EUROCAE

# ANNUAL REPORT

## 2024

THE EUROPEAN ORGANISATION
FOR CIVIL AVIATION EQUIPMENT

L'ORGANISATION EUROPEENNE
POUR L'EQUIPEMENT DE L'AVIATION CIVILE

# Content



**Dear EUROCAE members, partners and friends,**

as Director General of EUROCAE, it is a pleasure to share with you this editorial for our 2024 Annual Report – a moment I always look forward to, as it offers the opportunity to reflect on the milestones of the past year. It is always amazing to stand back and reflect on what has happened during the year – and 2024 was a busy one as you will (re)discover while reading this annual report.

At the time of writing, EUROCAE counts nearly 500 members worldwide, bringing together a vibrant community of 5,000 experts. I am proud to witness the growing efficiency and impact of our standardisation activities, with 50 active Working Groups (WGs) developing high-quality standards that support both European and global aviation priorities.

Over the past year, EUROCAE has published 29 deliverables, ran 30 Open Consultations, and launched 4 new Working Groups:

- WG-128 Airborne Electronic Hardware Design Assurance.
- WG-129 Take Off Performance Monitoring System.
- WG-130 ATM/ANS Supporting Standards.
- WG-131 Terrain Awareness and Warning System.

This brought the total number of active WGs to 50 – a stable high number compared to the last few years and an indication of the increasing need for consensus-based standards. These WGs work in 11 technical domains, spanning air traffic management, airports, avionics, cabin, innovative aerial services, space-based systems, software, security, RF spectrum, system engineering and of course environmental sustainability.

One of our most dynamic areas of work is Artificial Intelligence. To highlight the depth of expertise within our WGs, we launched an engaging video series featuring experts from WG-114 Artificial Intelligence. Each month, this series dives into key topics, sparking conversation and fostering community engagement.

A major focus of our activities is the development of standards enabling the deployment of innovative technologies. In this context, the Technical Advisory Committee decided to map the EUROCAE Technical Work Programme to the newly adopted European ATM Master Plan and its Strategic Deployment Objectives. This is a very positive step towards an even more integrated approach to innovation to accelerate market uptake of ATM innovation and keep our aviation safe, efficient and sustainable.

Close alignment with regulatory frameworks is vital, especially in emerging fields. We continue to work closely with EASA and other regulators to ensure our standards support innovation while meeting safety and compliance needs. Amongst many others, a striding example of this is the creation of WG-130, tasked to review all existing EUROCAE standards to evaluate if they are fit for purpose to support the new ATM/ANS conformity assessment framework, and to make recommendations to develop revised or new standards. The group is co-chaired by industry and EASA, showing the close engagement and relationship.

Our strong partnerships with other Standards Developing Organisations (SDOs), particularly RTCA and SAE International, remain central to our strategy. 70% of our work programme is carried out jointly, producing technically identical standards that are globally applicable and widely recognised by authorities such as ICAO, EASA and many national regulators. The EUROCAE Secretariat is following closely whether the standards that were developed with the intention of being recognised as acceptable means of compliance effectively achieve that goal. This is an important testament to the quality of the standards and the power of the consensus process.

In addition to the progress of standardisation activities and our external engagements, we are also innovating the EUROCAE organisation itself.

The launch of the EUROCAE Hub, in September 2024, represents a major step in our digital transformation. The response has been overwhelmingly positive, with users praising its intuitive design and enhanced collaboration capabilities. We will certainly continue on this journey into 2025 and beyond, but the foundation is now strong and future-oriented.

Another opportunity to enhance user experience is the digitalisation of the standards themselves. Originally,

EUROCAE standards were distributed in print. Nowadays, EUROCAE standards are available as protected PDF files via the e-Shop that can be printed by members. We recognise the increasing interest in receiving our standards in new digital (i.e. machine-readable) formats. Together with our members, we have embarked on a project to considers new drafting and distribution methods to ensure efficient and collaborative standards development and delivery, using state of the art technologies. This project is expected to deliver first results in 2025, and we will continue to report out as we progress.

We also intensified our communication activities to promote the work of our WGs and its importance. In this context we diversified our communications with presence of social media as well as new formats, such as videos like our AI series, on which you can catch up on our YouTube Channel. There you can also watch recordings of our events like the Aviation Cyber Summit, as well as our Symposium, held on 24–25 April in Lucerne, Switzerland. This was a particularly meaningful event, marking a return to our birthplace – EUROCAE was founded in Lucerne in 1963. The symposium featured insightful sessions on connectivity, aviation security, airport development, innovative aerial services, drone integration and more.

Training is another key pillar of our work. We have expanded our offer to support continuous learning on EUROCAE standards, and I invite you to explore the upcoming training sessions listed on our website.

You will also have noticed a change in the feel of this Annual Report. A survey conducted some time ago showed that many of you still like to enjoy reading our Annual Report and Broadcast magazine on paper. In an effort to reduce our carbon footprint, we decided to switch to a more environmentally friendly version of it. Using recycled paper is a powerful step toward greater sustainability, as it significantly reduces the environmental impact of paper production.

In close collaboration with the EUROCAE Council, we have set our strategic direction for 2025. This strategy reaffirms our commitment to developing relevant, timely standards – by the members, for the members. Our updated Technical Work Programme (TWP) places particular emphasis on sustainability, advanced air mobility, and decarbonisation. These are critical areas as we work together to support a zero-emission aviation future. At the same time, we continue to explore new domains such as space, artificial intelligence, future connectivity, remote towers, virtual centres, and ATM ground equipment.

None of these achievements would be possible without the tireless work of the EUROCAE Secretariat. Our team, though small, is highly effective and deeply committed to the organisation's goals. As our activities grow, so does our team, and I am proud of the skills and spirit they bring to their work every day.

You will read the full report on 2024 activities and 2025 strategy presented by the President on the next pages. As you can see, this has been another dynamic and productive year for EUROCAE. On behalf of the entire team, I would like to thank all our members, experts, Council and TAC representatives for your continued engagement. I invite you to read on and discover more about the year's progress – a testament to our shared commitment to shaping the future of aviation.

With best regards,

**Anna von Groote**
Director General

**Dear EUROCAE members,**

On behalf of the EUROCAE Council, it is my honour to present the 2024 Council Report and our strategic vision for 2025. It is a privilege to do so for the second time in my capacity as EUROCAE President.

2024 was a remarkable and successful year for EUROCAE. Our core activity, the standards-development, was thriving, with 50 Working Groups (WG) active and 10 dormant. We published 29 deliverables and ran 30 Open Consultations. The WGs held a total of 244 meetings. These numbers alone are impressive, even more so when compared to previous years, showing a continuous and strong upwards trend. This shows the relevance and importance of our activities and the recognition by regulators and industry alike of the resulting standards. A very good example of the close collaboration between EASA and the industry through EUROCAE is WG-130, that is tasked to review the suitability of existing standards or new standards needed for certification against the new ATM/ANS conformity assessment framework.

The Technical Advisory Committee, at the centre of the standards-development processes, held five meetings and continued to engage actively and dialogue with the WG leaders. The TAC also reviewed and updated the Technical Work Programme (TWP), which for the first time is now mapped to the European ATM Master Plan, demonstrating that standardisation is firmly anchored in the overall innovation pipeline. This is also reflected in our work with the SESAR 3 Joint Undertaking, its governance and many projects, the SESAR Deployment Manager, the Alliance for Zero Emission Aviation (AZEA) and many others.

Our membership basis remains strong. In 2024, we had 341 full members and 131 limited members. This is a very slight decrease in membership, which is due to many different factors, such as company mergers, or the end of some WGs for example on Covid-related subjects for which limited members had joined. Though this is not yet alarming, the Secretariat will in 2025 develop a strategy and initiate some actions for more active membership engagement. It is also my duty as EUROCAE President to report on the non-paying members, according to Article 7 of the EUROCAE Constitution, complemented by paragraph 1.5.5 of the Handbook "Loss of Membership". In 2024, 14 members did not pay their annual membership fee and were therefore removed from the list of EUROCAE members based on a Council #326 decision (June 2024). Unfortunately, the geopolitical situation has not changed and hence our Russian members remain suspended.

We work in a complex ecosystem of stakeholders, and we value the partnerships we have with all major aviation organisations in Europe and globally. As always, our collaboration with our main partners RTCA and SAE remains strong and successful. In 2024, we intensified relationship notably with the NATO Armament & Aerospace Capabilities Directorate, through the signature of a Technical Cooperation Agreement, enhancing cooperation between civil and military aviation, fostering a closer relationship that will strengthen both sectors. We have deepened our collaboration with ASD-STAN to harmonise European aerospace standards, improve communication, and prevent duplication of efforts, as well as updated agreements with ETSI and with EUROCONTROL, strengthening our organisations' partnership in the areas of aviation standardisation.

Last year was also marked several changes on the EUROCAE IT side. Following a period marked by increasing difficulties to use the workspace, we initiated a complete overhaul of the system with a new IT partner. This enabled us, on 16 September 2024, to launch the new EUROCAE Hub, a collaborative platform for WGs and members. In 2025, more functionalities will be added, with a dedicated team area, more extensions on the WG area but also in terms of membership management. Furthermore, we will see a completely new website and e-Shop. Approved by the Council, this major update intends to provide better services to members, working groups, Council and TAC, and will facilitate the management of our diverse activities. It is therefore a strategic investment, and we believe it will greatly enhance our collaboration and membership experience.

In this context, I would also like to report on an incident occurring in late 2024, when someone impersonated EUROCAE to send out fake invoices in our name. Luckily, we were able to identify the issue quickly and limit the damages, but it shows how vulnerable organisations are in today's connected society. We will do our outmost to improve and further secure the system to avoid such situation from arising again in the future, but I must ask all of you to remain vigilant and in case of any doubt contact the Secretariat.

Last year, we continued to strengthen our proactive communication strategy by diversifying our content and expanding our presence across all relevant channels and media. We also participated in numerous events and exhibitions, significantly raising our visibility. One of the highlights was the launch of a video series to promote WG-114 on Artificial Intelligence, where we engaged more with WG experts and members to create meaningful content and foster direct interaction. Our team attended nearly 40 events, and we maintained an active presence on social media and through newsletters, with communications being shared almost daily. This level of engagement will continue in 2025, especially with the upcoming launch of our new website.

Additionally, our training catalogue expanded, with the addition of a course on aircraft safety assessment processes (ED-79/ED-135). Nearly 300 participants attended one of the 9 training sessions, which were offered in-person, online, or as tailored company on-site sessions. This marks a significant increase in both participation and revenue, reinforcing the positive growth we have experienced in recent years.

The financial report will be presented by the Treasurer, but I would like to point out the stable and healthy situation of the Association. As the income from our trainings and other activities continuously increased over the last years, we have initiated a review of the situation to stay in line with our legal obligations as non-profit association under French law. This will continue well into 2025, and we will report on the outcome at the next General Assembly.

Finally, we continued to expand our Quality Management System, extending it from the standards development processes to other supporting functions. While we are not immediately seeking formal ISO 9001 certification, our QMS is closely aligned with this international standard, providing a solid foundation with clear and effective procedures. Soon, it will encompass all aspects of EUROCAE's activities, including organisational administration.

The Secretariat has worked tirelessly throughout the year on these and many other initiatives. Despite some staff changes, the team remains strong and motivated, united in their commitment to advancing the organisation and fostering a collaborative and accomplished working environment.

## 2025 Strategic Vision

Looking ahead to 2025, the Council has once again come together to define our key objectives, which are outlined in the upcoming Business Plan (BP).

Almost 10 years have passed since the introduction of the BP, and the organisation has developed considerably during this time, at all levels. After initially focusing on a strong and robust organisation fit for the future, reputation and international recognition, today we are in a much more stable situation. This is now reflected also within our strategy and hence the BP2025 has been modified accordingly. The updated Strategic Lines and Objectives provide a solid basis for EUROCAE activities for 2025, setting the organisation up to operate successfully within the European and international context and addressing both external and internal factors, challenges and opportunities.

The vision and slogan remain unchanged for 2025:

### EUROCAE Vision

*The European leader in the development of worldwide recognised industry standards for aviation.*

### EUROCAE Slogan

*DRIVING THE STANDARD FOR AVIATION.*

In support of the Vision, the Mission of the organisation is defined as follows. It has been amended to reflect more clearly the link between standards and innovation:

Take a leading role in coordinating European and global aviation standardisation activities and in developing and maintaining high-quality standards that:

- Build upon the state-of-the-art expertise of its members.
- Are fit for purpose to be adopted internationally.
- Support operational, development and regulatory processes.
- Address emerging global aviation innovation and challenges.

The Strategy Lines and Targets remain largely stable although some redundancies have been removed and clarified:

A Be the leading European Standards Development Organisation (SDO) responding to its membership's needs in support of the European and global aviation frameworks
   1. Play a leading role in a collaborative European standardisation framework and secure EUROCAE's key position
   2. Maintain EUROCAE and EU Strategies, priorities and needs aligned
   3. Actively contribute to every step of the innovation lifecycle and support R&D projects using standards as an enabler
   4. Plan the activities in line with members' needs and execute in accordance with the Technical Work Programme (TWP)

B Strengthen a European leading role of EUROCAE as an international aviation standardisation organisation
   1. Increase the global footprint and recognition of EUROCAE to ensure international harmonisation and global interoperability
   2. Build a strong relationship and long-term cooperation with key partners
   3. Develop membership and engage with members in line with aviation standardisation needs
   4. Ensure visibility and communication to support international outreach and engagement

C Maintain the high quality and robustness of EUROCAE standards by continuously improving and ensuring the effectiveness of our processes
   1. Ensure efficient and effective standards development process to deliver relevant and robust standards at the required quality level in line with TWP
   2. Develop and publish standards in line with members' needs and demands
   3. Make available robust tools to facilitate standards development and enhance user experience
   4. Support implementation of standards through relevant trainings and other measures

D Ensure EUROCAE's robustness, sustainability and independence
   1. Ensure robust governance and processes
   2. Pursue a quality management approach and process management structure
   3. Ensure robust, resilient and appropriately skilled Secretariat team

4. Ensure robust and transparent financial management and maintain balanced income structure

All these objectives are underpinned by a series of concrete actions and deliverables. For 2025, we have identified a series of more detailed KPIs for the organisation, which we will keep monitoring progress on a regular basis.

It should be noted that SL D has been extended to ensure the robustness of the entire organisation, including the governance. We are now monitoring the participation rates to both the Council and the TAC through a newly introduced KPI, as high attendance rates demonstrate a strong commitment from Council and TAC members and lead to more informed, collective decision-making. This, in turn, enhances our ability to steer the Association effectively in the interest of the entire membership. I am very pleased to report that initial reports show very strong engagement in both governance bodies. I am happy to report very high levels of participation in both the governance bodies, close to 90 %.

I would like to conclude this report by expressing my heartfelt thanks to the Secretariat team, under the excellent leadership of our Director General, as well as to my colleagues in the Council and TAC for their unwavering dedication. I also want to extend my gratitude to our members and the experts in the WGs (especially our WG leaders) for their invaluable contributions.

None of our collective achievements would be possible without each and every one of us. Our diversity and consensus-based approach are truly our greatest strengths. These words might be seen as easily said. But I would like us all to take some time to reflect on them. EUROCAE is one of these rare organisations where people who "usually do not sit on the same side of the table", join forces to achieve a common goal. To some, this might seem irrational. But we all know it is the only way to achieve something that is beneficial for all of us, for our industry. We should not take that for granted, realise the chance we have to be able to work in such an environment and do our best so we and aviation industry can continue to benefit from this situation.

As we look ahead to 2025, let's continue to build on these successes with the same commitment, passion and values. Together, we set the standard for an aviation industry that is safer, more efficient, and more sustainable.

**Guillaume Roger**
EUROCAE President

## EUROCAE is the European leader in...

...developing aviation standards for airborne and ground systems, as well as related documents essential for the regulation of aviation equipment and systems. As a membership-based organisation, EUROCAE unites around 500 leading aviation organisations and companies worldwide, uniting them under a shared commitment to excellence in standardisation.

## EUROCAE develops standards that...

...meet industry needs while supporting both European and global regulations. Our standards, known as EUROCAE Documents (EDs), enhance safety, expand market opportunities, ensure interoperability, drive technological advancement, and accelerate the adoption of innovative technologies.

To achieve this, we provide a collaborative platform—the EUROCAE Hub—where Working Groups (WGs) bring together our members to contribute on a voluntary basis. Currently, 5,000 experts are actively engaged in around 50 Working Groups, developing new EDs and maintaining existing standards.

The development of EUROCAE Documents follows a rigorous, well-established process that fosters teamwork, industry collaboration, and excellence, grounded in the principles of openness, transparency, and consensus.

With over 300 EDs published to date, EUROCAE's standards are globally recognised for their high quality and cutting-edge relevance.

## EUROCAE unites...

...manufacturers, service providers, regulators, research institutes, and international organisations committed to advancing aviation standards.

A unique structure led by the Technical Advisory Committee (TAC), bringing together top experts from various aviation stakeholder categories. The TAC plays a crucial role in ensuring the consistency and coherence of EUROCAE's Technical Work Programme (TWP) while providing guidance on ongoing and future standardisation activities.

EUROCAE membership is open to organisations and industries worldwide, fostering a truly global collaboration in aviation standardisation.

## EUROCAE offers...

...EUROCAE Documents (EDs), developed in collaboration with industry experts to set high-quality standards.

In addition, EUROCAE engages external companies to support engineering studies and services within its areas of activity. The organisation also hosts technical workshops and symposia, including the EUROCAE Annual Symposium, held alongside the General Assembly.

Furthermore, EUROCAE provides training courses in cooperation with leading experts, helping the industry to better understand and apply existing standards and regulations.

# COUNCIL

The EUROCAE Council is responsible for providing strategic direction and ensuring the effective governance of EUROCAE. Composed of representatives from EUROCAE's full members, the Council reflects the diversity of the aviation sector, bringing together key stakeholders from industry, regulatory bodies, research organisations, and service providers.

The Council consists of no fewer than 8 and no more than 20 members, who are elected at the General Assembly. During its first meeting (held immediately after the General Assembly), the Council elects its President, two Vice-Chairpersons, and the Treasurer.

### The main role of the Council is:

- to define the strategic objectives, policy, business plan and associated annual budget for EUROCAE and to periodically review the progress;
- to approve the appointment of the Director General, contracts, agreements, and any expenses outside the budget, and to supervise the administration of the EUROCAE Association by the Director General;
- to appoint the Technical Advisory Committee Chairperson, its members; to set its objectives and approve its outputs;
- to approve the set up or continuation of Working Groups, the strategic part of the terms of reference, and the publication of EUROCAE Documents;
- to monitor and, when required, to support the supervision of Working Group activities;
- to agree the subscription ceiling for the following year that is submitted to the General Assembly and to approve the membership fee categories below the approved ceiling.

The Council meets at least four times a year, normally at the EUROCAE premises. Council members consider the interest of the whole EUROCAE membership when executing their function.

## Council Members – May 2024 - April 2025

### COUNCIL OFFICERS

- President: Guillaume Roger (DGAC / DTA / STAC)
- Vice-President: Bruno Ayral (THALES LAS FRANCE)
- Vice-President: Michael Holzbauer (FREQUENTIS)
- Treasurer: Benoit Gadefait (SAFRAN)

| ORGANISATION | REPRESENTED BY |
|---|---|
| AIRBUS Operations | Eva Faure |
| ASD | Vincent de Vroey |
| COLLINS AEROSPACE | Marielle Roux |
| DASSAULT AVIATION | Eric Bouchard |
| DFS | Frank Zetsche |
| DGAC / DTA / STAC | Guillaume Roger |
| DSNA | Francois Xavier Prach |
| EASA | Maria Algar Ruiz |
| EGIS | Philip Church |
| EUROCONTROL | Philip Hughes |

| ORGANISATION | REPRESENTED BY |
|---|---|
| FREQUENTIS | Michael Holzbauer |
| HONEYWELL AEROSPACE | Stéphane Marché |
| INDRA SISTEMAS | Oscar López Otero |
| LEONARDO | Fabio Moriggi |
| NATS | Andrew Leeson |
| SAFRAN | Benoit Gadefait |
| SESAR 3 Joint Undertaking | Peter Hotham |
| SKYGUIDE | Thomas Buchanan |
| THALES LAS France | Bruno Ayral |
| THALES GROUP | Bernard Fabre |

# Technical Advisory Committee (TAC)

**Chairperson:** Eric Bouchard (DASSAULT AVIATION)
**Vice-Chairperson:** Roy Posern (FRAPORT)

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.

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 synchronisation 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 EASA, SESAR, ICAO, RTCA or SAE).

Each year, the TAC contributes its collective expertise to the development of the EUROCAE Technical Work Programme (TWP). This document, aligned with the European ATM Master Plan, 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.

| TAC MEMBERS | 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 |
| Denis Ricaud | Thales Group | Equipment manufacturers – Avionics |
| Jean-Luc Faillot | SAFRAN | Equipment manufacturers – Aircraft Non Avionic |
| Pascal Rohault | Thales Air Systems | Equipment manufacturers – Ground Equipment |
| Siegfried Schäfer | DFS | Air Navigation Service Providers |
| Jaime del Molino | IATA | Airlines or Airspace Users |
| Lucca Crecco | SESAR JU | European R&D community |
| Roy Posern | Fraport | Airports |
| Sergiu Marzac | Boeing | Unmanned Aircraft Systems |
| Anna von Groote | EUROCAE | EUROCAE |

# 2024 General Assembly

The 62nd EUROCAE General Assembly took place on 24 April 2024, during the EUROCAE Symposium 2024. Representatives from 45 full members and three observers (limited members) attended or were represented The Assembly approved the activity report, strategy proposed by the Council, accounts, and elected Council members for the next term. It was also an opportunity to express gratitude to Guillaume Roger, DGAC / DTA / STAC, for his dedicated leadership as EUROCAE President.

In his report, EUROCAE President Guillaume Roger thanked the entire EUROCAE team, the Director General, the Secretariat, the experts contributing to the Technical Advisory Committee and Working Groups, and all the members. He highlighted achievements, including the active engagement of the Working Groups and the publication of high-quality standards.

During the General Assembly, Guillaume Roger emphasised EUROCAE's focus on sustainability, space, and the single value chain for ATM R&D within the new EASA framework, praising the essential role of the Technical Advisory Committee. He commended EUROCAE's improved communication strategy, increased visibility on social media, and participation in various events, including receiving the flight Safety Foundation's Richard Teller Crane Founder's Award.

EUROCAE members received information on initiatives to enhance training activities, improve IT infrastructure, and explore new forms of digital standards distribution. Members also received an update on membership, financial management, collaboration with partner organisations, and the ongoing strategy for 2024 and beyond. At the end of the GA, members reviewed the Financial Report and elected the new Council.


# Financial Report

## Operating income

- Main income:
  - Membership fees
  - Biennial European Commission Grant
- Other revenue mainly results from:
  - Sales of EUROCAE Documents (EDs)
  - Training sessions
  - Events
  - Contracts

## Operating expenses

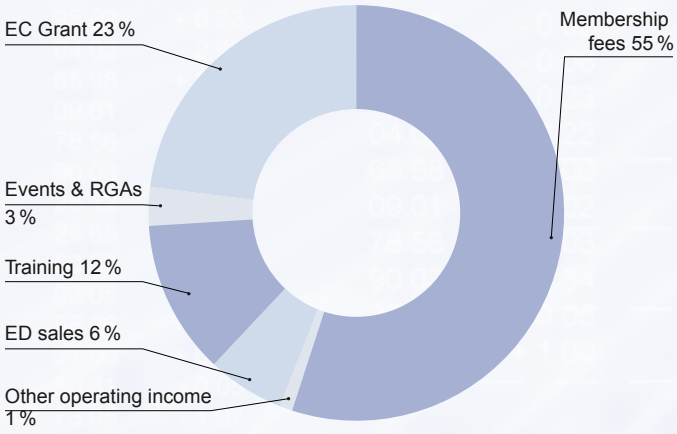
- Premises
- Staff salaries and related costs
- Social security contributions
- Taxes and charges
- Service provisions and various purchases
- Travels

## Statutory audit

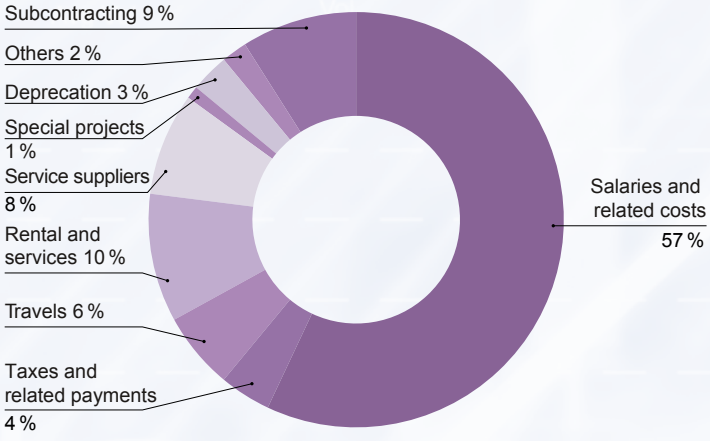
As every year, EUROCAE fiscal year was audited:

- EUROCAE's accounts ending 31 December 2024:
  - Audit report delivered on 16 April 2024
  - No findings

## EUROCAE operating income:




## EUROCAE operating expenses:



# EUROCAE and our Partners: Driving Global Standardisation Together

At EUROCAE, our mission is to ensure a dynamic and forward-thinking standardisation process that stays closely aligned with the latest industry advancements while addressing the needs of our stakeholder community. Achieving this requires collaboration, and we work hand-in-hand with European and international partners to promote a harmonised approach to standardisation.

Expanding our outreach, fostering robust relationships, and establishing long-term partnerships with key stakeholders remain at the heart of our strategic objectives.

# EUROCAE maintains agreements with the following organisations:

- Airports Council International Europe (ACI Europe)
- Japan Aviation Innovation Development Association (AIDA)
- ASD-STAN
- ASTM International
- Civil Air Navigation Services Organisation (CANSO)
- Confiance.AI
- EUROCONTROL
- European Aviation Safety Agency (EASA)
- European Cockpit Association (ECA)
- European Telecommunications Standards Institute (ETSI)
- General Aviation Manufacturers Association (GAMA)
- Global UTM Association (GUTMA)
- International Council of Aircraft Owner and Pilot Associations (IAOPA)
- International Air Transport Association (IATA)
- International Civil Aviation Organisation (ICAO)
- International Federation of Air Traffic Controllers' Associations (IFATCA)
- Korean Institute of Aviation Safety (KIAST)
- RTCA, Inc
- SAE International
- SESAR 3 Joint Undertaking
- SESAR Deployment Manager
- Standards R&D Centre


# Domains of Activity

EUROCAE activities are classified around 11 domains.

## AVIONICS

This domain encompasses all standardisation activities which are related to equipment and systems on board aircraft, including Communication, Navigation and Surveillance (CNS) capability and supporting systems (interfaces, power, data sharing networks).

## AIR TRAFFIC MANAGEMENT

This domain addresses various standardisation activities that concern Air Traffic Management (ATM) functions and components, contributing to safe and efficient movement of aircraft during all phases of operations, and to global interoperability. It also covers ground systems providing CNS capability and topics related to specialised services (e.g., meteorological, aeronautical).

## AIRPORTS

This domain addresses standardisation activities related to systems, interfaces and equipment, supporting the safe and efficient operating of air traffic in the airport vicinity and on the ground. Attention is also given to the Counter-UAS capacity, providing airports the ability to minimise the risk and effect of unauthorised operation of Unmanned Aircraft Systems.

## SPACE

Aviation development is increasingly intertwined with space technology innovation. Therefore, this domain includes all standardisation activities related to space-based solutions, either for providing CNS capability in all phases of operations, or for proposing ATM capacities. In addition, EUROCAE experience in space-based solutions and ATM may open the door to involvement in new activities such as Space Traffic Management (STM) or Higher Airspace Operations (HAO) in the future.

## INNOVATIVE AERIAL SERVICES

The Innovative Aerial Services (IAS) domain, and its subset of Urban Air Mobility (UAM), encompasses new classes of airspace users and emerging concepts such as piloted, unmanned or uncrewed aircraft systems, namely UAS, RPAS, and VTOL, for which a set of standards are needed to support their safe integration in the airspace. This domain also covers related topics, like UAS Traffic Management (UTM or U-space in Europe) and ground infrastructure, that are necessary for global integration in the operational environment. New concepts for general aviation will also fall in this domain.

## CABIN

The Cabin domain gathers different aspect related to airspace users, from air medical to other topics to be included at a later stage. These additional topics could address for examples: seats, cabin monuments, oxygen supply systems, interior lighting, cargo and many more topics as per the needs of EUROCAE members.

## ENVIRONMENTAL SUSTAINABILITY

This domain supports the development of a more environmentally, socially, and economically sustainable

aviation sector. Standards related to technological and operational measures, such as new energy sources, improved airframes, optimised operations, and other relevant improvements that contribute to reducing the environmental impact of aviation are in the scope of this domain. The human pillar of sustainability is also addressed via the Next Generation Aviation Professional (NGAP) activity.

### RF SPECTRUM

This domain encompasses various aspects linked to the use and management of the Radio Frequency (RF) Spectrum, and the interoperability issues between aviation systems or functions and their environment, either on-board or in the open.

### IT & SOFTWARE

This domain covers initiatives to guarantee the safe design, development, and qualification of aviation software, both for on-board and in ground systems. It also covers the specific topic of artificial intelligence applied in aviation.

### SECURITY

Aeronautical Information Systems Security (AISS) addresses information security protection as a means of ensuring safety of flight and maintaining the operation of the civil aviation infrastructure without significant disruption. AISS shall be seen from an end-to-end perspective, from information production, processing, management, communication to operational usage and maintenance, therefore encompassing the aircraft, the supporting ground infrastructure, including communication, and the supply chain.

### SYSTEM ENGINEERING

This domain accommodates activities on transverse topics that are clearly within the scope of EUROCAE, but do not solely fit within a single domain, such as Environmental Qualification, Aeronautical Database Management, and Quality and Safety Design.

# Standards Development – Working Group Activities

EUROCAE's core activity is the development of internationally recognised aviation standards in support of:

- Regulatory requirements (e.g., ICAO, EU, EASA, FAA),
- Research and Development in Europe and globally,
- Industrialisation and deployment of future solutions,
- European and global aeronautical Industry.

Over 5000 experts from 45 nations contribute to developing standards. This wealth of knowledge is a crucial factor for the high quality of our standards, and we thank every expert for their contribution. This work is performed in different WGs where experts develop standards and technical reports: EUROCAE Documents (ED), EUROCAE Reports (ER) and Internal Reports (IR).

At the end of 2024, 50 WGs were active. 23 of them were joint with Special Committees (SC) from RTCA, our Standard Developing Organisation (SDO) partner based in the US, and 5 WGs work jointly with SAE committees.

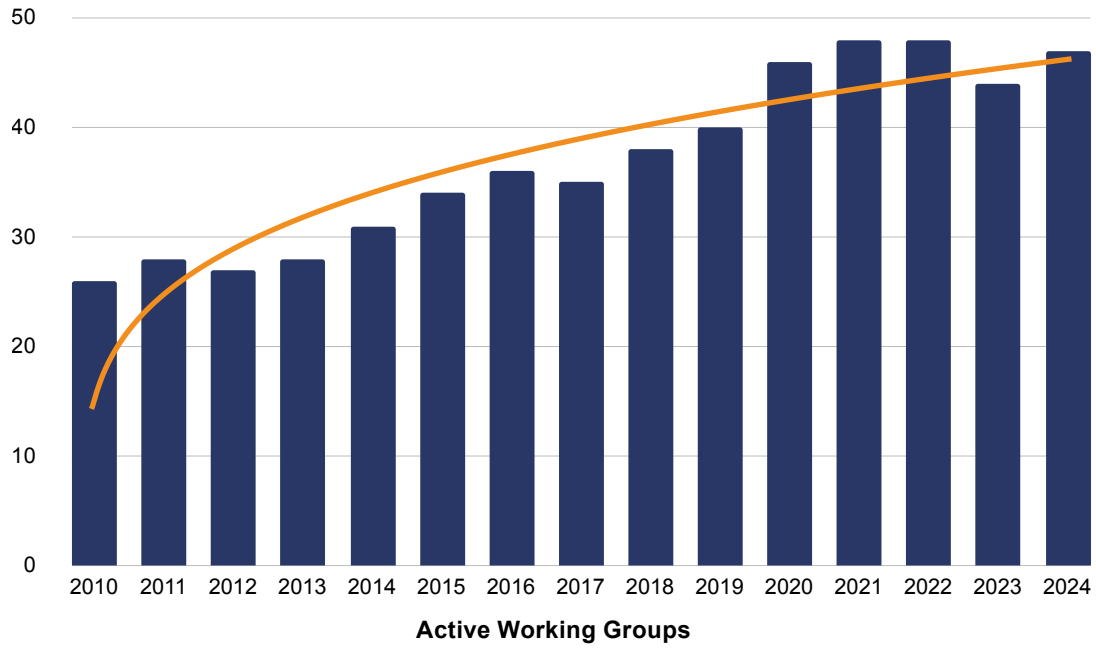
This year, four new Working Groups were created to address key developments in aviation standards:

- WG-128 Airborne Electronic Hardware Design Assurance: Focused on ensuring robust design assurance processes for airborne electronic hardware.
- WG-129 Take Off Performance Monitoring System: Dedicated to enhancing safety through improved monitoring of aircraft takeoff performance.
- WG-130 ATM/ANS Supporting Standards: Tasked with developing a comprehensive programme of standards to support the evolving ATM framework.
- WG-131 Terrain Awareness and Warning System: Established to update existing standards in collaboration with RTCA SC-231.

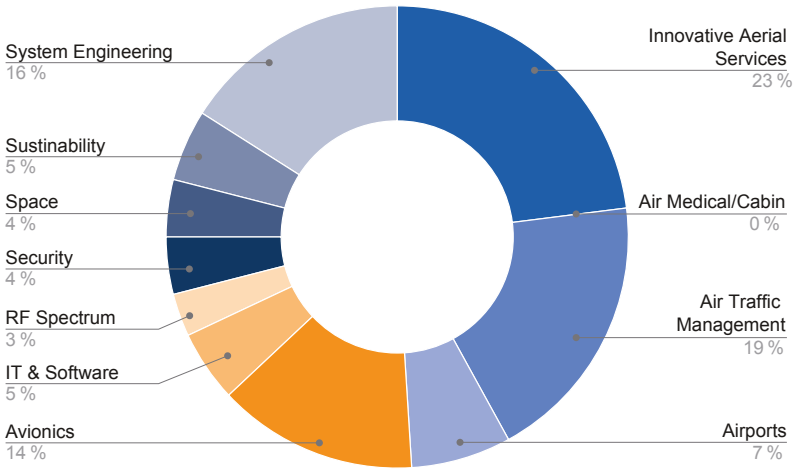
During its October meeting the Council approved the disbandment of the following dormant WGs:

- WG-95 Inflight Ice Detection
- WG-99 Portable Electronic Devices
- WG-101 Runway Overrun Awareness & Alerting Systems (ROAAS)
- WG-102 GEN-SUR SPR
- WG-106 Electronic Flight Bag (EFB)
- WG-120 Technical Means for identifying potential Covid-19 carriers among passengers
- WG-121 Aircraft Cleaning
- WG-123 Infectious Passenger Handling in Air Ambulance Operations

In addition, WG-83 Airport FOD Detection Systems was declared dormant and WG-104 SWIM Services was reactivated.

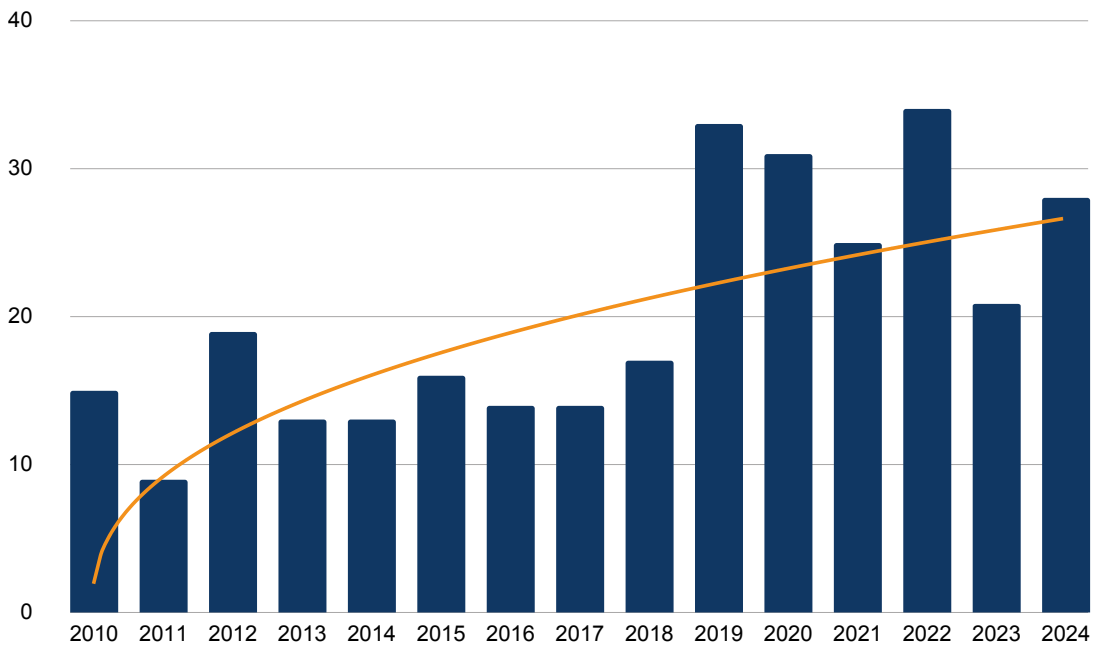


At the end of 2024, more than 160 activities were under development. Details on each WG and their activities are provided in the following pages of this report.




**Volume of Activity by Domain**


As a result of this work, more than 25 deliverables are published every year, once again with an upward trend.




**Publications per year**

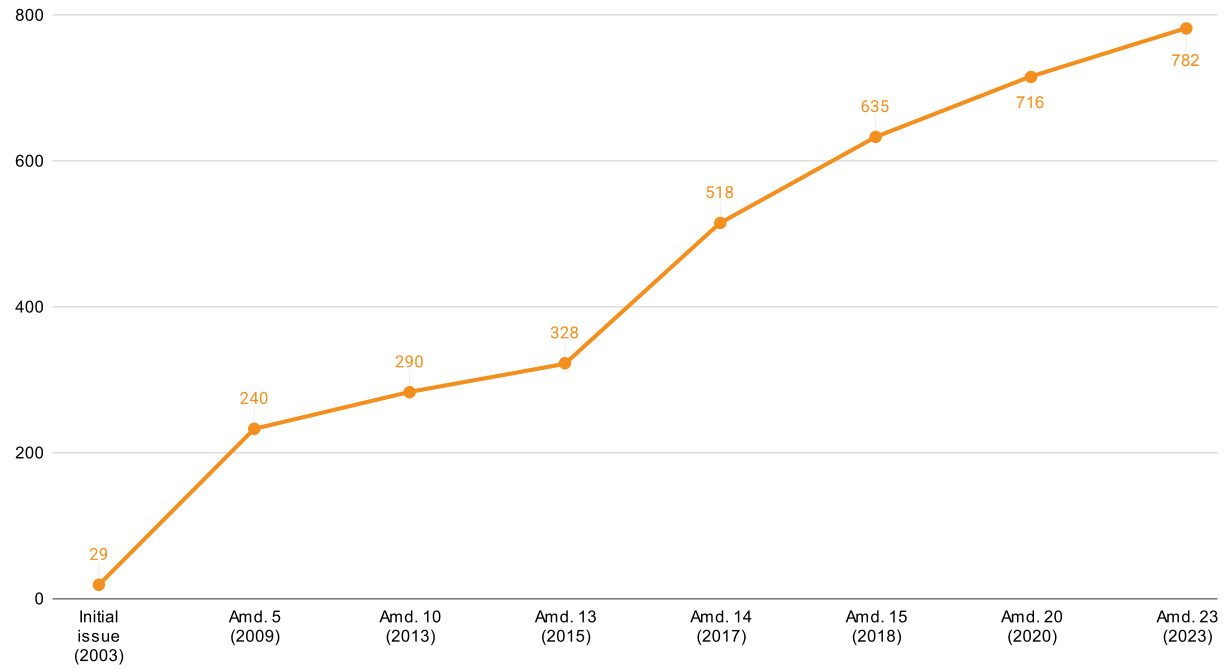
# Regulatory Recognition of EDs by Regulators Hits an All-Time High

In recent years, EUROCAE documents have reached unprecedented levels of recognition by regulators worldwide – especially in Europe. This trend stems from objectives set by the European Commission in the early 2010s, aiming to shift the continent towards a more performance-based approach to regulation (PBR), acknowledging that the benefits of standards for the European industry are tremendous.

Today, EDs are systematically integrated into key regulatory documents – and at an accelerating pace. Between 1990 and 2019, over 80% of the approximately 250 EDs published by EUROCAE were referenced at least once by ICAO, EASA, or the FAA. Over the past two decades, references to EDs in regulations have steadily increased — and with each new update of EASA's documents, the pace has continued to accelerate. For example, since 2003, the number of ED references in EASA's AMC-20 – a key document for airworthiness requirements – has multiplied nearly 27 times, clearly reflecting the growing importance of EDs in aviation regulation. Similarly, in the latest amendments to CS-25 and CS-ACNS, EDs are now cited dozens of times, covering domains from avionics to cybersecurity. The latest EASA publications are no exception, with over 70 ED references included in both 'Part-IS' and 'Small Category VCA', published in 2024. Between 2024 and Q1 2025 alone, 75% of the sixteen updates to various EASA means of compliance incorporated EDs.

This upward trajectory highlights the increasing recognition of the value and relevance of EUROCAE standards – and this momentum shows no signs of slowing down. A key indicator is the decreasing time between the publication of an ED and its regulatory recognition. Two decades ago, this recognition often took over five years. Since 2016, nearly 90% of the new EDs recognised in ETSOs have been adopted in under 3 years from their publication – some even within months.

This acceleration reflects the trust regulators place in EUROCAE's processes, technical expertise, and responsiveness to industry needs. The trend is clear: EUROCAE is not only producing relevant standards – it is actively helping shape regulation. With over 130 EDs now recognised by ICAO and hundreds embedded in EASA's acceptable means of compliance and guidance material, EUROCAE's role in supporting a safe, modern, and harmonised aviation landscape is today more critical than ever.




**Total Number of ED References in EASA's AMC-20**

# List of Working Groups

| Domain | Reference | Title |
|---|---|---|
| **Avionics** | WG-49 | Mode S Transponders |
| | WG-51 | Automatic Dependent Surveillance - Broadcast (ADS-B) |
| | WG-75 | Traffic Alert and Collision Avoidance Systems (TCAS) |
| | WG-79 | Enhanced Vision Systems (EVS), Synthetic Vision System (SVS) |
| | WG-98 * | Aircraft Emergency Locator Transmitters |
| | WG-110 | Helicopter Terrain Awareness and Warning Systems (HTAWS) |
| | WG-118 | Crash-Protected and Lightweight Flight Recorders |
| | WG-129 | Take Off Performance Monitoring System |
| | WG-131 | Terrain Awareness and Warning Systems |
| **Innovative Aerial Services** | WG-105 | Unmanned Aircraft Systems (UAS) |
| | WG-112 | Vertical Take Off and Landing (VTOL) |
| **Air Traffic Management** | WG-59 | Flight Data Processing (FDP) Interoperability |
| | WG-67 | Voice on Internet Protocol (VoIP) for ATM |
| | WG-76 | AIS/MET Datalink Services |
| | WG-78 | Standards for Air Traffic Data Communications Services |
| | WG-81 | Interoperability of ATM Validation Platforms |
| | WG-85 | 4D Navigation |
| | WG-92 | VDL Mode 2 |
| | WG-103 | Independent Non-Cooperative Surveillance System (INCS) |
| | WG-104 | SWIM Services |
| | WG-107 | DME Infrastructure supporting PBN Positioning |
| | WG-108 | ATN/IPS |
| | WG-122 | Virtual Centre |
| | WG-126 | VCS-ATC Systems Integration for ATM Information Exchange |
| | WG-130 | ATM/ANS Supporting Standards |

* | Dormant Working Group

| Domain | Reference | Title |
|---|---|---|
| **Airports** | WG-41 | A-SMGCS |
| | WG-83 ** | Airport Foreign Object Debris (FOD) Detection Systems |
| | WG-100 | Remote & Virtual Tower (RVT) |
| | WG-109 | Runway Weather Information Systems |
| | WG-111 | Airport Collaborative Decision Making (A-CDM) |
| | WG-115 | Counter UAS (C-UAS) |
| **Space** | WG-28 | Ground Based Augmentation Systems (GBAS) |
| | WG-62 | GNSS |
| | WG-82 | New Air-Ground Data Link Technologies |
| **RF Spectrum** | WG-96 | Wireless On-Board Avionics Networks |
| | WG-119 | Radar Altimeters |
| | WG-124 | Spectrum |
| **Security** | WG-72 | Aeronautical Systems Security |
| **System Engineering** | WG-14 | Environment |
| | WG-31 | Electromagnetic hazards |
| | WG-44 | Aeronautical Databases |
| | WG-63 | Complex Aircraft Systems |
| | WG-128 | Airborne Electronic Hardware Design Assurance |
| **IT & Software** | WG-97 | Interoperability of virtual avionic components |
| | WG-114 | Artificial Intelligence |
| | WG-117 | Aviation Software Standards |
| | WG-127 | Lower-risk Aviation Applications |
| **Sustainability** | WG-80 | Hydrogen and Fuel Cell Systems |
| | WG-113 | Hybrid Electric Propulsion |
| | WG-116 | High Voltage Systems and Components in Aviation |
| | WG-125 | Next Generation Aviation Professionals (NGAP) |

** | Dormant Working Group

The latest and up to date Work Programme is available on our website.

# Working Group Reports



THALES


DSNA
DTI


DME Infrastructure
supporting PBN
Positioning

# WG-49 Mode S Transponder

**CHAIRPERSON:** Eric Potier, EUROCONTROL
**TPM*:** Alexander Engel

Following the publication of Revision F of ED-73/DO-181 'Minimum Operational Performance Standards (MOPS) for Secondary Surveillance Radar Mode S Transponders', in December 2020, and Change 1 in January 2022, the sole remaining task in WG-49's Work Programme is ED-115A 'Minimum Operational Performance Standards for Light Aviation Secondary Surveillance Radar Transponders'. Currently, progress on this document is on hold, pending an evaluation with Working Group members to determine its necessity. Any decision regarding the continuation of this work will require TAC approval.

* | TPM: Technical Programme Manager

# WG-51 Automatic Dependent Surveillance-Broadcast (ADS-B)

**CHAIRPERSON:** Johann Martensson, EUROCONTROL
**SECRETARY:** Jörg Steinleitner, EUROCONTROL
**TPM:** Alexander Engel

WG-51 has established five subgroups, as outlined below. Currently, SG-2 remains dormant, while the other subgroups are actively working on their assigned tasks as defined in the Terms of Reference.

### Subgroup 1

SG-1 developed and published ED-102B/DO-260C 'Minimum Operational Performance Standards for 1090 MHz Extended Squitter Automatic Dependent Surveillance – Broadcast (ADS-B) & Traffic Information Services – Broadcast (TIS-B)', including Change 1.

To address errors and improve test efficiencies identified in Chapter 2.4 of the MOPS, WG-51, in collaboration with RTCA SC-186, has developed Change 2 to ED-102B/DO-260C. This update also includes minor clarifications and editorial corrections, with publication planned for the first quarter of 2025. Once this activity is completed, SG-1 will return to dormant status.

### Subgroup 2

SG-2 on VDL Mode 4 remains dormant.

### Subgroup 3

On 8 July 2024, WG-51/SG-3, together with SC-186/WG-4, published ED-194B Change 1 'Minimum Operational Performance Standards (MOPS) for Aircraft Surveillance Applications' to address identified issues with TIS-B test vectors for the surveillance processing test procedures. Additionally, the document incorporates Cockpit Display of ADS-B for Visual Separation (CAVS) requirements to align with FAA TSO-C195c.

### Subgroup 4

SG-4 published ED-129C 'Technical Specification for a 1090 MHz Extended Squitter ADS-B Surveillance System' on 19 October 2023. As a follow-up, WG-51/SG-4 has been tasked with developing Revision D of ED-129 to integrate the complete scope of ADS-B Version 3, as defined in ED-102B/DO-260C. The publication of this revision is expected to be in 2027. However, during initial implementations of ED-129C, observations revealed the need for a more expedited development of a document addressing clarifications, error corrections, and test efficiencies. As a result, SG-4 has been assigned the development of Change 1 to ED-129C, with publication scheduled for Q2 2026.

### Subgroup 5

SG-5 has been tasked with developing Revision A to ED-142 'Technical Specification for a Wide Area Multilateration System with Composite Surveillance Functionality'. According to the latest Terms of Reference, this document is set for publication by June 2025. Additionally, ED-142B has been added to the WG-51/SG-5 Work Programme, with a tentative publication target of 2029. The revision will be required to incorporate the full scope of ADS-B Version 3, as outlined in ED-102B/DO-260C.

# WG-75 Traffic Alert and Collision Avoidance Systems (TCAS)

**CHAIRPERSON:** Guido Manfredi, VOLOCOPTER
**SECRETARY:** Garfield Dean, EUROCONTROL
**TPM:** Alexander Engel

WG-75, working jointly with RTCA SC-147, has developed several documents detailing various variants of the Airborne Collision Avoidance System (ACAS):

- ED-256/DO-385 'MOPS for Airborne Collision Avoidance System X (ACAS X) (ACAS Xa and ACAS Xo)', published in October 2018. Change 1 to ED-256/DO-385, published on 17 September 2019, addressed observations made during the early implementation of the system.
- ED-256A/DO-381A 'MOPS for ACAS Xa with ACAS Xo Functionality', developed at the request of EASA in 2022, as a single reference document for the ETSO.
- ED-275/DO-386 'MOPS for ACAS Xu', the ACAS variant for Unmanned Aircraft Systems (UAS), published on 21 December 2020.
- ED-264/DO-382 'MASPS for the Interoperability of Collision Avoidance Systems', published on 11 September 2020. As different types of collision avoidance systems will operate simultaneously in airspace, ensuring their interoperability is critical.

WG-75 is actively involved in the development of several new documents:

- ED-XXX 'MOPS for Rotary Aircraft': This document is expected to be published by late 2025. Given the expertise available in WG-105 *UAS* and WG-112 *VTOL*, members from these working groups have been invited to contribute.
- ED-XXX 'MOPS for Active Surveillance Systems': Currently under development in collaboration with SC-147, this document is scheduled for publication in Q3 2025.

Following a request for better performance of ACAS Xu in Terminal Areas, a Revision is required to ED-275/DO-386 to implement revised DAA algorithms when the DAA System detects being in a Terminal Area.

While ED-264 provides requirements for the interoperability of CAS, the only guidance and requirements for how to validate the performance of a CAS is contained in the ICAO SARPS. To improve this situation, a new document is required to guide the process of validating CAS so that adequate, but not excessive work is performed. Consequently, WG-75 was tasked to develop a 'Guidance for the Validation of Collision Avoidance Systems'. Target date for publication is end of 2026.

# WG-79 Enhanced Vision Systems (EVS), Synthetic Vision Systems (SVS)

**CHAIRPERSON:** Carlo Tiana, COLLINS AEROSPACE
TPM: Atiqah Pillain

WG-79 is tasked with developing comprehensive regulatory guidance documents covering all aspects of airborne vision systems. The group collaborates with RTCA SC-213 to harmonise guidance between U.S. and European regulators.

In 2021, WG-79 developed ED-291 'Test Procedures for Quantified Visual Advantage', to support the demonstration of visual advantages provided by Enhanced Flight Vision Systems (EFVS). This publication established a consensus standard for a flight-test method to measure and quantify the visual performance of installed EFVS. The releases of ED-255 'MASPS for a Combined Vision Guidance System for Rotorcraft Operations' and ED-291 'Test Procedures for Quantified Visual Advantage' stand out as significant accomplishments of the group.

With the ongoing advancements in enhanced and synthetic vision technologies, WG-79/SC-213 has been focusing on MASPS-level guidance since 2019. This includes guidance for Synthetic Vision Systems (SVS), Enhanced Flight Vision Systems (EFVS), Enhanced Vision Systems (EVS), and Combined Vision Systems (CVS) technologies, integrating synthetic and enhanced vision.

This work will culminate with two significant publications in January 2025:

- ED-327 'MASPS for Enhanced Vision Systems and Enhanced Flight Vision Systems'.
- ED-326 'MASPS for Synthetic Vision Systems, Synthetic Vision Guidance Systems, and Combined Vision Systems'.

WG-79 will continue to advance vision system standards, emphasising their critical role in ensuring safe navigation and operations for airborne platforms. These systems support threat detection and avoidance, navigation to landing areas (e.g., airstrips, vertiports, and landing zones), and safe landing and taxi operations under both clear and low-visibility conditions.

Existing MASPS, such as ED-255 for Helicopter Operations, do not yet provide guidance to reduced minima or operational credit. The group aims to extend these standards to cover systems that enable operational credit for helicopters and Innovative Aerial Services (IAS) in low visibility operations. Additionally, coordination with EUROCAE Working Groups developing standards for IAS is required.

# WG-118 Crash-Protected and Lightweight Flight Recorders

**CHAIRPERSON:** Hannes Griebel, CGI
Jennifer Weiss, ACR ELECTRONICS
**SECRETARY:** Robin Hudson, DRS TECHNOLOGIES CANADA LTD
**TPM:** Atiqah Pillain

Investigations into commercial air transport incidents have underscored the need to improve voice recording quality. Authorities have recommended the development of an objective analysis technique to ensure consistent cockpit voice recorder (CVR) performance. The ICAO Flight Recorder Specific Working Group (FLIRECSWG) has advised updating standards to include crew-machine interface recording, as outlined in ICAO Annex 6. In response, EASA proposed revising the European Technical Standard Order (ETSO-C124b) to align with EUROCAE standards ED-112A 'MOPS for Crash Protected Airborne Recorder Systems' and ED-155 'Minimum Operational Performance Specification for Lightweight Flight Recording Systems', incorporating technical requirements into performance standards.

Acknowledging these needs, the TAC established WG-118 in 2020. The WG was tasked with revising ED-112A to address the following areas:

- Recording information displayed to the flight crew on electronic displays,
- Capturing the operation of switches and selectors by the flight crew,
- Improving audio quality assessments for voice recorders, and
- Enhancements related to deployable recorders.

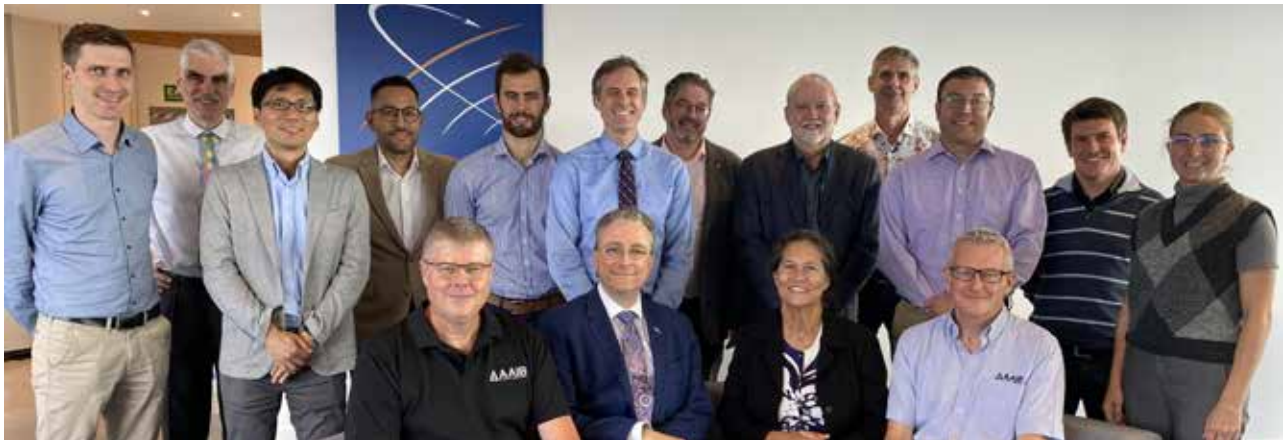
This work culminated in the publication of ED-112B in September 2023. The ED-112B Change 1 and ED-112B Integrated Change 1 are scheduled for publication in January 2025 introducing minor technical updates related to survival criteria (for both fixed and deployable recorders), as well as deep-sea pressure and seawater immersion considerations.

Simultaneously, the revision of ED-155, with the updated ED-155A, is scheduled for publication in February 2025.

WG-118 is also actively developing a MASPS for Crash Protected Recording Systems for AAM aircraft. Given the intricate nature of AAM recording systems, the MASPS approach, while addressing the end-to-end system- including control stations, is considered more appropriate than MOPS. The AAM aircraft recording systems must account for three key aspects:

- Data Recording Requirements and Equipment in the AAM aircraft,
- Recording of the C2-Link, and
- Control Station Data Recording and Equipment Requirements, as applicable.

Additionally, WG-118 has initiated the development of a report and a MASPS for Virtual Flight Recorder Data Recording Services (VFDR). This standard focuses on cloud-based data storage solutions, where data transmitted by aircraft is securely stored in a virtual environment. The VFDR MASPS aims to provide an acceptable means of compliance with the Global Aeronautical Distress and Safety System (GADSS) provisions while supporting incident and accident investigations. This innovative approach reflects the growing importance of cloud-based systems in modern aviation and their role in enhancing data accessibility and analysis.



# WG-129 Take-off Performance Monitoring System

**CHAIRPERSON:** Brian Roberts, UK CAA
**TPM:** Atiqah Pillain

In 2015, WG-94 *Take-Off Performance Monitoring System* produced a Technical Report providing a high-level overview of the Take-Off Performance Monitoring (TOPM) System concept. The report recommended reassessing the need for Minimum Operational Performance Standards (MOPS) / Minimum Aviation System Performance Standards (MASPS) within three to five years. Following completion of the report, WG-94 was closed.

In 2024, WG-129 was established as its successor, tasked with addressing the evolving requirements and advancements in Take-Off Performance Monitoring (TOPM) systems.

The UK Civil Aviation Authority (CAA) received a safety recommendation from the UK Air Accidents Investigation Branch (AAIB) related to a Serious Incident Report (AAIB-27895) involving a take-off performance issue. The investigation found that a UK-registered aircraft took off with insufficient power selected, resulting in significantly higher runway consumption than intended. Although the aircraft became airborne safely, this only occurred because the available runway length was sufficient. During the climb, the crew recognised the error and applied full power. Over the past five years, 32 similar incidents have been reported, as documented in Appendix A of the UK AAIB Serious Incident Report.

Currently, no operational or performance requirements govern TOPM systems. To address this gap, WG-129, in collaboration with RTCA SC-244, conducted a technology assessment to inform a future standardisation program for this capability.

In November 2024, WG-129 and SC-244 drafted an Internal Report outlining the current technologies available to support Take-Off Performance Awareness and Alerting Systems (TOPAAS). This report serves as the foundation for developing a new MOPS.

The new MOPS aims to establish guidance material for a system that provides visual and aural alerts to the flight crew if acceleration is insufficient to reach take-off speed before a critical runway point. This will ensure that the Pilot Flying (PF) has sufficient time to take corrective action. The publication of the standard is scheduled for September 2026.

# WG-105 Unmanned Aircraft Systems (UAS)

**CHAIRPERSONS:** Alexandra Florin, WING
Maurizio Goiak, LEONARDO
**SECRETARY:** Jean-Philippe Bonhomme, NEXTIDEE
**TPM:** Bertrand Riveill

WG-105 is responsible for developing the necessary standards to ensure the safe integration of Unmanned Aircraft Systems (UAS), including Remotely Piloted Aircraft Systems (RPAS) when controlled and monitored from a Remote Pilot Station (RPS), into all classes of airspace. This work takes into account emerging European regulations, which follow a risk-based approach depending on the category of operation (open, specific, or certified), as well as industry requirements.

WG-105 is organised into six Subgroups (SGs) that are working on several deliverables in the following areas:

- SG-1: Detect and Avoid (DAA)
  - MASPS and MOPS for DAA against conflicting traffic for RPAS operating under IFR in all airspace classes
  - MOPS for DAA for UAS operating in Very Low Level (VLL)
- SG-2: Command, Control, and Communication, Spectrum, and Security (C3&S)
  - RPAS C2 Datalink
  - UAS Communications by Cellular Networks
  - C2 MASPS European Stakeholders Report
- SG-3: UAS Traffic Management (UTM)
  - Interface between the UAS operator and the Network Identification Service
  - Network Remote Identification exchange protocol between USSPs
  - U-space Scenarios and Uses Cases
  - MOPS for Geofencing
- SG-4: Design and Airworthiness (D&AW)
  - Minimum Operational Performance Standard for Command Unit Core Layer of UAS to be operated in the EASA certified category of operations
- SG-5: Enhanced RPAS Automation (ERA)
- SG-6: Specific Operational Risk Assessment (SORA)
  - UAS Safety Analysis for the Specific Category with Low and Medium Levels of Robustness
  - SAIL II Application of SORA
  - Guidelines for showing compliance with SAIL III and IV non-design related SORA Operational Safety Objectives
  - GNSS for UAS

The Enhanced RPAS Automation (ERA) SG is currently dormant, following publication of planned deliverables on Automatic Take-Off and Landing, Automatic Taxi and Automation & Emergency Recovery.

The WG-105 work programme is regularly updated according to our member's needs and to adapt to the evolving landscape of the UAS industry.

Latest Publications:

- ED-325 Vol. I 'Guidance Document for Special Condition Light UAS – Medium Risk' (December 2024)
- ER-032 'European Industry Position Report on RTCA SC-147 ACAS sXu' (November 2024)

Of the 17 documents currently under development in this Working Group, the following are the upcoming publications:

- ED-336 'Guidelines for SAIL II application of SORA' (February 2025)
- ED-269 'Change 1, MOPS for Geofencing published' (January 2025)

# WG-112 VTOL

**CHAIRPERSONS:** Oliver Reinhardt, VOLOCOPTER
Lionel Tauszig, EASA
**SECRETARY:** Tom Gunnarson, WISK
**TPM:** Bertrand Riveill

WG-112 was established following a joint EUROCAE/EASA workshop and held its first meeting in June 2019. WG-112 is responsible for developing industry standards to complement EASA's SC-VTOL with Means of Compliance (MoC).

The group was set an ambitious goal to publish the first related documents as quickly as possible. To support this goal, EUROCAE introduced a streamlined publishing process. This process, known as the Lean Process, significantly reduces administrative efforts while maintaining EUROCAE's core principles and commitment to publishing high-quality standards.

The WG is structured in nine subgroups:

- SG-1 Electrical Systems
- SG-2 Lift/Thrust
- SG-3 Safety
- SG-4 Flight
- SG-5 Ground infrastructure
- SG-6 Avionics
- SG-7 ConOps
- SG-8 Seats (joint with SAE Seat committee)
- SG-9 Electromagnetic Hazards

The Steering Committee (SG-0) current work is on defining new tasks to support EASA's fourth priority list of MoC complementing the SC-VTOL. A key aspect of WG-112's success is the strong coordination with WG-63 on Complex Aircraft Systems and WG-105 on UAS, contributing to a more harmonised regulatory framework.

Currently, WG-112 is developing nineteen standards, with 22 documents already published since the Working Group's inception.

Latest publications:

- ED-314 'Compliance methodologies for VTOL certification in inadvertent icing and snow operation' (February 2024)
- ED-295 'Guidance on VTOL Flight Control Handling Qualities Verification' (July 2024)
- ED-309 'Guidance on VTOL Energy Level Information Provided to the Crew' (February 2023)
- ED-308 'Guidance on VTOL Charging Infrastructure' (February 2023)

# WG-44 Aeronautical Databases

**CHAIRPERSON:** Stephane Dubet, DSNA
**SECRETARY:** Sasho Neshevski, EUROCONTROL
**TPM:** Alex Milns

WG-44 was created in 1997, and it has developed several standards to cover the processing of aeronautical data (ED-76B), navigation (ED-77A), terrain and obstacles (ED-98C, ED-119C), and aerodrome mapping (ED-99D, ED-119C). WG-44 works closely with RTCA Special Committee 217 with equivalent documents being published by RTCA.

During early 2024, WG-44 and SC-217 finalised the drafting of EUROCAE ED-76B/RTCA DO-200C 'Standards for Processing Aeronautical Data', with publication of the update in June 2024. This update addressed interpretation issues encountered in applying the earlier edition across the industry and further enables opportunities for all market segments and entrants to utilise this standard in a consistent manner.

Throughout 2024, WG-44 and SC-217 worked on updates to EUROCAE ED-77A/RTCA DO-201B 'User Requirements for Navigation Data'. This work will continue through till the middle of 2025, with publication of ED-77B/DO-201C planned for late 2025.

# WG-59 Flight Data Processing (FDP) Interoperability

**CHAIRPERSON:** Andrés Grijalba, ENAIRE
**TPM:** Alexander Engel

WG-59 is tasked with revising ED-133 'Flight Object Interoperability Specification'. ED-133A was submitted for Open Consultation from July to October 2022. During the Comment Resolution Process, not all non-concur comments could be resolved. As a result, the Dissenting Opinion Procedure was invoked.

To assist in resolving the comments, a Council Task Force was formed. Together with the WG-59 Leadership and the Non-Concur Commenters, the task force developed a Work Programme that outlined the steps required for resolving comments and preparing for the subsequent publication of ED-133A.

Following the execution of this Work Programme, the Non-Concur Commenters confirmed that their issues had been adequately addressed. However, due to the substantial changes made to the document, the Council decided that a second Open Consultation was necessary. This second consultation has been scheduled for January 2025.

# WG-67 Voice over Internet Protocol (VoIP) for ATM

**CHAIRPERSON:** Liviu Popescu, EUROCONTROL
**SECRETARY:** Roberto Weger, SITTI
**TPM:** Alexander Engel

WG-67 was established in response to the shift towards a converged telecommunications network that exclusively carries IP traffic for both data and voice communications. This evolution resulted in the development of an international standard for Voice over IP (VoIP), specifically tailored for the ATC environment.

WG-67 has developed three key deliverables:

- ED-136 'Voice over Internet Protocol (VOIP) Air Traffic Management (ATM) System Operational and Technical Requirements'
- ED-137C 'Interoperability Standard for VOIP ATM Components' (published in 4 volumes), including Change 1 documents for Volumes 1, 2, and 4
- ED-138B 'Network Requirements and Performance for VoIP ATM Systems' (published in 2 parts)

Following the publication of ED-137C, WG-67 is working in line with its updated Terms of Reference (ToR) on Revision A of ED-136, scheduled for publication in early 2025. The current ED-136 will be split into two volumes:

- ED-136/1A 'Operational Services and Environment Definition (OSED)'
- ED-136/2A 'Safety and Performance Requirements (SPR)'

The revision of ED-138 began in June 2023, with plans for publication by Q1 2025.

In February 2024, WG-67 published Change 2 to ED-137/1C (Radio Volume). The group is currently working on Change 1 to ED-137/5C (Supervision Volume) and Change 2 to ED-137/4C (Recording Volume), both of which were in Open Consultation until May 2024.

# WG-76 AIS/MET Datalink Applications

**SECRETARY:** Macarena Martin Viton, AIRBUS
**TPM:** Alexander Engel

In 2024, WG-76, in collaboration with SC-206, completed work on ED-335/DO-364A 'MASPS for AIS/MET Datalink Services'. The document was open for consultation from October to November 2024. Despite several non-concur comments, the comment resolution process was successful, leading the groups to submit the document for Council approval, with publication planned for March 2025.

Work is also ongoing on the 'Technical Standard for Automated Atmospheric Turbulence Derivation Techniques', which will define the requirements for automated atmospheric turbulence derivation techniques that output in Eddy Dissipation Rate (EDR). The document will also outline a methodology for data validation to ensure operational comparability. The target publication date for this standard is early 2026.

The revision of 'MOPS for Flight Information Services Broadcast (FIS-B) with Universal Access Transceiver (UAT)', which is currently an RTCA-only document, is in progress with a target publication date at the end of 2025. This revision aims to enhance related products and services, correct errors, and align the document with updated requirements from the stakeholder community.

Finally, WG-76 is developing an Internal Report to provide recommendations on potential standards development related to aircraft-based meteorological observations. This report is expected to be delivered by the end of 2025.

# WG-78 Standards for Air Traffic Data Communications Services

**CHAIRPERSON:** Luc Emberger, AIRBUS
**TPM:** Alexander Engel

WG-78, in collaboration with RTCA SC-214, has developed the following documents:

- ED-228B/DO-350B 'Safety and Performance Requirements Standard for Baseline 2 ATS Data Communication'
- ED-229B/DO-351B 'Interoperability Requirements Standard for Baseline 2 ATS Data Communications'
- ED-230B/DO-352B 'Interoperability Requirements Standard for Baseline 2 ATS Data Communication - FANS 1A Accommodation'
- ED-231B/DO-353B 'Interoperability Requirements Standard for Baseline 2 ATS Data Communication ATN Baseline 1 Accommodation'

These updates reflect the experience gained during validation exercises, particularly a Very Large-Scale Demonstration involving revenue flights equipped with certified B2 avionics. The demonstration delivered a extensive report on its findings.

- ED-228B/DO-350B and ED-229B/DO-351B were published in December 2023.
- ED-230B/DO-352B and ED-231B/DO-353B followed in March 2024.

To correct errors in the ASN.1 message set, a Change 1 was developed for ED-228B/DO-350B and ED-231B/DO-353B, with publications on 15 October 2024 and 19 December 2024.

Practical experience with aircraft implementing the respective message sets has shown some variances in aircraft behavior upon receiving specific messages. As a result, it was requested that a Verification Test Standard be developed. This activity has now kicked off, and the group is collecting material to define the tests required. The target publication date for this standard is early 2026.

Recently, the TAC approved the development of an Internal Report to gather recommendations regarding a potential revision of the ATS Data Communication Standards. The submission of the report is scheduled for the end of 2025.

# WG-81 Interoperability of ATM Validation Platforms

**CHAIRPERSON:** Thomas Damm, DFS
**SECRETARY:** Jose Manuel Cordero, ENAIRE
**TPM:** Alex Milns

Formed in 2008, WG-81 focuses on identifying opportunities and addressing the technical challenges associated with improving the functionality and efficiency of ATM simulation platforms. The group's work encompasses the integration of various real-time platforms, the incorporation of fast-time models and tools, and the investigation of interoperability requirements. Additionally, WG-81 assesses the need for standardised data exchange protocols, data preparation tools, and high-level exchange mechanisms to facilitate seamless communication.

SESAR projects require verification and validation exercises at the ATM Services level to sustain the development of ATM concepts and systems throughout the research and development lifecycle. The deliverables from WG-81 support this R&D activity by providing interoperability standards for ATM Validation Platforms.

WG-81 developed ED-147B 'ATM Validation Platforms Interoperability Specification', alongside the associated ED-148A 'Guidance to Achieve ATM Validation Platforms Interoperability', both published in November 2021. The Working Group is now continuing the development of a supplement to ED-147B, which will provide implementation rules for applying the widely used High-Level Architecture (HLA) runtime infrastructure (as per IEEE 1516).

# WG-85 4D Navigation

**CHAIRPERSON:** Okuary Osechas, ZURICH UNIVERSITY OF APPLIED SCIENCES (ZHAW)
**SECRETARY:** Ricardo de Sousa, NATS
**TPM:** Mark Watson

WG-85, in collaboration with RTCA SC-227, is responsible for developing navigation standards aimed at designers, manufacturers, and installers of avionics equipment; airspace managers and service providers; as well as the users of these navigation systems for global operations.

The following documents have been developed:

- ED-323/DO-283C 'MOPS for Required Navigation Performance for Area Navigation': Initially an RTCA-only deliverable (DO-283), it was agreed that the revision of DO-283C would be a joint activity, as the implementation of the MOPS must be harmonised worldwide.
- ED-75F/DO-236E 'Minimum Aviation System Performance Standards: Required Navigation Performance for Area Navigation': This document ensures consistency with the changes introduced in the MOPS (ED-323/DO-283C). During the development of ED-323/DO-283C, modifications were made to the MOPS, necessitating corresponding updates to the MASPS (ED-75E/DO-236D) to maintain alignment between the two documents.

A second open consultation for ED-323/DO-283 and ED-75F/DO-236E was completed in Q4 2024, with publication of both documents anticipated in Q1 2025.

The work on ED-75/DO-236 complements ongoing activities in WG-107 *DME Infrastructure supporting PBN Positioning* MASPS. WG-85/SC-227 is coordinating with WG-107 regarding assumptions about aircraft behaviour when using DME as an area navigation sensor. WG-107 will also provide support to WG-85/SC-227 concerning assumptions about DME infrastructure performance.

Looking ahead, the working group plans to update the MASPS (ED-75F) and MOPS (ED-323) to further develop the functional, performance, and testing requirements for TOAC, as well as enhance the multi-sensor requirements for RNP and improve the resilience of RNP services in the event of GPS/GNSS outages.

# WG-92 VDL Mode 2

**CHAIRPERSON:** Stephane Pelleschi, COLLINS AEROSPACE
**TPM:** Mark Watson

WG-92 is working jointly with RTCA SC-214 VDL subgroup 3 and in close coordination with AEEC Datalink Committee. With the introduction of Aeronautical Telecommunications Network/Internet Protocol Suite (ATN IPS) and the related need for security, there is an opportunity to update VDL Mode 2 such that it will optimise ATN/ IPS operations.

VDL Mode 2 standards are being updated to cover the following topics:

- Operational feedback (from NM DSG and Datacom DCIT)
- Support of ATN/IPS (IOA) – Draft standard is available for IPS validation activities (FAA IPS VLD and SESAR FCDI)
- VDL Interference issue

This presents an opportunity to align the standards, ensuring coherence between the VDL Mode 2 standards for ACARS, ATN/OSI, and ATN/IPS, as well as maintaining consistent traceability between the VDL standards of RTCA and EUROCAE.

In line with the current version of the Work Programme, the groups are working on:

- ED-92D/DO-281D 'Minimum Operational Performance Standards (MOPS) for Aircraft VDL Mode 2 Physical Link and Network Layer'
- ED-XXX/DO-224E 'Signal-in-Space Minimum Aviation System Performance Standards (MASPS) for Advanced VHF Digital Data Communications'
- ED-276A/DO-383 'Guidance on Air to Ground VDL Mode 2 Interoperability'

# WG-103 Independent Non-Cooperative Surveillance (INCS) System

**CHAIRPERSON:** Javier Ceballos-Gutierrez, EUROCONTROL
**SECRETARY:** Hannes Stahl, HENSOLDT
**TPM:** Alexander Engel

The increasing need to mitigate clutter from wind farms and detect small Remotely Piloted Aircraft has placed new demands on sensor design. WG-103 has been tasked with developing a Technical Specification for an INCS System.

This was established in response to the ongoing evolution in the design of Non-Cooperative Sensors. Traditionally, rotating Primary Surveillance Radars fulfilled this role, but they are now being supplemented by a range of innovative designs made possible by recent technological advancements. As these technologies progress, operational requirements have similarly evolved to meet new challenges in changing environments.

The absence of a common technical specification for emerging sensors posed a risk of producing a wide variety of sensor types, none of which might meet the operational needs of end users. However, the working group has made significant progress in assembling a balanced specification. This specification is sufficiently flexible to avoid unnecessarily limiting design choices while still being precise enough to ensure that systems produced under it are interoperable and capable of meeting user requirements. The working group includes a diverse mix of sensor manufacturers and ANSPs, with significant participation from Europe, as well as representation from America and Asia.

After an Open Consultation and a challenging comment resolution process (due to complex non-concur comments), ED-288 'Technical Specification (TS) for an Independent Non-Cooperative Surveillance (INCS) System' is set to be submitted for a second Open Consultation in early 2025.

# WG-107 DME Infrastructure supporting PBN Positioning

**CHAIRPERSON:** Gerhard Berz, EUROCONTROL
**SECRETARY:** Maurizio Scaramuzza, SKYGUIDE
**TPM:** Mark Watson

The 12th ICAO Air Navigation Conference acknowledged the ongoing necessity for terrestrial-based backup systems to mitigate the risks associated with GNSS disruptions. At present, GPS serves as the cornerstone for all PBN navigation applications, including Area Navigation (RNAV) and Required Navigation Performance (RNP). However, DME/DME is primarily seen as supporting only RNAV applications, which has led to concerns that, in the event of a GPS failure, there would be a need to fall back on a less capable navigation solution along with corresponding mitigation measures.

An analysis conducted by EUROCONTROL, Airbus, and other partners (SESAR 15.3.2 D12) concluded that RNP1 performance could be sustained based on DME/DME, provided that the ground transponder can be relied upon for part of the integrity budget. Without this reliance, on-board reasonableness checks would not be able to detect all identified faults. Fortunately, current equipment meets this integrity requirement, even though it is not explicitly specified in Annex 10.

To support PBN, the Working Group has outlined several key objectives:

- Enhancing the robustness of DME infrastructure to support RNAV specifications and ensure reliable performance in the event of a GNSS outage.
- Establishing DME infrastructure requirements to enable prolonged support for PBN operations that require an RNP1 navigation specification in case of a GNSS outage (also known as RNP reversion).
- Defining DME infrastructure requirements and assessment methods to fully support RNP operations, at least to the RNP1 specification. This will include providing guidance for States to approve RNP operations based on DME.

For ground functions, the goal is to revise ED-57, the MOPS for Distance Measuring Equipment (DME/N and DME/P) – Ground Equipment, to reflect current equipment performance.

Additionally, a separate MASPS is being developed to provide clear documentation for Air Navigation Service Providers on how to offer an RNP reversion mode based on DME/DME positioning. This document will explain the overall concept and describe the various system elements, as well as their allocations between the ground and airborne segments. The MASPS will be a standalone document, ensuring consistency with the complementary ED-75/DO-236. To maintain consistency across deliverables, close cooperation between WG-107 and WG-85/SC-227 has been established. WG-107 is expected to complete this work by the second quarter of 2025.

# WG-108 ATN/IPS

**CHAIRPERSON:** Stephane Pelleschi, COLLINS AEROSPACE
**TPM:** Mark Watson

WG-108, in collaboration with RTCA SC-223, completed ED-262/DO-379 'Technical Standard of Aviation Profiles for Aeronautical Telecommunication Network/Internet Protocol Suite (ATN/IPS)' in September 2019. The updated version, ED-262A/DO-379A, was published in October 2024, following the ATN/IPS standards development by ICAO. ED-262A is intended for validation exercises, with a future version expected to serve as the baseline for IPS systems development.

In September 2023, ED-315/DO-404 'Minimum Aviation System Performance Standard (MASPS) on ATN-IPS end-to-end interoperability and certification' was published. This MASPS could be used to support early ATN/IPS development and prototyping.

Currently, WG-108 is working on an Internal Report to evaluate the impact of ATN/IPS research projects on the MASPS and IPS Profiles. The report will also include an analysis of the subsequent planning and execution of relevant maintenance activities on the standards. The outcomes will be summarised in the Internal Report, with a view to revising the standards between 2026 and 2027.

This work is being conducted in close coordination with ICAO, the Airlines Electronic Engineering Committee (AEEC) of ARINC, and the wider community to ensure alignment on the content and expected release dates of all standards.

# WG-122 Virtual Centre

**CHAIRPERSON:** Nicolas Suarez Tetzlaff, ENAIRE/CRIDA
**SECRETARIES:** Prachi Shekhar, EGIS AVIATION UK
Isabel Franke-Chaudet, EGIS AVIATION UK
**TPM:** Alex Milns

After an in-depth stakeholder workshop on 25 August 2020, where more than 60 experts participated in an insightful discussion on the importance of this topic, the need for standards was clearly established. This confirmed the relevance and urgency of the initiative, leading to the launch of WG-122 in November 2020.

WG-122 has been working in parallel with a number of SESAR projects focusing on different aspects of Virtual Centres, with many of the active members of WG-122 also engaged in these research and development projects. This synergy of personnel supports the identification of emerging standardisation needs for the Virtual Centre concept and in-service applications.

Since its creation, the Working Group has delivered two documents, a report ER-026 'Virtual Centre - Strategy for Standardisation - Phase 1' in January 2022 and a second report ER-029 'Taxonomy of Services for Virtual Centres' in January 2024.

WG-122 is now focusing on developing a guidance document for implementation of Virtual Centres. This document will address the need for clear guidance on Virtual Centres (VCs) to support their implementation. It will aim to consolidate existing knowledge from various sources, including the Airspace Architecture study, and provide a holistic understanding of the Virtual Centre concept.

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

# WG-126 VCS-ATC Systems Integration for ATM Information Exchange

**CHAIRPERSON:** Roberto Weger, SITTI
**SECRETARY:** Iuliana Lungo, ROMATSA
**TPM:** Alexander Engel

Air Traffic Control (ATC) Systems and Voice Communication Systems (VCS) form the fundamental combination needed for the effective and efficient management of air traffic by Air Traffic Controllers (ATCOs). At present, there is no existing standard that outlines the integration between these two systems.

WG-126 has been tasked to define a new communication standard to be used as an interface between ATC and VCS systems, so that they can share flight information (e.g. flight call sign, frequency in use, device being receiving/transmitting, etc.) and present them in a coordinated and comprehensive way to controllers. The standard will enable:

- Integrated sharing of information
- Combined recording of voice and flight information
- Greater situational awareness of ATCOs
- Lower workload for ATCOs
- Higher safety

The current Terms of Reference list the following deliverables:

- 'OSED for ATC Systems – VCS Interoperability for ATM Information Exchange'
- 'Interoperability Standard for ATC Systems – VCS Interoperability for ATM Information Exchange'

The target date for the publication of both deliverables is Q1 2026. The OSED has reached an advanced level of maturity and could potentially be submitted for Open Consultation in early 2025. However, due to its dependency on the content of the INTEROP Standard, this step may need to be postponed.

# WG-130 ATM/ANS Supporting Standards

**CHAIRPERSONS:** Jose-Luis García Chico, EASA
Pascal Rohaut, THALES
**SECRETARY:** Serge Cologner, DSNA
**TPM:** Alex Milns

WG-130 was established by the EUROCAE Council in October 2024 in response to the publication of Regulation (EU) 2023/1768, which established the requirements for the attestation of ATM/ANS equipment and completes the technical and interoperability framework to ensure the safety performance of civil aviation and operational/technical interoperability in Europe.

To support this new framework, detailed technical and operational standards developed by EUROCAE will be used as a means of compliance for ATM/ANS equipment attestation and ATM/ANS operations.

WG-130 is tasked to identify and facilitate development of standards and related deliverables, including a coordinating role in consolidating standards developments by other existing WG, to support the attestation of ATM/ANS equipment and ATM/ANS operations. As the framework develops, detailed standards developed by EUROCAE will be used as a means of compliance for ATM/ANS equipment attestation and ATM/ANS operations.

WG-130 held its kick-off meeting in November 2024 and set in place a working structure to support the first deliverable; a report further analysing the suitability of the existing standards to support safe and interoperable operations. The Working Group will also propose a work programme to address required updatesalong with a proposal for the management and reporting structure of future work to support the conformity assessment framework.

Members of WG-130 are also active in other organisations and coordination groups with an important role in the ATM conformity assessment framework, such as the EASA RMT.0744 and the European ATM Standards Coordination Group (EASCG). This ensures close cooperation and coordination of the activities of WG-130 and these other bodies.

# WG-41 Advanced Surface Movement Guidance and Control System (A-SMGCS)

**CHAIRPERSON:** Roy Posern, FRAPORT
**SECRETARY:** Vasileios Stefanioros, EASA
**TPM:** Alex Milns

WG-41 focuses on the functionalities of Advanced Surface Movement Guidance and Control Systems (A-SMGCS) for airports, incorporating the latest advancements from SESAR projects and ongoing initiatives within organisations like EUROCONTROL.

During 2024, WG-41 continued the development of an Interoperability Standard for A-SMGCS, where the complete range of system interfaces needed to support optimal airport operations and latest SESAR project outcomes will be defined, and the relevant data exchanges specified. Members of the working group meet regularly on-line between plenary meetings to progress the development of this Interoperability Standard. WG-41 expects to be publishing this standard during 2025.

WG-41 has also commenced a review of ED-128, to be renamed 'Guidelines for the Implementation and Operation of A-SMGCS' reflecting the broader scope with the incorporation of routing and guidance functions into the scope of the document. Members of WG-41 maintain close liaisons with EUROCONTROL, ensuring the technical specifications in the EUROCAE documents remain aligned with the related EUROCONTROL Specifications.


# WG-83 Foreign Object Debris Detection (FOD)

**CHAIRPERSON:** Stéphane Larose, THALES LAS
TPM: Alex Milns

Established in 2010, WG-83 was tasked with developing guidance documents to assist airports in implementing systems for Foreign Object Debris (FOD) detection.

Following the publication of ED-235 'Minimum Aviation System Performance Specification for Foreign Object Debris Detection Systems', in 2016, the group developed the associated OSED to support airports in defining their CONOPS when deploying FOD detection systems. This effort led to the release of ED-274 'OSED for Aerodrome Foreign Object Debris Detection Systems', in August 2020.

In 2024, WG-83 successfully updated ED-235 to incorporate the latest technological advancements, including sensor innovations and artificial intelligence for FOD identification and classification. The revised document, ED-235A, was published in April 2024.

With no further work required in this domain, WG-83 was placed in dormant status by the EUROCAE Council in October 2024.

# WG-100 Remote and Virtual Tower

**CHAIRPERSON:** Jörn Jakobi, DLR
**SECRETARY:** Mark Edry, COLLINS AEROSPACE
**TPM:** Alex Milns

WG-100 was established in June 2014 and has been actively developing the MASPS for Remote Tower Optical Systems (ED-240). This work has evolved in parallel with technological advancements in this emerging field, ensuring alignment with SESAR projects, operational trials, and the implementation of Remote Tower technology.

The first edition of ED-240 was released in September 2016. Since then, ED-240A (2018) and ED-240A Ch1 (2021) have progressively increased the scope of the document to cover more functionalities that can be optionally implemented for Remote Tower Optical Systems. In July 2023, ED-240B was published, adding the processing and integration of information produced by existing or emerging surveillance systems/sensors, such as Primary Surveillance Radar (PSR), Secondary Surveillance Radar (SSR), Surface Movement Radar (SMR), Wide Area Multilateration/Airport Surface Multilateration (WAM/MLAT), Auto-matic Dependent Surveillance Broadcast (ADS-B), and/or other sensors.

Consistent with the continued evolution of remote tower system capabilities, WG-100 now continues the evolution of ED-240B, with the next edition, ED-240C being planned for publication in 2026. These extended MASPS will consider the application of artificial intelligence technologies such as machine learning and knowledge-based systems as a means of enhancing visual tracking performance and the performance of safety net functions. The update will also consider the impact of drones on remote tower performance requirements and cybersecurity, along with further refinements of the existing content in ED-240B.

WG-100 benefits from active participation from members across the globe. In addition to its many European contributors, experts from Canada, Japan, Singapore, the USA, and the Middle East bring valuable insights and experience in Remote Tower research and implementation.

In November 2024, WG-100 convened in Singapore, hosted by CAAS, a EUROCAE member. This meeting not only reinforced EUROCAE's presence in the Asia-Pacific region but also provided an opportunity for local members to engage directly and contribute to the discussions.

# WG-109 Runway Weather Information Systems

**CHAIRPERSON:** Bruno Boggio, DGAC STAC
**TPM:** Alex Milns

With the introduction of the Global Reporting Format (GRF) in 2021, ICAO has reinforced the critical role of runway condition assessment. Runway Weather Information Systems (RWIS) are designed to assist aerodrome operators in accurately evaluating runway conditions and detecting meteorological contaminants on pavements.

To support the GRF, EUROCAE established WG-109 in 2018 with the task to develop minimum requirements for RWIS, define the performance expected from the systems, and a way of verifying that the latter is achieving the performance expectations.

In December 2021, ED-292 'Minimum Aviation System Performance Standard (MASPS) for Runway Weather Information Systems' was published. It is one of the first standards to specify the minimum performance requirements to support airports in implementing the relevant ICAO Standards and Recommended Practices and EASA regulation related to GRF.

Following two years of in-service application of ED-292 and the GRF, WG-109 reconvened in February 2024 to initiate an update of the MASPS, and has held regular meetings throughout the year. WG-109 will also develop a guidance document for the implementation and operation of RWIS, which will support airport operators in assessing implementation options and operational requirements for RWIS.

# WG-111 Airport Collaborative Decision Making (A-CDM)

**CHAIRPERSON:** Segun Alayande, HEATHROW AIRPORT (ACI EUROPE)
**SECRETARY:** Ieyasu Sugimoto, ADB SAFEGATE
**TPM:** Alex Milns

A-CDM is a programme designed to enhance operational efficiency at airports. It brings together not only airport operators but also key stakeholders, including ANSPs, aircraft operators, ground handlers, de-icing companies, and various supporting services, fostering seamless coordination and improved decision-making.

EUROCAE first published a set of A-CDM standards in 2008. Since then, the Airport-Collaborative Decision Making community has continued to update A-CDM procedures and system features. This functional evolution of A-CDM and requirements derived from the European Pilot Common Project (PCP)/Common Project One (CP1) and other domains with close connections to A-CDM triggered the need to update the earlier standards.

On 26 February 2019, EUROCAE Council approved the creation of a new WG to update existing EDs on A-CDM.

During 2024, WG-111 finalised drafts of ED-141A and ED-146A. These two documents will be published in early 2025 concurrent with a new EUROCONTROL A-CDM Functional Specification document, with the EUROCAE documents providing a more technical focus.

Work on the data model specification is continuing, with publication of ED-145A targeted for late 2025.

WG-111 brings together experts from over 15 organisations, including regulators, airports, ANSPs, aviation consultancy firms, and manufacturers. Collaborating closely, the group leverages its collective expertise to develop and share best practices for the effective implementation of A-CDM.

# WG-115 Counter UAS (C-UAS)

**CHAIRPERSONS:** Javier Ceballos Gutierrez, EUROCONTROL
Assaf Monsa Chermon, D-FEND SOLUTIONS
**SECRETARY:** Mark Lupton, OPERATIONAL SOLUTIONS LTD
**TPM:** Alex Milns

Established in 2019, WG-115 is dedicated to developing standards for managing unauthorised Unmanned Aerial Systems (UAS) operations in airport environments. The group focuses on defining performance and interoperability requirements for Counter-UAS operations and collaborates closely with RTCA SC-238 to ensure global harmonisation.

The use of unauthorised UAS in the vicinity of major airports has significantly impacted airport and flight operations. Many close UAS encounters have been reported during approach, landing, and take-off of conventional aircraft, and this has an impact on flight safety. Counter UAS systems permit the detection, tracking and identification of unauthorised UAS operations and the reporting to airport operators, Air Traffic Control, aircrew and law enforcement authorities. In accordance with national regulations, neutralisation or disruption of the UAS (either the Unmanned Vehicle, the Command-and-Control Datalink, or the Remote Pilot) may be actioned by the Counter UAS system.

In 2021, WG-115/SC-238 delivered ED-286/DO-389 'Operational Services and Environment Definition (OSED) for Counter-UAS in Controlled Airspace', which introduces the overall capability of a C-UAS System, including the detection capabilities of unauthorised UAS in a protected area of influence around an airport. In December 2023, ED-322/DO-403 'System Performance and Interoperability Requirements for Non-Cooperative UAS Detection Systems' was published to complement the OSED with more specific technical requirements.

During 2024, work on a review of the OSED (ED-286) continued, to better align to current thinking and provide relevant guidance to potential users, as the understanding of the C-UAS system operating context has evolved since 2021.

# WG-28 Ground Based Augmentation System (GBAS)

**CHAIRPERSON:** Linda Lavik, INDRA
**TPM:** Mark Watson

WG-28 is developing standards for GBAS ground sub-systems, with a particular focus on multi-constellation multi-frequency concepts incorporating Galileo.

Since its creation in December 1985, WG-28 has worked on the maintenance of ED-114 'Minimum Operational Performance Standards (MOPS) for Global Navigation Satellite Ground Based Augmentation System (GBAS) Ground Equipment to support Precision Approach and Landing'. A minor corrigendum, correcting a hyperlink within ED-114B Change 1, was published during Q3 2024.

The WG is now working on preliminary material for future Multi-Constellation Multi-Frequency GBAS MOPS. This Internal Report should be submitted to TAC by Q1 2025.

WG-28 is collaborating with ICAO Navigation System Panel (NSP) in the context of GBAS Dual Frequency Multi-Constellation (DFMC) developments. The group also continues to monitor activities within WG-62 *GNSS* and RTCA SC-159 Global Positioning System. These groups are developing airborne MOPS that will be relevant for GBAS DFMC operation.

# WG-62 GNSS

**CHAIRPERSON:** Pierre Bouniol, THALES GROUP
**SECRETARY:** Mikael Mabilleau, EUSPA
**TPM:** Mark Watson

WG-62 develops standards for integrating Galileo and other GNSS systems into civil aviation applications. Working in close collaboration with RTCA SC-159 WG-2, the group aims to establish unified standards for GNSS receivers, ensuring seamless and reliable performance across multiple satellite navigation systems.

The group supports the use of the European Geostationary Navigation Overlay Service (EGNOS), Europe's regional satellite-based augmentation system (SBAS) that is used to improve the performance of global navigation satellite systems (GNSSs), such as GPS.

In this context, the work of WG-62 is focused on the development of the Satellite-Based Augmentation System (SBAS) Dual Frequency Multi Constellation (DFMC) receiver Minimum Operational Performance Standard (MOPS). A first version of ED-259 'Minimum Operational Performance Standards for Galileo - Global Positioning

System - Satellite-Based Augmentation System Airborne Equipment' was published in February 2019. Revision A was published in October 2023 and Revision B is expected by 2026.

ED-259 is the avionics standard supporting Required Navigation Performance (RNP) En Route and Terminal operations, Departure operations, RNP APCH (approach) down to Localizer Performance with Vertical guidance (LPV) minima and Automatic Dependent Surveillance - Broadcast (ADS-B).

ED-259A is meant to support validation of airborne requirements for above mentioned operations when using Dual Frequency GPS, Galileo and SBAS signals as defined by ICAO Standards and Recommended Practices (SARPs) (Annex 10, Volume I, Amendment 93), as well as the development of Dual-Frequency Multi-Constellation (DFMC) SBAS services.

A future release of the document will provide requirements supporting production approval, typically through a new Technical Standard Order (TSO) or European Technical Standard Order (ETSO).

In 2024, four plenary meetings were held jointly with RTCA SC-159 SG-2. In addition, the SBAS DFMC MOPS authors and editors groups continue to hold regular progress meetings.

Coordination is ensured with other GNSS constellations, e.g. a subgroup is preparing an internal report on the People's Republic of China GNSS, called BeiDou (BDS), to be delivered in Q1 2025, to initiate technical activities toward integration of BDS in ED-259.

# WG-82 New Air-Ground Data Link Technologies

**CHAIRPERSON:** Radek Zaruba, HONEYWELL
**SECRETARY:** Martina Angelone, ESA
**TPM:** Mark Watson

WG-82 is responsible for developing standards related to emerging air-ground data link technologies, including those for airport surface, satellite, and En route/Terminal Manoeuvring Area (TMA) L-band systems. The documents currently under development are designed to support the creation of ICAO Standards and Recommended Practices (SARPs) or serve as Means of Compliance (MoC) for these technologies.

WG-82 is currently drafting the following documents, in coordination with RTCA SC-222:

- ED-242D 'Minimum Aviation System Performance Standard (MASPS) for Aeronautical Mobile Satellite Radiocommunication Services AMS(R)S Data and Voice Communications Supporting Required Communications Performance (RCP) and Required Surveillance Performance (RSP)'
- ED-243D 'Minimum Operational Performance Standards (MOPS) for Avionics Supporting Next Generation Satellite Systems (NGSS)'

WG-82 also is currently working on the development of the following standards:

- ED-xxx 'MASPS for L-band Digital Aeronautical Communications System (LDACS) for Data and Voice Communications'
- ED-xxx 'MOPS for L-band Digital Aeronautical Communications System (LDACS) for Data and Voice Communications'

# WG-96 Wireless On-Board Avionics Networks

**CHAIRPERSON:** Uwe Schwark, AIRBUS
**TPM:** Mark Watson

WG-96 was established in 2013 with the objective of developing guidance material for the certification of Wireless On-Board Avionics Networks, with the group's work successfully completed in 2017. Following this, WG-96 initiated a joint activity with RTCA SC-236 to develop standards for Wireless Avionics Intra-Communications (WAIC) systems.

The Radio Regulations were changed in 2015 to allow WAIC systems to share the band 4200 – 4400 MHz with Radio Altimeters. WAIC systems must be able to share the band with Radio Altimeters and WAIC systems on other aircraft in a way that ensures that the safe operation of Radio Altimeters is not compromised, and the worst-case performance of a WAIC system can be predetermined. These two aspects are major prerequisites for proof of airworthiness for future WAIC systems.

ED-260A 'Minimum Aviation System Performance Specification (MASPS) for Coexistence of Wireless Avionics Intra-Communication Systems within 4200-4400 MHz' was published on 26 July 2022.

Publication of ED-319 'Minimum Operational Performance Specification (MOPS) for a Wireless Avionics Intra-Communication System' is expected in 2025 pending resolution of non-concur comments from non-aviation spectrum stakeholders.

# WG-119 Radar Altimeters (RA)

**CHAIRPERSON:** Jean-Luc Robin, AIRBUS
**TPM:** Mark Watson

WG-119 is focused on enhancing the robustness of Radar Altimeters against the Radio Frequency (RF) environment. Since its inception in May 2020, the joint WG-119/SC-239 group has held regular meetings, alternating between virtual sessions and physical meetings organised.

The future RF environment concurrently combines the following interferences:

- Interferences at the edges of the RA band (3.800 – 4.200MHz) and (4.400 – 5.000MHz), including anticipated future modulations and signal strength,
- Interferences within the RA band (4.200 – 4.400MHz),
- Out of RA band interferences that could potentially have an indirect effect on the RA due to level of signal, modulation, potential harmonics, RA antenna potential weakness (susceptibility) or RA design potential weakness (resonance).

WG-119's primary objective is the development of ED-30A 'Minimum Operational Performance Standard (MOPS) for

Low Range Radar Altimeters'. This MOPS will focus on the radar altimeter's robustness against both the current and anticipated future Radio Frequency (RF) environments, including the potential impact of 5G technology deployment.

The current ED-30 and DO-155 documents are not technically identical. The aim of this revision is to harmonise these documents, creating technically consistent standards (ED-30A/DO-155A) that will supersede both ED-30 and DO-155.

## WG-124 Spectrum

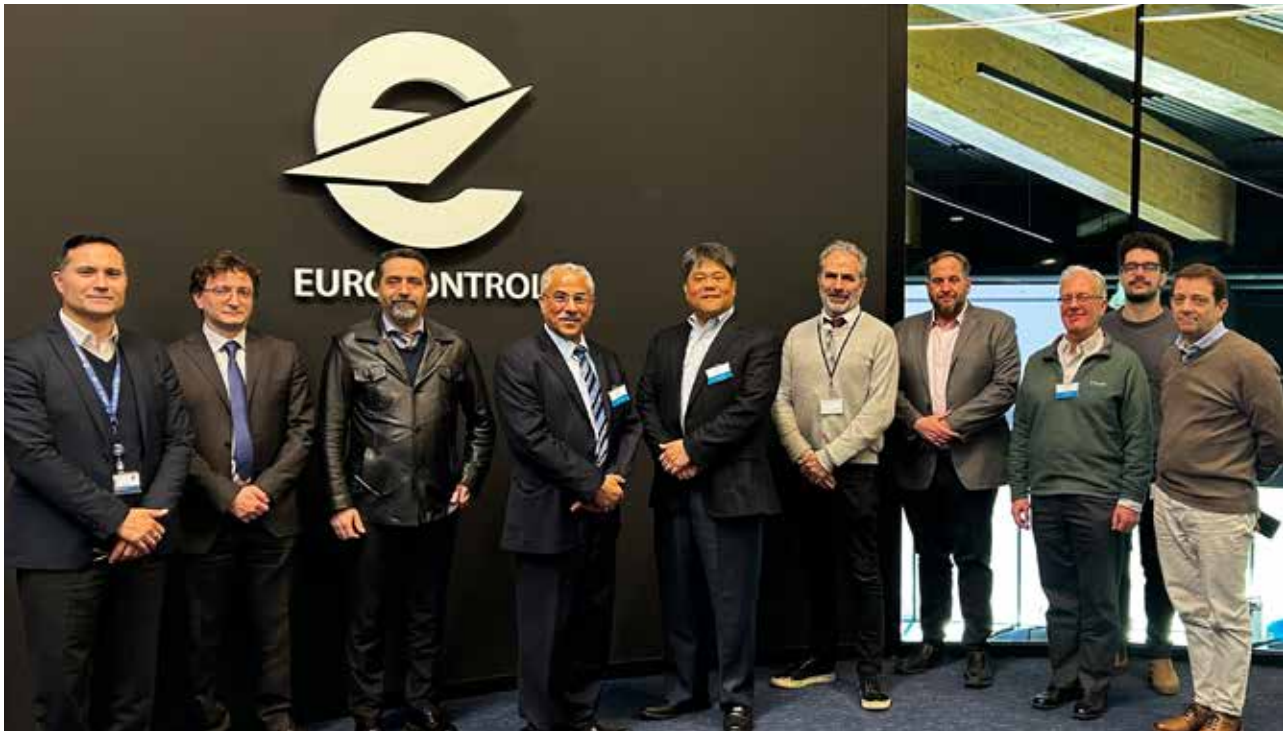
**CHAIRPERSON:** John Micallef, EUROCONTROL
**SECRETARY:** Mike Nash, UK CAA
**TPM:** Mark Watson

WG-124 was established to provide guidance on the efficient use of radio frequency (RF) spectrum by aeronautical Communications, Navigation, and Surveillance (CNS) systems, while ensuring the necessary safety margins are upheld. The group is working jointly with RTCA SC-242. The group's guidance will support future evaluations of compatibility with other systems and optimise the use of the allocated spectrum, fully considering the unique requirements of aeronautical CNS systems. The deliverables are expected to be referenced by EASA, other Civil Aviation Authorities (CAAs), ICAO, and national/international spectrum regulators, as applicable, in their guidance materials for aviation systems.

The EUROCAE Report ER-028 'Survey of Radio Frequency (RF) Performance of Standards for Aeronautical RF Systems' was published in November 2023.

WG-124 is currently tasked with the development of the following documents:

- 'Report for Aeronautical Radio Frequency (RF) Systems, their Regulatory Framework, and Operational Considerations' (expected to be published Q1 2025)
- 'Spectrum Guidance for the Developers of Standards for Aviation Wireless Systems' (expected to be published Q4 2025)



# WG-72 Aeronautical Systems Security

**CHAIRPERSON:** Cyrille Rosay, EASA
**SECRETARY:** Theodore Kalthoff, ARCHER
**TPM:** Anna Guégan

Established in December 2005, WG-72 is tasked with developing process specifications, guidelines, and means of compliance to address security concerns for aeronautical systems, covering the entire lifecycle of these systems. This ensures safe, secure, and efficient operations, particularly in light of the growing use of highly integrated electronic systems and network technologies on board aircraft.

EUROCAE's cybersecurity standards are frequently referenced by regulators. The group is meeting four times per year, alternatively in Europe and on the North American continent. The physical participation to the meetings is steadily increasing, although the hybrid format is maintained.

WG-72's activities, in collaboration with RTCA SC-216, are organised into four subgroups, focused on developing three revisions and four new documents.

### WG-72 SG-3

WG-72 SG-3 is focused on the organisational aspects of information security, currently working on a revision of ED-206/DO-392 'Guidance on Security Event Management', first published in 2022. This standard is aimed at organisations responsible for managing information security events that could impact aviation safety. The revised version is scheduled for publication in Q4/2025. Additionally, WG-72 SG-3 is revising ED-204B/DO-355B 'Information Security Guidance for Continuing Airworthiness' to provide further clarification of responsibilities and enhance the objectives related to information security for continued airworthiness.

### WG-72 SG-4

WG-72 SG-4 is focused on adapting Information Security Management Systems (ISMS) to the aviation sector. In response to new EASA regulations that mandate the management of cybersecurity risks for approved organisations and competent authorities in aviation, this work aims to guide these entities in implementing and maintaining an ISMS. The forthcoming document, expected for Q2/2025, will provide a standardised framework for organisations and authorities subject to the new EASA regulation, helping them establish, maintain, and improve their ISMS within the aviation context. It will also serve as a baseline for auditing by certified organisations.

### WG-72 SG-5

WG-72 SG-5 is focused on end-to-end data security, aiming to provide a comprehensive framework for securing data that impacts aviation safety throughout its lifecycle-during production, transport, storage, and usage. This work will support EASA's proposed Part IS, Part DAT, as well as the EASA/FAA Future Connectivity for Aviation (FCAV) initiative and the European ATM Master Plan. The final report, expected for publication in Q2/2025, will underpin future standards in this critical area.

### WG-72 SG-6

WG-72 SG-6 is currently updating ED-202A 'Airworthiness Security Process Specification', with a focus on improving change impact analysis related to the information security of embedded systems. The revision will identify the minimum set of activities required to demon-

strate compliance with changes, provide guidance on authority involvement in the compliance demonstration, and outline the implementation of security updates for certified products. Additionally, SG-6 is initiating two new activities related to ED-203: Change 1 and a companion report addressing frequently asked questions (FAQ).

Both documents are slated for publication in 2025.

In addition to its own activities, WG-72 provides its expertise to support activities in other working groups. WG-72 is collaborating for example with WG-96 *Wireless On-Board Avionics Networks*, WG-105 *Unmanned Aircraft Systems*, WG-114 *Artificial Intelligence* or WG-112 *VTOL*.

## WG-14 Environmental Testing

**CHAIRPERSON:** Marc Ponçon, AIRBUS HELICOPTERS
**SECRETARIES:** Julien Floch, EMITECH
Philippe Chenebault, DASSAULT AVIATION
Eric Delesalle, SAFRAN
**TPM:** Alex Milns

Established in September 1970, Working Group 14 remains dedicated to reviewing and updating ED-14, 'Environmental Conditions and Test Procedures for Airborne Equipment,' along with the associated user guide material in ED-234, 'User Guide Supplement to ED-14G.'

Due to technology evolution, equipment test levels and procedures need to be periodically updated. ED-14/DO-160 is now published as edition G, and although the document has reached a high level of maturity, it will continue to evolve on a regular basis. ED-14H/DO-160H is currently being developed, to reflect latest technologies and testing protocols. WG-14, that celebrated its 100th meeting in October 2024, collaborates closely with RTCA SC-135 in the development of these document. In the past year, joint meetings of WG-14 and SC-135 have seen good progress and convergence on many topics within ED-14H and the completion of 3 'review and comment' phases, where integrated change proposals on many sections of the document were opened for review by all Working Group and Special Committee members. The Working Group expects to release ED-14H to Open Consultation during the second half of 2025.

In June 2024, the EUROCAE Council approved a change to the title of WG-14 from *Environment* to *Environmental Testing* to better reflect the objectives of the Working Group.

Sub-Group 1 of WG-14 is developing a new deliverable titled 'Minimum Standard Environmental Test Conditions for UAS Ground Based Equipment'. As technology evolves and Unmanned Aircraft Systems (UAS) are integrated into commercial applications, it is considered necessary to review existing environmental qualification standards and requirements for surface-based equipment (stationary ground, mobile ground, and sea-based) and provide environmental qualification requirements for UAS Detect and Avoid (DAA), Command, Control, Communications (C3), and Control Station Equipment.

# WG-31 Electromagnetic Hazards

**CHAIRPERSONS:** Franck Flourens, AIRBUS
Christelle Kutyla, AIRBUS
**SECRETARY:** Simeon Earl, BAE SYSTEMS
**TPM:** Alex Milns

Founded in February 1987, WG-31 is responsible for developing technical standards, specifications, guides, and other materials necessary to support the regulation and certification of aircraft in relation to electromagnetic hazards, including lightning protection, electromagnetic compatibility (EMC), and high-intensity radiated fields (HIRF). WG-31 collaborates closely with the SAE AE2 Lightning Committee and the SAE AE4 Electromagnetic Compatibility Committee.

WG-31 has a broad programme of work, with 6 documents currently in review and another 3 new documents under development. ED-84B 'Aircraft Lightning Environment and Related Test Waveforms' was published in October 2024, and ED-105B 'Aircraft Lightning Test Methods' was finalised by the Working Group, for publication in January 2025.

The key topics of the Working Group include fuel tank protection against ignition risks, test methods for supporting lightning certification, guidance for demonstrating compliance to HIRF, and guidance for use of simulation in support of compliance processes. WG-31 is divided into four subgroups to deal with these matters in parallel with equivalent SAE AE2 and SAE AE4 subgroups. WG-31 maintains good group dynamics to address its current deliverables, while ensuring convergence with SAE on topics of common interest.

At the October 2024 meeting of WG-31, Franck Flourens announced his resignation from the WG-31 chair role which he had served for many years. WG-31 and EUROCAE wish Franck a happy retirement in 2025 and beyond and thank him for his leadership of the Working Group and service to the EUROCAE.

# WG-63 Complex Aircraft Systems

**CHAIRPERSONS:** Olivier Durou, AIRBUS
Franck Ybert, SAFRAN
**SECRETARY:** Claire Lucas, ROLLS ROYCE
**TPM:** Bertrand Riveill

WG-63, in collaboration with SAE S-18, is dedicated to providing the industry with guidelines for the development and safety of aircraft, systems, and equipment. The group develops standards that align with industrial practices in both Safety and Development Assurance. WG-63 is currently focused on the following deliverables:

- 'Industry Guidance to Address Common Mode Errors in Aircraft/ System Designs'
- 'Industry Guidance to consider Intrinsic Hazards in aircraft / systems development and safety assessment processes'
- 'Industry Guidance to consider Model Based Engineering in Development Process'
- 'Human Considerations for Functional Hazard Assessments'
- 'Using STPA During Development and Safety Assessment of Civil Aircraft'
- 'A clarification notice for ED-79B to address typographical errors and clarify portions to facilitate usage of the newly released ARP4754B / ED-79B'
- 'Aircraft and system Development Assurance Reviews'
- 'Applicability of Existing DA/SA Processes to UAS and VTOL'

WG-63/S-18 are also evaluating the applicability of existing development assurance and system safety practices to UAS and VTOL in the activity. This task could produce results that may be included in future updates of 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'.

To perform this task, WG-63 is coordinating with WG-105 *UAS* and WG-112 *VTOL* that are respectively producing guidelines on UAS Functional Hazard Analysis (FHA) and VTOL safety assessment (Common Mode Analysis (CMA), Specific Risks).

# WG-128 Airborne Electronic Hardware Design Assurance

**CHAIRPERSONS:** Pascal Pampagnin, AIRBUS
James Benzamat, CETRAC
**SECRETARY:** Murat Yilmaz, TURKISH AEROSPACE
**TPM:** Atiqah Pillain

In April 2000, ED-80 'Design Assurance Guidance for Airborne Electronic Hardware' was published by WG-46 *Electronic Hardware*. This standard, alongside its counterpart RTCA DO-254, has been extensively utilised and proven effective as guidance for the certification of Airborne Electronic Hardware (AEH). Recognised by airworthiness authorities such as EASA through AMC 20-152A and the FAA through AC 20-152A, ED-80 provides a process-oriented framework and well-established guidance on topics such as requirement-based verification, safety, and development assurance practices.

Over years of application across certified programmes and in conjunction with A(M)C 20-152A, authorities and industry stakeholders have identified areas for improvement, clarification, and enhancement to the ED-80 standard. Maintaining harmonisation of certification requirements and guidance materials across regulatory bodies remains a priority for industry members.

As AEH technology continues to evolve rapidly, specific areas of the original ED-80 require updates, including guidance for emerging technologies like multicore processors and model-based development approaches.

WG-128 *Airborne Electronic Hardware Design Assurance*, in collaboration with RTCA SC-243, has been tasked with addressing these updates. Their initial activity involved preparing the Internal Report 'Strategy for the Updating of ED-80 Design Assurance Guidance for Airborne Electronic Hardware'. This strategy document clarifies the scope of required changes and outline an update plan for ED-80 and is available for WG-128 members.

In November 2024, the TAC approved the launch of ED-80 Revision A, which builds on the foundation established in the Internal Report, joint with RTCA SC-243.

ED-80 Revision A will incorporate industry experience accumulated since the original publication and will include updates reflecting advancements in technology and certification practices. Additionally, a frequently asked questions (FAQ) document will be proposed to offer supplementary explanations and details about ED-80/DO-254 content. The Kick-Off meeting for ED-80 Revision A will be hosted by Joby Aviation in Santa Cruz on February 27, 2025.

# WG-97 Interoperability of Virtual Avionic Components

**CHAIRPERSON:** Olivier Fourcade, AIRBUS GROUP
**SECRETARY:** Virgine Froute, DASSAULT AVIATION
**TPM:** Thuc Nguyen

In December 2023, WG-97 achieved a major milestone with the publication of Revision B of ED-247 'Technical Standard of Virtual Interoperable Simulation for Tests of Aircraft Systems in virtual or hybrid bench'. This comprehensive framework guides the development, validation, verification, and operation of test benches for aircraft systems. The year 2024 was dedicated to reviewing key objectives from this milestone and planning for Revision C to address evolving industry needs.

Traditional physical test benches used in aircraft development are highly complex and involve significant initial and recurring costs. To address these challenges, Virtual Testing has emerged as a promising solution, having already demonstrated its advantages in industries such as telecommunications. However, in avionics, this approach faces unique challenges, such as managing complex distributed systems, supporting diverse hardware, and integrating infrastructure from multiple suppliers. WG-97 tackles these issues by standardising the integration of virtual avionics components and enabling the development of "plug-and-play" virtual test benches.

ED-247B is organised into six critical areas of virtual and hybrid architectures:

- Formalisation of Component Sharing: Defines protocols to ensure interoperability across platforms and organisations.
- Command & Control: Establishes mechanisms for efficient management of test bench components.
- Virtualisation of Functional Data: Enables high-fidelity models for virtual and hybrid testing.
- Time Management: Implements a state machine to synchronise components and manage temporal data accurately.
- Data Instrumentation: Provides precise internal and external data for analysis and verification.
- Health and Monitoring Services: Focuses on proactive monitoring to maintain system reliability and integrity.

Looking ahead, WG-97 has outlined the following priorities for 2025:

- Revision C Development: Defining new content based on industry feedback to address emerging requirements and incorporate technological advancements.
- Global Outreach: Strengthening communication with the worldwide avionics community to foster adoption and collaboration.

# WG-114 Artificial Intelligence in Aviation

**CHAIRPERSONS:** Christophe Gabreau, AIRBUS
Sandrine Serres, AIRBUS
Fateh Kaakai, THALES
**SECRETARY:** Radek Zakrzewski, COLLINS AEROSPACE
**TPM:** Thuc Nguyen

EUROCAE WG-114, working jointly with SAE G-34, was established in June 2019 to collaboratively develop a unified standard for the aviation industry. The group provides detailed guidance for the certification and approval of safety-critical aeronautical products leveraging Artificial Intelligence (AI) and Machine Learning (ML). This standard is intended to serve 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.

Initially organised into seven subgroups, WG-114 has streamlined its structure to accelerate progress toward its goals. As of 2024, the following subgroups are actively contributing to the standard's development:

- SG-1: Airborne & Ground Applications
- SG-23: Machine Learning Development Lifecycle
- SG-4: Machine Learning Constituent Implementation & Verification
- SG-57: System & Safety Consideration for Machine Learning
- SG-8: Human Factor Consideration (introduced in 2024)

The addition of SG-8 in 2024 marked a pivotal expansion in the group's scope. This new subgroup focuses on the unique certification challenges posed by AI systems interacting with human operators, addressing usability, workload, and decision-making reliability. Alongside discussions on Information Security, this development highlights WG-114's proactive approach to tackling emerging concerns in AI integration.

In 2024, the group also achieved several milestones:

- A stable draft of ED-324 'Process Standard for Development and Certification Approval of Aeronautical Products Implementing AI', aligned with EASA Concept Papers Levels 1 and 2, was completed. The draft lays the foundation for AI/ML integration in aviation and will be open for consultation in 2025.
- The new release of ER-27 'Taxonomy provided a structured framework for categorising AI/ML components and processes', supporting the practical application of ED-324 guidelines.
- Representatives of WG-114 joined the Rule Making Task Force 0742 of EASA, marking an important step in aligning its work with ongoing regulatory developments and ensuring that the group's efforts contribute directly to the European regulatory framework for AI in aviation.

Looking ahead to 2025, the group aims to launch the Open Consultation phase of ED-324, a critical step to ensure recognition from cross-industries and to gather valuable feedback before the final publication of the standard, expected in December 2025.

Over the course of one year, we interviewed the experts of EUROCAE Working Group 114 to better understand the challenges, opportunities, and progress in the field of Artificial Intelligence and Machine Learning in aviation.

**Watch our AI in Aviation video series**

# WG-117 Aviation Software Standards

**CHAIRPERSON:** Burak Ata, HELSING
**SECRETARY:** Kattie Grady, JOBY AVIATION
**TPM:** Thuc Nguyen

In 2024, WG-117 made significant strides in its efforts to advance aviation software standards, particularly through the work of its SG-2 subgroup COTS Open Source and Service History. This year, the group undertook a series of internal reviews that led to substantial improvements in the content of the supplement document addressing Commercial Off-The-Shelf (COTS) and Open-Source Software. These reviews have been instrumental in ensuring the standards remain adaptable and robust, particularly as the aviation software landscape evolves. The group's commitment to refining and enhancing the standards is demonstrated through a thorough and continuous review process, which has successfully identified and addressed previous gaps.

To accelerate progress, WG-117 maintained an intensive schedule of quarterly Plenary meetings, paired with an increased frequency of SG-2 working meetings—held twice a week. This approach enabled the group to foster collaborative problem-solving and make timely decisions, ensuring that key updates to the standards were addressed efficiently. These meetings provided a platform for deep technical discussions, reinforcing the group's focus on delivering high-quality and up-to-date standards.

Further building on the legacy of the Forum Aeronautical Software (FAS), WG-117 initiated a thorough analysis of all feedback received since the publication of ED-12C/DO-178C 'Software Considerations in Airborne Systems and Equipment Certification' and related documents in 2012. This analysis seeks to identify potential updates to existing EUROCAE/RTCA publications, ensuring that the standards evolve in alignment with the latest technological advancements and industry needs, making a significant impact on the safety and reliability of aviation software.

WG-117's work exemplifies a commitment to excellence and continuous improvement. By integrating the expertise and resources of FAS, the group has expanded its capabilities, allowing it to better address the needs of the aviation community. As the group progresses with SG-2's efforts and the integration of stakeholder feedback, it is well-positioned to deliver standards that will have a lasting, positive effect on the aviation software sector.

Looking ahead, WG-117 plans to launch the Open Consultation of ED-337 'Incorporation of Commercial Off the Shelf Software and Open-Source Software and Supplement to ED-12C/DO-178C and ED-109A/DO-278A' in 2025, offering a final opportunity for stakeholder feedback before completing the final document by the end of the year. This phase will be a critical step toward ensuring broad industry recognition and the finalisation of these important standards.

# WG-127 Lower-Risk Applications

**CHAIRPERSONS:** Kurt Schueler, GARMIN
Umut Durak, DLR
**SECRETARY:** Stephan Thesing, ROLLS ROYCE
**TPM:** Thuc Nguyen

WG-127 was established in April 2023 by the EUROCAE Council, following a recommendation from the Technical Advisory Committee (TAC). In September of the same year, WG-127 committed to developing a software development assurance standard for lower-risk aviation applications, as well as authoring a EUROCAE Report to provide a rationale for the new standard.

The group held a series of biweekly virtual meetings and three face-to-face plenary sessions, during which they considered potential users, their regulatory framework, and use cases that may be deemed lower-risk. The UAS, UTM/U-space, and GA communities (including small rotorcraft) were identified as primary beneficiaries of a simplified software development assurance methodology. This approach is designed to address Item Development Assurance Levels (IDAL) D and C, as well as levels between them.

In March 2024, the group's Terms of Reference and Work Programme were updated. A key deliverable is a EUROCAE Report. This report will provide the rationale behind the new software development assurance standard, outline the project's scope, and inform the user communities of the forthcoming changes.

The development of the new Software Development Assurance Standard for Lower-Risk Aviation Applications is slated for publication in 2025. This timeline highlights the importance and urgency of the initiative. The drafting of the standard has already begun, with active participation from global industry representatives, including experts from the UAS, UTM/U-space, and GA communities across Europe, the Americas, and Asia. European Research Institutes, as well as major aviation authorities such as the European Union Aviation Safety Agency (EASA), the Federal Aviation Administration (FAA), and the National Civil Aviation Agency (ANAC) of Brazil, are also playing significant roles.

The global collaboration within WG-127 reflects the broad recognition of the need for standards to address the specific challenges and risks of lower-risk aviation applications. By drawing on the expertise of a diverse range of stakeholders, the group is positioned to create a practical and robust standard that will enhance safety, streamline regulatory compliance, and foster growth and innovation in these emerging sectors.

Looking ahead to 2025, the group will progress into the Open Consultation phase, a crucial step for gathering wider industry feedback. The final publication of both the EUROCAE Report and the Software Development Assurance Standard is expected by the end of the year, marking a significant milestone in aviation safety and the development of standards for lower-risk aviation applications.

# WG-80 Hydrogen Fuel Cell Systems

**CHAIRPERSONS:** Olivier Savin, BLUE SPIRIT AERO
**Beatrice Toussaint, AIRBUS**
**TPM:** Atiqah Pillain

WG-80 was established in 2008 with the mandate to develop operational guidelines, best practices, and standards to support the certification of hydrogen fuel cells in aircraft. To ensure consistency with other industry initiatives, the committee collaborates closely with SAE AE-7F.

In recent years, WG-80 has made significant strides in advancing hydrogen technologies within the aviation sector:

- In early 2013, the committee drafted ED-219/AIR6464 'Aircraft Fuel Cell Safety Guidelines'.
- Four years later, in 2017, it introduced ED-245/AS6858 'MASPS for Installation of Fuel Cell Systems on Large Civil Aircraft'.
- Then, in December 2019, ER-020/AIR7765 'Considerations for Hydrogen Fuel Cells in Airborne Applications' was released.

Over the past few years, WG-80 has focused on developing two key standards to define technical guidelines for the safe design of hydrogen fuel cells on aircraft. One standard focuses on liquid hydrogen (LH2), while the other addresses gaseous hydrogen (GH2). These documents provide specifications on system definition of LH2 and GH2 storage and distribution systems aboard aircraft. They are expected to be published by December 2025.

In response to increasing industry demand, a new activity was launched in May 2023 to develop a Guidance document for Hydrogen Fuels for Propulsion. This document compiles practices, regulations, and guidance materials related to the design, construction, integration, qualification, safety, certification, and maintenance of Proton Exchange Membrane (PEM) Fuel Cell Systems (FCS) used as a primary source of electrical power for aircraft propulsion. This standard specifically addresses the Fuel Cell System itself, excluding considerations related to hydrogen quality, storage, distribution, and other propulsion or electrical power distribution system elements. The publication is expected in 2026.

The initial issue of these documents focuses on typical power demands for conventional takeoff and landing fixed-wing aircraft in accordance with part/CS-23 and part/CS-25.

Furthermore, a new initiative was added to the work programme in 2024, focusing on Hydrogen Fueling Stations for Airports. This report, undertaken in collaboration with the AE-5CH SAE committee, developed an initial ER/AIR on hydrogen fueling stations for airports, addressing both gaseous and liquid hydrogen fueling options.

The work of WG-80, in collaboration with SAE, plays a crucial role in facilitating the safe and efficient adoption of hydrogen fuel cells in the aviation sector. By aligning industry consensus and closely working with aviation authorities, WG-80 ensures the creation of robust standards that enable the industry to meet the challenges and opportunities presented by hydrogen technologies.

# WG-113 Hybrid Electric Propulsion

**CHAIRPERSONS:** David Le Maux, SAFRAN
Jan Norrgard, DENSO
**TPM:** Atiqah Pillain

The aviation industry is undergoing a transformative shift with the integration of electrical power into aircraft propulsion. This change is primarily driven by environmental imperatives, as research suggests that electrifying aircraft propulsion could significantly reduce carbon emissions, contributing to global climate goals such as those outlined in the Paris Agreement, which aims to limit global temperature rise to below 2°C above pre-industrial levels.

Initiatives like the Clean Aviation programme in Europe aim to develop breakthrough technologies enabling a net-zero emissions aviation sector by 2050. Electrification of propulsion systems is a key component of this strategy, with projections showing that these advancements could lower aviation's carbon footprint by up to 50 % by 2050 compared to 2005 levels.

Flexibility to support future designs calls for clearly defined concepts and updates to existing processes. In this context, developing industry standards is essential, as it enables authorities to optimise resources, harness global expertise, and foster a collaborative approach across stakeholders.

In response to these challenges, WG-113 is proactively addressing industry needs. In 2022, the group drafted ER-25 to identify the critical standardisation requirements for Hybrid Electric Propulsion. Key findings emphasised the need for advancements in areas such as high-voltage and high-power equipment design and qualification, electrical fireproofing, energy storage system performance and product release, protection against electrical shock hazards, and substantiation of endurance, durability, and operational demonstrations at the system, subsystem, and component levels.

Since EASA published the Special Condition (SC) E-19 for Electric Hybrid Propulsion Systems (EHPS), there has been a need to define appropriate Means of Compliance to support this Special Condition. Relevant guidance is essential to enable industry applicants to produce robust compliance demonstration evidence that is acceptable to EASA.

To address this, ED-321 'Guidance Material for Endurance Substantiation of Electric/Hybrid Propulsion Systems (EHPS)' was developed and published in 2024. EASA refers to ED-321 in their MOC EHPS 420.

The publication of ED-321 marked a significant accomplishment for the WG. This guidance material, focused on the endurance substantiation of EHPS, will serve as a key reference for complying with SC-E-19, particularly MOC.420.

Currently, the Working Group is developing a complementary document focused on the durability substantiation

of Electric/Hybrid Propulsion Systems (EHPS). This new guidance aims to address the long-term reliability and operational sustainability of EHPS, providing industry stakeholders with comprehensive recommendations to ensure compliance with evolving certification requirements. This document is jointly coordinated with SAE E-40.

In undertaking this task, WG-113 ensures coordination with other SDOs working on similar topics. This approach ensures the alignment of standards and harmonisation of efforts across the industry, contributing to the development of robust and forward-looking standards for hybrid-electric propulsion technologies that meet the needs of modern aviation.

## WG-116 High Voltage Systems and Components in Aviation

**CHAIRPERSONS:** Rémy Biaujaud, SAFRAN
Thierry Lebey, SAFRAN
TPM: Atiqah Pillain

As the aeronautics industry faces increasing electrical power demands and prioritises weight reduction in equipment, the push for higher voltage levels in electrical systems has grown. This transition, however, introduces new risks and technical challenges, including the development of updated interface specifications, protection mechanisms, and safety protocols.

WG-116 was formed with the mission of creating new standards to address these risks and support the industry and certification authorities in the design and certification of next-generation electrical and hybrid aircraft.

Since its creation in March 2020, WG-116 has actively engaged with experts from legacy aircraft manufacturers, engine producers, electrical system developers, and civil aviation authorities. The group also collaborates with WG-112 *VTOL* and WG-113 *Hybrid Electric Propulsion*.

In 2024, ED-320 'Aging Mechanisms of Electrical Insulation Materials in High Energy Systems' was published, which outlines the primary aging mechanisms occurring in high-voltage systems and components. This document aims to assist system and equipment designers in incorporating these phenomena into their risk analyses and lifespan assessments.

The group also completed ED-332 'Guidance for Aircraft High Voltage Power Quality', which establishes electrical requirements for higher-voltage networks. This guidance is intended to support the specification, development, and verification of electrical equipment and systems, particularly those utilised in electrical propulsion applications.

The group is currently focused on two key areas of development:

- Guidance for High Voltage Risk Mitigation at EWIS and Human Safety Level: This document aims to identify the unique risks associated with high-voltage systems and propose effective mitigation strategies. It will serve as a critical resource for ensuring safety at both the Electrical Wiring Interconnection System (EWIS) and human safety levels.
- Test Guidelines for Electrical Insulation Materials and Components in High Voltage Systems (in collaboration with SAE AE-11): This effort seeks to establish comprehensive test guidelines, recommendations, and reference standards for insulation materials in high-energy systems. The focus is on high-voltage scenarios, including AC, DC, and PWM, as well as operational conditions at various altitudes, to assess and quantify the effects of insulation aging over time.

These ongoing initiatives are pivotal in addressing emerging challenges in high-voltage systems, ensuring their reliability, safety, and longevity in modern and future aerospace applications. New activities are being defined in the roadmap for future work.

## WG-125 Next Generation of Aviation Professionals (NGAP)

**CHAIRPERSONS:** Antonio Gonzalez Gomez, EASA
Cate Brancart, GAMA
**SECRETARY:** Julija Razmislaviciene, FOXATM
**TPM:** Atiqah Pillain

WG-125 was launched in 2022. The objective of the group was to brings together industry members, universities, and students to promote collaboration between academia and the aviation industry. The working group focused on fostering the next generation of aviation professionals through initiatives in education, training, and mentoring.

The work programme of WG-125 includes two reports:

- A Report on Best Practices for Mentoring Students and Young Professionals.
- A Report on Guidelines and Techniques to Foster Cooperation and Collaboration Among Aviation Stakeholders.

50 active Working Groups

11 Domains of Activity

500 members

5000 experts

300+ standards

45 countries

## Together we are driving the standard for aviation

# European ATM Standards Coordination Group (EASCG)

**CHAIRPERSON:** Manuel Rivas Vila, EASA
**Secretary:** Alex Milns

Since its creation in 2015, the European ATM Standards Coordination Group (EASCG) has developed and maintained the ATM Rolling Development Plan (A-RDP), the value of which is well recognised, and is often used by the ATM community in Europe and beyond.

The plenary membership of EASCG is composed of representatives from EASA, EUROCAE, EUROCONTROL, the European Commission (DG MOVE), the SESAR 3 Joint Undertaking, ETSI and CEN/CENELEC. Representatives of ASD, CANSO Europe, the European Defence Agency and SESAR Deployment Manager actively participate as observers.

The EASCG met several times over the year, with progressive updates to the A-RDP, including the adoption of a new more dynamic and accessible version. The A-RDP reports on all relevant standardisation activities that are ongoing or planned within various Standard Developing Organisations and monitors their links to the European ATM Master Plan, the Common Project One regulation ((EU) 2021/116) and the SESAR Deployment Programme.

The focus of the EASCG discussion is on new standardisation activities that are needed to support the community in implementing the outcomes SESAR R&D activities and enabling accelerated market uptake. The EASCG also monitors the review of existing standards related to ATM systems. During 2024, the EASCG took particular note of emerging standardisation needs identified by the EASA to support the ATM Conformity Assessment Framework, which came into effect in September 2023.

Scan for more information:


# European UAS Standards Coordination Group (EUSCG)

**CHAIRPERSON:** Natale Di Rubbo, EASA
**Secretary:** Bertrand Riveill

The EUSCG is a joint coordination and advisory group established to coordinate UAS-related standardisation activities across Europe, primarily stemming from EU regulations and EASA rulemaking initiatives. It serves as a bridge linking European activities to those at the international level. EASA chairs this group, while EUROCAE acts as the secretariat, ensuring coordination between the regulator and participating SDOs.

The main task of the EUSCG is to develop, monitor, and maintain a comprehensive European UAS standardisation Rolling Development Plan (U-RDP), which is linked to the standardisation roadmap developed by EASA and other organisations. Inputs from EUSCG members and other key actors in the aviation domain, as

needed, were used to develop the eighth version of the U-RDP. The group is working to consolidate a new version that should be available in 2025.

Currently 22 experts are working within the group, from SDOs, Civil Aviation Authorities and industry representatives. Additionally, the EUSCG facilitates the coordination and sharing task of work and activities among the regulator and SDOs, avoiding the risk of overlapping developments and gaps.

Scan for more information:

# European Cyber security for aviation Standards Coordination Group (ECSCG)

**CHAIRPERSON:** Cyrille Rosay, EASA
**Secretary:** Anna Guégan

The European Cyber security for aviation Standards Coordination Group (ECSCG) is a joint coordination and advisory group established to coordinate cyber security in aviation related standardisation activities. Its purpose is to coordinate the cyber security-related standardisation activities across Europe to ensure that necessary and appropriate standards are available in due time.

ECSCG also acts as a bridge for similar international developments outside the region. Considering that finite resources are available, it is important to limit overlaps between different initiatives. It is also important to ensure system interoperability and compatibility of relevant standardisation activities in Europe and globally.

ECSCG gathers experts from European regulators (European Commission and EASA), European organisations active in cybersecurity, and international SDOs to discuss the terms of reference for the coordination group with the goal to define a way to streamline standards developing activities in Europe.

The group meets two times per year. In 2024, meetings took place on 15 May and 6 November at EASA. The main deliverable of the ECSCG is the European Cyber security for aviation Standardisation Rolling Development Plan (C-RDP). The C-RDP lists and categorises standardisation and regulatory activities, providing a method to identify and discuss overlaps and gaps. The first version of the ECSCG RDP was published in 2019.

Scan for more information:

# EUROCAE Trainings

EUROCAE provides a high-quality portfolio of aviation training based on our standards. Our courses are tailored for aviation professionals across the globe. The trainings aim to acquaint participants with EUROCAE standards, which are drafted in response to industry demand for consistent practice and aim to provide a harmonised approach in demonstrating compliance to aviation rules.

## UAS Airworthiness and Safety

This training course aims to familiarise the audience with issues related to UAS Airworthiness and Safety. It presents the essential tool to conduct System Safety and Operational Risk Assessment, based upon design and operational risk mitigation measures, which is a key element in getting flight authorisation from Civilian Aviation Authorities (in the framework of Specific and Certified Categories, as per EC regulation 2019/947). Participants will be able to identify risks related to UAS operations and prepare inputs for risk assessments, in line with SORA methodology.

**Target audience:** anyone involved in UAS design, manufacturing and operations who is involved in the process of flight authorisation granted by Civil Aviation Authorities. This includes managerial, technical and operational people (UAS Industry, Operators but also Authorities).

## Cyber Security Management for Aviation Organisations

This training gives a general overview of cyber security in aviation and teaches participants how to adopt a standards-led approach to cyber security. Attendees will be able to identify basic principles, their implementation, and effects of cyber security in the aviation environment, and describe how cyber security impacts different actors in this sector.

**Target audience:** anyone working in aviation (airport, ANSP, airline, manufacturing industry (developing, producing or maintaining aircraft)), and authorities, regulators and aerospace industry, who either need a high-level overview on aviation cybersecurity or who need to deal with cyber security as part of their day-to-day activities.

## Aircraft Cyber Security and Continuing Airworthiness

The training consists of two parts: a development part and a continuing airworthiness part, which provides detailed information and insight into the current regulatory landscape surrounding cyber security. Participants can either join a single part or a combined training.

**Target audience**: the course content is structured for all backgrounds, whether it is for IT and aviation professionals involved in system, software, or hardware development and aircraft certification, focusing on cybersecurity. It is tailored for those dealing with certifications, guidance, and cybersecurity in design organisations, suppliers, airlines, and maintenance sectors within aviation.

## Aviation Software Standards - Airborne (ED-12C)

EUROCAE ED-12C has been the basis for airworthiness approvals of airborne software for 30 years and is recognised by all certification authorities. Knowledge of this standard is a prerequisite for all persons involved in the development or approval of airborne software. This course provides the basics to understand the principles of ED-12C and how a software design system must be built to fulfill the objectives listed therein.

**Target audience:** anyone involved in the development or qualification of airborne software. A prior knowledge of software engineering is expected.

## Aviation Software Standards – ATM

This training provides an overview of relevant EUROCAE standards to apply for systems and software development in aviation (ED-109A and ED-153). The participants will be able to identify basic principles, their implementation, and benefits of good software engineering practices in the aviation domain. With the provided detailed description of how software safety regulations, standard, and certification affect different actors in aviation, participants will understand how standards can enable the effective management of software development costs in safety critical systems.

**Target audience:** anyone involved in the development and/or qualification of ATM software, including SW and HW engineers, project managers, product quality assurance engineers. A prior experience of software engineering is recommended.

## Electronic Hardware in Airborne Systems (ED-80)

The purpose of the training is to enable participants to understand the ED-80 standard and how it is used and complemented by major Certification Authorities. This course explores the qualification of electronic hardware in airborne systems.

**Target audience:** anyone working in aviation and regulatory or industrial audiences.

## Voice over Internet Protocol (VoIP)

This course enables participants to get a sufficient knowledge and comprehensive view of the different components of a VoIP ATM system and their mutual interfaces through a full overview of the ED-136, ED-137 and ED-138 (18 EDs).

**Target audience:** anyone involved in ATM VoIP development and implementation of ATM VoIP design, manufacturing and operations.

## Cockpit Voice Recorder (CVR)

ED-112A MOPS for Crash Protected Airborne Recorder Systems is the standard applicable to the design / Qualification of airborne crash recorders (CVR and DFDR) and are the AMC identified in AIR-OPS regulation. The purpose of the training is to enable participants to understand ED-112A application in the frame of CVR inspection.

**Target audience:** anyone involved in the CVR analysis as AIR-OPS (airlines, MRO, Part 145).

## Safety and development processes for civil aircraft (ED-79B and ED-135)

This training is intended as an introduction to these two 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.

**Target audience:** anyone involved in overall development assurance and/or safety assessment processes.

### How to book trainings:

Places are limited! Book early online:

eurocae.net/product-category/trainings/

For any further request or information, please contact trainings@eurocae.net or scan the QR code.

# Empower Your Team: EUROCAE's In-House Training Solutions

EUROCAE In-House Training is a tailored and adaptable learning solution crafted to meet the distinct needs of your organisation. In-House Training delivers expertise and knowledge directly to your doorstep. Our team works closely with your organisation to pinpoint the most pertinent topics that align with your specific goals, challenges, and industry requirements.

- Tailored to your Needs: identify training solutions to your business needs, ensuring your team receives training that addresses your challenges and goals.
- Adaptable Scheduling: arrange sessions at your team's most convenient times, minimising disruptions to daily operations and optimising their learning experience.
- Team Cohesion: cultivates a sense of unity and shared learning experiences within your team. This fosters collaboration, allowing team members to collectively apply their newfound skills.
- Cost-Effective: reduces expenses linked to sending employees for external training by eliminating travel or accommodation costs.

## 2024 Training Summary

**11**
instructors

**+290**
participants

**9**
courses

**+90 %**
of participants recommend our courses

**1**
new training

**32**
sessions

**100 %**
of participants obtained their diploma


# EUROCAE Symposium 2024

## Shaping the Future of Aviation in Lucerne
## A Historic Gathering Returns to Its Roots

On 24-25 April 2024, EUROCAE hosted its annual Symposium in the vibrant city of Lucerne, Switzerland, at the iconic Kultur- und Kongresszentrum Luzern (KKL). This distinguished event brought together 200 aviation professionals, including leading experts, industry pioneers, and institutional representatives from Europe and beyond, reaffirming EUROCAE's pivotal role in shaping global aviation standards. The occasion held special significance as EUROCAE was founded in Lucerne in 1963, marking a meaningful return to its roots.

Anna von Groote, Director General of EUROCAE, highlighted the event's purpose: "Our goal was to obtain insights, strategies, and visions from a broad spectrum of aviation stakeholders, uniting experts and representatives from European and international institutions, as well as various industry sectors. The robust discussions and conclusions reached will inform EUROCAE's strategic direction, guiding our efforts to support aviation advancements and achieve overarching objectives".


## Summary of the Sessions and Insights

- **Towards Future Connectivity**

  Experts from regulatory bodies, standardisation organisations, and the industry discussed the 'Future Connectivity for Aviation' white paper, a collaborative effort by EASA, FAA, Airbus, and Boeing. This document lays the groundwork for next-generation connectivity solutions, with EUROCAE committed to supporting essential standardisation activities to facilitate this transition.

- **Aviation Security: Global Threats and Mitigation Strategies**

  A comprehensive panel delved into evolving global threats, including cybersecurity risks, GPS jamming, spoofing, and counter-UAS strategies. Discussions underscored the importance of Minimum Operational Performance Standards as a cornerstone for safeguarding aviation against these persistent challenges.

- **The Impact of New Airport Developments**
  This session explored the dynamic landscape of airport infrastructure, from mega-hubs to regional airports. Panelists discussed the economic, environmental, and community-related implications of airport development, emphasising the need for sustainable and inclusive growth strategies.
- **Public Acceptance of Innovative Aerial Services**
  Experts analysed societal perceptions of Innovative Aerial Mobility, addressing public concerns and highlighting the importance of engaging civil society to foster trust and support for emerging aerial technologies.
- **Vertiports, Drone Integration, and Counter-UAS Strategies in Airport Environments**
  Regulatory perspectives from EASA complemented industry insights on the integration of drones, vertiports, and counter-UAS measures within airport environments. Discussions highlighted operational challenges and the evolving regulatory landscape required to support these advancements.
- **Explore the Future's Technological Frontier to Aviation**
  This forward-looking panel showcased cutting-edge technologies transforming aviation, including Blockchain, Artificial Intelligence (AI), Single Pilot Operations, and Quantum Computing. The conversation balanced the potential of technological innovation with the essential role of human oversight in aviation safety.


In addition, the EUROCAE Symposium feature Flash-Talks highlight emerging trends:

- Coexistence between mobile networks and aviation
- Drone applications for linear inspections
- Ground equipment certification
- The future of mobility at Paris Olympics 2024
- Market uptake and R&I Challenges for zero emission aviation
- Cultivating top talent in aviation

## Reflections and Future Directions

Guillaume Roger, President of EUROCAE, concluded, "EUROCAE will meticulously evaluate the conclusions drawn and collaborate with our Council and Technical Advisory Committee to align EUROCAE's strategy and identify potential standardisation activities stemming from these discussions".

EUROCAE extends its sincere gratitude to the organisations that contributed to the programme: ADB Safegate, ACI, Airbus, Amazon Prime Air, Boeing, CANSO, Clean Aviation Joint Undertaking, Collins Aerospace, EASA, EGIS, ERAC, European Commission, European Defence Agency, EUROCONTROL, EUSPA, FAA, Federal Office of Civil Aviation, Frequentis, Groupe ADP, Honeywell, INTEL, INDRA, International Aviation Women's Association, Kookiejar, NLR, RTCA, SESAR 3 Joint Undertaking, Skyguide, Skyports, Thales, UIC2, Volocopter, Wing, and Zurich University of Applied Sciences.

Special thanks to our sponsors—Skyguide, Airbus, Thales, Indra, Collins Aerospace, Frequentis, Anzen, and Honeywell – for their invaluable support.

Looking ahead, EUROCAE revealed plans for its 2025 Symposium, planned to take place in Madrid on 23-24 April 2025.

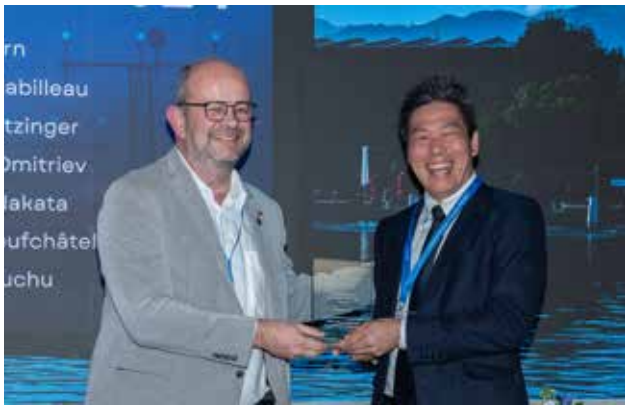
# Winners of the 2024 EUROCAE Awards

The winners of the 2024 EUROCAE Awards were unveiled in Lucerne during the EUROCAE Symposium. Nominations for these awards come directly from our Working Groups, where groundwork is laid. With over 5,000 participants from around 500 member organisations registered with EUROCAE, this event is a celebration of individuals who have gone above and beyond in their contributions. These exceptional experts have taken on significant responsibilities and worked diligently to achieve outstanding results. Through the annual EUROCAE Awards, we proudly recognise the dedication and achievements of these extraordinary members.

The Selection Committee, representing EUROCAE's Governance, included members from the Council, the Technical Advisory Committee, and the Secretariat. For the Global Harmonisation Award, a representative from RTCA also joined the Committee.

We extend our sincere gratitude to all of our experts for their valuable contributions and offer our heartfelt congratulations to the winners of the 2024 EUROCAE Awards. Their exceptional work and unwavering dedication have set a remarkable standard within the industry.

- President Award: Patrick Souchu
- Lifetime Achievement Award: Luc Deneufchâtel
- Working Group Leadership Award: Roy Posern
- Global Harmonisation Award: Mikael Mabilleau
- Women in EUROCAE Award: Laure Baltzinger
- Best Contribution Award: Konstantin Dmitriev
- International Award: Hiroaki Nakata

# Aviation Security in Focus: EUROCAE and RTCA Joint Summit Draws 400 Global Experts

Hundreds of participants from across the globe gathered for the "Aviation Security Summit" on 23 October 2024, uniting top experts and key stakeholders in the aviation industry to address the critical issue of aviation security.

EUROCAE and RTCA are both dedicated to ensure the right balance between security and safety, emphasising the importance of a robust and trusted framework. Acknowledging that security is only as strong as its weakest link, the summit tackled challenges throughout the entire aviation ecosystem, spanning the full product lifecycle.

"The event provided a valuable platform to hear directly from and collaborate with global security experts and professionals, ensuring that our standards development efforts continue to evolve in line with the industry's needs", says Anna von Groote, Director General at EUROCAE. "EUROCAE and RTCA are fully committed to support standardisation activities, enabling us to collectively tackle and overcome the challenges facing the aviation sector".

## SUMMARY OF THE SESSIONS


This panel provided an in-depth analysis of the diverse cybersecurity challenges facing the aviation industry today. Experts discussed not only the well-known risks but also emerging threats that are increasingly sophisticated. The conversation emphasised the need for continuous collaboration across all sectors, from ground operations to aircraft systems, to safeguard aviation security.


This session explored the complex relationship between maintaining operational safety while addressing evolving security threats. Experts delved into key issues such as spoofing, jamming, and the role of stringent security standards in protecting aviation systems. Speakers shared their expertise on how the industry can effectively balance these critical concerns to ensure both secure and safe aircraft operations.


As the aviation landscape evolves, both in the air and on the ground, new security challenges emerge. This panel focused on how advanced technologies are reshaping the aviation security landscape, with speakers discussing collaborative strategies to ensure that safety and security are upheld across all domains. Speakers explored the critical role of technology in safeguarding the future of aviation operations.

In addition to the panel discussions, the summit also featured three flash talks delivered by Gian Andrea Bandieri (EASA), Philip Windust (FAA), and Michael Goodfellow (ICAO), offering focused insights from these key regulatory bodies.

EUROCAE and RTCA will review the outcomes of the discussions to refine current standards and guide future standardisation efforts, ensuring they align with the evolving connectivity needs of the aviation industry.

**If you missed it, simply scan this QR code to access the recording.**

# ICAO Innovation Fair

## 12-14 March / Montreal, Canada

This important event delved into innovation in aviation and discussed how to adapt systems, processes, and structures to ensure that future innovations bring value to aviation and contribute to achieving the United Nations Sustainable Development Goals. Our Director General, Anna von Groote, participated in the panel “Digitalisation in Aviation: Tackling the Challenges?”, where she explained the importance of standardisation in complement to the regulatory frame and of innovation towards building up safe, resilient and sustainable systems.

# Airspace World

## 19-21 March / Geneva, Switzerland

The collaborative effort known as “Europe for Aviation”, comprising nine European aviation organisations dedicated to advancing the modernisation, sustainability, and resilience of European aviation safety, convened at the Airspace World event held from 19 to 21 March 2024, in Geneva, Switzerland. Throughout the duration of the 3-day event, these organisations (EC DG MOVE, EASA, EDA, EUSPA, INEA, SDM, SJU and EUROCAE) demonstrated the power of collaboration by illustrating how they can collectively address the most pressing challenges encountered by the European aviation industry, thereby pushing the boundaries of progress even further. Representing EUROCAE were: Anna von Groote, Director General; Alex Milns, Technical Programme Manager; Mark Watson, Technical Programme Manager; and Yago Grela, Communication Manager.

# Aerospace Tech Week

## 17-18 April / Munich, Germany

Aerospace Tech Week is an event focused on driving innovation and technology advancements in the aerospace sector. Throughout the two-days event, our team played a pivotal role in shaping conversations around key industry topics: AI, cybersecurity, datalink, and sustainability. At our shared stand with EUROCONTROL, we were delighted to welcome esteemed colleagues and industry experts. Representing EUROCAE were: Anna von Groote, Director General; Anna Guégan, Senior Technical Programme Manager; and Yago Grela, Communication Manager.


# FlyAI Forum

## 29-30 April / Brussels, Belgium

EUROCAE Senior Technical Programme Manager, Anna Guégan, was part of the second Fly AI Forum, dedicated to exploring the latest developments and deployments of artificial intelligence and machine learning in aviation. On her presentation, she focused on the developments of WG-114, whose primary scope of this group is to prepare technical standards, guides and any other material required to support the development of systems and the certification of aeronautical systems implementing AI technologies.


# Aviation Energy Forum (AEF) IATA

## 28-30 May / Vienna, Austria

This event provided a unique platform for airline representatives, fuel and SAF suppliers, and IATA Strategic Partners to gain deeper insights into the airline industry's commitment to achieving net-zero emissions by 2050. Our Technical Programme Manager, Esther Hoyas, took part in the panel "Standards for Hydrogen in Aviation", where she highlighted the crucial work being carried out by EUROCAE Working Groups to accelerate and ensure the safe integration of H2 Aircraft into the air transport system.

# EASA-CAAC Aviation Safety Conference

## 28-30 May / Xiamen, China

The 2024 EASA-CAAC Aviation Safety Conference took place in Xiamen, China, marking the third edition of this flagship event. The conference serves as a key platform for Chinese and European aviation industry leaders and regulators to discuss the latest developments in aviation safety and sustainability. Our Senior Technical Programme Manager, Anna Guégan, participated in the panel “Elevating Aviation: Standardising Safety and Efficiency in the Skies”, where she emphasised the vital role of standards in the aviation industry. She also showcased EUROCAE’s ongoing work on GNSS, AI, and IAS, highlighting opportunities for enhanced collaboration with Chinese stakeholders.


# UNVEX

## 4-5 June / Barcelona, Spain

Barcelona was at the centre of innovation in June as it hosted UNVEX 2024, a key event showcasing the latest advancements in unmanned vehicle technology. Bringing together industry leaders, policymakers, and experts, the event fostered discussions on the future of autonomous systems. Our Technical Programme Manager, Javier Diana, took part in the “Regulation / Certification” panel, highlighting the significant progress made by EUROCAE Working Group 105 on UAS in advancing and streamlining standardisation for the drone sector.

# Global TBO Symposium

## 4-6 June / Brussels, Belgium

The first Global Trajectory-Based Operations (TBO) Symposium took place at EUROCONTROL's headquarters in Brussels, providing a key platform for discussions on the future of TBO. The event brought together industry leaders, regulators, and experts to exchange insights on the latest developments and next steps in TBO implementation. Our Director General, Anna von Groote, joined the panel "TBO Roadmap and Next Steps", emphasising that EUROCAE already has fit-for-purpose standards available or in development for TBO. She highlighted the need to strengthen collaboration between SESAR deployment priorities and the EUROCAE Technical Work Programme to ensure seamless integration and progress in the field.

# ICAO - First Advanced Air Mobility Symposium

## 9-12 September / Montreal, Canada

In 2024, we had the privilege of participating in the first-ever Advanced Air Mobility (AAM) Symposium organised by the International Civil Aviation Organization (ICAO). This landmark event brought together representatives from government, industry, academia, and international organisations to collaboratively shape the future of AAM on a global scale. Our Director General, Anna von Groote, moderated the panel "Welcome to the World of eVTOL", which explored how eVTOLs differ from conventional aircraft, the new technologies and innovative approaches needed for their airworthiness, and the critical role of ICAO and international standard development organisations (SDOs) in supporting their safe integration into the airspace. The panel also featured distinguished speakers: Johann C. Bordais (Eve Air Mobility), Balkiz Sarihan (Airbus), JoeBen Bevirt (Joby Aviation), Kyle Clark (BETA Technologies), Klaus Roewe (Lilium), Ramy Mourad (Boeing), and Billy Nolen (Archer).

# Counter UAS Homeland Security Europe

## 9-10 September / London, United Kingdom

This event provided a comprehensive platform for discussions on Counter-UAS (C-UAS) priorities, challenges, and solutions, bringing together key stakeholders to strengthen national security by addressing the evolving UAS threat. Our Technical Programme Manager, Alex Milns, participated in the panel “C-UAS Standardisation and Enhancing System Interoperability”. He outlined ongoing efforts to standardise C-UAS systems, develop a harmonised C-UAS testing methodology, and emphasised the importance of industry collaboration to ensure the effective development and integration of standards.


# World Aviation Festival

## 8-10 October / Amsterdam, Netherlands

The World Aviation Festival brought together airlines, airports, and aviation experts to explore the latest innovations, trends, and challenges shaping the future of the industry. Our Director General, Anna von Groote, participated in the panel “How will advancements in AI technology impact the technical aspects of cybersecurity within the aviation industry?”, where she shared insights on the ongoing work of EUROCAE’s WG-114 *AI on Aviation*. She also delivered a presentation on “How can we develop comprehensive cybersecurity strategies tailored to the unique challenges faced by the aviation industry?”, emphasising the crucial work of WG-72 *Aeronautical Systems Security* and the development of upcoming cybersecurity standards.

# AIRTEC International Fair

## 8-10 October / Augsburg, Germany

The AIRTEC International Fair is a premier B2B trade fair and dialogue platform dedicated to aerospace and future mobility. This event provided an excellent opportunity to engage with our members and industry leaders, fostering discussions on the future of aviation and mobility technologies. Our Senior Technical Programme Manager, Alain Vallée, delivered an insightful keynote on “Standards as Means of Compliance for Aviation Regulations: Defining the Global Roadmap for Acceptance of AAM’s Innovative Concepts”. He highlighted the essential work being done by WG-105 on UAS and WG-112 on eVTOL, showcasing how these standards are paving the way for the regulatory acceptance of Advanced Air Mobility innovations.

# High Integrity Software Conference

## 22 October / Wales, United Kingdom

The High Integrity Software Conference (HISC) is dedicated to fostering the exchange of challenges, best practices, and expertise among software engineering professionals. This event serves as a key platform for discussing the development of high-integrity software in safety-critical industries. Our Technical Programme Manager, Thuc Nguyen, delivered a presentation on “Ensuring Safety while Integrating AI”, sharing insights from EUROCAE’s WG-114 *AI in Aviation*. As artificial intelligence continues to reshape industries, aviation remains at the forefront of this transformation. However, integrating AI into such a safety-critical domain requires a careful and well-structured approach.

# EUROCONTROL - Current State of Counter-UAS Systems

## 4-5 November / Brussels, Belgium

The High-Level Workshop on the Current State of Counter-UAS Systems, organised by EUROCONTROL in Brussels, focused on addressing the growing threat posed by unauthorised or malicious unmanned aerial systems (UAS). The event brought together key stakeholders to explore innovative solutions for detecting, tracking, identifying, and mitigating UAS threats—ensuring airspace security and operational safety. Our Technical Programme Manager, Alex Milns, participated in Session 3: “Integration and Implementation”, where he outlined the ongoing work of WG-115 in C-UAS standards development.

# EDA Autonomous Systems Community of Interest (ASCI) Conference

## 13-14 November / Brussels, Belgium

This event brought together leaders to explore the current landscape and future of autonomous systems. Our Senior Technical Programme Manager, Anna Guégan, contributed to the panel “Taxonomy, Standards, and Regulation for AS”, where she underscored the critical role of standards and the value of civil-military collaboration. She highlighted WG-105 on UAS as a prime example, demonstrating how outcomes from EDA projects have informed EUROCAE activities.

# Aviation Cybersecurity Conference

## 19-20 November / London, United Kingdom

This is a key event for cybersecurity professionals, where EUROCAE proudly contributed as an Industry Partner. Our Senior Technical Programme Manager, Anna Guégan, delivered an insightful presentation titled “Securing the Future: The Role of Standardisation in Cybersecurity”. She emphasised how robust cybersecurity standards enable aviation stakeholders – including manufacturers, operators, and service providers – to operate on a unified and secure foundation.

# A decade of Transformation: Modernising European ATM As One

## 4 December / Brussels, Belgium

We were honoured to attend the SESAR Deployment Manager (SDM) event celebrating "A Decade of Transformation: Modernising European ATM As One" to mark their 10th anniversary. Our Director General, Anna von Groote, joined the panel discussion "10 years of unique collaboration". She underscored the vital role of collaboration between deployment and standards, highlighting the 2023 cooperation agreement between EUROCAE and SDM. This agreement aims to provide stakeholders with the necessary tools, references, and standards to successfully implement the SESAR Deployment Programme.


# EUROCAE was also present at:

- Royal Aeronautical Society - Remotely Piloted and Autonomous Systems Specialist Group (24 January/London, United Kingdom)
- ETSI Artificial Intelligence Conference (5-7 February/Nice, France)
- EASA Workshop on Industry Standards (28 February/Cologne, Germany)
- ENISA-ESOSs Cybersecurity Standardisation Conference (5 March/Brussels, Belgium)
- 50 Ans Aéroport Paris-Charles de Gaulle (12 March/Paris, France)
- Connecting Europe by Air (3 April/Virtual)
- International Symposium on Air Traffic Management for Civil Aviation Asia (11-12 April/Virtual)
- EASA AI Days (1-3 July/Cologne, Germany)
- ICAO Air Navigation Conference (26 August – 6 September/Montreal, Canada)
- EASA Annual Safety Conference (4-5 November/Virtual)
- AI Applications in Aeronautics, Defence, and Space (13-14 November/Paris, France)
- IWAC 2024 (19-20 November/Virtual)
- EU-Asia Pacific Workshop for AI (20 November/Virtual)
- China International Standardisation Forum (21-22 November/Virtual)

# EUROCAE Publications

EUROCAE Documents (EDs) are developed by Working Groups bringing together renowned experts in their area and following a well-established process. EUROCAE has published more than 300 documents, all of them addressing various domains in aviation. Several documents were jointly developed with US partners and many documents are referenced in ETSO/TSOs, ICAO SARPs, EUROCONTROL ESARRs, and FAA standards. They are recognised worldwide for their high quality and as state-of-the-art technical specifications.

These EDs cover system or equipment performance specifications, safety and performance requirements, interoperability requirements, technical specifications, or guidance material. Some documents are dedicated to the airborne side, others to the ground side (mainly CNS and ATM), while others cover common air and ground requirements.

EUROCAE Reports (ER) describe results of Working Groups, which are of general interest but not appropriate to publish in the form of a specification or other type of ED.

**New documents published in 2024 highligted in orange.**

| ED ref. | ED title | Identifier |
|---|---|---|
| 1/WG7/70 | MPS for airborne 75 MHz marker beacon receiving equipment | WG-7 |
| 1/WG7C/1-74 | MPS for airborne Doppler radar ground speed and/or drift angle measuring equipment | WG-7 |
| 1/WG7C/2-74 | MPS for airborne automatic dead reckoning computer equipment utilising aircraft heading and Doppler obtained velocity vector data | WG-7 |
| ED-12C | Software considerations in airborne systems and equipment certification | WG-71 |
| ED-12C Corr 1 | Software Considerations in Airborne Systems and Equipment Certification Corrigendum 1 | WG-71 |
| ED-14G | Environmental Conditions and Test procedures for airborne equipment | WG-14 |
| ED-14G Change 1 | Environmental Conditions and Test procedures for airborne equipment | WG-14 |
| ED-18 | Audio systems characteristics and MPS aircraft microphones (except carbon), aircraft headsets, handsets and loudspeakers, aircraft audio selector panels and amplifiers | WG-18 |
| ED-22B | MPS for airborne VOR receiving equipment | WG-7 |
| ED-23C | MOPS for airborne VHF Receiver-Transmitter operating in the frequency range 117.975 – 137.000 MHz | TF-Climax |
| ED-24 | MPS for airborne VHF communications equipment operating in the frequency range 118.000 – 135.975 MHz (Part 2 - transmitter) | WG-7 |
| ED-25 | Performance Specification for experimental aerosat L-BAND avionics | WG-15 |
| ED-26 | MPS for airborne altitude measurements and coding systems | WG-9 |
| ED-27 | MOPR for airborne area navigation systems based on VOR and DME as sensors | WG-13 |
| ED-28 | MPS for airborne area navigation computing equipment based on VOR and DME as sensors | WG-13 |
| ED-29 | MPS for airborne omega navigation equipment | WG-16 |

| ED ref. | ED title | Identifier |
|---|---|---|
| ED-30 | MPS for airborne low range radio (radar) altimeter equipment | WG-6 |
| ED-31 | MPS for ground distance-measuring equipment (DME) | WG-17 |
| ED-36B | MOPS for MLS Airborne Receiving Equipment | WG-28 |
| ED-38 | MPS for airborne weather ground mapping and assisted approach pulse radars | WG-3 |
| ED-39 | MOPR for airborne area navigation systems, based on two DME as sensors | WG-13 |
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| ER-004/4 | Volume 4: UAS for Visual Line of Sight Operations | WG-73 |
| ER-005 | Contiguous Aircraft/System Development Process Example | WG-63 |
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| ED ref. | ED title | Identifier |
|---|---|---|
| ER-008 | Development of Atmospheric Neutron Single Event Effects Analysis for Use in Safety Assessments | WG-63 |
| ER-009 | Guidance material for the generation of aerodrome mapping database | WG-44 |
| ER-010 | UAS / RPAS Airworthiness Certification - “1309” System Safety Objectives and Assessment Criteria | WG-73 |
| ER-011 | Validation of the FGS Coupled to TCAS MASPS Requirements | WG-75 |
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| ER-016 | RPAS 5030-5091 MHz CNPC LOS and BLOS compatibility study | WG-105 SG-22 |
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| ER-021 | Report and Outcome of Round Robin Camera Detection Process Verification and Validation | WG-31 |
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| ER-031 | Technical Investigation and Justification of Alternative ICDs for Data Exchange Mechanisms between USSPs | WG-105 SG-3 |
| ER-032 | European Industry Position Report on RTCA SC-147 ACAS sXu | WG-105 SG-1 |
| ER-033 | Rationale for a Software Development Assurance Standard for Lower-risk Aviation Applications | WG-127 |
| ER-034 | Hydrogen Fueling Stations for Airports in both gaseous and liquid form | WG-80 SG-1 |

# MEMBERSHIP

EUROCAE is deeply grateful to all our members for their ongoing support and active participation. The recent growth in membership has been truly remarkable, with numbers steadily rising once again. This growth underscores the increasing relevance and importance of standardisation in our industry.

As the aviation sector recognises standards as a key strategic tool, we are proud to provide a platform that supports the development and implementation of these vital benchmarks. Our members, representing a wide range of stakeholders, contribute their expertise and insights to shape these standards, ensuring they meet the needs and challenges of the industry.

We place great importance on achieving balanced representation within our membership. This includes not only various sectors across Europe but also an international dimension. We believe that adopting a global perspective is crucial to fostering collaboration, driving innovation, and addressing the interconnected nature of our industry.

We sincerely thank our members for their continued trust and engagement. We also look forward to welcoming new members who share our commitment to aviation standardisation and its transformative potential.

Together, we can unlock new opportunities and tackle the challenges ahead.

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- Initiating activities that may lead to future standards
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- The development of Means of Compliance with European and global regulations.
- A network of key industry players—both private and public—who are shaping the future of aviation.
- A trusted community of professionals with a global reputation for setting industry standards and leading innovation, rather than simply adapting to decisions made by others.

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- The ability to adjust and align your company's investments and developments early, with well-informed insights into the latest trends.
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- Enhanced reputation with customers and suppliers as an industry leader.
- Greater readiness to meet customers' and regulators' expectations.
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| Bureau d'Enquêtes et d'Analyses | BEA Bureau d'Enquêtes et d'Analyses pour la sécurité de l'aviation civile |
| CAA/SRG | Civil Aviation Authority |
| Callen-Lenz Associates Ltd | Callen-Lenz |
| CANSO | canso |
| CELAB S.r.l. | celab |
| CETC Northwest Group | XHBD |
| Cetrac | cetrac |
| CGI IT UK Ltd | CGI |
| China Academy of Civil Aviation Science and Technology | |
| Civil Aviation Authority of New Zealand | CAA Civil Aviation Authority of New Zealand |
| Civil Aviation Authority of Singapore | CAAS Civil Aviation Authority of Singapore |
| Civil Aviation Bureau of JAPAN | MLIT Ministry of Land, Infrastructure, Transport and Tourism |
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| DAER – Politecnico di Milano | POLITECNICO MILANO 1863 |
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| IFATCA | JAXA Japan Aerospace Exploration Agency |

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MADRID - 23 & 24 APRIL 2025

# EUROCAE SYMPOSIUM & GENERAL ASSEMBLY

EUROCAE

DUBLIN - 22 & 23 APRIL 2026

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