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**Capacity Building for CO₂ mitigation from international aviation - Fourth Seminar
Mombasa, Kenya
12-14 December, 2018**

Moving forward on CORSIA Implementation
By Ms. Jane Hupe, Deputy Director, Environment, ICAO



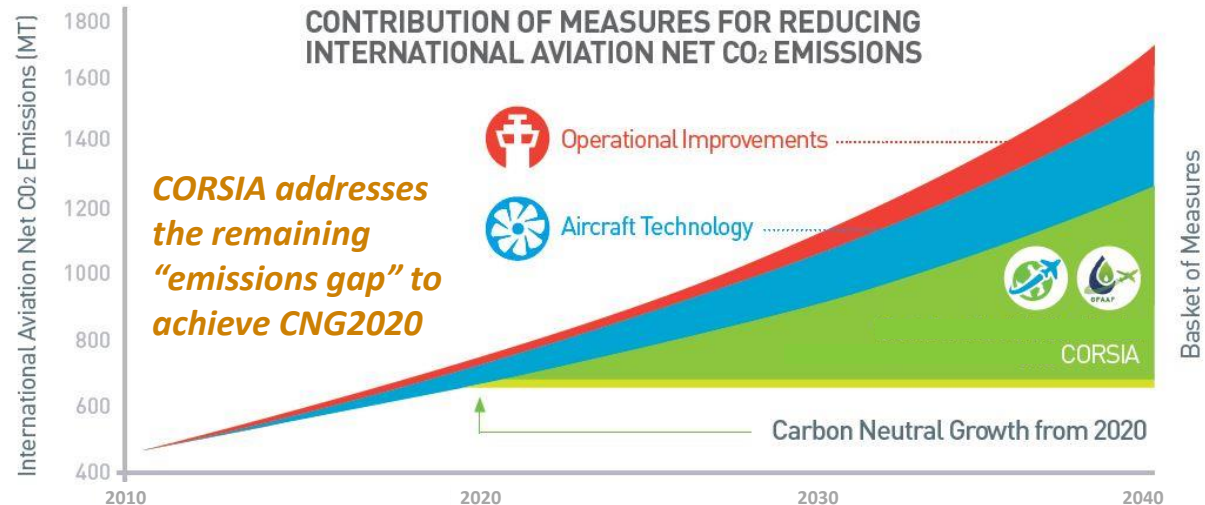


CORSIA

Adopted through Assembly Resolution 39-3 and is the **first global MBM scheme** for any industry sector

To achieve ICAO's global aspirational goal of carbon neutral growth from 2020 (CNG 2020), CORSIA is one complementary element in the basket of measures to:

- aircraft technology
- operational improvements
- sustainable aviation fuels



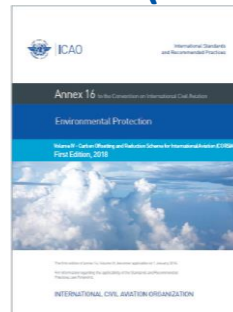


ICAO Policy



**Chicago Convention
ICAO Assembly Resolutions
A39-1, A39-2 and A39-3:**
Consolidated statement of continuing ICAO policies and practices related to environmental protection

ICAO Standards and Recommended Practices (SARPs)



Annex 16 - Environmental Protection:
Volume I, Aircraft Noise
Volume II, Aircraft Engine Emissions
Volume III, Aeroplane CO₂ Emissions
Volume IV, CORSIA **NEW**

ICAO Guidance



Various guidance on noise, LAQ and climate change, e.g.:
Environmental Assessment of Proposed ATM Operational Changes (Doc 10031)
Environmental Technical Manual Volume IV (Doc 9501) NEW



CORSIA Package

1. Standards and Recommended Practices (SARPs) – Annex 16, Volume IV
 - Mandatory actions by States and operators (the “what” and “when”) to implement CORSIA
 - Adopted in June 2018
2. Environmental Technical Manual (ETM) Volume IV
 - Guidance on the process (the “how”) to implement CORSIA
3. Implementation Elements
 - Directly referenced in Annex 16, Volume IV, and essential information for the implementation of CORSIA



Assembly Resolution A39-3

- Key design features of CORSIA:
 - Phased implementation (paragraph 9)
 - Emissions coverage: route-based approach (paragraph 10)
 - Offsetting requirements (paragraph 11)
 - New entrants (paragraph 12)
 - Technical exemptions (paragraph 13)
 - Review mechanism (paragraphs 9g and 18)
- CORSIA implementation features:
 - Monitoring, Reporting and Verification (paragraphs 15, 20a and 20b)



76 States (75.96% of international aviation activity) to participate in the pilot phase
(As of 20 November 2018)

Phased Implementation



Second phase participation criteria:

- 90% of global RTK
- 0.5% of RTK

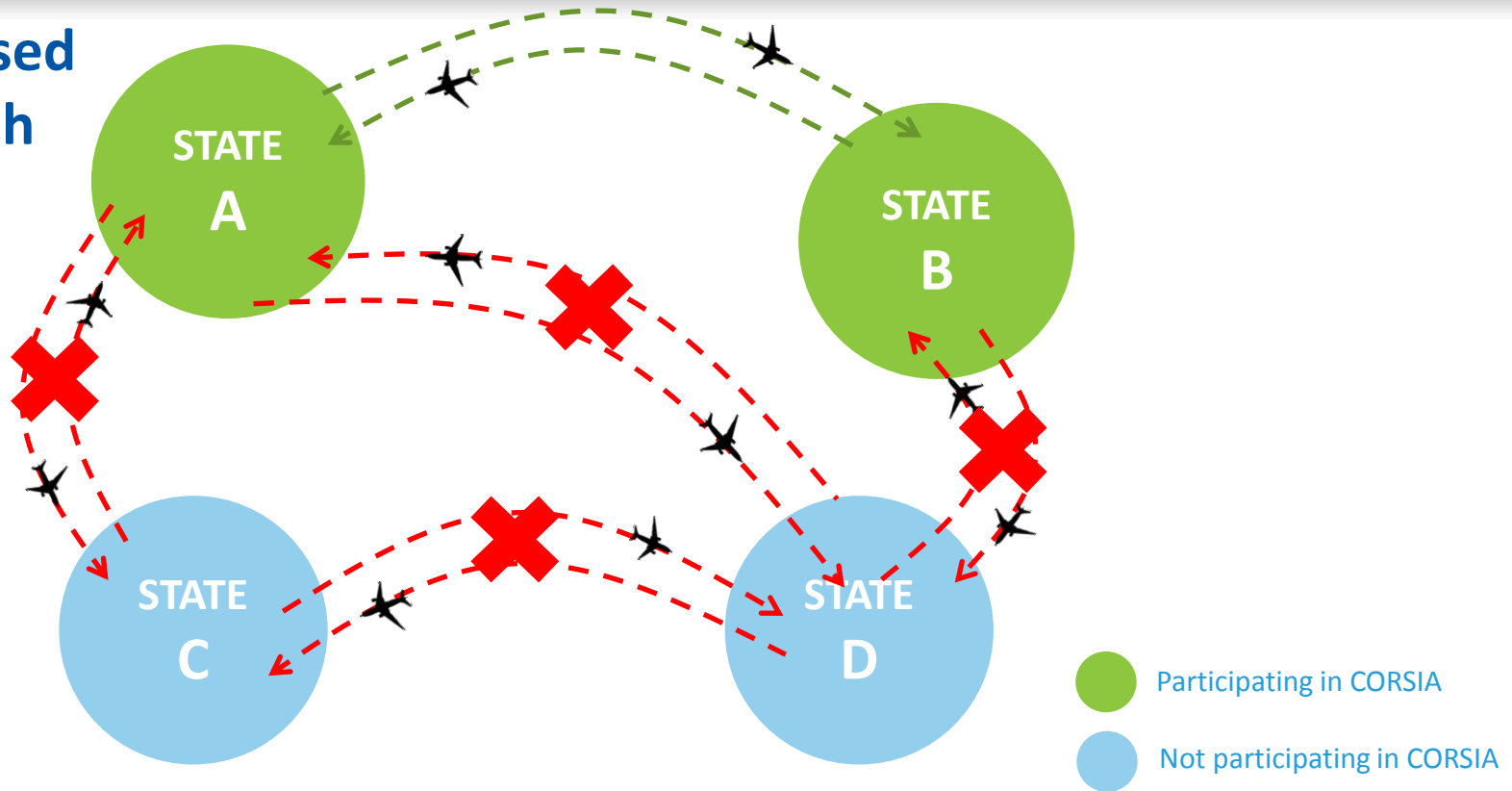
Exemptions:

- LDCs, LLDCs, SIDS

All Member States are encouraged to participate in the pilot and first phase of the CORSIA



Route-based approach

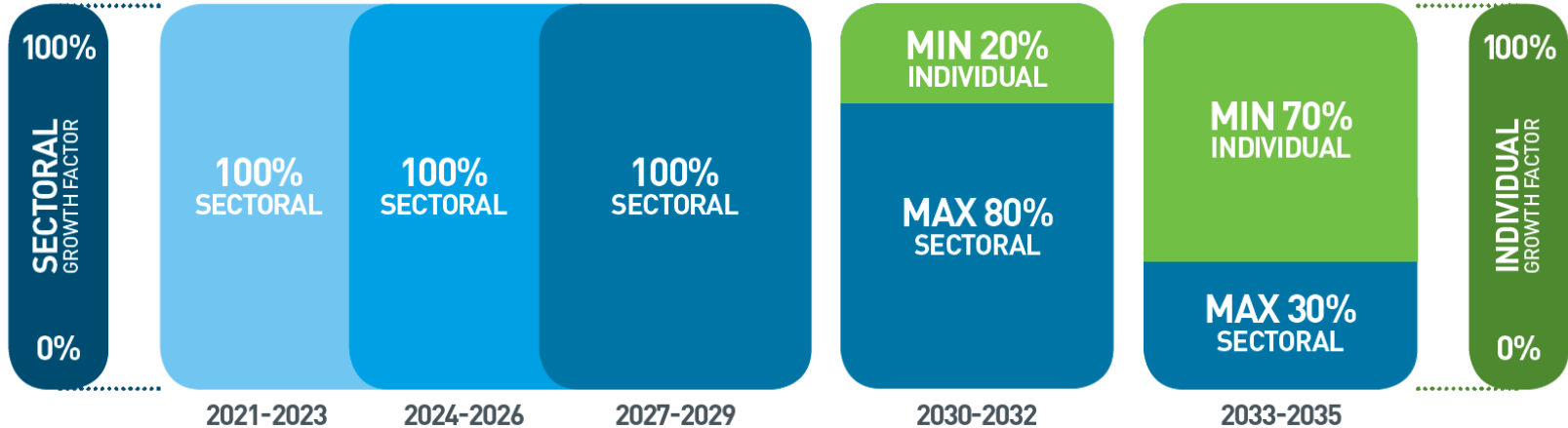




Offsetting requirements

Operator's annual emissions **X** Growth Factor = **CO₂ offset requirements**

The Growth Factor changes every year taking into account both the sectoral and the individual operator's emissions growth. The Growth Factor is the percent increase in the amount of emissions from the baseline to a given future year, and is calculated by ICAO.





Technical exemptions:

- Emissions from aeroplane operators emitting less than 10 000 metric tonnes of CO₂ emissions from international aviation per year
- Emissions from aircraft with less than 5 700 kg of Maximum Take Off Mass (MTOM)
- Emissions from humanitarian, medical and firefighting operations

New entrants:

- Exempted for the first 3 years or until their annual emissions exceed 0.1% of total 2020 CO₂ emissions from international flights, whichever comes first.



Review mechanism

Council to make informed recommendations to the Assembly on whether it is necessary to make adjustments to the next phases of the scheme

- Periodic review of the CORSIA every three years starting in 2022
- Special review by the end of 2032 on termination of the scheme, its extension or any other improvements of the scheme beyond 2035

	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Phases	Pilot Phase (voluntary, 3 years)			First Phase (voluntary, 3 years)			Second Phase (all non-exempted States, 9 years)								
Compliance cycles	Cycle 1 (3 years)			Cycle 2 (3 years)			Cycle 3 (3 years)			Cycle 4 (3 years)			Cycle 5 (3 years)		
Periodic reviews		Review 1			Review 2			Review 3			Review 4	Special			Review 5
Assemblies		A41			A42			A43			A44				A45



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<https://www.youtube.com/watch?v=D0tAy0apYII>

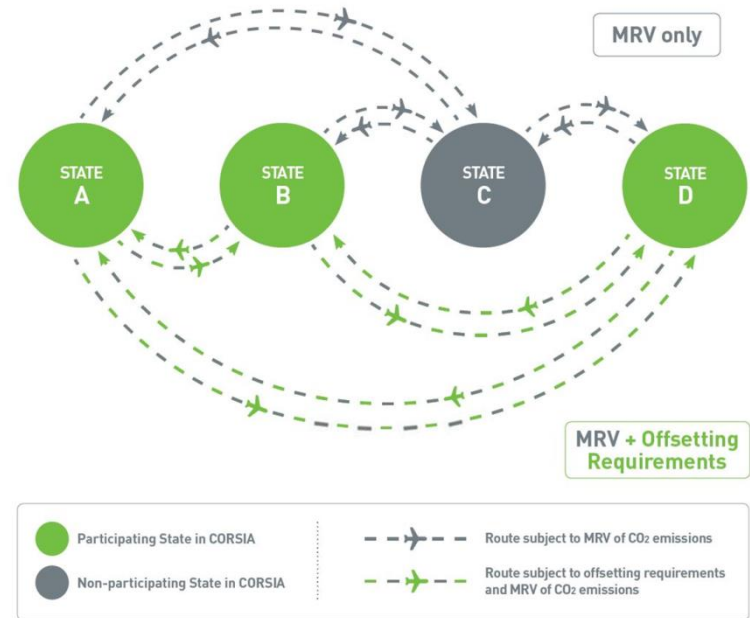


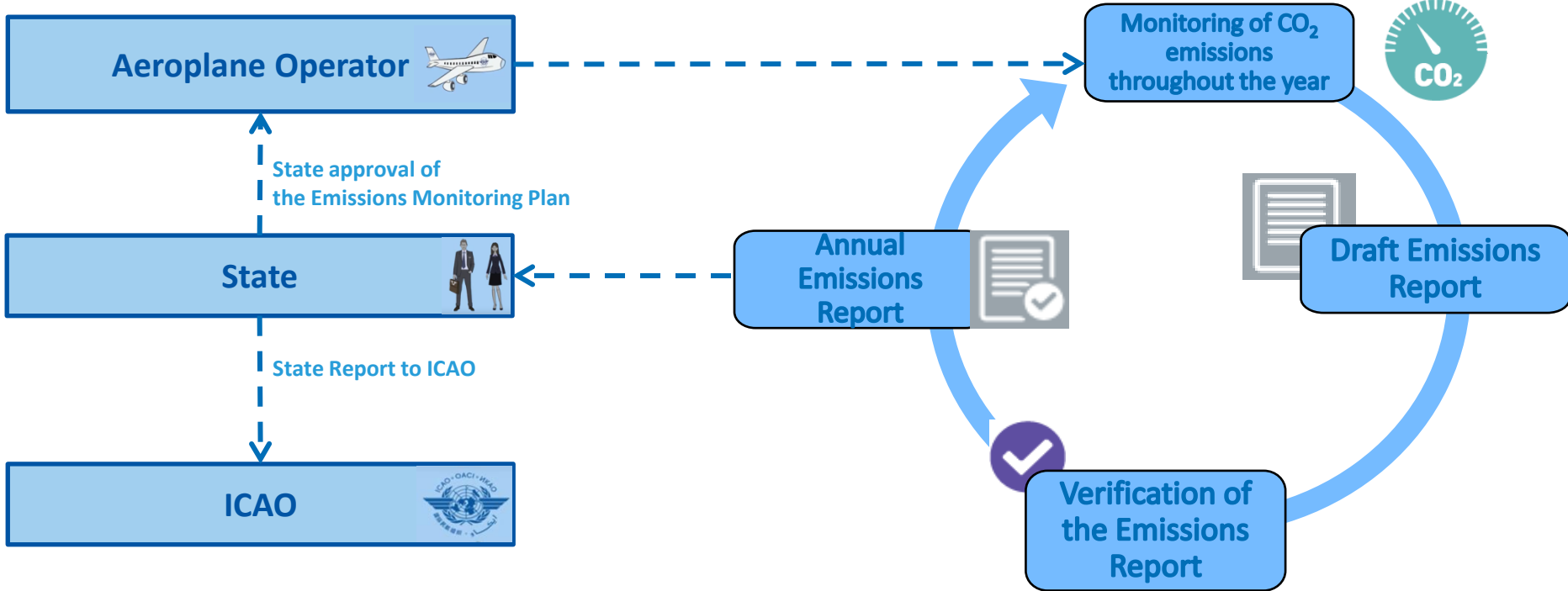
Monitoring, Reporting and Verification (MRV) is the backbone for the successful implementation of CORSIA, which requires:

- Reliable information on CO₂ emissions and on offsetting requirements

ALL ICAO MEMBER STATES with aeroplane operators conducting international flights are required to monitor, report and verify CO₂ emissions from these flights every year from 2019, independent of their participation in CORSIA.

ICAO MEMBER STATES PARTICIPATING IN CORSIA need to ensure that their aeroplane operators comply with the CORSIA offsetting requirements every three years (starting in 2021), in addition to annual CO₂ MRV.







Monitoring of CO₂ Emissions – Emissions Monitoring Plan

- An Emissions Monitoring Plan (EMP) is a collaborative tool between the State and the aeroplane operator.
- The EMP identifies how to monitor and report CO₂ emissions information which the State requires.
- An aeroplane operator shall submit an EMP to the State to which it is attributed for approval.

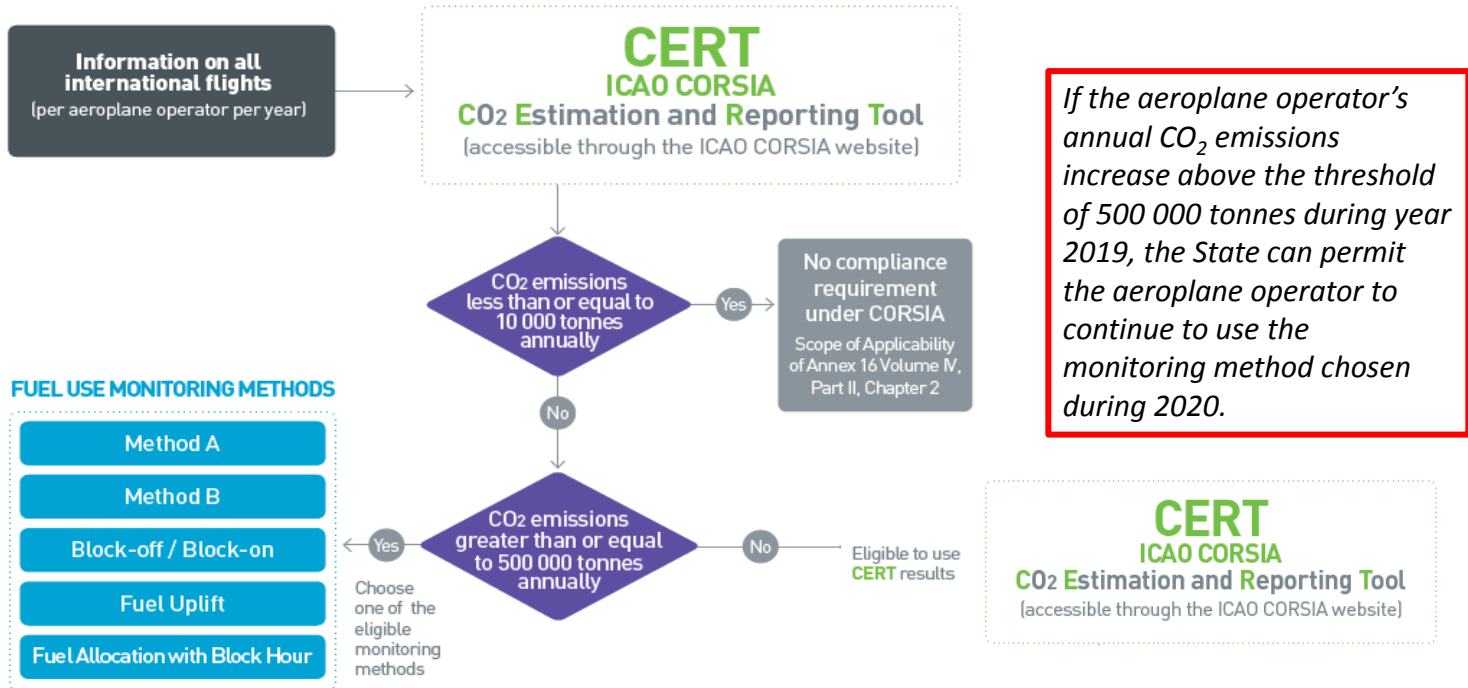


Emissions Monitoring Plan – Short-term Requirements

- **30 November 2018** - States are recommended to approve Emissions Monitoring Plan which operators submitted to them
 - Only a recommendation, because SARPs are only applicable starting 1 January, 2019.
- **28 February, 2019 (latest)** - aeroplane operators are requested to submit their Emissions Monitoring Plan to States to which they are attributed, per Annex 16, Volume IV requirements.
- **30 April, 2019 (latest)** - States have to approve operators' Emissions Monitoring Plan, per Annex 16, Volume IV requirements.

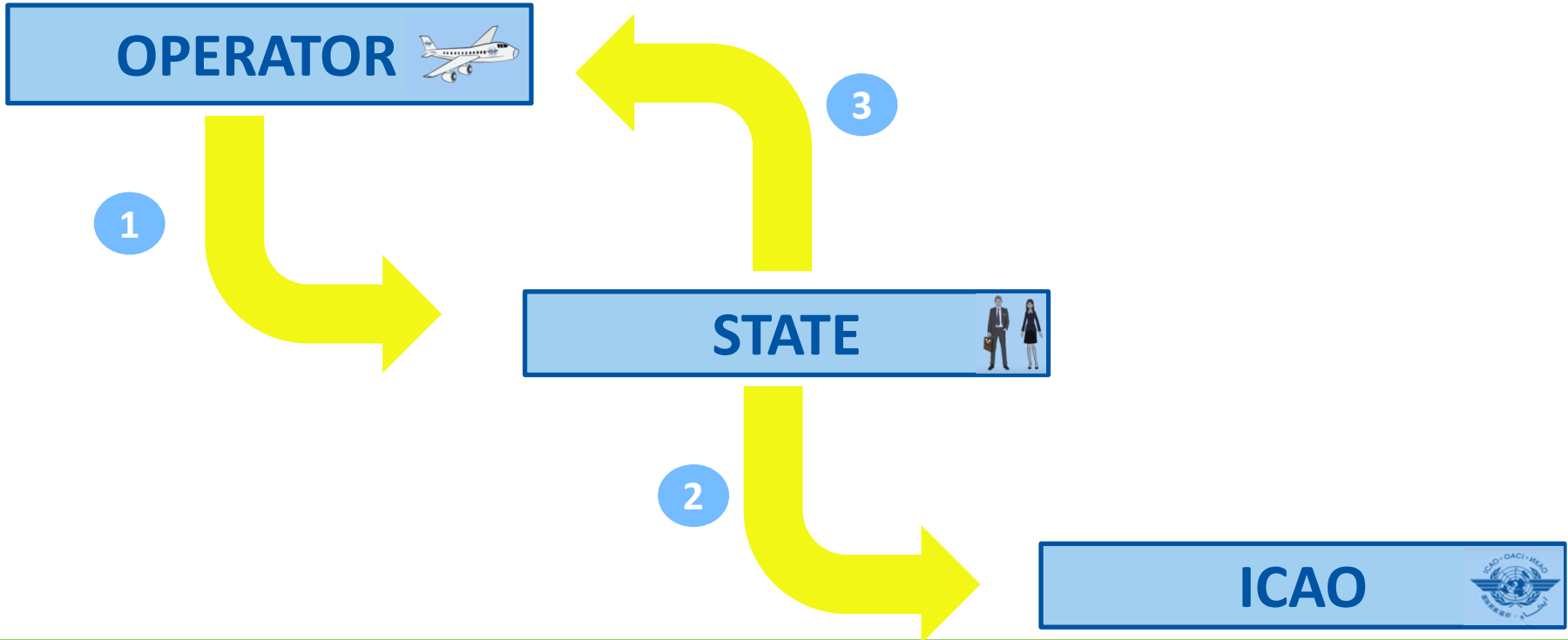


Emissions Monitoring Options (for 2019 & 2020)





Reporting of CO₂ Emissions





Reporting of CO₂ Emissions

- CORSIA requires aeroplane operators conducting international flights^(*) to report on related CO₂ emissions information
 - First reporting year: **2020** (for data related to 2019 international flights)
 - Frequency of reporting: on an annual basis
 - Reporting format: **Emissions Report**
 - Reporting recipient: State

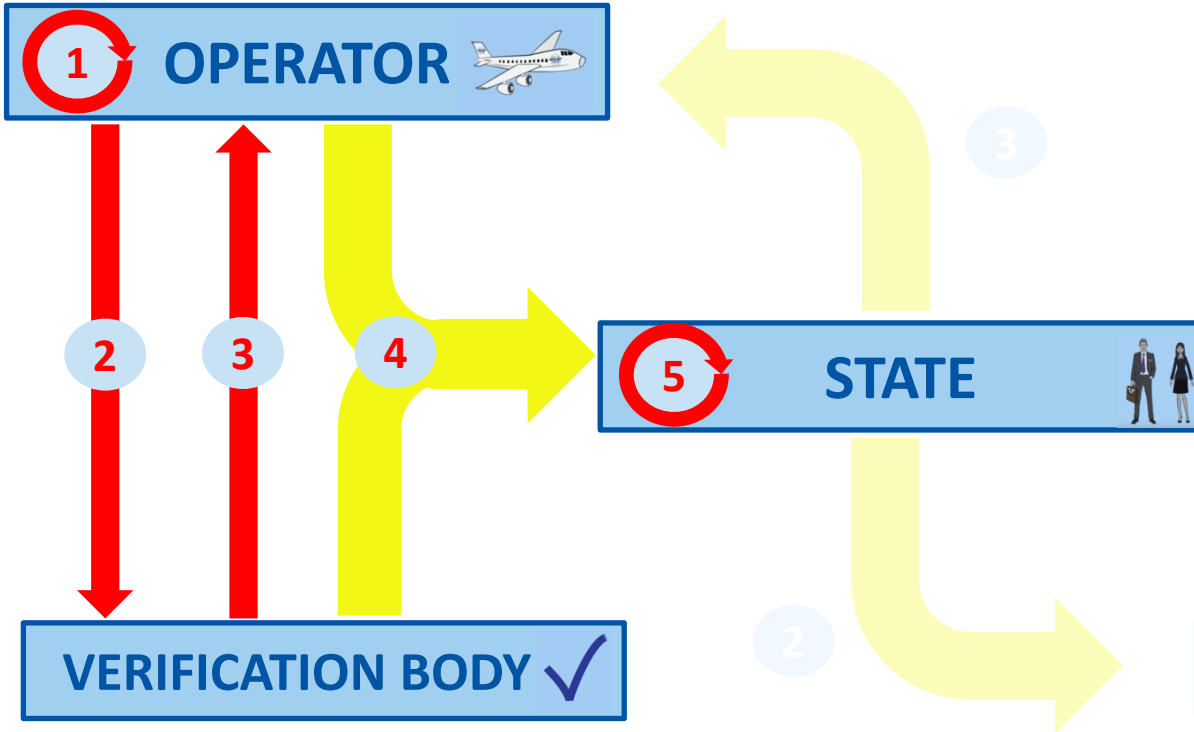
(*) aeroplane operators that produce annual CO₂ emissions greater than 10 000 tonnes from international flights conducted by aeroplanes with a maximum certificated take-off mass greater than 5 700 kg (with the exception of humanitarian, medical and firefighting flights)

Reference: Annex 16, Volume IV, Part II, Chapter 2, 2.3.1



Verification of CO₂ Emissions

- 1 Internal pre-verification
- 2 Aeroplane operator submits Emissions Report to an accredited verification body
- 3 Verification body produces Verification Report
- 4 Aeroplane operator and verification body submit Emissions Report and Verification Report to State
- 5 State's order of magnitude check of Emissions Report





ICAO Global Aviation Training (GAT) – CORSIA Verification Course

GLOBAL AVIATION TRAINING
TRAINER PLUS

ICAO'S NEWLY LAUNCHED CORSIA VERIFICATION COURSE

The CORSIA Verification Course provides training on how to verify CO₂ Emissions Reports that have been prepared by aeroplane operators, in accordance with the provisions of the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) Standards and Recommended Practices (SARPs).

[SEE MORE TRAINING DETAILS →](#)

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TARGET POPULATION:

Professionals with experience in the verification of CO₂ emissions using ISO 14064-3:2006, who want to get involved in the verification of aeroplane operators' CO₂ Emissions Reports under CORSIA.

PREREQUISITES:

Working knowledge of ISO 14064-3:2006 is required; knowledge of ISO 14065:2013 is desirable.

DURATION: 3 days

DELIVERY MODE: Classroom

LANGUAGE OF INSTRUCTION: English

STRUCTURE OF THE COURSE

The course comprises 3 modules:

1. Introduction to CORSIA
2. Monitoring and reporting of CO₂ emissions
 - Fuel use monitoring methods and estimation of CO₂ emissions
 - Aeroplane operators' reporting requirements
3. Verification of CO₂ emissions
 - Requirements for verifiers and verification procedures in accordance with Annex 16, Volume IV, and the Environmental Technical Manual (Doc 9501), Volume IV
 - Preparation of the Verification Report

The course contains presentations, exercises, case studies, and knowledge tests/quizzes to demonstrate the required knowledge and application of the key concepts presented.

LEARNING OBJECTIVES

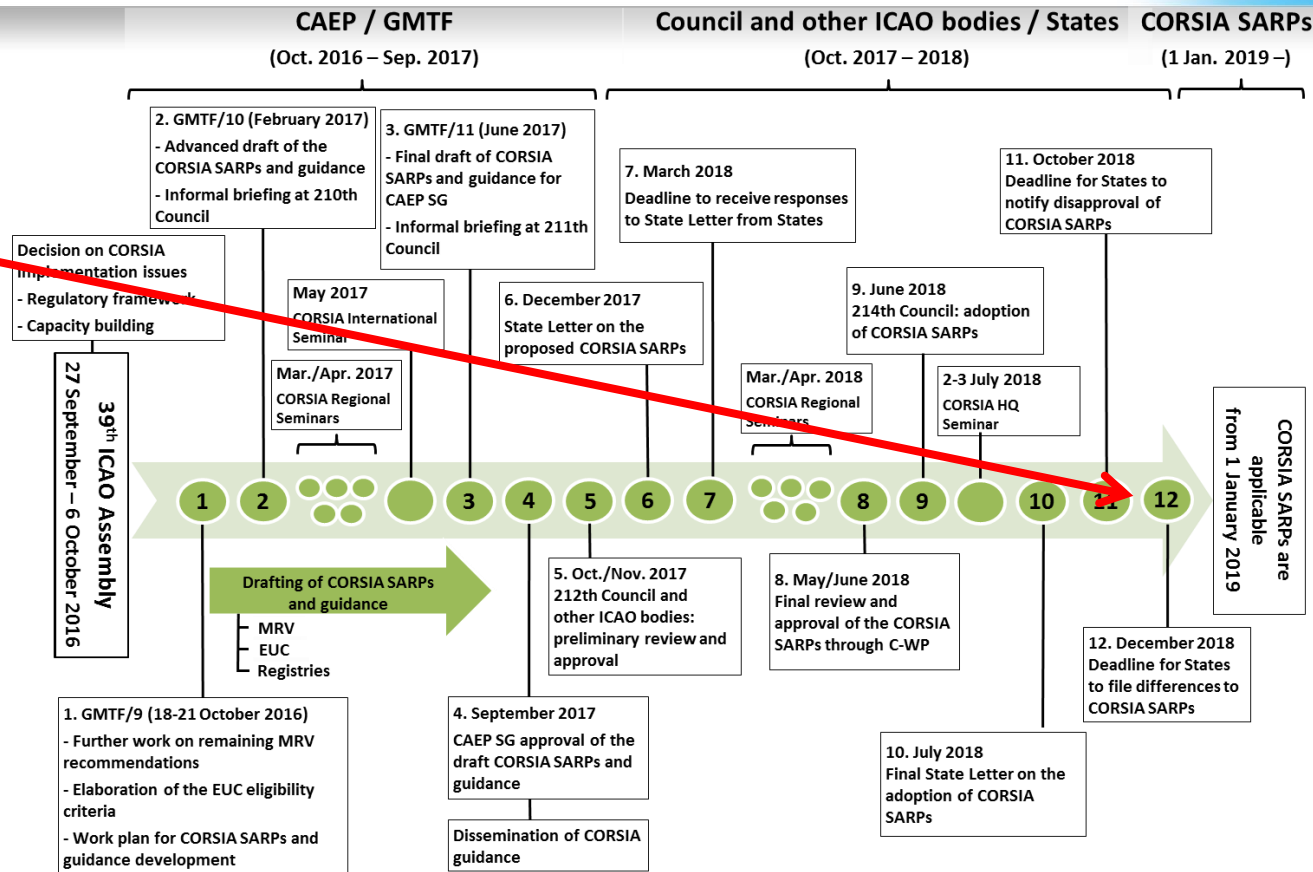
After having successfully completed this course, participants will:

- Have acquired full understanding of the CORSIA monitoring, reporting, and verification (MRV) requirements as outlined in Annex 16, Volume IV, and the Environmental Technical Manual (Doc 9501), Volume IV;
- Be able to apply the verification requirements as outlined in Annex 16, Volume IV, and the Environmental Technical Manual (Doc 9501), Volume IV, including materiality threshold, verification criteria, verification scope and objectives and the Verification Report preparation and submission requirements;
- Be able to correctly identify the scope of applicability for CORSIA MRV requirements, as well as for CORSIA offsetting requirements; and
- Be able to apply a working knowledge of the fuel use monitoring methods and of the ICAO CORSIA CERT estimation tool as outlined in Annex 16, Volume IV.

For more information and course schedule, please visit
www.icao.int/training



We are here!





Progress on Capacity Building

ICAO events related to CORSIA since 39th Assembly

- 2017 ICAO Regional Seminars on CORSIA (5 seminars, March – April 2017)
- 2017 ICAO HQ Seminar on CORSIA (Montréal, 10-11 May 2017)
- Additional CORSIA seminars, with support by AFCAC (Nigeria and Zambia, August 2017)
- ICAO Seminar on Carbon Markets (Montréal, 7-9 February 2018)
- 2018 ICAO Regional Seminars on CORSIA (5 seminars, March – April 2018)
- 2018 ICAO HQ Seminar on CORSIA (Montréal, 2-3 July 2018)



ACT-CORSIA

- The ICAO Council endorsed a plan to provide direct and tailored assistance on CORSIA implementation to States around the world
- The ICAO Assistance, Capacity-building and Training on **CORSIA (ACT-CORSIA)** programme – Launched on 2 July 2018!





ACT-CORSIA: Focus Areas

- ICAO coordinated initiative
 - Different cooperation modalities amongst ICAO Member States for CORSIA capacity-building and assistance under the umbrella of ICAO
- 1) **Development and approval of Emissions Monitoring Plans**
 - 2) **Establishment of national/regional regulatory frameworks**



ACT-CORSIA: From Planning to Implementation

- Some States are ready to support other States
- Buddy partnerships among States are crucial!
 - Assistance to approximately 90 States
 - Technical experts were trained by ICAO and work with CORSIA focal points of the support receiving States to provide on-site training and close follow-up (Sep 2018 to early 2019)
- Three Step Approach:
 1. Preparatory Activities
 2. On-site Training
 3. Remote Follow-Up



CORSIA Focal Point Nominations

- 160 States have officially nominated their CORSIA focal points
- If your State has not officially nominated their CORSIA focal point by writing a letter to ICAO's Environmental Office, please do so ASAP
- The CORSIA focal point will be necessary for CORSIA implementation



ESAF Buddy Partnerships

- Angola & Mozambique (*in partnership with Brazil*)
- Botswana, Lesotho, Malawi, Namibia, Zambia & Zimbabwe (*in partnership with South Africa*)
- Comoros, Djibouti, Madagascar, Mauritius & Seychelles (*in partnership with Canada & France*)
- Eritrea, Ethiopia, Somalia & Tanzania (*in partnership with Italy*)
- Rwanda, South Sudan, Uganda (*in partnership with Kenya*)



WACAF Buddy Partnerships

- Burkina Faso, Cote d'Ivoire, Mali, Mauritania, Niger, Senegal, & Togo (*in partnership with Canada & France*)
- Cabo Verde & Sao Tome and Principe (*in partnership with Brazil*)
- Cameroon, Chad, Congo, Democratic Republic of Congo & Gabon (*in partnership with Canada & France*)
- Gambia, Ghana, Liberia & Sierra Leone (*in partnership with Nigeria*)



Carbon Offsetting and Reduction Scheme for International Aviation
ACT-CORSIA Buddy Partnerships
On-site Training Activities



Completed On-site Trainings
 (as of 14 December 2018)





CORSIA Capacity-building in 2019

- CORSIA Regional Seminars
 - Focus on reporting and verification of emissions for CORSIA
 - Regional seminars will be held in various ICAO regions
- ICAO is working with the International Accreditation Forum to train accreditation bodies and verification bodies (GAT Course)
- Continued ACT-CORSIA training on the next focus areas through Buddy Partnerships



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(EUR/NAT) Office
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Middle East
(MID) Office
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(ESAF) Office
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Beijing

Asia and Pacific
(APAC) Office
Bangkok



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