





EU CORSIA Africa and Caribbean

REGIONAL WORKSHOP

CORSIA IMPLEMENTATION AFTER ICAO 41st GENERAL ASSEMBLY

Working for quieter and cleaner aviation.

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Johannesburg, 10-13 May 2023



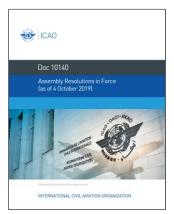




Amendment I to CORSIA SARPs, Environmental Protection - Annex 16, Volume IV

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ICAO Policies, SARPs and Guidance on CORSIA





ICAO Assembly Resolution
A41-22 - Consolidated statement
of continuing ICAO policies and
practices related to environmental
protection — Carbon Offsetting and
Reduction Scheme for International
Aviation (CORSIA)





Standards and Recommended Practices (SARPs)

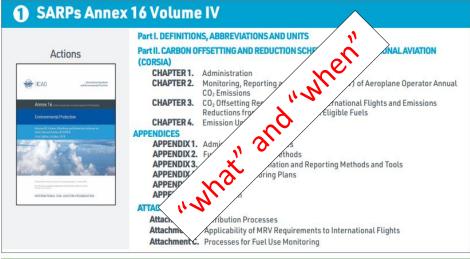
Annex 16, Volume IV to the Convention on International Civil Aviation

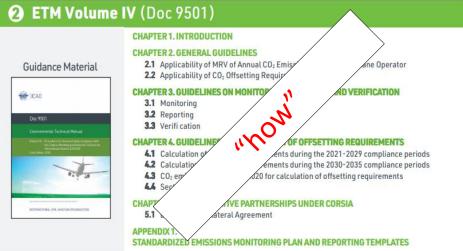


Guidance

Environmental Technical Manual, Volume IV



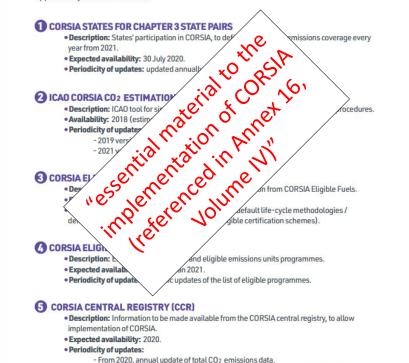




3 ICAO CORSIA Implementation Elements

(Directly referenced in the SARPs)

Five ICAO CORSIA Implementation Elements will be reflected in fourteen ICAO documents directly referenced in the Volume IV of Annex 16 and will contain material to be approved by the ICAO Council for publication by ICAO to support such Annex. These publications will be made available on the ICAO CORSIA website after they are approved by the ICAO Council.



- From 2025, triennial update of information on emissions units and compliance.

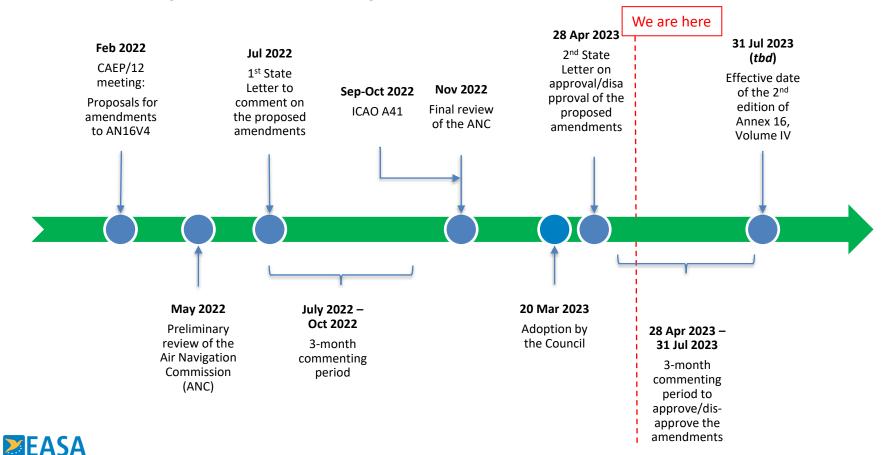
Annex 16, Volume IV, 2nd Edition

→ Like other ICAO Annexes, Annex 16, Volume IV is being maintained on a regular basis, based on the inputs from technical experts

- → Task C.01 of the CAEP/12 Work Programme: Maintenance of Annex 16, Volume IV and related guidance material
 - → CAEP/12-WP/20 (February 2022): Proposed amendments to Annex 16, Volume IV and ETM, Volume IV
- → In addition, consequential amendments arising from amendments to Annex 7 as well as from 41st session of the ICAO Assembly



Annex 16, Volume IV, 2nd Edition - Timeline







Proposed amendments in ICAO Annex 16, Volume IV-CORSIA, Second Edition

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Proposed Amendment 1

- → Recommendations of the twelfth meeting of the Committee on Aviation Environmental Protection (CAEP/12); Amendment 7 to Annex 7 "Aircraft Nationality and Registration Marks; and the adoption by the 41st Session of the ICAO Assembly of Resolution A41-22, Consolidated statement of continuing ICAO policies and practices related to environmental protection Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA)"
 - a) clarification on technical matters related to monitoring, reporting and verification provisions;
 - b) definition of an <u>offsetting threshold for aeroplane operators with low levels of international aviation</u> <u>activity;</u>
 - c) clarification on the calculation of **offsetting requirements for new aeroplane operators that do not qualify** as new entrants;
 - d) alignment of verification-related contents with the latest applicable editions of Standards of the International Organization for Standardization (ISO) referenced in Annex 16, Volume IV;
 - e) consequential amendments arising from Amendment 7 to Annex 7; and
 - f) consequential amendments arising from Assembly Resolution A41-22.



Proposed Amendment 1







CHAPTER 2 MRV OF AO ANNUAL CO2 EMISSIONS

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Monitoring, Reporting and Verification of AO annual CO2 emissions

→ APPLICABILITY OF MRV REQUIREMENTS

2.1.5 Recommendation. — If the aeroplane operator is close to the threshold of MRV applicability from international flights, it should consider engaging with the State to which it is attributed for guidance. The State should carry out oversight of the aeroplane operators attributed to it, and engage with any that it considers may be close to or above the threshold.

The aeroplane operator with annual CO2 emissions below the threshold may choose to voluntarily engage with the State to which it is attributed. Also, an aeroplane operator that was within the scope of applicability the previous year but falls outside of scope in the given year, should notify the State to which it is attributed of this fact.



Monitoring, Reporting and Verification of AO annual CO2 emissions

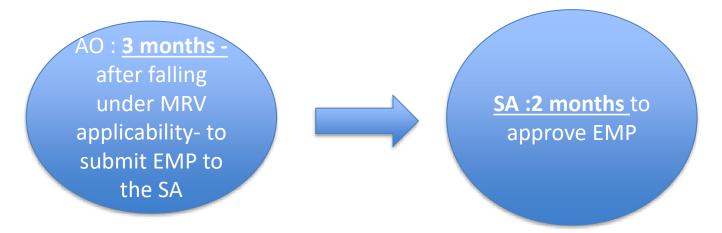
- \rightarrow MONITORING OF CO2 EMISSIONS: <u>2021-2035</u> period- <u>2.2.1.3</u>
- 2.2.1.3.5. The aeroplane operator that meets the MRV requirements after 1 January 2021 for the first time without qualifying as a new entrant may use either a Fuel Use Monitoring Method or the ICAO CORSIA CO2 Estimation and Reporting Tool (CERT), in the year when it first meets the requirements (year y).
- 2.2.1.3.6 If the aeroplane operator that meets the MRV requirements after 1 January 2021 for the first time without qualifying as a new entrant does not have sufficient information to use a Fuel Use Monitoring Method, the State to which the aeroplane operator is attributed shall, at its discretion, approve the use of the ICAO CORSIA CO2 Estimation and Reporting Tool (CERT) for a period lasting no later than 30 June in the year after the aeroplane operator first meets the MRV requirements. (year y + 1).



Proposed amendments for EMP

EMISSIONS MONITORING PLAN

→ 2.2.2.3 The aeroplane operator that meets the MRV requirements after 1 January 2021 for the first time without qualifying as a new entrant shall submit an Emissions Monitoring Plan within three months of falling within the scope of applicability, and the State shall approve it within two months of receiving a complete Emissions Monitoring Plan.





Proposed amendments for EMP

2.2.2.7 In cases where the aeroplane operator that meets the MRV requirements <u>after 1 January 2021</u> <u>for the first time</u> without qualifying as a new entrant falls into scope of MRV **near the end of year** y**,** or does not realise that it has fallen into scope until the beginning of year y + 1, **the operator shall engage with its attributed State as soon as possible**

- → **2.2.2.8 Recommendation:** "the aeroplane operator and the State **should** determine **how much**, if any, **flexibility is needed** to meet the deadlines for submitting an Emission Monitoring Plan, State approval of the Emissions Monitoring Plans and completion of the verification process"
- → 2.2.2.9 Recommendation.— The aeroplane operator should engage with their State well before falling into scope and to include Emissions Monitoring Plan development as part of any planning process (e.g. mergers, splits, subsidiary development, expanding from domestic to international operations) or other change in status or activity which may cause them to fall into the scope of applicability



Monitoring, Reporting and Verification of AO annual CO2 emissions

→ 2.4 VERIFICATION OF CO₂ EMISSIONS

- **2.4.1.2** Before engaging the verification body, the aeroplane operator should conduct a check to confirm the verification body's accreditation status for the purpose of SARPs Annex 16, Vol IV. **Supporting resources** for this purpose include the list of verification bodies accredited in States, included within the ICAO document entitled "CORSIA Central Registry (CCR): Information and Data for Transparency" available on the ICAO CORSIA website, as well as lists of accredited verification bodies with their corresponding CORSIA scopes provided through the accrediting national accreditation body.
- **2.4.1.4** A verification body shall conduct the verification according to ISO 14064-3:2019, and the relevant requirements in Appendix 6 Section 3
- **2.4.2.1** A verification body shall be accredited to ISO/IEC 17029:2019, ISO 14065:2020
- **2.4.2.2** A national accreditation body shall be working in accordance with ISO/IEC 17011:2017 and the relevant requirements in Appendix 6, Section 4.







CHAPTER 3 CO₂ offsetting requirements from international flights and emissions reductions from the use of CEF

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Proposed amendments for offsetting- requirements for new AO that do not qualify as new entrants

→ 3.2.5 When an aeroplane operator does not have CO2 emissions covered by offsetting requirements (i.e. no flights between participating states) in 2019, and does not qualify as a new entrant, the State shall use a value of 10 000 tonnes of CO2 as the 85% of total annual AO's Co2 emissions in 2019 covered by offsetting in the given year y



Definition of a threshold for aeroplane operators with low level of international activity

→ **3.4.2** If the sum of the aeroplane operator's offsetting requirements in the three years of a given compliance period (*OR1,C* + *OR2,C* + *OR3,C*) is less than <u>3 000 tonnes of CO2</u>, then the aeroplane operator has no offsetting requirements for the compliance period

Note: If the sum of the aeroplane operator's offsetting requirements in the three years of a given compliance period (OR1,C + OR2,C + OR3,C) is less than 3 000 tonnes of CO2, the aeroplane operator **may choose to voluntarily engage** with the State to which it is attributed in order to offset such emissions.







CHAPTER 4 Emissions Units

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Proposed amendments for EMISSIONS UNITS

CANCELLING CORSIA ELIGIBLE EMISSIONS UNITS

→ **4.2.3 Recommendation.**— The **State should develop procedures** to ensure aeroplane operators are notified of programme eligibility changes involving a decision by the Council to immediately revoke eligibility **within 14 days** of the publication of the changes by ICAO.







Appendix 2 Fuel use monitoring methods

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Fuel use monitoring methods

→ 2.2 METHOD A

"For **short term leasing** where the previous or subsequent flight(s) (or both) is performed **by another aeroplane operator**, then the necessary data shall be acquired from the third party. When this information is not available, **the use of block-on or block-off data is allowed**"



Fuel use monitoring methods

→ 2.6.1 Fuel Allocation with Block Hour

2.6.1.1"For an aeroplane operator which can clearly distinguish between international and domestic fuel uplifts, the aeroplane operator shall compute, for each aeroplane type, the average fuel burn ratios by summing up all actual fuel uplifts <u>determined by using the Fuel Use Monitoring Method Fuel Uplift</u> from international flights, divided by the sum of all actual block hours from international flights for a given year, according to the formula:

$$AFBR_{AO,AT} = \frac{\sum_{N} U_{AO,AT,N}}{\sum_{N} BH}$$

AFBR AO, AT = Average fuel burn ratios for aeroplane operator (AO) and aeroplane type (AT) (in tonnes per hour);

UAO, AT, N = Fuel uplifted for the international flight N for aeroplane operator (AO) and aeroplane type (AT) determined using **the Fuel Use Monitoring Method Fuel Uplift** (in tonnes): and

BHAO, AT, N = Block hour for the international flight N for aeroplane operator (AO) and aeroplane type (AT) (in hours).







Appendix 5 Reporting

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Content of the ER from AO to SA

→ Table A5-1 Content of an aeroplane operator Emissions Report

	<u> </u>	
Field #	Data Field	Details
Field 1	Aeroplane operator information	1.a Name of aeroplane operator
	information	1.b Detailed contact information of aeroplane operator Address of aeroplane operator
		1.c Name of a point of contact Contact information for the person within the aeroplane operator's company who is responsible for the Emissions Monitoring Plan
		1.d Method and identifier used to attribute an aeroplane operator to a State in accordance with Part II, Chapter 1, 1.2.4
		1.e State
Field 3	Information to identify the verification body and	3.a Name and contact information of the verification body
	Verification Report the national accreditation body	3.b Verification Report to be a separate report from aeroplane operator's Emissions Report Name and contact information of the national accreditation body
		Note.— Verification Report to be a separate report from aeroplane operator's Emissions Report.



Content of the ER from the AO to SA

Field 4	Reporting year	 4.a Year during which emissions were monitored 4.b Date on which Emissions Report was compiled 4.c Version of the Emissions Report 	
Field 5	Fuel Use Monitoring Method	 5.a Indicate whether the aeroplane operator used ICAO CORSIA CO₂ Estimation and Reporting Tool (CERT) 5.b Indicate whether the aeroplane operator used the Fuel Allocation with Block Hour method during the reporting year 	
Field ≶ 6	Type and mass of fuel(s) used	 56.a Total fuel mass per type of fuel: Jet-A (in tonnes) Jet-A1 (in tonnes) TS-1 (in tonnes) No. 3 Jet fuel (in tonnes) Jet-B (in tonnes) AvGas (in tonnes) Note 1 Above totals to include CORSIA eligible fuels. Note 2 The aeroplane operator using the ICAO CORSIA CERT, as described in Appendix 3, does not need to report Field 56. 	
Field 7	Fuel density	7.a Specify whether standard and/or actual fuel density was used to determine the fuel uplift in the reporting year	



Content of the ER from the AO to SA

→ Table A5-2. Supplementary information to an aeroplane operator's Emissions Report if emissions reductions from the use of each CORSIA eligible fuel being claimed

Field #	Data Field	Details	
Field 1	Aeroplane operator information and reporting information	a. Name of aeroplane operator	
	Toporting information	a. Address of aeroplane operator	
		a. Reporting year	



Content of the ER from the AO to SA

Field 23	Identification of the producer of the neat	23.a Name of producer of the neat CORSIA eligible fuel 23.b Contact information Address of the producer of the	
	CORSIA eligible fuel	23.b Contact information Address of the producer of the neat CORSIA eligible fuel	
Field 34	Fuel Production	34.a Production date of the neat CORSIA eligible fuel	
		34.b Production location of the neat CORSIA eligible fuel	
		34.c Batch identification number of each batch of neat CORSIA eligible fuel	
		34.d Mass of each batch of neat CORSIA eligible fuel produced	
Field 45	Fuel type	45.a Type of fuel (i.e., Jet-A, Jet-A1, TS-1, No. 3 Jet fuel, Jet-B, AvGas)	
		45.b Feedstock used to create the neat CORSIA eligible fuel	
		45.c Conversion process used to create the neat CORSIA eligible fuel	
• • •	•••		
Field 78	Life cycle emissions values of the CORSIA eligible fuel	78.a Default or Actual Life Cycle Emissions Value (LS _{fCEF}) for given CORSIA eligible fuel f, which is equal to the sum of 78.b and 78.c (in gCO ₂ e/MJ rounded to the nearest whole number)	
		78.b Default or Actual Core Life Cycle Assessment (LCA) value for given CORSIA eligible fuel f (in gCO ₂ e/MJ rounded to the nearest whole number)	
		78.c Default Induced Land Use Change (ILUC) value for given CORSIA eligible fuel f (in gCO ₂ e/MJ rounded to the nearest whole number)	



Content of the ER from AO to SA

Field 89	Intermediate purchaser	89.a Name of the intermediate purchaser
		89.b Contact information Address of the intermediate purchaser
		Note.— This information would be included in the event that the aeroplane operator claiming emissions reductions from the use of CORSIA eligible fuels was not the original purchaser of the fuel from the producer (e.g., the aeroplane operator purchased fuel from a broker or a distributor). In those cases, this information is needed to demonstrate the complete chain of custody from production to blend point.
Field 910	Party responsible for shipping of the neat CORSIA eligible fuel to the fuel blender	910.a Name of party responsible for shipping of the neat CORSIA eligible fuel to the fuel blender 910.b Contact information Address of party responsible for
	the ruer stemeer	shipping of the neat CORSIA eligible fuel to the fuel blender
Field 1011	Fuel Blender	1011.a Name of the party responsible for blending neat CORSIA eligible fuel with aviation fuel
		1011.b Contact information Address of the party responsible for blending neat CORSIA eligible fuel with aviation fuel
•••	•••	•••



Content of Emissions Report from SA to ICAO

→ 3.1 List of aeroplane operators attributed to the State and verification bodies accredited in a State

Table A5-3. State Report of aeroplane operators attributed to the State and verification bodies accredited in the State

Field #	Data Field	Details
Field 1	List of aeroplane operators attributed to the State	Name and contact information of aeroplane operator Aeroplane operator Code Address of aeroplane operator Code Method and identifier used to attribute aeroplane
Field 2	List of verification bodies	operator to a State in accordance with Part II, Chapter 1, 1.2.4 2.a State
1 10.0 2	accredited in the State (for a given year of compliance)	2.b Name of verification body and accreditation certificate number
		2.c State of verification body registration
		2.d Copy of accreditation certificate or weblink to online certificate
		2.e Weblink to main national accreditation body website



Content of Emissions Report from a State to ICAO

→ 3.2 Emissions Report from a State to ICAO

Note 1.— Information on the following fields can be found in the ICAO document entitled "CORSIA Central Registry (CCR): Information and Data for Transparency" that is available from the ICAO CORSIA website:

a) Total CO2 emissions for 2019, and 85% of total CO2 emissions for 2019, aggregated for all aeroplane operators on each State pair;

- b) Total annual CO2 emissions aggregated for all aeroplane operators on each State pair (with identification of State pairs subject to offsetting requirements i.e., Part II, Chapter 3 in a given year) (Field 1); and
- c) For each aeroplane operator:
- Aeroplane operator name;
- State in which aeroplane operator is attributed;
- Reporting year;
- Total annual CO2 emissions (Field 2);
- Total aggregated annual CO2 emissions for all State pairs subject to offsetting requirements, as defined in Part II, Chapter 3, 3.1 (Field 3); and
- Total aggregated annual CO2 emissions for all State pairs not subject to offsetting requirements, as defined in Part II, Chapter 3, 3.1 (Field 4)



Used of CEF in a State

→ Table A5-6 CORSIA eligible fuels supplementary information to the Emissions Report from a State to ICAO

Field#	Data Field	Details	Notes
Field 1	Production	1a Production year of CORSIA eligible fuel claimed	
		1b Producer of CORSIA eligible fuel	
		1c Production location of the neat CORSIA eligible fuel	
• • •	•••	•••	•••



Used of CEF in a State

Field 3	CORSIA eligible fuel claimed	3a Fuel types (i.e., type of fuel, feedstock and conversion process)	This would provide a total mass for each fuel type being claimed by all aeroplane
		3b Total mass of the neat CORSIA eligible fuel (in tonnes) per fuel type being claimed by all the aeroplane operators attributed to the State	operators attributed to the State.
		3c Default or Actual Life Cycle Emissions Value (LCEF) for given CORSIA eligible fuel	
• • •		•••	•••



Content of the Emissions Unit cancellation report from AO to State

→ Table A5-7. Emissions Unit Cancellation Report from aeroplane operator to State

Field #	Data Field	Details	
Field 1	Aeroplane operator information	1a Name of aeroplane operator 1b Detailed contact information Address of aeroplane operator	
		1c Name of a point of contact-Contact information for the person within the aeroplane operator's company who is responsible for the Emissions Unit Cancellation Report	
		1d Unique identifier by which an aeroplane operator is attributed to a State, in accordance with Part II, Chapter 1, 1.2.4	
		1 e State	



Content of the Emissions Unit cancellation report from AO to State

Field 5	Consolidated identifying information for cancelled emissions	For each batch of cancelled emissions units (batch defined as a contiguous quantity of
	units	serialized emissions units), identify the following:
		5 aQuantity of emissions units cancelled;
		5b Start of serial numbers;
		5c End of serial numbers;
		5d Date of cancellation;
		5e Eligible emissions unit programme CORSIA Eligible Emissions Unit Programme;
		5f Unit type;
		5g Host country;
		5h Methodology;
		5i Demonstration of unit date eligibility;
		5j Programme-designated registry name;
		5k Unique identifier for registry account to which the batch was cancelled;
		5l Aeroplane operator in whose name the unit was cancelled; and
		5m The unique identifier for the registry account from which the cancellation was initiated.



Content of the Emissions Unit Cancellation Report from State to ICAO

→ Table A5-8. Content of Emissions Unit Cancellation Report from State to ICAO

Field #	Data Field	Details	
Field 5	Consolidated identifying information for cancelled emissions units	For each batch of cancelled emissions units (batch defin as a contiguous quantity of serialized emissions unit identify the following:	
		5.a Quantity of emissions units cancelled;	
		5.b Start of serial numbers;	
		5.c End of serial numbers;	
		5.d Date of cancellation;	
		5.e Eligible emissions unit programme CORSIA Eligible Emissions Unit Programme;	
		5.f Unit type;	
		5.g Host country;	
		5.h Methodology;	
		5.i Demonstration of unit date eligibility; and	
		5.j Programme-designated registry name.	







Appendix 6 VERIFICATION

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2. Verification Body

- → 2.1. The verification body shall be accredited to ISO/IEC 17029:2019 and ISO 14065:2020
- → 2.2 Management of impartiality (ISO 14065:2020 section 5.4)
- → 2.3 Personnel (ISO 14065:2020 section 6.2)
- → 2.4 Process for the competence of personnel (ISO 14065:2020 section 7.3.2)
- → 2.5 Management process for the competence of personnel (ISO 14065:2020 section 7.3.5)
- → 2.6 Management process for the competence of personnel (ISO 14065:2020 section 7.3.6)
- → 2.7 Management process for the competence of personnel (ISO 14065:2020 section 7.3.7)
- → 2.8 Pre-engagement (ISO 14065:2020 section 9.2)
- → 2.9 Engagement (ISO 14065:2020 section 9.3)
- → 2.10 Records (ISO 14065:2020 section 9.11)
- → 2.11 Confidentiality (ISO 14065:2020 section 10.4)



3. Verification of Emissions Report and Emissions Unit Cancellation Report

- → 3.1 Type of engagement (ISO 14064-3:2019 section 5.1.2)
- → 3.2 Level of assurance (ISO 14064-3:2019 section 5.1.3)
- → 3.3 Objectives (ISO 14064-3:2019 section 5.1.4)
- → 3.4 Scope (ISO 14064-3:2019 section 5.1.6)
- → 3.5 Materiality (ISO 14064-3:2019 section 5.1.7)
- → 3.6 GHG data and information (ISO 14064-3:2019 section 6.1.3)
- → 3.7 Circumstances requiring a site or facility visit (ISO 14064-3:2019 section 6.1.4.2)
- → 3.8 Validation or verification plan (ISO 14064-3:2019 section 6.1.5)
- → 3.9 Evidence-gathering plan (ISO 14064-3:2019 section 6.1.6)
- → 3.10 General (ISO 14064-3:2019 section 6.3.2.1)
- → 3.11 Verification Report (ISO 14064-3:2019 section 6.3.3)
- → 3.12 Independent review (ISO 14064-3:2019 section 8)
- → 3.13 Facts discovered after the verification/validation (ISO 14064-3:2019 section 10)



4. National Accreditation Body

→ A national accreditation body shall be working in accordance with ISO/IEC 17011:2017 and the following requirements

→ 4.1 Accreditation cycle (ISO 17011:2017 section 7.9.3)







Implementation Task List for States

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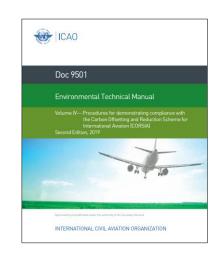
Implementation Task List

- → Essential steps to be followed by a State to implement the proposed amendment to Annex 16, Volume IV will include:
 - → Identification of the rule-making process necessary to transpose the new ICAO provisions into national regulations
 - → Establishment of a national implementation plan that takes into account the new ICAO provisions
 - Conducting a gap analysis between the new ICAO provisions and national framework
 - Drafting of the necessary modification(s) to the national regulations
 - → Official adoption of the national regulations and means of compliance
 - → Filing of State differences with ICAO, if necessary



Supporting Documentation

- → Contents of ETM, Volume IV are being revised to align with the second edition of Annex 16, Volume IV
- → ETM, Volume IV (3rd edition) expected to be published by end 2023



Title	Type (PANS/TIME 1/6:)	Dlanned publication data
	(PANS/TI/Manual/Circ)	Planned publication date
Environmental Technical Manual,	Updated guidance	2023
Volume IV — Procedures for		
demonstrating compliance with the		
Carbon Offsetting and Reduction		
Scheme for International Aviation		
(CORSIA) (Doc 9501), Edition 3		



Supporting Documentation (external)

→ Annex 16, Volume IV contains various references to external (non-ICAO) documentation, in particular related to verification and accreditation of verifiers

Title	External Organization	Publication date
IAF MD 6:2014	IAF	2014
ISO 14066:2011	ISO	2011
ISO/IEC 17011:2017	ISO	2017
ISO/IEC 17029:2019	ISO	2019
ISO 14064-3:2019	ISO	2019
ISO 14065:2020	ISO	2020







Thank you for your attention!

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