



9104-1

***“REQUIREMENTS FOR CERTIFICATION OF AVIATION, SPACE, AND DEFENSE
QUALITY MANAGEMENT SYSTEMS”***

**CHANGE PRESENTATION
IN SUPPORT OF
MARCH 2021 – RE-BALLOT PROCESS**

IAQG 9104-1:2022



- The 9104-1:2022 represents a **COMPREHENSIVE** revision to the previous standard.
- This update is focused on “clarification of requirements” and includes:
 - Clearly stated requirements, in the correct location within the standard
 - A new Organization Certification Analysis Process (OCAP)
 - Remote auditing allowance increased to 50%
 - Graphics and examples inserted to provide clarity
 - A new Performance Based Surveillance / Recertification Process (PBS/RP)

Core Team Members

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AEROSPACE STANDARD	9104.1
	Ballot Draft 17 March 2021 Supersedes January 2012 Technically equivalent settings published in all IAQG sectors
Requirements for Certification of Aviation, Space, and Defense Quality Management Systems	
RATIONALE	
<p>In early 2000, the International Aerospace Quality Group (IAQG) developed the Industry Controlled Other Party (ICOP) scheme to support the certification of Aviation, Space, and Defense (ASD) organization's Aerospace Quality Management System (AQMS). The scheme was built upon the existing International Accreditation Forum (IAF) and International Organization for Standardization (ISO)/International Electrotechnical Commission (IEC) requirements for certification of an organization's Quality Management System (QMS).</p> <p>The ICOP scheme and ISO/IEC requirements have changed over time, this revision incorporates those changes and strengthens the alignment between industry and current IAF requirements. Furthermore, this standard was revised to align with the latest revisions to the other ICOP scheme requirements documents.</p>	
FOREWORD	
<p>To assure customer satisfaction, ASD organizations must provide, and continually improve, safe and reliable products and services that meet or exceed customer and applicable statutory and regulatory requirements. The globalization of the industry and the resulting diversity of regional and national requirements and expectations have complicated this objective. Organizations have the challenge of purchasing products and services from external providers throughout the world and at all levels of the supply chain. External providers have the challenge of delivering products and services to multiple customers having varying quality requirements and expectations.</p> <p>Industry established the IAQG, with representatives from 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. This standard has been prepared by the IAQG.</p> <p>The IAQG develops documents that standardize QMS requirements to the greatest extent possible and can be used at all levels of the supply chain by organizations around the world. Their use should result in improved quality, cost, and delivery performance through the reduction or elimination of organization-unique </p>	

***Re-Ballot Draft
17 March 2021***

Rationale for change

– Align with ISO/IEC 17021-1:2015, ISO/IEC 17011:2017 criteria and IAF Mandatory Documents

» ISO as Supplemented by Aviation, Space & Defence industry unique Industry Controller Other Party (ICOP) sector scheme requirements

INTERNATIONAL STANDARD	ISO/IEC 17021-1
First edition 2015-06-15	
+	
<p>Conformity assessment – Requirements for bodies providing audit and certification of management systems – Part 1: Requirements</p> <p><i>Évaluation de la conformité – Exigences pour les organismes procédant à l'audit et à la certification des systèmes de management – Partie 1: Exigences</i></p>	

IAF Mandatory Documents (MD Series)

IAF publishes Mandatory Documents which are required to be used by accreditation bodies when accrediting certification/registration bodies to assure that they operate their programs in a consistent and equivalent manner. IAF Mandatory documents are not intended to establish, interpret, subtract from or add to the requirements of any ISO/IEC Guide or Standard, but simply to assure consistent application of those Guides or Standards.

Copies of all published IAF Mandatory Documents are available below.

[IAF MD 1-2016 IAF Mandatory Document for the Audit and Certification of a Management System Operated by a Multi-Site Organization](#)
(Issue 2, issued on 29 January 2016, application from 29 January 2016)
This document is for the audit and, if appropriate, the certification of management systems of organizations with a number of sites with a single management system.

[IAF MD 2-2017 IAF Mandatory Document for the Transfer of Accredited Certification of Management Systems](#)
(Issue 2, issued on 15 June 2017, application from 15 June 2018)
This document provides normative criteria on the transfer of accredited management system certification between certification bodies. The criteria may also be applicable in the case of acquisitions of certification bodies accredited by an IAF or Regional MLA signatory.

[IAF MD 3-2008 Advanced Surveillance and Recertification Procedures \(ASRP\)](#)
(Issue 1, Version 2, issued on 1 February 2008; Application from 15 September 2008)
This document provides normative criteria for advanced surveillance and recertification procedures (ASRP) for consistent application of clause 9.1.1 of ISO/IEC 17021:2008 for determining subsequent adjustments to the audit program. This document addresses Quality Management Systems (QMS) and Environmental Management Systems (EMS), in which IAF members have had experience of implementing ASRP or its predecessor methodologies. The use of ASRP is not mandatory, but if an accreditation body wishes to permit their accredited certification body and its client(s) to opt for the use of ASRP, it is a requirement of IAF that the certification body and its client(s) conform to this document and be able to demonstrate conformity to the accreditation body.

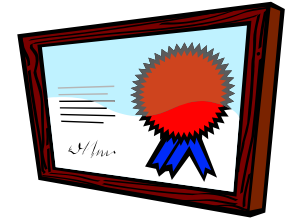
[IAF MD 4-2018 IAF Mandatory Document for the Use of Information and Communication Technology \(ICT\) for Auditing/Assessment Purposes](#)
(Issue 2, issued 04 July 2018, application from 04 July 2019)
The scope of this document is for the auditing/assessment of management systems, persons and product and is applicable to conformity assessment bodies and accreditation bodies. The use of ICT is not mandatory and may be used for other types of conformity assessment activities, but if used as part of the audit/assessment methodology, it is mandatory to conform to this document.

[IAF MD 5-2010 Determination of Audit Time of Quality, Environmental, and Occupational Health & Safety Management Systems](#)
(Issue 4, issued 07 May 2010, application from 07 May 2020)
This document is mandatory for the consistent application of the relevant clauses of ISO/IEC 17021-1 for audits of quality, environmental, and occupational health and safety management systems. All clauses of ISO/IEC 17021-1 continue to apply and this document does not supersede any of the requirements in that standard.

[IAF MD 5-2015 Determination of Audit Time of Quality and Environmental Management Systems](#)
(Issue 3, issued on 09 June 2015; Application from 09 June 2016) [SUPERSEDED BY IAF MD 5-2019]

SAE Aerospace an ISO International Group	AEROSPACE STANDARD	SAE AS91041
		Issued: 2012/01
		Superseding AS9104 Technically equivalent writings published in all IAGG sectors
Requirements for Aviation, Space, and Defense Quality Management System Certification Programs		
RATIONALE		
<p>After the initial publication of International Aerospace Quality Group (IAQG) 9104 standard in 2004, it became evident that a single standard containing all aspects of the Industry Controller Other Party (ICOP) Aerospace Quality Management System (AQMS) was too complex. It was decided that the standard be broken into three sections:</p> <ul style="list-style-type: none"> • 91041 – Requirements for Aviation, Space, and Defense Quality Management System Certification Programs; • 91042 – Requirements for Oversight of Aerospace Quality Management System Registration/Certification Programs; and • 91043 – Requirements for Aerospace Auditor Competency and Training Courses. <p>The requirements for oversight and AQMS auditor qualification information (91042 and 91043 respectively) were removed from the original 9104 text. The effort recast the total review of the initial standard, now re-designated as 91041, which is the keynote document of the 9104 series trilogy.</p>		
FOREWORD		
<p>In December 1998, the aviation, space, and defense industry established the IAQG with the goal of achieving significant improvements in quality and reductions in cost throughout the value stream.</p>		
ICOP Management Process		
Auditor Training, & Authentication	ICOP Industry Control & Oversight	

Robust, Conforming & Valued Output



Competent auditor + appropriate location + sufficient time = value added audit & report

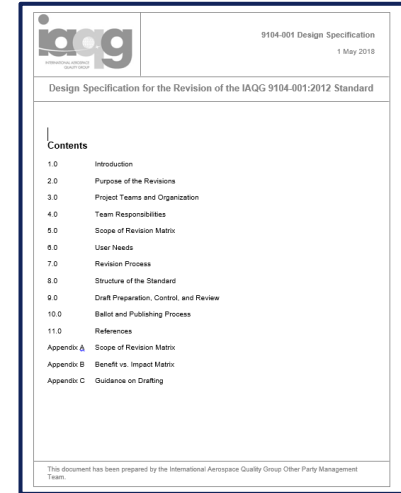
Scope of Revision


- The 9104-1 Document is a COMPLETE rewrite of the existing Standard
- The standard contains requirements that are complementary and in addition to:
 - ISO/IEC 17011
 - ISO/IEC 17021-1
 - IAF MD 1, 2, 4, 5,11,12
 - IAQG 9101, 9104-2 and 9104-3 (as recently revised)
- A significant “step up” in the drive to reduce QMS nonconformance and oversight with built in audit reductions for consistently high performing and conforming organizations

The requirements of these standards are NOT restated in 9104-1

9104-1 Design Specification

- The writing team established and followed the IAQG approved design specification during the re-ballot effort.
- The IAQG 9104-1 re-ballot draft standard:
 - complies with the IAQG five-year standard review criteria;
 - aligns with ISO/IEC 17021-1:2015, and ISO/IEC 17011:2017 criteria and IAF MDs;
 - ensures linkage to 9104-2, 9104-3, and 9101 standards;
 - aligns language with ISO 9000, ISO/IEC 17000, 9100:2016 principles, and the IAQG Dictionary;
 - incorporates existing IAQG OPMT resolutions and FAQs;
 - incorporates information derived from analysis of the Industry Controlled Other Party (ICOP); certification process



		9104-001 Design Specification 1 May 2018
Design Specification for the Revision of the IAQG 9104-001:2012 Standard		
Contents		
1.0	Introduction	
2.0	Purpose of the Revisions	
3.0	Project Teams and Organization	
4.0	Team Responsibilities	
5.0	Scope of Revision Matrix	
6.0	User Needs	
7.0	Revision Process	
8.0	Structure of the Standard	
9.0	Draft Preparation, Control, and Review	
10.0	Ballot and Publishing Process	
11.0	References	
Appendix A	Scope of Revision Matrix	
Appendix B	Benefit vs. Impact Matrix	
Appendix C	Guidance on Drafting	
This document has been prepared by the International Aerospace Quality Group Other Party Management Team.		

Key Process Changes

— The revised 9104-1 standard includes modified requirements for:

- IAQG committee, oversight and management of the Industry Controlled Other Party (ICOP) certification scheme, including introduction of Regional Management Structures (RMS)
- AB Witness Audits and File Reviews
- Audit Duration requirements
 - Audit Calculator replaced with a risk-based Organization Certification Analysis Process (OCAP) – with data driven from client information
 - Allowances for site specific audit duration based on risks and activity
 - A functional example OCAP tool is available for use
 - Option to utilize a Performance Based Surveillance and Recertification Process (PBS/RP)

Key Changes to 2012 Published Standard

General :

- In order to protect the ICOP scheme, participants must report observed conduct that could adversely effect the integrity of the ICOP certification scheme.
- Site Structures
 - Single and Multi-sites only
 - Per IAF MD 5 and MD 1
 - Eliminated Campus, Several Site and Complex (eliminates CSOC - Certification Structure Oversight Committee as well)

Why isn't "Campus" retained in 9104-1?

- In the 2012 version of 9104-1 the concept of Campus was introduced as it was permitted in the IAF Mandatory Document (MD1) at that time.
- Since publication of 9104-1, the IAF changed the requirements in MD1:
 - The method of calculation of audit duration used in the Campus Certification structure is no longer permitted (i.e. summing all the employees for all sites).
 - “Campus” is also not permitted in the calculation of audit duration for ISO 9001 certification or any other accredited management system certification.
 - IAF MD 1 requires the calculation of audit duration separately for each site.
- As the ICOP scheme is based on the requirements for accredited third- party certification it was not possible to retain the Campus approach.
- Organizations with consistently high performing management systems may consider the optional approach within the PBS/RP as an alternative.

Key Changes

— Certification Program:

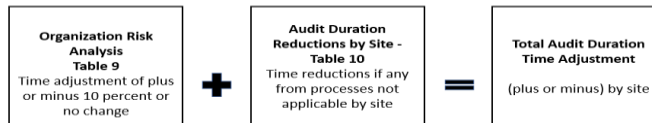
- The organization context, certification structure and audit time calculation have been revised to include a new Organization Certification Analysis Process (OCAP):
 - Aligned with ISO and IAF MDs
Non-applicable processes result in audit duration reduction from the established minimum baseline.
 - OCAP will be used to drive the audit duration baseline and includes increases, allowance for decreases and movement of audit duration between sites; with limitations
 - Re-ballot includes graphics that clarifies audit duration calculation

Example:

- Number of personnel at site = 150. It is a recertification audit. The site has no design process.
- Audit duration for the site from Table 8 = 7 days.
- Risk Analysis for the organization is "Low" so from Table 9 = a 10% reduction in audit duration.
- Reduction for no design process at the site from Table 10 = 20% reduction in audit duration.

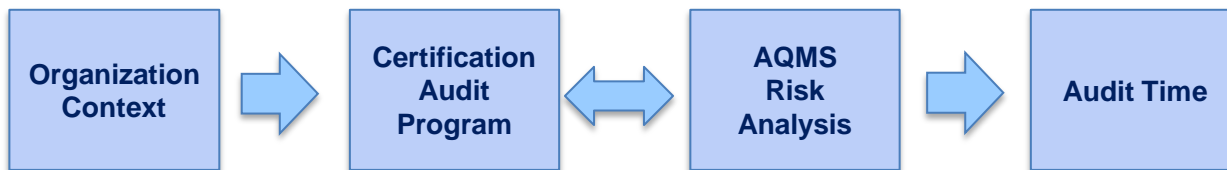
Total audit duration time adjustment is 10% + 20% = 30% or 2.1 days (7 x 0.3).

Total audit time for the audit (after adding calculated time for each site) is total audit duration (7 - 2.1 = 5 rounded to the nearest ½ day) plus 20% or [(5 x 0.2) + 5] = 6 days.



Key Changes - OCAP

- The Organization Certification Analysis Process (OCAP) includes the following concepts:



- AQMS Standard
- Core Processes
- Applicable IAQG Standards

- Physical Site(s)
- Virtual Sites
- QMS Processes

- Org. Performance
- Complexity
- Internal Audit Maturity
- Customer Satisfaction
- Resulting Risk:
 - High – Med – Low

- On-site
- Off-site
- Audit Duration
- MD 5 Baseline used for:
 - Planning
 - Auditing
 - Report writing

Key Changes

- **CB Certification Program: RISK ANALYSIS**
- Data to be supplied by the Client / Organization to the CB

Metric	Data Source	Low	Medium	High
On-time Delivery	Organization	Exceeds	Meets	Below
Conformity of Delivered Product or Service (e.g., item escape rate)	Organization	Exceeds	Meets	Below
Customer Satisfaction	Organization	Exceeds	Meets	Below
AQMS Process Effectiveness from Previous Audit Report	Process Effectiveness Assessment Reports (PEARs)	5	3-4	1-2

RISK ANALYSIS	% CHANGE
Low	- ≤10%
Medium	No Change
High	+ ≥10%

Risk is calculated at the “Organization” level and adds or subtracts from **AUDIT DURATION** by **SITE**

Key Changes to 2012 Published Standard



— Client Participation:

- The CB requires client participation in the audit planning process by submitting the audit plan to the CB prior to the audit. The CB provides feedback on the audit plan and may be lead audited as part of the audit process.
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IAQG Standards Matrix						
Aerospace Standards	Number	Release Date	Contractually Flowed Down & Compliant	Voluntarily Compliant	Voluntarily Partially Compliant	List Equivalent Industry Standard(s)
Foreign Object Damage (FOD) Prevention Program - Requirements for Aviation, Space, and Defense Organizations	9146	26-Apr-17				
Aerospace First Article Inspection Requirement	9102	6-Oct-14				

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- Client must submit their AQMS

IAQG Standards Matrix						
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Foreign Object Damage (FOD) Prevention Program - Requirements for Aviation, Space, and Defense Organizations	9146	26-Apr-17				
Aerospace First Article Inspection Requirement	9102	6-Oct-14				

Key Changes to 2012 Published Standard



- **CB Certification Program:**
 - Performance Based Surveillance/Recertification Process (PBS/RP)
 - Replaces IAF MD3
 - High Hurdle for Entry and remaining in the Program
 - Entry allowed only after 1 certification cycle (3 years)
 - Robust Internal Audit Program / ASD Lead Auditor Course
 - Low / no Complaints / Meet KPIs consistently
 - Good results / No major NCRs from CB audits
 - Methodology – All sites Initial
 - One-Third of sites for each surveillance + Central Function
NOTE: Using recertification audit duration for the sites
 - One-Third of sites at Recertification + Central Function
NOTE: Central Function can be a virtual site
 - Program adjustments when performance criteria is not continually met

Key Changes to 2012 Published Standard



— Audit Duration

- Flexibility to determine the amount of calculated audit duration to be used at each site.
- Re-ballot has increased allowance for use of remote audit using IAF MD4 (50% Max)
- Audit duration is based on the results of OCAP, justified and supported with documented information

— Audit report writing

- Off-site time for report writing may be used during performance of the on-site audit

— Auditor rotation

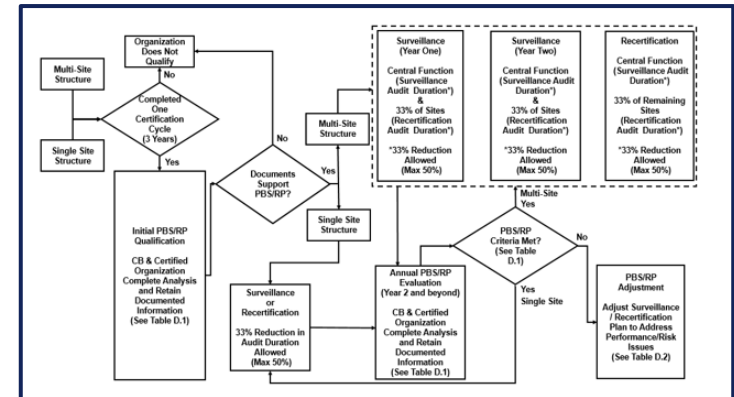
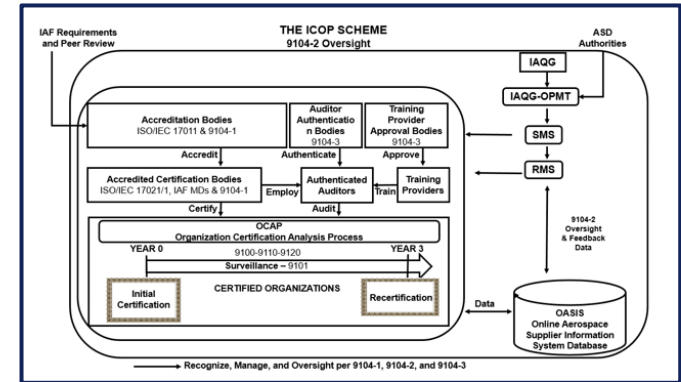
- Required after a maximum of 6 consecutive audits, unless justification is submitted and approved by AB

Key Changes to 2012 Published Standard

Appendices:

The re-ballot still includes appendices that provide clarification:

- ICOP Certification Model
- OASIS Feedback Model
- PBS/RP Process Flow



Summary



- The new version of the 9104-1:2022 standard represents a significant change to the Industry Controlled Other Party (ICOP) Aviation, Space & Defense (AS&D) Quality Management System (QMS) certification process based on lessons learned
- All changes are aligned with the revision objectives and are needed to improve, innovate, add value and promote confidence in the ICOP certification scheme
- We need your support to effectively implement these much needed changes.

***Industry Controlled Other Party
Aerospace Quality Management System Certification
Robust – Recognized – Valued***



INTERNATIONAL AEROSPACE QUALITY GROUP

