EUROCAE

#222025

BROAD CAST#22

MEET THE TECHNICAL
ADVISORY COMMITTEE
(TAC)

PARTNERSHIP BETWEEN
EUROCONTROL &
EUROCAE

EUROCAE SYMPOSIUM
23-24 APRIL 2025
MADRID (SPAIN)

Contents

Dear EUROCAE members, partners, and friends,

Welcome to the 22nd edition of the EUROCAE Broadcast - a landmark issue showcasing the latest updates, achievements, and highlights of EUROCAE's activities over the last months.

Our 50 active Working Groups remain at the heart of the organisation's mission, driving vibrant discussions and collaborative progress. Together, they ensure the aviation industry is equipped with standards that meet the challenges of today while preparing for tomorrow.

Whilst all 50 of them are to be applauded for their hard work and dedication, I would like to highlight just a few of them specifically:

After thorough discussion taking into account all stakeholders' views, EUROCAE TAC and Council approved the creation of WG-130 ATM/ANS Supporting Standards, which held its kickoff meeting in November 2024. The aim of this important WG is to identify, review existing standards and facilitate the development of updated/new standards in support of the European ATM/ANS Conformity Assessment Framework, with the aim of providing a comprehensive framework for the certification of relevant equipment within ambitious timeframes. The co-leadership of this WG by EASA and industry, along with a record participation, demonstrates the confidence and stakeholder buy-in for this important activity.

Another example of our support to urgent technical matters is the new WG-133 "GNSS Multi Elements Antenna", which is a direct response to the GNSS signal degradations caused by jamming and spoofing, posing a significant concern for aviation safety. Thanks to an initiative by the EU Agency for the Space Programme (EUSPA), this new WG will develop antenna requirements to increase GNSS reliability and resilience.

These activities are just examples of the many more reflected in our 2025 Technical Work Programme (TWP), a cornerstone document that provides a comprehensive overview and strategic planning of EUROCAE's scope of work. Developed by our Technical Advisory Committee (TAC), the TWP outlines current and future activities in standardisation, covering key areas supporting the European Aviation and Space policies. A special focus this year was on the link between the European ATM Master Plan, adopted by the SESAR 3 JU Governing Board in December and our TWP, ensuring alignment and consistency across the overall ATM innovation pipeline.

Looking beyond Europe, our engagement with our international partners remains strong, notably with RTCA and SAE. With both organisations combined, over 70% of our work programme is executed jointly, developing in technically identical standards in many key areas for the aviation industry. This results in globally applicable and harmonized standards, which are recognized by international organisations like ICAO as well as regional and national regulatory bodies worldwide. A testament to this international collaboration was our joint EUROCAE-RTCA Security Summit, held fully virtual in October 2024 (and still available on our YouTube channel if you missed it).

In October, we also hosted our Annual Leadership Summit, gathering leaders from across our Working Groups to share updates and discuss new initiatives. Among the key topics presented were our new digital Hub, the quality management system, and enhanced communication strategies. This summit was not only a chance to exchange ideas but also a platform to strengthen collaboration and encourage innovation within our community.

Indeed, the launch of the EUROCAE Hub, which we reported extensively in Broadcast #21, was a significant step forward in our digital transformation. The feedback so far has been overwhelmingly positive, with many praising its user-friendly interface and enhanced collaboration tools. But this was just the beginning. Our next milestone will be the launch of our new, modern, and interactive website and e-Shop, scheduled for release during the 2025 Symposium in April. More extensive functionalities on the Hub will follow in the second half of the year, based on user experience and feedback.

EUROCAE has been a present at numerous international events, with both in-person and virtual contributions, including the High-Level Workshop on Counter-UAS Systems, the EASA Annual Conference, the International Workshop on ATM/CNS (IWAC2024), the Aviation Cybersecurity Conference, and SESAR Joint Undertaking's Annual Conference, to name just a few. These events exemplify our unwavering commitment to advancing aviation through active engagement with our members and stakeholders.

This also reflects in the membership, which continues to grow, reaching close to 500 members in 45 countries, and actively supporting many standardisation activities and trainings in different parts of the world.

All these activities are possible thanks to our members and the amazing team at the Secretariat, which continues to grow and develop. We're delighted to welcome Atiqah Pillain as a Technical Programme Manager focusing on Sustainability and Safety Systems as well on our QMS, Bertrand Riveill as a Technical Programme Manager for Innovative Aerial Services (IAS), and Elizabeth Ficadière as our new Executive Assistant & Office Manager. Please join me in extending a warm welcome to these talented individuals as they become part of the EUROCAE team!

Looking ahead, we have an exciting schedule of events. In April we'll be at the Aerospace Tech Week in Munich, and in May, we'll participate in Airspace World with a joint stand alongside the "Europe for Aviation" partners. In June, we'll proudly expose with our own stand at the Paris Air Show in Le Bourget. We hope to see many of you at one of these happenings!

Of course, the highlight of our event calendar is the EUROCAE Symposium 2025, set to take place on 23-24 April in Madrid, Spain. This marks our return to Spain after nearly three decades! The Symposium promises to be an immersive experience, uniting industry leaders to explore advancements and shape the future of aviation.

I am looking forward to many interesting exchanges, discussions and engagements in the coming months!

As always, I hope you find this edition of the EUROCAE Broadcast both insightful and inspiring. None of our achievements would be possible without the dedication and passion of our members, Working Groups, Council, TAC, and Secretariat team.

Anna von Groote
Director General, EUROCAE

EUROCONTROL and EUROCAE

A Partnership Advancing European Aviation Standards

By Raúl Medina (EUROCONTROL Director General)

In the dynamic and ever-evolving landscape of European aviation, effective coordination between regulatory, operational, and technical bodies is essential. This is particularly important in standardisation, where the growing complexity of the regulatory environment demands efficient use of limited resources.

EUROCONTROL and EUROCAE, two organisations responsible for developing European aviation standards with global relevance, are crucial in ensuring the safe, efficient, and innovative operation of the European air traffic management (ATM) system. Our standardisation activities complement each other well: EUROCONTROL focuses primarily on operational and ATM network aspects, while EUROCAE specialises in technical specifications for systems and equipment. Together, we cover a large part of the full spectrum of aviation standardisation needs, contributing to a safer, more efficient European airspace.

For over six decades, EUROCONTROL and EUROCAE have worked closely in aviation standardisation, enabling the industrialization of desired and innovative ATM solutions. EUROCONTROL officially joined EUROCAE in 1973, though our support and contributions began earlier. Today, EUROCONTROL participates in EUROCAE's governing bodies, including the Council and Technical Advisory Committee (TAC), and EUROCONTROL experts actively lead and contribute to EUROCAE working groups developing technical standards. With over 100 EUROCONTROL experts actively contributing to various EUROCAE working groups, EUROCONTROL stands as one of the largest individual contributors to EUROCAE's activities. EUROCONTROL also supports the EUROCAE Secretariat, further strengthening this productive collaboration.

The partnership between the organisations spans various ATM domains, ensuring technological advancements align with operational needs and regulatory requirements. Our complementary roles are particularly evident in key areas such as supporting the EU regulatory framework, advancing ATM modernisation, fostering innovation, driving SESAR deployment, ensuring interoperability, and promoting both European and international harmonisation, while also ensuring the upmost efficiency and synergies and avoiding duplication of efforts.

EUROCONTROL and EUROCAE formalised their partnership by signing a Memorandum of Cooperation (MoC) in 2004, establishing a strong foundation for collaboration. The MoC has been updated over the years to reflect the increasing cooperation between our organisations. An update was signed in March 2025, marking a new phase of cooperation and reaffirming our shared commitment to addressing evolving standardisation needs in European aviation.

The updated MoC emphasises our mutual objective to collaborate on critical standardisation issues in the European aviation sector while promoting global harmonisation. It strengthens the recognition of each organisation's role in shaping aviation standards and deepens our complementarity. This renewed partnership will further enhance aviation safety, efficiency, and interoperability, benefiting both European and international aviation communities.

EUROCONTROL's Director General, Raúl Medina and EUROCAE's Director General, Anna von Groote

A prime example of the synergy between our two organisations is our joint response to the European Union Aviation Safety Agency's (EASA) new regulatory framework for ATM/ANS equipment conformity assessment. By working together to develop the necessary standardisation material to support certification, we eliminate redundancies, maximize efficiency, and leverage synergies. This collaboration strengthens European aviation while positioning it as a global leader.

Another recent example of the complementary roles of our organisations in meeting our stakeholders' needs is the publication of standards supporting Airport Collaborative Decision Making (A-CDM). A-CDM is a critical enabler for improving efficiency, predictability, and punctuality in airport operations. Following a synchronised development process, EUROCONTROL published in January 2025 the "EUROCONTROL Specification for Airport CDM", which defines operational requirements and harmonised processes and procedures. At the same time, EUROCAE released the "Minimum Technical Specifications for Airport CDM Systems" (ED-141A), outlining essential technical and non-functional system requirements and "Guidelines for Test and Validation Related to Airport CDM Interoperability" (ED-146A), providing guidance on testing and validation for A-CDM systems. These three new publications are complementary and address stakeholder needs by incorporating lessons learned from past implementations and allowing for further improvements in airport operations across Europe.

In conclusion, the partnership between EUROCONTROL and EUROCAE is fundamental to European aviation's progress. Our collaborative efforts drive innovation, enhance safety, support the regulatory framework, and facilitate the integration of next-generation aviation technologies. Together, we contribute to a more efficient, harmonised, and sustainable aviation system in Europe and beyond.

EUROCAE's Director General, Anna von Groote, met with Tânia Cardoso, EUROCONTROL's European Green Sky Director, for a productive discussion on how EUROCAE and EUROCONTROL's work in standardisation complement each other.

Meet the Technical Advisory Committee (TAC):

Driving Aviation Standardisation Forward

At the heart of EUROCAE's mission to develop high-quality aviation standards lies the Technical Advisory Committee (TAC). Comprising leading experts from various sectors of the industry, the TAC plays a crucial role in guiding the organisation's standardisation activities, ensuring alignment with global aviation needs and regulatory developments.

A Key Role in EUROCAE's Structure

Defined in the EUROCAE Constitution and detailed further in the EUROCAE Handbook, the TAC serves as a strategic body advising the Council on technical, operational, and, when required, policy matters. Its primary responsibility is to oversee and provide recommendations on the creation and modification of standardisation activities, mainly through EUROCAE's Working Groups.

Meeting at least four times a year in coordination with the Council, the TAC ensures a seamless flow of information to provide technical insight to the Council and support decision-making. These meetings offer a forum to monitor the progress of Working Groups, assess international regulatory and standardisation activities (such as those led by innovation: EASA, SESAR, ICAO, and RTCA/SAE), and ensure that EUROCAE's work remains at the forefront of global aviation developments.

Supporting Working Groups and Industry Collaboration

The TAC's impact is most significant at the initiation of new Working Groups (WG) or when refining ongoing projects. The committee ensures that any new initiative aligns with the work of other standardisation bodies, such as RTCA and SAE, while addressing the needs of the broader aviation industry. This approach helps to prevent duplication of efforts, optimise resource allocation, and enhance industry-wide collaboration.

To foster a more direct and meaningful engagement, WG leaders are often invited to TAC meetings. This interaction allows for a thorough exchange of insights, facilitating a well-informed and coordinated standardisation process.

Each year, the TAC contributes its collective expertise to the development of the EUROCAE Technical Work Programme (TWP). This document outlines the organisation's scope of work across the eleven domains. The TWP not only provides a strategic framework for EUROCAE's future activities but also ensures that the organisation remains responsive to industry trends and technological advancements. Once approved by the Council, the TWP serves as a reference for planning EUROCAE's work over a three-to five-year period. The latest version is openly available on the EUROCAE website.

Voices from the TAC

Eric Bouchard (Dassault Aviation and TAC Chair):

"When I joined the TAC in 2014 as the Business Aviation representative, I had no idea of the variety of topics I would engage with. Always striving for the best consensus and driven by a vision for the future of aviation, the TAC constructively discusses all aviation matters, ensuring technical consistency for effective regulation. As the current TAC Chair, I take great pleasure in leading this remarkable team towards meaningful achievements, fostering cross-sector understanding and balanced decision-making. Supporting Working Groups in a structured approach so that their outputs fit into the broader aviation framework is a tremendously exciting challenge."

Denis Ricaud (Thales):

"I feel fortunate and honoured to have been part of the TAC for the past five years as an avionics equipment representative. The experience has been incredibly enriching—sharing technical discussions with stakeholders who have diverse constraints, goals, and perspectives. Nowhere else have I encountered such a broad spectrum of aeronautical issues to tackle, often uncovering aspects that had initially gone unnoticed."

Luca Crecco (SESAR 3 Joint Undertaking):

"Joining the TAC means becoming part of a dynamic and expert-driven group dedicated to maintaining the EU's leadership in aviation and ATM standardisation. It also offers valuable opportunities for broad visibility and collaboration with ICAO and other international organisations (e.g., RTCA) to support global harmonisation efforts."

NAME	Organisation	Representing
Hette Hoekema	EASA	Regulatory Authority
Sasho Neshevski	EUROCONTROL	European ATM Organisation
Laurent Azoulai	Airbus	Aircraft Manufacturers – Commercial Aviation
Eric Bouchard	Dassault Aviation	Aircraft Manufacturers – Business Aviation
Estelle Laurendeau	AIRBUS Helicopters	Aircraft Manufacturers – Rotorcraft
Sebastien Dotte	Thales Group	Equipment Manufacturers – Avionics
Jacques Tourneux	SAFRAN	Equipment Manufacturers – Aircraft Non Avionic
Pascal Rohault	Thales LAS France	Equipment Manufacturers – Ground Equipment
Sergiu Marzac	The Boeing Company	Manufacturers – Innovative Aerial Services
Kyle Martin	GAMA	Manufacturers – General Aviation
Siegfried Schäfer	DFS	Air Navigation Service Providers
Jaime del Molino Blanco	IATA	Airlines or Airspace Users
Roy Posern	Fraport	Airports
Luca Crecco	SESAR JU	European R&D Community
Anna von Groote	EUROCAE	

Hydrogen Fuel Cell Systems // WG-80

Paving the Way for Hydrogen-Powered Aviation

In the dynamic landscape of aviation, the quest for sustainable and innovative fuel alternatives has positioned hydrogen at the forefront of future energy solutions. EUROCAE WG-80 Hydrogen Fuel Cell Systems has been pivotal in this transformation, advancing hydrogen fuel cell technologies through rigorous standards and strategic collaborations. These advancements are critical in the global effort to reduce aviation's environmental footprint, contributing to a greener, more sustainable future.

A Legacy of Progress and Collaboration

Established in 2008, WG-80 was created to develop operational guidelines, best practices, and standards supporting the certification of hydrogen fuel cells in aircraft. To maintain alignment with global industry advancements, WG-80 works closely with SAE AE-7F and AE-5CH, fostering a collaborative environment that bridges international expertise.

Under the leadership of Olivier Savin (Blue Spirit Aero) and Beatrice Toussaint (Airbus), WG-80 has made remarkable strides. Early achievements include the publication of ED-219/AIR6464 "Aircraft Fuel Cell Safety Guidelines" in 2013, offering critical safety guidelines for aircraft fuel cell systems. This was succeeded by ED-245/AS6858 "MASPS for Installation of Fuel Cell Systems on Large Civil Aircraft" in 2017, establishing

Minimum Aviation System Performance Standards (MASPS) for fuel cell installations in large civil aircraft. The release of ER-020/AIR7765 'Considerations for Hydrogen Fuel Cells in Airborne Applications' in December 2019 provided further insights into integrating hydrogen fuel cells in airborne applications.

WG-80's current focus is on developing two key standards dedicated to the safe design of hydrogen fuel cells in aircraft, addressing both liquid hydrogen (LH2) and gaseous hydrogen (GH2). These standards, which define system requirements for storage and distribution aboard aircraft, are set for publication by December 2025.

Recognising the growing industry interest, WG-80 launched a new initiative in May 2023 to create a Guidance Document for Hydrogen Fuels for Propulsion. This comprehensive document consolidates regulations, best practices, and technical guidelines for designing, integrating, qualifying, certifying, and maintaining Proton Exchange Membrane (PEM) / Fuel Cell Systems (FCS) used as primary power sources for aircraft propulsion. The guidelines specifically address power demands for conventional fixed-wing aircraft under part/CS-23 and part/CS-25.

Expanding Horizons: Hydrogen Fueling Infrastructure

In 2024, WG-80 expanded its efforts to address the

infrastructure necessary for hydrogen-powered aviation, launching an initiative on Hydrogen Fueling Stations for Airports. In collaboration with SAE AE-5CH, this project produced ER-034/AIR8466 "Hydrogen Fueling Stations for Airports in both gaseous and liquid form". Covering mobile fueling trailers and stationary stations, the report addresses unique safety considerations for various hydrogen storage methods and is available via the EUROCAE website.

Further collaboration with AE-5CH is underway to develop specifications for High Flow Liquid Hydrogen Fueling Processes and Couplings, targeting aerospace and heavy transport applications. This document will define new standards for fueling processes, including flow rates suitable for aircraft ranging from small regional jets to widebody aircraft, aiming to achieve throughput comparable to conventional jet fuels.

Shaping the Future of Sustainable Aviation

WG-80's collaborative approach has been instrumental in harmonising international standards for hydrogen fuel cell systems. Working alongside SAE AE-7F and key industry stakeholders ensures that guidelines are comprehensive and globally applicable, supporting the integration of hydrogen technologies across different regions and manufacturers.

The committee's focus on safety and performance has been critical in addressing the unique challenges associated with hydrogen fuel cells. Foundational documents like ED-219/AIR6464 and ED-245/AS6858 provide manufacturers and operators with robust guidelines for safe system integration.

Looking ahead, WG-80's initiatives on hydrogen fueling stations and high-flow liquid hydrogen fueling processes will be pivotal in establishing the infrastructure required for widespread hydrogen-powered aviation. These efforts are set to ensure that future fueling operations are not only safe and efficient but also capable of meeting the demands of an evolving aviation landscape.

In summary, WG-80's ongoing work and collaborations are laying the foundation for a sustainable future in aviation, where hydrogen fuel cell technology plays a central role in reducing emissions and enhancing environmental performance. Through its dedication to innovation, safety, and global cooperation, WG-80 is driving the aviation industry towards a cleaner, greener future.

Technical Programme Manager (TPM): Atiqah Pillain

IAS // WG-105

Enabling Safe Innovative Aerial Services Operations in our Modern World

Today, Innovative Aerial Services (IAS) have a strong mediatic presence in our world. They have a place in various technological improvements, from the mapping of fields, to building inspection and national heritage research, we also see them in various current conflicts.

For these systems to operate safely every day, robust regulations are essential. Recent drone-aircraft collisions serve as a stark reminder that risks persist.

In the mid-2000s, Innovative Aerial Services emerged as a key focus within the aviation sector, requiring careful consideration of the latest technological advancements. In response, EUROCAE took the lead in 2007 by establishing WG-73 on Unmanned Aircraft Systems (UAS). At a time when these technologies were still in their infancy, EUROCAE became a pioneer in standardisation for unmanned aviation. This work expanded further in 2012 with the launch of WG-93 on Light Remotely Piloted Aircraft System (RPAS), addressing the growing need for dedicated standards in this evolving field.

As a continuation and improvement of the work done by EUROCAE, the Working Group 105 in UAS was established in 2017, superseding WG-73 and WG-93, with the main objective to address the Unmanned Aircraft Systems topic with a bigger spectrum of applicability, covering related activities to support the needs from the industry in terms of standardisation.

WG-105 is addressing six important areas for UAS:

▸ Detect and Avoid
▸ C2 link
▸ Unmanned Traffic Management
▸ Airworthiness
▸ RPAS Automation
▸ Specific Operations Risk Assessment (SORA)

The Working Group is looking forward to covering future needs from the industry, in compliance with the latest regulations from EASA and other regulators, as well as with a strong coordination with Research and Development projects, like U-AGREE, a project funded by SESAR 3

JU enforcing the Digital European Sky by developing an integrated risk model for IAS operations, and many other projects.

Besides, EUROCAE is participating actively in ICAO activities, supporting the developments including RPAS Panel, AAM Study Group and the Drone Enable conference.

It is also worth noting the strong coordination inside EUROCAE with other Working Groups, like with WG-112 *VTOL* and WG-63 *Complex Aircraft System*.
WG-105 is composed of more than 800 experts from around the world, including members from Civil Aviation Authorities, industry, and other experts dedicated to harmonisation. The standards developed by WG-105 are key enablers for the acceptance and implementation of these innovative technologies, with 24 documents published to date, actively contributing to the safe operation of IAS worldwide.

Latest Publications:

▸ ED-269 Ch.1 "MOPS For Geofencing" (January 2024)
▸ ED-325 Vol I "Guidance Document for Special Condition Light - UAS - Medium Risk" (December 2024)
▸ ED-271A "Minimum Aviation System Performance Standards For Detect And Avoid Traffic For Remotely Piloted Aircraft Systems In Airspace Classes A-G Under IFR" (November 2024)
▸ ER-032 "European Industry Position Report on RTCA SC-147 ACAS sXu" (November 2024)

TPM: Bertrand Riveill

IAS // WG-112

Global Coordination and Alignment in VTOL Aircraft Standards

Credit: Bluenest by Globalvia

Innovative Aerial Services (IAS) is a new air transportation system enabled by Unmanned Aircraft Systems (UAS) and Vertical Take-Off and Landing (VTOL) aircraft, equipped with cutting-edge technologies. These aircraft may have a pilot on board, be remotely piloted, or operate autonomously.

WG-112 VTOL was established in 2019 to develop the industry standards necessary as Acceptable Means of Compliance (AMC) to support the EASA Special Condition on VTOL aircraft (SC-VTOL). Nowadays, WG-112 is co-chaired by representatives from EASA and Volocopter, with a Secretary from Wisk.

The group's work is currently structured around the following key areas:

▸ Electrical systems and components
▸ Lift/Thrust systems
▸ Safety assessment and Security
▸ Flight aspects
▸ Ground infrastructure and Vertiport operations
▸ Avionic systems
▸ Concept of Operations
▸ Seats
▸ Electromagnetic (EM) environment

Some of the key documents under development include:

▸ "Guidance for Common Mode Analysis for Lift/Thrust Systems in Enhanced VTOL"
▸ "Information Security Guidance for VTOL Collaborative Systems"
▸ "Guidance on the Use of Automated Ground Movement Equipment for VTOL Operations"

With nearly 700 experts involved, WG-112 is at the forefront of VTOL standards development, ensuring a safe and seamless transition towards the future of Innovative Aerial Services. While still a relatively young group, its rapid growth reflects the industry's strong commitment to shaping the future of this transformative sector. To date, the Working Group has developed 21 standards, further solidifying its leadership in this field. WG-112 continues to seek experts, and new members are welcome to contribute to this important work.

TPM: Bertrand Riveill

Virtual Centres // WG-122

Interview with Nicolas Suarez: Technical Manager at CRIDA and WG-122 Chair

In this edition of Broadcast, we are pleased to introduce Nicholas Suarez, Chair of WG-122 *Virtual Centres*. This Working Group is an important component of the Single Value Chain, delivering the standards that will be needed to support industrialisation, certification and deployment of Virtual Centres.

Tell us about your background and how you came to be involved with EUROCAE generally, and WG-122 'Virtual Centres' in particular?

I am a technical manager at CRIDA, ENAIRE's centre for research, development, and innovation in the Air Traffic Management (ATM) domain. With over 35 years of experience in developing, assessing, and validating ATM operational concepts and logical architectures, I have successfully led and participated in numerous ATM-related projects at both national and European levels. I have collaborated with key stakeholders such as ENAIRE, the Spanish Civil Aviation Authority (DGAC), EUROCONTROL, the FAA, and NASA. These projects have focused on enhancing ATM systems and improving operational efficiency.

My work has helped shape current ATM practices and provided insights into future developments. I specialise in ATM systems engineering, focusing on modelling, simulation, analysis, and evaluation of complex ATM scenarios. Additionally, I have been involved with SESAR from its early days. This involvement allows me to stay at the forefront of ATM research and development, aligning perfectly with my passion for innovation and excellence in ATM.

My participation in WG-122 was driven by two main motivations: ENAIRE's strong interest in developing Virtual Centres and my personal curiosity and interest in the field. Given my background and expertise, I saw this as a tremendous opportunity. The work of WG-122 in developing standards for virtual centres is crucial for the future of ATM. I was keen about working with other experts to shape the future of virtual centres in ATM, and I am proud to lead this initiative towards a more innovative and efficient air traffic management system.

SESAR has been supporting R&D for Virtual Centres over multiple projects, with work still underway. What do you see as the main themes deriving from this research, and how will it benefit ATM service provision in the future?

SESAR's Virtual Centre research has changed air traffic control (ATC) by decoupling ATC functions from fixed locations, creating greater operational flexibility and improving ATM. Key advancements include Remote Tower Operations (RTO), controlling airport traffic remotely, optimising airspace and potentially lowering airport costs. Virtual Area Control Centres (ACCs) consolidate control centres virtually, streamlining ATM across regions, improving flight efficiency and reducing delays. Flexible staffing dynamically adjusts controller positions based on traffic, optimising resource use and lowering staffing costs.

Virtualisation improves ATM efficiency and cost-effectiveness. Eliminating large on-site facilities reduces infrastructure costs. Controllers working from different locations increases resource utilisation, handling more traffic and optimising workload. This improves service delivery by ensuring the right resources are available, improving service quality and responsiveness.

Virtualisation enhances ATM safety and resilience. It improves situational awareness with wider data access, facilitating better decision-making. Increased redundancy allows seamless backup and recovery, ensuring continuous service and minimising disruptions. Finally, virtualisation facilitates better collaboration between ATC

units, enhancing safety and operational efficiency.

In summary, SESAR's Virtual Centre research makes ATM more flexible, efficient, safe, cost-effective, and resilient, better meeting modern ATC demands.

Where do you see the main challenges for Virtual Centre implementation?

Implementing Virtual Centres presents complex technical, operational, regulatory, and social challenges. Technically, ensuring interoperability between systems is crucial, along with maintaining data security and high network performance.

Operationally, new procedures and extensive training for air traffic controllers are essential. This training is critical to equip controllers with the skills required for virtualised operations and to ensure they can seamlessly integrate with existing systems, minimising transition disruptions. Socially, concerns about job security and the impact on the workforce must be managed through comprehensive training and support programmes.

Regulatory challenges in implementing Virtual Centres include updating regulations to accommodate new operational concepts and technologies, ensuring the framework remains relevant. Rigorous safety oversight is crucial, requiring new procedures and technologies to meet high standards and have robust monitoring mechanisms. Handling legal and liability issues is complex, involving responsibility determination in system failures or accidents, compliance with international aviation laws, and addressing jurisdictional conflicts. Clear legal frameworks and agreements are essential for the safe, efficient, and compliant operation of Virtual Centres in air traffic management.

Overcoming these challenges is critical for realising the full potential of Virtual Centres, ensuring enhanced efficiency, safety, and resilience. Robust standards are essential, providing a consistent framework for interoperability, data security, and operational procedures. Standards ensure legal recognition and compliance, facilitating integration and collaboration. By adhering to these standards, the aviation industry can achieve a more resilient and responsive ATM system.

What will the outcomes from EUROCAE WG-122 deliver to support Virtual Centre implementation? What does EUROCAE need to do to support the Strategic Deployment Objective of 'Virtualisation of operations' in the ATM Master Plan 2025?

EUROCAE WG-122 is developing standards for virtual centre implementation, performing four key tasks. First, information gathering (ER-026) described the context and work programme. Second, developing a standardisation framework and common vocabulary (ER-029) classified virtual centre services. Third, refining the service description template (ED-XXX) provides implementation guidance. Finally, developing the standard itself defines basic virtual control centre services.

These WG-122 deliverables are crucial for the European ATM Master Plan 2025's "Virtualisation of operations" objective. The standards provide a common framework for design, implementation, and operation, ensuring interoperability between different implementations, vital for network-wide benefits. They also ensure safety by establishing clear requirements and procedures, mitigating risks. They promote efficiency by fostering consistent implementation and optimal resource use, and aid deployment by providing a clear roadmap for stakeholders.

However, the WG-122 deliverables alone are insufficient. Continued research and development are needed to address remaining challenges. Real-world pilots are needed to validate feasibility and identify unforeseen challenges. Collaboration among stakeholders is essential for alignment and interoperability. Finally, training and education are required to develop workforce expertise. Combining WG-122's standardisation with these actions will effectively achieve the "Virtualisation of operations" objective within the ATM Master Plan 2025.

We thank Nicolas and all contributors to WG-122 for the excellent collaboration and contributions to the standardisation activities.

TPM: Alex Milns

IT & Software // WG-114

Advancing AI Standards in Aviation: EUROCAE WG-114's Latest Milestones

Since its establishment in June 2019, EUROCAE WG-114/SAE G-34 *Artificial Intelligence in Aviation* **has been working towards creating a unified standard for the aviation industry. This standard aims to provide detailed guidance for certifying and approving safety-critical aeronautical products that utilise Artificial Intelligence (AI) and Machine Learning (ML). The ultimate goal is for this standard to be recognised as an Acceptable Means of Compliance (AMC) by Competent Authorities, ensuring that AI/ML systems meet stringent safety and reliability criteria for integration into aviation.**

At the beginning of 2025, the group achieved several milestones:

▶ The completion of a stable draft of ED-324 "Process Standard for Development and Certification Approval of Aeronautical Products Implementing AI", represents a significant achievement in the journey towards integrating AI/ML technologies into aviation. This draft, aligned with EASA Concept Papers Levels 1 and 2, lays a robust foundation for the certification and approval of AI/ML systems in the aviation sector.

▶ The publication of EUROCAE Report ER-27 "Artificial Intelligence in Aeronautical Safety-Related Systems Taxonomy" in December 2024 is a pivotal development in the standardisation of AI/ML technologies in aviation. This report provides a structured framework for categorising AI/ML components and processes, which is essential for the practical application of the ED-324 guidelines. By offering a clear and consistent taxonomy, ER-27 helps ensure that all stakeholders have a common understanding of the terms and concepts used in the guidelines.

▶ Joining the EASA Rule Making Task 0742 marks a significant step in this alignment process. It ensures that WG-114's work supports the European regulatory framework for AI in aviation, reinforcing the group's commitment to developing standards that meet the highest safety and reliability criteria. This unified approach not only strengthens the regulatory foundation for AI/ML integration but also builds trust and confidence among stakeholders, paving the way for innovative advancements in the aviation industry.

The Open Consultation phase of ED-324, planned for 2025, demonstrates WG-114's commitment to inclusivity and transparency. By inviting feedback from a broad range of cross-industry stakeholders, the group will refine the standard and ensure it meets the needs of the entire aviation community. This phase is crucial for building consensus and ensuring that the final standard is both comprehensive and widely accepted.

Looking ahead, the milestones achieved and the planned activities in WG-114 represent significant progress towards the safe and effective integration of AI/ML in aviation. The group's proactive approach, collaborative efforts, and commitment to addressing both technical and operational challenges underscore their dedication to advancing aviation safety and innovation. As the entire aviation industry continues to evolve, the work of WG-114 will play a crucial role in shaping its future.

TPM: Thuc Nguyen

Watch our AI in Aviation video series:

ATM // WG-130

WG-130 Takes Off: Shaping the Future of ATM/ANS Standards

On 10 October 2024, the EUROCAE Council officially approved the establishment of WG-130 ATM/ANS Supporting Standards.

This newly formed Working Group is tasked with identifying and facilitating the development of standards and related deliverables. It will also play an important role, coordinating with existing Working Groups as needed, to support the Air Traffic Management (ATM) and Air Navigation Services (ANS) Conformity Assessment Framework. This framework requires the attestation of ATM/ANS equipment in line with Regulation (EU) 2023/1768.

WG-130 has already attracted over 100 participants representing a wide range of member organisations, including Aviation Regulatory Authorities, ATM/ANS System Manufacturers and Suppliers, and Air Navigation Service Providers. The group is co-chaired by José Luis García-Chico from EASA and Pascal Rohault from Thales, with Serge Coloigner from DSNA serving as secretary.

Since its inception, WG-130 has held three plenary meetings, reflecting the high level of interest and engagement from EUROCAE members. To support its ambitious work programme, the group has established several domain-specific task groups focused on reviewing existing EUROCAE standards. These task groups cover key ATM/ANS areas such as Air Traffic Services, Surveillance, Communications, and Systems Assurance.

The primary goal of this review is to assess the potential for greater use of EUROCAE standards within the EASA ATM/ANS Conformity Assessment Framework. It will help identify whether existing standards require updates and uncover potential gaps that could be addressed through new standards for ATM/ANS systems and constituents.

WG-130's first deliverable will be a comprehensive report analysing the suitability of current standards to support safe, interoperable operations. This report will also outline a work programme to address any necessary updates.

As WG-130 continues to evolve, EUROCAE warmly welcomes new members to join and contribute their expertise. The group's outcomes - and any new or revised standards developed - are expected to play a key role in supporting certification and declaration requirements for ATM/ANS equipment across Europe.

TPM: Alex Milns

RF Spectrum // WG-133

Combatting Jamming and Spoofing: WG-133's Mission in Revolutionising GNSS Antennas for Aviation

By Ettore Canestri and Franck Haddad (EUSPA)

The use of GNSS in aviation allows to enhance navigation performances for aviation. GNSS based technologies are now widely used for aircraft navigation for different phases of flight including departure, En Route and approaches.

One of the main weaknesses of current GNSS technologies is its low received signal power which are jammed or spoofed daily in some regions of the world.

With the increasing usage of GNSS for aviation, it clearly appears that resilience of airborne equipment to such threats is strategical for operations availability and continuity while maintaining the required integrity and accuracy. Beyond that, multiple systems, both in aircrafts and in CNS ground infrastructure, make use of GNSS time outputs, reinforcing the need for resilient GNSS signals. Indeed, several incidents associated with jamming issues have been reported so far and seem to increase over the time (i:e: Eurocontrol Think Paper#9 March 2021 "Does Radio Frequency Interference to Satellite Navigation pose an increasing threat to Network efficiency, cost-effectiveness and ultimately safety?").

During last years, several GNSS signal degradations caused by jamming not intentionally targeting aircraft significantly affected concerned airspace and the associated traffic management.

While new requirements have been injected to enhance future GNSS equipment resilience to spoofing and jamming, airborne receiver can only detect and isolate some of those effects with a limited efficiency to maintain continuity of operations.

To enhance continuity of operations in presence of Radio Frequency Interference (RFI), usage of active antennas such as Controlled Radiation Pattern Antenna (CRPA) used by military aircraft is a key enabler to improve civil aviation resilience to jamming and spoofing. These antennas are designed to attenuate jamming sources effects on satellite signal tracking.

CRPA antennas are usually composed with multi-patches antenna (from 4 to 7) and a dedicated electronic RF module oversees signal analysis and treatment, adjusting gain for the truth signals and attenuating jamming sources. This is achieved through signals analysis and beam forming of antenna gain.

GNSS antennas are significant contributors to GNSS aviation performance. The new Working Group 133 is tasked with the development of standards supporting CRPA technology. This new work will increase GNSS reliability and resilience when used in aircraft operations, while aiming at avoiding changes of receiver specifications.

The first task of the WG is to ensure compliance with international export control regulations and to avoid any infringement of such regulations globally. Recently, the US Department of State announced a revision of the International Traffic in Arms Regulations (ITAR) removing CRPA for PNT, with the intention to facilitate civil global navigation system resiliency, to be effective on September 2025. With the removal of CRPA from the US Munition List, this technology will become subject to the Export Administration Regulation (EAR).

CRPAs represent a significant advancement in safe-guarding commercial aviation against jamming and spoofing threats. Their adaptive capabilities and focus on maintaining GNSS signal integrity make them indispensable in today's aviation landscape.

....

Interested in this topic? WG-133 is currently looking for experts to join the discussion. Visit the EUROCAE website to learn more and get involved today.

TPM: Mark Watson

RF Spectrum // WG-124

Aeronautical Radio Frequency (RF) Systems: Regulatory Framework and Operational Considerations

The management and regulation of aeronautical radio frequency (RF) systems are critical to ensuring the safety and efficiency of modern aviation operations. As technological advancements continue to shape the aviation industry, the need for a robust framework to guide the use of RF spectrum becomes increasingly important. The joint EUROCAE/RTCA report (ER-036/RR-002) serves as a comprehensive resource, providing valuable insights into the evolution of RF systems and their role in supporting essential aviation functions. It aims to bridge the gap between the aerospace sector and telecommunications regulators, offering a foundation for collaboration and informed decision-making. This report addresses the challenges and opportunities associated with the growing demand for RF spectrum in aviation, outlining key considerations for its management and future development.

This report provides a comprehensive overview of the use and management of RF spectrum in aviation. It covers the use of RF spectrum, the evolution of aeronautical spectrum needs, and the high-level aviation concept of operations:

▶ **Use of RF Spectrum by Aviation:** the evolution from basic instrumentation and communication methods to advanced RF systems used today.

▶ **Evolution of Aeronautical Spectrum Needs and Usage:** given the expected growth in aviation and increasing demands from other industries, the aviation sector is considering the modernisation of existing systems. A goal would be to provide better spectrum efficiency and better resilience to interference to enable increased capacity for new aviation safety applications and for newcomers like Uncrewed Aircraft Systems (UAS) and Advanced Air Mobility (AAM). It will include efforts in digitalisation of services and improved spectrum coexistence.

▶ **High-Level Aviation Concept of Operations:** a high-level overview of how aviation operations are performed, including the roles of aviation safety regulators, air navigation service providers, and the design of airspace to maximise safety and efficiency, charted procedures and flight operations.

▶ **Future Technology Development and New Entrants:** technologies like L-band Digital Aeronautical Communications System (LDACS), Wireless Avionics Intra-Communication (WAIC), and the integration of Uncrewed Aircraft Systems / Remotely Piloted Aircraft Systems (UAS/RPAS) and commercial space transportation into the aviation ecosystem.

▶ **Design, Certification, and Installation of Aviation Systems:** the certification process for new or modified aircraft, including aircraft system safety assessment, development assurance levels and RF Performance Considerations.

▶ **High-Level Description of Aviation RF Systems:** an overview of various communication, navigation, and surveillance systems used in aviation, including ground-based and satellite voice and data communications systems, and future digital data communications systems, as well as systems installed in many aircraft today, to prevent accidents which have occurred in the past, or to aid in search and rescue efforts such as radar altimeters and weather radar.

The report underscores the significance of effective RF spectrum management, the maintenance of robust safety margins, and the necessity for modernisation to accommodate the future growth of aviation amidst the evolving demands of other industries.

WG-124 will now focus on drafting ED-xxx 'Spectrum Guidance for Developers of Standards for Aviation Radio Frequency Systems'. The guidance should be applied by other Working Groups to all new equipment standards developments (e.g. MOPS) or revisions of existing standards.

TPM: Mark Watson

System Engineering // WG-128

WG-128's Role in Updating ED-80 Design Assurance Standards

The rapid advancement of airborne electronic hardware (AEH) technology has presented new challenges and opportunities for the aviation industry, particularly in the areas of certification and design assurance. In response to these evolving demands, EUROCAE's WG-128, in collaboration with RTCA SC-243, is working to update and refine ED-80/DO-254, a cornerstone document for the certification of AEH. First published in April 2000, ED-80, "Design Assurance Guidance for Airborne Electronic Hardware", has been instrumental in guiding the industry through certification processes. Recognised by key airworthiness authorities such as EASA and the FAA, ED-80, alongside its counterpart RTCA DO-254, provides a rigorous, process-oriented framework that ensures safety, requirement-based verification, and effective development assurance practices.

As AEH technology continues to evolve, the original ED-80 requires updates to address emerging trends in the field, such as the use of multicore processors and model-based development approaches. WG-128, chaired by Pascal Pampagnin of Airbus and James Bezamat of Cetrac, has been diligently working on these updates to ensure that certification standards remain relevant and effective. The initial activity of WG-128 involved the preparation of an Internal Report, "Strategy for the Updating of ED-80 Design Assurance Guidance for Airborne Electronic Hardware", which outlines the required changes and an update plan for the document. This report has been shared with WG-128 members and serves as the foundation for the forthcoming revisions.

Based on this report, in November 2024, the EUROCAE Technical Advisory Committee (TAC) approved the launch of ED-80 Revision A, which incorporated industry experience accumulated over the years and reflected advancements in both technology and certification practices. One key addition to Revision A was a Frequently Asked Questions (FAQ) document, aimed at providing further clarification on the content of DO-254/ED-80 and helping stakeholders navigate the certification process more effectively.

The Kick-Off meeting for ED-80/DO-254 Revision A was successfully held on 27 February 2025, at Joby Aviation in Santa Cruz, marking an important milestone in the evolution of airborne electronic hardware certification standards. This meeting set the stage for the continued advancement of AEH certification, ensuring that it remains aligned with the rapid technological changes in the industry while prioritising safety, reliability, and innovation.

TPM: Atiqah Pillain
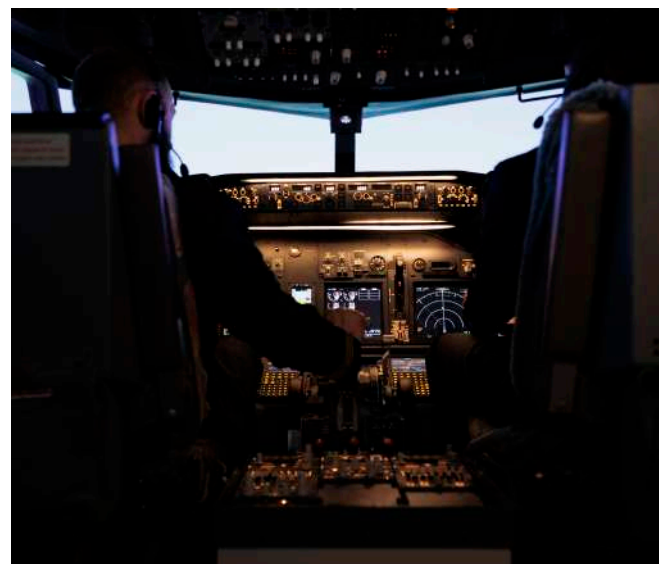

Avionics // WG-129

WG-129's Efforts in Developing Take-Off Performance Monitoring Systems

In 2015, EUROCAE Working Group WG-94 developed a pioneering Technical Report that laid the groundwork for the development of Take-Off Performance Monitoring (TOPM) Systems. This report outlined the fundamental concepts of TOPM systems and recommended reassessing the need for a Minimum Operational Performance Standard (MOPS) or Minimum Aviation System Performance Standards (MASPS) in the medium term. After the completion of this report, WG-94 was disbanded, paving the way for the formation of WG-129, which continues to advance the requirements and innovations in TOPM systems.

The need for such systems became particularly evident following a serious safety incident reported by the UK Civil Aviation Authority (CAA). In a Serious Incident Report (AAIB-27895), the UK Air Accidents Investigation Branch (AAIB) identified a case where an aircraft took off with insufficient power selected, leading to a longer-than-intended runway use. Fortunately, the aircraft was able to become airborne and reach a safe altitude after the crew applied full power. However, this incident highlighted a significant gap in take-off performance monitoring, as over the past five years, 32 similar incidents were reported, underscoring the critical need for improved monitoring systems.

Currently, there are no operational or aviation performance requirements for TOPM systems. To address this, WG-129 has undertaken a technology assessment to evaluate current solutions for Take-Off Performance Awareness and Alerting Systems (TOPAAS). The goal is to develop a system that provides both visual and aural alerts to the flight crew if acceleration is insufficient to reach take-off speed before a critical point on the runway, enabling the Pilot Flying (PF) to take corrective action in time.

In collaboration with RTCA Special Committee SC-244, WG-129 developed an Internal Report outlining the technologies available to support TOPAAS. This report has formed the foundation for the creation of a new MOPS that aims to provide standardised guidance on the design and operation of these systems.
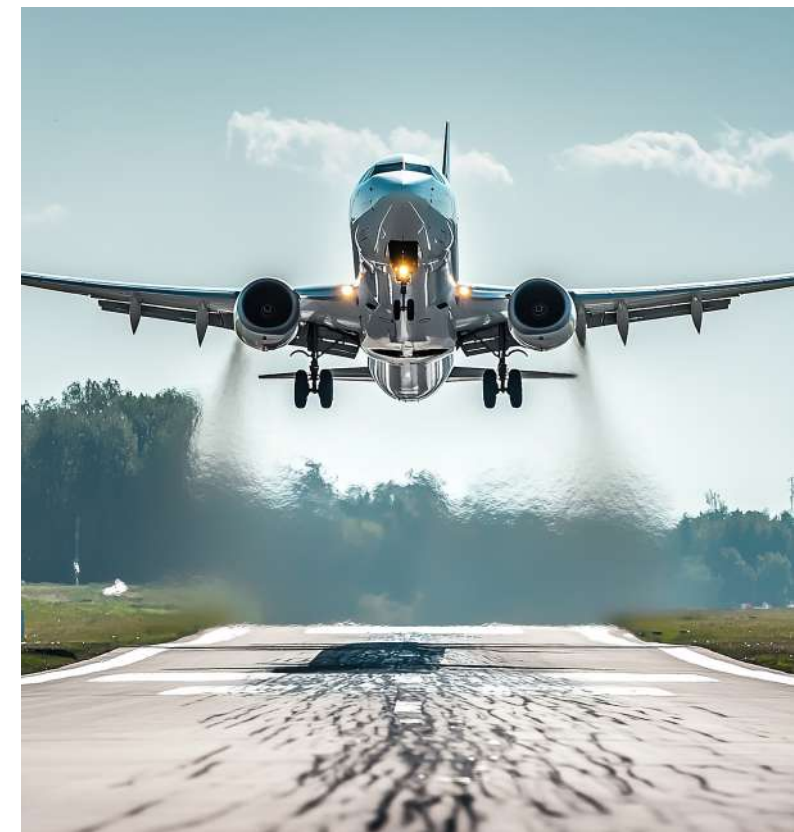
The anticipated MOPS will ensure that pilots receive timely alerts during take-off if acceleration is not sufficient to meet the required speed before the designated point on the runway. The system's visual and aural alerts will give the pilot flying the opportunity to take corrective action to avoid performance failures. With the standardisation effort underway, the final MOPS is scheduled for publication in September 2026, marking a significant step toward enhancing flight safety through improved performance monitoring systems.

TPM: Atiqah Pillain

Promoting Standards

Promoting our Standards at Industry Events

In the ever-changing landscape of aviation standards and innovation, active involvement in industry events is crucial. EUROCAE regards these occasions as vital opportunities to promote our standards, showcase the significant work of our diverse Working Groups, and enhance collaboration across the global aviation community. Our participation goes beyond mere attendance; it is a strategic commitment to knowledge exchange, networking, and shaping the discussions that will influence the future of aviation.

1.

2.

3.

4.

5.

6.

7.

8.

1. **High Integrity Software Conference,** 22 October 2024, Wales, United Kingdom
2. **EUROCONTROL C-UAS Workshop**, 4-5 November 2024, Brussels, Belgium
3. **Aviation Cybersecurity Conference**, 19-20 November 2024, London, United Kingdom
4. **China International Standardization Forum**, 21-22 November 2024, Beijing, China (virtual)
5. **A decade of Transformation: Modernising European ATM As One**, 4 December 2024, Brussels, Belgium
6. **NATO Use of Civil Standards Workshop**, 11-13 February 2025, Athens, Greece
7. **SESAR Annual Conference**, 9-10 September 2024, Brussels, Belgium
8. **Xponential Europe**, 18-10 February 2025, Düsseldorf, Germany

Setting the Standard:

Announcing the Winners of the 2025 EUROCAE Awards

With over 5.000 participants from nearly 500 member organisations, EUROCAE brings together a dedicated community of aviation experts committed to developing standards that enhance safety, efficiency, and innovation in aviation.

Each member plays a vital role in shaping the future of the industry, but some go above and beyond in their contributions. These exceptional individuals take on key responsibilities, invest significant time and expertise, and demonstrate an unwavering commitment to achieving the highest standards.

To recognise their outstanding efforts, EUROCAE presents its annual Awards, celebrating those who have made remarkable contributions to the success of our Working Groups.

We extend our deepest gratitude to all our members for their dedication and congratulate the 2025 EUROCAE Award winners for their extraordinary achievements.

President's Award:
Bruno Ayral (Thales LAS France & EUROCAE Council Member)

Lifetime Achievement Award:
Ross Hannan (Aeronautique Associates Limited & WG-117)

Working Group Leadership Award:
Luc Emberger (Airbus & WG-78)

Best Contribution Award:
Christophe Ouzeau (Collins Aerospace & WG-62)

Women in EUROCAE Award:
Amanda Hoprich (AVMET Applications & WG-76)

Global Harmonisation Award:
Sarah Stern (Boeing & WG-72)

International Award:
Steve Bellingham (NAV Canada & WG-105)

EUROCAE President Award Winner

An Exclusive Interview with Bruno Ayral (Thales LAS France & EUROCAE Council Member)

In the ever-evolving world of aviation, certain individuals stand out for their visionary leadership, unwavering dedication, and remarkable contributions to advancing global aviation standards. This year, EUROCAE proudly honors one such outstanding professional - Bruno Ayral (Thales), the recipient of the President Award 2025.

With a distinguished career marked by technical excellence and a deep commitment to aviation safety and innovation, Bruno has played a pivotal role in shaping the future of air travel through his work at Thales and active involvement in EUROCAE activities. Elected as a EUROCAE Council Member in 2007, Bruno has demonstrated exceptional dedication, actively participating in nearly 100 Council meetings over the years. His contributions have significantly influenced the strategic direction and development of aviation standards on a global scale.

1. Bruno, congratulations on receiving the EUROCAE President Award! What does this recognition mean to you personally and professionally?

Honestly, it is a great honour for me to receive this award. It acknowledges that my more than fifteen years on the EUROCAE Council have had some impact. It is true that EUROCAE has evolved significantly over the years, and I hope to have contributed to this transformation.

2. Reflecting on your career, what initially inspired you to pursue a path in aviation, and how did your journey at Thales begin?

I began my career in air traffic management (and at Thales) due to my strong interest in human-machine interaction. After earning several degrees in computer science and software development, and having had the opportunity to work alongside human factors experts, I sought a role in a field where human-machine interaction was a key concern. At the time, the literature highlighted two main domains: nuclear power plant monitoring and air traffic control. Thales presented an opportunity in the latter… The field of air traffic management and aviation then proved to be so rich and complex that it has kept me engaged ever since.

3. Throughout your work with EUROCAE, you've been involved in key projects. Can you share one or two that had a significant impact on you and the industry?

As a long-standing member of the EUROCAE Council, my involvement has primarily focused on projects that have shaped EUROCAE's structure, organisation, and working methods. Together with the Director General and the Secretariat, the Council has continuously worked to enhance EUROCAE's efficiency, ensuring it delivers the best possible service to its members - namely, high-quality, consensus-based standards that meet the industry's needs.

4. Innovation and standardisation often go hand in hand in aviation. What has been the biggest challenge you've faced in driving new standards, and how did you overcome it?

Standardisation is a complex endeavour, and its relationship with innovation can often be challenging to grasp. On one hand, there is broad agreement that in-depth technical analysis is essential to developing robust standards that effectively support industrial advancements. Additionally, achieving consensus is crucial to ensuring widespread adoption across the industry—all of which require time. On the other hand, there is increasing pressure to shorten the time needed to produce standards to facilitate the rapid deployment of innovative solutions, creating a clear paradox.

This challenge is particularly evident with complex standards that require experimental validation of their technical specifications. In such cases, a tailored approach is necessary, allowing the standard's content to be iteratively refined and adjusted as validation activities progress.

5. Collaboration is at the heart of EUROCAE's mission. How has working with international stakeholders and experts influenced your perspective on aviation standardisation?

The ATM business at Thales is undeniably global. It has always been a priority for us to ensure that solutions developed in one part of the world can be successfully implemented in other regions. One of EUROCAE's recognised strengths is that its standards are widely accepted internationally, often thanks to collaboration with other standardisation organisations, such as RTCA.

6. As a leader in the field, what advice would you give to young professionals who aspire to make meaningful contributions to aviation?

There are certainly various possibilities, but in this particular context, I would highly recommend taking an active role in a EUROCAE Working Group!

7. Looking ahead, how do you see the future of aviation evolving, and what role do you believe organisations like EUROCAE will play in addressing emerging challenges?

The evolution of aviation will likely involve exchanging and processing an increasing amount of data to optimise operations—such as managing traffic flows to accommodate more flights without delays and optimising flight trajectories to reduce environmental impact. Achieving this will require advancing system interoperability to the next level, which will undoubtedly rely on a comprehensive set of new standards. Additionally, we anticipate transformations in areas such as service-oriented architectures, cybersecurity, and certification, all of which will need to be supported by high-quality standards.

8. Finally, is there a message you'd like to share with your colleagues, collaborators, and the broader EUROCAE community as you receive this award?

As I approach the end of my professional career—one that I have thoroughly enjoyed—I can only quote Douglas Adams to say to the entire community: "So long, and thanks for all the fish!"

Overview & Dates

EUROCAE Training Programmes

Safety & Development Processes for Civil Aircraft

Introduction to interrelated guideline documents (ED-79B "Guidelines for Development of Civil Aircraft and Systems" and ED-135 "Guidelines and Methods for Conducting the Safety Assessment Process on Civil Airborne Systems and Equipment"), which address the recommended practices for the development and safety assessment of an aircraft and/or its systems.

Non-member 1.600 €

Voice over Internet Protocol (VoIP)

Discover and develop a comprehensive view of the different components of a VoIP ATM system and the mutual interfaces through a full overview of the latest updated ED-136 "Voice over Internet Protocol (VoIP) Air Traffic Management (ATM) System Operational and Technical Requirements", ED-137 "Interoperability Standard for VOIP ATM Components", and ED-138 "Network Requirements and Performances for Voice over Internet Protocol (VoIP) Air Traffic Management (ATM) Systems".

Non-member 1.400 €

Aviation software standards - ATM

Understand the ED-109 "Software Integrity Assurance Considerations for Communication, Navigation, Surveillance and Air Traffic Management (CNS/ATM) Systems" standard and some guidance on its application to support CNS/ATM Software Design, Development up to qualification/certification.

Non-member 1.400 €

Aviation software standards - Airborne

Understand ED-12C "Software Considerations in Airborne Systems and Equipment Certification" principles and how to build a software design system capable of fulfilling ED-12C's objectives. The course also addresses tool qualification (ED-215) and introduces the technological supplements (ED-216, ED-217, ED-218).

Non-member 1.400 €

Electronic hardware in airborne systems

Understand ED-80 "Design Assurance Guidance for Airborne Electronic Hardware" and how it is used and complemented by major Certification Authorities.

Non-member 1.400 €

How to book trainings:

Places are limited, so interested persons are advised to book a spot as soon as possible using the registration forms that are available scanning this QR code:

Discounts on Fees:
Member: -20%, Student: -90%

In addition to our standard training courses, EUROCAE offers in-house training for organisations with larger groups. Our expert instructors can deliver tailored courses directly at your facilities, ensuring a more convenient and cost-effective solution for your team.

For further information, please contact us at trainings@eurocae.net

Aircraft cyber security and continuing airworthiness

Adopt a standards-led approach to cyber security in aviation and understand cyber security regulations for development and operation of aircraft, aircraft systems and constituent hardware and software.

Non-member 1.600 €

Cyber security management for aviation organisations

Create awareness in aviation cyber security and guide through the relevant regulatory and standards landscape. Support compliance to and application of those with hands-on exercises.

Non-member 1.600 €

UAS airworthiness and safety

Encompass the whole subject of UAS airworthiness approvals. You will develop a complete picture while "zooming" into a number of peculiar issues, such as Safety Assessment process activities and Operational Risk Assessment.

Non-member 1.600 €

Cockpit voice recorder (CVR)

Understand ED-112A "MOPS for Crash Protected Airborne Recorder Systems" and its practical application in the frame of CVR inspection as per AIR-OPS 965-2012.

Non-member 1.600 €

EUROCAE

New Members

FULL MEMBERS:	
Beta Technologies (United States)	BETA
Eva Aviation (Japan)	EVA
GIFAS (France)	GIFAS
Hoper (Greece)	hoper
It Depends Aero (Germany)	IDA It Depends Aero
ReDat Recording (Czech Republic)	ReDat Recording
SMAN Crew (Germany)	SMAN Crew
TUALCOM (Turkey)	TUALCOM
Ubifly Technologies (India)	THE ePLANE CO.
Via Technology Ltd (UK)	VA

LIMITED MEMBERS:	
Airways (Israel)	AIRWAYZ
FEV Creltec (Germany)	FeV
ISDEFE SA (Spain)	Isdefe
Mainblades Inspections B.V. (Netherlands)	mainblades
PowerCell Sweden (Sweden)	
Sarsys (Sweden)	SARSYS
Zipline (United States)	Zipline

Membership benefits

Why become a member of EUROCAE?

FULL MEMBER

As a full member of EUROCAE, your organisation will enjoy substantial benefits that enhance your aviation business:

▸ Participate in as many EUROCAE Working Groups or Task Forces as desired.

▸ Get free access to all EUROCAE Documents (ED) and EUROCAE Reports (ER).

▸ Gain access to all Working Group documents, such as Terms of Reference (TOR), meeting minutes, reports, and drafts of WG deliverables.

▸ Propose new activities under the EUROCAE banner.

▸ Propose your representative for election to the EUROCAE Council, appointment to the EUROCAE Technical Advisory Committee, or election as a Working Group Chairperson.

▸ Vote at the General Assembly and drive the future of standards in aviation.

▸ Enjoy a network of partners (private and public) who are key actors in future aviation changes.

▸ Receive special rates for the EUROCAE Annual Symposium.

LIMITED MEMBER

If you wish to participate in a single Working Group, a **Limited Membership** is right for your organisation..

Limited Members are informed about the ongoing activities of the specific Working Group in which they participate and benefit from free soft copies of any EUROCAE Document developed by that particular Working Group. They also receive a 30% discount on the purchase of any EDs from the EUROCAE catalogue and special rates for EUROCAE training and the Annual Symposium.

CANDIDATE MEMBER

Candidate Membership grants the right to access the Workspace of 1 Working Group for a 3-month trial period. After this period, access will be automatically suspended unless an application for Full or Limited Membership has been received.

BECOME A MEMBER NOW:

# From Europe to the World: EUROCAE Expands Membership to 45 Countries

We are thrilled to share a major milestone in our commitment to global collaboration: for the first time, our membership now spans 45 countries worldwide!

While proudly rooted in Europe, we continue to play a key role in advancing aviation standards on a global scale.

We extend our heartfelt gratitude to all our members for their continued support and active engagement.

Interested in becoming a member? Find out more on our website and join this worldwide community.

Australia	Estonia	Japan	Portugal	Sweden
Austria	Finland	Kazakhstan	Romania	Switzerland
Belgium	France	Luxembourg	Saudi Arabia	Taiwan
Brazil	Germany	Malta	Singapur	Turkey
Bulgaria	Hungary	Mexico	Slovak Republic	UAE
Canada	Iceland	Netherlands	Slovenia	United Kingdom
China	Ireland	New Zeland	South Africa	United States
Czech Republic	Israel	Norway	South Korea	
Denmark	Italy	Poland	Spain	
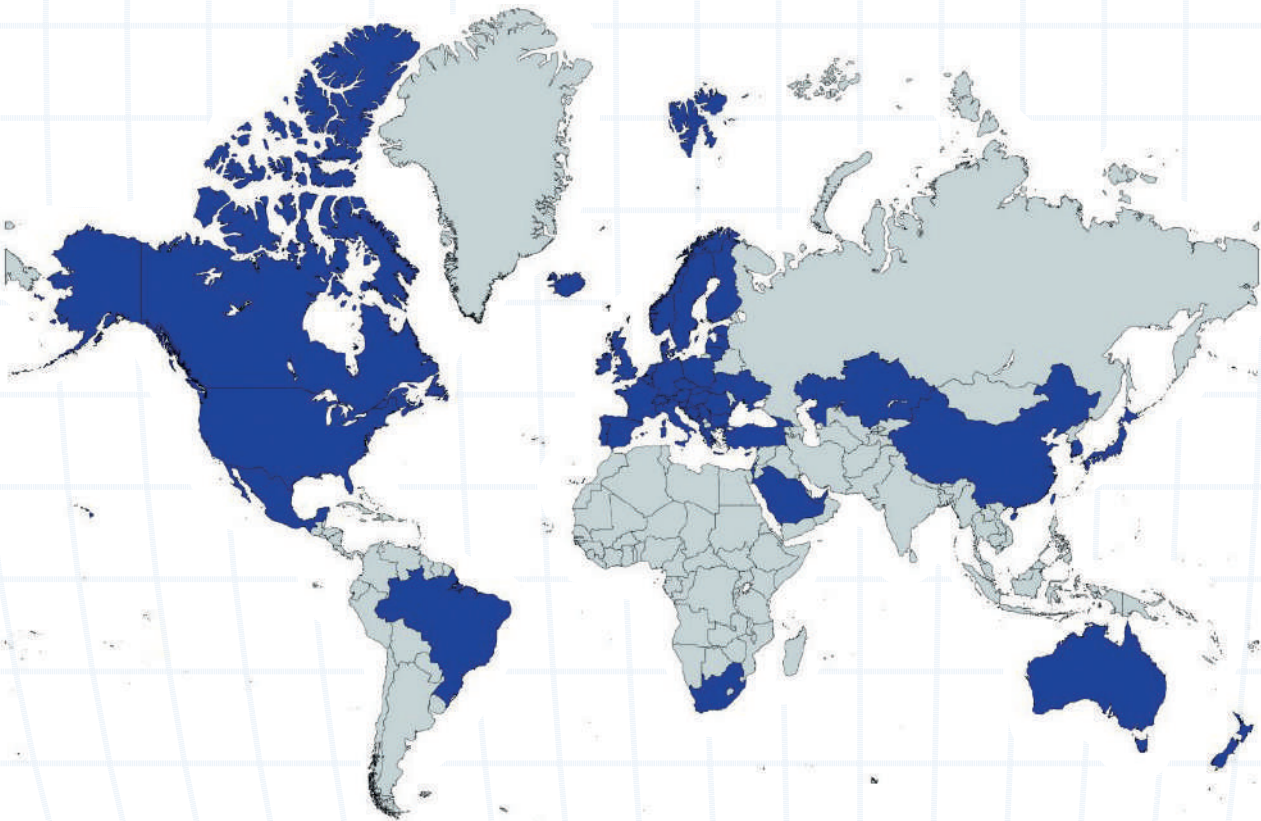
MADRID - 23 & 24 APRIL 2025

EUROCAE SYMPOSIUM & GENERAL ASSEMBLY

EUROCAE

Gold Sponsors

AIRBUS

INDRA

ENAIRE

Silver Sponsor

Collins Aerospace
An RTX Business

Partner

European Commission

Bronze Sponsors

FREQUENTIS

ANZEN
SYSTEM SAFETY AND DIGITAL ENGINEERING

skyguide

Honeywell

EUROCAE
Latest Publications

EUROCAE Documents (EDs) are developed by dedicated Working Groups composed of distinguished experts in their respective fi elds. Their creation follows a rigorous, well-established process grounded in the principles of openness, transparency, and balanced representation of all relevant stakeholders.

Many EDs are developed in collaboration with international partners and are globally recognised for their high quality and cutting-edge technical content. They encompass a wide range of documents, including system and equipment performance standards, safety and performance requirements, interoperability requirements, technical specifi cations, and guidance material. Some documents focus on airborne systems, others on ground-based infrastructure (primarily CNS and ATM), while many address common requirements for both air and ground operations.

EUROCAE Documents are widely referenced as Means of Compliance with regulatory frameworks, notably by organisations such as EASA and ICAO.

ED REFERENCE	ED TITLE	PUBLICATION DATE
ED-102B Ch. 1	MOPS for 1090 MHz Extended Squitter ADS-B and TIS-B	21 March 2025
ED-105	Aircraft Lightning Test Methods	17 March 2025
ED-332	Guidance for Aircraft High Voltage Power Quality	12 March 2025
ED-336	Guidelines for SAIL II application of SORA	10 March 2025
ED-334	Guidance for Common mode analysis for lift - thrust system for VTOL enhanced category	5 March 2025
ED-331	Guidance for the use of Automated Ground Movement Equipment to move VTOL Aircraft with Passengers Onboard at Vertiports	5 March 2025
ED-323	MOPS for Required Navigation Performance for Area Navigation	4 March 2025
ED-75F	MASPS - Required Navigation Performance for Area Navigation	4 March 2025
ED-305	Information Security Guidance for VTOL	27 February 2025
ED-146A	Guidelines for Test and Validation Related to Airport CDM Interoperability	6 February 2025
ED-141A	Minimum Technical Specifications for Airport CDM Systems	6 February 2025
ED-137/4C Ch. 2	Interoperability Standard for VoIP ATM Components – Volume 4 Recording	23 January 2025
ED-269 Ch. 1	MOPS for Geofencing	13 January 2025
ED-327	MASPS for EVS CVS EFVS	8 January 2025
ED-326	MASPS for SVS SVGS CVS	8 January 2025
ED-325 Vol. I	Guidance Document for Special Condition Light - UAS - Medium Risk	6 January 2025
ED-76B Corr. 1	Standards for Processing Aeronautical Data	19 December 2024
ED-231B Ch. 1	INTEROP for Baseline 2 ATS Data Communications - ATN Baseline 1 Accommodation	19 December 2024
ER-027	Artificial Intelligence in Aeronautical Safety-Related Systems Taxonomy	12 December 2024
ER-032	European Industry Position Report on RTCA SC-147 ACAS sXu	28 November 2024
ED-271A	MASPS for Detect and Avoid Traffic for Remotely Piloted Aircraft Systems in Airspace Classes A-G Under IFR	25 November 2024
ER-034	Hydrogen Fueling Stations for Airports in both gaseous and liquid form	13 November 2024

EUROCAE Secretariat

Our Team

Explore our organisation and get to know the people working to advance the future of aviation standards.

Director General
Anna von Groote

Communication Manager
Yago Grela

Publications & Training Manager
Laura Rahon

Administrative & Accounting Manager
Madhvee Jha

Executive Assistant & Office Manager
Elizabeth Ficadiere

Senior Technical Programme Manager
Anna Guégan

Technical Programme Manager
Alex Milns

Technical Programme Manager
Tri Thuc Nguyen

Technical Programme Manager
Atiqah Pillain

Technical Programme Manager
Bertrand Riveill

Technical Programme Manager
Alain Vallée

Technical Programme Manager
Mark Watson

EUROCAE Liaison
Alexander Engel

EUROCAE | LE TRIANGLE | 9-23 RUE PAUL LAFARGUE | 93200 SAINT DENIS | FRANCE
WWW.EUROCAE.NET