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WORKING PAPER

COMMITTEE ON AVIATION ENVIRONMENTAL PROTECTION (CAEP)

STEERING GROUP MEETING

São Paulo, Brazil, 5 to 9 December 2022

Agenda Item 3: CORSIA (WG4)

VIEWS OF THE UNITED STATES ON WORKING GROUP 4 AND CORSIA

(Presented by the United States)

SUMMARY

This paper provides United States views on the ongoing and planned work of the Working Group 4. It also provides views on the potential implications of the outcome of the 41st Assembly on the Working Group 4 work program. A summary of these implications is also presented in WP/34.

Action by the CAEP-SG is in paragraph 6.

1. INTRODUCTION

1.1 The United States commends WG4 technical experts for the technical and analytical work conducted in response to the Council requests in support of the 2022 CORSIA Periodic Review that was considered at the 41st Assembly.

1.2 The United States welcomes the outcome of the 41st Assembly that reaffirmed the importance of CORSIA and will ensure that ICAO does not backtrack on its climate ambition by confirming CORSIA's fundamental aspects. It does incorporate necessary adjustments identified through the 2022 CORSIA Periodic Review to maintain CORSIA's fairness to all operators and takes into account the pandemic's economic impacts on the sector. The United States believes that CORSIA is, and will continue to be, a critical piece of ICAO's "basket of measures" to address international aviation's climate impacts.

2. DEVELOPMENT OF THE ICAO CORSIA CERT

2.1 The United States acknowledges that the development of the CERT and CO_2 Estimation Models (CEMs) is now in stable development mode and there are limited benefits of comparing the CORSIA CEMs reflecting actual performance of aircraft based on as operated data with the Modelling and Database Group (MDG) Greenhouse Gas (GHG) models based on modelled data.

2.2 We support WG4's recommendation of streamlining the coordination across groups and not creating un-necessary work across Working Groups. We agree with the proposal from WG4, supported by MDG, to stop the CEM review process by MDG in its current form, while allowing ICCAIA experts to review the CEMs as part of technical work within WG4.

2.3 The United States supports the ongoing work by the CTAG-CCG on the development of a potential hybrid CERT aerodrome database to address gaps in the ICAO eDoc 7910. For context, in order to prepare the necessary information to fill data gaps in the 2021 U.S. Emissions Report, we added nearly 500 Custom Aerodromes not contained in the 2021 CERT aerodrome database. While the CERT provides flexibility for users to add Custom Aerodromes to complement the underlying CERT Aerodrome database (based on ICAO eDoc 7910), entering Custom Aerodromes is time intensive and creates duplicative work not just for the United States but for other States as well as Aeroplane Operators using the CERT.

3. OUTCOME OF 41ST ASSEMBLY AND NEW ENTRANT BASELINE

3.1 The amendments to CORSIA agreed during the 41st Assembly, specifically the change to the Sectoral and Individual Shares (i.e., extension of 100% sectoral and 0% individual through 2032 and adjusted 85% sectoral and 15% individual from 2033 through 2035), delays but does not remove the need for operators' baselines. As a result, there is still a need to define new entrant operators' baseline.

3.2 While new entrant operators' baseline will not be used until 2032, we see no need to wait to address this gap in Annex 16, Volume IV. We expect that WG4 would leverage the technical work conducted during the CAEP/12 cycle on the definition of options for new entrant's baseline, refresh the analyses of impacts of baseline options with amendments to CORSIA from the 41st Assembly, and provide a recommendation to the CAEP/13 meeting or at a Steering Group meeting if available sooner.

3.3 We note that the amendments from the 41st Assembly to the Sectoral and Individual Shares after 2030 should help the deliberations of WG4 towards a recommendation to CAEP.

4. METHODOLOGY FOR THE CORSIA PERIODIC REVIEW

4.1 The United States recognizes that the 2022 CORSIA Periodic Review was the first such review. It was also substantially impacted by the global Covid-19 pandemic, resulting in an emergency adjustment to the CORSIA baseline in June 2020, followed by a decision by the ICAO Council, at its 222nd Session in March 2021, to approve the Terms of Reference for the 2022 periodic review of CORSIA and to agree on a series of requests to CAEP for the provision of inputs to the Council's work on the 2022 CORSIA periodic review towards the 41st Session of the ICAO Assembly. We note that this series of requests and the highly demanding schedule associated to it impacted the WG4 work plan (especially CAEP/12 Task C.08 and CAEP/13 Task C.07 on Technical Analysis Support). However, we are grateful that WG4 addressed all requests from Council in a timely manner. Developing a methodology and managing the expectations on the scope and content of the CORSIA Periodic Review would help with the planning and execution of the technical work by WG4.

4.2 The United States noted that the 41st Assembly called for the development of a methodology and timeline to conduct the periodic review of the CORSIA, with the technical contribution

of CAEP, for consideration by the Assembly, every three years from 2022. Paragraph 17 of the Resolution provided high level expectations on the scope and content of the outcome of the CORSIA periodic review.[1]

4.3 We recommend that WG4 be tasked to develop a methodology and timeline for the CORSIA Periodic Review. With the expectation that, pending approval by Council, the methodology would be applied towards the 2025 CORSIA Periodic Review, the methodology and timeline should be submitted to CAEP at SG/20232. Consideration by CAEP after the SG/20232 meeting could jeopardize the preparation and execution of technical work and analyses required to support the 2025 CORSIA Periodic Review. This work would need to start in early 2024 to allow WG4 to provide a status update to the SG/20243 and an assessment at the CAEP/13 meeting while providing an opportunity for Council to request complementary questions at the March/April 2025 session of the Council.

4.4 The Appendix provides initial input from the United States towards the development of the CORSIA Periodic Review methodology and timeline. We intend to continue to contribute to the development of this methodology and timeline, in coordination with other CAEP working groups and the Secretariat.

5. LEVERAGING ANNEX 16 VOLUME IV MRV TOWARDS MONITORING PROGRESS TOWARDS THE LTAG

5.1 The United States noted that the 41st Assembly requested Council to regularly monitor progress on the implementation of all elements of the basket of measures towards the achievement of the LTAG and for Council to consider necessary methodologies for the monitoring of progress, and report to a future Session of the ICAO Assembly.[2]

5.2 While we expect that priority should be given on the methodology and timeline for monitoring progress towards the ICAO's global aspirational goal within the CORSIA Periodic Review as requested in A41-22 and described in section 4 of this paper, the methodology to monitor progress towards the long-term aspirational goal should leverage, among other sources of information, the reported data by States through the Monitoring, Reporting and Verification (MRV) process contained in Annex 16, Volume IV. Starting in 2019, the ICAO collected and published verified data for CO_2 emissions from international aviation (after technology and operations improvements) and starting in 2021 ICAO collected data for Emissions Reductions from CORSIA Eligible Fuels and Cancelled Emissions Units. This data allows for monitoring net CO_2 emissions from international aviation on a yearly basis through 2035. Annex 16, Volume IV MRV provisions should be considered as part of input to future methodology for monitoring progress towards the long-term aspirational goal.

[1] ICAO, Resolution A41-22: *Consolidated statement of continuing ICAO policies and practices related to environmental protection - Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA)*, available at: https://www.icao.int/environmental-protection/CORSIA/Documents/Resolution_A41-22_CORSIA.pdf

[2] ICAO, Resolution A41-21: *Consolidated statement of continuing ICAO policies and practices related to environmental protection - Climate change*, available at: https://www.icao.int/environmental-protection/Documents/Assembly/Resolution_A41-21_Climate_change.pdf

6. ACTIONS BY THE CAEP-SG

6.1 The CAEP-SG is invited to:

a) agree with the proposal to streamline the CO_2 Emissions Models (CEMs) review process by MDG as contained in CAEP-SG/20221-WP/05;

b) encourage WG4 to complete the technical work towards a recommendation on the definition of baselines for new entrant aeroplane operators by the CAEP/13 meeting or sooner;

c) recommend that WG4 develop a methodology and timeline for the CORSIA Periodic Review and submit it to CAEP at the SG/20232 meeting; and

d) consider leveraging the Monitoring, Reporting and Verification process from Annex 16, Volume IV towards methodologies for the monitoring of progress towards the long-term aspirational goal.

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APPENDIX

INPUT TOWARDS METHODOLOGY AND TIMELINE FOR CORSIA PERIODIC REVIEW

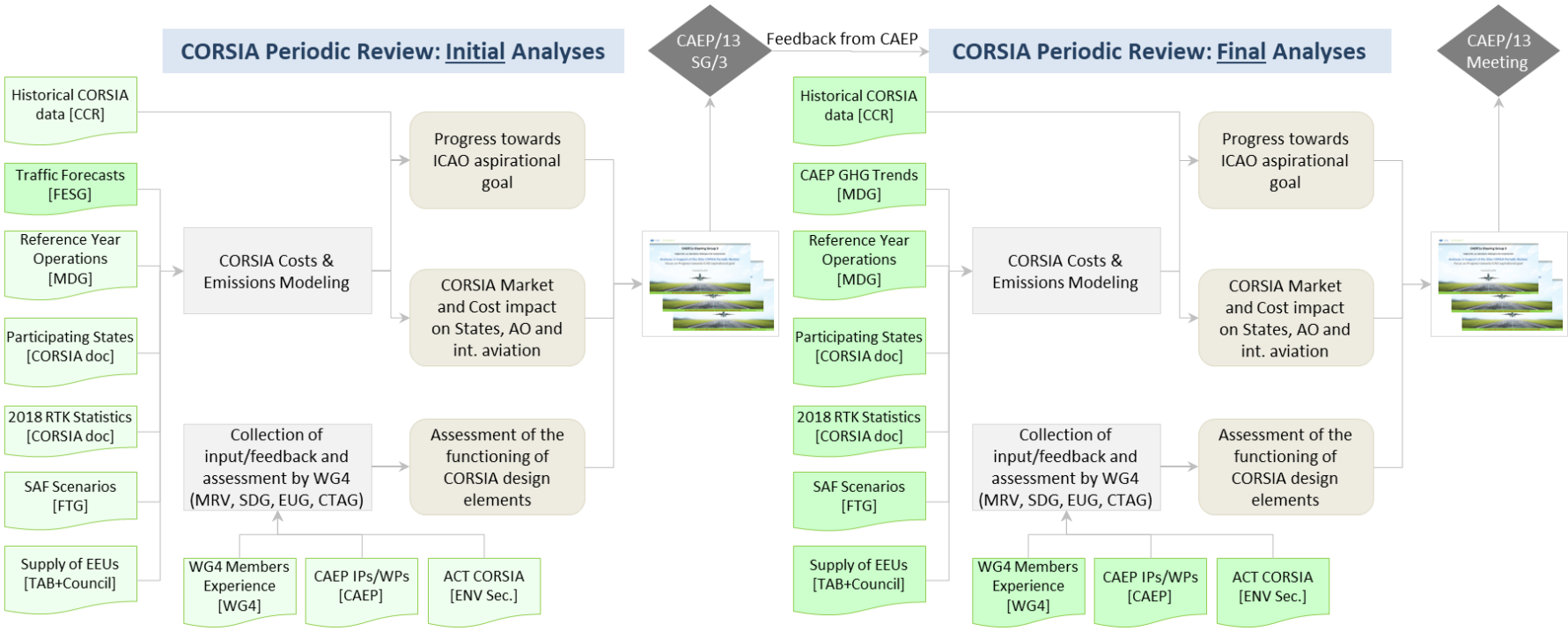
1.1 Using Resolution A41-22, Paragraph 17 as a guide, the table below provides a high-level overview of the potential scope and methodology for the CORSIA periodic review. For the next two CORSIA Periodic Reviews, this table focuses on sections a) and b). Additional considerations with regard to the 2032 special review could be coordinated with Council prior to this specific review.

Ref.	Input from A41-22 Resolution Paragraph 17	Interpretation	Potential Outcome	Lead and Supporting Working Groups
a) i.	*assessment of progress towards achieving the ICAO's global aspirational goal*	Tracking actual net CO_2 emissions[3] over time based on reported data under Annex 16 Volume IV. Estimating net CO_2 emissions through 2035 using latest ICAO/CAEP traffic forecasts, fuel burn trends, CEF scenarios and offsetting requirements.	Comparison of net CO_2 emissions (and contribution from basket of measures) against proxy/reference 2019 CO_2 emissions level.	WG4-CTAG *with input from:* *- ICAO published data from CCR for actual/historical data.* *- FESG, MDG and FTG for forward looking scenarios.*
a) ii.	*assessment of the scheme's market and cost impact on States and aeroplane operators and on international aviation.*	Assessment of actual and estimated (future) quantities of offsetting requirements for (1) international aviation, (2) by States and (3) across types of operators. Assessment of costs from (1) offsetting requirements, (2) ER from CEF, (3) implementation of MRV requirements.	Distribution of offsetting requirements for (1) international aviation, (2) by States and (3) across types of operators.	WG4-CTAG *with input from:* *- ICAO published data from CCR for actual/historical data.*
a) iii.	*assessment of the functioning of the scheme's design elements.*	Assessment of functioning of MRV, calculation of offsetting requirements, cancellation of emissions units, etc.	Recommendations on potential adjustments to CORSIA design elements	WG4 SDG, MRV, CTAG, EUG *with input from:* *- WG Members,* *- CAEP IPs/WPs,* *- ENV Sec. from ACT CORSIA*

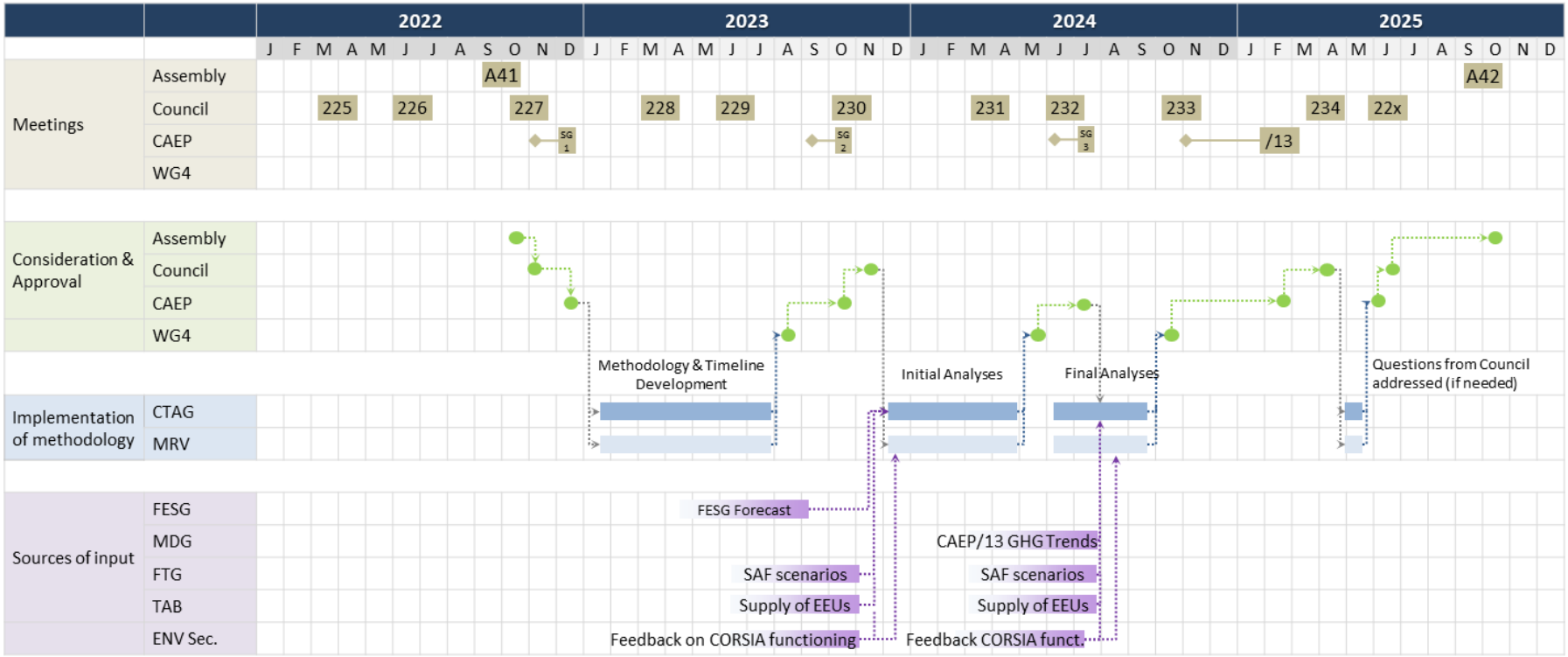
[3] Net CO_2 emissions defined as: CO_2 emissions from international aviation after technology, operations, emissions reductions from SAF and final offsetting requirements.

Assessments described above are expected to take into "*b) consideration of the scheme's improvements that would support the purpose of the Paris Agreement, in particular its long-term temperature goals; and update the scheme's design elements to improve implementation, increase effectiveness, and minimize market distortion, taking into account the consequential impact of changing the scheme's design elements, e.g., to MRV requirements*"

1.2 The Figure below illustrates the high-level approach and elements of input, methodologies, and output of the CORSIA Periodic Review. Given the CAEP meeting timeline and expected availability of data and information, the technical assessments in support of the CORSIA Periodic Review is expected to be an iterative two-phase process. In the initial phase, traffic forecasts from FESG would be used along with initial assumptions that are required to conduct assessments requested by the Assembly and the Council. The outcome of this phase will be submitted to the CAEP Steering Group 3 to seek feedback from CAEP. Once the final CAEP Trends is available (at or shortly after SG3) the final analyses would be updated along with any additional updates to the other assumptions. The final analyses would be submitted to the CAEP meeting.



1.3 The Figure below presents input towards the development of the timeline for the CORSIA Periodic Review. For the CAEP/13 cycle, this includes the development of the methodology and timeline by SG/20232 for consideration by Council at its 230th session. The execution of the methodology would start shortly after Steering Group 2 (SG/20232) although, data collection and modelling capabilities preparation could start earlier. A status update of initial analyses would be provided at the Steering Group 3 (SG/20243) with a final planned deliverable for consideration at the CAEP/13 meeting. Following consideration by the Council at its 234th session, shortly after the CAEP/13 meeting, Council may ask complementary questions that could be addressed by CAEP along with any significant updates since mid-2024.



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