ICAO ENVIRONMENT

Session 3: ICAO CORSIA CO_2 Estimation and Reporting Tool (CERT)

ICAO Secretariat

The role of the CERT within CORSIA

ICAO

CORSIA

CERT

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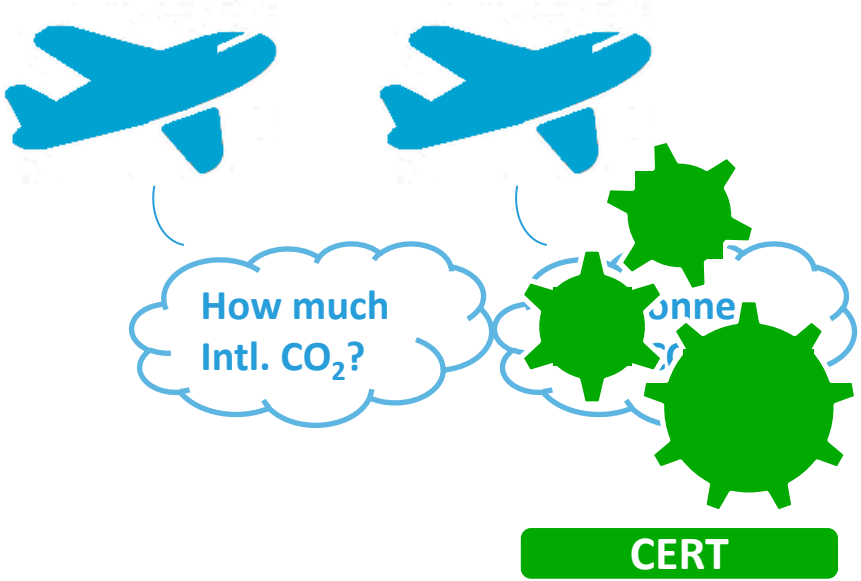
What is the CERT?

CERT is an ICAO tool to help Aeroplane Operators estimate and Report their international aviation emissions



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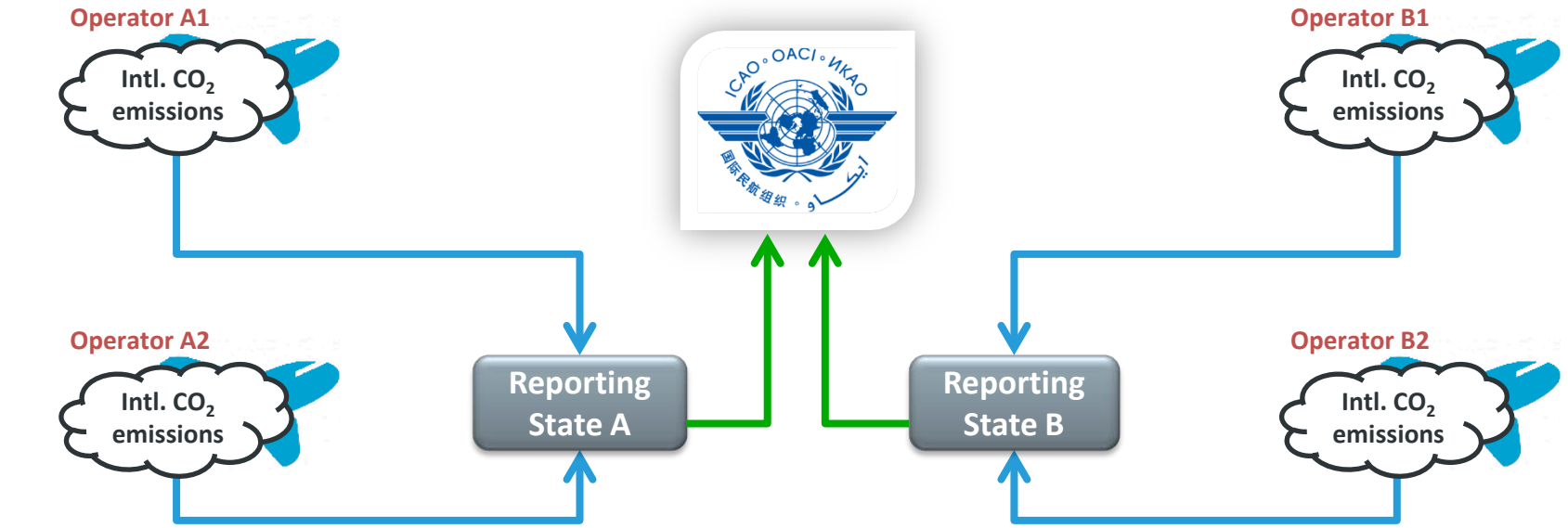
Why use the CERT?

International Aviation Emissions Monitoring and Reporting from Aeroplane Operators is a CORSIA requirement



Note: Aeroplane Operators eligible to use the CERT, are also encouraged to use one of the five Fuel Use Monitoring Methods to monitor CO_2 emissions from international flights.

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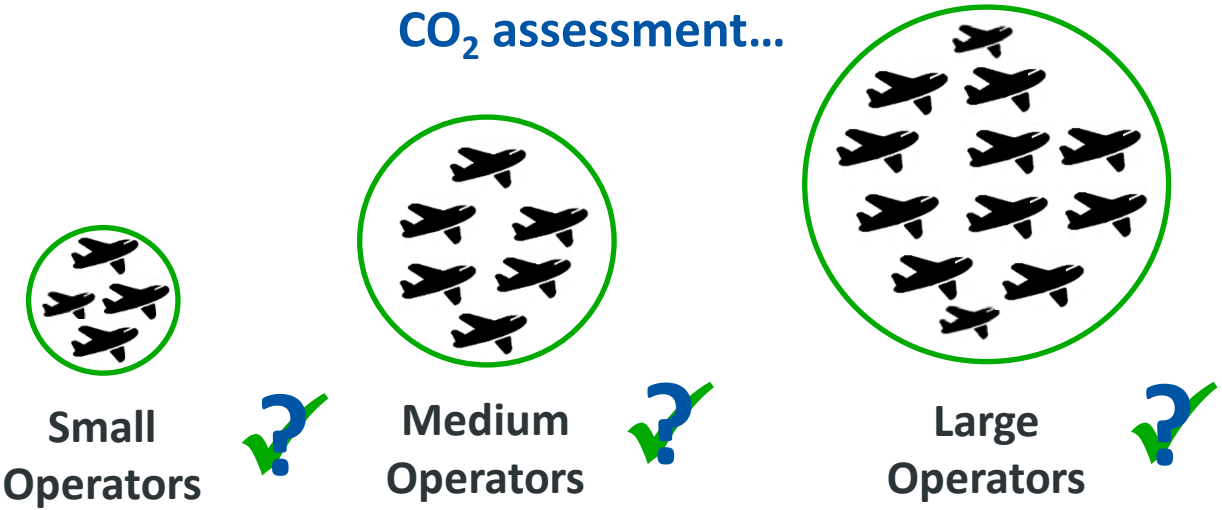
Who can use the CERT?

ALL Aeroplane Operators can use the CERT for a preliminary CO_2 assessment…



… but only some Aeroplane Operators can use the CERT as primary* means for CO_2 Estimation and Reporting

* Note: All Aeroplane Operators can use the CERT to fill data gaps (up to a certain number of flights)

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Who can use the CERT?

CERT	Aeroplane Operators International CO_2 Emissions (tonnes) 2019-2020*		
Function / Use	**≤ 10K CO_2**	< 500K CO_2	**≥ 500K CO_2**
Preliminary CO_2 Assessment	✓	✓	✓
CO_2 Estimation & Reporting	No CORSIA requirement	✓	Not Eligible to use CERT **
Filling Data Gaps	No CORSIA requirement	✓	✓

** Note: from 2021-2035 operators can use CERT to estimate and report emissions if their annual emissions from international flights subject to offsetting requirement are < 50 000 tonnes of CO_2 annually.*

*** Note: If an aeroplane operator uses CERT for 2019 CO_2 estimation and reporting (based on their preliminary CO_2 assessment) but exceeds the threshold of 500 000 tonnes in 2019, the State could permit the operator to continue to use CERT during 2020.*

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How does the CERT work?

CERT is a flight-by-flight*-based tool requiring only 3 elements of input:

- an Aeroplane Type
- an Origin
- a Destination

INPUT

* Entry of batches of flights is allowed (i.e., number of flights in a year using the same aeroplane type and on the same aerodrome pair).

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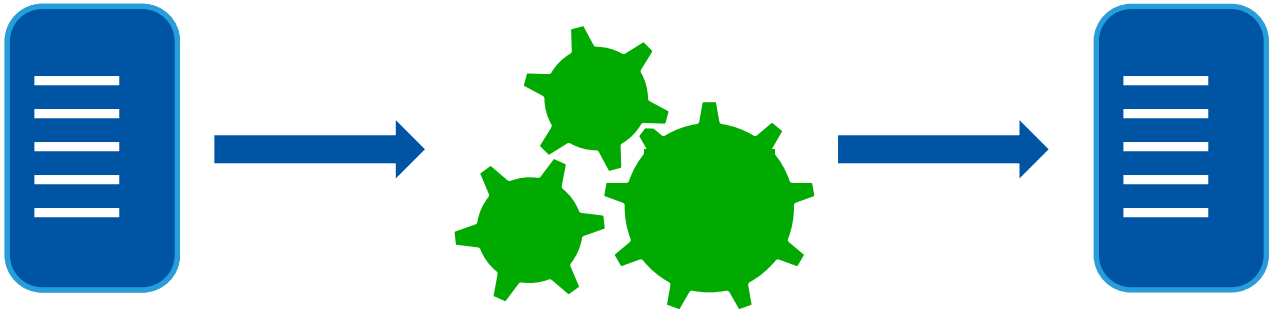
How does the CERT work?

INPUT **CERT** **OUTPUT**



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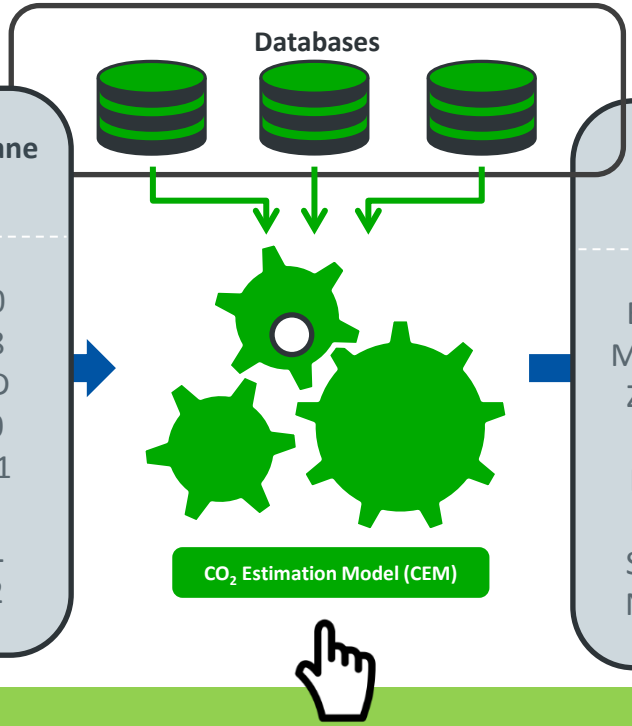
How does the CERT work?

INPUT

Origin	Destination	Aeroplane type
EGKK	EVRA	A320
MMMX	MUHA	B738
ZBAA	ZMUB	DH8D
KJFK	CYUL	E190
HKJK	LFPG	MD11
…	…	…
SBGR	OMDB	B77L
NFFN	NVVV	AT72

* For illustration only

CERT



OUTPUT

Origin	Destination	CO_2 emissions*
EGKK	EVRA	1 000
MMMX	MUHA	2 000
ZBAA	ZMUB	3 000
KJFK	CYUL	4 000
HKJK	LFPG	5 000
…	…	…
SBGR	OMDB	6 000
NFFN	NVVV	7 000

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Introduction to the CERT as a tool

ICAO

CORSIA - CERT

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Functionalities of the CERT

The CERT will have up to 4 functionalities:

	CERT CO_2 Estimation & Reporting Tool		
Year of Validity	**2018** (Version 2018)	**2019-2020** (Version 2019-2020)	**2021-2035** (Version 2021-2035)
Estimation of CO_2 for Determination of Simplified Compliance Procedures Eligibility	**Yes**	**Yes**	**Yes**
Report Generation Functionality	**Partial***	**Yes**	**Yes**
Monitoring (Estimating CO_2)	**No**	**Yes**	**Yes**
List of States pairs subject to offsetting requirement	**No**	**No**	**Yes**

* The 2018 Version of the CERT includes the functionality to generate a summary report of the assessment of the estimation of the Aeroplane Operators CO_2 emissions. The report can be used as supporting evidence for the operator's Emissions Monitoring Plan.

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How does the CERT work?

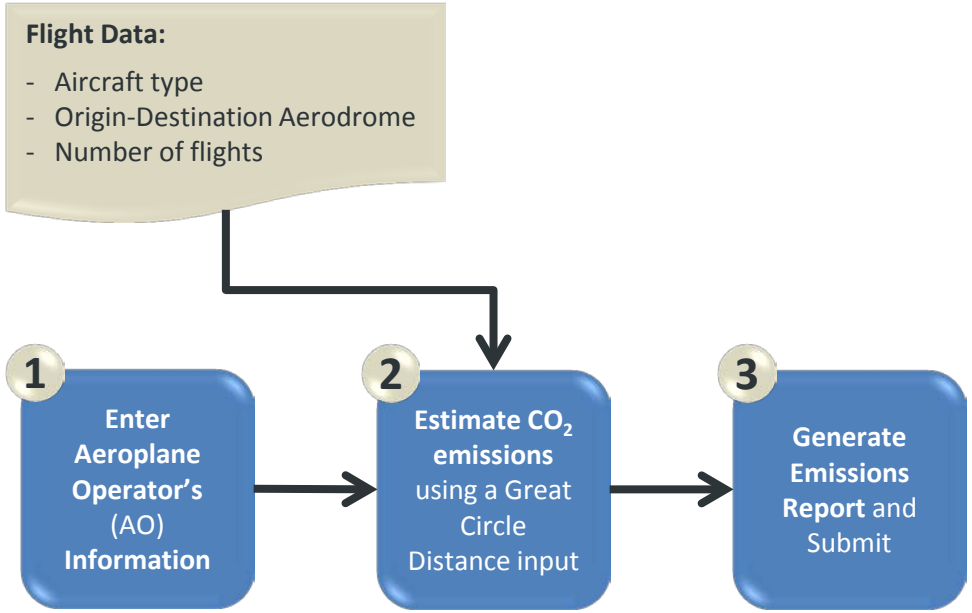
The CERT comprises a three-step process

(1) Entering Aeroplane Operator's Basic Information

(2) Entering Flight Data to estimate CO_2 Emissions by entering:

a) Aeroplane Type by ICAO Type Designator
b) Origin-Destination Aerodrome
c) Number of flights (if batches of flights are entered)

(3) Generating the Summary Assessment report in support for EMP submission



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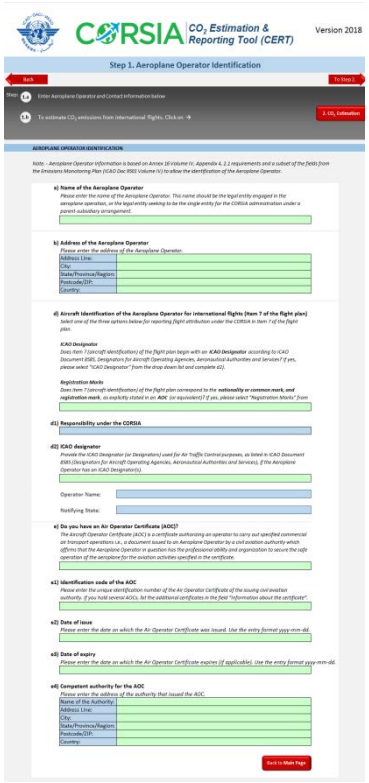
How does the CERT work? – Step 1



STEP 1

Flight Data:

- Aircraft type
- Origin-Destination Aerodrome
- Number of flights

1. **Enter Aeroplane Operator's** (AO) **Information**
2. **Estimate CO_2 emissions** using a Great Circle Distance input
3. **Generate Emissions Report** and Submit

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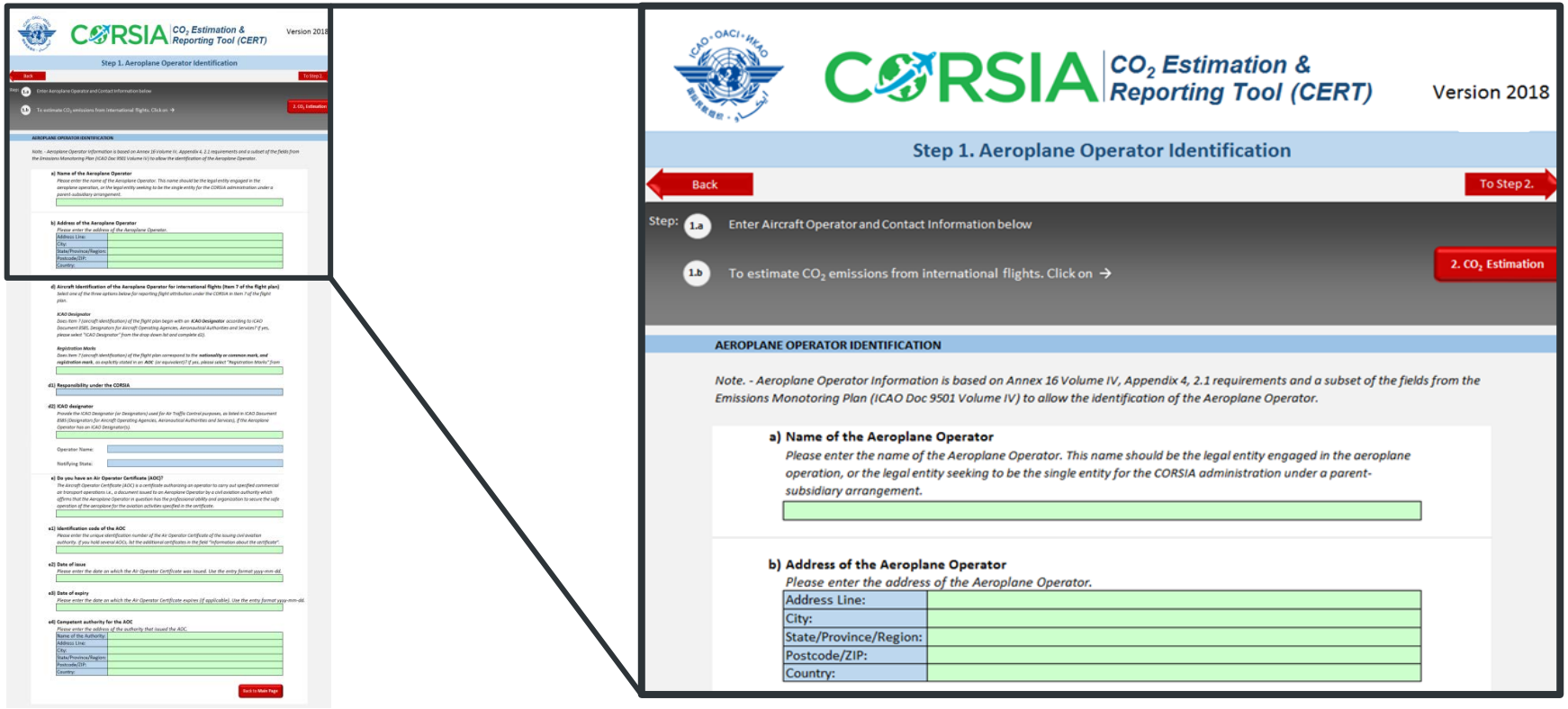
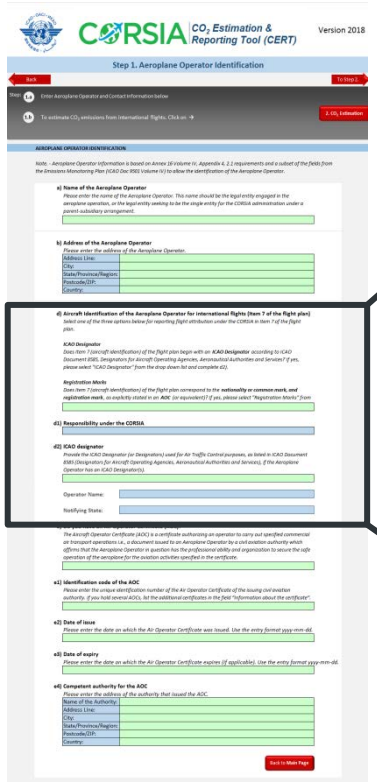
How does the CERT work? – Step 1



How does the CERT work? – Step 1



d) Aircraft Identification of the Aeroplane Operator for international flights (Item 7 of the flight plan)

Select one of the three options below for reporting flight attribution under the CORSIA in Item 7 of the flight plan.

ICAO Designator

Does Item 7 (aircraft identification) of the flight plan begin with an ***ICAO Designator*** *according to ICAO Document 8585, Designators for Aircraft Operating Agencies, Aeronautical Authorities and Services? If yes, please select "ICAO Designator" from the drop down list and complete d2).*

Registration Marks

Does Item 7 (aircraft identification) of the flight plan correspond to the ***nationality or common mark, and registration mark****, as explicitly stated in an* ***AOC*** *(or equivalent)? If yes, please select "Registration Marks" from the drop down list and complete d3).*

d1) Responsibility under the CORSIA

d2) ICAO designator

Provide the ICAO Designator (or Designators) used for Air Traffic Control purposes, as listed in ICAO Document 8585 (Designators for Aircraft Operating Agencies, Aeronautical Authorities and Services), if the Aeroplane Operator has an ICAO Designator(s).

Operator Name:

Notifying State:

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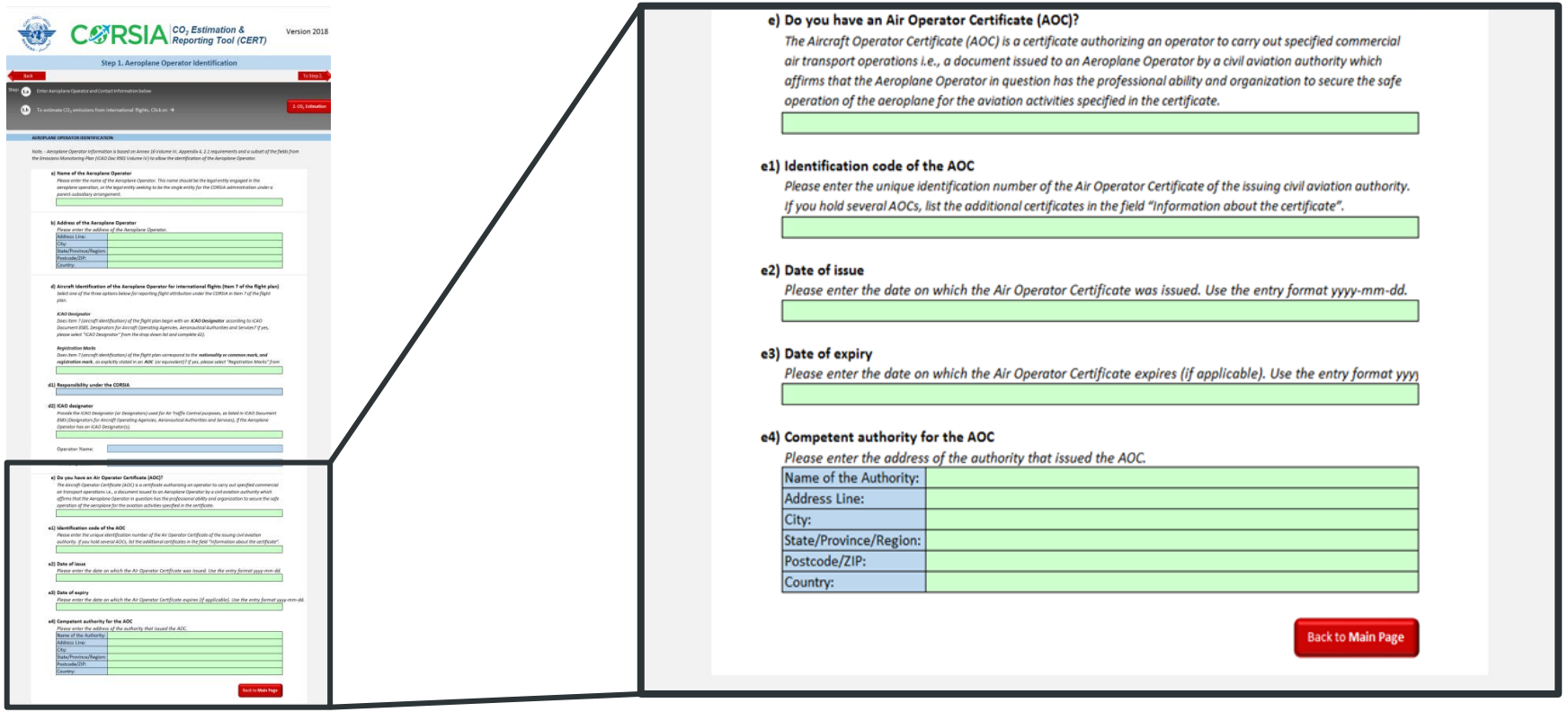
How does the CERT work? – Step 1



e) Do you have an Air Operator Certificate (AOC)?

The Aircraft Operator Certificate (AOC) is a certificate authorizing an operator to carry out specified commercial air transport operations i.e., a document issued to an Aeroplane Operator by a civil aviation authority which affirms that the Aeroplane Operator in question has the professional ability and organization to secure the safe operation of the aeroplane for the aviation activities specified in the certificate.

e1) Identification code of the AOC

Please enter the unique identification number of the Air Operator Certificate of the issuing civil aviation authority. If you hold several AOCs, list the additional certificates in the field "Information about the certificate".

e2) Date of issue

Please enter the date on which the Air Operator Certificate was issued. Use the entry format yyyy-mm-dd.

e3) Date of expiry

Please enter the date on which the Air Operator Certificate expires (if applicable). Use the entry format yyy

e4) Competent authority for the AOC

Please enter the address of the authority that issued the AOC.

Name of the Authority:	
Address Line:	
City:	
State/Province/Region:	
Postcode/ZIP:	
Country:	

Back to Main Page

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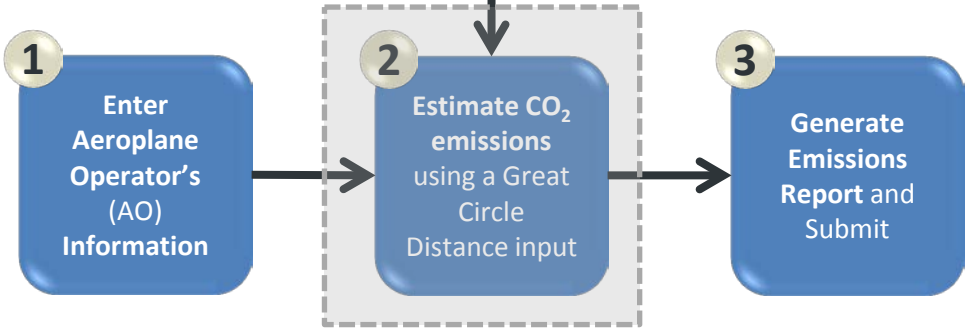
How does the CERT work? – Step 2

STEP 2

Flight Data:

- Aircraft type
- Origin-Destination Aerodrome
- Number of flights



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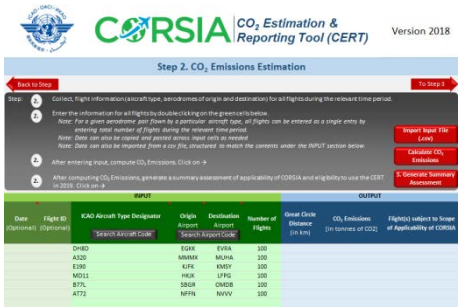
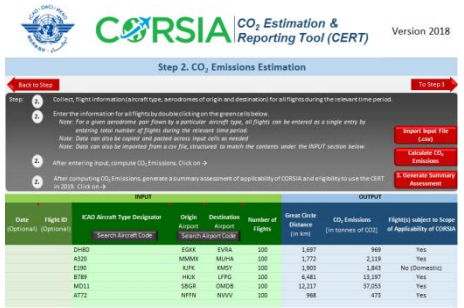
How does the CERT work? – Step 2





INPUT *				OUTPUT *		
ICAO Aircraft Type Designator	**Origin** Airport	**Destination** Airport	**Number of Flights**	**Great Circle Distance** (in km)	**CO_2 Emissions** (in tonnes of CO_2)	**Flight(s) subject to Scope of Applicability of CORSIA**

* Illustrative numbers/data

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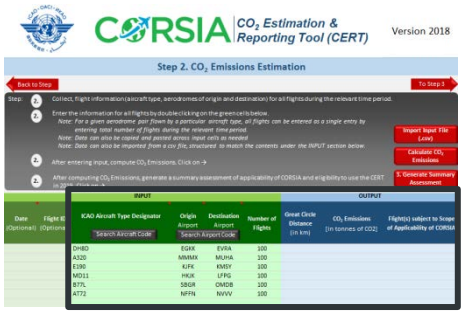
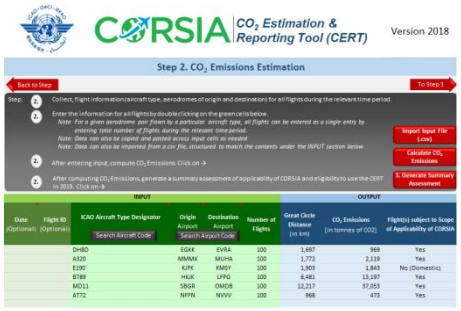
How does the CERT work? – Step 2





INPUT *				OUTPUT *		
ICAO Aircraft Type Designator	**Origin** Airport	**Destination** Airport	**Number of Flights**	**Great Circle Distance** (in km)	**CO_2 Emissions** (in tonnes of CO_2)	**Flight(s) subject to Scope of Applicability of CORSIA**
DH8D	EGKK	EVRA	100			
A320	MMMX	MUHA	100			
E190	KJFK	KMSY	100			
B789	HKJK	LFPG	100			
MD11	SBGR	OMDB	100			
AT72	NFFN	NVVV	100			

* Illustrative numbers/data

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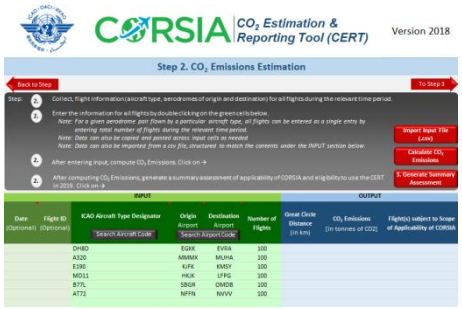
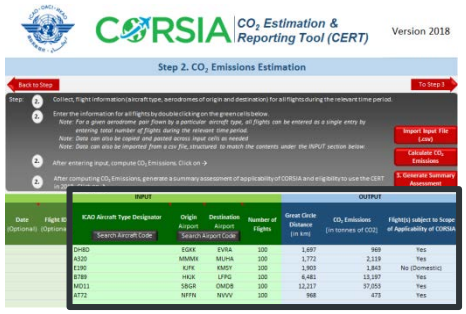
How does the CERT work? – Step 2





INPUT *				OUTPUT *		
ICAO Aircraft Type Designator	**Origin** Airport	**Destination** Airport	**Number of Flights**	**Great Circle Distance** (in km)	**CO_2 Emissions** (in tonnes of CO_2)	**Flight(s) subject to Scope of Applicability of CORSIA**
DH8D	EGKK	EVRA	100	1,697	969	Yes
A320	MMMX	MUHA	100	1,772	2,119	Yes
E190	KJFK	KMSY	100	1,903	1,843	No (Domestic)
B789	HKJK	LFPG	100	6,481	13,197	Yes
MD11	SBGR	OMDB	100	12,217	37,053	Yes
AT72	NFFN	NVVV	100	968	473	Yes

* Illustrative numbers/data

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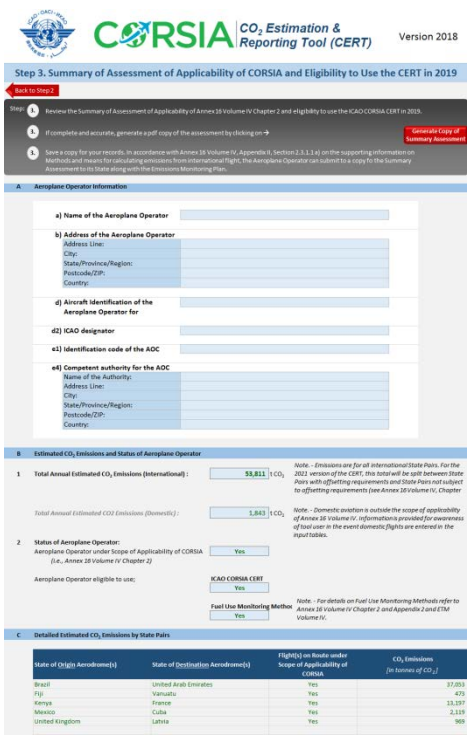
How does the CERT work? – Step 3



CORSIA CO_2 Estimation & Reporting Tool (CERT) Version 2018

Step 3. Summary of Assessment of Applicability of CORSIA and Eligibility to Use the CERT in 2019

Back to Step 2

Step: 1. Review the Summary of Assessment of Applicability of Annex 16 Volume IV Chapter 2 and eligibility to use the ICAO CORSIA CERT in 2019.

1. If complete and accurate, generate a pdf copy of the assessment by clicking on → Generate Copy of Summary Assessment

1. Save a copy for your records. In accordance with Annex 16 Volume IV, Appendix II, Section 2.1.1.1a) on the supporting information on Methods and means for calculating emissions from international flight, the Aeroplane Operator can submit to a copy fo the Summary Assessment to its State along with the Emissions Monitoring Plan.

A Aeroplane Operator Information

a) Name of the Aeroplane Operator

b) Address of the Aeroplane Operator
Address Line:
City:
State/Province/Region:
Postcode/ZIP:
Country:

d) Aircraft Identification of the Aeroplane Operator for

d2) ICAO designator

e1) Identification code of the AOC

e4) Competent authority for the AOC
Name of the Authority:
Address Line:
City:
State/Province/Region:
Postcode/ZIP:
Country:

B Estimated CO_2 Emissions and Status of Aeroplane Operator

1 Total Annual Estimated CO_2 Emissions (International) : 53,811 tCO_2

Note. - Emissions are for all international State Pairs. For the 2021 version of the CERT, this total will be split between State Pairs with offsetting requirements and State Pairs not subject to offsetting requirements (see Annex 16 Volume IV, Chapter

Total Annual Estimated CO2 Emissions (Domestic) : 1,843 tCO_2

Note. - Domestic aviation is outside the scope of applicability of Annex 16 Volume IV. Information is provided for awareness of tool user in the event domestic flights are entered in the input tables.

2 Status of Aeroplane Operator:
Aeroplane Operator under Scope of Applicability of CORSIA (i.e., Annex 16 Volume IV Chapter 2) — Yes

Aeroplane Operator eligible to use; ICAO CORSIA CERT — Yes

Fuel Use Monitoring Method — Yes

Note. - For details on Fuel Use Monitoring Methods refer to Annex 16 Volume IV Chapter 2 and Appendix 2 and ETM Volume IV.

C Detailed Estimated CO_2 Emissions by State Pairs

State of Origin Aerodrome(s)	State of Destination Aerodrome(s)	Flight(s) on Route under Scope of Applicability of CORSIA	CO_2 Emissions [in tonnes of CO_2]
Brazil	United Arab Emirates	Yes	37,053
Fiji	Vanuatu	Yes	473
Kenya	France	Yes	13,197
Mexico	Cuba	Yes	2,119
United Kingdom	Latvia	Yes	969

STEP 3

Flight Data:

- Aircraft type
- Origin-Destination Aerodrome
- Number of flights

1. **Enter Aeroplane Operator's (AO) Information**
2. **Estimate CO_2 emissions** using a Great Circle Distance input
3. **Generate Emissions Report** and Submit

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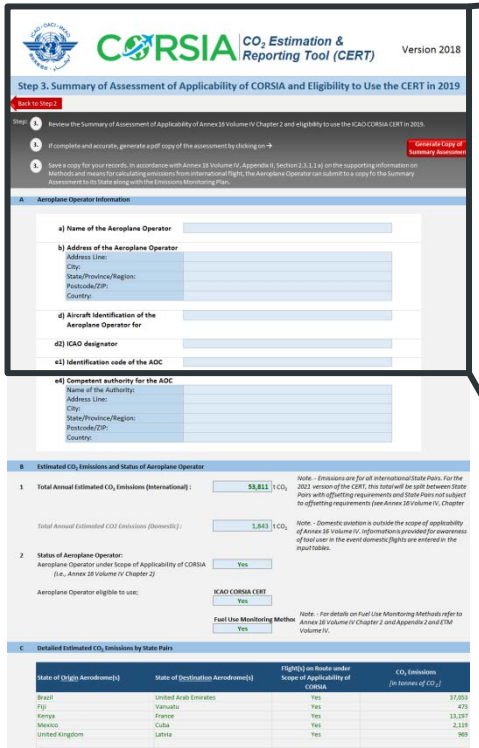
How does the CERT work? – Step 3



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A Aeroplane Operator Information

a) Name of the Aeroplane Operator

b) Address of the Aeroplane Operator

Address Line:
City:
State/Province/Region:
Postcode/ZIP:
Country:

d) Aircraft Identification of the Aeroplane Operator for

d2) ICAO designator

e1) Identification code of the AOC

e4) Competent authority for the AOC

Name of the Authority:
Address Line:
City:
State/Province/Region:
Postcode/ZIP:
Country:

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Note. - Emissions are for all international State Pairs. For the 2021 version of the CERT, this total will be split between State Pairs with offsetting requirements and State Pairs not subject to offsetting requirements (see Annex 16 Volume IV, Chapter

Total Annual Estimated CO2 Emissions (Domestic) : 1,843 tCO_2

Note. - Domestic aviation is outside the scope of applicability of Annex 16 Volume IV. Information is provided for awareness of tool user in the event domestic flights are entered in the input tables.

2 Status of Aeroplane Operator:

Aeroplane Operator under Scope of Applicability of CORSIA *(i.e., Annex 16 Volume IV Chapter 2)* Yes

Aeroplane Operator eligible to use; ICAO CORSIA CERT Yes

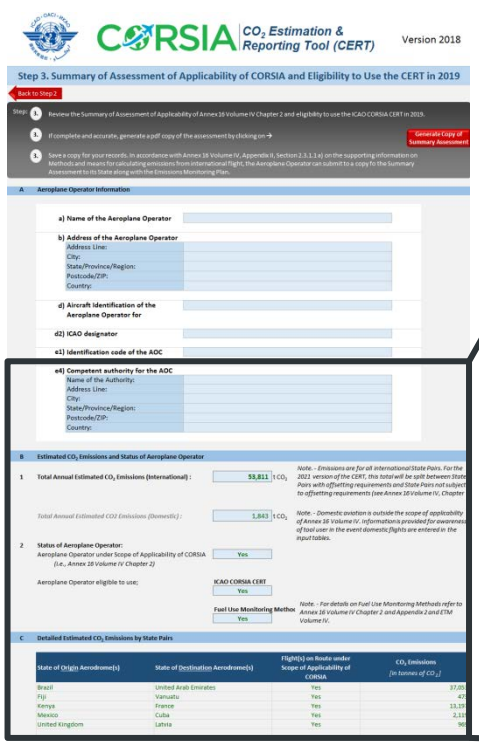
Fuel Use Monitoring Method Yes

Note. - For details on Fuel Use Monitoring Methods refer to Annex 16 Volume IV Chapter 2 and Appendix 2 and ETM Volume IV.

C Detailed Estimated CO_2 Emissions by State Pairs

State of Origin Aerodrome(s)	State of Destination Aerodrome(s)	Flight(s) on Route under Scope of Applicability of CORSIA	CO_2 Emissions *[in tonnes of CO_2]*
Brazil	United Arab Emirates	Yes	37,053
Fiji	Vanuatu	Yes	473
Kenya	France	Yes	13,197
Mexico	Cuba	Yes	2,119
United Kingdom	Latvia	Yes	969

How does the CERT work? – Step 3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e1) Identification code of the AOC

e4) Competent authority for the AOC
Name of the Authority:
Address Line:
City:
State/Province/Region:
Postcode/ZIP:
Country:

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Fuel Use Monitoring Metho Yes

Note. - For details on Fuel Use Monitoring Methods refer to Annex 16 Volume IV Chapter 2 and Appendix 2 and ETM Volume IV.

C Detailed Estimated CO_2 Emissions by State Pairs

State of Origin Aerodrome(s)	State of Destination Aerodrome(s)	Flight(s) on Route under Scope of Applicability of CORSIA	CO_2 Emissions [in tonnes of CO_2]
Brazil	United Arab Emirates	Yes	37,05
Fiji	Vanuatu	Yes	47
Kenya	France	Yes	13,19
Mexico	Cuba	Yes	2,11
United Kingdom	Latvia	Yes	96

e4) Competent authority for the AOC

Name of the Authority:	
Address Line:	
City:	
State/Province/Region:	
Postcode/ZIP:	
Country:	

B Estimated CO_2 Emissions and Status of Aeroplane Operator

1 **Total Annual Estimated CO_2 Emissions (International) :** 53,811 t CO_2

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Kenya	France	Yes	13,197
Mexico	Cuba	Yes	2,119
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What are the benefits of the CERT?

- ☑ **Easy-to-use tool**
- ☑ **Simplifies CO_2 estimation tasks for all users** (Operators and States)
- ☑ **ICAO-approved tool**
- ☑ **Available free of charge**
- ☑ **Available on the ICAO CORSIA website for download**

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Next…

And now a live demo of the CERT

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