2 Determining the requirements related to products and services

8.2.3 Review of the requirements related to products and services

8.2.4 Changes to requirements for products and services
8. Operation

8.3 Design and development of products and services

8.3.1 General

8.3.2 Design and development planning

Clarified dividing design and development into distinct activities.

8.3.3 Design and development inputs

8.3.4 Design and development controls

8.3.5 Design and development outputs

8.3.6 Design and development changes
8. Operation

8.4 Control of externally provided processes, products and services

8.4.1 General

8.4.2 Type and extent of control

8.4.3 Information for external providers

Slight change to NOTE to allow remote inspection and audit of the external supplier.

Restructured clause to increase understanding including adding direct and sub-tier control
8. Operation

8.5 Production and service provision

8.5.1 Control of production and service provision

8.5.2 Identification and traceability

8.5.3 Property belonging to customers or external providers

8.5.4 Preservation

8.5.5 Post-delivery activities

8.5.6 Control of changes

8.6 Release of products and services

8.7 Control of nonconforming outputs

8.5.1.d NOTE includes clarity and alignment with clause 8.5.1.1

8.5.1.3 Production Process Verification structure changed to make it clear that it is more than FAI.
9. Performance evaluation
   9.1 Monitoring, measurement, analysis and evaluation
      9.1.1 General
      9.1.2 Customer satisfaction
      9.1.3 Analysis and evaluation

   9.2 Internal audit

   9.3 Management review

10. Improvement
   10.1 General
   10.2 Nonconformity and corrective action

   10.3 Continual improvement

Reviewing performance indicators change from NOTE to requirement
Ensuring risks are included when establishing an audit program

NOTE: Organization requirement to plan periodic QMS maturity assessment and set improvement goals and objectives
IA9100:2024-2025
Quality Management System
Schedule and Plan
9100 Key Change Summary

Next Steps

- IA9100 Coordination Draft distributed by end of 2023
- Disposition Coordination Draft comments
- Formal Ballot and Dispositioning in 2024-2026
- 2026: publication of the new revision in alignment with ISO 9001 release

![Timeline Diagram]

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IA9100
Quality Management System
Deployment Support Material – Where to find it?
IAQG Support Material

- Support Material resides on IAQG Website [www.iaqg.org](http://www.iaqg.org)
This document standardizes quality management system requirements to the greatest extent possible and can be used at all levels of the supply chain by organizations around the world. Its use should result in improved quality, schedule, and cost performance by the reduction or elimination of organization-unique requirements and wider application of good practice. While primarily developed for the aviation, space and defense industry, this standard can also be used in other industry sectors where a quality management system with additional requirements over an ISO 9001 system is needed.

**Resources 9100:2016 Series – QMS: Aviation, Space and Defense Organizations Standards Clarifications**

- 9100:2016 Series Clarification Table

**9100: 2016 – QMS: Aerospace Improvement Maturity Model (AIMM)**

**Resources 9100:2016 – QMS: Aviation, Space and Defense Organizations Guidance Materials**

- Support Materials
  - 9100: 2016 FAQ
  - 9100 Gap Assessment Worksheet
  - 9100 Evaluation Guidance Material
  - Relationship between IAQG Standards and 9100:2016 Standard (Table C1)

**Correlation Materials**

- Correlation of 9100:2016 mapped against EASA Commission Regulation (EU) 748/2012 Part-21
- Correlation of 9100:2016 mapped against FAA Part-21

**Presentations**

- 9100:2016 Executive Overview Presentation
- 9100:2016 Overview Presentation
- 9100:2016 Overview Presentation Recording

**Articles**

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  - 2019, February ASQ Quality Progress: We Have Lift-off
  - 2019 May ASQ Quality Progress: The Complete Package
  - 2019 December ASQ Quality Progress: Teaching New Heights
  - 2020 March ASQ Quality Progress: Fundamental to Success
  - 2020 June ASQ Quality Progress: An Essential Ingredient
  - 2020 September ASQ Quality Progress: Let the Preparation Begin
  - 2020 December ASQ Quality Progress: Does it Apply?
  - 2021 March ASQ Quality Progress: The Next Level of Success
  - 2021 October ASQ Quality Progress: Confirm or Review?
  - 2021 December ASQ Quality Progress: AIMM: An Improvement Roadmap
  - 2022 April ASQ Quality Progress: A Better Understanding

**Resources for ISO 9001:2015**

The following have been prepared by ISO/TC 176/SC2 to inform and assist organizations in making the ISO 9001:2015 transition

- News on the ISO 9001 revision
- A summary of the changes, and on the revision of ISO 9001:2015
- A paper on ISO 9001 and Risk
- A presentation on ISO 9001 and Risk-Based Thinking
- Guidance on the requirements for Documented Information of ISO 9001:2015
- How Change is addressed within ISO 9001