



ANNUAL REPORT

2025



AIR AND SPACE ACADEMY



AIR



SPACE



DEFENCE



ENVIRONMENT



Bruno STOUFFLET

President

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2025 was an important year for the Air and Space Academy, with the renewal of its governance and the expansion of its scientific, institutional and international activities. AAE could thus consolidate its role as an independent, neutral, multidisciplinary reference body in the fields of aviation, space, and defence, while also affirming its stance on key contemporary issues.

True to its mission, AAE continued to analyse and reflect on major strategic issues. The societal challenges of **decarbonising air transport** and ensuring **aviation safety** remained at the heart of its priorities. **Air combat systems and access to space** were also the subject of work aimed at preserving European competitiveness amid rapid technological change.

The year was a particularly active one, with five sessions held in France and abroad combining forward-looking work with industrial visits and exchanges with key stakeholders. Particular attention was paid to **international outreach**, notably through the organisation of an English-language videoconference session, and to the promotion of talent during the annual formal plenary session.

Highlights of the year included conferences, lecture series and training courses. The annual **CEFT conference**, in collaboration with 3AF, **Les Entretiens de Toulouse** (Toulouse Encounters) and the **METEOPS conference in Brussels** demonstrated AAE's capacity to assemble researchers, experts and decision-makers to address significant scientific and operational issues.

AAE strengthened its contribution to public debate by publishing opinions, dossiers and letters. It also took a stance on air transport taxation, calling for a coordinated European approach. Participation in podcasts and major international events such as the ICAO Assembly, the Space Forum and the CEAS/AIDAA conference helped increase its visibility and influence.

Finally, AAE's commitment to young people and knowledge transfer was demonstrated through initiatives in Europe and Africa. Meanwhile, efforts to preserve the sector's heritage continued with the donation of some 88,000 archival photographs to Aéroscopia, a museum centred around AAE's **Concorde No. 1, recently classified as a historic monument in France**.

In 2025, the Air and Space Academy fully affirmed its role as a place for reflection, dialogue and influence, serving aviation, space and society while actively preparing for the challenges of the years to come.

THE AIR AND SPACE ACADEMY

As an observer to the International Civil Aviation Organization (CAO), a member of the French aerospace journalists' association (AJPAE), the International Aerospace Information Network (IAIN) and the International Astronautical Federation (IAF), as well as an associate of the Council of European Aerospace Societies (CEAS), the Air and Space Academy (AAE) facilitates discussions at a European level and provides ad hoc analytical and forward-looking contributions on topics of common interest to the institutions and industry players that request them. These multidisciplinary studies are conducted by members working together in **sections and commissions**.

MEMBERSHIP

AAE is composed of members, elected by nomination and co-option, who hold or have held high-level positions in the aviation and space sectors. Its membership includes engineers, industrialists, researchers, high-ranking military staff, executives, pilots, astronauts, doctors, lawyers, economists, journalists, writers and artists, forming a unique pool of skills and knowledge dedicated to **promoting scientific, technical, cultural and human excellence in aviation and space**. As of 1st January 2026, the Air and Space Academy comprises 403 members and correspondents, reflecting its growth and the diversity of its membership.

BOARD

President:	Bruno Stoufflet
Vice presidents:	Danielle Bénadon, Philippe Forestier, David McMillan Gérard Rozenknop
Secretary general:	Olivier de L'Estoile
Treasurer:	Guy Rupied



The headquarters of the Air and Space Academy in Toulouse is home to its **permanent team**, led by director Philippe Prigent.

ACADÉMIE DE L'AIR ET DE L'ESPACE

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SECTIONS

Section I – Scientific Knowledge and Applications – focused on climate and Earth observation, space exploration, modelling applied to aeronautics and the analysis of human influence on the climate system. The section made a significant contribution to interdisciplinary environmental research.

Section II – Applied Sciences and Technologies – addressed technological and industrial developments in air and space, including the integration of artificial intelligence, satellite communications, geopolitical issues, aviation safety, flight control systems, and transformations in the space sector.

Section III – Human Presence and Activities – continued its work on synthetic terrain display flight assistance systems and participated in flight evaluations, playing a central role in organising the 'Weather and Operations' conference and the work of the Civil Aeronautics and Defence commissions.

Section IV – Ethics, Law, Sociology and Economics – worked on themes including safety, sustainable aviation and transport, energy transition, forecasting for aviation and infrastructure, air traffic control, new space and the legal framework, and competition in launchers and space applications.

Finally, **Section V – History, Literature and Arts** – worked to promote aerospace heritage and memory, enrich the French language, collect testimonies, and obtain recognition of the Concorde aircraft as a historic monument.

COMMISSIONS

The **Civil Aviation** commission continued its work in the field of automation (publication of an opinion) and drones in conjunction with 3AF (preparation of a dossier). In connection with the work of the DGLR, it studied the respective contributions of aircraft structures and aerodynamics to reducing energy consumption. A new working group has been launched on the evolution of regional aviation.

The **Defence** commission monitored air operations in Ukraine and Iran to inform Europe's approach, continued its work on the future of combat helicopters and collaborative combat, and began considering the concept of a European 'space shield' involving significant international cooperation.

The **Education and Training** commission organised the CEFT conference in Paris in collaboration with 3AF and led working groups on aeronautical training and skills. It also strengthened its partnerships with the INSP and the ISAE group to promote knowledge transfer. **Les Entretiens de Toulouse**, long integrated into this commission, now constitutes a commission in its own right (see p7).

The **Energy and Environment** commission furthered its research into sustainable fuels, decarbonised energy, contrails and the Earth's radiation balance, while also focusing on foresight, communication and combatting disinformation. On the topics of contrails and the radiation balance, the commission is now working with world-class specialists.

The **European Actions** commission initiated and coordinated AAE's contacts with the relevant European institutions involved in space, defence, and sustainable air transport. It contributed to internal discussions on concrete actions to enhance the Academy's European dimension.

The **Space** commission published Dossier 56, 'Seven recommendations to secure the future of European launchers'. This dossier was presented to several interested organisations. At the request of the Energy and Environment commission, the Space commission is also investigating the value of a space mission to accurately measure the Earth's radiation balance.

VISITS

In 2025, AAE continued its policy of travelling throughout France and Europe to strengthen ties with institutional and industrial partners, and promote in-depth discussions on aerospace, environmental, and technological issues.

The first meetings of the year took place in **Toulouse**, where visits were organised to the ATR industrial site and the Cité de l'Espace. These allowed for in-depth discussions on industrial, market and decarbonisation issues, as well as providing an insight into current scientific and space news.

A highlight of the year was the trip to **Madrid** on 27 and 28 March. Following a welcome at ETSIAE, visits to Indra's facilities and simulators, as well as to the Hispasat control centre, provided an opportunity to discuss operational and strategic challenges facing space services in Europe and America.

On 22 and 23 May, members gathered in **Paris** for a visit to the Drones Hub in Brétigny-sur-Orge, where they heard a presentation on the European U-Elcome project and took part in a round-table discussion led by Eurocontrol and ONERA. There were also demonstrations of flights and innovative solutions. The following day, the general assembly took place at the town hall of the 15th arrondissement.

The autumn session, held on 26 September, was conducted in English for the first time via **videoconference**, to encourage European and international participation.

On 8 October, the Swissair Pour Toujours association organised a visit to the Swiss Military Museum in **Payerne** as part of a Section 5 meeting. This provided an opportunity to establish contacts with museum officials and the Swiss military.

Plenary session

The final session of the year took place in Toulouse on 27 and 28 November. Following visits to the Latécoère site in Gimont and the Pierre Baudis Conference Centre, the formal plenary session was held in the Salle des Illustres at Toulouse City Hall. This provided an opportunity to welcome new members, hear a lecture by Georges Ville on the history of Airbus and present the year's awards and medals. The day concluded with a convivial cocktail reception hosted by Toulouse municipality.



The formal plenary session in Toulouse City Hall © AAE

MANAGING THE IMPACT OF WEATHER ON AIR AND SPACE LAUNCH OPERATIONS

The METEOPS conference, organised by AAE at Eurocontrol in Brussels on 12 and 13 November 2025, brought together over 120 participants from around the world.

The conference was organised into four sessions and aimed to explore innovative collaborative strategies, tools and decision-making processes to mitigate weather-related risks, enhance safety, and reduce operational disruption and costs.



« Fireside chat » between AAE president Bruno Stoufflet and Willie Walsh, director general of IATA © AAE / Eurocontrol

Discussions focused on the increasing frequency and intensity of high-impact weather events such as turbulence, volcanic ash clouds, thunderstorms and extreme temperatures, which are often exacerbated by climate change.

While progress was highlighted, including the improved relevance of meteorological information, enhanced network management and collaborative decision-making frameworks, speakers also drew attention to the remaining challenges of integrating new technologies, refining meteorological models and ensuring a consistent operational language among different stakeholders.

The event emphasised the importance of a **unified approach to weather management, the gradual implementation of new tools and the establishment of regular forums to promote knowledge sharing**, with the collective goal being to strengthen resilience to weather disruptions while maintaining safety and efficiency in a context of constantly evolving risks.

The conference proceedings, including video recordings of the presentations, are freely available on our website.

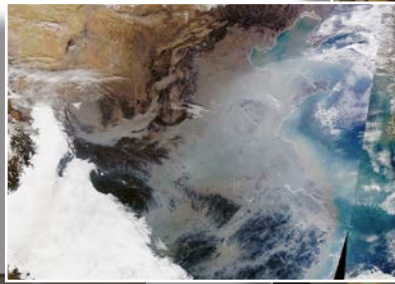


Delegates from 18 countries in the Eurocontrol headquarters © AAE / Eurocontrol

In partnership with various institutions and associations, AAE organised numerous lectures in France and Europe to promote scientific and technical knowledge in the fields of aviation and space to a wide audience.

28 LECTURES FOR THE GENERAL PUBLIC ON KEY THEMES:
DECARBONISATION, WEATHER, SPACE, ETC.

1900 PARTICIPANTS: AMATEURS, PROFESSIONALS AND
STUDENTS



In 2025, the « Air & Space » lecture cycle in the
José Cabanis Toulouse Médiathèque,
celebrated its 20th year.

*Over 200 lectures to an ever-growing audience of
connoisseurs and enthusiasts!*

LES ENTRETIENS DE TOULOUSE

Les Entretiens de Toulouse (Toulouse Encounters) is a high-level professional training programme organised in partnership with X-Exed, with three objectives:

- ➔ **encourage dialogue** between all players in the aeronautics and space sector;
- ➔ **facilitate mutual understanding** and the dissemination of scientific and technical knowledge among all these players;
- ➔ **contribute to exchanges** between SMEs, large groups, contractors and research centres.

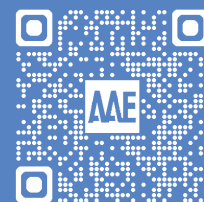
This is a scientific training programme in which participants, thanks **to an innovative teaching method based on debate**, explore areas of expertise other than their own and enrich their networks.



The 2025 edition was once again a success, attracting some 300 participants.

15 & 16 avril 2026 at ISAE-SUPAERO - Toulouse
entretiensdetoulouse.com

72 workshops / 18 areas :



■ Civil Aviation	■ Tests and Experimentations	■ Modelling and Systems Engineering
■ Aerodynamics	■ Onboard Energy	■ Aeronautic Maintenance
■ Avionics	■ Space and Aeronautics	■ New Engine and Propulsion Systems
■ Cybersecurity	■ Artificial Intelligence	■ Structures Design
■ Military	■ Innovation and Competitiveness	■ Sustainable Air Transport
■ Drones and Autonomous Vehicles	■ Materials	■ Factory of the Future

CEFT CONFERENCES

KNOWLEDGE, EXPERTISE, TRAINING AND TRANSMISSION

In January 2024, the conference '**Transportation of Tomorrow: What type of engineers do we need?**' was held in Le Bourget. Initiated by the University of Nanterre, it brought together around 100 participants to explore the essential skills for tomorrow's engineers. Building on the success of this event, a series was launched and its scientific committee includes the 3AF and AAE commissions related to training and education.

A second conference, held on **6 February 2025**, focused on '**Agile knowledge transfer**', addressing topics such as the impact of artificial intelligence, teaching methods and intergenerational exchanges.

A third conference, on '**Expertise: how experts can benefit from AI**,' is to take place on **5 February 2026**.

QUARTERLY MAGAZINE

Newsletter No. 136 – Applications of AI in aeronautics, defence and space

This newsletter provides a summary of the discussions held during a conference on this topic organised by AAE in 2024. After a general introduction, it presents feature articles on the applications of artificial intelligence in the aerospace and defence sectors, accompanied by recommendations for controlled implementation.

This issue calls for greater ambition in order to fully reap the benefits of this technology.



Newsletter No. 137 – Space in Europe

Devoted entirely to space, this newsletter first covers scientific topics such as solar system exploration and measuring winds from space. It then turns to the recently approved IRIS² communications system. This is followed by an examination of the situation of European launchers and a presentation of Spanish space activities.

A comprehensive overview of Europe's space ambitions.

Newsletter No. 138 – Flight safety

In just a few decades, air travel has become the safest form of transport, with serious air accidents now being rare occurrences. This article provides an overview of air safety, before taking a closer look at investigations, automation, and the prevention of mid-air collisions in general aviation.

Exploring a theme at the heart of air operations.



Lettre n°139 – Space in Spain

After an introduction from the director of Spain's brand new space agency, this newsletter provides an overview of the Spanish space industry. It features articles from the leaders of major companies and start-ups in the sector, including TEDAE, GMV, Hispasat, Hisdesat, PLD Space and Startical.

An in-depth look at the driving forces and advances in the sector in Spain.

Multidisciplinary studies conducted by the sections and commissions identify key issues and often lead to the organisation of events and the publication of dossiers, opinions, and other works.

In 2025, discussions focused on three main themes:

SPACE

Dossier 56 : Seven recommendations to secure the future of European launchers

Following delays to Ariane 6 and difficulties with Vega-C, the ESA Ministerial Council met in Seville in 2023 without any operational launchers. There, they launched the European Launcher Challenge to stimulate innovation and prepare the next generation of small European launchers. Faced with increased international competition, particularly from the United States, Europe must reaffirm its space ambitions. To this end, the AAE Space commission published seven recommendations for the future of European launchers.



WEATHER

Managing the impact of weather on air and space launch operations

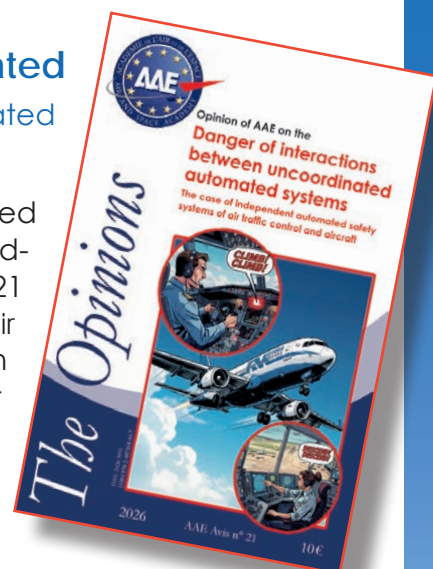
Weather events disrupt air operations on a daily basis, causing delays, damage and economic losses amounting to billions of dollars. At this conference, high-level speakers explored ways to mitigate risks, enhance safety and reduce costs in the era of climate change, using advanced data, innovative tools and collaborative decision-making. The **proceedings** of the conference, including video recordings of the presentations, are available online.



FLIGHT SAFETY

Danger of interactions between uncoordinated automated systems - The case of independent automated safety systems of air traffic control and aircraft

In light of the increasing risks posed by frequently uncoordinated development of safety automation systems for ground-based air traffic control and onboard aircraft, Opinion No. 21 highlights the importance of an integrated approach to their design, operation and regulation. The opinion makes seven key recommendations and calls for the urgent establishment of a comprehensive, cooperative framework to ensure consistency, standardisation and trust between ground-based and in-flight automation systems. This framework is essential for achieving safer and more efficient skies.



One of AAE's missions is to disseminate knowledge and information on air and space. To this end, publications, videos and other resources are freely available to all on its website, with information disseminated widely via mailing lists and social networks.



OUR WEBSITE IN 2025 ACADEMIEAIRESPACE.COM



110.5K VIEWS



41.3 VISITORS



159 COUNTRIES



11946 SUBSCRIBERS TO OUR MAILING LISTS

SOCIAL MEDIA



6973
FOLLOWERS



2865
FOLLOWERS



2820
FOLLOWERS



941
FOLLOWERS



772
FOLLOWERS

385 VIDEOS

192.5K VIEWS

33.7K HOURS VIEWED

ACTIONS

In June 2025, the current president, Bruno Stoufflet, and his predecessor, Michel Wachenheim, signed an **opinion piece** criticising France's unilateral increase in the tax on airline tickets (TSBA), which was intended to finance the railways. They highlighted the harmful effects of this increase on the competitiveness of French air transport. They expressed their disappointment at the lack of European coordination and called for a concerted international strategy to decarbonise the aviation sector.

AAE also participated in a **podcast** dedicated to the decarbonisation of aviation, increasing its visibility among a wider audience on this essential topic.

Finally, the AAE's commitment to **preserving the sector's heritage** was demonstrated by the donation of nearly 88,000 archival photographs to the Aéroscopia museum.

SAJAC

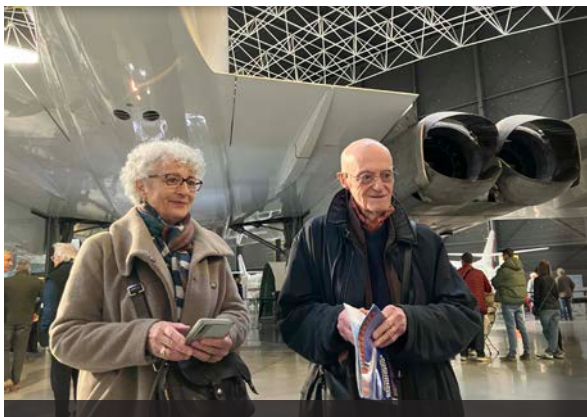
From 4 to 9 February, our vice-president, Philippe Forestier, visited Cameroon for **Central African Youth Aviation Week (SAJAC)**, at the invitation of Fadimatou Noutchemo, President of the Young African Aviation Professionals Association (YAAPA). The event brought together 1,000 young students from across the country, concluding with an audience with Prime Minister Joseph Dion Ngute.



The organisers of SAJAC with Philippe Forestier © AAE

CONCORDE DAYS

On 1 and 2 March, AAE was invited to take part in a special Concorde weekend at the Aéroscopia museum in Toulouse. **The star attraction was the Academy's Concorde No. 1, which was recently listed as a French historic monument.** Several of our colleagues attended the event, including Jean Pinet, a former Concorde test pilot, who took part in a roundtable discussion.



Jean Pinet accompanied by his daughter at the Concorde days © AAE

OACI

At the invitation of the International Civil Aviation Organization, Michel Wachenheim and Mark Beauregard represented AAE at the **42nd session of its assembly**, which was held in Canada from 23 September to 2 October.



The 42nd ICAO assembly © ICAC



PARIS AIR SHOW

In 2025, a delegation of fifteen people from AAE attended the Paris Air Show, where they had the opportunity to deepen or renew useful contacts with exhibitors, including Airbus, Safran, Dassault Aviation, Ariane, Apave Group and Latécoère.

Thanks to the work of its **Prizes and Medals commission**, each year AAE honours key players and innovators in the fields of aeronautics and space, in order to draw attention to their achievements.

2025 AWARDS

Grand Prize

- **Valère Moutarlier** (European Commission) and **Josef Aschbacher** (ESA), for their decisive action in committing to and developing the major GMES Copernicus programme.



2025 Grand prize award ceremony, held on 14 November at ESA headquarters in Paris
© AAE



Vermeil medal

- **Armand Jacob, Robert Lignéé** and **Fabrice Vuillaume** (Airbus) to honour their outstanding contributions to developing the ROPS system for improving the safety of aircraft landings.

Academy medals

- **Philippe Laudet** (Cnes), for his outstanding contribution to the development of the SEIS precision seismometer instrument for the InSight Mars mission.
- **Christel Seguin** (Onera), for her major contribution to the creation of a "DVR" digital analysis tool for a UAV in preparation for the certification process for flight authorisation.
- **Andréa Ciabrini, Alain Delavet** and **Setareh Taheri** (Airbus Helicopters), for their innovative work in the certification testing process under icy conditions for the Airbus H175B E helicopter.

Master II dissertation prize in law, economy and sociology of air and space transport

- **Antonia Kardamaki**, for the excellent quality of her work on "Distributed Satellite Systems for Space Situational Awareness: Legal Challenges and Incentives in the International and EU Context".

THANK YOU TO OUR SPONSORS!

In 2025, AAE's partners – businesses, public institutions, and higher education establishments – provided crucial financial and logistical support for the activities of the Air and Space Academy, while fully respecting its freedom of thought and independence of expression. We would like to express our deepest gratitude for their ongoing commitment, which has enabled AAE to carry out and develop its work in the service of air and space.

Special mention must go to Toulouse City Council, whose continuous support since AAE's inception has been instrumental in its development and regional influence.



with the support of:



FOCUS ON THE FUTURE

In 2026, the Air and Space Academy will continue ongoing work while strengthening its role as an independent, neutral, multidisciplinary European authority in aviation and space. This will be reflected in an increase in publications and scientific events, as well as a renewed commitment to institutions, young people, and its European and international partners.

AAE will publish four new opinions to complement the recently published opinion on the potentially dangerous interactions of uncoordinated ground and airborne automation systems. These opinions will focus on **military helicopters** and **civil drones**, **collaborative combat** and the **space shield**.

The Academy's influence will also be strengthened through its communication strategies, with the development of its thematic newsletters and greater availability of a host of free resources on its website.

2026 will be a year of numerous scientific and institutional events. **Lecture cycles** will continue in Toulouse, Bordeaux, Brussels and other cities in France and Europe. The **3rd CEFT conference** will take place on 5 February 2026 in collaboration with 3AF at the Air and Space Museum in Le Bourget, focusing on the question, '**How can experts benefit from artificial intelligence ?**' The interactive training course **Les Entretiens de Toulouse** will take place again on 15 and 16 April 2026 at ISAE-SUPAERO.

Two international conferences are planned for the end of the year. Although details are still to be finalised, they will focus on **aviation and climate**, and on **services provided by aviation to society**.

AAE will continue to strengthen its collaboration with European and international organisations with a view to supporting initiatives, encouraging scientific cooperation, and promoting shared influence.

Beyond these actions, I would like to see the Academy fully committed to the following objectives in 2026:

- Promoting independence, neutrality and multidisciplinary among national and European institutions to provide recognised, useful expertise for public decision-making.
- Better integrating the European dimension into its practices, work and events.
- Affirming its commitment to diversity by encouraging female and international candidates to guarantee renewal and influence.

These objectives reflect the Air and Space Academy's ambition to step up as an influential, credible and open organisation that serves tomorrow's major aviation and space challenges.



Bruno STOUFFLET

President