



AEROSPACE STANDARD

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Superseding AS9104/3

Technically equivalent writings
published in all IAQG sectors.

(R) Requirements for Aviation, Space, and Defense Auditor Training, Development,
Competence, and Authentication

RATIONALE

This standard has been revised to align with the latest revisions of the International Aerospace Quality Group (IAQG) 9104/1 and 9104/2 standards, the International Organization for Standardization (ISO)/International Electrotechnical Commission (IEC) 17021-1 and 17021-3 standards, and to incorporate lessons learned from past activities, including feedback from interested parties.

FOREWORD

Industry established the IAQG, with representatives from Aviation, Space, and Defense (ASD) companies in the Americas, Asia/Pacific, and Europe, to implement initiatives that make significant improvements in quality and reductions in cost throughout the value stream.

The IAQG developed a global scheme for the acceptance and recognition of audits performed by Certification Bodies (CBs), using the 9100-series standards and taking into account the schemes already in use or under development in the various IAQG sectors, including the application of a:

- 3rd party audit certification scheme with specific ASD requirements, under the guidance and oversight of the ASD industry; and
- Harmonized approach for the purpose of improving the quality and process control throughout the entire supply chain.

Confidence and reliance in the audit process depends on the development and provision of auditor training, robust auditor authentication, and competence of those conducting the audits. Competence is based on the demonstration of personal attributes, and the ability to apply knowledge and skills gained through education, training, and experience.

This document has been prepared by the IAQG and standardizes the requirements for ASD Quality Management System (QMS) auditor training, development, competence, and authentication in support of certification to Aerospace Quality Management System (AQMS) standards. This document supplements existing international standards for competency requirements.

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In this standard, the following terms are used:

- “Shall” indicates a requirement;
- “Should” indicates a recommendation;
- “May” indicates a permission; and
- “Can” indicates a possibility or capability.

Words “example” or “e.g.” indicate suggestions given for guidance. Information marked “NOTE” is for guidance in understanding or clarifying the associated requirement.

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1. SCOPE

This document defines the minimum requirements for auditors, CBs, Auditor Authentication Bodies (AABs), Training Provider Approval Bodies (TPABs), and Training Providers (TPs) who participate in the IAQG Industry Controlled Other Party (ICOP) scheme. The requirements in this standard supplement those defined within the 9104/1, 9104/2, ISO/IEC 17021-1, and ISO/IEC 17021-3 standards.

Data protection for the parties subject to this document and other relevant requirements of the ICOP scheme are managed via bi-lateral contracts between the joint controllers of the data.

2. REFERENCES

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments or resolutions) applies. When a conflict in requirements between this document and the referenced standards exist, the requirements of this document shall take precedence.

9100*	Quality Management Systems - Requirements for Aviation, Space, and Defense Organizations
9104/1*	Requirements for Aviation, Space, and Defense Quality Management System Certification Programs
9104/2*	Requirements for Oversight of Aerospace Quality Management Systems Registration/Certification Programs
9110*	Quality Management Systems - Requirements for Aviation Maintenance Organizations
9120*	Quality Management Systems - Requirements for Aviation, Space, and Defense Distributors

*As developed under the auspice of the IAQG and published by various standards bodies (e.g., Aerospace and Defense Industries Association - Standardization [ASD- STAN], SAE International, European Committee for Standardization [CEN], Japanese Standards Association [JSA]/Society of Japanese Aerospace Companies [SJAC], Brazilian Association for Technical Norms [ABNT]).

ISO 9000	Quality management systems - Fundamentals and vocabulary
ISO 9001	Quality management systems - Requirements
ISO/IEC 17000	Conformity assessment - Vocabulary and general principles
ISO/IEC 17021-1	Conformity assessment - Requirements for bodies providing audit and certification of management systems - Part 1: Requirements
ISO/IEC 17021-3	Conformity assessment - Requirements for bodies providing audit and certification of management systems - Part 3: Competence requirements for auditing and certification of quality management systems
ISO/IEC 17024	Conformity assessment - General requirements for bodies operating certification of persons

3. TERMS AND DEFINITIONS

Definitions for general terms can be found in ISO 9000, ISO/IEC 17000, 9104-series standards, and the IAQG International Dictionary (located on the IAQG website). An acronym log for this document is presented in Appendix A. For the purpose of this standard, the following definitions apply:

3.1 AUDIT EXPERIENCE

Experience gained and demonstrated by direct involvement in an audit as a team leader or team member conducting 2nd or 3rd party QMS or AQMS audits.

3.2 AUDITOR AUTHENTICATION

The process and output from confirming an auditor's competence has met or exceeded the minimum requirements for an auditor, as defined in this standard.

3.3 AUDITOR AUTHENTICATION CYCLE

A period of 3 years from initial authentication or re-authentication.

3.4 AUDITOR PERFORMANCE MANAGEMENT

Activity undertaken to monitor individual 3rd party auditor performance and establish improvement programs, as required, to maintain auditor authentication, based on the results of performance information gathered.

3.5 AUTHENTICATED AUDITOR (AA)

A person with the demonstrated competence (i.e., knowledge, skills, and personal attributes) to conduct an audit on ASD organizations that has been authenticated in accordance with the requirements of this standard.

3.6 AUTHENTICATED EXPERIENCED AUDITOR (AEA)

A person with the demonstrated competence (i.e., knowledge, skills, and personal attributes) to lead an audit on ASD organizations that has been authenticated in accordance with the requirements of this standard, together with appropriate recognized work experience and demonstrated knowledge in the ASD industry.

3.7 AVIATION, SPACE, AND DEFENSE (ASD) LEAD AUDITOR COURSE

An interactive training course approved by a TPAB, that includes current 9100 standard requirements, the process approach as it applies to auditing an entire AQMS, and how to plan, conduct, report, follow-up, and close an AQMS audit.

3.8 CONTINUAL PROFESSIONAL DEVELOPMENT (CPD)

The means by which professionals improve and broaden their knowledge and skills required to enhance individual capability. CPD includes relevant structured learning activities that focus on subjects and topics that are related to the audit profession, including emerging industry technologies and regulatory requirements.

3.9 CONTRACTOR

A person who undertakes work on behalf of an organization on a contract basis that is specified in a mutually binding agreement. This does not include individuals who provide expert advice professionally (i.e., consultancy).

3.10 FULL SYSTEM AUDIT

Direct involvement as a team leader or team member (as applicable) in a QMS (ISO 9001) or AQMS (9100, 9110, 9120) audit that covers all requirements of the respective standard, aligned to the certification scope of the audited organization.

3.11 INTERNATIONAL AEROSPACE QUALITY GROUP (IAQG) SANCTIONED REQUISITES

Any activity mandated by the IAQG to support auditor authentication (e.g., training, assessment, evaluation).

3.12 PERFORMANCE IMPROVEMENT PLAN (PIP)

The means to address performance improvement that includes a clear, structured set of actions and deliverables, together with timescales, in order to attain a specified level of performance.

3.13 REGULATORY AVIATION MAINTENANCE SPECIFIC TRAINING COURSE

An interactive training course (or a series of courses) approved by a civil/military aviation authority, conducted over a minimum two working days relating to aviation maintenance regulations.

3.14 SUSPENSION

Temporary restriction(s) applied to authentication or approval activity due to the non-fulfillment of requirements.

3.15 WITHDRAWAL

Cessation of authentication or approval due to the non-fulfillment of requirements.

4. AUDITOR AUTHENTICATION

4.1 General

4.1.1 Auditors seeking authentication shall meet the requirements defined within this standard and provide documented evidence of the required baseline training, audit experience, IAQG sanctioned requisites, work experience, industry knowledge, and CPD (as applicable) relative to the applicable AQMS standard to the AAB.

4.1.2 The following auditor grades have been established for each AQMS standard:

- a. Authenticated Auditor (AA); and
- b. Authenticated Experienced Auditor (AEA).

4.2 Auditor Authentication Requirements

4.2.1 Auditor authentication shall be undertaken in accordance with the applicable requirements relating to each authentication phase:

- a. Auditor initial authentication (see 5);
- b. Auditor re-authentication (see 6); or
- c. Auditor advancement (see 7).

4.2.2 Auditors shall only conduct audits for which they are authenticated (e.g., AA/AEA 9100 auditors cannot perform audits to 9110 or 9120).

4.2.3 Auditors can be authenticated for one or more grades and/or standards, but only for one grade (AA or AEA) per standard at the same time.

4.2.4 Auditors shall be authenticated to 9100, in order to be authenticated for other AQMS standards (i.e., 9110 and/or 9120).

NOTE: Where an auditor is already authenticated to 9100 and is seeking authentication to another AQMS standard, the work experience utilized for initial authentication may be used to demonstrate compliance to the requirements, provided the 9100 authentication is current.

4.2.5 Auditors shall disclose within their application to the AAB if they have had any previous applications or authentications rejected, suspended, or withdrawn; including the reason(s) why.

4.3 Auditor Work Experience

4.3.1 Authenticated Auditor Work Experience

Work experience shall be full time as an employee or contractor in industries with similar scopes of applicability (e.g., automotive, nuclear, maritime, medical devices, other high risk/safety critical industries), with direct involvement in engineering, design, manufacturing, quality, or process control.

4.3.2 Authenticated Experienced Auditor Work Experience

Work experience shall be full time as an employee or contractor within the ASD industry with direct involvement in engineering, design, manufacturing, quality, or process control within any of the following organizations:

- a. Major Equipment Manufacturer/Integrator Organization: An organization that designs, produces, and delivers complete vehicles or systems for ASD applications (e.g., aircraft, ships, submarines, major weapon systems, launchers, or spacecraft).
- b. Prime Organization: An organization that designs and/or produces a major assembly, major subassembly, or major component of an ASD end item (e.g., cabins, wings, fuselages, propulsion systems, control systems, health monitoring systems, ordnance management systems, radar systems, emergency or backup systems).
- c. ASD Regulatory Agency: A civil (e.g., National Aviation Authority [NAA]), military (e.g., Ministry of Defense [MoD]), or space organization (e.g., European Space Agency [ESA], National Aeronautics and Space Administration [NASA], Canadian Space Agency [CSA], Japan Aerospace Exploration Agency [JAXA], China National Space Administration [CNSA]).

4.3.3 Authenticated Experienced Auditor Maintenance Work Experience

Work experience shall be full time as an employee or contractor within an aviation maintenance organization authorized by a civil or military aviation authority with direct involvement in overhaul, disassembling, inspection, testing, replacement, defect rectification, and the embodiment of a modification or repair.

4.4 Aviation, Space, and Defense Industry Knowledge

4.4.1 Industry knowledge shall include at a minimum, an understanding of the processes and controls for:

- a. Advance product quality planning;
- b. Change control;
- c. Containment, cause analysis, and corrective action;
- d. Configuration, identification, and traceability;
- e. Critical items and key characteristics;
- f. Design and development;
- g. External provider approval and control;
- h. Foreign object damage/debris (FOD) prevention program;
- i. Nonconforming material management;
- j. Operational risk management;
- k. ASD regulatory requirements;
- l. Prevention of counterfeit/unapproved parts;
- m. Product safety;
- n. Production part approval process;
- o. Production processes and product verification/validation; and
- p. Sampling inspection or testing.