

Small Group Exercise 1: Emissions Monitoring Plan

Introduction:

According to the draft Annex 16, Volume IV, the 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 the aeroplane operator will submit an EMP to the State by 30 September 2018, and that the State will approve the operator’s EMP by 30 November 2018 (while the mandatory deadline for submission of an EMP is 28 February 2019 and for approval 30 April 2019).

Purpose of an EMP is to:

- (1) identify the aeroplane operator;
- (2) provide information on the operator’s fleet and operations;
- (3) identify operator’s method of calculating CO₂ emissions from international flights; and
- (4) describe how the operator will manage and control its CO₂-related information.

Once the EMP has been approved by the State, the operator will monitor its CO₂ emissions in accordance with the approved EMP.

Instructions for Small Group Exercise 1:

Appendix 1 of this exercise provides an illustrative example of the EMP, which was submitted by “A1 Airline”. The left side of the Appendix 1 provides EMP sections and instructions, and the right-side of the Appendix 1 provides the inputs by A1 Airline.

Appendix 2 of this exercise provides an illustrative checklist for the State’s review of the EMP.

In the small group, please review the information provided in A1 Airline’s EMP in Appendix 1, by comparing against the checklist in Appendix 2. The EMP sections in Appendix 1 are corresponding to the checklist sections in Appendix 2. As part of the review, please focus on the following:

- a) Identify any errors and inconsistencies and discuss possible consequences they might have for CO₂ emissions monitoring. Please note that information in section 1 (Aeroplane Operator Identification) of the EMP is correct, and does not contain any errors.
- b) Based on the results of a) above, assess whether the EMP could be approved, or disapproved; or should further information from the operator be requested.
- c) If the EMP cannot be approved, identify the areas that the aeroplane operator should clarify and correct; and what actions should the State authority take before the EMP can be approved.

APPENDIX 1: A1 AIRLINE: EMISSIONS MONITORING PLAN (EMP)					
1 AEROPLANE OPERATOR IDENTIFICATION					
EMP section and instructions		Aeroplane operator inputs			
1.1 Name of the aeroplane operator <i>Please enter the name of the aeroplane operator.</i>		A1 Airline			
1.2 Information for attributing the aeroplane operator to a State <i>Select one of the three options below for reporting flight attribution under the CORSIA in Item 7 of the flight plan.</i> a) ICAO Designator b) Air operator certificate c) Place of juridical registration		a) ICAO Designator: according to ICAO Document 8585			
1.3 ICAO designator <i>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).</i>		ABC			
1.4 Description of the ownership structure of the company <i>Details of ownership structure relative to any other aeroplane operators with international flights, including identification of whether the operator is a parent company to other operators, or a subsidiary of another operator.</i>		A1 Airline does not have any parent/subsidiarity relationships.			
1.5 Description of the aeroplane operator's activities <i>Please describe the operator's activities. Provide details of main State pairs, typical leasing arrangements, scheduled/non-scheduled, pax/cargo/executive and geographic scope of operations.</i>		A1 Airline is a commercial operator based in State A, and operates flights between its hub located in State A and 9 States (States B, C, D, E, F, G, H, I, and J). A1 Airline also operates domestic flights within State A. One of A1 Airline's aeroplanes is modified to be compatible to provide support for international humanitarian, medical, and firefighting operations, as needed. A1 Airline operates both passenger and cargo traffic. Most of A1 Airline's operations are scheduled traffic between established State pairs, however, A1 Airline also performs non-scheduled charter flights on demand.			
2 FLEET AND OPERATIONS DATA					
2.1 Fleet declaration <i>List all aeroplane types, including owned aeroplanes as well as leased aeroplanes, with an MTOM ≥ 5 700 kg (12 566 lbs) operated on international flights at the time of submission of the Emissions Monitoring Plan.</i>		#	ICAO type designator	Fuel type	Number of aeroplanes
		1	A320	Jet-A	2
		2	BCS3	Jet-A	2
		3	B739	Jet-A	3
		4	E190	Jet-A	3
2.2 Completeness of the fleet list, and flights		All A1 Airline's aeroplanes are fully owned by the company, and are included in A1 Airline's Fleet Management System. Any additional aeroplane purchased by A1 Airline will be included into the Fleet Management System at the time of			

2018 ICAO REGIONAL SEMINARS ON CORSIA

	<p>aeroplane delivery. The Fleet Management System will track every flight operated by any aeroplane owned by A1 Airline; data in the system includes: complete schedule for each aeroplane; Flight Plan for each flight, passenger/cargo manifest; fuel uplift for the flight concerned; and an after-flight report signed by the captain.</p>																																																																		
<p>2.3 List of State pairs operated by the aeroplane operator <i>Please list all State pairs where international flights are currently operated.</i></p>	<table border="1"> <thead> <tr> <th>#</th> <th>State of Origin</th> <th>State of Destination</th> <th>#</th> <th>State of Origin</th> <th>State of Destination</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>A</td> <td>B</td> <td>11</td> <td>C</td> <td>A</td> </tr> <tr> <td>2</td> <td>A</td> <td>C</td> <td>12</td> <td>D</td> <td>A</td> </tr> <tr> <td>3</td> <td>A</td> <td>D</td> <td>13</td> <td>E</td> <td>A</td> </tr> <tr> <td>4</td> <td>A</td> <td>E</td> <td>14</td> <td>F</td> <td>A</td> </tr> <tr> <td>5</td> <td>A</td> <td>F</td> <td>15</td> <td>G</td> <td>A</td> </tr> <tr> <td>6</td> <td>A</td> <td>G</td> <td>16</td> <td>H</td> <td>A</td> </tr> <tr> <td>7</td> <td>A</td> <td>H</td> <td>17</td> <td>I</td> <td>A</td> </tr> <tr> <td>8</td> <td>A</td> <td>I</td> <td>18</td> <td>J</td> <td>A</td> </tr> <tr> <td>9</td> <td>A</td> <td>J</td> <td>19</td> <td>A</td> <td>A</td> </tr> <tr> <td>10</td> <td>B</td> <td>A</td> <td>20</td> <td>A</td> <td>M</td> </tr> </tbody> </table>	#	State of Origin	State of Destination	#	State of Origin	State of Destination	1	A	B	11	C	A	2	A	C	12	D	A	3	A	D	13	E	A	4	A	E	14	F	A	5	A	F	15	G	A	6	A	G	16	H	A	7	A	H	17	I	A	8	A	I	18	J	A	9	A	J	19	A	A	10	B	A	20	A	M
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<p>2.4 Determination of all international flights <i>Please provide information on procedures for determining which aeroplane flights meet the definition of "international" flights, and therefore are subject to the emissions monitoring requirements.</i></p>	<p>ICAO Designator "ABC", as included in the Flight Plan, will be used to identify A1 Airline's international flights. Information on all flights operated by A1 Airline are saved in the Fleet Management System, which is being hosted by a central IT system, physically located at company's headquarters.</p> <p>For CORSIA purposes, international flights are then identified from the Fleet Management System by A1 Airline's Operations Department by filtering out all flights from the list of State pairs as indicated in the Table in 2.3.</p> <p>Training flights, ferry flights, and weather-related diversions are excluded from CORSIA applicability. A1 Airline also intends to exclude its cargo flights as well as any non-scheduled flights from the scope of CORSIA.</p> <p>Humanitarian, medical and firefighting flights will be identified and filtered out by using the information provided in respective flights' flight plan, as saved in the Fleet Management System.</p>																																																																		
<p>2.5 Determination of international flights with offsetting requirements <i>Please provide information on the procedures for determining which international flights are in scope of the carbon offsetting requirement under the CORSIA (Note – CORSIA offsetting requirements shall be applicable starting from 1 January 2021).</i></p>	<p>A1 Airline will use the ICAO Document entitled "CORSIA States for Chapter 3 State Pairs", which will be available on the ICAO website, to identify those State pairs that are in the scope of the offsetting requirements.</p>																																																																		

3 METHODS AND MEANS FOR CALCULATING EMISSIONS FROM INTERNATIONAL FLIGHTS												
3.1 Fuel Use Monitoring Method and / or the ICAO CORSIA CO₂ Estimation and Reporting Tool (CERT) <i>Please select which option the operator will use for the CO₂ emissions monitoring starting in 2019.</i> a) Fuel Use Monitoring Method b) ICAO CORSIA CO ₂ Estimation and Reporting Tool (CERT)		ICAO CORSIA CO ₂ Estimation and Reporting Tool (CERT)										
3.2 Estimated annual fuel use in 2019 <i>Please demonstrate the eligibility to use the ICAO CORSIA CO₂ Estimation and Reporting Tool (CERT) tool by providing an estimate of the 2019 total annual fuel consumption for international flights.</i>		<table border="1"> <thead> <tr> <th>Fuel type</th> <th>Annual fuel burn (in tonnes)</th> <th>Fuel Conversion Factor</th> <th>Annual CO₂ emissions (in tonnes)</th> </tr> </thead> <tbody> <tr> <td>Jet-A</td> <td>100 000</td> <td>3.16</td> <td>316 000</td> </tr> </tbody> </table>	Fuel type	Annual fuel burn (in tonnes)	Fuel Conversion Factor	Annual CO ₂ emissions (in tonnes)	Jet-A	100 000	3.16	316 000		
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Jet-A	100 000	3.16	316 000									
3.3 Supporting information on estimation for 2019 <i>Provide supporting information on how the estimation of emissions in 3.2 has been determined, including on how fuel consumption has been estimated (e.g. by using ICAO CORSIA CO₂ Estimation and Reporting Tool (CERT)).</i>		A1 Airline has estimated its annual CO ₂ emissions by collecting fuel invoices from international flights for a 12-months period from July 2017 to June 2018. Based on the fuel invoices, A1 Airline's fuel burn in this period was approx. 100 000 tonnes of Jet-A. A1 Airline expects its operations to grow slightly between 2017 and 2019, however, in 2019 A1 Airline's fuel burn should remain within 100 000 tonnes of Jet-A +/-10 % .										
4 DATA MANAGEMENT, DATA FLOW, AND CONTROL												
4.1 Description of data management and addressing data gaps <i>Please provide a description of the steps in the data flow and data processing, including controls to assure data quality, beginning with the source data up to the emissions report. Please reference the responsible departments. Please also specify data sources that can be alternatively used for reporting purposes.</i>		<ul style="list-style-type: none"> After completion of a flight, the Captain of the flight signs and records the after-flight report in the Fleet Management System. A1 Airline's CORSIA Manager extracts information from the Fleet Management System on a regular basis (once a month), and performs cross-checks against alternative data sources, such as ACARS data. Purpose of regular cross-checks is to ensure that input information for ICAO CORSIA CERT is being collected correctly on a continuous basis. Every January, the CORSIA Manager will compile a draft Emissions Report covering the CO₂ emissions from the previous year. Draft Emissions Report is then forwarded to A1 Airline's Quality Manager for an internal pre-verification, before submitting the Report to an independent third-party verification. <p>In an unlikely situation of a data gap in the Fleet Management System, A1 Airline's CORSIA Manager will identify the missing flights by using the information from air traffic control records, and use ICAO CORSIA CERT to fill in missing CO₂ emissions information for the missing flights.</p>										
4.2 Documentation and recordkeeping plan and addressing related risks <i>Please specify where CORSIA-related information is being stored. Please indicate the IT system used, if applicable.</i>		A1 Airline will keep records of CORSIA-relevant information for a period of 5 years. Due to the limitations in A1 Airline's IT systems, all records will be printed out as hard copies, and stored in the CORSIA Manager's office.										

2018 ICAO REGIONAL SEMINARS ON CORSIA

APPENDIX 2: EMISSIONS MONITORING PLAN (EMP) CHECKLIST FOR STATE REVIEW		
EMP Section	Checklist for State Review	Sufficient Information Provided in the EMP? Yes/No
1 AEROPLANE OPERATOR IDENTIFICATION		
1.1 Name of the aeroplane operator	Operator has clearly identified its company name.	Yes
1.2 Information for attributing the aeroplane operator to a State 1.3 ICAO designator	Operator has identified one of the following items for information for attributing the aeroplane operator to a State: a) Unique ICAO Designator (or Designators) used in the call sign for air traffic control purposes; b) Copy of the air operator certificate; or c) Place of juridical registration.	Yes
1.4 Description of the ownership structure of the company	Operator has described the details of its ownership structure relative to any other operators, including identification of whether the aeroplane operator is a parent company, a subsidiary and/or has a parent and/or subsidiaries.	Yes
1.5 Description of the aeroplane operator's activities	Aeroplane operator has described its activities (e.g., scheduled/non-scheduled, passenger/cargo/executive, and geographic scope of operations).	Yes
2 FLEET AND OPERATIONS DATA		
2.1 Fleet declaration	Operator has listed its aeroplane types with 5 700 kg of maximum take-off mass or greater and types of fuel (e.g., Jet-A, Jet-A1, Jet-B, Aviation Gasoline) used in aeroplane operated in international flight at the time of submission of the Emissions Monitoring Plan.	
2.2 Completeness of the fleet list, and flights	Operator has provided information on the means the operator will use to track and document each aeroplane and flight operated to ensure completeness of monitoring. Also, the operator has provided information on procedures for how changes in aeroplane fleet and fuel used will be tracked and integrated in emissions monitoring.	
2.3 List of State pairs operated by the aeroplane operator	Operator has identified all States at the time of the Emissions Monitoring Plan submission where the aeroplane operator operates international flights, listed as State pairs.	
2.4 Determination of all international flights	Operator has outlined appropriate means to identify the international flights attributed to the operator: a) ICAO Designator; b) registration marks; or c) emissions monitoring plan code. Aeroplane operator has identified correct procedures for determining which flights are international flights, and therefore are subject to the emissions monitoring requirements. Also, If the aeroplane operator conducts any domestic flights and/or humanitarian, medical or firefighting international flights, information should be provided on the procedures for how those flights will be separated from flight subject to the emissions monitoring requirements.	

2018 ICAO REGIONAL SEMINARS ON CORSIA

2.5 Determination of international flights with offsetting requirements	Aeroplane operator has identified sufficient and correct procedures for identifying international flights subject to offsetting requirements.	
3 METHODS AND MEANS OF CALCULATING EMISSIONS FROM INTERNATIONAL FLIGHTS		
3.1 Fuel Use Monitoring Method and / or the ICAO CORSIA CO₂ Estimation and Reporting Tool (CERT) 3.2 Estimated annual fuel use in 2019 3.3 Supporting information on estimation for 2019	Does the operator seek to use the ICAO CORSIA CERT? If yes, the operator should provide an estimate of CO ₂ emissions for international flights in 2018 (or other 12-month period), together with information on how the estimation of emissions was reached (only operators with emissions of less than 500 000 tons of CO ₂ from international flights can use the CERT in 2019 and 2020). The estimation method should be reasonable and provide reliable support for aeroplane operator's claim that it will qualify to use the ICAO CORSIA CERT.	
4 DATA MANAGEMENT, DATA FLOW, AND CONTROL		
4.1 Description of data management and addressing data gaps	Operator has a data management plan in place to track and report required information. Also, the operator has described its methodology for handling data gaps and erroneous data values.	
4.2 Documentation and recordkeeping plan and addressing related risks	Operator has described a sufficient and correct documentation and record keeping plan, including the risks associated with the data management processes and means for addressing significant risks.	
FINAL ASSESSMENT		
Does the EMP include sufficient and correct information for the approval?		
If not, what are the critical areas that the aeroplane operator should clarify (identify the EMP section number)?		
Are there any non-critical errors, which don't prevent approving the EMP, but for which improvements could be made in order to improve the quality of the EMP (identify the section number)?		
DECISION BY THE STATE AUTHORITY		
Based on the assessment above, the EMP is:	<input type="checkbox"/> Approved; <input type="checkbox"/> Disapproved; or <input type="checkbox"/> Pending further information from the operator	
Date: _____ Place: _____ Signature: _____		

— END —