



ICAO

CORSIA - CERT

Version 2019

Tutorial

This tutorial is valid for the 2019 Version of the ICAO CORSIA CERT only

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1 Introduction

The ICAO CORSIA CO₂ Estimation and Reporting Tool (CERT) is one of the five ICAO CORSIA Implementation Elements and is reflected in the ICAO document entitled "ICAO CORSIA CO₂ Estimation and Reporting Tool", referenced in Annex 16, Volume IV.

The ICAO CORSIA CERT can be used by aeroplane operators to support the monitoring and reporting of their CO₂ emissions, in accordance with the requirements in Annex 16, Volume IV, Part II, Chapter 2, 2.2 and Appendix 3.

The ICAO CORSIA CERT also supports aeroplane operators in fulfilling their monitoring and reporting requirements by populating the standardized Emissions Monitoring Plan and Emissions Report templates.

The ICAO CORSIA CERT can mainly be used for two purposes:

- i. Assessment of (1) whether the operator is within the applicability scope of the Annex 16, Volume IV, Part II, Chapter 2 requirements towards the submission of the Emissions Monitoring Plan and (2) the operator's eligibility to use the ICAO CORSIA CERT as a monitoring method in 2020; and
- ii. Estimation of 2019 CO₂ Emissions and/or Generation of an Emissions Report.

This tutorial has been developed for the 2019 version of the ICAO CORSIA CERT and technical details on the development of the ICAO CORSIA CERT can be found in the *Document ICAO CORSIA CO₂ Estimation & Reporting Tool (CERT): Design, Development, and Validation of the ICAO CORSIA CERT for 2019* available on the ICAO CORSIA CERT [webpage](#).

2 Navigating through the ICAO CORSIA CERT

On the top of each section of the ICAO CORSIA CERT, a header similar to the one shown in Figure 1 includes the following information/options:

- Title of the current section (e.g. “Step 2. CO₂ emissions estimation”); and
- Button(s) to navigate through the tool back and forth and the “Home” button for moving back to the main page of the tool.



Figure 1: Navigation bar

3 The ICAO CORSIA CERT step-by-step

As mentioned previously, the ICAO CORSIA CERT can be used mainly for two purposes and because those purposes are different, it will require users to go through different steps and provide different information.

Depending on the selection made from the “Background” worksheet, the steps will differ. The following figure summarizes the steps based on the selection made by users from the Background worksheet (for more information, see section 3.1.2). Each little rectangle represents a specific worksheet in the Excel workbook. The text and the color of each worksheet are identical than the little rectangles depicted in Figure 2.

In order to facilitate the navigation through the tutorial, it was divided into three sections and each section has a color (i.e. purple, green and blue). At the bottom of each page, a colored sticker is displayed indicating the current section.

Rectangles in the green section represent the common steps or common functionalities, rectangles in the purple section are steps referred to the first point above (*see Introduction, section i.*) and rectangles in the blue section to the second point (*see Introduction, section ii.*).

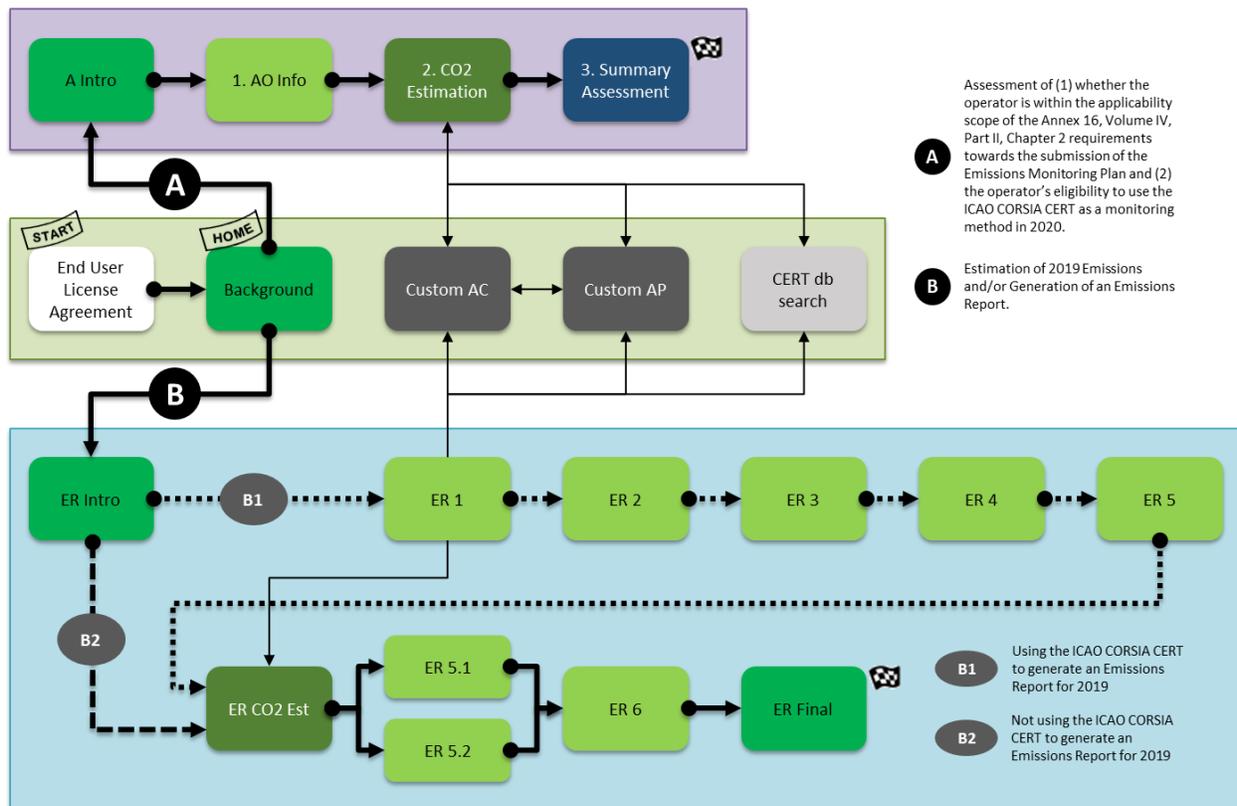


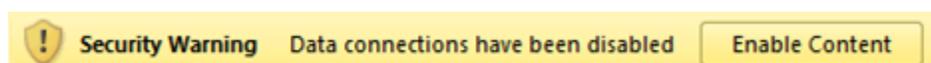
Figure 2: Steps in the ICAO CORSIA CERT

3.1 Common steps

The text in square bracket ([...]) after each title represents the name of the worksheet as appears in the ICAO CORSIA CERT. Each section (i.e. each worksheet) starts with a new page.

3.1.1 End user license agreement [End User License Agreement]

When you start the ICAO CORSIA CERT for the first time, you have to enable the macros by clicking the “Enable Content” button from the yellow banner displayed at the top of the page:



Before starting to use the ICAO CORSIA CERT, please read carefully the terms and conditions of the tool and accept them (see Figure 3).

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CORSIA | CO₂ Estimation & Reporting Tool (CERT) Version 2019

End user license agreement

ICAO Carbon Offsetting and Reduction Scheme for International Civil Aviation (CORSIA) CO₂ Estimation and Reporting Tool (CERT)

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1. License: ICAO grants to the Licensee the right to access and use the ICAO CORSIA CERT interface, which is comprised of a Microsoft Excel spreadsheet (collectively “Software”), provided that the Licensee complies with all the terms and conditions of this Agreement.
2. Permitted Use: The Software is provided for use only by the Licensee for the sole purpose of estimating CO₂ emissions and populating the Emissions Monitoring Plan and Emissions Report templates, as part of CORSIA monitoring, reporting and verification requirements, as per the Standards and Recommended Practices (SRPs) in Annex 16, Volume IV.
3. Restrictions on Use: Licensee may not: copy, in whole or in part, Software or any related documentation; modify the Software; reverse compile, reverse engineer, disassemble or reverse assemble all or any portion of the Software; rent, lease, license, sublicense or sell the Software. Licensee may not create derivative works from the Software, specifically including the creation of a database of aviation CO₂ emissions for use outside of the CORSIA framework. Commercial use of the Software is expressly prohibited. Licensee obtains no rights in the Software except those given in this limited license.
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 Tel.: +1 514-954-6219
 Fax: +1 514-954-6077
 Internet e-mail: CERT@icao.int

Figure 3: End user license agreement

Note: If you do not accept the terms and conditions, you cannot proceed with using the ICAO CORSIA CERT.

3.1.2 Background [Background]

After accepting the end user license agreement, the “Background” worksheet will be automatically displayed on your screen. This worksheet is divided into three sections (see Figure 4):

- i. The purpose of the use of the ICAO CORSIA CERT (grey area with two options and checkboxes)
- ii. Background information on the ICAO CORSIA CERT, which helps to answer questions such as what is the ICAO CORSIA CERT, who can use it, for which purpose and how to use it.
- iii. List of all the references used for the ICAO CORSIA CERT.

This worksheet (also referred to as “Home”) allows users to select the purpose of the use of the ICAO CORSIA CERT. In other words, the selection will orient users either on path A or on path B as illustrated in Figure 2.

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CORSIA | CO₂ Estimation & Reporting Tool (CERT) | Version 2019

Main page | Background information

Step: **1** Choose below the purpose of the use of the ICAO CORSIA CERT 2019 (click on the appropriate checkbox):

- Assessment of (1) whether the operator is within the applicability scope of the Annex 16, Volume IV, Part II, Chapter 2 requirements towards the submission of the Emissions Monitoring Plan and (2) the operator's eligibility to use the ICAO CORSIA CERT as a monitoring method in 2020. Click on →
- Estimation of 2019 Emissions and/or Generation of an Emissions Report. Click on → **Next**

Background information on the ICAO CORSIA CERT

The ICAO CORSIA CO₂ Estimation and Reporting Tool (CERT) can be used by an aeroplane operator to support the monitoring and reporting of their CO₂ emissions, in accordance with the requirements from ICAO Annex 16, Volume IV, Part II, Chapter 2, 2.2 and Appendix 3.

The ICAO CORSIA CERT supports aeroplane operators in fulfilling their monitoring and reporting requirements by populating the standardized Emissions Monitoring Plan and Emissions Report templates. This support includes:

- (i) assessing its eligibility to use Fuel Use Monitoring Methods in support of their Emissions Monitoring Plan (Annex 16, Volume IV, Part II, Chapter 2, 2.2);
- (ii) assessing whether or not it is within the applicability scope of the Chapter 2 MRV requirements; and
- (iii) filling any CO₂ emissions data gaps.

The 2019 version of the ICAO CORSIA CERT is valid for the assessment of (1) whether the operator is within the applicability scope of the Annex 16, Volume IV, Part II, Chapter 2 requirements towards the submission of the Emissions Monitoring Plan and (2) the operator's eligibility to use the ICAO CORSIA CERT as a monitoring method in 2020. For operators within the scope of applicability of the Annex 16, Volume IV, Part II, Chapter 2, the CERT 2019 can be used to support the development of an Emissions Report.

Users of the tools can report issues and request support via CERT@icao.int

References: The ICAO CORSIA CERT is based on several references, as listed below:

Document	Description	Revision/Issue	Version
CORSIA Emissions Report (ER) Template	CORSIA Emissions Report (ER) Template	ETM Volume IV, Second Edition	Version: 7 June 2019
CERT Aircraft db	ICAO CORSIA CERT Aircraft database	v2.8	Version: 05 April 2019
ICAO eDoc 7910	eDoc 7910 - Location Indicators		Last Updated: 26 June 2019
ICAO Doc 8585	Doc 8585 - Designators for Aircraft Operating Agencies, Aeronautical Authorities and Services.		Last Updated: 09 January 2019
ICAO Doc 8643	Doc 8643 - Aircraft Type Designators		Last Updated: 09 October 2018
ICAO Fuel Formula	ICAO Fuel Formula		

Figure 4: Background information

3.1.3 Custom Aeroplane/Aerodrome [Custom_AC / Custom_AP]

As described in Figure 2, the custom functionalities¹ can be accessed either from the “2. CO2 emissions estimation” worksheet or from the “ER_CO2_Est” worksheet by clicking one of the two buttons as illustrated below:



The ICAO CORSIA CERT uses ICAO Doc 7910 – *Location Indicators* and ICAO Doc 8643 – *Aircraft Type Designators* as the main references for aerodrome codes and aeroplane codes, respectively. However, some aerodromes or aeroplane types may not be included in the ICAO CORSIA CERT for several reasons. For example:

- An aerodrome could be missing because the relevant State authority has not provided the required information to ICAO.
- An aeroplane type could be missing because it may be a new aeroplane type or a not commonly used aeroplane type.

You can add both missing aerodromes and custom aeroplanes by providing information using the “Custom aerodrome information” section (see Figure 5) and the “Custom aeroplane information” section (see Figure 6).

Custom aerodrome [Custom AP]

To enter a new aerodrome in the ICAO CORSIA CERT, the following information is required (Figure 5: ❶):

- Custom aerodrome code
- Aerodrome name
- Latitude
- Longitude
- ICAO Member State

Based on the information above, the tool will compute the Great Circle Distance using the coordinates.

You can customize the symbols for coordinates by clicking the “Customize Lat./Long. Separation Symbols” button (Figure 5: ❷). Users can also check if coordinates entered are correct by clicking the “Check Validity of Lat./Long. Format” button (Figure 5: ❸). If an error occurs, an error code will be displayed (information on error codes can be found in the ICAO CORSIA CERT FAQs).

Note: *Information on aerodromes that has been preloaded in the ICAO CORSIA CERT database can be modified. For example, if the coordinates and/or the associated ICAO State name are incorrect, you can manually enter the aerodrome code in the custom aerodrome section and provide the correct*

¹ The access to the custom functionalities requires users to select one of the two purposes of the ICAO CORSIA CERT from the “Background” worksheet.

information. The ICAO CORSIA CERT gives priority to aerodrome codes listed in the custom aerodrome section and not those available in the ICAO CORSIA CERT database.

Note: You cannot modify/overwrite the name of an ICAO State.

Custom aerodrome information

Steps:

This "Custom Aerodrome Information" function should be used when aerodrome codes entered under the "CO₂ Emissions Estimation" are not listed in ICAO CORSIA CERT version of the ICAO Doc. 7910. Alternatively, if the user finds an error (e.g., lat/long) in the ICAO CORSIA CERT version of the ICAO Doc. 7910, a Custom Aerodrome can be used instead.

Check 'CO₂ Emissions Estimation' for any error/warning flags. If aerodrome codes are not found, then follow:

- If needed, customize Latitude and/or Longitude separation symbols. Click on →
- Enter Custom Aerodrome(s) below.
- To check validity of Latitude and Longitude format. Click on →
- If needed, enter Custom Aerodrome. Click on →
- Once needed complementary information is entered, to go back to the CO₂ Estimation page. Click on →

Buttons: Customize Lat./Long. Separation Symbols, Check Validity of Lat./Long. Format, Custom Aeroplanes, CO₂ Estimation

Custom Aerodrome Code	Aerodrome Name	Latitude	Longitude	ICAO Member State	Suggested ICAO Member State	Lat./Long. Error Code
AAAA	AAAA Airport	10.10	20.20	Switzerland		
ZZZZ	ZZZZ Airport	92.50	-75.50	Canada		E15

Custom symbols for coordinates

Fields: Degree, Minutes, Seconds, Decimal separator, Latitude (North/South), Longitude (East/West)

Buttons: OK, Default value

Formats allowed:

Option 1: 40° 26' 46" N
Option 2: 40.1234

Notes:

a) Only 1 character can be entered in each box
b) Symbols for Latitude (i.e. N/S) and Longitude (i.e. E/W) cannot be customizable

Hints:

a) To enter °, key shortcut "Alt+0176" can be used
a) To enter ', key shortcut "Alt+34" can be used

Figure 5: Custom aerodrome information

Custom aeroplane [Custom AC]

To enter a new ICAO Aircraft Type Designator or Custom aeroplane code in the ICAO CORSIA CERT, the following information is required:

- ICAO Aircraft Type Designator or Custom aeroplane code
- Aeroplane category (4 options available from a dropdown menu)
- Average Maximum Take Off Mass² (MTOM) of aeroplanes in the fleet (in kg)

Based on the information above, the tool will compute the generic equations for Great Circle Distance input and Block Time input (see Figure 6).

Note: You cannot modify/overwrite the information of the aeroplane types that are preloaded in the ICAO CORSIA CERT database.

² The average MTOM is calculated using the arithmetical average of individual MTOMs of aeroplane in the fleet of a given aeroplane type code, divided by the number of aeroplane in the fleet of the given aeroplane type code. The individual MTOMs are the individual permissible take-off mass of each individual aeroplane according to the certificate of airworthiness, the flight manual or other official documents as defined by ICAO Annex 16 Volume IV.

Custom aeroplane information

← Back
Home

Steps: This "Custom Aeroplane Information" function should only be used ICAO Aircraft Type Designator(s) or Custom aeroplane code(s) entered under the "CO₂ Emissions Estimation" are not listed in ICAO CORSIA CERT version of the ICAO Doc. 8643.

Check 'CO₂ Emision Estimation' for any error/warning flags. If ICAO Aircraft Type Designator(s) or Custom aeroplane code(s) are not found, then follow Steps B and/or C.

A Enter Custom Aaeroplane below.

B If needed, enter Custom Aerodrome(s). Click on →

C Once needed complementary information is entered, to go back to CO₂ Estimation page, click on →

Custom Aerodromes

CO₂ Estimation

Custom Aircraft Information

Fields highlighted in yellow need to be filled-out by the user

ICAO Aircraft Type Designator or Custom Aeroplane Code	Aeroplane Category (select from drop down list below)	Average MTOM of Aeroplanes in the Fleet (in kg)	Generic Equations based on Great Circle Distance (GCD) Input		Generic Equations based on Block Time (BT) Input	
			Fuel at Intercept (in kg)	Fuel Rate (in kg/km)	Fuel at Intercept (in kg)	Fuel Rate (in kg/min.)
AA10	Jet with certified MTOM >= 60,000kg and < 136,000kg	80,000	1,069	3.52	(191)	43.25

Figure 6: Custom aeroplane information

3.1.4 Search Aeroplane/Aerodrome [CERT_db_search]

The ICAO CORSIA CERT includes a search engine for aeroplane types and aerodromes. This functionality³ can be accessed either from the “2. CO2 emissions estimation” worksheet or from the “ER_CO2_Est” worksheet by clicking one of the two buttons as illustrated below:



From the interface illustrated in Figure 7, you can search:

- An aeroplane type either by ICAO Aircraft Type Designator or by aeroplane model
- An aerodrome (either by ICAO aerodrome code or aerodrome name).

Green fields are to be used for search input

ICAO Aircraft Type Designators in the ICAO CORSIA CERT database

Search* by ICAO Aircraft Type

Designator: <input type="text" value="A21N"/>	Example of aeroplane model: <input type="text" value="A-321neo"/>	Manufacturer: <input type="text" value="AIRBUS"/>	Engine type: <input type="text" value="Jet"/>
--	--	--	--

Search* by example of aeroplane model:

ICAO Aircraft Type Designator: <input type="text" value="B77W"/>	Manufacturer: <input type="text" value="BOEING"/>	Engine type: <input type="text" value="Jet"/>
---	--	--

Aerodromes in the ICAO CORSIA CERT database

Search* by aerodrome code:

Aerodrome name: <input type="text" value="MONTREAL/PIERRE ELLIOT TRUDEAU INTL, QC"/>	ICAO Member State: <input type="text" value="Canada"/>
Latitude: <input type="text" value="45.4706"/>	Longitude: <input type="text" value="-73.7408"/>

Search* by aerodrome name:

Aerodrome code: <input type="text" value="LFPO"/>	ICAO Member State: <input type="text" value="France"/>
Latitude: <input type="text" value="48.7233"/>	Longitude: <input type="text" value="2.3794"/>

*Note. - When entering text contained in the full name (e.g., aerodrome name), the Dropdown Menu can be used to review the subset of options. Use the arrow button of the Dropdown Menu to display the options.

[Back to CO₂ Estimation](#)

Figure 7: Searchable ICAO CORSIA CERT databases of aeroplane types and aerodromes

³ The access to the custom functionalities requires users to select one of the two purposes of the ICAO CORSIA CERT from the “Background” worksheet.

3.2 ICAO CORSIA CERT used for the Summary Assessment

The text in square bracket ([...]) after each title represents the name of the worksheet as appears in the ICAO CORSIA CERT. Each section (i.e. each worksheet) starts with a new page.

3.2.1. Introduction [A_Intro]

This worksheet highlights the three steps for the generation of the summary assessment and provides the buttons for accessing each step.



The screenshot displays the ICAO CORSIA CERT interface. At the top left is the ICAO logo, followed by the text "ICAO - OACI - HKAO" and "国际民航组织". To the right is the "CORSIA" logo with a globe icon, and the text "CO₂ Estimation & Reporting Tool (CERT)". Further right is "Version 2019". Below this is a blue header bar with the text "Summary of assessment of applicability of CORSIA and eligibility to use the ICAO CORSIA CERT in 2020". Underneath the header are navigation buttons: "Back" (left arrow), "Home", and "To Step 1" (right arrow). The main content area is titled "Steps:" and lists three steps with corresponding buttons:

- 1** Enter aeroplane operator information . Click on → **1. Aeroplane Operator Information**
- 2** To estimate CO₂ emissions from international flights. Click on → **2. CO₂ Estimation**
- 3** To generate a summary assessment of applicability of CORSIA and eligibility of the aeroplane operator to use the ICAO CORSIA CERT in 2020. Click on → **3. Summary Assessment**

Figure 8: Introduction

3.2.2 Aeroplane operator identification [1. AO Info]

In accordance with Annex 16, Volume IV, Part II, Chapter 2, 2.2.2, an aeroplane operator shall submit an Emissions Monitoring Plan (EMP) to the State to which it is attributed for approval by the State.

It is recommended that an aeroplane operator use the standardized EMP template to develop the EMP for submission to its State. To facilitate the use of the template, a light version of the EMP template (i.e. only the aeroplane operation identification section) is embedded into the ICAO CORSIA CERT. The complete EMP template can be downloaded from the [CORSIA webpage](#).

Green fields in the form are the inputs that the user needs to fill-in (see Figure 9). Some of these fields are populated using drop-down menus.

Step 1. Aeroplane operator identification
Summary of assessment of applicability of CORSIA and eligibility to use the ICAO CORSIA CERT in 2020

Back Home Next

1.1 Enter aeroplane operator and contact information below

1.2 To estimate CO₂ emissions from international flights, click on → **2. CO₂ Estimation**

Aeroplane operator identification

Note - Aeroplane operator information is based on Annex 16, Volume IV, Appendix 4, 2.1 requirements and a subset of the fields from the Emissions Monitoring Plan (ICAO Doc 9502, Volume IV) to allow the identification of the aeroplane operator.

a) Name of the aeroplane operator
Please enter the name of the aeroplane operator. This name should be the legal entity engaged in the aeroplane operation, or the legal entity seeking to be the single entity for the CORSIA administration under a parent-subsidary arrangement.

b) Address of the aeroplane operator
Please enter the address of the aeroplane operator.

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

d) Aircraft identification of the aeroplane operator for international flights (Item 7 of the flight plan)
Select the options planned to be used for reporting flight attribution to the aeroplane operator.

ICAO Designator
Does Item 7 (aircraft identification) of the flight plan begin with an ICAO Designator according to Doc 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.

ICAO Designator and registration marks

d1) Responsibility under the CORSIA

d2) ICAO designator
Provide the ICAO Designator (or Designators) used for Air Traffic Control purposes, as listed in Doc 8585 – Designators for Aircraft Operating Agencies, Aeronautical Authorities and Services, if the aeroplane operator has an ICAO Designator(s).

Operator Name: _____

Notifying State: _____

e) Do you have an air operator certificate (AOC)?
The air 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 yyyy-mm-dd

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:	

Figure 9: Aeroplane operator identification page

3.2.3 CO₂ emissions estimation [2. CO₂ Estimation]

The CO₂ emissions estimation page will estimate CO₂ emissions based on provided traffic data. Multiple options are offered for importing data:

- **Option 1:** Fill-in the form manually by selecting the ICAO aircraft type designator, aerodrome of origin and aerodrome of destination from the drop-down menus (see figure 10).

The figure illustrates the manual data entry process in four stages:

- Stage 1:** The 'ICAO Aircraft Type Designator' dropdown menu is open, showing a list of aircraft codes including A320, A321, A322, A323, A324, A325, A326, and A327.
- Stage 2:** The 'Origin Aerodrome' dropdown menu is open, showing a list of airport codes including CYTS, CYRZ, CYLB, CYUL, CYVR, CYW, and CYB.
- Stage 3:** The 'Destination Aerodrome' dropdown menu is open, showing a list of airport codes including LSGG, LSGC, LSGE, LSGD, LSGH, LSGI, LSGJ, LSGK, and LSGL.
- Stage 4:** The form is fully filled out. The 'ICAO Aircraft Type Designator' is A333, 'Origin Aerodrome' is CYUL, 'Destination Aerodrome' is LSGG, and 'Number of Flights' is 365.

Figure 10: Process for filling-out the form manually

- **Option 2:** Copy/paste data from external sources
- **Option 3:** Import a CSV (Comma Separated Values) file containing traffic data which respects the following format (see figure 11 on how to import a CSV file and figure 12 for the CSV structure):
 - Date (optional) – leave cell blank if no dates are provided
 - Flight ID (optional) – leave cell blank if no flight ID is provided
 - ICAO aircraft type designator (mandatory)
 - Origin aerodrome (mandatory)
 - Destination aerodrome (mandatory)
 - Number of flights – if the field is left blank then the tool will automatically set it with “1”

Step 2. CO₂ emissions estimation

Summary of assessment of applicability of CORSIA and eligibility to use the ICAO CORSIA CERT in 2020

Back Home Next

Steps:

2.a Collect, flight information (aircraft type, aerodromes of origin and destination) for all flights during the relevant time period.

2.b Enter the information for all flights by double clicking on the green cells below.
Note: For a given aerodrome pair flown by a particular aircraft type, all flights can be entered as a single entry by entering total number of flights during the relevant time period.
Note: Data can also be copied and pasted across input cells as needed
Note: Data can also be imported from a csv file, structured to match the contents under the INPUT section below.

2.c After entering input, compute CO₂ emissions. Click on →

2.d After computing CO₂ emissions, generate a summary assessment of applicability of CORSIA and eligibility to use the ICAO CORSIA CERT in 2020. Click on →

Import Input File (.csv)

Estimate CO₂ Emissions

3. Generate Summary Assessment

INPUT OUTPUT

ICAO Aircraft Type Designator Origin Destination

Open

Example import data.csv

File name: Example import data.csv

Open Cancel

1. Press the "Import Input File (.csv)" button to open the dialog window

2. Select the csv file

3. Press the "Open" button to import the csv file into the ICAO CORSIA CERT

Figure 11: Import Input File (.csv)

Example import data.csv - Microsoft Excel

.csv file

Data structure

Date (Optional)	Flight ID (Optional)	ICAO Aircraft Model - Type Designator	Origin Aerodrome	Destination Aerodrome	Number of Flights
		A306	SBGR	SAEZ	365
		A306	SBGR	SGAS	365
		A310	SBGR	SPJC	365
		A310	SBGR	SCEL	365
		A332	SAEZ	SBGR	365
		A332	SGAS	SBGR	365
		A333	SPJC	SBGR	365
		A333	SCEL	SBGR	365
		A343	HKJK	FNLU	301
		A343	HKJK	FNLU	64

Figure 12: Sample of a CSV file

Once data has been imported/entered, press the "Estimate CO₂ Emissions" button to calculate the Great Circle Distance between each aerodrome pair and to estimate the CO₂ emissions. Furthermore, the tool

highlights if the flights are subject to the scope of applicability of CORSIA (i.e. if the flight is operated on an international route or not⁴). See Figure 13 for an illustrative example.

Step 2. CO₂ emissions estimation

Summary of assessment of applicability of CORSIA and eligibility to use the ICAO CORSIA CERT in 2020

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Steps:

- 2.a Collect, flight information (aircraft type, aerodromes of origin and destination) for all flights during the relevant time period.
- 2.b Enter the information for all flights by double clicking on the green cells below.
Note: For a given aerodrome pair flown by a particular aircraft type, all flights can be entered as a single entry by entering total number of flights during the relevant time period.
Note: Data can also be copied and pasted across input cells as needed
Note: Data can also be imported from a csv file, structured to match the contents under the INPUT section below.
- 2.c After entering input, compute CO₂ emissions. Click on →
- 2.d After computing CO₂ emissions, generate a summary assessment of applicability of CORSIA and eligibility to use the ICAO CORSIA CERT in 2019. Click on →

INPUT						OUTPUT		
Date (Optional)	Flight ID (Optional)	ICAO Aircraft Type Designator	Origin Aerodrome	Destination Aerodrome	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
		<input type="text" value="Search Aircraft Code"/> <input type="button" value="Custom AC"/>	<input type="text" value="Search Aerodrome"/> <input type="button" value="Custom AP"/>					
		A306	SBGR	SAEZ	365			
		A306	SBGR	SGAS	365			
		A310	SBGR	SBGL	365			
		A310	SBGR	SCEL	365			
		A332	SAEZ	SBGR	365			
		A332	SGAS	SBGR	365			
		A333	SPJC	SBGR	365			
		A333	SCEL	SBGR	365			
		A343	HKJK	FNLU	301			
		A343	HKJK	FNLU	64			

OUTPUT		
Great Circle Distance (in km)	CO ₂ Emissions (in tonnes of CO ₂)	Flight(s) subject to Scope of Applicability of CORSIA
1,721	14,519	Yes
1,138	10,665	Yes
337	4,043	No (Domestic)
2,617	19,060	Yes
1,721	13,847	Yes
1,138	10,129	Yes
3,477	30,386	Yes
2,617	23,818	Yes
2,754	22,123	Yes
2,754	4,704	Yes

1. Import/enter data
2. Press the “Estimate CO₂ Emissions” button
3. Get the results!

Figure 13: Process of estimating CO₂ emissions

⁴ From 2021 onward, the ICAO CORSIA CERT will identify if the flight is under the scope of applicability of CORSIA and if the flight is subject to offsetting requirement.

3.2.4 Summary of assessment of applicability of CORSIA and eligibility to use the ICAO CORSIA CERT in 2020 [3. Summary Assessment]

After clicking the “3. Generate Summary Assessment” button from Step 2, a draft summary assessment will be generated for your review (see Figure 14 for more information on the structure of the summary assessment).

After reviewing the summary assessment, you can generate a copy of it as a PDF file by clicking the “Generate Copy of Summary Assessment” button.

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Step 3. Summary of assessment of applicability of CORSIA and eligibility to use the ICAO CORSIA CERT in 2020

Buttons: Back, Home

Steps:

- 3.a Review the summary of assessment of applicability of Annex 16, Volume IV Chapter 2 and eligibility to use the ICAO CORSIA CERT in 2020.
- 3.b If complete and accurate, generate a pdf copy of the assessment by clicking on → **Generate pdf Copy of Summary Assessment**
- 3.c Save a copy for your records. In accordance with Annex 16, Volume IV, Appendix 4, Section 3.1.1 a) on the supporting information on methods and means for calculating emissions from international flight, the aeroplane operator can submit to a copy of the summary assessment to its State along with the Emissions Monitoring Plan.

A Aeroplane operator information

a) Name of the aeroplane operator: **A1 Airways**

b) Address of the aeroplane operator:
 Address line: **Airport Road 1**
 City: **Airport City**
 State/Province/Region:
 Postcode/ZIP: **123456**
 Country: **State A**

d) Aircraft identification of the aeroplane operator for international flights: **ICAO Designator: according to Doc 8585**

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 CO₂ emissions and status of aeroplane operator

1 Total annual estimated CO₂ emissions (international): **465,249** t CO₂
Note - Emissions are for all international State Pairs. For the 2021 version of the ICAO CORSIA 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 3 for details).

Total annual estimated CO₂ emissions (domestic): **-** t CO₂
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 CO₂ 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	307,422
Fiji	Vanuatu	Yes	5,204
Kenya	France	Yes	145,007
United States	Canada	Yes	7,616

Annotations:

- Button to generate a copy of the summary assessment as a PDF
- Section summarizing aeroplane operator information provided at step 1
- Section providing the total annual estimated CO₂ emissions and the status of the Aeroplane operator
- Section providing detailed estimated CO₂ emissions by State pairs

Figure 14: Summary of assessment of applicability of CORSIA and eligibility to use the ICAO CORSIA CERT in 2020

3.3 ICAO CORSIA CERT used for Emissions Estimation with Emissions Report

The text in square bracket ([...]) after each title represents the name of the worksheet as appears in the ICAO CORSIA CERT. Each section (i.e. each worksheet) starts with a new page.

3.3.1 Introduction [ER_Intro]

In this worksheet, you need to answer questions and select the appropriate input. Based on the selection, inputs will be different (differences are explained in section 3.3.7).

The ICAO CORSIA CERT can be used as a primary monitoring method if the aeroplane operator is eligible and the operator chooses to do so. CO₂ emissions can be estimated based on either Great Circle Distance or Block Time. Users make this choice by selecting one of two checkboxes highlighted in yellow in Figure 15.

The ICAO CORSIA CERT can also be used for filling data gaps if the aeroplane operator uses one of the five Fuel Use Monitoring Methods. CO₂ emissions can be estimated either based on Great Circle Distance or Block Time by selecting one of two checkboxes highlighted in blue in Figure 15.

Checkboxes highlighted in yellow and blue are mutually exclusive meaning that only one checkbox can be selected at the time. But the checkbox highlighted in orange is independent and optional. If the checkbox highlighted in orange is checked then a complete Emissions Report will be generated at the end of the process.

For the example in section 3.3, it is assumed that the orange checkbox is checked. Section titles marked with an asterisk (*) refer to sections to be filled by users if the generation of the Emissions Report functionality is activated.

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Step:

1 In accordance with the Aeroplane Operator's Emissions Monitoring Plan (EMP), please answer the following questions;

- Is the Aeroplane Operator eligible and using the ICAO CORSIA CERT as primary monitoring method?
 If yes, are you using;
 Great Circle Distance input ?
 Block Time input ?

- Is the Aeroplane Operator using Fuel Use Monitoring Methods as a primary monitoring method and using the ICAO CORSIA CERT for data gap filling?
 If yes, are you using;
 Great Circle Distance input ?
 Block Time input ?

- Are you using the ICAO CORSIA CERT to generate an Emissions Report for 2019?

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Figure 15: Introduction

3.3.2 Aeroplane operator identification and description of activities [ER 1]

This section is dedicated to the aeroplane operator identification and description of activities.

1 Aeroplane Operator Identification and Description of Activities

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Step:

1 Enter Aeroplane Operator Identification and Description of Activities information below

a) Name of aeroplane operator
Please enter the name of the aeroplane operator. This name should be the legal entity carrying out the aviation activities.

--

a1) Address of the aeroplane operator
Please enter the address of the aeroplane operator.

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

a2) Contact person
Please enter the contact information of the person within the aeroplane operator who is responsible for the Emissions Report.

Title:	
First name:	
Surname:	
Email address:	
Telephone number:	
Address line 1:	
Address line 2:	
City:	
State/Province/Region:	
Postcode/ZIP:	
Country:	

a3) Alternate contact person
Please enter the contact information of an additional person within the aeroplane operator who is responsible for the Emissions Report.

Title:	
First name:	

Figure 16: Aeroplane operator identification and description of activities

3.3.3 Underlying basic information of the Emissions Report [ER 2]

This section is dedicated to the underlying basic information of the Emissions Report.

2 Underlying basic information of the Emissions Report

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Step:

2 Enter underlying basic information of the Emissions Report below

a) Reporting year
Please provide the reporting year.

b) End of reporting period
Usually the last day of the reporting year, as long as the operator has not ceased flight operations during the reporting year. Use the format yyyy-mm-dd.

c) Date of issue
Date on which the Emissions Report was compiled. Use the format yyyy-mm-dd.

d) Version
In case of multiple submissions, please enter the Emissions Report version number.

e) Current Emissions Monitoring Plan
Please enter the version number of the approved Emissions Monitoring Plan on which this Emissions Report is based.

e1) Approval of the current Emissions Monitoring Plan
Please enter the date of the approval of the Emissions Monitoring Plan. Use the format yyyy-mm-dd.

e2) Emissions Monitoring Plan is valid from
Please enter the date of validity of the current Emissions Monitoring Plan. Use the format yyyy-mm-dd.

Figure 17: Underlying basic information of the Emissions Report

3.3.4 Aeroplane fleet and fuel types [ER 3]

This section is dedicated to the aeroplane fleet and fuel types.

3 Aeroplane Fleet and Fuel Types

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Step: 3 Enter information about aeroplane fleet and fuel types below

a) Registration of all aeroplanes operated in the reporting year
*Please list all aeroplanes with an MTCM greater than 5 700 kg (12 566 lbs) operated on international flights, as defined in Annex 16, Volume IV, Part II, Chapter 1, 1.1.2, and Chapter 2, 2.1, during the reporting period. If necessary, please attach a separate list.
 Please enter the ICAO aircraft type designator, as specified in Doc 8643 – Aircraft Type Designators, the registration marks and state whether the aeroplane is owned or leased. Please mark with an “X” applicable fuel type(s) for each ICAO aircraft type designator.
 *For the purposes of this template, the fuel total could include the sum of equivalent fuels.
 Additional information about Doc 8643 – Aircraft Type Designators can be found at:
<http://www.icao.int/publications/D0C8643/Pages/Search.aspx>*

No.	ICAO aircraft type designators	Registration marks	Owned or leased	Fuel used*			
				Jet-A	Jet-A1	Jet-B	AvGas
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

Figure 18: Aeroplane Fleet and Fuel Types

3.3.5 Fuel density [ER 4]

This section is dedicated to the fuel density.

4 Fuel Density

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Step: **4** Enter information about fuel density below

Note. - The section is only required for aeroplane operators who monitor CO₂ emissions using a Fuel Use Monitoring Method.

a) Fuel density
Please specify whether standard and/or actual density was used to determine the fuel uplift in the reporting year.

a1) Consistency
Please confirm that the application of density data for CORSIA purposes is fully identical to the actual procedures used for operational and safety reasons.

Figure 19: Fuel Density

3.3.6 Reporting [ER 5]

This section is dedicated to reporting. You can aggregate the reported data on two levels:

- State pair level or
- Aerodrome pair level.

Based on the selection made in this section, the tool will automatically redirect to the relevant worksheet (i.e. either ER 5.1 or ER 5.2) after the estimation of the CO₂ emissions.

If the Emissions Report functionality is not selected, you still have the possibility to generate a partially filled-in Emissions Report that will contain various statistics available in worksheets ER 5.1 or ER 5.2 and ER 6. To do this, you can click the “Populate ER with CO₂ Information” button from worksheet ER_CO2_Est and specify the level of aggregation in worksheet ER 5.

5 Reporting

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Step: 5 In accordance with your State's requirements, enter the appropriate level of aggregation of the reported data below

a) Aggregation level of reported data

Please select whether the aeroplane operator reports on a State pair or at an aerodrome pair level as advised by the State. If State pair level is chosen, please continue with "5.1 Reporting - State pairs". If aerodrome pair level is selected, please continue with "5.2 Reporting - Aerodrome pairs".

Figure 20: Reporting

3.3.7 CO₂ Emissions estimation and Data gap filling [ER_CO2_Est]

In this worksheet, you will have to import data using any of the three options explained in section 3.2.3.

Based on the selection made in worksheet ER_Intro, the data input requirement will be different. The interface as such will remain the same, but some fields will be automatically greyed-out. The following figures summarize how the interface will look depending on the selection made in worksheet ER_Intro.

You are able to import a CSV (Comma Separated Values) file containing traffic data if it is in the following format. If any field is not relevant/optional, you can leave the field blank.

- i. Date
- ii. Flight ID
- iii. ICAO aircraft type designator
- iv. Origin aerodrome
- v. Destination aerodrome
- vi. Number of flights
- vii. Total Block Time for all flights (in min.)
- viii. Total Fuel Use for all Flights (in tonnes)
- ix. Type of Fuel
- x. Data Gap Reference

INPUT										OUTPUT				
Date (Opt.)	Flight ID (Opt.)	ICAO Aircraft Type Designator	Origin Aerodrome	Destination Aerodrome	Total Number of Flights	Total Block Time for all flights (in min.)	Total Fuel Use for all Flights (in tonnes)	Type of Fuel	Data Gap Ref. (Opt.)	Data Gap	Aerodrome Pair Great Circle Distance (in km)	CO ₂ Emissions (in tonnes of CO ₂)	Flight(s) subject to Scope of Applicability of CORSIA	Warnings
		<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
		<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
		<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
		<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Figure 21: Use as primary monitoring method and based on Great Circle Distance

INPUT										OUTPUT				
Date (Opt.)	Flight ID (Opt.)	ICAO Aircraft Type Designator	Origin Aerodrome	Destination Aerodrome	Total Number of Flights	Total Block Time for all flights (in min.)	Total Fuel Use for all Flights (in tonnes)	Type of Fuel	Data Gap Ref. (Opt.)	Data Gap	Aerodrome Pair Great Circle Distance (in km)	CO ₂ Emissions (in tonnes of CO ₂)	Flight(s) subject to Scope of Applicability of CORSIA	Warnings
		Search Aircraft Custom AC	Search Aerodrome Custom AP											

Figure 22: Use as primary monitoring method and based on Block Time

INPUT										OUTPUT				
Date (Opt.)	Flight ID (Opt.)	ICAO Aircraft Type Designator	Origin Aerodrome	Destination Aerodrome	Total Number of Flights	Total Block Time for all flights (in min.)	Total Fuel Use for all Flights (in tonnes)	Type of Fuel	Data Gap Ref. (Opt.)	Data Gap	Aerodrome Pair Great Circle Distance (in km)	CO ₂ Emissions (in tonnes of CO ₂)	Flight(s) subject to Scope of Applicability of CORSIA	Warnings
		Search Aircraft Custom AC	Search Aerodrome Custom AP											

Figure 23: Combined use of Fuel Use Monitoring Method and data gap filling based on Great Circle Distance

INPUT										OUTPUT				
Date (Opt.)	Flight ID (Opt.)	ICAO Aircraft Type Designator	Origin Aerodrome	Destination Aerodrome	Total Number of Flights	Total Block Time for all flights (in min.)	Total Fuel Use for all Flights (in tonnes)	Type of Fuel	Data Gap Ref. (Opt.)	Data Gap	Aerodrome Pair Great Circle Distance (in km)	CO ₂ Emissions (in tonnes of CO ₂)	Flight(s) subject to Scope of Applicability of CORSIA	Warnings
		Search Aircraft Custom AC	Search Aerodrome Custom AP											

Figure 24: Combined use of Fuel Use Monitoring Method and data gap filling based on Block Time

Once data has been imported/entered, press the “Estimate CO₂ Emissions” button. Depending of the use the ICAO CORSIA CERT and the type input (i.e. Great Circle Distance or Block Time), different output will be returned.

The following table summarizes all types of output and the expected format:

Output	Format	Comment
Data Gap	<ul style="list-style-type: none"> • “Yes” • Blank field 	<p>Data gap occurs if:</p> <p>For CO₂ emissions estimation – based on Block Time:</p> <ol style="list-style-type: none"> 1. “Total Block Time for all flights” information is missing <p>For Data gap filling:</p> <ol style="list-style-type: none"> 2. “Total Fuel Use for all Flights” information is missing 3. “Type of Fuel” information is missing
Aerodrome Pair Great Circle Distance (in km)	<ul style="list-style-type: none"> • Distance (in km) • Blank field 	Great Circle Distance (GCD) is computed only when CO ₂ emissions are estimated based on GCD.
CO ₂ Emissions (in tonnes of CO ₂)	<ul style="list-style-type: none"> • CO₂ emissions (in tonnes) • Blank field 	<p>CO₂ emissions are estimated if the ICAO CORSIA CERT is used for CO₂ emissions estimation or for filling data gaps.</p> <p>If “Total Fuel Use for all Flights” and “Type of Fuel” fields are filled, the “CO₂ Emissions” field is left blank.</p>
Flight(s) subject to Scope of Applicability of CORSIA	<ul style="list-style-type: none"> • “Yes” • “No (Domestic)” 	For flights operated on an international route, a “Yes” is returned otherwise it is a “No (Domestic)”.
Warnings	<ul style="list-style-type: none"> • “Fuel Cap.” • “Range” • “Date” • Blank field 	<p>The ICAO CORSIA CERT runs non-binding checks when estimating the CO₂ emissions.</p> <p>If estimated fuel burn exceeds the fuel tank capacity or the maximum range capability of an aeroplane type, a “Fuel Cap.” or “Range” warning is displayed.</p> <p>If a year other than the current year is entered in the “Date” field, the “Date” warning is displayed.</p>

Table 1: List of outputs

3.3.8 Reporting - State pairs / Reporting - Aerodrome pairs [ER 5.1 / ER 5.2]

Depending on the selection made in worksheet ER 5, section c) will be different (see Figure 25). The rest of the form remains the same. These specific sections are automatically partially pre-filled when the “Populate ER with CO₂ Information” button (located in worksheet ER_CO2_Est) is pressed.

c) Table of all State pairs
*Please list all State pairs on which international flights were performed and enter the number of flights and the amount of CO₂ emissions.
 For the purposes of this template, the fuel total could include the sum of equivalent fuels.

State of departure	State of arrival	CO ₂ emissions estimated with CERT?	Total No. of flights	Fuel type*	Total mass of fuel (in tonnes)	Fuel conversion factors	Total CO ₂ emissions (in tonnes)	Subject to offsetting requirements ?
								Not applicable in 2019

c) Table of all aerodrome pairs
*Please list all aerodrome pairs on which international flights were performed and enter the number of flights and the amount of CO₂ emissions.
 For the purposes of this template, the fuel total could include the sum of equivalent fuels.

Departure		Arrival		CO ₂ emissions estimated with CERT?	Total No. of flights	Fuel type*	Total amount of fuel used (in tonnes)	Fuel conversion factors	CO ₂ emissions (in tonnes)	Subject to offsetting requirements ?
ICAO airport code	State	ICAO airport code	State							
										Not applicable in 2019

Figure 25: Reporting – State pairs / Reporting – Aerodrome pairs

3.3.9 Data gaps [ER 6]

This section is dedicated to data gaps. It is automatically partially pre-filled when the “Populate ER with CO₂ Information” button (located in worksheet ER_CO2_Est) is pressed.

6 Data Gaps

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Step: **6** Enter complementary information about data gaps below.

Explanation: “Data gaps” occur when an aeroplane operator is missing data relevant for the determination of its fuel use for one or more international flights in accordance with Annex 16 Volume I, Part II, Section 2.2.1.1

a) Did any data gaps occur during the reporting year?

b) Is the threshold of 5 per cent for data gaps exceeded?

In 2019 and 2020, 5 per cent refers to international flights, as defined in Annex 16, Volume I, Part II, Chapter 1, 1.1.2, and Chapter 2, 2.1. From 2021 onwards, 5 per cent refers to international flights subject to offsetting requirements, as defined in Annex 16, Volume I, Part II, Chapter 1, 1.1.2, and Chapter 3, 3.1.

The aeroplane operator using a Fuel Use Monitoring Method shall fill data gaps using the ICAO CORSIA CERT, provided that the data gaps during a compliance period do not exceed the thresholds described above.

Estimated emissions should then appear in spreadsheet 5.1 Reporting – State Pairs as separate State pairs (if reporting is done at State pair level) or in spreadsheet 5.2 Reporting – Aerodrome Pairs as separate aerodrome pairs (if reporting is done at aerodrome pair level).

b1) Per cent of data gaps

Please enter per cent of data gaps (according to criteria defined in Part II, Chapter 2, 2.5.1 and rounded to the nearest 0.1 per cent)

b2) List of data gaps if the 5 per cent threshold has been exceeded in the reporting year

Please complete the list underneath if the threshold has been exceeded.

No.	Reference <i>(Describe the data gap, either by referencing the aeroplane, aerodrome, flight number, etc. for which the data gap occurred and/or the start and end date of the period where the data gap occurred.)</i>	Cause <i>(Please describe the cause why the data gap occurred.)</i>	Type <i>(Describe the type of data gap, such as “density measurement not available”, “fuel uplift not available”, etc.)</i>	Replacement method <i>(Describe the method of determining alternative data, such as referencing the procedure in your Emissions Monitoring Plan, “By... Tool”, etc.)</i>	CO ₂ emissions <i>(in tonnes)</i> <i>(Provide the amount of CO₂ emissions which are affected by the data gap.)</i>	Remarks

Figure 26: Data gaps

3.3.10 Review and file export [ER_Final]

In this worksheet, you can generate different documents.

The Emissions Report can be generated in Excel format and in PDF format. When generating the Emissions Report, a log document (in PDF format) will be automatically generated. This document contains general information and statistics on the ICAO CORSIA CERT spreadsheet used.

The two last buttons offer the possibility to download the entire table (i.e. input and output) from the worksheet ER_CO2_Est and to download information entered on Custom Aerodrome and Custom Aeroplane.

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Steps:

- 1 Review the Estimation of CO₂ Emissions and/or the Emissions Report for 2019. **Start Review**
- 2 Once the Emissions Report is complete, it can be exported and saved as;
 - Excel workbook (i.e., filled version of the ICAO ER template). Click on -> **Generate ER in Excel format**
 - If needed and/or for records, a pdf file can be generated by clicking on -> **Generate ER in pdf format**

Note. - A log file (for audit or to provide to the Verification Body and/or State as needed) is generated when copies of the Emissions Report generated.

 - If needed, a .csv file of the data contained in "CO₂ Emissions Estimation & Data Gap Filling" can be generated by clicking on -> **Generate CSV File of CO₂ Est. Input & Output**
 - If needed, a .csv file of the data contained in "Custom Aeroplane Information" and "Custom Aerodrome Information" can be generated by clicking on -> **Generate CSV File of Custom AC/AP**

Figure 27: Review and File Export

--- END ---