

SIDs 2023 Report

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Abstract

This report describes the thirteenth edition of the SESAR Innovation Days, which took place at the University of Seville between 27th and 30th November 2023. Out of 74 submissions, 42 papers were retained and presented at the SIDs. All papers can be downloaded from the SIDs website and the Engage 2 homepage.

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Engage 2

¹ Representatives of all the beneficiaries involved in the project

² Representatives of the beneficiaries involved in the project

THE SESAR 3 KNOWLEDGE TRANSFER NETWORK

Engage 2

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1 Introduction

The thirteenth edition of the SESAR Innovation Days (SIDs) took place between 27th and 30th November 2023, kindly hosted by the University of Seville. Support to the organisation of the SESAR was provided by the Engage 2 Knowledge Transfer Network as per the Grant Agreement with the SESAR 3 Joint Undertaking. This support concerned mainly the scientific aspects of the SIDs, including the call for contributions, coordinating and chairing the SIDs committee, managing the paper review and selection process and creation of the agenda with the technical paper tracks in which the selected papers were presented in parallel sessions.

Other aspects of the conference were organised by the SESAR Joint Undertaking, especially S3JU Communications. This includes the selection and preparation of the keynotes, the configuration of the virtual conferencing system, the virtual networking activities and communications.

Over 450 participants attended the SIDs 2023, which featured technical presentations, plenary talks, panel discussions and numerous networking activities. The SIDs 2023 is the latest edition of a series of scientific conferences which have been organized since 2011 and taken place in changing locations.

1.1 Engage 2 support to the SESAR Innovation Days

Engage 2 is the SESAR Knowledge Transfer Network (KTN), established to promote and facilitate the development of air traffic management research in Europe. The organisation of the SIDs receives support and expertise from Engage 2 consortium members (activity led by EUROCONTROL), from initial planning through to post-conference activities.

1.2 Scope of this document

The following sections describe the SIDs themselves plus a number of specific aspects:

- Programme Committee;
- Call for Contributions;
- Paper selection process;
- Conference programme;
- Paper publications;
- Results of a participant satisfaction survey; and
- Some lessons learned for future editions.

2 The SESAR Innovation Days

The SIDs are a scientific conference based on an open Call for papers and the peer-review of paper submissions through the SIDs Committee; committee members perform a triple review of all submissions on the basis of which a decision about acceptance and rejection is made. Members of the SESAR Scientific Committee are invited members of the SIDs committee.

The SIDs have taken place annually since 2011, usually in late November or early December and in varying locations. The number of SIDs participants has been increasing since 2011, with exceptionally high participation in the years 2020 and 2021 in which the conference was held as a virtual event. The 2023 edition saw 450 conference participants.

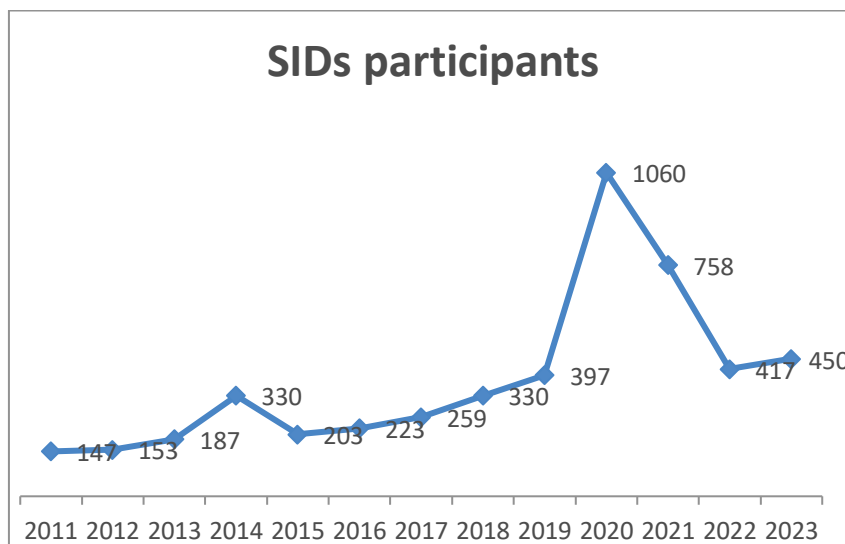


Figure 1 SIDs participation 2011 – 2023

2.1 SIDs Committee

The SIDs Committee is composed of selected researchers from academia and industry; its main task is the review of paper and poster submissions leading to decisions about acceptance and rejection of all submissions. The SIDs Committee was composed of the following members:

SESAR Innovation Days 2023 Committee	
Programme Chair	Dirk Schaefer – EUROCONTROL
Local Organisation Chair	Damián Rivas – University of Seville
Programme Committee	Sara Bagassi – University of Bologna Luis Barbero – GATCO Juan Alberto Besada Portas – UPM Madrid Tatjana Bolic – Westminster University Marc Bourgois – EUROCONTROL

Lorenzo Castelli – University of Trieste
Andrew Cook – University of Westminster
Ramon Dalmau Codina – EUROCONTROL
Francesca De Crescenzo – University of Bologna
Daniel Delahaye – ENAC
Eduardo Garcia – CANSO
Peter Hecker – TU Braunschweig
Jacco Hoekstra – TU Delft
Gokhan Inalhan – Cranfield University
Radosav Jovanovic – University of Belgrade
Bruno Lamiscarre – NeoMetSys
Javier Lopes – Boeing Research & Technology Europe
Guglielmo Lulli – Lancaster University
Efstathios Malakis – Hellenic Civil Aviation Authority
Stephane Marché – Honeywell Aerospace
Max Mulder – TU Delft
Jose Muñoz – ASLogic
Fedja Netjasov – University of Belgrade
Olivia Nunez – SESAR JU
Xavier Olive – ONERA
David Perez – Innaxis
Goran Petrovic – SMATSA
Simone Pozzi – Deep Blue
Xavier Prats – UPC
Jose Javier Ramasco – University of the Balearic Island
Andrea Ranieri – ALG
Paul Ravenhill – pjr Aviation
Damián Rivas – University of Seville
Sergio Ruiz – EUROCONTROL
Georg Trausmuth – Frequentis
Alfonso Valenzuela – University of Seville
George Vouros – University of Piraeus

Table 1: SIDs 2023 Committee members

2.2 Call for Contributions

The Call for Contributions was published in May 2021, soliciting paper and poster submissions. The Call for Contributions was open to all relevant ATM research, although submissions through SESAR ER and IR projects were encouraged. The Call was published via the SIDs website [1], and announced through emails and the SESAR e-news.

Contributions were encouraged in the following areas of interest:

Call topic
Advanced air traffic services
Airline Operations
Airspace Management & Design
ATM operations, architecture and performance
Automation, autonomy and robotics
Aviation economics and business models
Communications, navigation and surveillance (CNS)
Complexity, data science and information management
Environment and meteorology
High performing airport operations
Human factors and decision support tools
Legal and regulatory aspects and the ATM innovation process
Machine learning and artificial intelligence
Network and Flow Management
Safety, security and resilience
Uncertainty, applied modelling and optimisation techniques
Unmanned aerial systems (UAS), U-space and Urban Air Mobility

Table 2: SIDs call topics

The paper submission deadline was set to 29th September and an extension was granted until 6th October – the extension was widely communicated using the same means of communication as the publication of the call itself. No further extension was granted beyond 6th October – owing to the fact that the review assignment to committee members was performed subsequently. A total of 74 full papers (maximum 8 pages) were submitted.

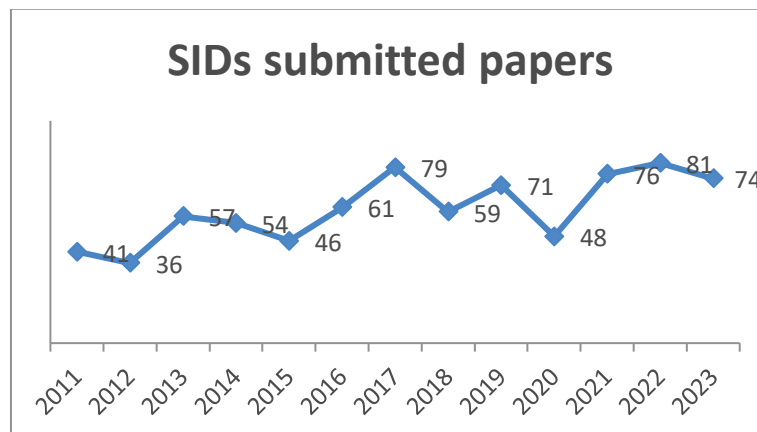


Figure 2 SIDs paper submissions 2011 – 2023

A submission template was made available for full papers. Papers had to be submitted via a dedicated page on the EasyChair conference management system (a professional licence was purchased). The paper template was available for download on the EasyChair page in both Word and LaTeX format. Papers had to be submitted in pdf format.

At the same time the call invited poster submissions. Unlike in previous years, the poster submission process was de-coupled from the paper submission process and logistically managed by the SESAR 3 JU; the poster submission review was nevertheless performed by the SIDs committee.

A total of 66 posters were submitted and accepted for display at the SESAR Innovation Days.

2.3 Paper review and selection

As shown in Figure 2, a total of 74 full papers were submitted via EasyChair and subsequently triple-reviewed by the SIDs Committee. EasyChair's paper bidding function was used which allowed all reviewers to specify which papers they would prefer to review and to declare conflicts of interest, e.g. in cases in which they authored or co-authored a paper. The review assignment was done by the Programme Chair respecting the preferences as much as possible. An average of six papers had to be reviewed per committee member over a four week period (review were assigned on 9th October; reviews were due on 3rd November). Shortening the period available for reviews is difficult since six full paper reviews constitutes a significant investment in time and SIDs committee members are senior academics with teaching and research schedules.

The paper review was based on an assessment of the full 8-page submission according to the following criteria:

- Overall evaluation;
- Innovativeness;
- Technical quality;
- References.

The overall evaluation was based on a score (strong reject; reject; weak reject; borderline paper; weak accept; accept; strong accept) as well as a free text field. The review comments provided in this field were sent to the authors with the email notification of acceptance or rejection. Reviewers were instructed to provide detailed and constructive feedback. Another free text field allowed committee members to provide confidential remarks for other Programme Committee members – comments provided here were not sent to authors.

Each paper was reviewed by three reviewers who entered their reviews via EasyChair. In cases in which reviews came to different conclusions, a dialogue between the three reviewers was initiated by the Programme Chair. In most cases this led to a consensus between the reviewers; in the few cases where this was not possible, a decision was taken based on the review comments.

Notification emails were sent to inform authors whether their paper or poster as accepted or rejected. A total of 42 papers were accepted; this corresponds to a paper acceptance rate of 56.8%. The acceptance rate is an important quality indicator for scientific conferences as it helps determine how selective the conference is. With an acceptance rate of around 60% - as shown in Figure 3 - the SIDs

are quite selective, albeit not penalizingly so. A total of 66 posters were submitted and accepted for the SIDs.

Unlike papers which present scientific results and are quite critically reviewed with respect to the scientific approach and the validity of the conclusions drawn from the research, posters are a way of exposing planned research in it's early steps and encourage discussion. Poster submissions are hence much less critically reviewed, leading, in this case, to the acceptance of all submissions.

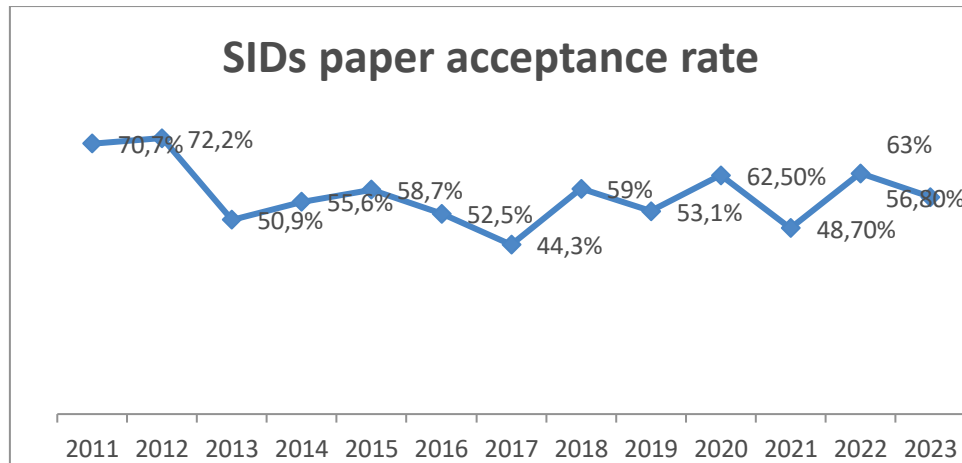


Figure 3 SIDs paper acceptance rate 2011 – 2023

2.4 Conference programme

All papers were assigned to thematic tracks and integrated as sessions of three/four paper presentations into the programme. Whilst keynotes, plenary talks and discussion panels took place in plenary sessions, i.e. were attended by the entire audience, technical sessions were conducted in parallel sessions. The event schedule can be seen on the conference website [SESAR Joint Undertaking | SESAR Innovation Days \(sesarju.eu\)](https://sesarju.eu)

DAY 1 - 27 November - OPENING CEREMONY

16:00 – 16:30	Welcome drinks
16:30 – 17:00	Welcome remarks Carlos Caspueñas Muñoz & Andreas Boschen
17:00 – 18:00	Operational site visits Carlos Caspueñas Muñoz & Andreas Boschen
18:00 – 18:30	Networking drinks

DAY 2 - 28 November

09:30 – 10:00	Welcome Remarks
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	Miguel Ángel Castro Arroyo, University of Seville; Andrés Sáez Pérez, University of Seville & Andreas Boschen, SESAR 3 JU		
10:00 – 10:40	Keynotes Enrique Maurer, ENAIRE & Andrea Gentili, European Commission		
10:40 – 11:00	Programme Overview Dirk Schaefer, EUROCONTROL & David Batchelor, SESAR 3 JU		
11:00 – 11:30	Coffee & Exhibition Opening		
13:00 – 14:30	Technical session High Performing Airport Operations	Technical session Speech Recognition	
13:00 – 14:00	Lunch & Exhibition		
14:00 – 15:30	Plenary 1: Higher Airspace Operations David Hansell, Airbus; Patrick Giles, NATS; Nicole Viola, Concordia University; Ovidiu Dumitrache, EUROCONTROL & David Batchelor, SESAR 3 JU		
15:30 – 15:45	Comfort Break		
15:45 – 17:45	Technical session: Machine Learning and Artificial Intelligence I	Technical session: ATM Operations, Architecture and Performance	Technical session: Human Factors and Decision Support Tools
17:45 – 18:45	Networking Cocktail & Exhibition		

DAY 3 - 29 November

09:00 – 09:05	Welcome Andreas Boschen, SESAR 3 JU		
09:05 – 09:30	Opening Address Steve Bradford, FAA & Rebecca Guy, FAA		
09:30 – 11:00	Plenary 2: Artificial Intelligence in ATM Giuseppe Contissa, University of Bologna; Jose Manuel Cordero, CRIDA; Luis Barbero, GATCO; Paula Lopez, Innaxis; Ramon Dalmau-Codina, EUROCONTROL & Ruben Flohr, SESAR 3 JU		
09:30 – 11:30	Artistic Interlude		
11:30 – 12:00	Coffee & Exhibition		
12:00 – 13:30	Technical session: Machine Learning and Artificial Intelligence II	Technical session: Trajectories, Safety & Transversal Aspects	
13:30 – 14:30	Lunch & Exhibition		
14:30 – 14:50	Keynote Milagros Sánchez, Indra		
14:50 – 15:30	Panel Discussion: Research Priorities in the European ATM Master Plan 2024 Update Alain Siebert, SESAR 3 JU; Tatjana Bolic, University of Westminster; Peter Hecker, TU Braunschweig & Andrew Cook, University of Westminster		
15:30 – 15:45	Engage 2: Upcoming Engagement Opportunities Micol Biscotto, Deep Blue		

15:45 – 16:00	Comfort Break		
16:00 – 18:00	Technical session: Environment & Meteorology	Technical session: Network & Flow Management	Technical session: UAS, U-space & UAM
19:30 – 22:30	Networking Event - Hosted by Indra		

DAY 4 - 30 November	
09:30 – 11:00	Technical session: Mobility Technical session: Airspace Management & Design
11:00 – 11:30	Coffee & Exhibition
11:30 – 12:10	Closing Keynotes Sergio Millanes, AENA & Giovanni Zucchetta, Ryanair
12:10 – 12:30	Closing Address Raúl Medina, EUROCONTROL
12:30 – 13:15	Sesar Young Scientist Award Ceremony Andreas Boschen, SESAR 3 JU & Peter Hecker, TU Braunschweig
13:15 – 13:30	Closing Andreas Boschen, SESAR 3 JU
13:30 – 14:15	Lunch & Exhibition
13:45 – 17:00	Site Visits to Seville Airport And Ryanair

Table 3: SIDs 2023 Programme

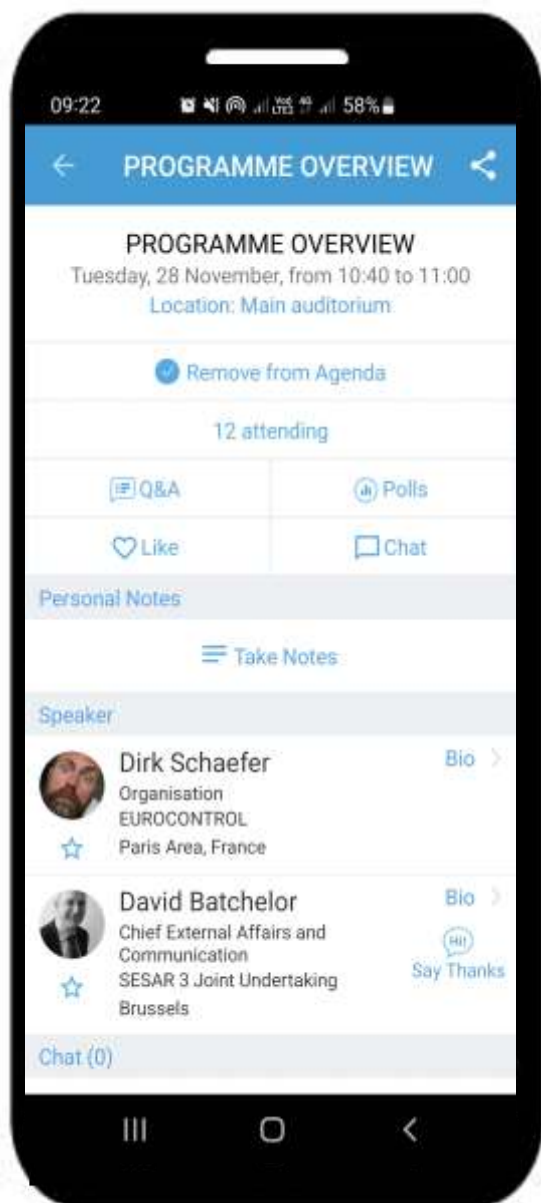


Figure 4 Whove Conference App

The conference programme and all resources were available on the SIDs website as well as the Whova conference application. The app is shown in Figure 4, the website followed a conventional style.

The programme provided the overview as well as links to the speaker's pages and the abstract of the talks. The papers themselves were linked to the talks and could be downloaded from both the website and the Whova app. Participants could also create their own personalised schedule composed of the talks they planned to attend.

Information concerning the posters displayed at the conference was also available on the website and app.

2.5 SIDs paper publications

The SESAR Innovation Days are committed to the principles of open access to publications and data as laid out by the European Commission in the H2020 Open Access and Data Management Policy [3]. Unlike many other scientific conferences and journals, all papers presented at the SIDs are therefore available for free download on the SIDs website [1] as well as the Engage 2 website, hosted in the "Resources" section [2]. Authors are encouraged to reuse their own publications freely and for any purpose. Together with the publications from previous years, the SIDs paper database constitute a rich and often cited source of information in the ATM research community.

In order to promote dissemination, starting in 2023 a Digital Object Identifier (DOI) has been assigned to each SIDs conference paper. In addition and as in previous years the conference papers are filed for

listing in Elsevier's Scopus database.

A listing of the papers from the 2023 edition of the SESAR Innovation Days can be found in Appendix A.

3 Participant survey results

Participants were requested to provide feedback about the 2023 SESAR Innovation Days through an on-line survey. For sake of comparability, the same questionnaire as in previous years was used – with some adaptations in 2020 and 2021 to cater for the virtual conference format. The survey encompassed questions in the following areas:

- Before the SIDs including website and app;
- Content;
- Networking and logistics; and
- Overall benefits.

In addition to providing their agreement to each question on a four-point Likert scale (strongly disagree/disagree/agree/strongly agree) a free-text field was provided in each category for explanations and further comments.

Responses from a 74 participants were received (2022: 52 responses; 2021: 76 responses; 2020: 43 responses). The results of the feedback survey are provided below, compared to the results from previous years: we provide seven years of data to allow five years of comparison when excluding the years 2020 and 2021 - in which the conference was online - and some of the comparisons may not be applicable. The results are presented in a segmented fashion to discriminate the four categories of agreement rather than collapsing the positive and negative responses. This was done because most questions received high and sustained agreement and it was assumed that displaying strong agreement and agreement in a separate fashion might offer some additional insights.

3.1 Before the SIDs including website and app

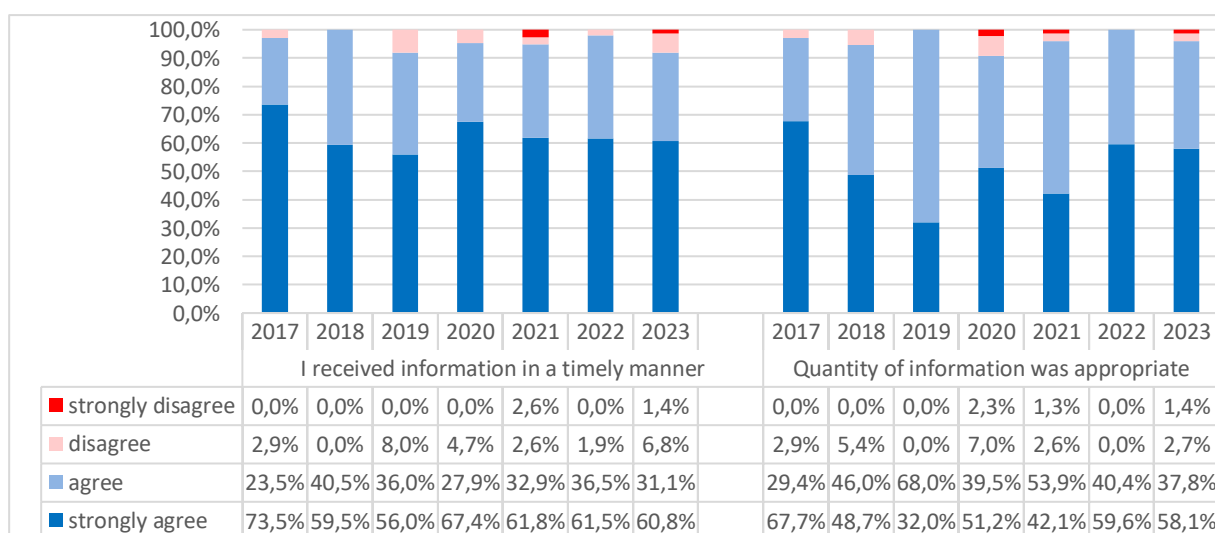


Table 4: 'I received information in a timely manner' and 'Quantity of information was appropriate'

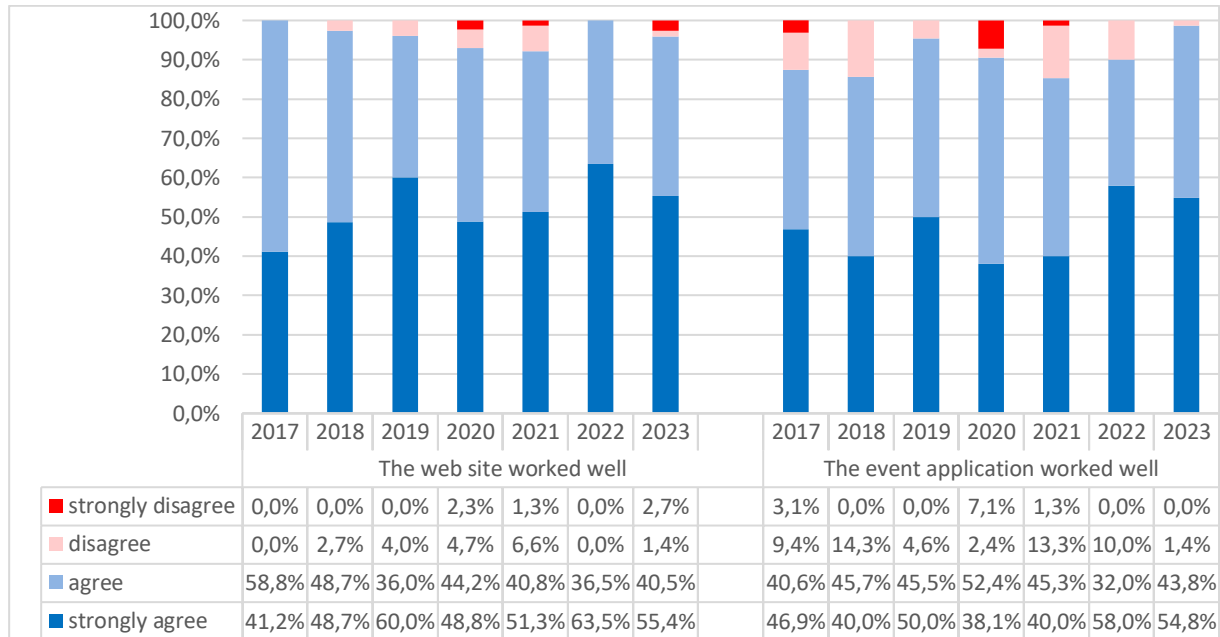


Table 5: ‘The web site worked well’ and ‘The event application worked well’

The following comments were received in this category:

- Did not receive code for Whova applicaton for the event
- Sheer amount of Emails before and during the Event could have been considered as spam
- Could you please send the Whova event code when we submitted via website to attend?
- The agenda was frozen too late for appropriate planning. Late, slight changes (by 15-30 minutes) of the schedules were very irritating.
- My best thanks for you
- Communication on platform and agenda with the zoom links was received relatively late.
- Website not very user friendly, especially during the seminar itself. Lot of information missing how to sue it or get the videos, documentation, etc., Not clear information on seminar agenda. Must as been user friendly such a Teams for instance.
- I would like to see or review some of the conferences or presentations which I missed during those days, but not all of them appear. I would also like the possibility to download the videos.

Discussion

Most comments concern the completeness of the information on the conference application Whova, its user-friendliness and the late publication as well as changes to the conference schedule. It is difficult to achieve the right balance between communicating too frequently and not enough.

It seems desirable that the event schedule be published a little earlier on the website and the app.

3.2 Content

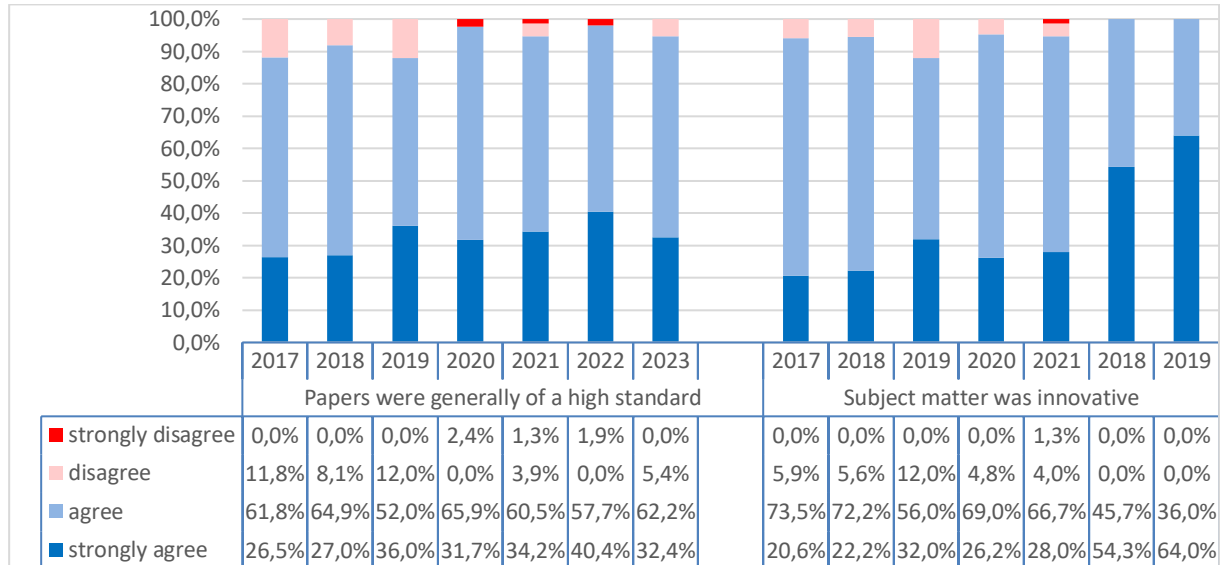


Table 6: ‘Papers were generally of a high standard’ and ‘Subject matter was innovative’

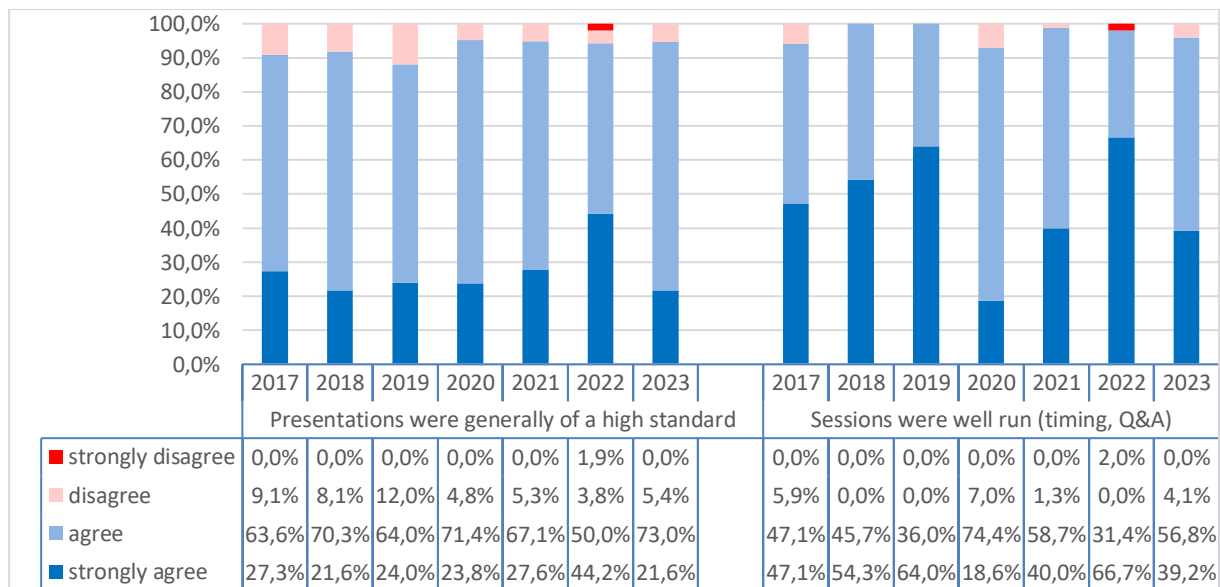


Table 7: ‘Presentations were generally of a high standard’ and ‘Sessions were well run (timing, Q&A)’

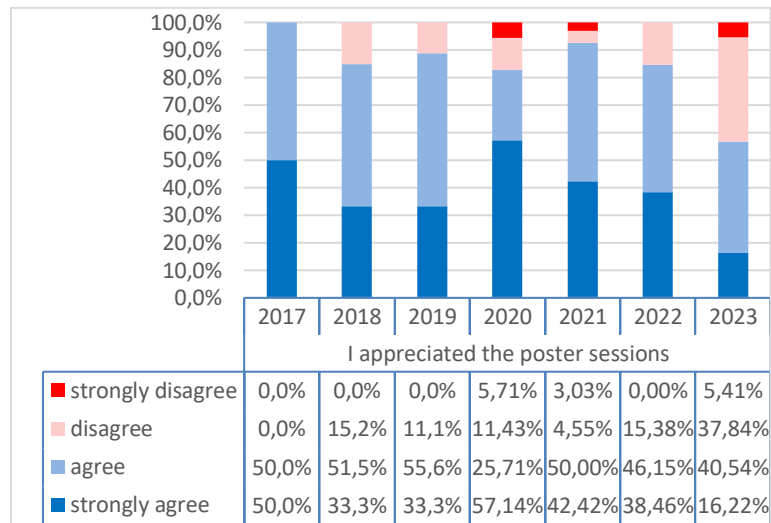


Table 8: 'I appreciated the poster sessions'

The following comments were received in this category:

- It's a shame there was no specific time for the posters, as people were eating or drinking coffee at the same time there were not many persons there to discuss. Maybe it would be great to replace a paper session by a posters session?
- Even though focus was on research and low TRL level, the presenters should start with a short explanation on "why" they are doing the effort. What is the motivation and the need for improvement for the particular solution.
- As AI/ML topics have dominated, presenters should make sure that data sets would be available for verification of solutions.
- The posters exhibition was in a different floor and people rarely visited them
- Unfortunately, the conference was not organized in a way to draw attention to the posters. It would be better if food/drinks were served at stations placed amongst the posters, to really bring the people there. Then the people could also interact whilst queing. As a poster presenter, I had to drag people to my poster, to actually share my work and discuss.
- 30 minutes per presenter is a little too much time. The poster exhibition was very nicely displayed but not visited by guests as the exhibition periods coincided with lunch and coffee breaks. I'd recommend a specific poster session of a couple hours, it is easier for the people presenting the posters and it ensures the guests to come by. Otherwise people prefer food and coffee over posters.
- Posters were too far away from the coffee break hall.
- You are probably going to get that a lot but the poster exhibition felt a bit isolated from the rest, which beats the purpose here.
- Good variety of subjects for poster Session.
- The posters were good but the organisation of the poster sessions and poster location was wrong, so overall, I did not appreciate the poster exhibition.
- Posters were not easy to reach during coffee or break, so not many people came to visit. I would have appreciated to have posters in places where people were passing by.
- Poster Exhibition was of very poor use. Location of the posters was not the best, and it was very cold.

- The posters were hidden.
- I suggest to include the poster and the food area in the same area, as for example SESAR Annual conference, so the people is "forced" to stay close to the Poster, therefore, facilitating interaction with posters.
- The location of the posters was not optimal because people were more interested in having food than looking at posters.
- The posters were in an area a little isolated, it will be better to have them close to the coffee area. Most of the time the posters were empty.
- Poster sessions welcome, but not in this format. The organization of the poster exhibition should not be in that form.
- The cocktail reception e.g. should be integrated into the poster session.
- Two issues: not too much time between sessions to have a look, and when I had time nobody was there. Perhaps it also had to do with the fact that networking/food area and poster areas were so strictly separated. Was much better in Budapest last year.
- Big error setting the posters away from the place the coffee break and cocktail on Tue was served. I'd prefered to have less posters (so, reject based on quality, innovation, ...), but have them in a space where food/drinks is served.
- It would help to have the posters in the same area that coffee is served during breaks - although not hidden, the posters weren't in a prime location.
- There were too many technical presentations in a 'packed agenda'; Thus participants had no real time to visit the posters' exhibition.
- The poster exhibition was quite badly planned, people didn't come to see it and as the food was upstairs nobody came down during the breaks (because everyone was eating and talking upstairs). If at least the coffee had been served downstairs, people would have visited the exhibition more. In addition, the high tables invaded too much and covered the posters.
- The poster exhibition was a bit away from the area where most of the participants spent their time during the breaks.
- Unfortunately no time to check the posters, as the breaks were all about networking and it was complicated to "escape" to check out the poster. Despite my plan to check out 2 or 3 of them, to meet the people presenting them and discuss with them, I did not have a single minute for that. Moreover, most of the time, only a few presenters of posters were on their site, as they were also in the networking area discussing with many people. Maybe dedicating a session for the poster review would help? (Not sure it is a good idea, though).
- The location of the posters was not good, only limited number of visitors at the posters (maybe due to the slow catering process). Also, the number of posters was too high - more is not always better...
- Poster Exhibition should have its own slot to really have time to circulate and talk with presenters. often, there were no one in front of the poster, because, well they had to eat and timing for eating was quite short. So, all in all, I did not see any poster while I intended to.
- Sessions were often very empty at beginning (especially after coffee break / lunch). A bell 5 mins before the start would help!
- The posters were out of sight. It would be better to integrate them more into the coffee / snack area.
- The poster exhibition was not, as last year, in the common room and thus less interactions were possible; a pity because most of the posters were very good.

- I have the feeling that the posters were more or less ignored. Last year, when the food/coffee was offered right next to the posters, more attention was paid to the posters, but even from last year's experience, I wouldn't have come just as a poster presenter.
- The posters did not receive enough attention on-site. The coffees and lunches were served in a different location (one next to the other, but still separated). People was staying where the coffee and lunch was served, not even coming down to the poster's spot.
- Unfortunately, the posters were a bit far from the lunch/coffee space. Attendees could not easily see the posters. The exhibition area was not well animated nor well advertised.
- More time for working is necessary.
- I would position the poster exhibition in a strategic location, ensuring that people are encouraged to pass through it (similar to Brussels). Additionally, I would allocate longer periods exclusively for networking in this posters' area.
- It was pity that stand for poster was not located near to coffee place. People felt alone sometime. May be having a poster session to allow people to come.
- Would have picked a neutral option for the questions 2-3. Posters exhibit didn't have much engagement due to the layout of the atrium.
- Poster presenters were not really available, most of the time no one was near the posters so that you can ask questions.
- The poster locations, which were separated from the buffet, made it rather difficult to attend the poster sessions and the discussions about them.

Discussion

All questions concerning the papers, subject matter and presentations received high ratings between 95% and 100% agreement as in previous years. With such consistent high ratings and a paper acceptance rate of around 60% over the past years the SESAR Innovations Days are an established high-quality scientific conference.

Most critical comments concern the poster session and this is reflected in the agreement with the statement "I appreciated the poster session" which dropped from 85% in 2022 to 57% in 2023.

Some logistical suggestions were made which concerned locating the poster session in an area closer to the coffee area, thus encouraging more conference participants to visit the posters. The fact that the poster area was poorly visited led some poster presenters to abandon their poster, which in turn did not benefit the poster sessions. That collocating coffee and poster area works is reflected in the fact that satisfaction with the poster session in previous years has consistently exceeded 85% (ignore 2020 and 2021 in which the conference was online).

Two additional points need to be considered: (a) with 66% posters the sheer number of posters was exceptional this year, leading to an very packed poster area and potentially an overload on the part of the poster visitors; and (b) the poster teaser sessions in previous years, i.e. very short presentations of the different posters during the technical paper sessions to raise interest were abandoned in 2023; it might be worth considering bringing these poster teasers back in 2024.

3.3 Networking and logistics

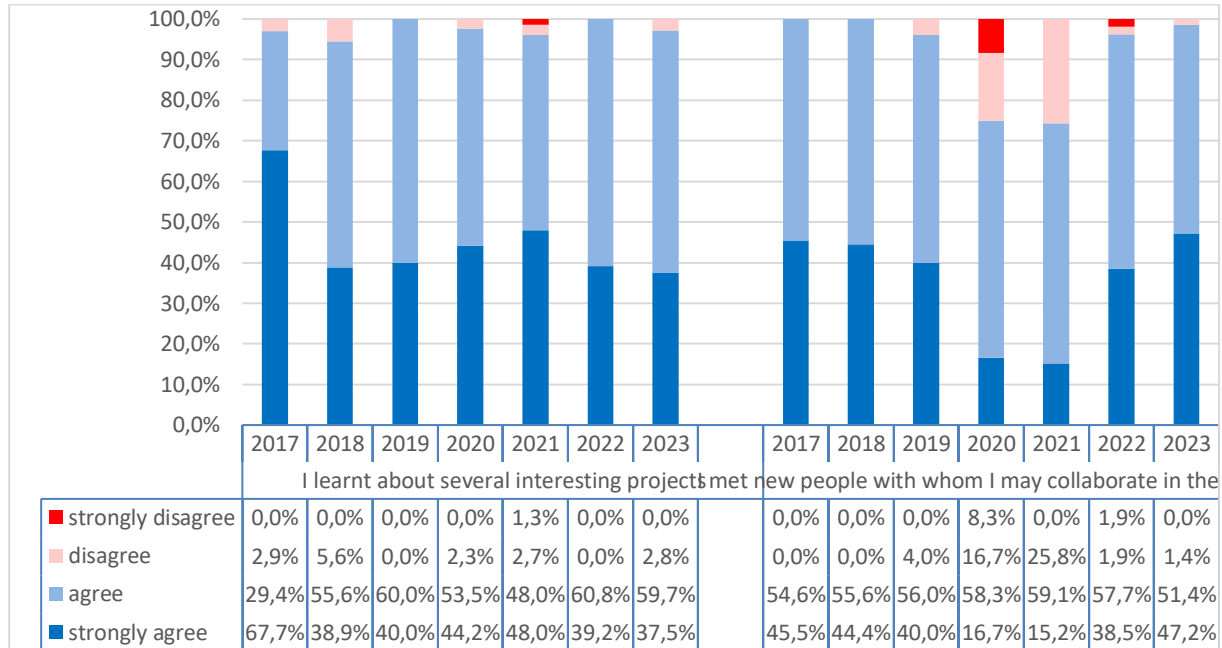


Table 9: 'I learnt about several interesting projects' and 'I met new people with whom I may collaborate in the future'

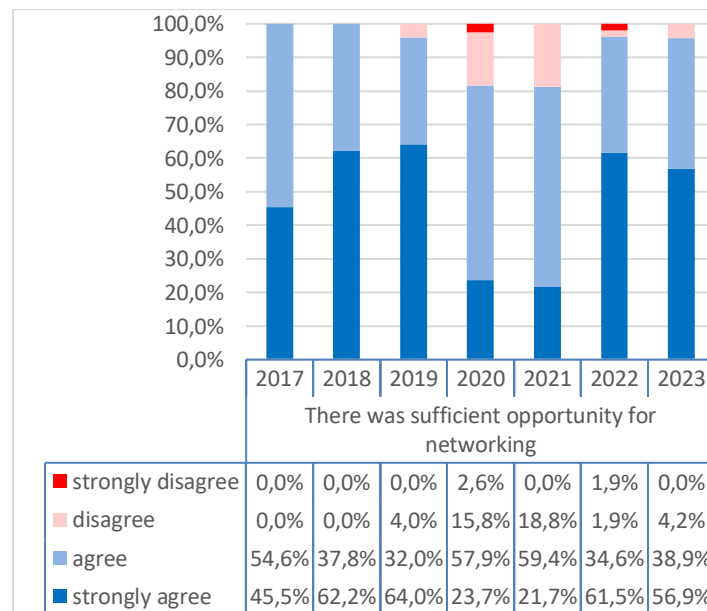


Table 10: 'There was sufficient opportunity for networking'

The following comments were received in this category:

- Some sessions, or speeches may be streamed via app or zoom. Also, poster presenters should be motivated to share pdf related to the posters rather than the flyers.

- In the Whova app, it was not possible to visualize the entire Poster, but only 2 pictures and a description. It would have been much better to see the entire poster.
- Not really helpful. It was good to see who's around and who to talk to, but really networking through the app doesn't work for me. Made more sense to look for people in-between sessions.
- The internet connection at the university was rather poor thus lowering a bit the usage of Whova.
- It was impossible to download the app on my business smartphone.
- Some people post useless comments, consequently spamming, just to win the prize of the most dedicated on the app.
- The venue was cold.
- The wifi was very bad.
- The exhibition area was not visited. Perhaps it would help to have the catering integrated into each space.
- The quality of the catering was not as good as previous years.
- I prioritized live networking opportunities more than virtual ones. However, it's great to have both options available. Perhaps, virtual options are more suitable after and before the event, but if someone wants to connect with a specific speaker or attendee, it's possible to find them on the app.
- I do not think that Whova should have such high influence in a conference, it can move away focus from the important things. Also, for the Thursday, the timing on the app was changed at the last minute so you had to change plans.
- Very well indeed/ I liked the photo contest.

Discussion

The satisfaction with all aspects of networking opportunities received high and consistent rating of above 95% in 2023 and in previous years, suggesting that the balance of technical content and networking opportunities in the conference program is appropriate.

Some comments suggest that perhaps there was an overly high focus on the conference application, especially for networking.

Some participants suggested that the WiFi at the venue was not performant enough for efficient use of the conference application. It was also suggested that the posters themselves could be made available on the website and the application.

3.4 Overall benefits

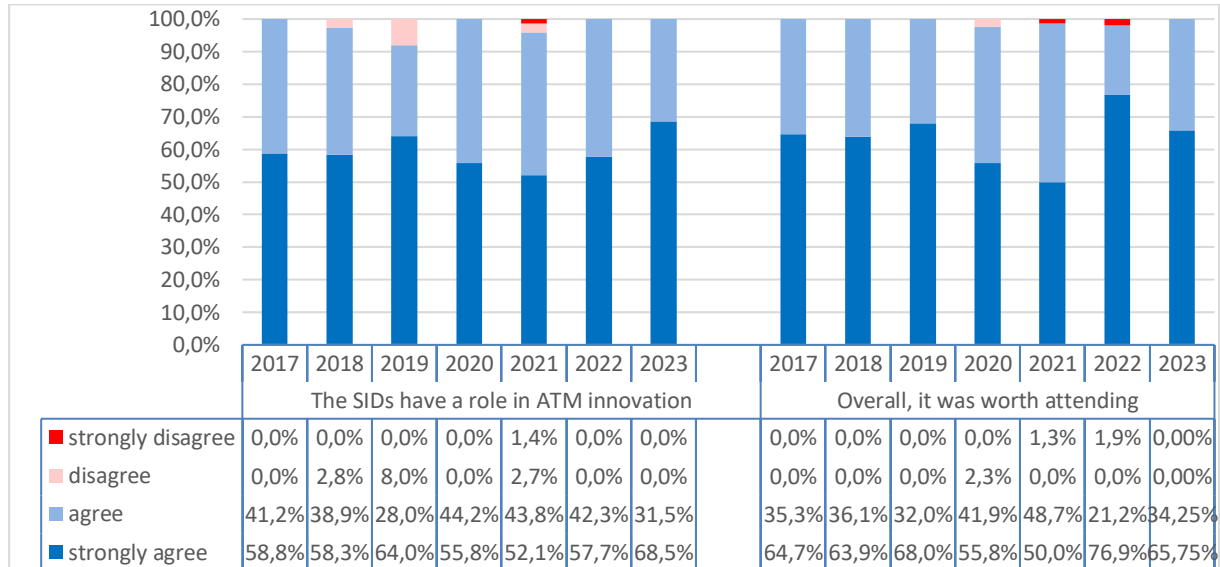


Table 11: 'The SIDs have a role in ATM innovation' and 'Overall, it was worth attending'

The following comments were received in this category:

- Specific time to check and discuss around the posters would have been nice.
- Create more attention and engagement with the poster exhibition.
- I am not sure how the location has been selected in each year, but maybe, this process can be explained or, if already done, maybe just mentioning about it to let us know. Sorry if I dont know this process... Furthermore, if there is no action like that, maybe a vote system can be active to let us previous participants to share their choices. But, of course, each option should be available for your adjustments, logistic, agreements etc not to have problems within the planning. It is an enjoyable idea to have an interactive society. Btw, Roma is a fascinating choice.
- Specific poster session, reduce the presentation time.
- The announcement of rooms was not what I am expecting from a SID.
- A room in fourth floor announced as floor 2 with not sign in the beginning how to reach the room, was at least strange for me.
- I see no value of the visit to Ryanair or the Seville Airport. The information was OK, but for that no bad organized four hours trip is necessary.
- Coffee breaks could be perhaps 15' longer (to allow more networking). Same for lunches.
- The poster area and the food/coffee area should be the same to increase networking time.
- Less paper presentations. More time for people to visit the Posters and not only during lunch breaks. Papers and other documents to be sent well in advance so that participants can prepare their own agenda.
- Having exhibition in parallel with coffee or lunch may not be the best idea because people spent the whole break queuing for food, which means they couldn't visit posters. So poster presenters were mostly alone without anyone being interested in their work.
- Also, having poster exhibition and lunch at the same time means that poster presenters cannot leave their poster and queue for lunch. This was another dilemma.

- A better approach would be to separate times for poster exhibition so that people truly have time to attend them, and let all people have lunch at the same time.
- Not all the power point presentations are available, which is really a pity! (it was better last year....).
- Accomodation (food) was not really suitable... low quantities and less choice (so less possible adaptation to one's specific regime)...
- As a panelist last year and having attended this year's panel on AI in ATM, I have two proposals:
 - Do not script the panel discussions as strictly.
 - Focus on a smaller aspect of AI. Jumping from the difference between supervised, unsupervised, or reinforcement learning explained by one panelist to the aspect of certification by another does not follow a narrative line and is confusing. Focusing only on e.g. certification but also having someone from EASA would have been more interesting to me.
- I would appreciate if the year, the exhibition area and posters are given more importance and publicity, by frequently inviting attendees to see the posters while having coffee.
- Overall, the SESAR innovation days were so organized and beneficial on many levels
- I was glad to discover researches and to meet researches from academy and industry and to make connections.
- The agenda could be made shorter by having fewer keynotes and plenaries (some of the early parts of the agenda were poorly attended).
- The interlude is a lovely part of the agenda!
- It would be nice to have more networking possibilities.
- Have more discussion-based panel sessions.
- The food unfortunately was not good but it is nothing the SESAR staff can do.

Discussion

The overall satisfaction with the SESAR Innovation Days, as reflected in the conference participants' agreement with the statement "The SIDs have a role in ATM innovation" and "Overall, it was worth attending", was 100% with between 65% and 70% of participants strongly agreeing with this statement.

Some suggestions in the comments again focussed on encouraging attendees to visit the poster area; some proposed condensing keynotes, panel discussions and the technical programme in favour of the poster sessions.

Comments concerning the quality of the food and logistical details of the conference location are noted and will be addressed in the logistics of the 2024 event.

4 Lessons learned

The satisfaction of SIDs participants provides one perspective on what went well and what could be improved and this view is presented in the previous section. In addition, the SIDs team has reflected on lessons learned and has come to the conclusions presented in the following sub-sections.

4.1 The SIDs are a well-established, high-quality scientific conference

All questions concerning the technical subject matter, the conference papers and the technical presentations show very high satisfaction amongst conference participants (see Table 6 and Table 7) which is sustained over various years. Together with a consistent paper acceptance rate of around 60% and an ever increasing number of conference participants, this leads to a recognition that indeed the SESAR Innovation Days have established themselves as an important and high-quality scientific conference in ATM research and innovation.

The work of the SESAR committee, overseeing the call for papers and performing the (triple) paper review and selection is key to this success. Whilst improvements are always possible and desirable, we advise that changes to the scientific aspects of the conference should be brought about gently and gradually.

Whilst we recognise that the SIDs are attracting a number of additional meetings and events and the keynotes and panel discussions are successful in attracting a larger audience, it is advised that scientific aspects remain central to the SIDs. A good balance between keynotes and panel discussions on the one hand and technical paper presentations on the other hand remains of critical importance.

4.2 Improve attractiveness of posters sessions

Compared to previous years but also compared to other aspects of the SIDs, the poster session is the greatest area of concern in 2023. The conference participants' agreement with the statement "I appreciated the poster session" which dropped from 85% in 2022 to 57% in 2023. Numerous free-text comments suggest that the poster area should be co-located with the area in which coffee and cocktails are served. This was done in previous years; the higher satisfaction rate in past years (not considering the years 2020 and 2021 in which the conference was held remotely) seems to confirm that the problem might indeed related to the location and set-up of the poster area.

However, two additional points worth considering are: (a) with 66% posters the sheer number of posters was exceptional this year, leading to an very packed poster area and potentially an overload on the part of the poster visitors; and (b) the poster teaser sessions in previous years, i.e. very short presentations of the different posters during the technical paper sessions to raise interest were abandoned in 2023; it might be worth considering bringing these poster teasers back in 2024.

Two suggestions are hence to (i) consider limiting the number of posters to around 30 posters as in previous years; and (ii) re-introducing the poster teaser sessions.

4.3 Publications

The most valuable and enduring output of the SESAR Innovation Days are the conference papers which are stored on the SIDs website as well as on the Engage website. The commitment to the European Commissions open-research policy and the fact that the SIDs papers can be freely downloaded and disseminated make the database of all SIDs papers (since 2011) a valuable asset for the ATM research community. With the introduction of Digital Object Identifiers (DOI) for each SIDs paper as of 2023 a further steps was made towards availability and findability.

It seems hence imperative that the SIDs continue to focus on making the SIDs papers available, freely and consistently, on the SIDs website and Engage 2; authors are encouraged to disseminate without constraints; and DOIs and potentially other means of making the papers as findable and available as possible are applied.

5 Outlook

The fourteenth edition of the SESAR Innovation Days will take place between 12th and 15th November 2024 in Rome. Preparations are already underway and the SIDs committee has been nominated and invited. The call for contributions will be published in March 2024.

6 References

- [1] SIDs homepage: <http://www.sesarinnovationdays.eu/>
- [2] Engage 2 dedicated section for SIDs 2023 paper on the official project website: <https://engagektn.eu/resources/sids-2023-papers>
- [3] H2020 Open access & data management policy, accessible https://ec.europa.eu/research/participants/docs/h2020-funding-guide/cross-cutting-issues/open-access-dissemination_en.htm

7 List of acronyms

Acronym	Description
AI	Artificial Intelligence
ATM	Air Traffic Management
DOI	Digital Object Identifier
ER	Exploratory Research
IR	Industrial Research
KTN	Knowledge Transfer Network
ML	Machine Learning
S3JU	SESAR 3 Joint Undertaking
SIDs	SESAR Innovation Days
UAM	Urban Air Mobility
UAS	Unmanned Aerial Systems

Table 12: List of acronyms

8 Appendix A: SIDs conference papers

	Title	Authors
2023-01	Modelling the Likelihood of Air Traffic Management Regulations due to Weather at Airports	Ramon Dalmau, Jonathan Attia and Gilles Gawinowski
2023-04	Using Relative State Transformer Models for Multi-Agent Reinforcement Learning in Air Traffic Control	Jan Groot, Joost Ellerbroek and Jacco Hoekstra
2023-05	Policy Analysis of Safe Vertical Manoeuvring using Reinforcement Learning: Identifying when to Act and when to stay Idle	Jan Groot, Marta Ribeiro, Joost Ellerbroek and Jacco Hoekstra
2023-06	The HAAWAII Framework for Automatic Speech Understanding of Air Traffic Communication	Hartmut Helmke, Matthias Kleinert, Arthur Linß, Petr Motlicek, Hanno Wiese, Lucas Klamert, Julia Harfmann, Nuno Cebola, Hörður Arilfússon, Teodor Simiganoschi
2023-09	Evaluating Impact of Non-nominal Space Mission Event on Conventional Air Traffic	Juan Nunez-Portillo, Tatiana Polishchuk, Valentin Polishchuk and Henrik Hardell
2023-10	Contrail Altitude Estimation Based on Shadows Detected in Landsat Imagery	Esther Roosenbrand, Junzi Sun and Jacco Hoekstra
2023-12	Aircraft Landing Time Prediction with Deep Learning on Trajectory Images	Liping Huang, Sheng Zhang, Yicheng Zhang, Yi Zhang and Yifang Yin
2023-14	Air Traffic Controllers' Acceptability of Physiological and Behavioural Data Processing for Air Traffic Management	Anaïs Servais, Léa Cressonnier, Clément Lheureux, Tim Decrock, Mathis Breton and Christophe Hurter
2023-15	Time-Minimal Aircraft Trajectory in the Presence of Unsteady Wind by Shape Optimization	James Shihua, Chris Nguyen and Rhea Liem
2023-18	Customization of Automatic Speech Recognition Engines for Rare Word Detection Without Costly Model Re-Training	Mrinmoy Bhattacharjee, Petr Motlicek, Iuliia Nigmatulina, Hartmut Helmke, Oliver Ohneiser, Matthias Kleinert and Heiko Ehr
2023-20	Towards the Integration of Higher Airspace Operations in the European ATM Network	Augustin Udristioiu, Andra Ioana Gradinaru, Giovanni Di Antonio, Fabrizio Arru, Lorenz Losensky, Sven Kaltenhaeuser, Miguel Ángel Vilaplana Ruiz, Alvaro Sainz Carreno, Stephane Petitjean, Marc Vales, Angella Vozella, Gabriella Gigante and Luigi Brucculeri

2023-21	Sector Traffic Balancing Using Tactical Demand Tailoring	Sven Vegter, Alejandro Murrieta-Mendoza, Catya Zuñiga Alcaraz, Koos Noordeloos and Evert Westerveld
2023-22	Impact of USSPs performance in shared U-space volumes	Jose Luis Munoz-Gamarra, Juan Jose Ramos Gonzalez, Zhiqiang Liu and Agustí Sobejano
2023-24	Remote pilot modelling for evaluation of ACAS Xu	Sybert Stroeve, Carmelo-Javier Villanueva-Cañizares and Garfield Dean
2023-25	Investigating Transparency Needs for Supervising Unmanned Air Traffic Management Systems	Yiyuan Zou and Clark Borst
2023-26	Probabilistic Prediction of Aircraft Turnaround Time and Target Off-Block Time	Paolino De Falco, Jan Kubat, Vladimir Kuran, José Rodriguez Varela, Salvatore Plutino and Alessandro Leonardi
2023-27	Use of Convective Indices to Improve the Prediction of Departure Delays	Juan Nunez-Portillo, Alfonso Valenzuela, Antonio Franco and Damian Rivas
2023-28	LTE Mobile Network Technical Feasibility for Unmanned Aerial Vehicle BVLOS operations in a Rural Test Area	Timo Kasurinen
2023-29	Optimizing air-rail travel connections: A data-driven delay management strategy for seamless passenger journeys	Geoffrey Scozzaro, Clara Buire, Daniel Delahaye and Aude Marzuoli
2023-30	Optimization of Regulated Airline Arrival Flows via Target Time Management	Leonardo Caranti, Marie Carré, Lucas Weber, Richard Stevens and Dominique Heilmann
2023-31	Dynamic Airspace Re-configuration for Drones with Varying Mission Requirements	Juergen Teutsch
2023-32	Arrival Time Management in real weather conditions	Judith Rosenow, Daniel Lubig and Hartmut Fricke
2023-39	Bringing Explainability to Autoencoding Neural Networks Encoding Aircraft Trajectories	Zakaria Ezzahed, Antoine Chevrot, Christophe Hurter and Xavier Olive
2023-40	Weather-Aware Integrated Air Traffic Management Technology Development	Tom Reynolds, Mike Matthews and Blake Cushnie
2023-41	Evaluating the Operational Impact of an AI-Based Decision Support for Go-Around Handling	Lukas Beller, Gökay Özer, Marco Pfahler, Phillip Koppitz and Florian Holzapfel
2023-43	Leveraging passengers' mobile network data for an integrated air-rail frequency planning in Spain	Clara Buire, Daniel Delahaye, Marcel Mongeau, Aude Marzuoli, Jerónimo Bueno-Gonzalez,

		Rubén Artime, Oliva García Cantú Ros and Javier Burrieza-Galán
2023-45	Multi-Agent Planning for Autonomous Airport Surface Movement Operations	Malte von der Burg and Alexei Sharpanskykh
2023-47	Feasibility and Benefits of Implementing Flight Centric ATC in the Spanish upper airspace	Pablo Gil Castresana, Ana Vidaller Guillén, Daniel López Gómez, Juan Antonio López Sánchez, María Teresa Cano Rincón, Nadal Ceñal Ordoñez, Julián Chaves Cáceres and Fernando Ruiz-Artaza Rubio
2023-50	Studying structural change in the European Aviation Network	Juul Vossen, Enrico Spinielli and Rainer Koelle
2023-53	PETA: Combining Machine Learning Models to Improve Estimated Time of Arrival Predictions	Ramon Dalmau, Aymeric Trzmiel and Stephen Kirby
2023-56	A Machine Learned Traffic Flow Coordination Framework for Flow-Centric Airspace	Chunyao Ma, Sameer Alam, Qing Cai and Daniel Delahaye
2023-58	Arrival Optimization with Point Merge in a Dual-runway Environment	Henrik Hardell, Tatiana Polishchuk and Lucie Smetanová
2023-60	Enhancing Airside Monitoring: Multi-view Approach for Accurate Aircraft Location Estimation in Digital Towers	Hasnain Ali, Duc-Thinh Pham and Sameer Alam
2023-62	Urban Perspectives on UAVs Infrastructure Development	Stefano Cunietti, Chiara Sammarco, Ilaria Ferrando and Domenico Sguerso
2023-64	Introduction of moving sectors for flow-centric airspace management	Michael Schultz, Koji Tominaga and Vu N. Duong
2023-66	Mercury: an open source platform for the evaluation of air transport mobility	Luis Delgado, Gérald Gurtner, Michal Weiszler, Tatjana Bolić and Andrew Cook
2023-67	A machine learning approach for predicting airport passenger flows	Juan Blasco Puyuelo, Javier Burrieza Galán, Oliva García Cantú Ros, Ricardo Herranz and David Mocholí
2023-68	Systematic Approach to Assessing the Readiness of a Technology for Safe and Effective Human Use: Opportunities to Integrate Human Readiness Levels (HRLs) in Federal Aviation Administration (FAA) Research, Acquisition, and System Development Processes	Edward Austrian, Michael Sawyer, Jason Kring, Kevin Siragusa and Tara Gibson

2023-70	Roadmap for a European open science alliance for ATM research	Tatjana Bolic, Andrew Cook, Rainer Koelle, Enrico Spinielli, Quinten Goens and Martin Strohmeier
2023-72	Automatic Speech Analysis Framework for ATC Communication in HAAWAI	Petr Motlicek, Amrutha Prasad, Iuliia Nigmatulina, Hartmut Helmke, Oliver Ohneiser and Matthias Kleinert
2023-73	Evaluating Transatlantic Flight Emissions and Inefficiencies Using Space-Based ADS-B Data	Junzi Sun, Aidana Tassanbi, Piotrek Obojski and Philip Plantholt
2023-76	Integrated Air and Space Traffic Management: An Agent-Based Simulation for Analysis of Space-Launch Impact on Air Traffic	Zhengyi Wang, Imen Dhief, Wei Zhou, Sameer Alam, Henk Blom, Sven Kaltenhaeuser and Tobias Rabus