

Minutes of meeting

Scientific Committee meeting SC(M)04-2023

Wednesday, 28 June 2023 (10h00 to 16h00)

Eurocontrol, Brussels

Item 1. Welcome & review of actions

The SC Chair, TBO, welcomed all participants to the fourth meeting of the SESAR 3 JU Scientific Committee (SC).

TBO reviewed the list of actions from the previous meeting and closed the following actions:

SC02/04

SC03/01

SC03/02

SC03/03

SC03/04

SC03/07: the ERP (Experimental Plan) and ERR (Experimental Report) templates have been already defined by the JU in view of the kick-off of the Exploratory Research projects (DES ER1 call). The templates will be made available to the awarded projects during the execution of the projects. The JU recommended to leave the "Experimental Guidelines" document issued by the Scientific Committee as it is.

On SC03/08: Performance will be tackled by two new SESAR 3 projects which have recently signed their grant agreement, namely PEARL and AMPLE 3, and are expected to kick-off their activities between July and September.

The SC can take contact with these two projects via the SESAR 3 JU Programme Manager, Serge Bagieu.

The action can stay open.

Item 1. Conclusions:

Not applicable.

Item 2. Status SESAR 3 JU Calls and SC involvement on the adoption process of the Bi-Annual Work Programme

PHO presented a high level view of the SESAR 2020 Programme's last Release that contains results from:

- 1 ER project
- 24 SESAR Solutions from IR projects (2 V1/TRL2 SESAR candidate Solutions, 19 V2/TRL4 SESAR candidate Solutions, 13 V3/TRL6 SESAR Solutions)
- Conclusion of the Very Large Scale Demonstration Projects

He also provided the following delivery examples: delegation of ATM services provision amongst ATSUs, delegation of ATM services, Y-Architecture supporting delegation of ATM services provision amongst ATSUs, Attention Guidance - "Fade-out" algorithm, Automatic Speech Recognition (see slides).

The SESAR 2020 programme included 86 ER projects, addressing ATM domains ranging from airport operations,

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ATC, network services, CNS to automation and robotics, paving the way to the Digital European Sky. Results have been used either as an input in the ER01 call or for the IR01 call technical specifications. The SESAR 2020 programme also included 35 IR projects and 33 VLDs and more than 30.000 demonstration flights. In terms of Solutions, 63 Solutions were delivered in SESAR 1 and 72 in SESAR 2020. A Solutions catalogue is available online (<https://www.sesarju.eu/catalogue>).

On the DES programme, PHO presented the timeline for the various calls: ER1 and IR1, that have signed their grant agreements by mid-June, ER2 call planned to be published on 29 June, the Europe's Rail JU – SESAR 3 JU synergy call, that should open at the beginning of October; the CEF calls, managed by CINEA, two ongoing and one planned to be published at mid-September.

On the Europe's Rail JU – SESAR 3 JU Synergy call, PHO specified that Europe's Rail JU will publish and manage the grants, while the SESAR 3 JU provides technical expertise. Projects relevant to the SESAR 3 JU work could be invited to present their work at the SC.

SC members agreed to organise a joint meeting with the Europe's Rail JU (call for expression of interest currently ongoing) and with Clean Aviation JU respective SCs in 2024.

Regarding the ER1 and IR1, all grants have been signed within the time-to-grant, except 2 signed just few days after 15 June. Projects iSNAP and ATC-TBO have been promoted from the IR1 reserve list bringing the number of IR proposals to 32 and including two additional SESAR 3 JU members in the consortia: LVNL and Swedavia.

SC Members asked clarifications about UK contributions and co-funding. UK entities do not currently receive funding from HE programme, but from the UK government. The amount originally accounted for the UK entities, has been released and made available for other SESAR 3 projects/calls.

On the DSD calls status, PHO informed that the DSD 1a (CEF-T-2021-SIMOBGEN) call covers the Green Deal & U-space domains and includes 5 projects, currently in execution and with demonstration activities under preparation. The DSD 1b (CEF-T-2022-SIMOBGEN) call covers the transition towards higher levels of automation and Virtual Centres. 5 proposals have been submitted and 3 selected and the grant preparation phase is ongoing. PHO briefly presented: the 5 projects in the DSD 1a call: 2 under the Green Deal (ECHOES, HERON); 3 under the U-space (BURDI, EALU-AER, U-ELCOM); the 3 projects under DSD1b call: DEVICE, EXODUSS, ESMA. See slides for more details.

The current DES portfolio includes 58 grants, either active or under preparation; this represents a significant investment of EUR 636.244.460,97 and an EU contribution (HE+CEF) of EUR 322.732.927,07.

All calls are described in the BAWP and the JU is preparing the draft BAWP 2024-2025, that will be provided to the SC for their review around mid-October in view of adoption by the Governing Board in December 2023.

Item 2. Conclusions

The SC took note of the information provided and of the plan to contact Europe's Rail and Clean Aviation JU SC in 2024, with the help of SESAR 3 JU Secretariat.

Item 3. Master Plan campaign

Mr Alain Siebert (ASI) informed the SC that, as of 1 July he will take up the new position of Chief Technology and Strategy, which includes the oversight of the Governance activities and he will be in closer contact with the SC.

He informed that the overall theme for the MP 2024 campaign will be "sustainability", and the overall motto

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will be “to establishing Europe as the most efficient and environmentally friendly sky to fly in the world”. The proposed success criteria will help set the right ambition level, taking into account different expectations of stakeholders, multiple objectives and constraints. 6 out of 8 success criteria should help to define the content of future technical priorities, while the remaining 2 will be connected to the assessment of the rolling out of SESAR and to shaping the European position at global level. The list of proposed success criteria is the following:

1. Define the critical path for establishing Europe as the most efficient and environmentally (CO₂ and non-CO₂) friendly sky to fly in the world with safety as a paramount feature and putting that transformation into perspective with the planned introduction of Sustainable Aviation Fuel (SAF) and the next generation aircraft for zero-emission aviation,
2. Provide the supporting Digital European Sky service-oriented target architecture and a data-driven / cloud technology-based delivery model for a fully scalable and resilient ATM in Europe,
3. Set-out the future roadmap for the evolution towards an integrated European CNS service delivery infrastructure ensuring a higher level of connectivity and automation of systems on the ground and in the air as well as the convergence of the ATM and U-space environments,
4. Ensure the integration of new entrants and enable in particular Innovative Air Mobility services by elaborating advanced U-space services,
5. Define the civil-military interoperability and coordination roadmap taking into account the security dimension of ATM,
6. Include strategic deployment objectives that (a) cater for voluntary or mandated deployment of SESAR solutions and (b) encourage investments by early movers and accelerate market uptake supported by EASA's European Plan for Aviation Safety,
7. Perform a network performance impact assessment to demonstrate how and when the SESAR vision will contribute to achieve the SES performance objectives and improve passenger experience,
8. Shape the European position to drive the global agenda for ATM modernisation at ICAO level.

In terms of organisation, in order to help steer the ATM MP campaign a temporary sub-group of the SESAR 3 JU Programme Committee (called MP Steering Group – MP SG) will be created in the period of October 2023 till June 2024.

As the SC contribution to the MP SG will be valuable to provide the Scientific Community point of view, the JU invited the SC to appoint a representative and an alternate to take part of the MP SG. The work is planned to kick off on 10 October and should last until spring 2024.

ASI added that the JU plans to regularly report about the MP campaign at the SC meetings and to share the first drafts of the MP update in early Q2 2024 with a view of asking a feedback by June 2024.

TBO proposed to organise a task force to support the SC representatives at the MP Steering Group. TBO, PHE, JBE, SBA offered to participate to the task force to support the MP SG.

Item 3. Conclusions

TBO will communicate the SC representatives to the MP SG to the SESAR 3 JU. MP SG support task force is established and composed of TBO, PHE, JBE, SBA.

Item 4. Open data task force

TBO presented Engage KTN lessons learnt.

Data availability is a bottleneck, since projects usually spend 6 to 12 months to obtain data, thus hindering possible innovation. The need of licensing and/or non-disclosure agreement prevents data sharing and without the input data it is difficult to achieve comparability and reproducibility.

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TBO supported the idea of a framework to share ATM-relevant data (including MET data), to afford easier access without having multiple agreements in place. Sharing of code is also an element widely requested.

TBO reminded of Horizon Europe requirements in terms of research data and in particular that beneficiaries must manage the digital research data, in line with the FAIR principles (Findable, Accessible, Interoperable, Reusable): they should have a data management plan, they should deposit the data in a trusted repository and ensure open access as soon as possible, according to the principle ‘as open as possible as closed as necessary’.

TBO explained that project Engage 2 plans to apply Open science and FAIR approach, with different collaborations proposed: one with PRU, PRC and Opensky Network on enriching open data, and the second with CANSO on hackathons and educating future workforce.

The PRC is sponsoring the Opensky Network symposium (<https://symposium.opensky-network.org/> - Toulouse) as an Open Data forum. PRC is also sponsoring the collaboration between PRU and Opensky Network to develop two products to be included in the Opensky Network platform: the first one is a EU flight table, where each row would represent a flight, with different columns and fuel “performance” data to facilitate environmental assessments (agreed with airlines); the second one is a milestone table, to include crossings of 200NM or 40NM around airports (bases for some of the Performance Scheme KPIs).

The initiative is in contact with China and Brazil for future work and is looking for support from EUROCONTROL.

TBO enumerated opportunities and barriers to opening data and presented the plan for the task force, that consist in defining the approach (open data vs access to relevant data to SESAR/EC funded projects) and the priorities (providing first support to funded projects vs support data availability for all research).

She concluded by mentioning that the task force will seek exchanges with Engage 2, Opensky Network, PRC, EUROCONTROL, DG MOVE, ECWMF, EUMETNET and ESA.

SMA mentioned additional barriers: AI and machine learning related; biases caused by different reasons related to incomplete or non-representative data sets, manual acceptance of flights, airports, protection of personal data, etc.

A sustainable data architecture is necessary to collect reliable data. Identifying an entity entrusted to collect reliable data and the conditions under which it can operate, is equally important. This translates into establishing a top down approach, at the right level, for the collection and sharing of data.

Item 4. Conclusions

The task force will contact project Engage 2 in July to highlight the need of bringing the data availability issue at appropriate level.

Item 5. SIDs – Special Issue publication

DSC, the SIDs Programme Committee chair, provided a follow-up presentation on the results of the SIDs 2022 survey and on the discussion on SIDs 2022 special issue.

According to the results of the survey amongst the authors of the SIDs 2022 papers, almost 90% of authors declared their willingness to publish in open journals, although some preferred to publish in a journal with impact factor. The main reference database for indexing are Scopus, JCR (Journal Citation Report) and also Google Scholar, more popular in the U.S.

He presented two options and respective conditions: the Journal of Open Aviation Science and the European Journal of Transport and Infrastructure Research (EJTIR), both published by University of Delft.

SC members discussed about the two options and on best option to have more impact for the SC work. The

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conference proceedings, and the Special Issue should at least be listed in SCOPUS, to be of use towards academic requirements of many Universities. From the next SIDs, the papers will have a DOI assigned which will make citation and the tracking of citations easier.

Item 5. Conclusions

DSC will further pursue the exchange with the EJIR.

Item 6. Young Scientist Award 2023 update

LCR reminded the SC that the call for the YSA and that for the SIDs paper were published on 8th May, with closure on 8th September. The award ceremony is planned on 30th November during the SIDs in Seville.

The evaluation of the applications shall be concluded by 20th October. To guarantee an adequate level of scientific excellence of the award, only applications having a score equal or higher to 70 will be considered for the shortlist for each category.

LCR informed that the YSA evaluators will be managed as independent experts via the EC tool EMI. Since the SC members are independent experts already enrolled in EMI, SC members are eligible to perform evaluations for the YSA. The administrative enrolment process up to the electronic signature of the contract for the evaluation task will take place after the call closure. The effort will be agreed with the SESAR 3 JU before the signature of the contract, and it will be based on the number of applications received and declared eligible. LCR informed that the new point of contact for the YSA file is Ms Lili Deyanova-Stanojevic (from Grant Management team).

In view of the close deadline for the completion of the evaluations (20th October) and based on the experience in previous years, the SC members asked the SESAR 3 JU to consider the possibility to have a “Quality Controller” to support the evaluations by ensuring consistency between scores and assessments. The SESAR 3 JU took the action and will inform the SC as soon as possible.

Item 6. Conclusions:

PHE, RSO, SMA confirmed their availability to act as evaluators for the YSA 2023 edition, while SBA could have the role of Quality Controller, as necessary.

Item 7. Performance Task Force

TBO presented the US assessment strategy.

The approach is based on a CBA analysis performed every 2 years that considers three levels of benefits: implemented, baselined and anticipated. She explained the current simulation capabilities and the new ones (see slides).

She concluded by highlighting the main differences between NextGen and SESAR: whereas in the US the CBA is run by one office, collecting input from various projects, to be inserted in a NAS simulator and covers the entire innovation pipeline, in SESAR, PAGAR is run by a project, collecting input from projects that are then extrapolated for the network and covers only the research and development part (which corresponds to the anticipated part in the US case).

Currently, environmental indicators covers only CO₂, while other emissions also impact the climate change. SESAR, Europe’s Rail and Horizon Europe main programme fund various multimodality projects. The SC would

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be interested in the discussion with the colleagues from DG MOVE about the introduction, or the new ways of measuring the CO₂ impact and how multimodality impacts mobility in Europe.

Item 7. Conclusions:

The SC agreed to monitor the ramp up of transversal projects and TBO will talk to ASI on performance indicators.

Item 8. AOB

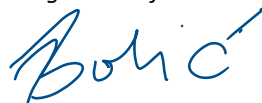
- a. PHO informed the SC that the EC/DG MOVE is seeking the SC opinion on the best approach to continue ATM research after the conclusion of the SESAR 3 JU, i.e. after the conclusion of the current programme in 2028.
The SC noted that: project Engage 2 is looking into ATM research beyond 2030; the reflection should also encompass education, higher level education and skills training,...etc. The scope of research coming from the ATM MP update should also be taken into account.
- b. TBO asked suggestions for speakers for the SIDs event.
- c. IVA asked about Indian organisations active in ATM research: the SC members referred to the Indian Institute of Technology, active in engineering but not really in ATM; to the Indian Aeronautical Society, which is more active at national level than at the international one.
- d. PHO informed that as of 1 July a new office reorganisation will be implemented in the SESAR 3 JU: PHO will take up the position of “Advisor for ATM Science & Technology” and will continue attending the SC meeting in his new capacity; ASI will be assigned the position of “Chief Technology and Strategy”, with responsibilities covering Governance (including the SC); as LCR has moved to the position of Innovation & Market Uptake Officer in ASI’s team, IVA will be the ongoing point of contact for the SC; LSD will be the grant manager in charge of the YSA file .
- e. The next meetings:
 - SC05: 19 September from 12:00 to 15:00 (online)
 - SC06: 1 December from 9:00 to 13:00 in Seville

Item 8. Conclusions:

- a. The SC agreed to start the reflection on the future of European ATM research individually and discuss the matter during the upcoming meetings. The objective is to produce a White paper by the end of 2024.
- b. The SC will provide names to TBO and to the SESAR 3 JU.

TBO closed the meeting thanking all for their participation.

Signature of the Chairperson



Annex I – List of participants

MEMBERS

Arnaldo Rosa (RAR) - excused

Bagassi Sara (SBA)

Besada Juan (JBE)

Bolic Tatjana (TBO)

Delahaye Daniel (DDE)

Hecker Peter (PHE)

Malakis Efstathios (SMA)

Netjasov Fedja (FNE)

Somogyi Rita (RSO)

SESAR 3 JU

Andreas Boschen – SESAR 3 JU Executive Director (ABO) - excused

Peter Hotham – SESAR 3 JU Deputy Executive Director (PHO)

Alain Siebert – SESAR 3 JU Chief Economist and Master Planning (ASI)

Luca Crecco – SESAR 3 JU Programme Officer (LCR)

Ilaria Vazzoler – SESAR 3 JU Corporate Governance Officer (IVA)

Lili Deyanova – Stanojevic – SESAR 3 JU Grant Manager (LDS)

GUESTS

Dirk Schaefer – Eurocontrol – SIDs Programme Committee Chair (DSC)

Annex II - List of actions

Please note that closed actions from SC-01 and SC-02 meetings have been removed from the list.

Actions	Responsibility	Description	Due Date	Status
SC02/04	SC members	SC members willing to be members of SIDs PC to contact the PC Chair on individual basis	Beginning of March 2023	Closed
SC02/09	SC members	To get in contact with University of Delft and have an internal discussion on which Open Journal is suitable for issuing a SIDs paper	October 2023	Open
SC03/01	SC members	Poll the ER projects on the usefulness of the Experimental plan material.	April 2023	Closed
SC03/02	SESAR 3 JU	To provide the SC members with a clear procedure for reimbursement of costs.	asap	Closed
SC03/03	SC members	To send to the SESAR 3 JU comments on the second version of the ER-2 Call Tech Specs	15/03/23	Closed
SC03/04	SESAR 3 JU	To send to the SC members more detailed information on the outcome of the DES-01 Call	asap	Closed
SC03/05	SESAR 3 JU	To inform the SC members on the YSA 2023 evaluation reimbursement process	asap	Closed
SC03/06	SC members	To draft a work plan for the Open Data Task Force	asap	Open
SC03/07	SESAR 3 JU	To provide the SC members with an update on the status of the preparation of ERP and ERR templates, in relation to the possibility to improve the "Experimental guidelines" issued by the previous S2020 Scientific Committee	asap	Closed

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SC03/08	SESAR 3 JU	To facilitate information exchange between the SC and the SESAR 3 Transversal project as part of the follow up of the Performance Task Force work in the previous S2020 Scientific Committee	asap	Open
SC04/01	SC Members	To communicate the SC representatives to the MP SG to the SESAR 3 JU	asap	Closed (TBO's email to ASI of 29/06 – PHE+TBO)
SC04/02	SC Members	To contact project Engage 2 on data availability issue.	July	Open
SC04/03	SESAR 3 JU	To inform the SC members on the possibility to have a “quality controller” for the YSA 2023		As soon as possible (before the YSA Call closure)
SC04/04	SC Members	Reflecting on the future of ATM research (beyond 2028) and produce a White paper	End of 2024	Open