



Session 3

CORSIA MRV System: Reporting of CO₂ Emissions

ICAO Secretariat





Session 3, Part 1: Introduction to the Reporting of CO₂ Emissions





A reminder from the previous presentation...

- A monitoring, reporting and verification (MRV) system is a key component of CORSIA implementation
 - Implementation of the MRV system from 1 January 2019 for all international flights is essential to establish CORSIA's baseline (2019-2020 average)
 - Purpose of MRV is to collect information on international aviation CO₂ emissions on an annual basis and compare emissions from 2021 against the baseline emissions

Monitoring

Monitoring of CO₂ emissions is either based on a Fuel Use Monitoring Method, or the use of the ICAO CORSIA CERT.

Reporting

CO₂ emissions will be reported from aeroplane operators to their State Authority, and from States to ICAO.

Verification

CO₂ emissions information is accurate and free of errors.



- MRV provisions are included in Part II, Chapter 2 of Annex 16, Volume IV
 - 2.1 Applicability of MRV Requirements
 - 2.2 Monitoring of CO₂ Emissions
 - 2.3 Reporting of CO₂ Emissions
 - 2.4 Verification of CO₂ Emissions
 - 2.5 Data Gaps
 - 2.6 Error Correction to Emissions Reports

CHAPTER 2. MONITORING, REPORTING AND VERIFICATION (MRV) OF AEROPLANE OPERATOR ANNUAL CO₂ EMISSIONS

2.1 Applicability of MRV requirements

Note.— See also Chapter 1 for administration requirements of the State and aeroplane operator.

2.1.1 The Standards and Recommended Practices of this Chapter shall be applicable to an aeroplane operator that produces annual CO₂ emissions greater than 10 000 tonnes from the use of an aeroplane(s) with a maximum certificated take-off mass greater than 5 700 kg conducting international flights, as defined in 1.1.2, on or after 1 January 2019, with the exception of humanitarian, medical and firefighting flights.

2.1.2 **Recommendation.**— *When considering whether a flight is international or domestic, an aeroplane operator and a State should use, for the purpose of this Volume, Doc 7910 — Location Indicators, which contains a list of aerodromes and the State they are attributed to. Further guidance material is also provided in the Environmental Technical Manual (Doc 9501), Volume IV — Procedures for demonstrating compliance with the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA).*

2.1.3 The Standards and Recommended Practices of this Chapter shall not be applicable to international flights, as defined in 1.1.2, preceding or following a humanitarian, medical or firefighting flight provided such flights were conducted with the same aeroplane, and were required to accomplish the related humanitarian, medical or firefighting activities or to reposition thereafter the aeroplane for its next activity. The aeroplane operator shall provide supporting evidence of such activities to the verification body or, upon request, to the State.

2.1.4 The Standards and Recommended Practices of this Chapter shall be applicable to a new entrant aeroplane operator from the year after it meets the requirements in 2.1.1 and 2.1.3.

2.1.5 **Recommendation.**— *If the aeroplane operator is close to the threshold of annual CO₂ emissions, as defined in 2.1.1 and 2.1.3, from international flights, as defined in 1.1.2, it should consider engaging with the State to which it is attributed for guidance. Likewise, 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.*

Note.— See Attachment B Figure B-1 for a process flowchart on the determination of the applicability of Chapter 2 to international flights, as defined in 1.1.2.

2.2 Monitoring of CO₂ emissions

2.2.1 Eligibility of monitoring methods

2.2.1.1 The aeroplane operator shall monitor and record its fuel use from international flights, as defined in 1.1.2 and 2.1, in accordance with an eligible monitoring method as defined in 2.2.1.2 and 2.2.1.3, and approved by the State to which it is attributed. Following approval of the Emissions Monitoring Plan, the aeroplane operator shall use the same eligible monitoring method for the entire compliance period.

MRV of CO₂ Emissions in Annex 16, Volume IV



Covered in
Session 2

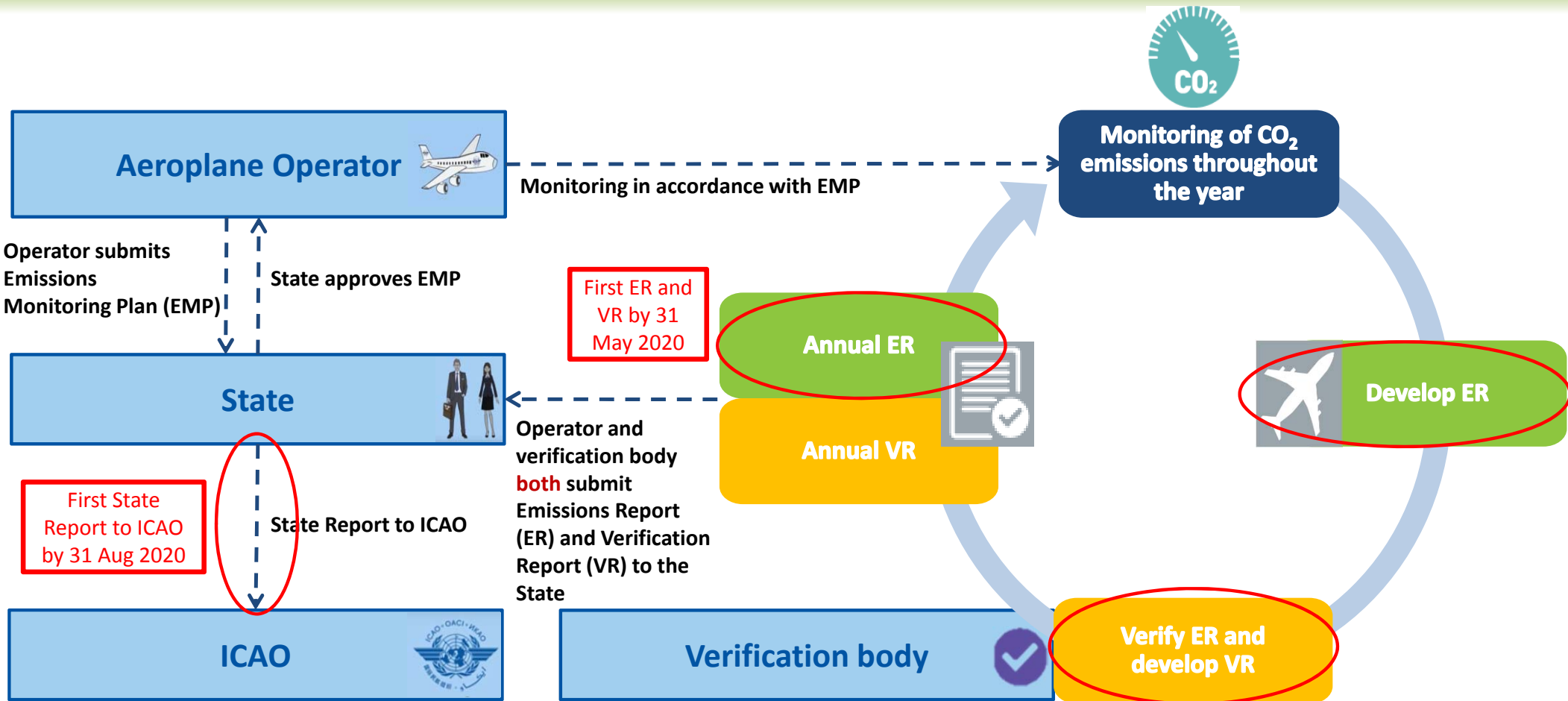
- 2.1. Applicability of MRV Requirements
- 2.2. Monitoring of CO₂ Emissions

Covered in
this session

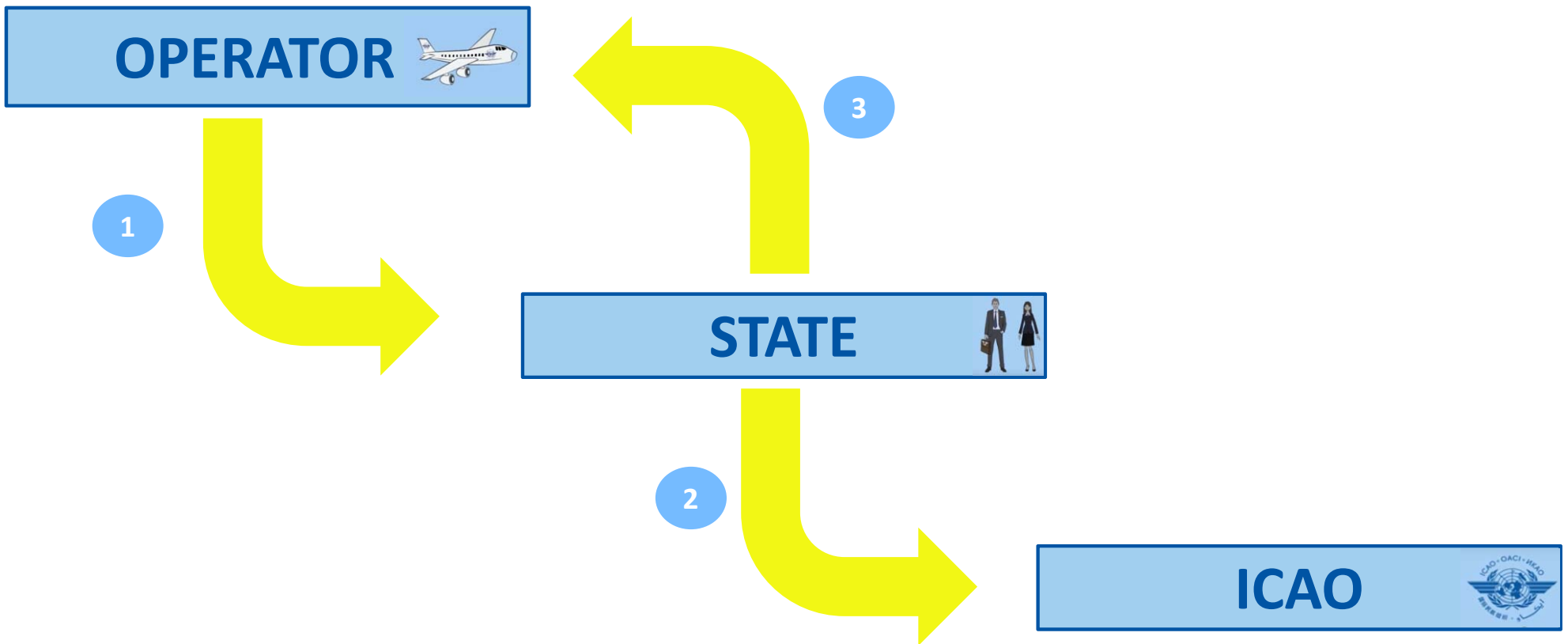
- 2.3. Reporting of CO₂ Emissions
- 2.4. Verification of CO₂ Emissions
- 2.5. Data Gaps
- 2.6. Error Correction to Emissions Reports

Covered in
Session 4

Annual Cycle for MRV Activities



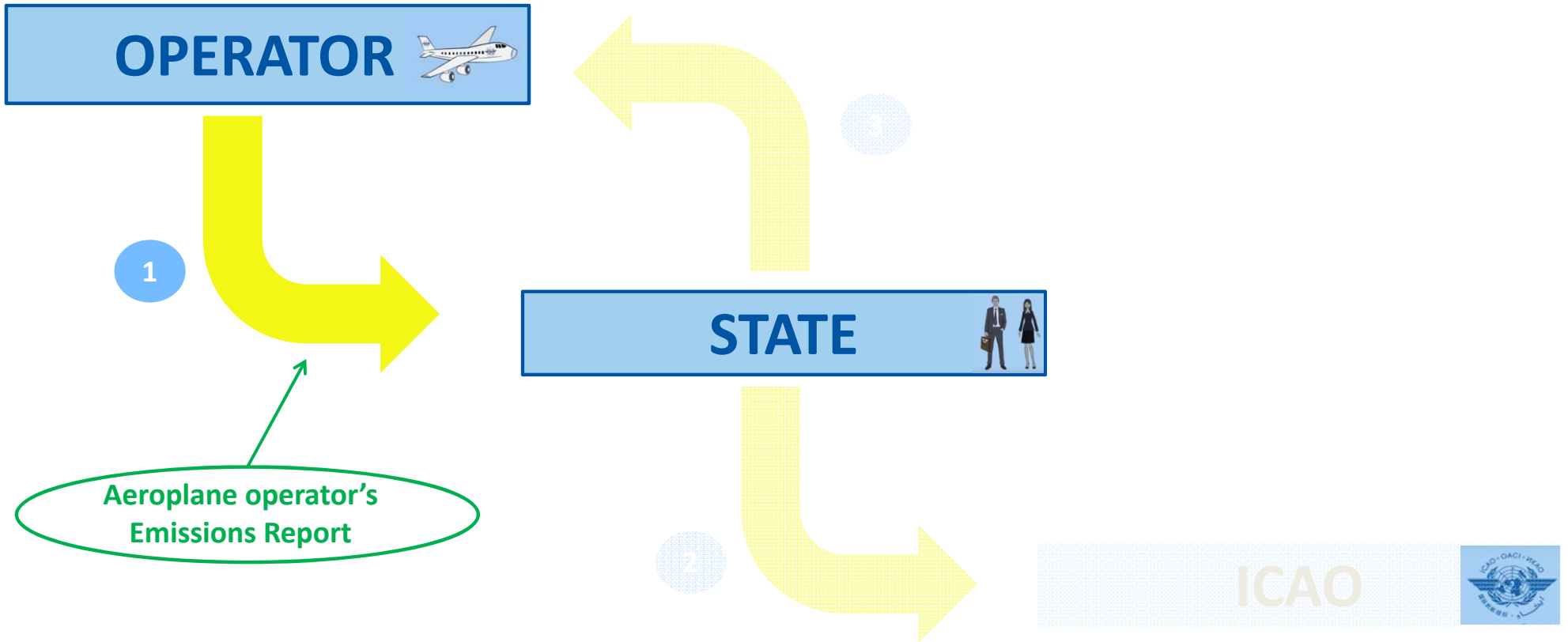
CORSIA Reporting Lines





Session 3, Part 2: Reporting of CO₂ Emissions by Aeroplane Operators





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



- 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)

CORSIA

EMISSIONS REPORT (ER)

CONTENTS

- 1 [Aeroplane operator identification and description of activities](#)
- 2 [Underlying basic information of the Emissions Report](#)
- 3 [Aeroplane fleet and fuel types](#)
- 4 [Fuel density](#)
- 5. [Reporting](#)
- 5.1 [Reporting - State pairs](#)
- 5.2 [Reporting - Aerodrome pairs](#)
- 6 [Data gaps](#)

Template Information

Template provided by:	
Version (publication date):	

Note: For the purpose of this template, international flight is defined as in Annex 16, Volume IV, Part II, Chapter 1, 1.1.2, and Chapter 2, 2.1.

- A means to communicate CO₂ emissions data from aeroplane operator to State
- Purpose of the Emissions Report:
 - Medium of CO₂ emissions data and info communication between AO and State
 - Key document within the CORSIA MRV as it includes all relevant CO₂ emissions related data as described in Annex 16, Volume IV, Appendix 5
 - Basis for calculation of operator’s offsetting requirements from 2021 onwards

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



- Aeroplane operator information
 - Name, contact information, State of attribution, etc.
- Reporting year (year during which emissions were monitored)
 - E.g. 2019 (for the Emissions Report to be prepared in 2020)
- Reference of the aeroplane operator's Emissions Monitoring Plan that is the basis for the emissions monitoring in the reporting year
 - Version number, date of approval, date of validity, date of last update, etc.
- List of operator's aeroplane fleet
 - Applicable to all operator's aeroplanes (with MTOM > 5 700 kg) operating international flights during the reporting year
 - Leased aeroplanes have to be included

Reference: Annex 16, Volume IV, Appendix 5, Table A5-1



- Details on use of ICAO CORSIA CERT (if operator is eligible for use of the Tool)
- Total fuel mass per type of fuel
 - When using ICAO CORSIA CERT, operators will not report this information
- Number of international flights during the reporting period, including:
 - Total number of operator's international flights during the reporting period
 - Breakdown per State pair (minimum information requirement) OR per aerodrome pair

During the preparation of the Emissions Monitoring Plan, the operator will be informed by the State of the level of aggregation to be used when reporting on international flights

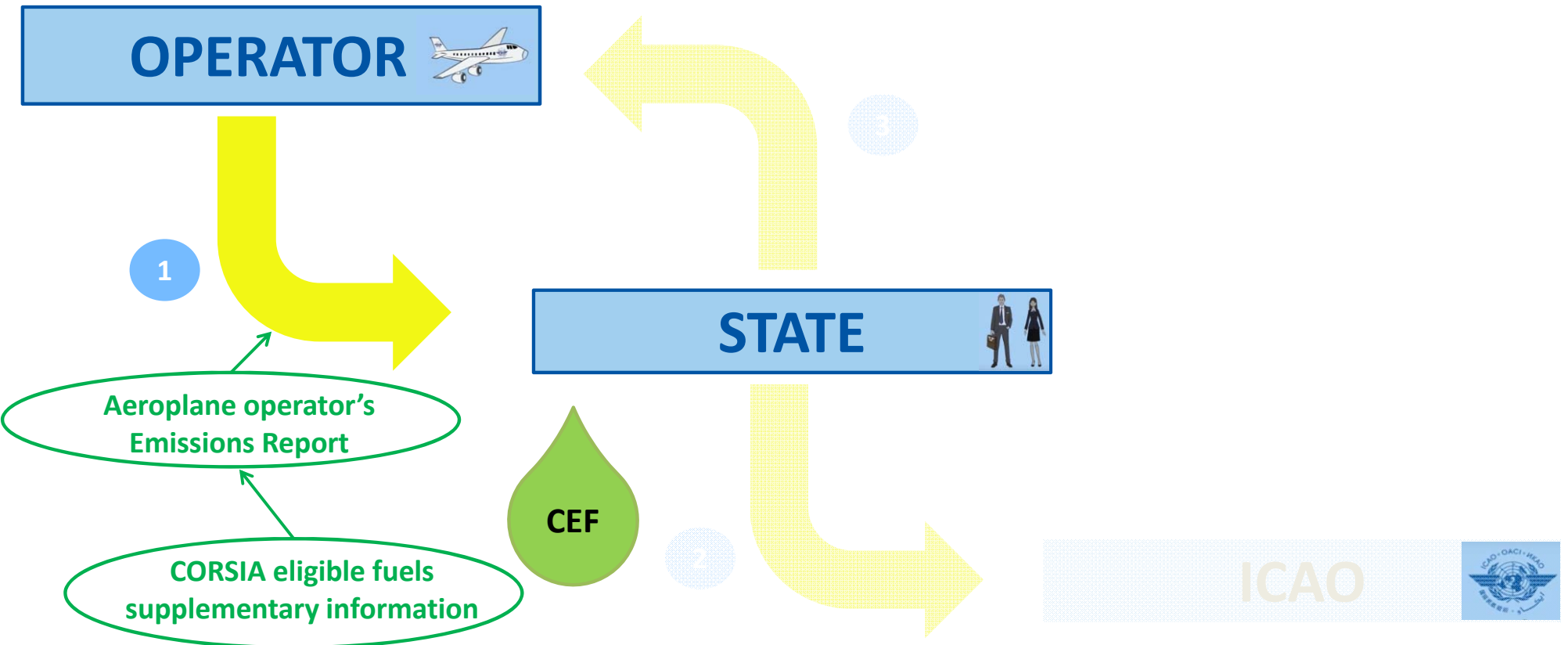
Reference: Annex 16, Volume IV, Appendix 5, Table A5-1



- CO₂ emissions:
 - Total CO₂ emissions from reported flights
 - Breakdown per State pair OR per aerodrome pair (same level of aggregation as for the reporting of the number of international flights)
 - From the start of CORSIA's pilot phase (i.e. reporting of CO₂ emissions for 2021 and beyond), reporting will include sub-totals for flights subject to offsetting requirements and flights not subject to offsetting requirements
- Information on verification body that has verified the Emissions Report
 - Name, contact information
(More information on this is provided in the second part of this presentation)



Aeroplane Operator's Reporting on CORSIA Eligible Fuels



Reference: Annex 16, Volume IV, Part II, Chapter 2, 2.3.3



CEF

- From the start of CORSIA's pilot phase (i.e. reporting of 2021 CO₂ emissions and beyond), aeroplane operators can claim emissions reductions by reporting on CORSIA eligible fuels (CEF)

- Aeroplane operators can report on CORSIA eligible fuels in two different ways:
 - a) On an annual basis (recommended)
 - b) One-time reporting within a given compliance period (e.g. 2021 – 2023)
- When reporting on CORSIA eligible fuels, operators shall subtract the fuel traded or sold to a third party from its total reported quantity



- Information to be included in the operator's annual Emissions Report when claiming emissions reductions from CORSIA eligible fuels (reporting of 2021 CO₂ emissions and beyond):

– For each CORSIA eligible fuel type:

- a) Total mass
- b) Approved Life Cycle Emissions values
- c) Emissions reductions claimed

– Total emissions reductions claimed from the use of all CORSIA eligible fuel types



Reference: Annex 16, Volume IV, Appendix 5, Table A5-1



CEF

- If an operator claims emissions reductions from CORSIA eligible fuels, additional information needs to be provided as a separate supplementary report to the Emissions Report:
 - Additional information includes data received from the producer of the neat (unblended) fuel, and from the fuel blender
 - The operator shall also provide:
 - a) Declaration of all other GHG schemes it participates in where the emissions reductions from the use of CORSIA eligible fuels may be claimed
 - b) Declaration that it has not made claims for the same batches of CORSIA eligible fuels under these other schemes

Reporting Templates

- Standardized reporting templates are available in the ICAO CORSIA website to facilitate uniform reporting from aeroplane operators to States

– Template of Emissions Report

– Template of CORSIA eligible fuels supplementary information to the Emissions Report



CEF

CORSIA»»IMPLEMENTATION

- Assembly Resolution A39-3

EN FR SP RU AR ZH

- SARPs - Annex 16 Volume IV

- Environmental Technical Manual - Volume IV (New)

» Templates (New)

← Here!

- ICAO CORSIA Implementation Elements

» CORSIA States for Chapter 3 State Pairs

» ICAO CORSIA CO₂ Estimation and Reporting Tool (CERT)

» CORSIA Eligible Fuels

» CORSIA Eligible Emissions Units

» CORSIA Central Registry (CCR)

Additional Material for CORSIA Implementation



CORSIA

ACT»»CORSIA

- CORSIA Buddy Partnerships
- Model Regulations
- Frequently Asked Questions
- Brochure and Leaflets
- Videos
- Seminars
- Online Tutorials
- Background Information





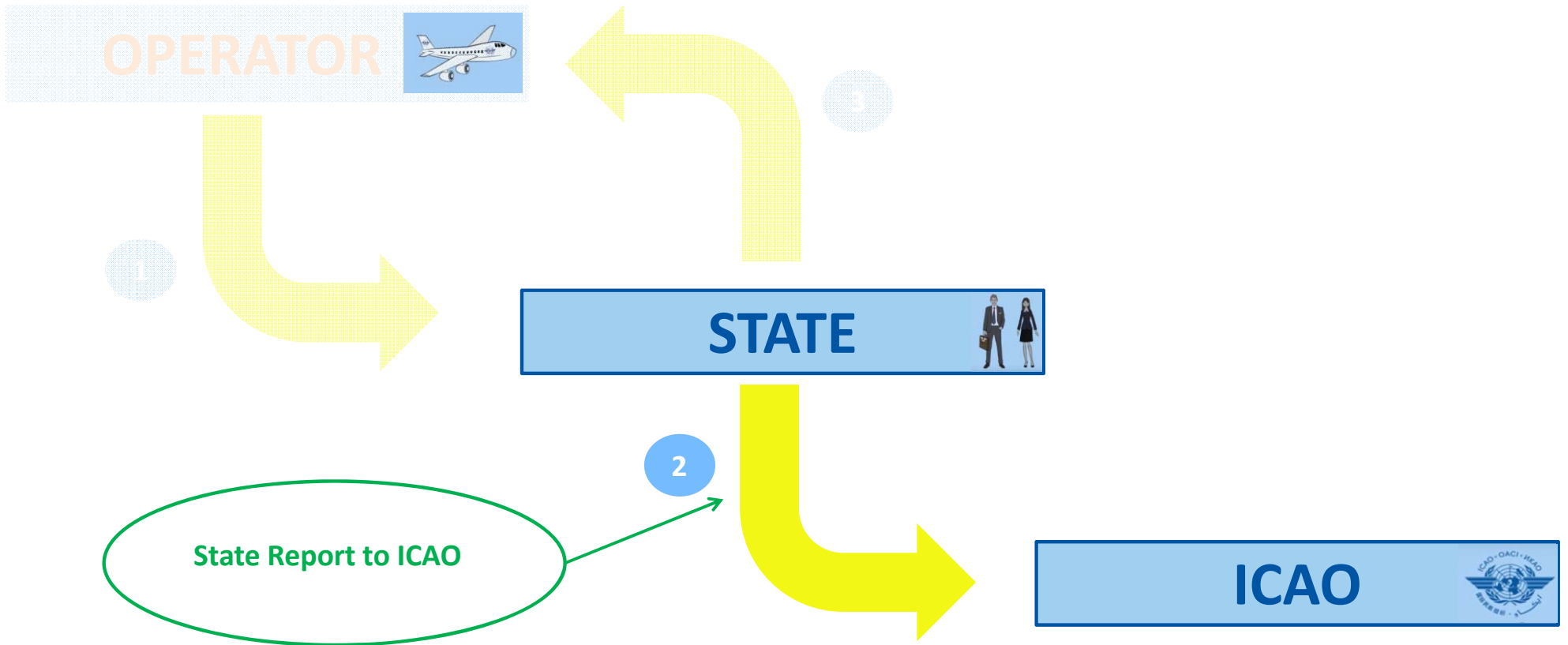
ICAO

ENVIRONMENT

Session 3, Part 3: Reporting of CO₂ Emissions by States

C  **RSIA**

Reporting of CO₂ Emissions – State



Reference: Annex 16, Volume IV, Part II, Chapter 2, 2.3.2



Reporting of CO₂ Emissions – State

- CORSIA requires States with 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 recipient: ICAO

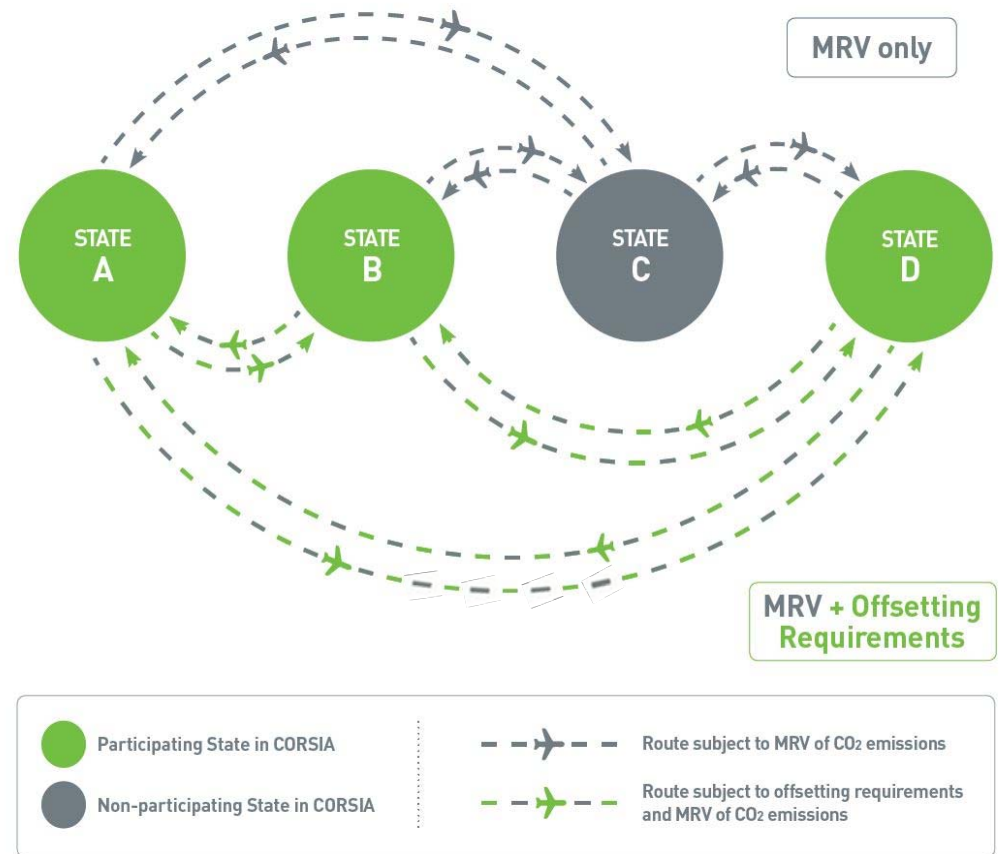
(*) aeroplane operators that produce annual CO₂ emissions greater than 10 000 tonnes from international flights conducted by aeroplanes with a maximum certificated take-off mass greater than 5 700 kg (with the exception of humanitarian, medical and firefighting flights)



- Total annual CO₂ emissions (in tonnes):
 - Per State pair
 - For each State pair, data aggregated for all aeroplane operators attributed to the State that conduct operations in that State pair
 - a) For a given State pair, no operator-specific data
 - b) For a given State pair, emissions from operators not attributed to the State are not taken into consideration

State reporting of CO₂ emissions to ICAO (from 2021)

- Total annual CO₂ emissions per State pair, aggregated for all aeroplane operators attributed to the State, with sub-totals for:
 - State pairs subject to offsetting requirements
 - State pairs not subject to offsetting requirements
- Total annual CO₂ emissions for each operator attributed to the State
 - One value per operator
 - When CERT is used by the operator (subject to eligibility), this will be specified





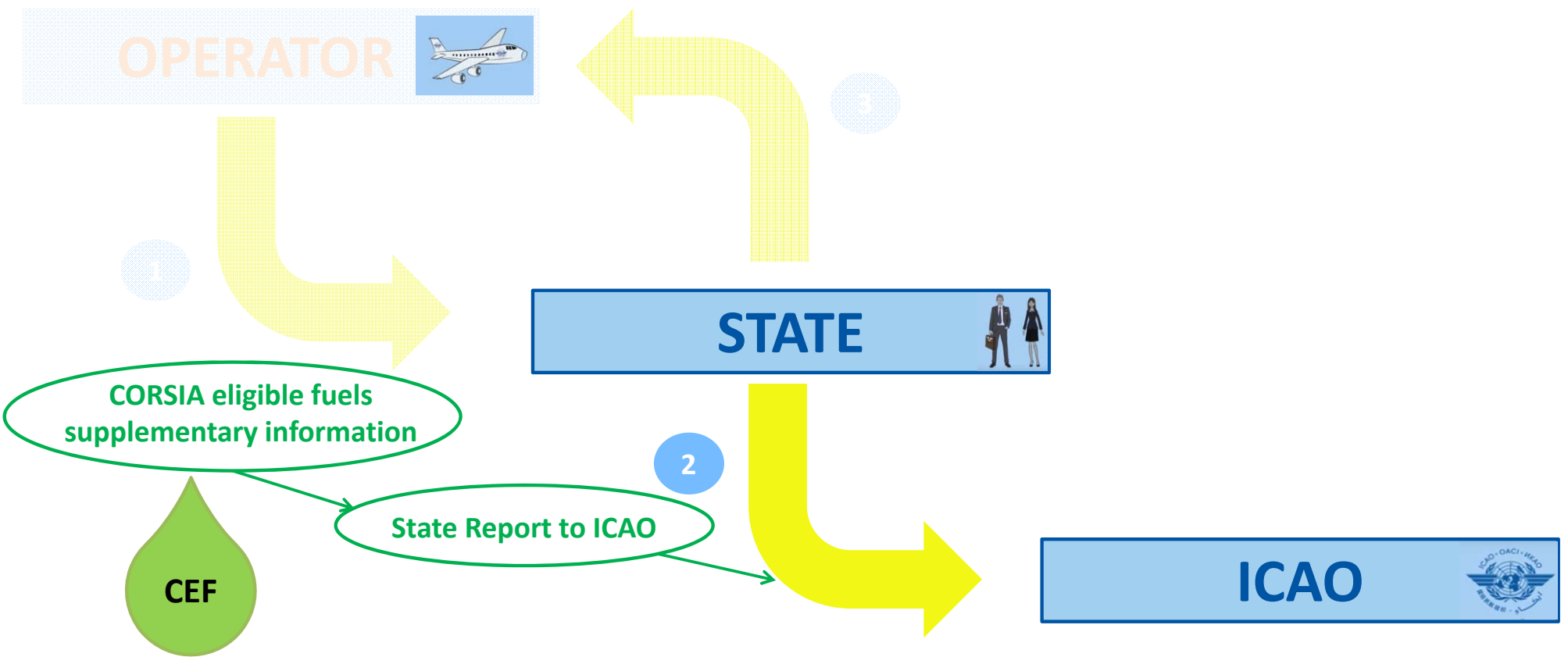
Confidentiality of data from aeroplane operators

- In specific circumstances, an aeroplane operator may request to its State of attribution not to publish data at the aeroplane operator level:
 - If the aeroplane operator operates a very limited number of State pairs
 - If aggregated State pair data may be attributed to an identified aeroplane operator as a result of a very limited number of aeroplane operators conducting flights on a State pair
- Based on received requests, the State will determine whether this data is confidential and will inform ICAO of any reported data deemed confidential



- For data reported as confidential by States, ICAO will aggregate the data and include this information in the ICAO document entitled “CORSIA Central Registry (CCR): Information and Data for Transparency”
 - For data deemed confidential because an aeroplane operator operates a very limited number of State pairs, ICAO will aggregate and publish the data without attribution to a specific aeroplane operator
 - For data deemed confidential because aggregated State pair data may be attributed to an identified aeroplane operator, ICAO will aggregate and publish the data without attribution to a specific State pair, but with the distinction between State pairs subject to offsetting requirements and those not subject to offsetting requirements

Reporting of CO₂ Emissions – State



Reference: Annex 16, Volume IV, Part II, Chapter 2, 2.3.2



CEF Supplementary Information to the Emissions Report from a State to ICAO (from 2021)

Reporting State



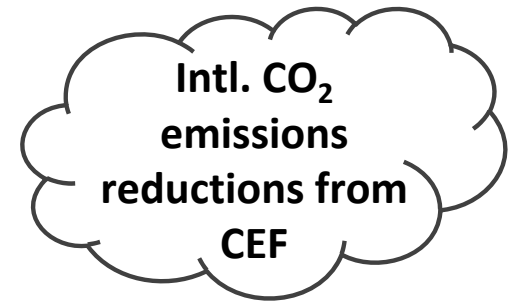
Production
(who / when)



Batch
(number / mass)

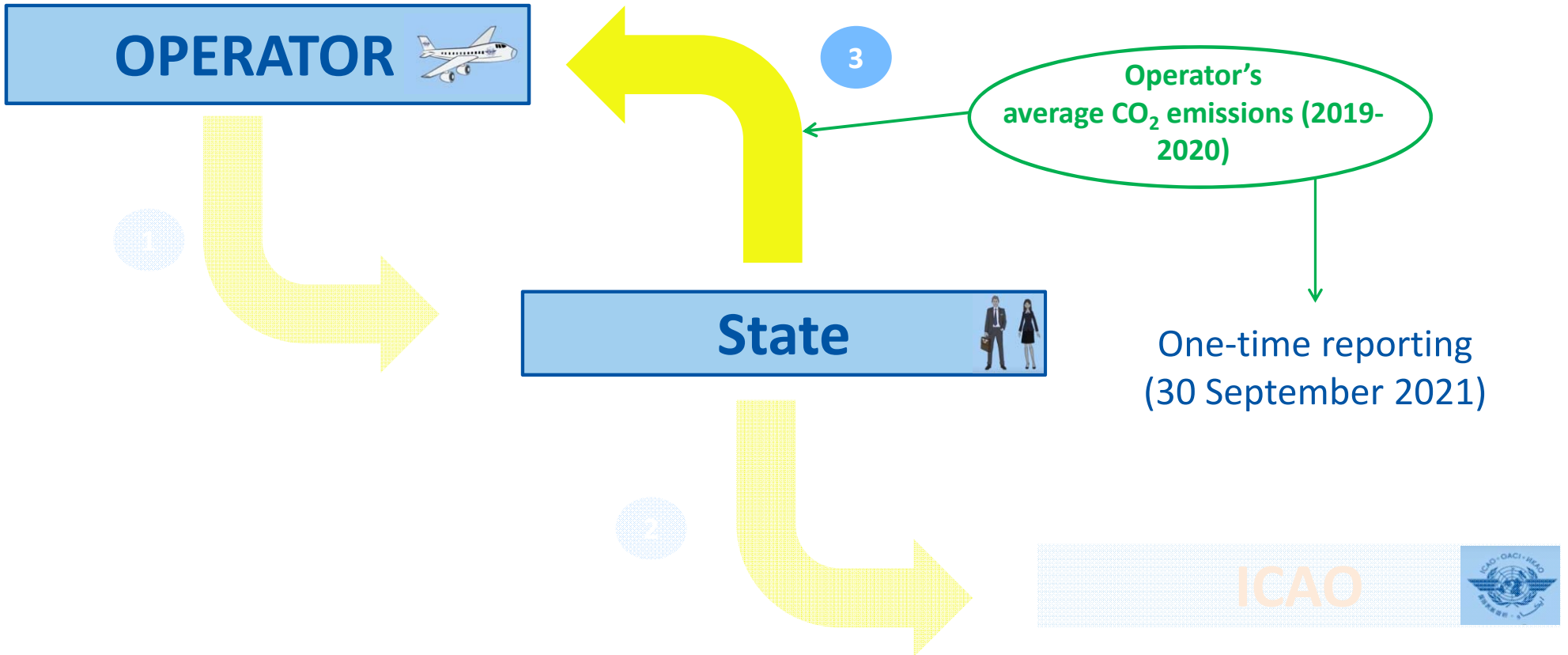


CEF type
(feedstock, conversion process, Jet A1/Avgas)



Emission reductions for each CEF type

Reporting of CO₂ Emissions – State



Reference: Annex 16, Volume IV, Part II, Chapter 2, 2.3.2



Session 3, Part 4: Data Gaps and Error Corrections

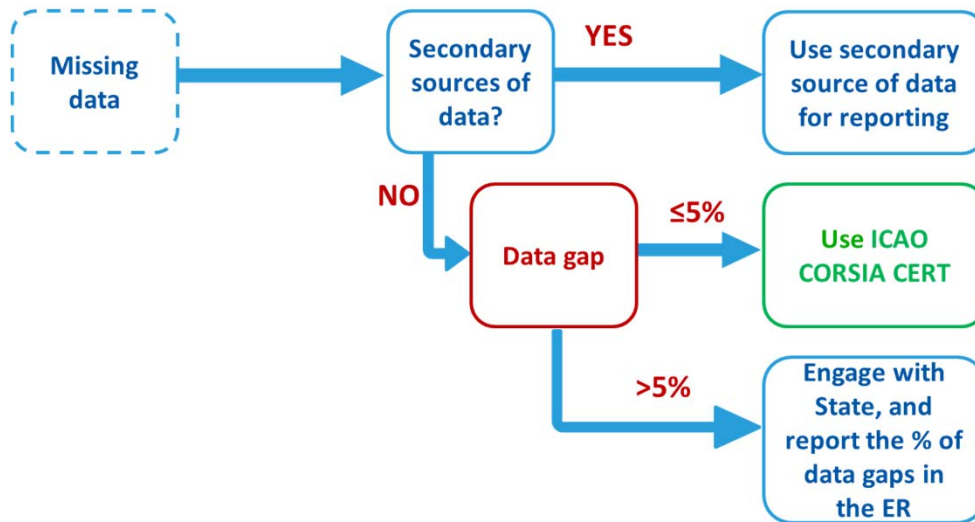


Data Gaps in Emissions Reports

- Gaps in emissions-related data can occur due to various reasons (e.g. irregular operations, data feed issues or critical system failures)
- Data gaps can be identified at various stages:
 - By the aeroplane operator when preparing the Emissions Report
 - By the verification body when receiving the Emissions Report submitted by the aeroplane operator
 - It can lead to an Emissions Report being assessed as “non-satisfactory”*
 - By the State in its review of the verified Emissions Report submitted by the aeroplane operator and the verification body

Data Gaps in Emissions Reports

- Actions to address data gaps - aeroplane operator
 - The aeroplane operator shall fill identified data gaps and correct systematic errors and misstatements prior to the submission of the Emissions Report



- Definition of the data gap threshold:
 - 2019-2020 period: 5 per cent of international flights*
 - 2021-2035 period: 5 per cent of international flights subject to offsetting requirements*

- Actions to address data gaps – State / ICAO
 - If the **aeroplane operator** does not provide its annual Emissions Report in accordance with the timeline as defined in Appendix 1, then the State to which it is attributed shall engage with the operator to obtain the necessary information
 - If this proves unsuccessful, then the **State shall estimate** the operator's annual emissions using the best available information and tools (i.e. ICAO CORSIA CERT)
 - If the State does not report to ICAO in due time, **ICAO will fill the data gaps** to calculate the total sectoral CO₂ emissions in that year and related calculations



Error Correction to Emissions Reports

- Error correction to Emissions Report
 - The State shall report an error in aeroplane operator's CO₂ emissions data submitted to ICAO and update the reported CO₂ emissions to address the error
 - Further guidance on error corrections by States will be provided in the near future



Session 3, Part 5: Timeline for Actions on Reporting of CO₂ Emissions



Timeline and Actions (2019)

Timeline	Responsibility	Action
1 January to 31 December 2019	Operator	Monitor 2019 CO₂ emissions from international flights
28 February 2019	Operator	Submit Emissions Monitoring Plan to State of attribution
30 April 2019	State	Approve Emissions Monitoring Plans of operators attributed to the State
30 April 2019	State	Submit to ICAO: <ul style="list-style-type: none"> - List of operators attributed to the State - List of verification bodies accredited in the State
31 May 2019	ICAO	Make available the ICAO document entitled “CORSIA Aeroplane Operator to State Attributions”

Timeline and Actions (2020)

Timeline	Responsibility	Action
1 January to 31 December 2020	Operator	Monitor 2020 CO₂ emissions from international flights
1 January to 31 May 2020	Operator	<ul style="list-style-type: none"> - Compile 2019 CO₂ emissions data to be verified by a verification body - Submit Emissions Report (coverage: 2019 CO₂ emissions) to selected verification body for verification
31 May 2020	Operator and verification body	Submit Emissions Report and associated Verification Report to the State of attribution
1 June 2020 to 31 August 2020	State	Conduct an order of magnitude check of verified Emissions Report from operators attributed to the State
31 August 2020	State	Submit 2019 CO₂ emissions data to ICAO
30 November 2020	State	Submit to ICAO: <ul style="list-style-type: none"> - List of operators attributed to the State - List of verification bodies accredited in the State
31 December 2020	ICAO	Make available the ICAO document entitled "CORSA Aeroplane Operator to State Attributions"

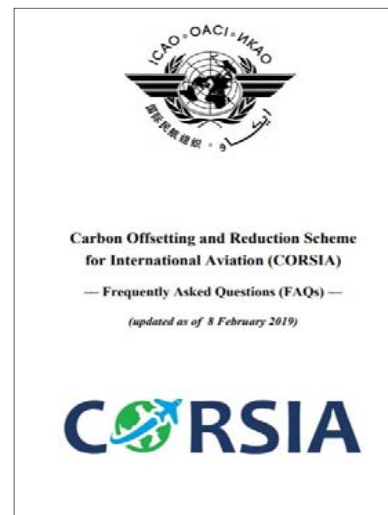
FAQs regarding the Reporting of CO₂ Emissions

A selection of Frequently Asked Questions (FAQs) on CORSIA and related responses are available for download via the CORSIA webpage: www.icao.int/corsia

What is the level of aggregation of the CO₂ emissions information that will be reported to which stakeholders?

Are there any provisions regarding the confidentiality of data if a route is only operated by one operator?

What is the timeline for reporting of CO₂ emissions, and who will report to whom?



What if there are gaps identified in the reported data?

How does an aeroplane operator report the use of CORSIA eligible fuels?

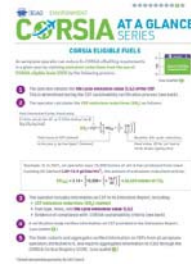
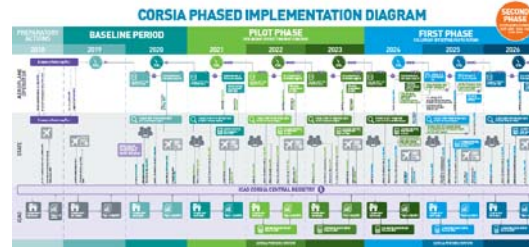


Questions?



Demonstration of

- Emissions Report template; and
- CEF Supplementary Information template



Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA)

CORSIA News (click here to consult the complete list)

19-25 Jan 2019

Trinidad & Tobago and Jamaica received training under the ACT-CORSIA Buddy Partnership with Germany

CORSIA IMPLEMENTATION

- Assembly Resolution A39-3
- SARPs - Annex 16 Volume IV
- Environmental Technical Manual - Volume IV (New)
 - Templates (New)
- ICAO CORSIA Implementation Elements
 - CORSIA States for Chapter 3 State Pairs
 - ICAO CORSIA CO₂ Estimation and Reporting Tool (CERT)
 - CORSIA Eligible Fuels
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Additional Material for CORSIA Implementation



ACT CORSIA

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