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ICAO CAPACITY BUILDING SEMINAR ON LOW EMISSIONS AVIATION MEASURES

# Carbon Offsetting and Reduction Scheme for International Aviation - CORSIA

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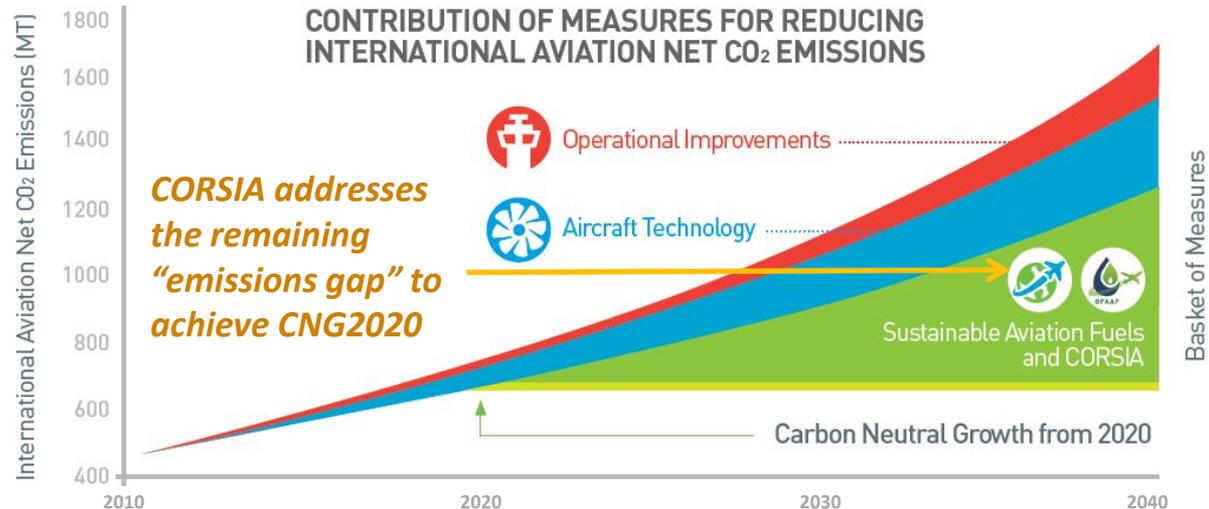


# CORSIA

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





## Carbon markets

- Compliance markets and voluntary markets
- Emissions units are traded in carbon markets
- Cancel emissions units to offset emissions
- Supply and demand affect prices



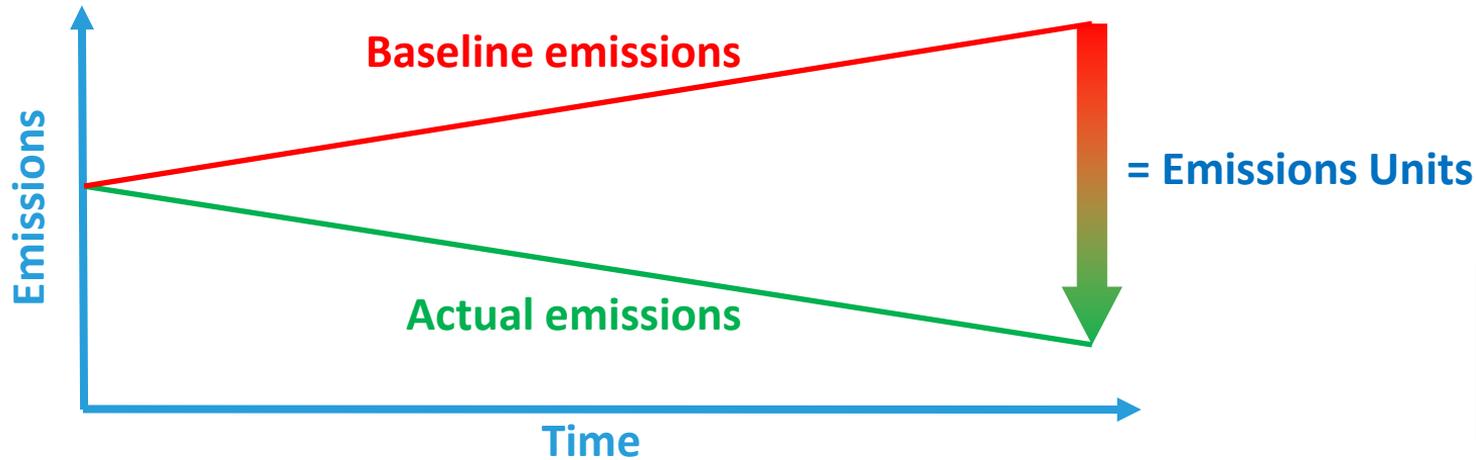
ICAO Seminar on Carbon Markets in February 2018 for further information:

<https://www.icao.int/Meetings/carbonmarkets/Pages/default.aspx>



## Emissions units

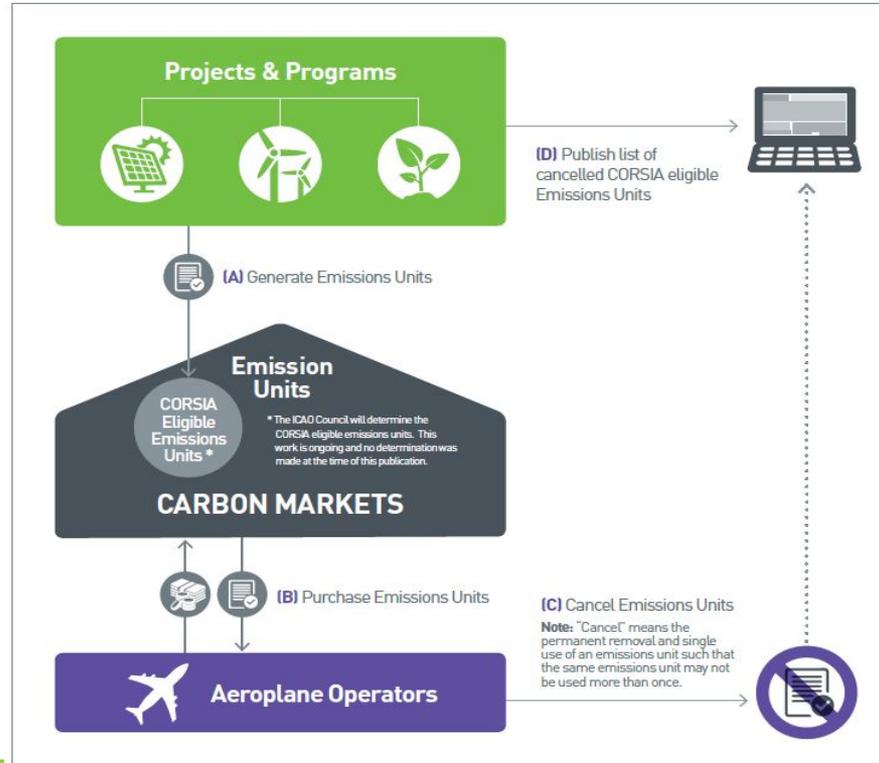
- Emissions reductions achieved by the implementation of projects
- Issued by crediting schemes through mechanisms, programmes, projects
- Difference between baseline emissions and actual emissions



1 emissions unit  
=  
1 tonne of CO<sub>2</sub>eq



# CORSIA and carbon markets





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# THE BASICS OF CORSIA



## Participation of ICAO States in the CORSIA



### Participation criteria:

- 90% of global RTK
- 0.5% of RTK

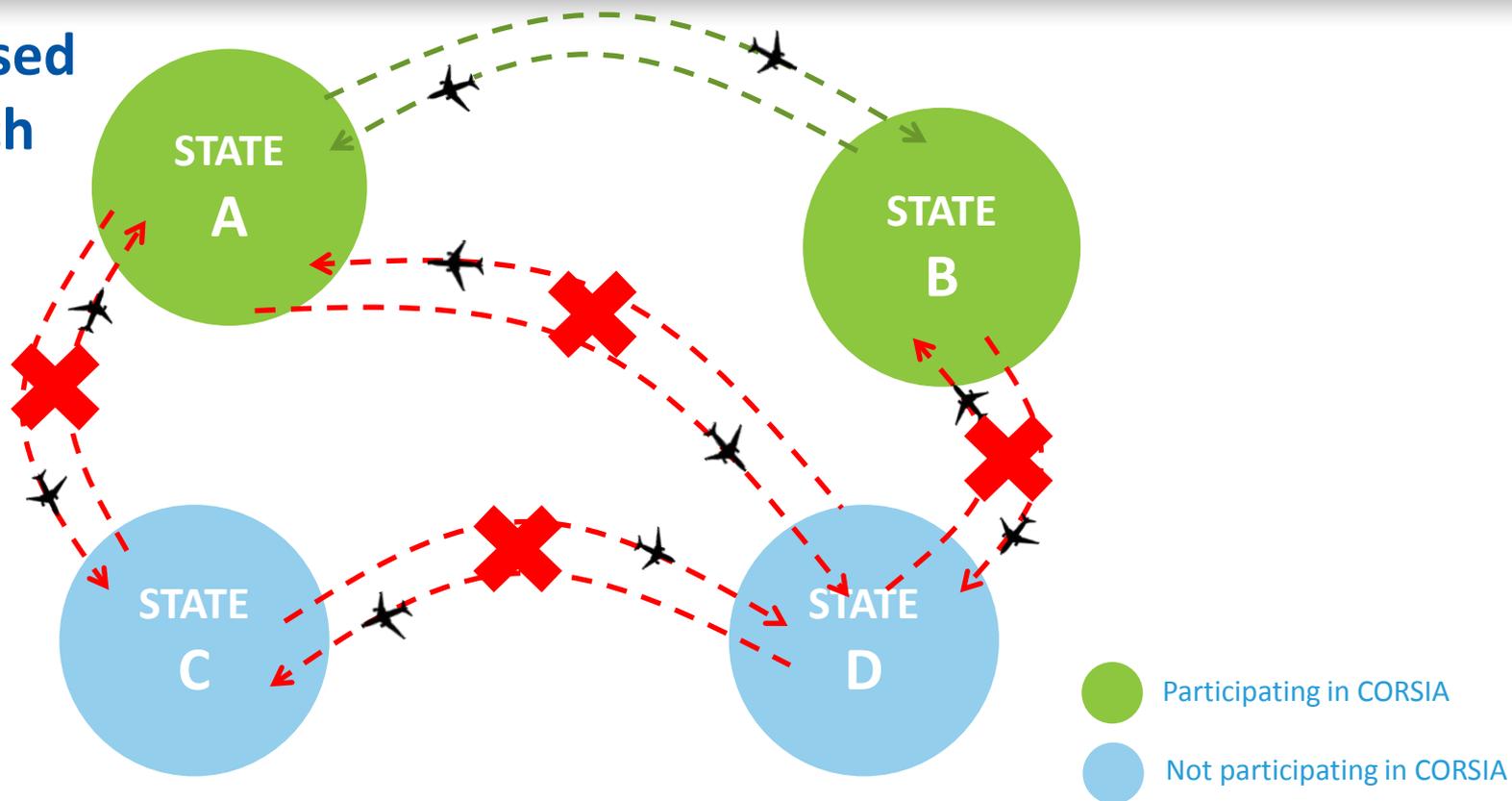
### Exemptions:

- LDCs, LLDCs, SIDS

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



## Route-based approach

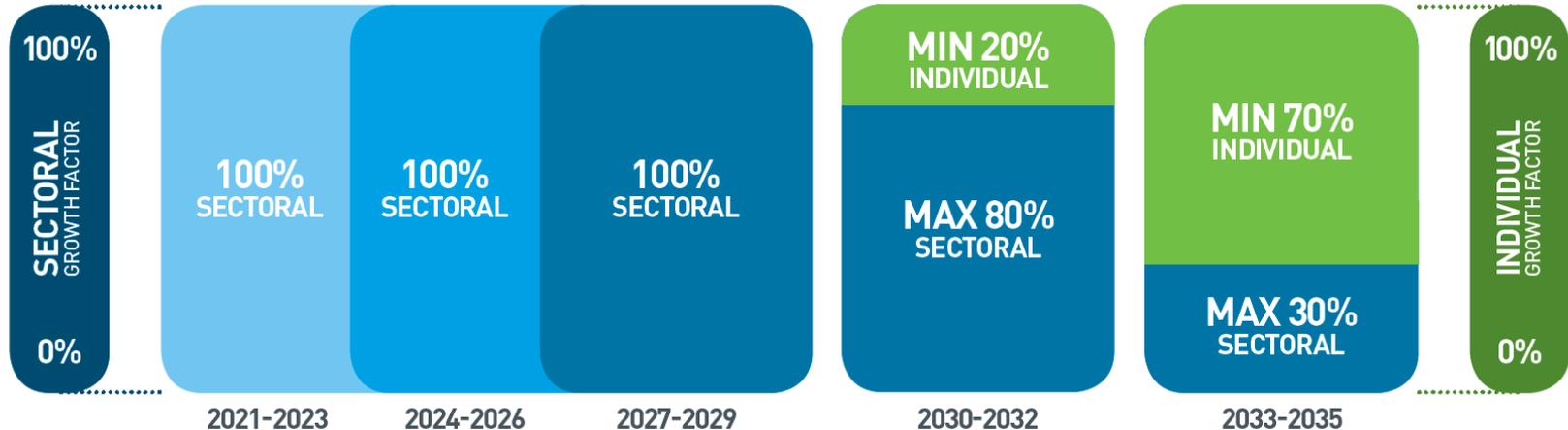




## Offsetting requirements

**Operator's annual emissions  $\times$  Growth Factor = CO<sub>2</sub> 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 CO<sub>2</sub> 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 CO<sub>2</sub> 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>

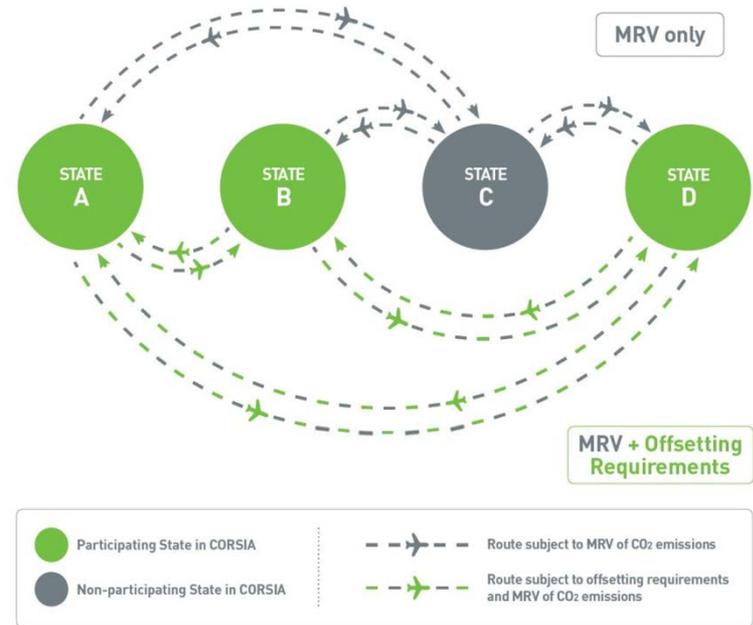


## Monitoring, Reporting and Verification (MRV) is the backbone for the successful implementation of CORSIA, which requires:

- Reliable information on CO<sub>2</sub> emissions and on offsetting requirements

**ALL ICAO MEMBER STATES with aeroplane operators conducting international flights are required to monitor, report and verify CO<sub>2</sub> 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 CO<sub>2</sub> MRV.**





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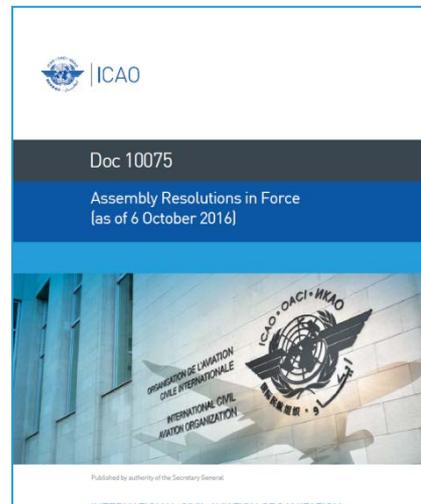


# STANDARDS AND RECOMMENDED PRACTICES



# Mandate for the Development of CORSIA SARPs

- The 39<sup>th</sup> ICAO Assembly requested the Council:
  - *“to develop, with the technical contribution of CAEP, the SARPs and related guidance material for the implementation of the MRV system under the CORSIA, including simplified MRV procedures, for adoption by the Council by 2018”*
- It also requested Member States:
  - *“whose aircraft operator undertakes international flights to develop the necessary arrangements, in accordance with the MRV SARPs, for implementation from 1 January 2019”*



**Resolution A39-3: Consolidated statement of continuing ICAO policies and practices related to environmental protection – Global Market-based Measure (MBM) scheme**

*Whereas* Assembly Resolution A38-18 decided to develop a global market-based measure (GMBM) scheme for international aviation, for decision by the 39th Session of the Assembly;

*Recalling* that Assembly Resolution A38-18 requested the Council, with the support of Member States, to finalize the work on the technical aspects, environmental and economic impacts and modalities



### 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)



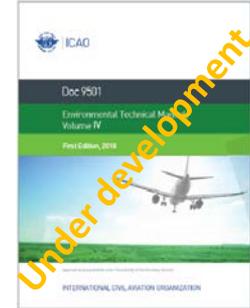
Annex 16 - Environmental Protection:

- Volume I, Aircraft Noise
- Volume II, Aircraft Engine Emissions
- Volume III, Aeroplane CO<sub>2</sub> Emissions
- Volume IV, CORSIA  
- *Under Development*



Various guidance on noise, LAQ and climate change, e.g.:

- Environmental Assessment of Proposed ATM Operational Changes (Doc 10031)
- Environmental Technical Manual Volume IV  
- *Under Development*





## Components

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



## Part I. DEFINITIONS, ABBREVIATIONS AND UNITS

## Part II. CARBON OFFSETTING AND REDUCTION SCHEME FOR INTERNATIONAL AVIATION

### CHAPTER 1. Administration

### CHAPTER 2. Monitoring, Reporting and Verification

### CHAPTER 3. CO<sub>2</sub> Offsetting Requirements and Emissions Reductions from SAFs

### CHAPTER 4. Emission Units

## APPENDICES

### APPENDIX 1. Administrative Processes

### APPENDIX 2. Fuel Use Monitoring Methods

### APPENDIX 3. CO<sub>2</sub> Emissions Estimation and Reporting Methods and Tools

### APPENDIX 4. Emissions Monitoring Plans

### APPENDIX 5. Reporting

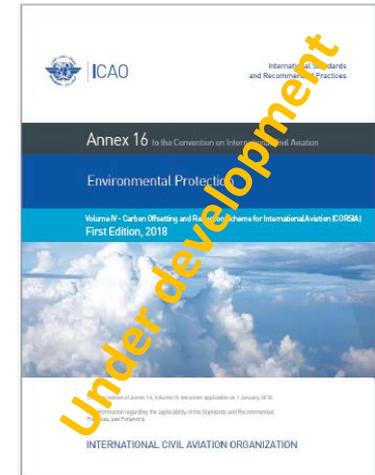
### APPENDIX 6. Verification

## ATTACHMENTS

### Attachment A. Attribution Processes

### Attachment B. Applicability of MRV Requirements to International Operations

### Attachment C. Processes for Fuel Use Monitoring





## CHAPTER 1. INTRODUCTION

## CHAPTER 2. GENERAL GUIDELINES

2.1 Applicability of MRV of Annual CO<sub>2</sub> Emissions from an Aeroplane Operator

2.2 Applicability of CO<sub>2</sub> Offsetting Requirements

## CHAPTER 3. GUIDELINES ON MONITORING, REPORTING AND VERIFICATION

3.1 Monitoring

3.2 Reporting

3.3 Verification

## CHAPTER 4. GUIDELINES ON CALCULATION OF OFFSETTING REQUIREMENTS

4.1 Calculation of Offsetting Requirements During the 2021-2030 Compliance Period

4.2 Calculation of Offsetting Requirements During the 2031-2035 Compliance Period

4.3 Baseline Emissions from 2019-2020 for Calculation of Offsetting Requirement

4.4 Sector Growth Factor

## CHAPTER 5. ADMINISTRATIVE PARTNERSHIPS UNDER CORSIA

5.1 Example of a Bilateral Agreement

## APPENDIX 1. STANDARDIZED EMISSIONS MONITORING PLAN AND REPORTING TEMPLATES





## CORSIA Implementation Elements

- The CORSIA Implementation Elements will be made available in separate documents, due to the following characteristics:
  - Nature of the information
  - Availability of the information at the time of adoption
  - Periodicity of the information updates
  - Users of the information
- Different implementation elements will become available at different points in time
- Once completed, they will be considered for approval by the Council and made available on the ICAO CORSIA webpage

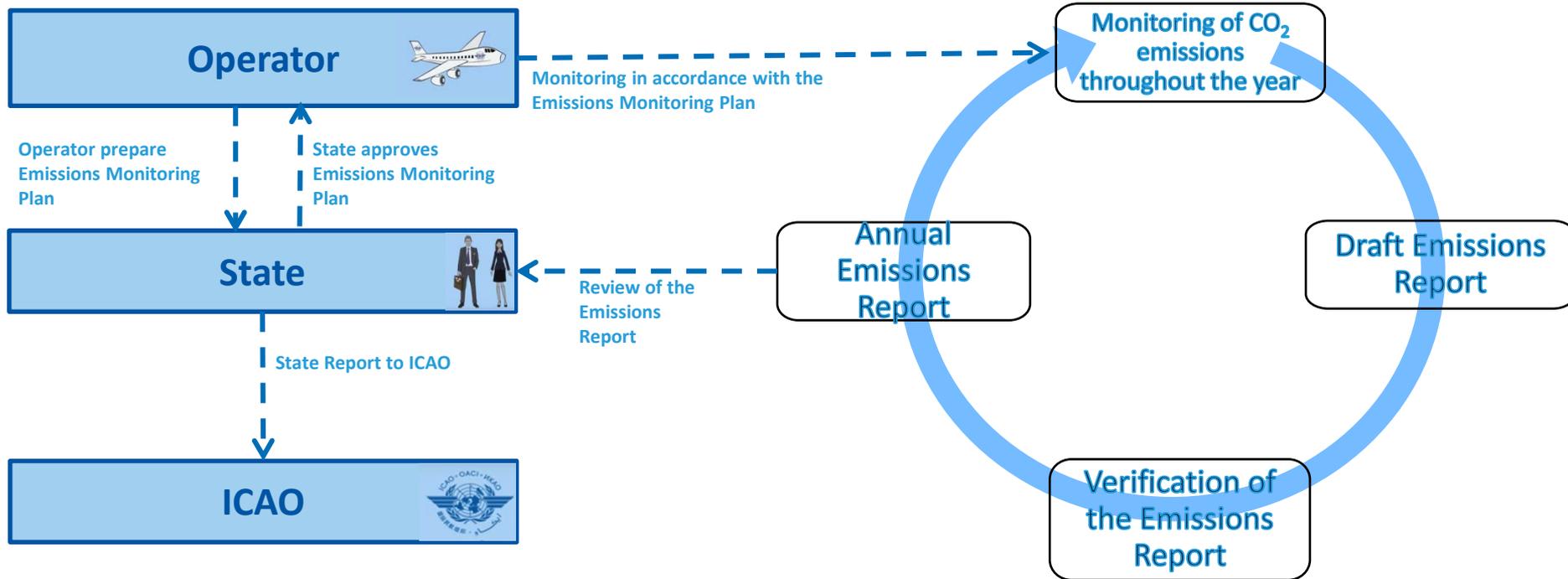


## CORSIA MRV system

- Implementation of the MRV system from 1 January 2019 for all international flights is essential to establish CORSIA's baseline (2019-2020)
- Purpose of MRV is to collect information on international aviation CO<sub>2</sub> emissions on an annual basis and compare emissions against the baseline emissions
- **Components of the MRV system:**
  - **Monitoring** of fuel use on each flight and calculation of CO<sub>2</sub> emissions
  - **Reporting** of CO<sub>2</sub> emissions information between aeroplane operators, States and ICAO
  - **Verification** of reported emissions data to ensure completeness and to avoid misstatements



# MRV cycle





## Summary

- CORSIA will help ICAO achieve its aspirational goal of carbon neutral growth from 2020 onwards
- CORSIA relies on the carbon markets for emissions units
- Implementation of CORSIA starts on 1 January 2019
- All States should start monitoring CO<sub>2</sub> emissions from international flights
- CORSIA SARPs are expected to be adopted in June 2018



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