



ICAO

ENVIRONMENT

ICAO Seminar on CORSIA

CORSIA

Monitoring, Reporting and Verification (MRV) System

ICAO Secretariat





- a) Assembly Resolution A39-3 and the MRV system
- b) Overview of Monitoring, Reporting and Verification procedures
- c) Expected roles and responsibilities in the MRV process

- a) **Assembly Resolution A39-3 and the MRV system**
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- Regarding the implementation of the MRV system, the 39th ICAO Assembly requested:
 - a) 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
 - b) all 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
 - c) that a methodology should be developed to ensure that an aircraft operator's offsetting requirements under the scheme in a given year can be reduced through the use of sustainable alternative fuels, so that all elements of the basket of measures are reflected

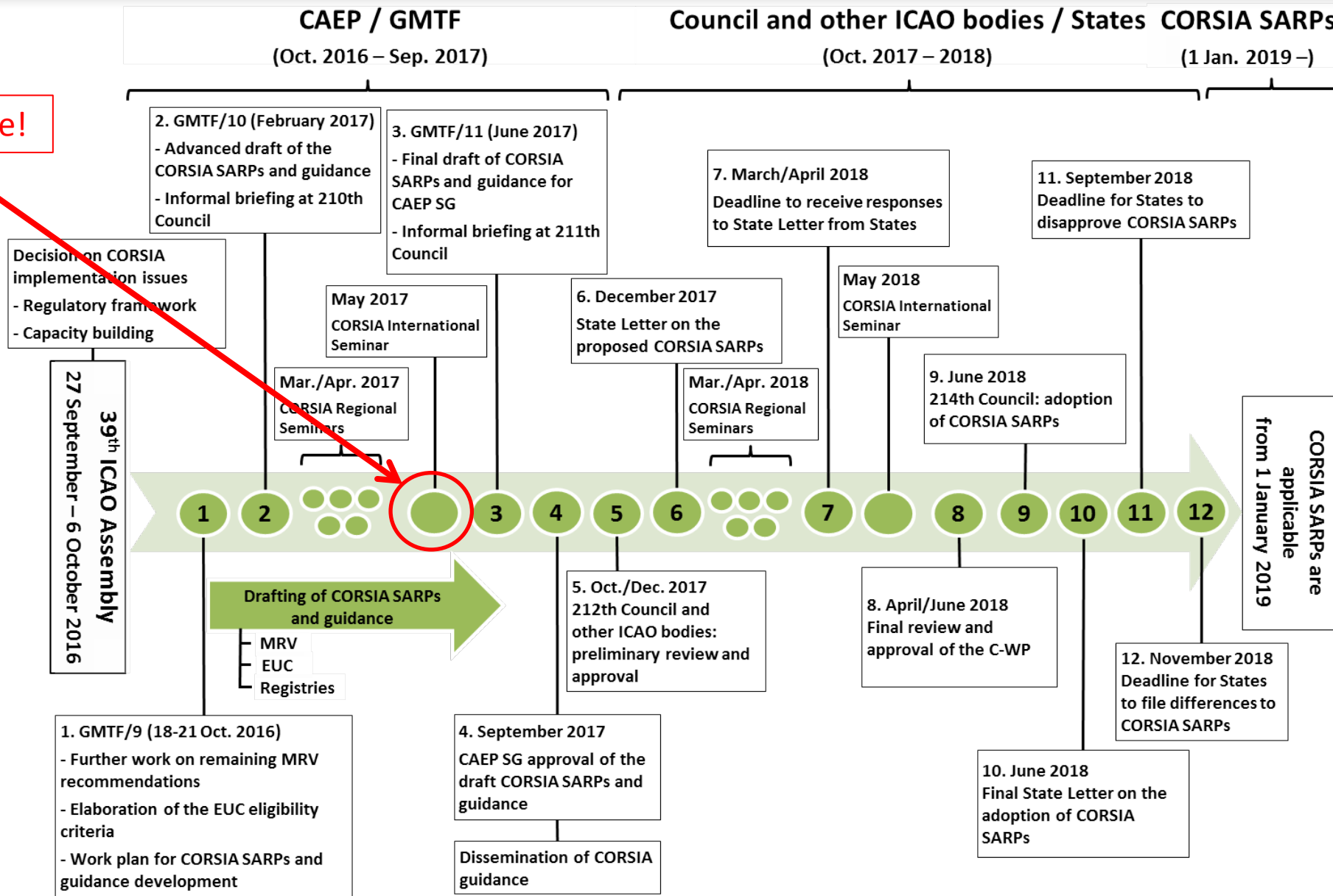
These paragraphs request the development of MRV SARPs and guidance by the Council by 2018, and implementation of the MRV system by States from 1 January 2019

- Regarding the capacity building and assistance to implement the MRV system, the Assembly requested:
 - a) the Council to take necessary action to expand the provision of capacity building and assistance for the preparation and implementation on Member States' action plans, in order to accommodate capacity building and assistance for implementation of the MRV system by Member States from 1 January 2019, including organization of seminars and training in all regions from 2017, and facilitation of financial support where needed, in particular for those States that volunteer to participate in the pilot phase and require support to do so
 - b) Member States to build partnerships among themselves to cooperate on the implementation of the MRV system

***These sub-paragraphs request
capacity building and partnerships on MRV***

CORSIA SARP and Guidance Development Timeline

We are here!





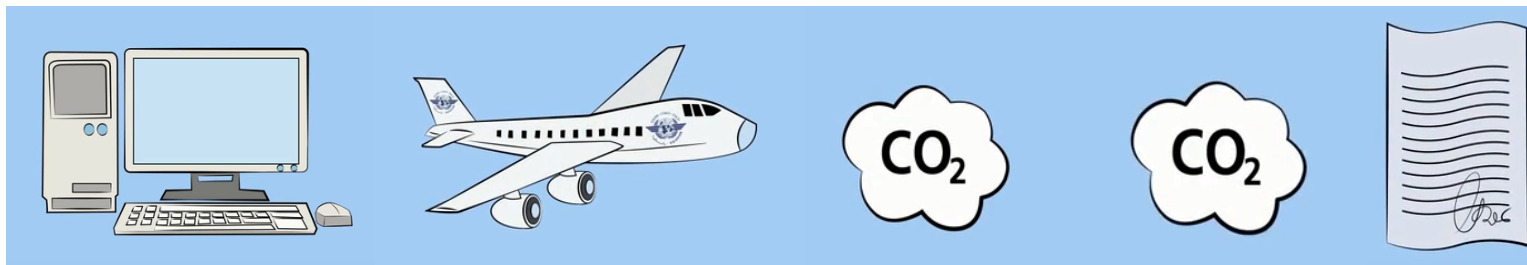
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- An MRV system is a key component of CORSIA implementation
 - Implementation of the MRV system from 1 January 2019 by all States whose aircraft operator undertakes international flights is essential
- Monitoring, reporting and verification of CO₂ emissions
 - Purpose: to collect data on international aviation CO₂ emissions on an annual basis and compare emissions against the baseline emissions (2019-2020)
 - Scope: all international flights (flights that depart in one country and arrive in a different country)
- Components of the MRV system:
 - **Monitoring** of fuel use on each flight and calculation of CO₂ emissions (1 tonne fuel burn = 3.16 tonnes CO₂ emissions)
 - **Reporting** of emissions information between aircraft operators, States and ICAO
 - **Verification** of reported emissions data to ensure completeness and to avoid misstatements

- The Assembly requested the Council, with the technical contribution of CAEP, to complete its work on MRV as soon as possible
- **The preliminary recommendations contained in this presentation regarding the CORSIA MRV system reflect the ongoing work of CAEP; further work is required in CAEP to provide its technical recommendations, for consideration by the Council**
- Following slides present a high-level overview of the key elements in the MRV system under the CORSIA





- All operators are responsible for monitoring emissions of international flights they performed
- Need to make sure that each international flight is attributed to a single aircraft operator
- Flight plan is used for the attribution of flights to operators – For example, the ICAO Designator* in Item 7 (aircraft identification) attributes the flight to an aircraft operator

1. ICAO model flight plan form

The diagram shows the ICAO model flight plan form (PLAN DE VOL) with various fields. Item 7, 'AIRCRAFT IDENTIFICATION' (Identification de l'aéronef), is highlighted with a red circle. An arrow points from this field to a table titled 'Illustrative examples of ICAO Designators'.

Illustrative examples of ICAO Designators	
Aircraft Operator	ICAO Designator
A1	ABC
A2	ACZ
B1	BCZ
B2	BNN

10 *ICAO Designators are contained in ICAO Doc 8585

- Monitoring of fuel burn and CO₂ emissions by an aircraft operator for each flight needs information, e.g.:
 - Aircraft fleet and operating routes; method for calculating CO₂ emissions; and how CO₂ emissions data will be managed
- Calculation of CO₂ emissions to be based on fuel burn:

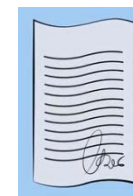
1 tonne of fuel burn = 3.16 tonnes of CO₂ emissions




- Flexibility for aircraft operators to choose an appropriate method:
 - Large operators: Fuel monitoring methods based on actual fuel burn
 - Small emitters: Emissions estimation methods (ICAO tool) – simplified procedure



Reporting of CO₂ Emissions

- Reporting of CO₂ emissions data (covered by CORSIA and not covered by CORSIA) provides the basis to calculate the total emissions and annual offsetting requirements of individual aircraft operators
- Flow of CO₂ emissions data:
 - **Aircraft operators** report emissions information to the State Authority every year
 - **States** report the necessary information to ICAO
 - **ICAO** consolidates the data, publishes total CO₂ emissions, calculates the annual sectoral growth factor, and communicates the growth factor to States/aircraft operators
- Standardized template is being developed to facilitate uniform reporting of information



- Verification on emissions data aims to ensure the consistency of data and to identify any errors in the aircraft operator's Annual Emissions Report
- A three-step verification pathway, which provides a role for each stakeholder:
 - **An internal pre-verification by the aircraft operator** 
 - **Third party verification before reporting to the State Authority** 
 - **An order of magnitude review by the State Authority** 
- Requirements for external verification to be based on existing ISO Standards

MRV of Sustainable Alternative Fuels

- Paragraph 6 of the Resolution A39-3 requests the Council to develop a methodology to ensure that an aircraft operator's offsetting requirements under the scheme can be reduced through the use of sustainable alternative fuels
- For MRV purposes, the sustainable alternative fuel needs to:
 - Meet requirements defined in sustainability criteria; and
 - Have a default emission value for each feedstock/production pathway
- Tracking the quantity of alternative fuel, based on fuel purchase records
 - Typically, aviation fuels are blended in fuel distribution infrastructure → it is not feasible to determine the alternative fuel content of fuel at the point of uptake to an aircraft
 - Work in CAEP is on-going to finalize the recommendations on how to best track the fuel purchase records from the fuel producer to the aircraft operator



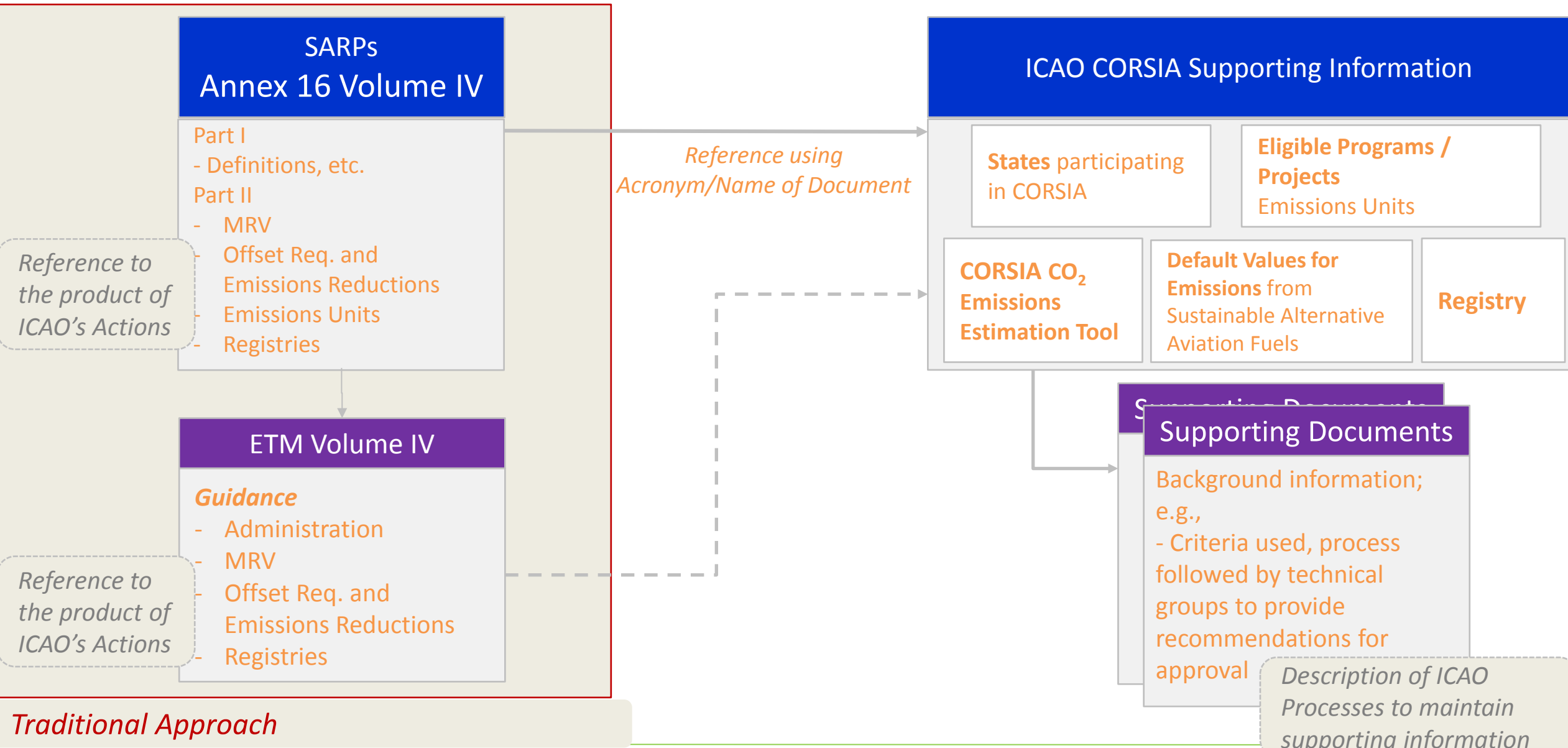




Preliminary Structure of the Draft SARPs, Guidance and Supporting Information/Documents

- In addition to the CORSIA SARPs and guidance material, which include the core requirements of the MRV system, supporting information/documents is needed to complete the MRV system
- Draft CORSIA SARPs, guidance material and supporting information/documents together will constitute a comprehensive package, which allows for the timely implementation of the MRV system

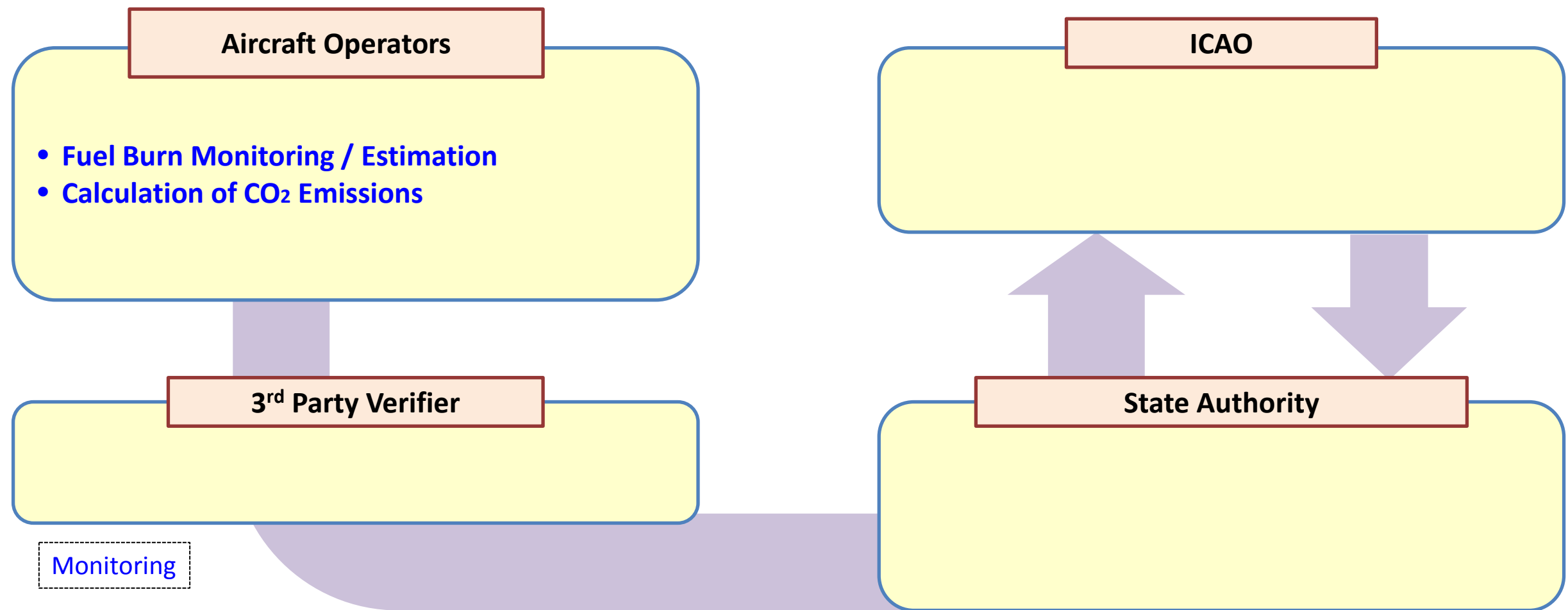
Preliminary Structure of the Draft SARPs, Guidance and Supporting Information/Documents

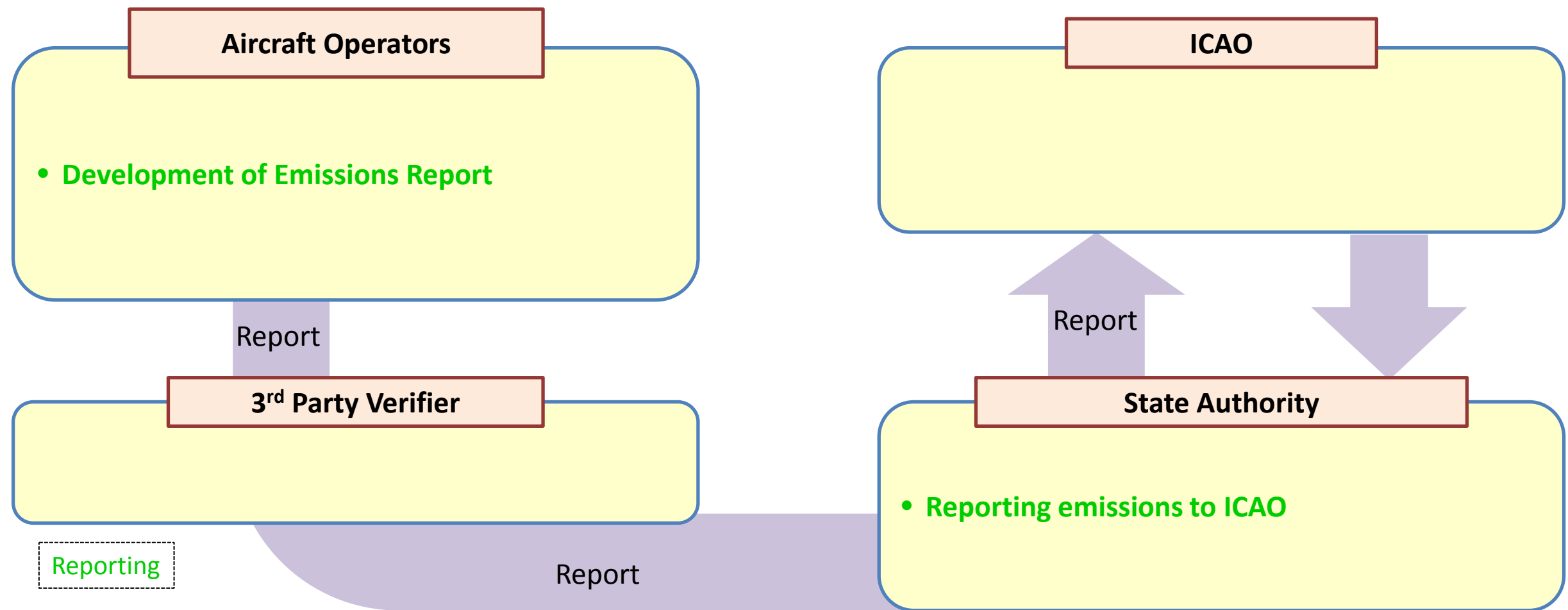
Note: This is a preliminary structure being discussed by CAEP and is subject to change.

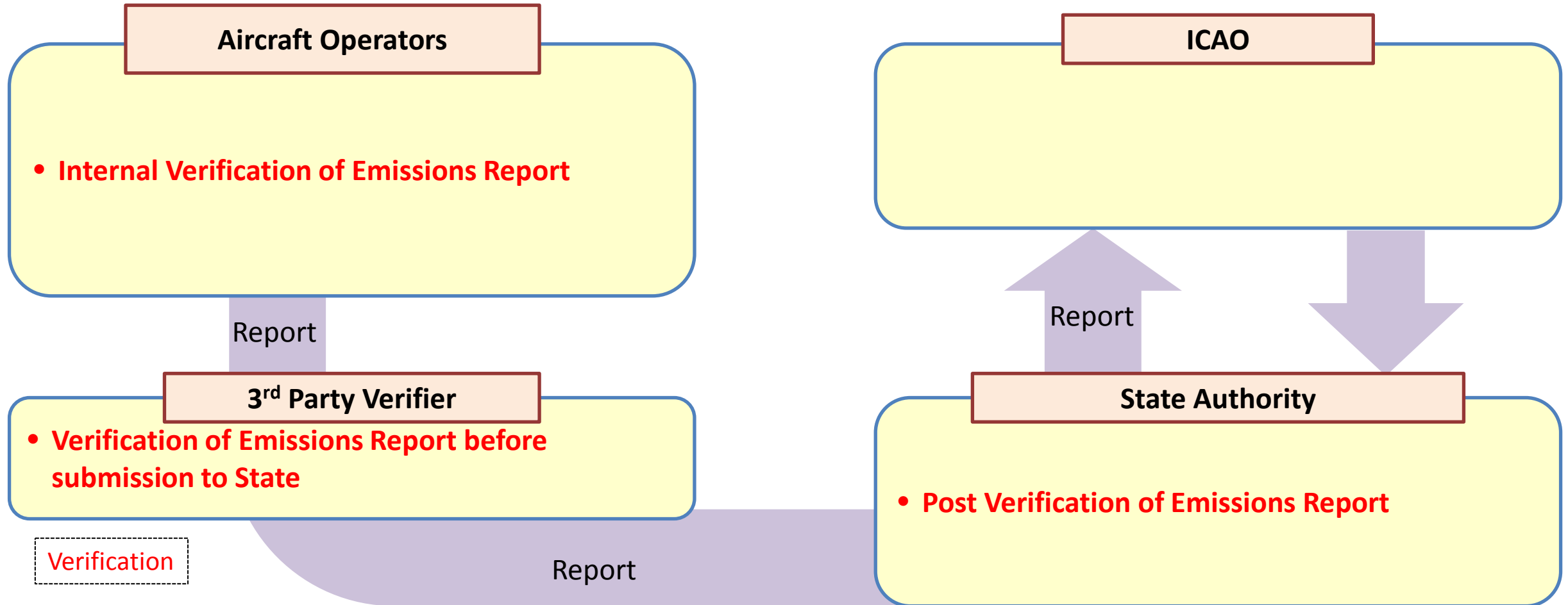


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The following slides show the examples on the roles of States, operators, ICAO etc. in the MRV process.

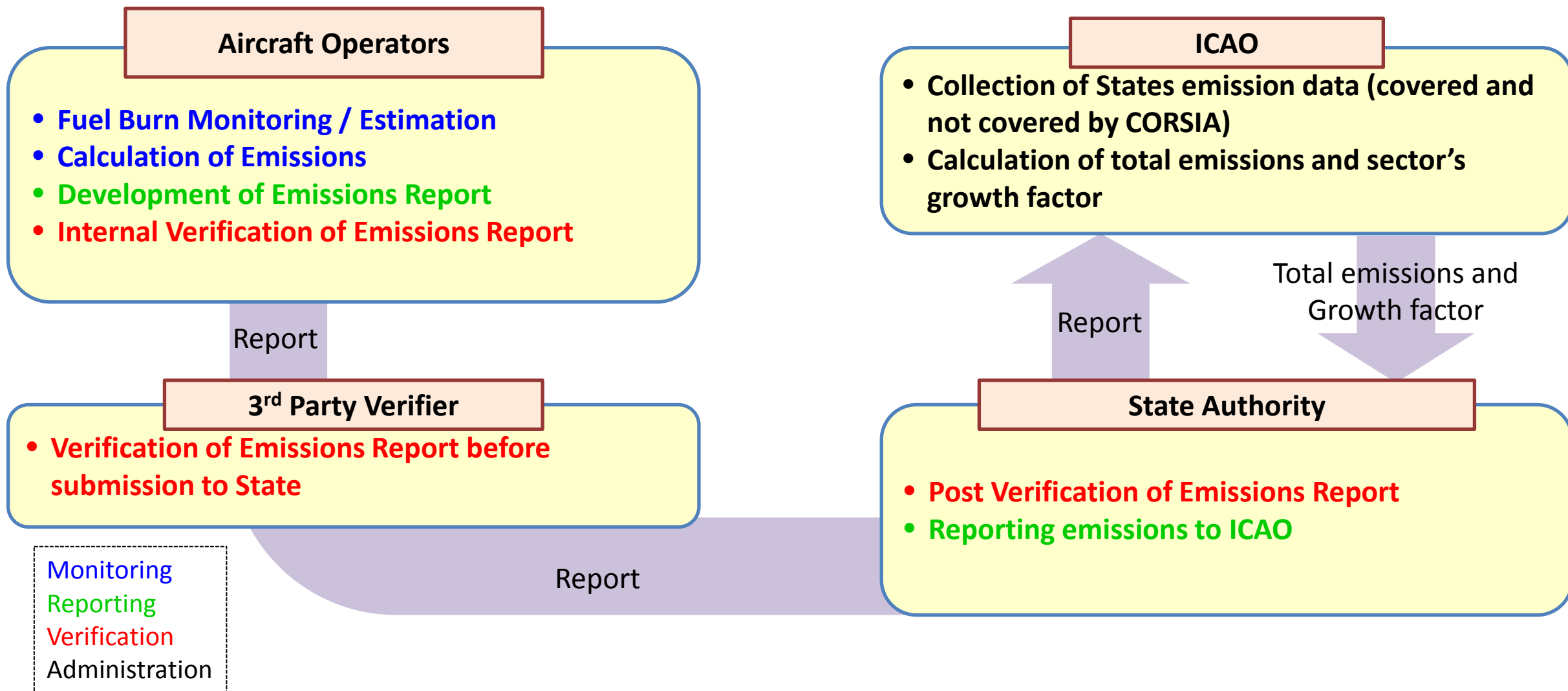











Overview – Roles in the MRV System



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THANK YOU

More information on the CORSIA:

- ICAO web site <http://www.icao.int/env>
 - CORSIA Video
 - CORSIA FAQs
 - CORSIA voluntary participation
 - Environment Report 2016

