

# AS 9100: What Quality Professionals Need to Know



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# What is AS 9100?



- Quality Management System standard based on ISO 9001 and AS 9000
- Expands requirements to meet needs of aerospace manufacturers
- Recognized worldwide
- Intended to ensure safety, reliability and quality
- Regulatory and statutory requirements take precedence over AS requirements (e.g., FAA, DoD, NASA, etc.)

# Background of AS9100



- 1997: introduced for large US aerospace contractors
  - 1999: International Aerospace Quality standard
  - AS 9100A: aligned with ISO 9001:2000 (did not require substantial changes from AS 9100).
  - AS 9100B: additional requirements released in 2004
- 
- Recognized by FAA



# AS 9100 Expectations



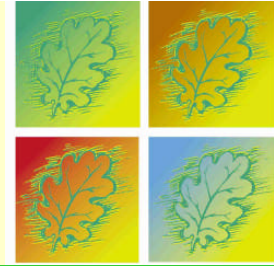
- Improve safety
- Improve quality
- Improve supplier control and monitoring
- Improve on-time delivery
- Improve customer satisfaction

# Specific Requirements



- Safety reliability and maintainability
- Design, design verification, validation and testing
- Approval and review of suppliers and their performance, flow down requirements
- Identification throughout product's life cycle
- Configuration management
- Control of production process changes
- Control of production equipment, tools and programs

# Specific Requirements (cont.)



- First Article Inspections
- Control of outside processing work
- Special processes (identify, validate, control)
- Inspection and testing procedures
- Methods, resources and records
- Emphasis on calibration data and records
- Review of nonconforming material dispositions
- Corrective action (and flow-down to suppliers)
- Service
- More audit requirements for registrars (AS 9101)

# Title Change



AS 9100B:

Quality Management Systems - Aerospace -  
Requirements

AS 9100C:

Quality Management Systems – Requirements for  
**Aviation, Space and Defense Organizations**

# AS 9100C: Substantial Revisions



- Emphasis on product and process improvement
  - Risk management
  - Critical items
  - Project management
- More emphasis on quality and on-time delivery

Incorporates all changes from ISO 9001:2008

3 Deletions

8 Revisions/Relocations

6 Additions

# AS 9100C: Deletions



## 4.2.2 Quality Manual

Deleted requirement to show the relationship between AS 9100 clauses and the organization's documented procedures.

## 7.4.3 Verification of Purchased Product

Deleted requirement to periodically validate test reports for raw material.

## 8.2.2 Internal Audit

Deleted requirement that detailed tools and techniques be developed and measured against the effectiveness of the internal audit process and overall QMS performance.

# AS 9100C: Revisions/Relocations



## 1.1 Scope

Scope extended to include Defense as well as Aviation and Space

## 4.1 QMS General Requirements

Moved the requirement to address Customer and applicable statutory and regulatory to the QMS level (previously located in 4.2.1, Documentation)

## 7.1.3 Configuration Management

Moved from Clause 4.3 to 7.1.3 to focus configuration management on the product throughout product realization

# AS 9100C: Revisions/Relocations



## 7.1.4 Control of Work Transfers

Moved from Clause 7.5.1.4 (Production) to 7.1.4 to expand coverage for permanent transfers (e.g. from one organization to another, from one organization to a supplier, from supplier to another)

## 7.4.1 Purchasing Process

Added Note recognizing that “objective and reliable data from external sources” may be considered for supplier selection and evaluation

## 7.4.1 Purchasing Process

7.4.1 a) revised register of suppliers requirement to include status (approved, conditional, disapproved) and provided examples for scope of approval (product type, process family)

# AS 9100C: Revisions/Relocations



## 7.5.1.1 Production Process Verification

Moved from Clause 8.2.4.2, First Article Inspection, to 7.5.1.1 to acknowledge that FAI verifies the process capability as well as measures the product

## 8.2.4 Monitoring and Measurement of Product

Revised sampling inspection plan justification to be based on recognized sampling principles and appropriateness for use

# AS 9100C: Additions



## 3.1 Risk

Added definition: An undesirable situation or circumstance that has both a likelihood of occurring and a potentially negative consequence.

## 3.2 Special Requirements

Added definition: customer requirements that have high risks to being achieved thus requiring they be included in the risk management process

## 3.3 Critical Items

Added definition: Those items having significant effect on the product realization and use of the product

# AS 9100C: Additions



## 5.2/8.2.1 Customer Focus/Satisfaction

Added requirements to measure product conformity and on-time delivery and to take action when planned results are not achieved.

Added requirement to develop and implement plans for customer satisfaction improvements that address deficiencies.

## 7.1.1 Project Management

Added requirement for planning and managing product realization in a structured and controlled way to meet requirements at acceptable risk within schedule and resource constraints

# AS 9100C: Additions



## 7.1.2 Risk Management

Added requirement to implement a risk management process focuses on product risk during the product realization process.

Includes:

- Assignment of responsibility
- Criteria
- Mitigation
- Acceptance of risks remaining

# Upgrade Time Frame



AS 9100C issued Jan 2009

From Release of AS 9101D (tbd):

Develop Auditor  
Training  
(max 6 months)

Train  
Certified Bodies  
& Auditors  
(max 12 months)

Companies Upgrade  
at Next Surveillance  
Audit or Re-Cert  
(max 12 months)

Earliest opportunity to upgrade is after your Certified Body and Auditor have completed training (7-8 months after release of AS 9101D)

## Where do you go from here?



- Get training for AS 9100C and AS 9101D
- Evaluate your QMS for gaps
- Revise your processes and update your QMS Documents as necessary
- Implement the changes – objective evidence!
- Complete a Management Review
- Conduct a full Internal Audit to AS 9100C
- Prepare...but not until the time is right
- Stay in contact with your Registrar for timing

# Questions?



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