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1. Scope

Supplier Quality System requirements of The Boeing Company are contained in this document. Systems are described in three appendixes and two addenda, the applicability of which shall be defined by contract.

This document also provides supplier requirements for Boeing recognition of certification/registration documentation issued by an accredited Certification Body (CB) in accordance with International Aerospace Quality Group (IAQG) requirements.

This document is an expression of the expectation by The Boeing Company of all of our suppliers today and in the future.

1.1 Appendix A—AS9100, Quality Management Systems - Aerospace – Requirements

This appendix describes the quality system requirements for Boeing suppliers as contained in ISO 9001 as supplemented by 9100*. Appendix A represents the International aerospace quality standard for quality assurance in design, development, production, installation, and servicing.

Boeing Appendix A suppliers will be AS/EN/JISQ 9100*, “Quality Management Systems – Aerospace – Requirements” certified from an accredited certification body listed in the International Aerospace Quality Group’s (IAQG) OASIS database.

For Suppliers under contract for Maintenance, Repair or Overhaul, the Seller’s AS/EN/JISQ9100 certification shall have an associated CB assessment report/package that contains evidence that service process (i.e clause 7.5.1.5) were assessed.

http://www.iaqg.sae.org/servlets/index?PORTAL_CODE=IAQG

***Note:** 9100 includes all IAQG sanctioned standards including but not limited to AS9100, EN9100 and JISQ 9100.

1.2 Appendix B—AS9003, Quality Systems - Model for Quality Assurance in Final Inspection and Test

This appendix describes the quality system requirements for Boeing suppliers as contained in SAE AS9003.



The Boeing Company has decided to phase-out AS9003 approvals. The transition period will be from June 1st, 2006 to June 30th, 2008. AS/EN/JISQ9100* will be the preferred quality management system standard.

On or before June 30, 2008, Boeing Appendix B suppliers will obtain an AS/EN/JISQ 9100*, "Quality Management Systems – Aerospace – Requirements" certification from an accredited certification body listed in the International Aerospace Quality Group's (IAQG) OASIS database:

http://www.iaqg.sae.org/servlets/index?PORTAL_CODE=IAQG

***Note:** 9100 includes all IAQG sanctioned standards including but not limited to AS9100, EN9100 and JISQ 9100.

1.3 Appendix C—AS9110, Quality Maintenance Systems - Aerospace - Requirements for Maintenance Organizations

This appendix describes the quality maintenance system requirements for Boeing suppliers as contained in ISO 9001 as supplemented by 9110*. Appendix C represents the international aerospace quality standard for aerospace maintenance organizations.

It is emphasized that the quality management system requirements specified in this standard are complementary (not alternative) to contractual and applicable law and regulatory requirements.

Suppliers that have active contracts for the maintenance, repair or overhaul of non-original equipment manufacturer equipment with Boeing and receive purchase contracts changes or new purchase contracts that include D6-82479 Appendix C as a requirement will have a transition period up to September 30, 2009 to obtain an AS/EN 9110*, "Quality Maintenance Systems - Aerospace - Requirements for Maintenance Organizations " certification from an accredited certification body listed in the International Aerospace Quality Group's (IAQG) OASIS database:

http://www.iaqg.sae.org/servlets/index?PORTAL_CODE=IAQG

***Note:** 9110 includes all IAQG sanctioned standards including but not limited to AS9110 and EN9110

1.4 Addendum 1—Variation Management of Key Characteristics (9103)**

Addendum 1 describes a process for managing the variation of key characteristics (KCs). It includes requirements that emphasize establishing both statistical control and capability of KCs, identification of improvement opportunities and implementation of improvement actions.

****Note:** 9103 includes all IAQG sanctioned standards including but not limited to AS9103, EN9103 and JISQ 9103.

1.5 Addendum 2—Quality System Requirements for Deliverable Software

Addendum 2 describes the quality system requirements for Boeing suppliers who design, develop, install, procure, or maintain deliverable software.

2. Boeing Recognition of Aerospace Quality Management System (AQMS) Accredited Certification/Registration

Quality system certification by accredited Certification Bodies (CBs) may be recognized as evidence of compliance.

Boeing reserves the right to;

- a. make final determination regarding compliance to Boeing requirements.
- b. change Boeing' approval status of Seller based on Seller contract conformance.
- c. terminate Boeing' recognition of Seller's certification, regardless of previous or current recognition and regardless of Seller's certification status.

When Seller utilizes CB AQMS certification as evidence of compliance, the Seller shall ensure the following:

1. The CB is accredited to perform AQMS assessments. The CB must use approved auditors and operate in accordance with the International Aerospace Quality Group (IAQG) certification/registration scheme as defined in AS/EN/SJAC 9104, "Requirements for Aerospace Quality Management System Certification/Registrations Programs".

NOTE: Reference IAQG OASIS database for listing of accredited CBs:

http://www.iaqg.sae.org/servlets/index?PORTAL_CODE=IAQG

2. The Seller maintains objective evidence of CB certification/registration on file at Seller's facility. Objective evidence shall include:
 - a. The accredited AQMS certificate(s) of registration.
 - b. The audit reports, including all information pertaining to the audit results in accordance with the applicable certification/registration scheme.
 - c. Copies of all CB finding(s), objective evidence of acceptance of corrective action, and closure of the finding(s).

Note: Certification records shall be maintained in accordance with contractually specified quality record retention requirements.

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3. Boeing Supplier Quality Representative is immediately notified in writing if / when Seller changes utilized CB.
 4. The CB services agreement provides for “right of access” to all CB records by Boeing, applicable accreditation body, applicable Registration Management Committee and other regulatory or government bodies for the purpose of verifying CB certification/registration criteria and methods are in accordance with the applicable IAQG certification/registration scheme.
 5. The CB has Seller’s written permission to provide audit results/data to IAQG membership as required by the applicable IAQG certification/registration scheme.
 6. Boeing is immediately notified in writing should the Seller’s certification/registration be suspended or withdrawn, or accreditation status of Seller’s CB be withdrawn. Send email notification to:

grpcrboversightrep@boeing.com
 7. Boeing-identified findings and Seller’s quality performance data is provided to the CB during certification/registration and surveillance activity.
 8. Upon Seller receipt of Boeing quality management system nonconformance that is classified as Major, against Seller's QMS, Seller shall coordinate with the CB in order to provide awareness and description of Corrective Action taken.
 9. In the event that Boeing changes Sellers approval status from Approved to Probation, Seller will make arrangements with seller’s CB for a .Special Short-notice Audit (Reference ISO 17021/AS9104 8.2.3). This audit scope will include investigation of nonconformities that resulted in the change of status to Probation and assessment of impact to certification.
 10. Upon request, the Seller will grant Boeing access to the tier two AQMS assessment results summary and scoring data contained within the IAQG On-line Aerospace Supplier Information System (OASIS).
 11. CB is provided access to applicable proprietary data (including Boeing proprietary data) to the extent necessary to assess supplier processes.
 12. Seller complies with all CB requirements imposed to issue and maintain AQMS certification/registration.

Boeing recognition of Seller’s AQMS certification/registration does not affect the right of Boeing to conduct audits and issue findings at the Seller’s facility. Boeing reserves the right to provide Boeing-identified quality system findings, associated quality system data, and quality performance data to the Seller’s CB.

Appendix A AS9100, Quality Management Systems – Aerospace - Requirements

The supplier is to maintain an effective quality system to ensure product and process integrity that is based on ISO 9001 as supplemented by 9100.

Note: 9100 contains ISO 9001 requirements with supplementation sequenced appropriately therein.

Additional information on ISO and ISO 9001 can be obtained at

<http://www.iso.ch/>

ISO standards can be purchased from the U.S. member body to ISO, which is the American National Standards Institute (ANSI) at <http://webstore.ansi.org> or from the ISO member body in your country.

9100 can be obtained through IAQG sanctioned national trade association, including:

SAE, the Society of Automotive Engineers: <http://www.sae.org>

AECMA, the European Association of Aerospace Industries:
<http://www.aecma-stan.org/>

SJAC, the Society of Japanese Aerospace Companies:

<http://www.sjac.or.jp/>



Appendix B AS9003, Quality Systems - Model for Quality Assurance in Final Inspection and Test

The supplier is to maintain an effective quality system to ensure product and process integrity that is based on SAE AS9003.

Additional information on ISO can be obtained at

<http://www.iso.ch/>

ISO standards can be purchased from the U.S. member body to ISO, which is the American National Standards Institute (ANSI) at <http://webstore.ansi.org> or from the ISO member body in your country.

SAE AS9003 can be obtained through:

SAE, the Society of Automotive Engineers

400 Commonwealth Drive

Warrendale, PA 15096-0001

Phone: 724-776-4970

Fax: 724-776-0790

Web site address: <http://www.sae.org>

Appendix C AS9110, Quality Maintenance Systems - Aerospace – Requirements for Maintenance Organizations

The supplier is to maintain an effective quality system to ensure product and process integrity that is based on ISO 9001 as supplemented by 9110.

Note: 9110 contains ISO 9001 requirements with supplementation sequenced appropriately therein.

Additional information on ISO and ISO 9001 can be obtained at

<http://www.iso.ch/>

ISO standards can be purchased from the U.S. member body to ISO, which is the American National Standards Institute (ANSI) at <http://webstore.ansi.org> or from the ISO member body in your country.

9110 can be obtained through IAQG sanctioned national trade association, including:

SAE, the Society of Automotive Engineers: <http://www.sae.org>

AECMA, the European Association of Aerospace Industries:
<http://www.aecma-stan.org/>

Addendum 1: Variation Management of Key Characteristics (9103**)

Addendum 1 provides a conformance assessment of 9103, Variation Management of Key Characteristics. When required by contract, it will be flowed in conjunction with Appendix A.

1. Scope

This document emphasizes requirements intended to ensure continual improvement, reduce variation of key characteristics about engineering nominal specifications, prevent defects, reduce waste, increase profit, improve product quality, and exceed customer expectations. Addendum 1 may be used in conjunction with other Boeing programs, such as the Preferred Supplier Certification (PSC) program, and may afford the organization an advantage in the source selection process.

2. Assessment of Conformance to Requirements

Conformance to the requirements of Addendum 1 shall be assessed by the organization at planned intervals as part of the organization's internal audit process. The Boeing Variation Management of Key Characteristics (9103) Evaluation Tool may be used for this evaluation. The results shall be shared with any subsequent Boeing or third party evaluator of the organization's Addendum 1 implementation. It is expected that opportunities for more effective improvement methods will be identified as a result of these evaluations.

Note: The Boeing Variation Management of Key Characteristics (9103) Detailed Evaluation Tool is based on the requirements of 9103. It may also be used as a guideline for evaluation of an organization's implementation of variation management methods. It provides additional information regarding the intent of each row of the Tool, including questions that will aid an organization's evaluators in determining the maturity of their 9103 System.

The current evaluation tools can be downloaded at:

<http://www.boeing.com/companyoffices/doingbiz/supplier/index.html>

2.1 Variation Management of Key Characteristics

The organization shall maintain an effective variation management system based on AS/EN/SJAC 9103, *Variation Management of Key Characteristics*, and a Boeing specific requirement as follows:

In some cases it may be impossible or prohibitively expensive to meet the stability and capability requirements of AS/EN/SJAC 9103 Section 5. These exceptions must be documented by the organization and shall require Boeing approval (ref. AS/EN/SJAC 9103 Section 5.6).

9103 can be obtained through IAQG sanctioned national trade associations including:

SAE, the Society of Automotive Engineers:

<http://www.sae.org>

AECMA, the European Association of Aerospace Industries:

<http://www.asd-stan.org/>

SJAC, the Society of Japanese Aerospace Companies:

<http://www.sjac.or.jp/>

Addendum 2: Quality Systems Requirements for Deliverable Software

Structure and Application

This Addendum 2 includes aerospace requirements which have been separated into two sections. Organizations shall select and declare in their quality manual, which section they will deploy to meet the Addendum 2 requirement.

Section 1 is based upon the AS 9100A and AS9006.

Section 2 is based upon the AS/EN/JISQ 9100* and Software Engineering Institute (SEI) Capability Maturity Model Integrated (CMMI).

Section 1 – Deliverable Aerospace Software Supplement for AS9100A Quality management Systems – Aerospace – Requirements for Software (based on ISO 9001:2000 as supplemented by AS9100A, Section 1)

The supplier is to maintain an effective quality system to ensure product and process integrity that is based on SAE AS9006.

SAE AS9006 can be obtained through:

SAE, the Society of Automotive Engineers

400 Commonwealth Drive
Warrendale, PA 15096-0001
Phone: 724-776-4970
Fax: 724-776-0790

Web site address: <http://www.sae.org>

Section 2 – Deliverable Aerospace Software Supplement for AS/EN/JISQ 9100* Quality Management Systems - Capability Maturity Model® Integration (CMMI)

The organization shall maintain an effective quality management system in accordance with AS/EN/JISQ 9100* to ensure product and process integrity and shall have completed a Standard CMMI Appraisal Methodology for Process Improvement (SCAMPI) Level A assessment.

The organization shall have been assessed and recognized at CMMI level 4 or above by an external SEI authorized assessor within the past 36 months.



The CMMI assessment / recognition shall encompass applicable Boeing programs at the organization's facilities performing the work.

These processes shall be applied to new programs and contracts as applicable.

Boeing reserves the right to verify the SEI level assessment at any time.

CMMI® is registered in the U.S. Patent and Trademark Office by Carnegie Mellon University.

***Note:** 9100 includes all IAQG sanctioned standards including but not limited to AS9100, EN9100 and JISQ 9100.



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Changed "Content Owner" on page i.
Added Company Quality Process Council Chair signature line.
Changed the titles and references of Appendix A through C.
Deleted Appendix C; Quality systems for Distributors.
Changed Appendix D and E to Addendum 1 and 2.
Changed affected page numbers.
Added Addendum 1 text for AQS Requirements.
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Updated Scope and Appendix A to incorporate SAE AS9100: 2001.
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