

## **SAB Chairperson's Report to the Clean Aviation Governing Board on the Activities of the Scientific Advisory Body (SAB): June 2022—December 2022**

**Author:** Trevor YOUNG (Chairperson, SAB)

**Date:** 21 March 2023

### **Scope**

This report has been prepared by the Chairperson of the Scientific Advisory Body (SAB) of the Clean Aviation Joint Undertaking (CAJU), with input from members of the SAB. The assistance of the CAJU is acknowledged: the CAJU has provided administrative and secretariat support to the SAB to facilitate the execution of assigned tasks, in accordance with Article 21 of Council Regulation (EU) 2021/2085.

### **Meetings of the SAB**

- SAB meeting no. 03/2022 was held on 11 October 2022 (09.00–16.00) at the JU premises in Brussels in hybrid format (i.e. with remote participation). The minutes of the meeting, approved by the SAB on 21 March 2023, are attached (annex).
- Technical (working) meetings to discuss the *Second Amended Work Programme & Budget 2022-2023 and Topic Descriptions for Clean Aviation Call #2* were held (via Microsoft Teams) on 7 November and 19 December 2022.
- Additionally, two joint SAB–TC (Technical Committee) meetings were held on 14 November and 24 November 2022 to discuss the “2-pager” outlines of proposed Topic Descriptions for Clean Aviation Call #2.

### **Key actions/events associated with SAB Meeting 03/2022**

- The meeting formally endorsed the appointment of Trevor Young as chairperson and Alain Joselzon as vice-chairperson.
- Members who had participated in the 2021 ARMs (Annual Review Meetings), which had taken place in Q2/2022, briefed the SAB and CAJU on key aspects of the reviewed CS2 SPDs (Clean Sky 2 System & Platform Demonstrators).
- The CAJU presented, for discussion, the CA Call #1 outcome (focusing on the retained proposals, funding, proposal abstracts and Call Evaluation Reports).
- The process leading to the issue of CA Call #2 was discussed. It was proposed (and agreed) that the opinion of SAB would be requested twice – once during the assessment of the TC’s “2-pager” topic outlines and a second time after the draft call topic descriptions were written (Dec 2022/Jan 2023).

- The schedule and expectations for the upcoming 2022 IPRs (Interim Progress Reviews) was discussed.
- The SAB had previously expressed its concern regarding Impact Monitoring in CA (e.g. in SAB report on the WP and Call#1 of 28 Feb 2022). In this context, several climate change metrics were outlined and the challenge of setting and measuring targets in CA were discussed.

### Key actions/events associated with SAB Technical Meetings (November – December 2022)

The SAB was tasked to provide an opinion on the Clean Aviation Call #2. This was undertaken in two steps:

- As the first part of this process, the SAB received (28 October 2022) draft texts of ten “2-pager” call topic outlines, prepared by the CA TC. SAB members reviewed the information provided and engaged in two meetings with the TC. The SAB report on the “2-pager” *Topic Outlines for Clean Aviation Call #2* was issued to the CAJU on 21 November 2022. This input coupled with responses from other entities (e.g. SRG) resulted in revisions to the “2-pager” call topic outlines (which formed the basis for the preparation of the Call Topic Descriptions).
- As a second step, the SAB received (on 19 December 2022), for review, the *Second Amended Work Programme & Budget 2022-2023 and Topic Descriptions for Clean Aviation Call #2*. The SAB report was submitted to the CAJU on 13 January 2023.

### Chairperson’s notes

There were no meetings of the SAB in Q3/2022, although several members were engaged in follow-up actions associated with the Annual Reviews of the Clean Sky 2 SPDs. Q4/2022, however, was very busy, with several SAB meetings, consultation on the *Amended Work Programme and Call #2*, and participation in the Interim Reviews of the CS2 SPDs.

The manner in which the SAB was consulted for the preparation of the Call #2 Topic Descriptions enabled the SAB to provide more meaningful, and timely, inputs and advice concerning the scientific merit of the proposed call topics than what was possible in Call #1. This time, the opinion of the SAB was also sought on the “2-pager” topic outlines prepared by the TC (Nov 2022). The timeline, however, was very compressed and coincided with IPRs of certain SPDs, resulting in a challenging situation for key SAB members. Nonetheless, it was concluded that the amended format resulted in a more meaningful engagement with the SAB than what was possible in Call #1.

The chairperson recorded the resignation from the SAB of Jan-Hendrik Boelens and thanked him for his valuable contributions in 2022.

Signed by,



Trevor Young

(Chairperson, SAB)

## Annex

### Minutes of SAB Meeting no. 03/2022



Scientific Advisory Body  
of the Clean Aviation Joint Undertaking  
Meeting no. 3  
N° SAB 03/2022

11 October 2022  
9.00 – 16.00  
Av. de la Toison d'Or, 56 - B-1060 Brussels

**Minutes of the Meeting**

<b><i>Final Agenda</i></b>		
<b>1.</b>	Welcome - Approval of MoM #2 / Election of Chair & Vice-Chair	9.00 – 09.10
<b>2.</b>	Presentation of Call 1 Results	9.10 – 10.00
	<b><i>Coffee Break</i></b>	<b>10.00 – 10.15</b>
<b>3.</b>	Estimated Timeline towards Call 2.	10.15 – 10.30
<b>4.</b>	ARM feedback <ul style="list-style-type: none"> <li>- ENG (A. Joselzon)</li> <li>- REG (P. Fernberg / Mirko Hornung)</li> <li>- FRC (W. Pasteuning)</li> <li>- ECO (F. Sanna Randaccio)</li> <li>- SAT (Wim)</li> </ul>	10.30 – 12.00
<b>5.</b>	Next IPR schedule including the list of experts. Brief discussion on the objectives of the IPR to come and the logic to close CS2 activities	12.00 – 12.15
	<b><i>Lunch Break</i></b>	<b>12.15 – 13.15</b>
<b>6.</b>	EASA Environmental Report 2022	13.15 – 13.30
<b>7.</b>	Impact Monitoring - Discussion / Inputs from SAB on <ul style="list-style-type: none"> <li>- Climate Metrics</li> <li>- TRL scale</li> </ul>	13.30 – 15.30
<b>8.</b>	Next Meeting date.	15.30 – 15.40 (10 min)
<b>9.</b>	AOB	(20 min)

**Attendees of Meeting N° SAB 03/2022 held 11 October 2022:**

<b>Surname</b>	<b>Name</b>	<b>Attending</b>
<b>SAB members</b>		
<b>Alonso</b>	Gustavo	In-person
<b>Argumosa</b>	Maria Del Pilar	In-person
<b>Boelens</b>	Jan-Hendrik	Absent
<b>Burt</b>	Graeme	In-person
<b>Consigny</b>	Hervé	In-person
<b>De Gennaro</b>	Michele	In-person
<b>Fernberg</b>	Patrik	In-person
<b>Henke</b>	Rolf	Absent
<b>Hornung</b>	Mirko	Absent
<b>Isambert</b>	Emmanuel	In-person
<b>Joselzon</b>	Alain	In-person
<b>Malina</b>	Robert	In-person
<b>Pasteuning</b>	Wim	In-person
<b>Sanna-Randaccio</b>	Francesca	In-person
<b>Young</b>	Trevor	In-person
<b>Clean Aviation Joint Undertaking (CAJU)</b>		
<b>Krein</b>	Axel	Remote
<b>Van Manen</b>	Ron	In-person
<b>Dubois</b>	Sébastien	In-person
<b>Brouckaert</b>	Jean-François	In-person
<b>Harty</b>	Niall	In-person
<b>Selmin</b>	Vittorio	In-person
<b>Bohra</b>	Dirsha	In-person

**Meeting chair:** Trevor Young

## **1. Welcome - Approval of MoM #2 / Election of Chair & Vice-Chair**

The JU welcomed Members to the third meeting of the SAB.

Hervé Consigny suggested repeat mentions of names be written in the minutes as first initial followed by surname (e.g. H. Consigny) rather than just surname for aesthetic reasons. Members agreed and this format was adopted for future minutes of SAB meetings. The minutes were corrected and deemed adopted.

The election of Chair and Vice-Chair took place electronically after the previous SAB meeting in May. Members could either put their own name forward for a position or nominate another member. Members were sent ballots with the list of nominations and voted by selecting a first and second preference. First preference was worth two points and second preference was worth one point. Following the voting period, Trevor Young was declared Chair and Alain Joselzon was declared Vice-Chair of the SAB.

## **2. Presentation of Call 1 Results.**

The JU presented the overview of the topics launched under the first call for proposals and provided a brief overview to SAB members about the robust evaluation process that took place over the summer period.

The JU highlighted that SAB's recommendations prior to the launch of the call to amend the work programme were translated into two project proposals.

In the case of the fuel cell topic, there were three proposals, but two were considered below threshold so only one would be moving forward. It was noted that this would be a key question for Call 2 or another future call as to whether to include a fuel cell topic again with revised proposals.

The overall estimated budget is slightly below the maximum allocated funding of EUR 736 million at EUR 728 million. The benefit of this was that it would allow Clean Aviation to fund up to and including the 20<sup>th</sup> project.

The JU also informed the SAB that it was unlikely that there would be an association agreement with the UK by the time of the signature of these projects. This would lead to roughly EUR 81 million becoming unfunded. The EU would not be able to fund UK entities in the absence of an association agreement. The JU noted, however, that the UK had a backstop for all projects commenced prior to 31 December 2022. Therefore, these programmes would be funded by the UK government. Additionally, projects could not be led by UK entities.

SAB members were then given a breakdown of funding values. Based on the proposed max. EU funding all proposals passing all thresholds were placed on the "Retained List" and can be invited to grant preparation. Technical adjustments totalling EUR -110 million were recommended. Experts considered EUR ~130 million of activities not currently proposed for funding to be essential for the achievement of the SRIA HLO. EUR 90 million of this concerned the EUR -110 million of adjustments. These activities should be considered for topics in subsequent calls. Involvement of EASA in actions was noted to be largely undefined and not yet reflected in funding amounts, and the resourcing required would need to be established in the grant preparation phase. The JU informed the SAB that the Technical Committee (TC) was on track to propose a prioritised list of topic areas to fit remaining funding of WP 2022-23 (EUR ~153 million).

## **3. Estimated Timeline towards Call 2.**

The JU noted that the plan was to launch Call 2 by the end of February 2023. In order to meet this deadline a proposed timeline for Call 2 was outlined in the recent TC meeting of 6 October 2022. The first requirement was for the TC to define the technical priorities by the agreed deadline of 26 October with a GB presentation on 27 October. With this in mind the TC would have to prepare two-page topic descriptions for each proposed Call 2 topic by this date as well. The SAB would then be tasked with assessing and providing an initial response to the TC's "two-pagers" in November. Following this, the JU would make preparations for the SAB and SRG to consult on the Amended Work Programme and Call 2 Topic Descriptions in December. The topics and written procedure would then be finalised in January, upon receipt of the two

advisory bodies' formal opinion on the topics. The launch was tentatively set for February 2023, in order to close in May 2023.

#### **4. ARMs feedback**

##### **I. ENG ARM Report**

As an Engine ITD reviewer, Alain Joselzon gave a presentation on the ENG ARM. The ENG ARM took place from 23-25 May 2022. He started by reminding SAB members of ENG ITD's overall objectives.

He noted that the review, conducted in line with the CAJU review process, was well prepared and effective. He emphasised that the review involved considerable efforts from all actors and despite some delays expected outputs would still support progress towards CS2 High Level Objectives. He went on to say that the programme had entered into the final critical period, with key activities requiring thorough, rigorous monitoring and management.

##### **II. REG ARM Report**

Patrik Fernberg reported on the REG ARM which he participated in as a reviewer. It was held at Leonardo's offices in Naples, Italy, from 8-10 June 2022. He opened by giving an overview of the high-level objectives to reduce emissions by the proposed conceptual aircraft: Innovative Turboprop (TP) 130 pax, Advanced TP 90 pax, regional multi-mission TP 70 pax.

He noted that the project was making good progress. Some significant demonstrations were achieved in 2021 but there were also delays in certain areas. These slippages are due to technical issues and manufacturing problems. With several activities' deadlines fast approaching, there was no room for further delays.

##### **III. FRC ARM Report**

Wim Pasteuning briefed Members on the FRC ARM which he participated in as a reviewer on 3, 5 and 6 May 2022. He provided an update on the main conclusions of the ARM going through the main programmes individually: WP1-NGCTR, WP2-Racer, WP3-Eco design, WP4 Technology Evaluator.

He viewed that the consortium management was performing well, and cooperation levels were good. He pointed out that deliverables and milestones were shifting to the right and expenditure was on track. Dissemination and communication and patents were also above the initial targets. That said, he noted that reported data needed to be consolidated with CAJU.

##### **IV. ECO ARM Report**

Francesca Sanna-Randaccio presented on the ECO TA ARM which she participated in as a reviewer. It took place on 31 May 2022, in Sorrento, Italy. She summarised the global objective of the ECO TA to reduce the aircraft environmental impact across the different life-cycle phases.

She went on to highlight some key stumbling blocks that constrained the ECO TA's progress. Following the ARM held in May 2022, however, she underlined that most of the stumbling blocks constraining progress had been addressed with clear actions, if not fully, at least

partially. She then gave the SAB an overview of the ECO design flagship demonstrators. Finally, she briefed Members on some key concerns that remained

#### V. SAT ARM Report

The SAT ARM report was not presented. Members were instead invited to read the presentation on the report in their own time.

### **5. Next IPR schedule including the list of experts and discussion on the objectives of the IPR to come and the logic to close CS2 activities**

CAJU presented an overview of the IPRs schedule and meetings locations, as well as the content of those reviews. It was pointed out the need to deeply assess the technical progress and to challenge the SPDs on delivery of achievements in due time as the CS2 Programme was close to its end; around half of the demonstrators would have to be finalised in the last year. The ARs and IPRs format for 2023 was also briefly discussed.

### **6. EASA Environmental Report 2022**

Emmanuel Isambert briefed SAB members on EASA's recent environmental report. The report looked at historic and future scenarios of air traffic and its associated noise and emissions. It also summarised the latest scientific understanding of these impacts before focusing on five main impact mitigation areas (Technology and Design; Sustainable Aviation Fuels; Air Traffic Management - Operations; Airports and Market-Based Measures) with recommendations on how to further improve the level of environmental protection.

### **7. Impact Monitoring**

#### I. Climate Metrics

The JU gave a presentation on impact monitoring in terms of climate metrics which was followed by a discussion on the matter.

#### II. TRL Scale

Similarly, the JU gave a presentation on impact monitoring in terms of technological readiness.

Due to time constraints, SAB members agreed to revisit these issues at a later meeting.

### **8. Next meeting**

Members agreed to hold the next meeting on 7 November 2022. It was decided that the meeting would be held via Teams due to the short notice of the meeting and the significant number of members not being in a position to travel.

[Subsequently, in late October, the Chair in coordination with the JU decided to focus the 7 November meeting exclusively on the upcoming SAB consultation on Call 2. The next formal meeting of the SAB would be in 2023.]



## **9. AOB**

It was agreed with the JU that the present meeting would be considered a third quarter meeting for the purposes of expenses and the subsequent meetings would be expensed in the fourth quarter.

The Chair closed the meeting by thanking members for their participation in another productive meeting of the SAB.

### **Minutes approved by:**



SAB Chairperson

**Date:** 21 March 2023