



WORKING PAPER

ASSEMBLY — 41ST SESSION

EXECUTIVE COMMITTEE

Agenda Item 18: Environmental Protection – Carbon Offsetting and Reduction Scheme for International Aviation (CORSA)

CARBON OFFSETTING AND REDUCTION SCHEME FOR INTERNATIONAL AVIATION (CORSA)

(Presented by the Council of ICAO)

EXECUTIVE SUMMARY

This paper reports on progress made by ICAO since the 40th Session of the Assembly regarding the Carbon Offsetting and Reduction Scheme for International Aviation (CORSA), including the updates of CORSA-related Standards and Recommended Practices (SARPs) and other relevant implementation elements, and the implementation support provided under the ICAO Assistance, Capacity-building and Training for CORSA (ACT-CORSA) programme, as well as the 2022 periodic review of CORSA.

Action: The Assembly is invited to:

- a) acknowledge the substantial progress achieved by the Organization since the 40th Session of the Assembly for the robust implementation of CORSA and its CO₂ emissions Monitoring, Reporting and Verification (MRV) requirements by States and aeroplane operators, in accordance with Annex 16, Volume IV;
- b) welcome the timely development and updates of CORSA implementation elements by the Council, including CORSA eligible fuels, CORSA eligible emissions units, and CORSA Central Registry;
- c) welcome the continued progress of the ICAO Assistance, Capacity-building and Training for CORSA (ACT-CORSA) programme, with the contributions and engagement of Member States, and request States to continue to engage in and support the ACT-CORSA programme;
- d) welcome the increasing number of States that voluntarily participate in CORSA and encourage other States to do so as soon as possible; and
- e) consider the information contained in this paper, including the Council's work on the 2022 CORSA periodic review, for the update of Assembly Resolution A40-19.

<i>Strategic Objectives:</i>	This working paper relates to Strategic Objective – <i>Environmental Protection</i> .
<i>Financial implications:</i>	The activities referred to in the attached Assembly working paper will be undertaken subject to the resources available in the 2023–2025 Regular Budget and/or from extra budgetary contributions as guided by the ICAO Business Plan 2023-2025.
<i>References:</i>	Doc 10140, <i>Assembly Resolutions in Force</i> (as of 4 October 2019) A41-WP/371, <i>Consolidated statement of continuing ICAO policies and practices related to environmental protection – Carbon Offsetting and Reductions Scheme for International Aviation (CORSA)</i>

1. PROGRESS ON CORSIA IMPLEMENTATION

1.1 Since the establishment of CORSIA in 2016, and as requested by relevant Assembly Resolutions A39-3 and A40-19, the ICAO Council has overseen the implementation of CORSIA, with support provided by its Climate and Environment Committee (formerly Advisory Group on CORSIA (AGC)), its Technical Advisory Body (TAB) and its Committee on Aviation Environmental Protection (CAEP).

1.2 Prior to the start of CORSIA's pilot phase on 1 January 2021, the Council successfully completed the development of all essential components of the CORSIA implementation package, namely: Standards and Recommended Practices (SARPs) in Annex 16 — *Environmental Protection, Volume IV — Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA)*; guidance in Doc 9501, *Environmental Technical Manual (ETM), Volume IV*; and five CORSIA Implementation Elements. Appendix A to this paper reflects the timeline for the recent developments of these components.

1.3 The first edition of Annex 16, Volume IV became applicable on 1 January 2019, the starting date for the monitoring, reporting and verification (MRV) of CO₂ emissions under CORSIA. Amendments to Annex 16, Volume IV are currently being considered by the Council, on the basis of technical recommendations from the CAEP/12 meeting in February 2022. In addition, updates to the ETM, Volume IV, which compiles technical guidance to support the implementation of SARPs, will be consequential to the next edition of Annex 16, Volume IV.

1.4 The five CORSIA Implementation Elements, as reflected in various ICAO documents directly referenced in Annex 16, Volume IV, contain materials that are essential for the implementation of CORSIA and approved by the Council for publication on the ICAO CORSIA webpage, as described below.

Voluntary participation in CORSIA¹

1.5 The ICAO document *CORSIA States for Chapter 3 State Pairs*, listing those States that volunteer to participate in CORSIA in a given year from 2021 onwards, is updated annually. For 2021 (first year of CORSIA's pilot phase), 88 States volunteered to participate in CORSIA. This number increased to 107 volunteer States for 2022, and 115 volunteer States for 2023. In this regard, the ICAO Assembly strongly encouraged all States to voluntarily participate in the pilot phase and the first phase of CORSIA (Resolution A40-19, paragraph 9 c) refers), as more participating States will bring closer the higher environmental integrity of CORSIA in meeting the ICAO global aspirational goal.

CORSIA CO₂ Estimation and Reporting Tool (CERT)²

1.6 The ICAO CORSIA CO₂ Estimation and Reporting Tool (CERT) allows aeroplane operators to apply simplified procedures for the monitoring and reporting of their CO₂ emissions under CORSIA as per Annex 16, Volume IV. The tool is updated annually since first published in July 2018, in order to incorporate additional functionalities as required for CORSIA implementation, with the update of the tool's background information.

CORSIA Eligible Fuels³

1.7 The first editions of the five ICAO documents related to CORSIA Eligible Fuels (i.e., Sustainable Aviation Fuel (SAF) and Lower Carbon Aviation Fuel (LCAF)) were completed prior to the start of the CORSIA pilot phase, with further updates as necessary, with a view to providing an incentive and means to reduce an aeroplane operator's CO₂ offsetting requirements under CORSIA. Those ICAO documents include default life-cycle emissions values, and methodologies for calculating actual life-cycle emissions values, as well as sustainability criteria, approved sustainability certification schemes (SCS) and

¹ CORSIA volunteer States webpage: <https://www.icao.int/environmental-protection/CORSIA/Pages/state-pairs.aspx>

² CORSIA CERT webpage: <https://www.icao.int/environmental-protection/CORSIA/Pages/CERT.aspx>

³ CORSIA Eligible Fuels webpage: <https://www.icao.int/environmental-protection/CORSIA/Pages/CORSIA-Eligible-Fuels.aspx>

the requirements for SCS. Currently, on the basis of technical recommendations from CAEP, further updates of the ICAO documents (e.g. sustainability criteria for LCAF) are considered by the Council.

CORSIA Eligible Emissions Units⁴

1.8 Following the Council's approval of the ICAO document *CORSIA Emissions Unit Eligibility Criteria* and the establishment of the TAB in March 2019, the Council approved and updated the ICAO document *CORSIA Eligible Emissions Units* on the basis of TAB's assessment work and recommendations on eight emission unit programmes and their specific scopes of eligibility to supply emissions units to CORSIA for the pilot phase. The next assessment result and recommendations of TAB will be considered by the Council in late 2022.

CORSIA Central Registry⁵

1.9 The CORSIA Central Registry (CCR) was launched in May 2020, ahead of the deadline of 31 August 2020 for States to report 2019 CO₂ emissions to ICAO. The data reported by States through the CCR serves as the basis for the CCR-related ICAO documents, featuring information such as: list of aeroplane operators attributed to States and list of accredited verification bodies in States, which are regularly updated; and total average CO₂ emissions for 2019 and 2020 aggregated for all aeroplane operators on each State pair route (published in December 2021). Data collected through the CCR will allow for the calculation of CORSIA annual Sector's Growth Factor, whose first value (corresponding to 2021) will be made available by end of October 2022.

1.10 In line with the reporting requirements contained in Annex 16, Volume IV, 117 States submitted their 2019 CO₂ emissions through the CCR, with 110 States having submitted their 2020 CO₂ emissions. As requested in Annex 16, Volume IV, the Secretariat filled the emissions gap for those States that were not able to submit data. The fact that more than 97% of the total CO₂ emissions have been reported by States through the CCR for both year 2019 (606 Million tonnes of CO₂ in total) and year 2020 (265 Million tonnes of CO₂ in total) is testament of the determination of both States and aeroplane operators to ensure the successful implementation of CORSIA.

2. CAPACITY BUILDING AND ASSISTANCE FOR CORSIA⁶

2.1 In June 2018, on the adoption of Annex 16, Volume IV, ICAO launched the ACT-CORSIA (Assistance, Capacity-building and Training for CORSIA) programme as part of the *No Country Left Behind* initiative, with the aim to assist all States with the CORSIA implementation in a "coordinated approach" under the umbrella of ICAO, and its importance was emphasized by the 40th Session of the Assembly (Resolution A40-19, paragraph 21 refers). While the COVID-19 pandemic in early 2020 had an impact on the planned CORSIA-related capacity-building activities, necessary adjustment of activities and related implementation modalities ensured the continuous provision of assistance.

ACT-CORSIA Buddy Partnerships

2.2 Buddy partnerships among States are the cornerstone of the ACT-CORSIA programme. As of August 2022, the partnerships involve 17 supporting States and 119 requesting States (Appendix B refers). Through close coordination with the ACT-CORSIA trainers from the supporting States and the CORSIA focal points of the requesting States, with the support of the ICAO Secretariat, the transition of training activities from in-person workshops to a virtual setting, caused by the COVID-19 pandemic, took place without disruption of the partnerships, contributing to the continued success of CORSIA implementation.

2.3 Phase III of the ACT-CORSIA buddy partnerships is currently ongoing with the provision of training in relation to CORSIA MRV implementation. Whereas activities in 2020 and 2021 focused on the submission of 2019 and 2020 CO₂ emissions reports through the CCR, 2022 activities place emphasis on

⁴ CORSIA Eligible Emissions Units webpage: <https://www.icao.int/environmental-protection/CORSIA/Pages/CORSIA-Emissions-Units.aspx>

⁵ CORSIA Central Registry webpage: <https://www.icao.int/environmental-protection/CORSIA/Pages/CCR.aspx>

⁶ Refer to main CORSIA webpage: www.icao.int/corsia for details on ACT-CORSIA activities

new reporting requirements, namely: the provision of total 2021 emissions for each aeroplane operator; the provision of aggregated figures for State pairs subject to (and not subject to) offsetting requirements; and the submission of information to claim emissions reductions from CORSIA eligible fuels.

CORSIA Seminars and Outreach Activities

2.4 In April 2020, ICAO organized a series of online training sessions on the CCR for all regions, where participants received training on the main CCR functionalities. This was complemented by the development of outreach materials for CORSIA focal points and other CCR users with further guidance on how to use and submit data to ICAO using the CCR.

2.5 In May 2020, ICAO developed two initiatives aimed at facilitating verification activities of CO₂ emissions reports under CORSIA, namely: development of an online CORSIA Verification Course to train more verification bodies; and an online webinar on CORSIA verification activities to clarify the basic understanding of verification requirements to CORSIA focal points.

2.6 In August 2020, ICAO launched the monthly CORSIA Newsletter with a view to continuously inform the status of CORSIA implementation, including: the evolution of the CO₂ emissions reported by States through the CCR; new publications and updates of ICAO CORSIA documents and tools; and progress made on the 2022 CORSIA periodic review. The newsletter also provides a periodic update on carbon market transactions data of CORSIA eligible emissions units, thanks to a new partnership between ICAO and Ecosystem Marketplace.

2.7 In November 2020, the ICAO Secretariat developed *Navigating CORSIA – A guide to the scheme’s design and implementation*, consisting of a package of pre-recorded presentations on the scheme’s design and implementation features. The presentations can also be accessed through ICAO TV.

2.8 In January 2021, the CORSIA Frequently Asked Questions (FAQs) available on the ICAO CORSIA website were fully updated to reflect the latest developments.

2.9 In October 2021, the ICAO CORSIA Forum was held to provide an overview of the “state of play” in CORSIA implementation, and to serve as a platform for States to share success stories and lessons learned regarding CORSIA implementation.

3. COVID-19 IMPACT AND SAFEGUARD⁷

3.1 From April to June 2020, the Council made a series of deliberations and decisions related to various impacts of the COVID-19 pandemic on CORSIA, which were supported by technical inputs and analyses provided by CAEP on the impact of the COVID-19 pandemic on the 2019/2020 average CO₂ emissions (so-called “CORSIA baseline”) as well as the related impact on the CORSIA offsetting requirements.

3.2 The Council in June 2020 decided that, in light of paragraph 16 to Resolution A40-19 and in order to safeguard against inappropriate economic burden on aeroplane operators, 2019 emissions shall be used for 2020 emissions for three CORSIA design features (the CORSIA baseline; the reference year for calculating offsetting requirements; and the new entrant threshold) during the CORSIA pilot phase from 2021 to 2023.

3.3 The Council also initiated the process for establishing the 2022 periodic review of CORSIA, as requested by paragraph 17 to Resolution A40-19, including a work programme of CAEP’s technical and analytical contributions to the review. The Assembly would need to further consider the CORSIA baseline after the pilot phase, following the consideration of the Council (paragraph 4 below refers), taking into account the need to take urgent action for addressing climate change.

⁷ Further details are contained in the COVID-19 impacts on CORSIA implementation and the 2022 CORSIA review webpage: <https://www.icao.int/environmental-protection/CORSIA/Pages/CORSIA-and-Covid-19.aspx>

3.4 In addition, as part of its subsequent work on the 2022 CORSIA periodic review, the Council in March 2022 requested the Secretariat to propose modalities of safeguards to be applied in case of inappropriate economic burden on international aviation, as referred to in paragraph 16 to A40-19.

3.5 In this regard, it should be noted that paragraph 16 to A40-19 requests the Council to decide the “basis and criteria” for triggering such action (safeguards) and identify means to address these issues. Based on the past analytical work of the Organization related to CORSIA, possible “basis and criteria” to define “inappropriate economic burden on international aviation” could refer to the levels of annual CO₂ emissions from international aviation and their changes (i.e. growth/reduction levels of annual CO₂ emissions), or the levels of the amount of total CO₂ offsetting requirements and associated levels of the compliance cost for the airline industry. Further analytical work on possible modalities of safeguards would be needed to explore such basis and criteria, as well as possible means of triggering safeguard measures.

4. 2022 CORSIA PERIODIC REVIEW⁸

4.1 The Council in March 2021 considered an update of the CAEP analysis on the impact of the COVID-19 pandemic on CORSIA (paragraph 3 above refers), and agreed on the process and Terms of Reference for the 2022 CORSIA periodic review, including a series of requests to CAEP for providing further inputs and analyses to support the Council’s subsequent work on this topic.

4.2 In accordance with the agreed process for the 2022 CORSIA periodic review, a State letter consultation process also took place to collect input from States on their experiences regarding CORSIA implementation (State letter ENV 6/6 –21/33, issued on 7 May 2021), in which the Council considered the results of States’ inputs in November 2021.

4.3 The Council in March 2022 considered updated CAEP inputs to the 2022 CORSIA periodic review, containing: further assessment of the COVID-19 pandemic impacts on CORSIA and its baseline; further assessment of costs of CORSIA implementation on States and aeroplane operators; and the analysis of possible market distortion in the context of CORSIA design elements. These CAEP analyses and related key takeaway messages are available on the 2022 CORSIA periodic review website.

4.4 Following further consideration in June 2022 on the CORSIA baseline after the pilot phase as part of the 2022 CORSIA periodic review, the Council requested CAEP to update the analyses to estimate CORSIA offsetting requirements, using the average of 2019 and 2020 emissions as the agreed baseline in Assembly Resolution A40-19, as well as the following scenarios for the CORSIA baseline after the pilot phase (2024 to 2035):

- a) 2019 emissions only;
- b) a percentage of 2019 emissions, reflecting an equivalent level to the average of 2019 and 2020 emissions (which corresponds to 70% of 2019 emissions); and
- c) the mid-point between the baseline scenarios above (which corresponds to 85% of 2019 emissions).

4.5 The Council in August 2022 considered the updated analyses of CAEP above, and noted that the behaviour of aviation during 2020 was heavily impacted by the pandemic and represented an anomaly, and agreed that the 2020 data would not be used for the purpose of defining the CORSIA baseline, which should be referenced to 2019 data.

4.6 As a result of the consideration of the updated CAEP analyses and other design elements of CORSIA, the Council agreed on its proposals for consideration by the Assembly, including the use of 2019 emissions as the CORSIA baseline for the pilot phase, and the use of 85% of 2019 emissions as the CORSIA baseline after the pilot phase, as well as the changes to the percentage use of the sectoral and individual

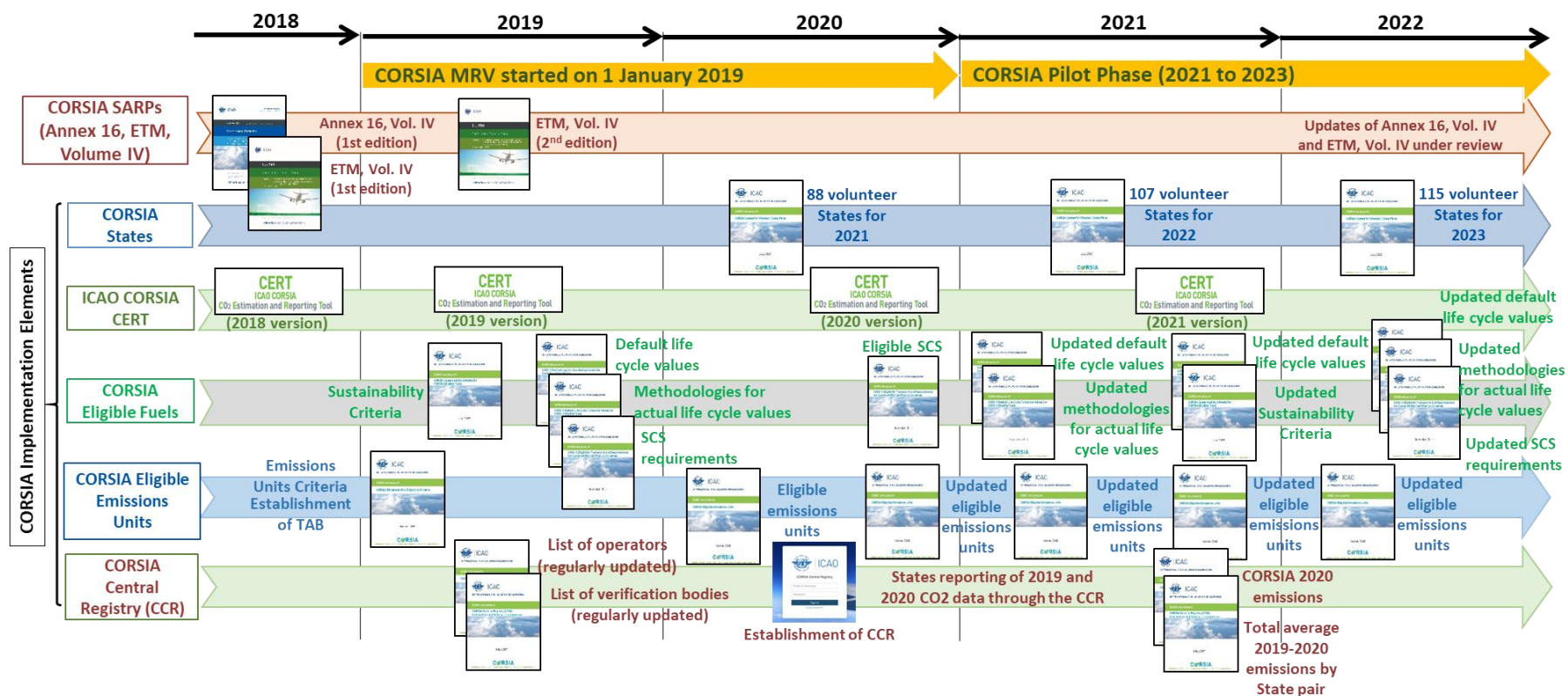
⁸ Further details are contained in the COVID-19 impacts on CORSIA implementation and the 2022 CORSIA review webpage: <https://www.icao.int/environmental-protection/CORSIA/Pages/CORSIA-and-Covid-19.aspx>

operator's growth factors as 100% and 0 % respectively (for 2030 – 2032 period) and 85 % and 15% respectively (for 2033 – 2035 period), for the calculation of offsetting requirements under CORSIA (refer to A41-WP/371, *Consolidated statement of continuing ICAO policies and practices related to environmental protection – Carbon Offsetting and Reductions Scheme for International Aviation (CORSIA)*).

APPENDIX A

DEVELOPMENT OF CORSIA IMPLEMENTATION PACKAGE (2018 – 2022)

ICAO completes all essential components for CORSIA implementation package



APPENDIX B

CORSIA BUDDY PARTNERSHIPS (AS OF AUGUST 2022)

 CORSIA <small>Phase III</small> Assistance, Capacity-building and Training on CORSIA	
AUSTRALIA  <ol style="list-style-type: none"> BRUNEI DARUSSALAM  INDONESIA  NAURU  PAPUA NEW GUINEA  SRI LANKA  THAILAND  	KENYA / UNITED KINGDOM  <ol style="list-style-type: none"> ETHIOPIA  RWANDA  SEYCHELLES  SOUTH SUDAN  UGANDA  UNITED REPUBLIC OF TANZANIA 
BRAZIL  <ol style="list-style-type: none"> ANGOLA  CABO VERDE  MOZAMBIQUE  SAO TOME AND PRINCIPE  	NEW ZEALAND  <ol style="list-style-type: none"> FIJI  SAMOA  SOLOMON ISLANDS  VANUATU 
CANADA <small>(Facilitated by CASSOS)</small>  <ol style="list-style-type: none"> ANTIGUA AND BARBUDA  BARBADOS  GUYANA  HAITI  JAMAICA  SURINAME  TRINIDAD AND TOBAGO  	NIGERIA  <ol style="list-style-type: none"> GAMBIA  GHANA  LIBERIA  SIERRA LEONE  SUDAN 
CANADA / FRANCE   <ol style="list-style-type: none"> BENIN  BURKINA FASO  BURUNDI  CAMEROON  CENTRAL AFRICAN REPUBLIC  CHAD  COMOROS  CONGO  CÔTE D'IVOIRE  DJIBOUTI  D. R. OF CONGO  GABON  GUINEA  MADAGASCAR  MALI  MAURITANIA  MAURITIUS  NIGER  SENEGAL  TOGO  	REPUBLIC OF KOREA  <ol style="list-style-type: none"> LAO PEOPLE'S D. R.  MONGOLIA  PAKISTAN  PHILIPPINES  VIETNAM 
FRANCE <small>(Facilitated by ACAO)</small>  <ol style="list-style-type: none"> ALGERIA  MOROCCO  TUNISIA  	QATAR  <ol style="list-style-type: none"> BAHRAIN  IRAN  IRAQ  JORDAN  KUWAIT  LIBYA  OMAN 
GERMANY  <ol style="list-style-type: none"> ALBANIA  ARMENIA  AZERBAIJAN  BELARUS  GEORGIA  KAZAKHSTAN  NORTH MACEDONIA  REPUBLIC OF MOLDOVA  SAUDI ARABIA  SERBIA  TAJKISTAN  TURKMENISTAN  	SINGAPORE  <ol style="list-style-type: none"> COOK ISLANDS  KIRIBATI  MARSHALL ISLANDS  PALAU  TONGA  TUVALU 
ITALY / UNITED KINGDOM   <ol style="list-style-type: none"> BAHAMAS  ERITREA  SOMALIA  	SOUTH AFRICA  <ol style="list-style-type: none"> BOTSWANA  ESWATINI  LESOTHO  MALAWI  NAMIBIA  ZAMBIA  ZIMBABWE 
JAPAN  <ol style="list-style-type: none"> AFGHANISTAN  BANGLADESH  BHUTAN  CAMBODIA  MALAYSIA  MYANMAR  	USA  <ol style="list-style-type: none"> ARGENTINA  DOMINICAN REPUBLIC  ECUADOR  PANAMA 
 <div style="display: flex; justify-content: space-between; align-items: center;"> <div style="background-color: #0070C0; color: white; padding: 5px; border-radius: 5px;">17 SUPPORTING STATES</div> <div style="background-color: #709A47; color: white; padding: 5px; border-radius: 5px;">119 REQUESTING STATES</div> </div>	