




IAF Mandatory Document



Application of ISO/IEC 17011 in Greenhouse Gas Validation and Verification (ISO 14065:2013)

Issue 1, Version 2

(IAF MD 14:2023)

The International Accreditation Forum, Inc. (IAF) facilitates trade and supports industry and regulators by operating a worldwide mutual recognition arrangement among Accreditation Bodies (ABs) in order that the results issued by Conformity Assessment Bodies (CABs) accredited by IAF members can be accepted globally.

Accreditation reduces risk for business and its customers by assuring them that accredited CABs are competent to carry out the work they undertake within their scope of accreditation. ABs that are members of IAF and their accredited CABs are required to comply with appropriate international standards and IAF mandatory documents for the consistent application of those standards.

ABs that are signatories to the IAF Multilateral Recognition Arrangement (MLA) are evaluated regularly by an appointed team of peers to provide confidence in the operation of their accreditation programs. The structure of the IAF MLA is detailed in IAF PL 3 - Policies and Procedures on the IAF MLA Structure and for Expansion of the Scope of the IAF MLA. The scope of the IAF MLA is detailed in the IAF MLA Status document.

The IAF MLA is structured in five levels: Level 1 specifies mandatory criteria that apply to all ABs, ISO/IEC 17011. The combination of a Level 2 activity(ies) and the corresponding Level 3 normative document(s) is called the main scope of the MLA, and the combination of Level 4 (if applicable) and Level 5 relevant normative documents is called a sub-scope of the MLA.

- The main scope of the MLA includes activities e.g. product certification and associated mandated standards e.g. ISO/IEC 17065. The attestations made by CABs at the main scope level are considered to be equally reliable.
- The sub scope of the MLA includes conformity assessment requirements e.g. ISO 9001 and scheme specific requirements, where applicable, e.g. ISO 22003-1. The attestations made by CABs at the sub scope level are considered to be equivalent.

The IAF MLA delivers the confidence needed for market acceptance of conformity assessment outcomes. An attestation issued, within the scope of the IAF MLA, by a body that is accredited by an IAF MLA signatory AB can be recognized worldwide, thereby facilitating international trade.

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Prepared by: IAF Technical Committee

Approved by: IAF Members

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Name for Enquiries: Elva Nilsen, IAF Corporate Secretary

Phone: +1 613 454-8159

Email: secretary@iaf.nu

Date: 26 February 2014

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INTRODUCTION TO IAF MANDATORY DOCUMENTS

The term “should” is used in this document to indicate recognised means of meeting the requirements of the standard. An Accreditation Body (AB) can meet these in an equivalent way. The term “shall” is used in this document to indicate those provisions which, reflecting the requirements of the relevant standard, are mandatory.

This document shall be read in conjunction with ISO/IEC 17011:2004 and IAF/ILAC-A5:11/2013.

Application of ISO/IEC 17011:2004. All clauses of ISO/IEC 17011:2004 continue to apply and this document provides additional criteria to that standard. This mandatory document is exclusively for accreditation of bodies applying ISO 14065:2013.

0. INTRODUCTION

ISO/IEC 17011 is an International Standard that sets out the requirements for bodies operating accreditation systems for Conformity Assessment Bodies.

The objective of this document is to enable Accreditation Bodies to harmonize their application of ISO/IEC 17011 for the accreditation of validation and verification bodies to ISO 14065.

ISO 14065 and the corresponding IAF MD 6 are program neutral documents and therefore Accreditation Bodies and peer evaluations may refer to specific GHG program as normative requirements.

This document provides normative criteria on the application of ISO/IEC 17011 for the accreditation of validation and verification bodies to ISO 14065.

This document follows the structure of ISO/IEC 17011. IAF normative criteria are identified by the letters "MD" followed with a reference number that incorporates the related requirements clause in ISO/IEC 17011. In all cases, a reference in the text of this document to "clause XXX" refers to a clause in ISO/IEC 17011, unless otherwise specified.

1. SCOPE

This document specifies normative criteria for Accreditation Bodies assessing and accrediting GHG validation and verification bodies to ISO 14065, in addition to the requirements contained within ISO/IEC 17011. It is also appropriate as a requirements document for the peer evaluation process for the IAF Multilateral Recognition Arrangement (MLA) among Accreditation Bodies.

2. NORMATIVE REFERENCES

For the purposes of this document, the normative references given in ISO/IEC 17011 and the following apply. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/IEC 17011:2004 Conformity Assessment – general requirements for accreditation bodies accrediting conformity assessment bodies

ISO 14065: 2013 Greenhouse gases: Requirements for greenhouse gas validation and verification bodies for use in accreditation or other forms of recognition

ISO 14064-3: 2006 Greenhouse gases: Specification with guidance for the validation or verification of greenhouse gas assertions

ISO 14066: 2011 Greenhouse gases: Competence requirements for greenhouse gas validation teams and verification teams

IAF/ILAC A5:11/ 2013 IAF/ILAC Multi-Lateral Mutual Recognition Arrangements (Arrangements): Application of ISO/IEC 17011:2004

IAF MD6: 2014 IAF Mandatory Document for the Application of ISO 14065:2013

3. TERMS AND DEFINITION

4. ACCREDITATION BODY

5. MANAGEMENT

6. HUMAN RESOURCES

MD 6.2.1 Annex B specifies the type of knowledge and skills that an Accreditation Body shall define for specific function, if not defined by the specific scheme.

7. ACCREDITATION PROCESS

7.1 Accreditation criteria and information

MD 7.1.1 Accreditation criteria shall be in accordance with ISO 14065 and any additional programme requirements where they exist.

MD 7.1.2(b) In greenhouse gas validation and verification, the Accreditation Body shall categorise the sector, for the purpose of scoping, an example can be found in Annex A. These sectors have been categorised on the basis of risk such as:

- The typical magnitude of emissions per facility, which correlates with potential financial liability of material misstatement within a regulated emissions trading system.
- Potential process emission, which typically correlates with increased complexity of emissions calculation methodology.
- Potential for non CO₂ emissions (CH₄, N₂O, etc.), typically correlates with increased complexity of emissions calculation methodology.
- Credibility (source), and application of emission factors.

7.5 Preparation for Assessment

MD 7.5.7 Validation and verification bodies' accreditation

In greenhouse gas validation and verification, the Note to clause 7.5.7 should also include the following:

- Initial approval of validation and verification personnel or control of their training.
- On-going monitoring of validation and verification personnel.
- Planning and conducting of validation and verification in accordance with GHG program requirement.
- Independent review and approval of the internal documentation completed during the validation or verification engagement and the validation/verification statement (opinion).

7.7 On-site Assessment

MD 7.7.3 Greenhouse gas validation and verification accreditation

In selecting witnessing of validation and verification activities, the Accreditation Body shall consider the risks associated with the sectors covered under the scope of accreditation.

Note: Annex A provides the scopes of accreditation that may be applicable for GHG emissions verification and GHG project validation.

The Accreditation Body should document the policy for the analysis and/or rationale used for selecting validation or verification activities to be witnessed. The witness programme should cover the scope of accreditation and be in accordance with GHG program and be consistent with national legal requirements, regulations, or other relevant authority that may stipulate level of witnessing. When deviating from this policy the justification should be documented.

Due to the nature and possible prolonged timescales to complete a verification activity, the Accreditation Body should recognise that a witness visit may provide only a limited demonstration of the verification team competence and process. Therefore the rationale should also consider the timing of a witness visit and the aspects to be witnessed to include pre data verification activities such as:

- Confirmation of sources, boundaries.
- Assessment of the control environment.

In addition a review of all internal documentation for an engagement and the final statement with the lead GHG verifier or independent reviewer can offer the opportunity for the V/VB to demonstrate the output from all the V/VB processes and the resolution of any issues identified by the team.

7.9 Decision-making and Granting Accreditation

MD 7.9.4. The accreditation certificate shall indicate the scope of accreditation and clearly specify the sector. Examples of included activities are shown in Annex A.

The accreditation certificate can also include the GHG program, where relevant, and sectors as defined in the GHG program.

Annex A**Scope of Accreditation
(Informative)****Greenhouse Gas Validation and Verification****Table 1.1 Organization Verification**

Sector	Examples of included activities
Power Generation and Electric Power Transactions	Transmission of electricity Generation of bulk electric power Transmissions from generating facilities to distribution centers and/or distribution to end users Renewable energy systems Purchased electricity, steam
General Manufacturing (physical or chemical transformation of materials or substances into new products)	Manufacturing – Electric and electronics equipment, industrial machinery Manufacturing – Food processing Note: Civil engineering, e.g. construction, will cover under this sector
Oil and Gas Exploration, Extraction, Production and Refining, and pipeline distribution, including Petrochemicals	Conventional exploration and production Oil sands and heavy oil upgrading Coal bed methane production Gas processing plants Gas well completions Transportation and distribution Natural gas storage and LNG operations Crude oil transportation Refining Petrochemical manufacturing Emissions from process vents in oil and gas treatment Process emissions (e.g. glycol dehydration, acid gas removal/sulphur recovery, hydrogen production, fluid catalytic cracker (FCC) catalyst regeneration) Venting emissions (e.g. vessel loading, tank storage and flashing, and venting of associated gas) Fugitive emissions (e.g. leaks from equipment and piping components) Non-routine events (e.g. gas releases during planned pipeline and equipment maintenance, releases from unplanned events)
Metals Production	Production of processing of ferrous metals Production of secondary aluminium

Sector	Examples of included activities
	Processing of non-ferrous metals, including production of alloys Production of coke Metal ore roasting or sintering, including pelletisation Production of pig iron or steel including continuous casting
Aluminum Production	Primary aluminium
Mining and Mineral Production	Production of cement clinker and production of lime or calcinations of dolomite or magnetite Glass and ceramic, mineral wool
Pulp, Paper and Print	
Chemical Production	Production of carbon black Production of ammonia Production of bulk organic chemicals by cracking, reforming, partial or full oxidation or by similar processes Production of hydrogen and synthesis gas by reforming or partial oxidation Production of soda ash and sodium bicarbonate Production of nitric acid Production of adipic acid Production of glyoxal and glyoxylic acid
Carbon Capture Storage	Capture and transport of GHG by pipelines for geological storage Geological storage of GHG in a storage site
Transport	Aviation Other transportation
Waste handling and disposal	Water and waste water treatment Landfill and Composting Facilities
Agriculture, Forestry and Other Land Use (AFOLU)	
General	Building Services/facilities management Education Hospital Others

Table 1.2 Project Validation and Verification

Sector	Example of included activities
Energy Industries (renewable/non-renewable sources)	Thermal energy generation from fossil fuels and biomass including thermal electricity from solar
	Energy generation from renewable energy sources
Energy Distribution	Electricity distribution
	Heat distribution
Energy Demand	Energy demand
Manufacturing Industries	Cement sector
	Aluminum
	Iron and steel
	Refinery
Chemical Industry	Chemical process industries
Construction	Construction
Transport	Transport
Mining/Mineral Production	Mining and mineral processes, excluding oil and gas industry, coal mine methane recovery and use
	Oil and gas industry, coal mine methane recovery and use
Metal Production	Metal production
Fugitive Emissions from Fuels (solid, oil and gas)	Mining and mineral processes, excluding oil and gas industry, coal mine methane recovery and use
	Oil and gas industry, coal mine methane recovery and use
Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride	Chemical process industries
	GHG capture and destruction
Solvents Use	Chemical process industries
Waste Handling and Disposal	Waste handling and disposal
	Animal waste management
Afforestation and Reforestation	
Agriculture	Agriculture
Carbon Capture and Storage of CO ₂ in Geological Formations	Carbon capture and storage of CO ₂ in geological formations

Annex B

Required Additional Knowledge and Skills for Accreditation Personnel Involved with the Application of ISO 14065 Activities (Normative)

The following table specifies the additional type of knowledge and skills that an Accreditation Body shall define for specific functions.

X: the Accreditation body shall define the criteria and depth of knowledge, for each of the functions which may be carried out by an individual or a group.

Competence	Accreditation Functions				
	Conducting the Application Review, Planning Assessments and Administration of Accreditation Program	Documentation Review	Office Assessment Team	Witness Assessment Team	Reviewing Assessment Reports and Making Accreditation Decisions
Understanding of the principles and process of validation and/or verification		X	X	X	X
Understanding of additional GHG program and/or regulatory requirements for the accreditation body and validation and/or verification bodies where applicable	X	X	X	X	X
Ability to review and understand the CAB's scope of accreditation to determine competence needed for the assessment	X	X			

Competence	Accreditation Functions				
	Conducting the Application Review, Planning Assessments and Administration of Accreditation Program	Documentation Review	Office Assessment Team	Witness Assessment Team	Reviewing Assessment Reports and Making Accreditation Decisions
Understanding of the CAB's scope of work and ability to confirm that the qualification of its personnel is appropriate for that scope of work		X	X	X	
Ability to determine the appropriate duration of assessment	X				
Ability to understand and assess the validation and/or verification team's process for conducting a risk-based assessment of all GHG sources, sinks and reservoirs and sampling an appropriate number of systems, sources, and calculation methodologies to look for errors or omissions within the reported GHG assertion within that sector.			X	X	X
Ability to identify the correctness of an organization's geographical boundaries, organizational boundaries, and reported units (i.e. equity share, operational control, or financial control)			X	X	X

Competence	Accreditation Functions				
	Conducting the Application Review, Planning Assessments and Administration of Accreditation Program	Documentation Review	Office Assessment Team	Witness Assessment Team	Reviewing Assessment Reports and Making Accreditation Decisions
Understanding of ISO 14064-1 or relevant GHG program requirements	X	X	X	X	X
Understanding of ISO 14064-2 or relevant GHG program requirements	X	X	X	X	X
Understanding of ISO 14064-3 or relevant GHG program requirements	X	X	X	X	X
Understanding of ISO 14065 and ISO 14066 or relevant GHG program requirements	X	X	X	X	X
Understanding of IAF MD 6	X	X	X	X	X
Understanding of this IAF MD	X				

End of IAF Mandatory Document – Application of ISO/IEC 17011 in Greenhouse Gas Validation and Verification (ISO 14065).

Further Information:

For further Information on this document or other IAF documents, contact any member of IAF or the IAF Secretariat.

For contact details of members of IAF see – IAF Web Site - <http://www.iaf.nu>.

Secretariat:

Name for Enquiries: Elva Nilsen, IAF Corporate Secretary

Phone: +1 613 454-8159

Email: secretary@iaf.nu