



## **COMMITTEE ON AVIATION ENVIRONMENTAL PROTECTION (CAEP)**

### **STEERING GROUP MEETING**

**São Paulo, Brazil, 5 to 9 December 2022**

#### **Agenda Item 5: Dual Stringency Analysis**

### **VIEWS OF THE UNITED STATES ON THE INTEGRATED CO<sub>2</sub>/NOISE STRINGENCY WORK**

(Presented by the United States of America)

#### **SUMMARY**

This paper presents views of the United States on the current state of the Integrated CO<sub>2</sub> Emissions and Noise Stringency Analysis. Specifically, the United States provides views on key elements within the integrated stringency analysis schedule, applicability, modelling approaches, and data, while emphasizing the importance of proceeding according to schedule in order for CAEP to be successful in recommending new CO<sub>2</sub>/Noise standards at CAEP/13. We welcome the progress made by these working groups to date.

Action by the CAEP-SG is in paragraph 6.

#### **1. INTRODUCTION**

1.1 This paper presents the views of the United States on key elements of the Integrated CO<sub>2</sub> Emissions and Noise Stringency Analysis. The United States supports the integrated development of more stringent CO<sub>2</sub> and Noise standards, as demonstrated by the resources that we have contributed to the working groups supporting this task. As reflected by the dual stringency status report to SG20221 (CAEPSG.20221.WP.010.5.en), we welcome the progress made thus far by the WG1, WG3, and MDG-FESG, with assistance by the Integrated Stringency Coordination Group (ISCG). The views presented in this paper support the overall goal of ensuring that the work proceeds according to the ISCG agreed schedule, which is critical in enabling a successful task outcome.

#### **2. INTEGRATED DUAL STRINGENCY SCHEDULE**

2.1 The ISCG has developed a master schedule that lays out the dual stringency work timeframe and deliverables (reference CAEPSG.20221.WP.009.5.en and in Appendix A of

CAEPSG.20221.WP010.5.en). Given the substantial amount of technical work and coordination across working groups necessitated by the integrated task, the United States supports and emphasizes the importance of meeting all milestones as highlighted in the ISCG Report.

2.2 WG1, WG3, and MDG-FESG, in coordination with the ISCG, have summarized the work to-date on the dual stringency in their status report to the Steering Group (CAEPSG.20221.WP010.5.en). The report meets the deliverable for SG20221 in informing CAEP on the status of the dual stringency tasks. The report explains the objectives, approach, and input data for the Sample Problem to sufficiently test the processes, models, and tools to be used for stringency analysis.

2.3 Based on our review of the status report, the Sample Problem can commence according to the schedule and note that the working groups should shift primary focus towards the development of the Main Analysis inputs.

### 3. IN PRODUCTION APPLICABILITY

3.1 CAEP/12 directed integrated stringency tasks to “consider, as a priority, the applicability to new types of aeroplanes.” As CAEP/12 did not exclude In Production, we strongly support including the consideration of In Production applicability for CO<sub>2</sub> as long as workload allows it. The analysis of a new CO<sub>2</sub> In Production standard should evaluate the subsequent impact on noise, including any unintended consequences. Conducting such a study as part of the main analysis ensures data-driven decisions on new In Production standards. This level of workload is reasonable in our view given that In Production applicability already exists for CO<sub>2</sub> but not for noise of jet aeroplanes after Chapter 3.

3.2 In response to the request for clarification from ISCG on WG1 actions (CAEPSG.20221.WP.009.5.en action e), the United States did not intend for WG1 to consider In Production SARP for noise.

### 4. M.07 MODELLING APPROACH

4.1 Task M.07 of the CAEP/13 MDG work programme calls for the MDG to “conduct a review of lessons learned from CAEP/12 analyses since the development of the most recent MDG/FESG lessons learned document. This may include: ... development of a new assumption for New Type modelling under which airplane/engines that cannot respond to the New Type standard would be modelled as if they remained In Production, because the New Type standard would not be imposing any legal requirement for these In Production airplanes/engines to go out of production.”

4.2 The traditional CAEP stringency analysis assumptions are defined in the Sample Problem as “Approach A-1”. The MDG Task M.07 in paragraph 4.1 is defined as “Approach A-2.” The A-2 approach aims to support a more comprehensive analysis space, noting that market-driven responses (e.g., a market-driven production cut-off) in approach A-1 are uncertain. Scenario-based analyses using both Approaches A-1 and A-2 address such uncertainty by capturing the impact of stringency options on the potential evolution of the fleet subject to different assumptions. To enable data-driven decisions, the United States supports the continued development of approach A-2 and the inclusion of both approaches A-1 and A-2 in the Sample Problem as well as the Main Analysis.

## 5. **NON-ICCAIA MANUFACTURER DATA**

5.1 Finally, the United States draws attention to a potential data gap in the Integrated CO<sub>2</sub>/Noise Stringency Analysis. Currently, there is no plan in place to collect data necessary for the analysis from original equipment manufacturers not represented by the International Coordinating Council of Aerospace Industries Associations (ICCAIA). We acknowledge that this issue of data from non-ICCAIA manufacturers is highlighted by the ISCG Report, and that ICCAIA manufacturers are planning to provide data by the end of December 2022. The United States requests feedback from CAEP Members representing non-ICCAIA manufacturers regarding when data could be provided.

## 6. **ACTION BY THE CAEP-SG**

6.1 The CAEP-SG is invited to:

- a) support the United States' views on the importance of keeping to the ISCG Integrated Dual Stringency Schedule;
- b) note the United States' endorsement of the WG1, WG3, MDG/FESG Integrated CO<sub>2</sub>/Noise Stringency Status Report;
- c) note that the United States supports the inclusion of In Production applicability for CO<sub>2</sub> in the main analysis;
- d) note the views of the United States that we do not support an In-Production Standard for noise;
- e) agree that MDG/FESG should continue to develop and test modelling approach A-2 under Task M.07 towards consideration for inclusion in the Main Analysis at SG20232; and,
- f) request feedback from CAEP Members of non-ICCAIA manufacturers on providing data for the main analysis.

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