



SLOVENSKI STANDARD

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Aerospace series - Quality management systems - Part 003: Requirements for
Aerospace Quality Management System (AQMS) Auditor Training and Qualification

Luft- und Raumfahrt - Qualitätsmanagementsysteme - Teil 003: Anforderung an das
Qualitätsmanagementsysteme der Luft- und Raumfahrt anwendbar für Auditoren
Ausbildung und Qualifikation

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Série aérospatiale - Systèmes de management de la qualité - Partie 003 : Exigences
applicables au Système de Management de la Qualité dans le domaine Aérospatial
(SMQA) Formation et Qualification des Auditeurs

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**Aerospace series - Quality management systems - Part 003:
Requirements for Aerospace Quality Management System
(AQMS) Auditor Training and Qualification**

Série aérospatiale - Systèmes de management de la
qualité - Partie 003 : Exigences applicables au Système de
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003: Anforderung an das Qualitätsmanagementsysteme
der Luft- und Raumfahrt anwendbar für Auditoren
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This European Standard was approved by CEN on 11 July 2008.

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Foreword

This document (EN 9104-003:2009) has been prepared by the Aerospace and Defence Industries Association of Europe - Standardization (ASD-STAN).

After enquiries and votes carried out in accordance with the rules of this Association, this Standard has received the approval of the National Associations and the Official Services of the member countries of ASD, prior to its presentation to CEN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by August 2009, and conflicting national standards shall be withdrawn at the latest by August 2009.

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Introduction

This document is written to define a common process for aerospace auditor training and authentication to be utilized by all the International Aerospace Quality Group (IAQG) sectors. In order to harmonize the presentation, the clause numbering system of this standard has been modified accordingly.

In December 1998, the Aerospace Industry established the International Aerospace Quality Group (IAQG) with the purpose of achieving significant improvements in quality and reductions in cost throughout the value stream.

IAQG developed a truly global scheme IAQG 9104 for the use of assessment results performed by Certification/Registration Bodies (CRBs), based on the 9100-series standards and taking into account the schemes already in use or under development in the various IAQG sectors.

This document supplements the existing international requirements for the accreditation of personnel certification bodies, accreditation of CRBs and auditor certification programs.

Confidence and reliance in the audit process depends on the competence of those conducting the audit, making certification/registration decisions and supporting an audit program. Competence is based on the demonstration of personal attributes, and the ability to apply Aerospace Quality Management System (AQMS) knowledge and skills gained through education, work experience, auditor training and audit experience. (EN ISO 19011:2002, 7.1).

Knowledge and skills are only two elements of competency. Therefore, organizations operating AQMS audit programs should establish and implement effective competency systems that are based on EN ISO 19011:2002 (section 7), ISO/IEC Guide 62 and IAF GD 2.

The IAF Guidance on the application of ISO/IEC Guide 62 (IAF GD 2) requires personnel operating in a specific technical field to have competence for the functions they perform, be they management, technical, administrative or other (IAF GD 2 G 2.21). This means that an organization operating an aerospace auditing program should have adequate personnel with required knowledge of aerospace processes, product and system requirements to ensure their audit program is able to operate effectively and in accordance with Aerospace Industry requirements.

Contained herein are requirements for Aerospace Auditor Competency and Training Course to satisfy the competency criteria in IAQG 9104 to support certification/registration and recognition of Aerospace Quality Management Systems.

1 Scope

This document provides the minimum requirements (Body of Knowledge) for AQMS Auditors who will participate in AQMS Certification/registration activities including Auditor Authentication process and for training organization. It is applicable to auditors seeking formal approval to conduct audits of the AQMS systems under the IAQG and those who manage the competency element of an AQMS audit program and to training organizations.

2 Normative 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) applies.

EN 9100, *Aerospace series — Quality management systems — Requirements (based on ISO 9001:2000) and Quality systems — Model for quality assurance in design, development, production, installation and servicing (based on ISO 9001:1994)*¹

EN 9104, *Aerospace series — Quality management systems — Requirements for Aerospace Quality Management System Certification/Registrations Programs*¹

EN 9110, *Aerospace series — Quality systems — Model for quality assurance applicable to maintenance organizations*¹

EN 9120, *Aerospace series — Quality management systems — Requirements for stockist distributors (based on ISO 9001:2000)*¹

EN ISO 9000:2005, *Quality management systems — Fundamentals and vocabulary (ISO 9000:2005)*

EN ISO 9001, *Quality management systems — Requirements (ISO 9001:2008)*

EN ISO 19011:2002, *Guidelines for quality and/or environmental management systems auditing (ISO 19011:2002)*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1

accreditation body

AB

body recognized by an IAQG sector that has the primary responsibility for the accreditation of certification bodies to issue certifications/registrations to Aerospace Quality Management Systems standards

3.2

aerospace

business of design, manufacture, maintenance, distribution and support of aviation vehicles and engines, accessories and component parts, all ancillary and allied businesses including aerospace vehicle operations

NOTE This also includes Space and Defence.

¹ Or the corresponding AAQG standards (e.g. AS, ARP, etc.) or APAQG (e.g. JISQ, SJAC, HB, etc.).

EN 9104-003:2009 (E)**3.3****aerospace experience auditor²****AEA**

auditor that has met the requirements set forth in this document and in EN 9104

3.4**aerospace product**

aircraft, rotorcraft, guided weapon, launcher, spacecraft, other product designed to travel through the air, inside or outside the ground effect, or to travel outside the influence of the earth's atmosphere or major components of these products such as engines or major sub-systems or parts, appliances, equipment and materials as contained in these

Refer to EN 9104.

3.5**aerospace quality management system standards****AQMS**

standards published under the umbrella of IAQG generally referred to as EN 9100, EN 9110 and EN 9120

NOTE In some countries, these standards are published with different designations.

3.6**auditor**

person that has met the requirements set forth in EN 9104 and this document

3.7**auditor authentication body****AAB**

body recognized by an IAQG sector that has the primary responsibility for certifying or approving persons (e.g. auditors) against specific requirements

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3.8**blended learning**

combination of electronic, knowledge-based training and face-to-face, skills-based training

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3.9**body of knowledge**

framework that defines the current boundaries of knowledge of the quality profession within the IAQG; it is set out as simple statements of knowledge that can be used and developed by user groups such as the educational establishment, training establishments, membership and those organizations that need to define guidance or competencies for their quality professionals

NOTE The IAQG's Body of Quality Knowledge is revised and administered by the IAQG People Capability Strategy Stream that accepts requests for revision as and when they arise from user groups and other interested parties.

3.10**Certification Body(ies)****CB**

body that audits and certifies/registers the conformity of the quality management system of organizations with respect to published aerospace quality management system (AQMS) standards and any supplementary documentation required under the system

NOTE Also referred to as a Certification/Registration Body (CRB).

² Sectors may use other names for 'Auditor', 'Aerospace Auditor' and 'Aerospace Experienced Auditor' (AEA) as long as the requirements of EN 9104 and this document are applied.

3.11**electronic training**

training that is conducted through computer-based methods (e.g. on-line, cd-rom)

3.12**international aerospace quality group****IAQG**

body of prime aerospace Original Equipment Manufacturers (OEMs); this group is chartered to develop and implement common requirements and guidelines for use by the space, aviation and defense industries for quality improvement

3.13**IAQG sector or sector**

sub-structure of the IAQG, consisting of the members in a specific area, such as Americas, Europe and Asia/Pacific

3.14**sector management structure****SMS**

organization established in a sector that manages the application of the sector scheme based on EN 9104

Each sector may use a different name for this organization (e.g. Registration Management Committee [RMC] in the Americas and Asia Pacific, Other Party Management Team [OPMT] in Europe within the AeroSpace and Defence Industries Association of Europe [ASD])

3.15**training provider approval body****TPAB**

body recognized by the SMS that has the primary responsibility to conduct the review and approval of training course content and training provider administration

3.16**work experience**

full-time work experience in the aerospace industry directly involved in engineering, design, manufacturing, quality or process control for a major airframe manufacturer, prime supplier, auxiliary equipment supplier and/or appropriate official civil, military or space organization such as National Aviation Authorities (NAA), domestic Space Agency (e.g. ESA/NASA/CSA), Ministry of Defense (MoD).

The work experience should have included direct involvement and/or knowledge of aerospace industry specific aspects such as: Aerospace industry quality, regulatory and/or military aerospace requirements and regulations (EASA/FAR 21; AQAP), first article inspection, airworthiness and safety requirements, aerospace material traceability requirements, aerospace sub-contractor approval and control, variation management of key characteristics, flow-down of AQMS requirements, foreign object damage/debris (FOD) prevention program, use of customer supplied products, calibration controls and positive recall system, acceptance authority media, non-conforming material management, sampling inspection/statistical process control requirements and limitations, special processes, configuration management/requirements control, manufacturing techniques, tool control, design development verification and validation.

In addition for maintenance this work experience should have included direct involvement and/or knowledge of maintenance regulations, such as EASA/FAR 145/147, and EASA Part M, return to service processes, flight test, functional checks prior to flight, weight and balance, wing walking or aircraft marshalling techniques

4 General

4.1 To support the AQMS auditor programs for organizations participating under the IAQG Industry Controlled Other Party scheme (ICOP), the IAQG has established minimum requirements for AQMS training courses and authentication of AQMS auditors.

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4.2 AQMS auditor competency programs shall provide for the definition of competency requirements and include a process for the initial determination of AQMS auditor competency and ongoing evaluation of AQMS auditor competency. Auditor competency programs shall be suitable to the nature and volume of AQMS audits conducted.

4.3 AQMS auditor competency is gained through a combination of AQMS auditor training, industry specific training, aerospace work experience and audit experience. Auditor competency can only be demonstrated through on-site evaluation.

5 AQMS auditor competency requirements

5.1 AQMS Auditors seeking authentication are required to meet the guidelines identified in EN ISO 19011:2002 (section 7.4) and shall possess a combination of audit experience, AQMS training, Industry Specific training (as applicable), and Work Experience relative to an AQMS standard, as defined in this document.

5.2 The following categories of auditors have been established:

- Auditor 9100.
- Auditor 9110.
- Auditor 9120.
- Aerospace Experience Auditor (AEA) 9100.
- Aerospace Experience Auditor (AEA) 9110.
- Aerospace Experience Auditor (AEA) 9120.

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5.3 The auditor authentication requirement for each auditor category described in 5.2 includes the qualification criteria specific to a particular AQMS standard. Auditors are found competent independently in each category, and can only conduct audits to the identified standard (i.e. AEA 9100 auditors cannot perform audits to EN 9110/EN 9120). Auditors can, however, be recognized for one or more Auditor categories.

5.4 The requirements to which auditors must demonstrate conformity before they can conduct audits recognized by IAQG ICOP are identified in Tables 1 and 2. Note that two different sets of criteria can be applied depending on the amount of Aerospace industry work experience the auditor holds, to become AEA.

5.5 Training courses required to support auditor authentication are required to be approved by the SMS recognized TPAB (Training Provider Approval Body).

NOTE ABs are not responsible for approving training courses.

Table 1 — Requirement for 9100 and 9120 (EN 9100/9120)

Element	Auditor 9100/9120	AEA 9100/9120	
Auditor recognition	QMS Auditor by nationally-recognized personnel certification body or meet the education, training, work experience and audit experience of EN ISO 19011:2002 section 7.4.		
Audit Experience	4 full QMS or AQMS (9100) audits conducted for a total of 20 audit person days within the past 3 years. Only 2 nd or 3 rd party audits shall be considered.		
AQMS Auditor Training	Successful completion of an approved Foundation Course (see Annex A): — 9100 for 9100 auditors. — 9120 for 9120 auditors. An attendee can only attend the Foundation Course if he/she has successfully completed a QMS (EN ISO 9001) auditor training course. or Successful completion of an approved AQMS standard Auditor Course (see Annex A): — 9100 for 9100 auditors. — 9120 for 9120 auditors.		
Industry Specific Training	Not required	Successful completion of an approved Aerospace Industry Specific Course: 9100/9110. (See Annex A.)	4 years of AQMS work experience within the past 10 years, as specified in 3.16.
Work Experience in AQMS sector See 3.16	Not required	2 years of AQMS work experience within the past 15 years.	
Auditor Evaluation	Not required	Successful completion of two full audits witnessed ^a by an AEA: — 9100 for 9100 auditors. — 9100 or 9110 for 9120 auditors.	

^a If during witness audit a candidate shows insufficient knowledge of aerospace requirements as mentioned under Sec 3.1 of Aerospace specific training course in Annex A, additional training and/or practical experience will be required.

Witness shall be performed by authenticated AEA who themselves have not become qualified via an industry specific training. The witness AEA shall not perform the audit as a member of the assessment team.

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Table 2 — Requirement for 9110 (EN 9110)

Element	Auditor 9110	AEA 9110	
Auditor recognition	QMS Auditor by nationally-recognized AAB or meet the education, training, work experience and audit experience of EN ISO 19011:2002 (section 7.4).		
Audit Experience	4 full QMS or full AQMS audits (9100 or 9110) conducted for a total of 20 audit person days within the past 3 years. Only 2 nd or 3 rd party audits shall be considered.		
AQMS Auditor Training	Successful completion of an approved 9110 Foundation Course (see Annex A). An attendee can only attend the Foundation Course if he/she has successfully completed a QMS (EN ISO 9001) auditor training course. or Successful completion of an approved AQMS standard Auditor Course (see Annex A).		
Industry Specific Training	Not required	Successful completion of an approved Aerospace Industry Specific Course: Repair/Maintenance.	4 years of AQMS work experience within the past 10 years, as specified in 3.16.
Work Experience in AQMS sector, see 3.16	Not required	2 years of AQMS work experience within the past 15 years.	
Auditor Evaluation	Not required	Successful completion of 2 full 9110 audits witnessed ^a by an AEA.	
<p>^a If during witness audit a candidate shows insufficient knowledge of aerospace requirements as mentioned under Sec 4.1 of Aerospace specific training course in Annex A, additional training and/or practical experience will be required.</p> <p>Witness shall be performed by authenticated AEA who themselves have not become qualified via an industry specific training. The witness AEA shall not perform the audit as a member of the assessment team.</p>			

6 Requirements for training courses

NOTE See Annex A for detailed requirements for training courses.

6.1 Class size, attendance

The number of students in a class shall be no greater than 20, nor fewer than four. A course for fewer than four attendees or greater than 20 attendees may be considered under rare and exceptional circumstances.

Attendees shall be required to be in attendance for the full duration of the course. Failure to do so shall be reflected in the attendee's continual and final evaluations.

6.2 Presentation and organization

The course shall be presented during consecutive days, unless otherwise authorized by the approval body.

The total course time shall be calculated in accordance with the minimum requirements for each course type. If the course is given through interpreters, this time shall be increased as required to meet the learning objectives.

Time devoted to meals, breaks, or other free time is not included in the calculation of the course duration.