Contents

Dear members, colleagues, and friends of EUROCAE,

I have the pleasure to address you for the first edition of the Broadcast in 2023.

As the Director General of EUROCAE, I am thrilled to be writing this editorial on the eve of our 60th anniversary.

Since 1963, EUROCAE brings together manufacturers, operators, regulators, and other aviation stakeholders to develop and promote standards for aviation equipment and systems. These standards support international harmonization and global interoperability for the entire aviation community. As we look back on the past 60 years of serving the aviation community, we see how EUROCAE has played a vital role in shaping the aviation industry. Through the development of technical standards, always keeping safety and security at the centre of our work, we have been at the forefront of innovation and progress and accompanied the industry over the years moving towards an ever more integrated, digital and sustainable aviation. From 23 members in 1963, we have grown to over 450 members from all over the world, and are running around 50 active Working Groups, which bring together close to 5,000 experts.

As we move forward, we are facing new challenges and opportunities. The COVID-19 pandemic has highlighted the importance of digitalisation in aviation. We are fully committed to supporting our members and the industry in this area, and we are already working on new standards and guidelines to help ensure that digitalisation is done in a safe and secure manner. In addition, aviation is under severe scrutiny by society regarding its environmental footprint, and hence efforts towards more sustainable operations are more and more important.

Together with the Council we have defined our strategy and targets to support the aviation community address these aspects. It is focused on EUROCAE's position within the European and international context and defines our priorities for 2023. As an SDO, our top priority has always been and remains the development of relevant standards – by the members, for the members and community. Listening to the needs of the hour is therefore at the core of our work, and this is reflected in the annual update of the Technical Work Programme TWP. This year, there is a clear focus on sustainability, and we will proactively work relevant stakeholders to identify standardisation needs and develop and execute a work programme that will support the community in its endeavours. Other new areas of activities – such as space, spectrum, Artificial Intelligence, future connectivity, remote towers and virtual centres, or standards for ATM ground equipment – also continue to grow.

The alignment with the regulatory frame, in particular EASA, is of prime importance for such new and innovative subjects. The strategic importance of standards as a facilitator for the introduction of new technologies and innovations through standardisation is increasingly visible, most prominently through the notion of the Single Value Chain (SVC) connecting R&D to Deployment.

This will support upstream identification and prioritisation of industrialisation needs arising from R&D and elsewhere, and be able to join those needs with deployment scenarios. EUROCAE has a central role to play to accelerate research towards market uptake by supporting a standards development environment in partnership with others in this single value chain – and we are well set to take up this challenge!

This last half year has seen numerous standards being published and new activities launched – many of which are highlighted in this 18th edition of the Broadcast. One I would like to point out specifically is the new Working Group 125 on NGAP (Next Generation of Aviation Professionals). It may not be the 'traditional' topic for EUROCAE to work on, but it is a very important subject and we see a role to bring together the community to exchange best practices to support building the next generation of leaders. The industry is changing rapidly and it is important to ensure that sufficient qualified and competent aviation professionals would be available to operate, manage, and maintain the future international air transport system. Let's work together to shape the future of our industry and ensure that we have a strong and capable next generation of aviation professionals.

Within the organisation we have a number of exciting projects lined up for 2023 onwards to ensure we continue to serve you as our members in the best possible way and maintain the high quality and robustness of EUROCAE standards by continuously improving the effectiveness of our processes. You will see first results of these projects later this year, and we will ensure to keep you updated regularly.

In this spring of 2023, we prepare to celebrate our 60th anniversary with a special Symposium, on 26-27 April at the National Air and Space Museum at Le Bourget. We hope to welcome many of you in one of the most iconic aviation museums in the world - the National Air and Space Museum of France at Le Bourget – it is not only a breathtaking architectural masterpiece, but also houses an impressive collection of historic aircraft and spacecraft, making it the perfect setting for a gathering of aviation experts from all over the world and for debating some of the topics mentioned above and more.

I am confident that with the support of our members and all the people who are part of our working groups, our Council, TAC and Secretariat team, we will be able to continue making a difference for the aviation community in the years to come.

In the meantime, I hope you enjoy reading this Broadcast and I look forward to seeing many of you on 26-27 April at Le Bourget,

Anna von Groote
Director General

Cooperation with SESAR 3 JU and SESAR DM

EUROCAE and SESAR strengthen cooperation to accelerate the delivery of the Digital European Sky

The European Organisation for Civil Aviation Equipment (EUROCAE) has signed two cooperation agreements with the SESAR 3 Joint Undertaking (SESAR 3 JU) and SESAR Deployment Manager (SESAR DM). Those agreements are aimed at strengthening cooperation and accelerating the delivery of the Digital European Sky as one team.

The cooperation agreements were signed on 9 March 2023 on the occasion of Airspace World (Geneva, Switzerland), the annual gathering of the global air traffic management industry. The memoranda of cooperation between EUROCAE and the SESAR DM, and between EUROCAE and the SESAR 3 JU, both aim to enhance collaboration on standardisation activities in aviation, and speed up the industrialisation and deployment of SESAR Solutions.

The cooperative arrangements will ensure that standardisation requirements are embedded at every stage of the SESAR lifecycle (i.e. definition, research and development, and deployment) and that standards-making is done collaboratively as one team between all industry stakeholders.

Anna von Groote, EUROCAE Director General, said, “The SESAR 3 Joint Undertaking and SESAR Deployment Manager are active EUROCAE members. Innovative and developing domains such as ATM require inputs from stakeholders across the innovation cycle, and we are glad to see this synchronised effort in Europe and for EUROCAE to be an integral part of the innovation pipeline. All together we can support the aviation community with robust, relevant and timely standards.”

Andreas Boschen, Executive Director, SESAR 3 Joint Undertaking, said, “Standardisation is critical to ensuring that the outcomes of SESAR research and innovation become an operational reality in line with the performance needs of the aviation industry. This new collaborative arrangement with EUROCAE sets us firmly on the path to delivering an inclusive and sustainable Digital European Sky.”

Mariagrazia La Piscopia, SESAR Deployment Manager Executive, said, “I am delighted to sign this memorandum today. Through this reinforced cooperation between SESAR Deployment Manager and EUROCAE we can be even more successful in ensuring stakeholders have the right tools, references, and standards to implement the SESAR Deployment Programme. This arrangement facilitates the continuation of the European journey of ATM modernisation and digitalisation through SESAR as one strong team”.

EUROCAE AND RTCA

RTCA and EUROCAE joining forces

EUROCAE’s President Bruno Ayral, RTCA’s President Terry McVenes, EUROCAE’s Director General Anna von Groote and representatives of both organisations

Terry McVenes, President and CEO of RTCA and part of its team met the EUROCAE team on 30 November and 1 December 2022. The joint coordination meeting was hosted at EUROCAE, where Bruno Ayral, President of EUROCAE, Anna von Groote, Director General, and part of the team were also present.

The meeting was successful, covering many topics from common processes to current and potential future joint activities. EASA and the FAA participated in specific items discussed during the meeting. This was also the occasion to give the final touch to the preparation of the Global Aviation Spectrum Summit.

This meeting reinforced the good relationship between EUROCAE and RTCA and the strategic partnership between the two organisations.

Our collaboration over time:

1963 Collaboration is established with RTCA right from EUROCAE’s creation

1976 First publication of a joint Document RTCA/EUROCAE (ED-14/DO-160)

1996 First recognition by ICAO that existing standards, such as EUROCAE and RTCA MOPS, can be used as a basis for SARPs

2014 Signature of a Memorandum of Cooperation MoC between EUROCAE and RTCA

2023 Signature of an updated MoC to reinforce cooperation

EUROCAE AND RTCA

JOINT SUMMIT ON SPECTRUM COMPATIBILITY

More than 400 attendees around the world joined the Global Aviation Spectrum Summit on 13-14 December 2022 for interactive discussions on how aviation can best prepare for the future global environment as technology moves towards more efficient and effective usage of spectrum.

Hundreds of aviation professionals heard from regulators from around the world discussing - the options of shortening avionics lifecycle through adaptation, situational awareness in a changing regulatory environment, the C-band 5G roll out and the conflicting messages reported in the press and the public confusion about the level of risk. Also covered were future spectrum needs and applications and how standards can evolve to meet future needs.

“Frequency spectrum is a vital, dynamic, and versatile resource pushing new frontiers in the 21st century. Available spectrum bands are scarce, but new technologies are enabling access by the public to new benefits available from the connectivity spectrum. This Spectrum Summit helped us to steer our standardisation activities to remain on the forefront of aviation, ensuring up to date, future proof and -essential standards contributing to safety in aviation”, says Anna von Groote, Director General at EUROCAE.

“The event created an opportunity to hear directly from and collaborate with spectrum experts and professionals from around the world to ensure our standards development efforts continually evolve to represent the industry’s needs”, says Terry McVenes, President and CEO of RTCA. “Looking towards the future, it will be imperative that the aviation industry come together collaboratively with other non-aviation spectrum users to ensure the safe integration of new technologies that are so important to the advancement of our collective industries.”

The companies and organisations that participated were: AIA, Airbus, ALPA, American Airline, ASRI, Boeing, Dassault Aviation, EASA, Eurocontrol, European Commission, FAA, Flyvercity, Honeywell, ICAO, ITU, MITRE, NASA, Reliable Robotics, T-Systems, and UAVionix.

SUMMARY OF THE SESSIONS:

- *Situational Awareness in a Changing Regulatory Environment:* Aviation Spectrum is regulated by both Aviation and Telecommunication authorities. This session brought together both sides to discuss spectrum regulations as they exist in the United States, in Europe, and in a global context. The recent developments are inspiring innovation in the regulatory process, and the speakers wondered what spectrum stakeholders can expect in the future.

- *Lessons Learned and Moving Forward:* With the C-band 5G roll out and the conflicting messages reported in the press, there was public confusion about the level of risk. The intersection of diverse industries in the spectrum domain, with vastly different approaches to operations, has resulted in more interaction across formerly unrelated industries.

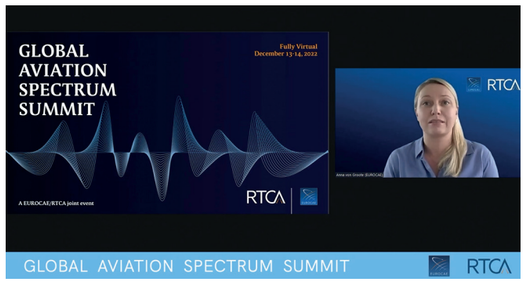
- *Shortening Avionics Lifecycle through Adaptation:* Changes in technology and development tools have enabled much shorter lifecycles, even for avionics providing safety critical functionality. New aircraft use cases, such as UAS and AAM, are taking advantage of these capabilities with the goal of bringing lifecycles down to less than 5 years. Panelists discussed the technologies that are making this possible, the challenges to this paradigm shift, and the impact on safety and regulatory requirements.

- *Future Spectrum Needs and Applications:* As new entrants push the boundaries in existing industries, there is a greater demand for spectrum to enable operations. Existing spectrum users need to make room to expand bandwidth to allow for innovation. Regulators around the world will continue to make adjustments to allocations in spectrum bands.

- *Working Together on Spectrum / What’s Next?:* Now that we have identified the current and future environment aviation is facing in utilizing spectrum for safety critical functions, this session explored how we can work together to provide the best path forward. Panelists shared the vision for future spectrum planning.

- *How Standards can Evolve to Meet Future Needs:* EUROCAE and RTCA align the development and structure of their documents to directly meet FAA’s, EASA’s and other aviation regulatory needs. There are improvements and developments to be considered in the structure and content of the documents that will make the use of spectrum more robust by the aviation community. Panelists discussed how EUROCAE/RTCA can be responsive to the industry’s needs.

> "Frequency spectrum is a vital, dynamic, and versatile resource pushing new frontiers in the 21st century"



Initiatives on Aviation Spectrum – One year on

In spring 2022, EUROCAE introduced its initiatives on spectrum working jointly with RTCA. Since then, various EUROCAE activities have progressed well and further expanded.

WG-124 Spectrum

The kick-off meeting of EUROCAE Working Group (WG) 124, joint with RTCA SC-242, took place in a virtual format in March 2022. The WG is tasked to provide guidance to ensure that the radio frequency (RF) characteristics of aeronautical Communications, Navigation and Surveillance (CNS) systems use the spectrum efficiently while respecting the necessary safety margins. The guidance will facilitate any future evaluation of compatibility with other systems and ensure that the usage of the allocated spectrum is as efficient as possible, while fully taking the specificities of aeronautical CNS systems into account.

The WG is currently reaching out to other EUROCAE and RTCA WGs and SCs in order to collect information on the way spectrum is treated across different domains of aviation. The contributions from other WGs mastering one of the many topics touched by spectrum is essential for WG-124 to be able to identify the trends and draw conclusions.

WG-119 Radar Altimeters

WG-119 Radar Altimeters, jointly with RTCA SC-239, was launched in early 2020 and is also progressing well. The purpose of the group is to develop standards ensuring radio altimeter robustness against existing and planned future radio frequency environment. The Open Consultation of ED-310 'Standard Guidance Document on Radar Altimeter RF Interference Rejection and Tolerance' was successful in raising interest and comments from the community. The resolution of the comments is ongoing.

ICAO coordination

EUROCAE Spectrum activities are closely coordinated with ICAO. As a member of the ICAO Frequency Spectrum Management Panel (FSMP), EUROCAE participates regularly to discussions on the management of aeronautical frequency spectrum.

EUROCAE holds also a seat on the Integrated communications, navigation, and surveillance (CNS) and Spectrum Task Force (ICNSS-TF). The ICNSS TF, main focus is to draft a roadmap of CNS and Spectrum (CNSS) evolution and to define a new CNSS standardisation framework including new frameworks for SARPs and standards and voluntary technical specifications (VTS).

Global outreach

EUROCAE strives to increase awareness of aviation RF spectrum challenges and reach a broader audience. On 18 November 2022, EUROCAE and the European Conference of Postal and Telecommunications Administrations (CEPT) Electronic Communication Committee (ECC) signed a Letter of Understanding. This LoU provides for the facilitation of information exchanges and coordination between both organisations in support of their common interest in ensuring the most efficient use and management of the radio frequency spectrum, accounting for the safety requirements specific to aviation.

TPM: Anna Guégan

WG-72

Transposing Information Security Management System to Aviation

The development of standards on aviation information security is adapting to the changes one can observe in the European aviation regulatory landscape. After focusing on the development of process standards, guidance, and methods for the protection of aircraft and ground ATM systems against intentional unauthorised electronic interaction (IUEI) the working group is now focusing on organisational aspects of information security. Last year the group finalised and published ED-206, a guidance on information security event management (ISEM). This standard is targeting organisations that need to manage information security events that can affect aviation safety.

Recently, the group updated its work programme to address one keystone to information security resilience: the adaptation of information security management system (ISMS) to aviation. EASA published new regulation including requirements on the management of cybersecurity risks for approved organisations and competent authorities in aviation. Requirements in this regulation are asking organisations and competent authorities to implement and maintain an ISMS, and it is expected that this document will provide the necessary guidance for implementing the required elements of ISMS adapted to the aviation framework and could be referenced by the EASA regulation. It will be used by organisations and authorities subject to the new EASA regulation in a standardised way to implement, maintain and improve an ISMS in the aviation framework.

Another big item in the work programme is the need to address end-to-end security of data. The future standard is expected to ensure that the data having an impact on aviation safety is secured during production, transport, storage and usage, this may include, but is not to, airborne software, databases, production and maintenance data, and possibly data used in end-to-end digital communication.

All this will require coordination with other working groups to ensure a coherent approach to information security, as this is a transverse topic that needs nevertheless a consistent approach to avoid the gap from where vulnerabilities in the aviation system would be exploited.

The group is meeting 4 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 as much as practicable.

TPM: Anna Guégan

The current work programme, joint with RTCA SC-216:

Identifier	Reference	Draft title	Target date (publication)
WG-72 SG-4 DP002	ED-xxx/DO-xyz	Information Security Management System for aviation organisations	Q3/2024
WG-72 SG-5 DP001	ED-xxx/DO-xyz	Standard on Aviation Data Security	Q1/2025
WG-72 SG-3 DP003	ED-206A/DO-392A	Guidance on Information Security Event Management	Q4/2024
WG-72 SG-6 DP001	ED-202B/DO-326B	Airworthiness Security Process Specification	Q2/2024

WG-114 Artificial Intelligence

Process Standard for Development and Certification/Approval of Aeronautical Safety-Related Products Implementing AI

Artificial Intelligence (AI) as a technology has become increasingly present in different industry applications. As of today, there is no approval certification considering AI for embedded aeronautical systems. The intent of this group is to provide guidance that can be used as a means of compliance for embedded AI technology.

The joint group was created in June 2019, under the name EUROCAE WG-114/SAE G-34, as a joint standardisation initiative in order to coordinate a common standard providing guidelines about certification activities in aeronautical systems related to safety-critical products using AI technologies. The group works under joint leadership by EUROCAE (Co-Chair Christophe Gabreau, Airbus, and Co-Chair Béatrice Pesquet-Popescu, Thales) and SAE (Chair Mark Roboff, Skythread Aero, and Co-Chair Paula Olivio, Embraer).

The joint group was initially structured around 7 subgroups:

- **SG1** Airborne & ground applications
- **SG2** Machine Learning (ML) data management
- **SG3** ML Design
- **SG4** ML implementation & verification
- **SG5** System and safety consideration for ML
- **SG6** System Modification considerations (not active)
- **SG7** Other process considerations (Planning, Config. Mgmt., Quality, Levelling, and Certification/ Approval)

These subgroups have a dynamic life and have seen since 2019 the merging of some of them.

The group determined that the efforts of SG6 would not be continued in the initial publication, however, it will be the central aim in the subsequent publication slated for 2025. The standard, which will be submitted to the adoption process by the end of 2023, will be by some informative material (AIR6994 / ER-xxx AI in Aeronautical Systems: Use Cases - Publication 2024) and will include a description of use cases representative of the industrial needs (some of them will be used in the standard development to mature the guidance). As a first foundational document, the group adopted a common Taxonomy (AIR6987 / ER-xxx AI in Aeronautical Systems: Taxonomy - Publication 2023), which will be revised periodically and before Issue 1 of the standard. In 2021, the working group already finalised a “Statement of Concerns” (ER-22) in order to align all the aeronautical industries on the same concerns and raise the main challenges that prevent the use of AI and specifically the use of Machine Learning in safety-critical applications nowadays.

During 2022, the group focused on technical work related to machine learning specificities in aeronautical development processes and started the redaction of the standard document. It revised the development process during its design phase, to highlight the interest in a W-shaped diagrammed for machine learning instead of the classical V-shaped one.

WORKING GROUP HIGHLIGHTS

WG-114 meeting at Airbus Defence and Space facilities in Manching (Germany)

One of the main additions to the standard is the integration of the Machine Learning Development Lifecycle (MLDL) with the aeronautical standardisation framework and the certification/approval process. In particular, it brings new:

- ML Design Requirements Process (including Operational Design Domain)
- ML Environment Set Up Process
- ML Data Management Process
- ML Model Design Process
- ML Implementation Requirements Process
- ML Configuration Management Process

This also contributes to defining and organising development objectives and outputs in a simple and clear manner for certification/approval applicants.

This work will be pursued during the current year, together with the discussion with the Authorities to recognise the standard as a Means of Compliance. The finalisation of the document and the adoption of the standard will be done in 2024.

The first release, Process Standard for Development and Certification Approval of Aeronautical Products Implementing AI, will cover non-adaptive supervised machine learning, while the second publication, foreseen to be finalized in 2026, will be concerned with other machine learning techniques and consider online ML.

TPM: Thuc Nguyen

WG-123

Infectious passenger handling in air ambulance operations

Air ambulance operations are a critical component of any healthcare system, providing medical transport to patients in need of emergency medical attention. Handling infectious patients in air ambulance operations is a crucial aspect of emergency medical transport.

With the increasing demand for air ambulance services, it is essential to have clear guidelines to protect patients and healthcare providers during the transport process, but so far, there is little alignment between national organisations to create a framework for disease control in aviation.

Additionally, air ambulance operations should have protocols in place for responding to infectious patients, including communication with healthcare facilities and transport destinations to ensure that appropriate precautions are taken to prevent the spread of disease. Moreover, proper training for healthcare providers and air ambulance crew members is crucial in ensuring that they have the necessary knowledge, skills and equipment to respond effectively to infectious patients during transport.

Air ambulance services have had to respond to changes in hospital capacities and patient needs, as well as changes in regulations and guidelines related to infectious diseases as COVID-19, which has resulted in increased operational costs and complexity. The COVID-19 pandemic has highlighted the importance of air ambulance services, and the need to have clear and comprehensive guidelines in place to ensure the safe transport of infectious patients and the protection of all individuals involved in the transport process.

Together with some major stakeholders, EUROCAE identified the need for a concerted effort to contribute to the development of a standardised framework for disease control in aviation and EUROCAE WG-123 Infectious passenger handling in air ambulance operations was created to develop guidelines for aeromedical passenger handling and transport in respect to COVID-19 and other infectious diseases.

Since the kick off meeting of WG-123, in September 2021, 26 field experts on aeromedical industry, especially ambulance carriers (operators), medical, technical and operational personal, equipment, system, aircraft and helicopter manufacturers, have been actively participating in the working sessions chaired by Walter Klimscha, UNICAIR. During this time, WG-123 has almost finalised the draft Guidance Document for aeromedical handling and transport of infectious passengers.

This guidance document will specify such a framework and include all measures related to prevention, management of incidents, training, and tracking on an international level in regards of infectious passenger handling.

Air ambulance services have had to adapt quickly to new challenges and changes, and the experience of the pandemic has shown the need for air ambulance services to be prepared for future public health emergencies. EUROCAE, through WG-123, actively works to develop guidance that ensure the safety and well-being of patients and healthcare providers during the transport process of infectious passengers. The expected target date for the publication is in April 2023.

TPM: Esther Hoyas

WORKING GROUP HIGHLIGHTS

Around 50 active Working Groups in 2023

More than 450 members

4500+ experts

Together we are driving the standard for aviation

WG-125

The Next Generation Aviation Professionals (NGAP) Programme

The Next Generation Aviation Professionals (NGAP) Programme is an initiative, which was introduced by ICAO in 2009 to ensure that sufficient qualified and competent aviation professionals would be available to operate, manage, and maintain the future international air transport system.

Since many years, but in particular after the COVID-19 crisis, it is clear that the aviation industry is facing a personnel shortage, which will have a significant impact on the sector. The shortage of skilled workers, including pilots, air traffic controllers, and maintenance technicians, could cause delays, cancellations, and increased operating costs.

This is especially critical: given that a large contingent of the current generation aviation professionals will soon retire, access to affordable training and education is increasingly problematic, and aviation competes with other industry sectors for highly-skilled professionals. In addition, the increased competition from other, more attractive, industries as well as the increase in traffic demand, are putting a strain on the industry's workforce.

The aviation community is taking initiatives to address the personnel shortage, including investment in training programmes, attractive benefits packages from the companies to workers, and the promotion of aviation careers to young people. Nevertheless, it is essential that more steps are taken to address this issue. The industry must work to attract new talent, and retain experienced workers, to ensure that the sector can continue to grow and thrive.

WG-125 was created to support the aviation industry with the challenges above. Through this working group, EUROCAE aims to engage with members in the aviation industry, universities and students, organisations and act as facilitator in encouraging industry-university collaboration.

The NGAP Programme is particularly important in this time, as technological advancements continue to occur, and personnel must be trained to cope with these changes and competent youth must be attracted into the industry to ensure continuous workflow and avoid the forecasted shortage of personnel in the future.

EUROCAE WG-125 held its kick off meeting on 11 January 2023 at EUROCAE's premises. With more than 50 participants in person and online, the NGAP working group will focus on developing the next generation of aviation professionals through education, training, and mentoring. The leader of WG-125 will be Cate Brancart (GAMA) and Antonio Gonzalez Gomez (EASA) as Chairs and Julija Razmislaviciene (FoxATM) as Secretary.

Participants discussed on how attracting and retaining students and youth in the aviation industry is a key objective of the WG, and how mentoring can greatly influence this. Likewise, an important point in the development of future WG activities will be the engagement with members in the aviation industry, universities and students, organisations, and act as facilitator in encouraging industry-university collaboration.

The WG's main activities will include developing best practices, identifying key competencies and skills needed for future aviation professionals, and creating a mentoring programme to support the next generation of leaders:

- ER-xxx Best practices for mentoring students and young professionals. *Publication target date: 31/01/2024*

- ER-xxx Guidelines and techniques to foster cooperation and collaboration among aviation stakeholders. *Publication target date: 31/01/2024.*

Focusing on two areas to entice the young towards aviation

"Best practices for mentoring Students and young professionals"

It will describe the importance and device tools for:

- good and lasting mentoring
- important characteristics of mentors and mentees
- efficient programmes tailored to address the key aims of the NGAP programme.
- managing expectations by mentees indicators of what makes a successful mentorship,
- ways to match mentors with mentees,
- benefits and different aims of a formal versus and informal mentoring scheme,
- list of factors that could derail a successful mentoring

"Guidelines and techniques to foster cooperation and collaboration among Aviation stakeholders and educational institutions"

It will outline the benefits of such collaboration, identifying ways to:

- encourage dialogue between the different actors
- provide several means to collaborate and identify ways to ensure that such curriculum or training syllabus is developed according to the latest and right input in line with technological advancements
- discuss skills development, assessment and maintenance through constant learning,
- explain how exploratory research can be collaboratively achieved and the benefits that this would bring
- explore the need to maintain a central hub where this collaboration and information can be fostered amongst partners and organisations that have an interest

TPM: Esther Hoyas

EUROCAE 60TH ANNIVERSARY

EUROCAE 60th Anniversary

60 years driving the standards for aviation

EUROCAE was formed at Lucerne, Switzerland, in 1963, as a European forum focusing on electronic equipment for air transport. EUROCAE currently has over 450 members, including industry, service providers, regulators, research institutes and international organisations, becoming the European leader in the development of worldwide recognised industry standards for aviation.

The 60th anniversary of EUROCAE is a significant milestone for the organisation, as it has played a vital role in shaping the safety and efficiency of air transportation in Europe over the past six decades.

Over the years, EUROCAE has made significant contributions to the aviation industry through its work on a wide range of standards: Air Traffic Management, Airports, Space, Avionics, Advanced Air Mobility, Air Medical, RF Spectrum, Security, System Engineering, IT & Software, and Sustainability.

In recent years, EUROCAE has also focused on emerging technologies, such as electric and hybrid-electric aircraft, unmanned aircraft systems, and connected aircraft. These efforts have helped to ensure that the aviation industry is well-equipped to meet the challenges of the 21st century and beyond.

As EUROCAE celebrates its 60th anniversary, it is worth noting the organisation's invaluable contributions to the aviation industry and its ongoing commitment to advancing the safety and efficiency of air transportation. Here's to the continued of success for EUROCAE!

Milestones of EUROCAE's history:

- **1963**: EUROCAE is founded as a non-profit organisation by a group of European aviation stakeholders at Lucerne (Switzerland)
- **1965**: first published document (Achievement of Reliability by use of Redundancy Techniques)
- **1970s**: EUROCAE begins developing standards for avionics and aircraft systems
- **1972**: EUROCAE publishes its first set of standards for avionics, covering topics such as airborne radio communications and navigation equipment
- **1975**: Secretariat moves to Paris (France)
- **1976**: First publication of a joint Document RTCA/EUROCAE (ED-14/DO-160: "Environmental Conditions and Test Procedures for Airborne Equipment")
- **1981**: Adoption of ED-14 as approved ISO Standard (ISO 7137)
- **1989**: EUROCAE extends its domain of activities to non-electronic equipment and becomes the European Organisation for Civil Aviation Equipment
- **1996**: Signature of Memorandum of Understanding with Joint Aviation Authorities (JAA), recognising EUROCAE as preferable body to develop specifications for airborne equipment and systems
- **2000**: Creation and first meeting of the EUROCAE Technical Advisory Committee (TAC)
- **2004**: EUROCAE recognised in Single European Sky (SES) Interoperability Regulation (552/2004)
- **2009**: Signature of a MoU between EUROCAE and ICAO (updated in 2017)
- **2015**: Creation of the European ATM Standards Coordination Group (EASCG)
- **2015**: EUROCAE releases its first standard for unmanned aircraft systems
- **2020**: EUROCAE releases its first standard for aircraft sustainability
- **2023**: 60th anniversary (+450 members, almost 50 active Working Groups, and +4500 experts)
- **2023**: Signature of updated MoCs with SESAR 3 JU and SESAR DM

Innovative Air Mobility

A disruptive market segment

DEFINITIONS

Innovative Air Mobility (IAM) is a new air transportation system, made possible by Unmanned Aircraft Systems (UAS) and Vertical Take-Off and Landing (VTOL) aircraft, equipped with new technologies such as enhanced battery technologies and electric propulsion. These aircraft will have a pilot on board, be remotely piloted or be autonomous.

IAM addresses passenger and cargo transport as well as other aerial missions in urban, regional, and interregional geographies; Urban Air Mobility (UAM) being understood as the subset of IAM in, and around, urban environments. Examples of IAM missions are already foreseen, and even already experimented: transportation of passenger's ("air taxi" or "air metro"), air cargo moving goods between warehouses and stores, home deliveries, emergency medical evacuations, rescue and humanitarian missions, law enforcement, news gathering, weather monitoring, ground traffic assessment, infrastructure inspection…

In parallel, new e-services will be developed to allow such operations along the concept of On-Demand Mobility (ODM): air traffic operations between any origin and any destination without the delays associated with scheduled service in traditional commercial aviation.

The AAM concept includes different segments: UAS and VTOL, but also the UAS Traffic Management (UTM) and Vertiports.

The EU has introduced the terms U-space and Innovative Air Mobility (IAM), whilst the FAA and other international stakeholders use the terms UTM and AAM. This domain is evolving fast, and terminology will continue to change.

MAIN ISSUES

IAM has the potential to be a disruptive market segment with high growth rates and a high number of aircraft and operations in various environment. However, several barriers must be overcome for IAM operations to be integrated safely and environment-friendly, and for mature end efficient operations to be conducted:

- Barriers associated with IAM vehicles include ride quality, lifecycle emissions, ease of certification in terms of both time and cost, auditory and visual noise in terms of annoyance perceived by the community on the ground, affordability in terms of operating cost, safety in terms of potential casualties and property damage, and efficiency in terms of energy usage.

- Barriers associated with IAM airspace integration include establishing safety with technologies and procedures to ensure separation from terrain, obstacles and other aircraft, and developing efficiency with tools and methods to sequence, schedule, and space IAM aircraft at vertiports and airports.

- More globally, all IAM vehicles and systems will need to be interoperable with each other, as well as with existing airspace users. At a minimum, standards must be developed for the data exchange architecture and for communication, navigation, and surveillance.

Emerging technologies like autonomy, computer vision and artificial intelligence are also important features for IAM and will need to be further developed and validated to safely support deployment of new concepts.

Finally, many IAM players are new in the aerospace industry, bringing new approaches to design, test and certification. However, the final goal will be to keep aviation safe.

REGULATORY SITUATION

- The International Civil Aviation Organisation (ICAO) launched several initiatives in the field of UAS:

- Starting in 2007 as the Unmanned Aircraft Systems Study Group (UASSG), the Remotely Piloted Aircraft Systems Panel (RPASP) coordinates and develops ICAO Standards and Recommended Practices (SARPs), Procedures and Guidance material, to facilitate a safe, secure and efficient integration of remotely piloted aircraft (RPA) into non-segregated airspace and aerodromes. Priority is on instrument flight rules (IFR) operation in controlled airspace.

- The Unmanned Aircraft Systems Advisory Group (UAS-AG) was established in 2015 as a technical body to support the ICAO Secretariat in developing guidance material and expedite the development of provisions to be used by States to regulate UAS. The UAS-AG is also supporting the ICAO Secretariat in guiding ICAO Member States by establishing a common global framework for, and core boundaries of, unmanned aircraft system traffic management (UTM).

- In November 2022, the Air Navigation Commission (ANC) established the Advanced Air Mobility Study Group (AAM SG). The Study Group will assist the Secretariat in developing a holistic vision and framework related to AAM and also to serve as a focal point for the ICAO AAM-related work, with the aim of ensuring global interoperability and harmonization.

- Europe has set one of the most advanced safety frameworks for operating and setting the technical requirements of drones.

WORKING GROUP REPORT

Regulation (EU) 2018/1139 extended EU competence to all UAS, providing for the establishment of common EU rules for all UAS, irrespective of their Maximum Take-off Mass (MTOM), using an operation-centric and risk-based approach.

The European Drone Strategy 2.0 “for a Smart and Sustainable Unmanned Aircraft Eco-System in Europe” was adopted end of November 2022 by the Commission. This strategy sets out a vision for the further development of the European drone market through ten areas which should unfold the development of the drone eco-system and foster uptake of drone technology, while ensuring safety, security and social acceptance.

With its Rulemaking Task (RMT) 0230, the European Union Aviation Safety Agency (EASA) contributes to achieving the objectives of the Basic regulation. Issue 4 of the Terms of Reference for RMT.0230 “Introduction of a regulatory framework for the operation of unmanned aircraft systems and for urban air mobility in the European Union aviation system” was published in December 2022.

EUROCAE Activities

Dedicated EUROCAE Working Groups (WG-105 UAS and WG-112 VTOL), and strong interaction with related activities (e.g. Airborne Collision Avoidance Systems, electric engines, high voltage, Artificial Intelligence…), are already well established to develop the technical standards needed to allow certification and operations of AAM components.

Since 2016, WG-105 is tasked to develop the necessary standards to enable safe integration of UAS (or RPAS) into all classes of airspace, with due consideration of the European regulatory proportionate risk-based approach, the related categories of operations (Open, Specific and Certified) and the industry expectations. WG-105 is specifically tasked to develop standards focussed on the following aspects: Detect and Avoid capability, Command & Control, UAS Traffic Management, Design & Airworthiness, Enhanced RPAS Automation and Specific Operation Risk Assessment.

WG-112 was created in 2019 to develop the appropriate industry standards, necessary as Acceptable Means of Compliance, to support the EASA Special Condition on VTOL aircraft (SC-VTOL). Work is currently organised around the following streams of activity: Electrical systems and components, lift/thrust systems, safety assessment and security, flight aspects, ground infrastructure and vertiport operations, avionic systems, concept of operation, Seats and Electromagnetic (EM) environment.

The EU Drone Strategy, as well as recognising the significant benefits that can arise from the AAM sector, notes that protection from malicious and non-cooperative drones also requires access to counter measure technologies.

WG-115, jointly with Special Committee SC-238 from our partner RTCA, is established to develop standards to support the safe and harmonised implementation of Counter-UAS (C-UAS) Systems into airport and ANSP systems, noting that C-UAS capability could also be used in other environments, such as urban areas or critical infrastructure. WG-115 is currently developing performance requirements for non-cooperative surveillance systems for detection of UAS in controlled airspace, especially in the vicinity of airports. While EUROCAE is not establishing standards for the defeat capabilities of C-UAS, WG-115 is also developing an Interoperability standard, which will address requirements to ensure C-UAS can be safety integrated into existing airport environments.

All activities are efficiently coordinated with SESAR 3 Joint Undertaking research and Very Large-Scale Demonstrations (VLD) projects. Early cooperation with Research and Technology (R&T) projects led by military organisations, such as the European Defence Agency (EDA), is also instrumental in improving the maturity and level of validation of our standards. In the Counter UAS domain, cooperation is extended to the European Commission (DG HOME) and the North Atlantic Treaty Organisation (NATO).

EUROCAE staff members and WG experts are regularly contributing to the activities performed by the international, European and national organisations and authorities, in addition to participation in working sessions with our partners all over the world.

NEED FOR FUTURE WORK

The integration of these new concepts of aircraft into the existing aviation structure (including certification) as well as in the Air Traffic Management (ATM) system will need further industry standards to achieve worldwide harmonisation and safety. Some aspects will certainly need to be considered for improved interoperability and efficiency: AAM operations at vertiports and airports, integration with surface mobility, autonomous operations, digital flight operations, digital flight rules and air traffic services…

Concerning communication and datalink, spectrum shortage may limit UAS operations and could become a priority topic in the future, while some techniques used to increase robustness to jamming are conflicting with the need to save spectrum for other users.

The following interacting components of the “Smart Cities” concept will need to be considered for their potential impact on UAM: Urban Ground & Underground Mobility, Activity places, Environment, Security & Privacy.

In addition, work on AAM will/might have an impact on the activities of Working Groups from other EUROCAE domains. This is especially the case for autonomy as the final objective for all VTOL manufacturers is to propose “Un-piloted” aircraft or at least aircraft adopting the Simplified Vehicle Operation (SVO) approach.

TPM: Alain Vallée

EUROCAE was present at the

Airspace World 2023

The “Europe for Aviation” partners, consisting of nine European aviation organisations working to promote the modernisation, sustainability and resilience of a safe European aviation, came together at Airspace World, from 8 to 10 March 2023 in Geneva, Switzerland.

Over the course of the 3-day global event, these organisations showcased how, through collaboration, they can go much further in tackling the most pressing challenges facing the European aviation industry.

The “Europe for Aviation” stand and theatre hosted a wide range of briefings, exhibits and demos illustrating collaboration in action between the European aviation organisations working to implement the Single European Sky - the European Commission, the European Union Aviation Safety Agency (EASA), the European Defence Agency (EDA), EUROCONTROL, the European Organisation for Civil Aviation Equipment (EUROCAE), the European Union Agency for the Space Programme (EUSPA), the European Climate, Infrastructure and Environment Executive Agency (CINEA), the SESAR 3 Joint Undertaking (SESAR 3 JU) and the SESAR Deployment Manager (SESAR DM).

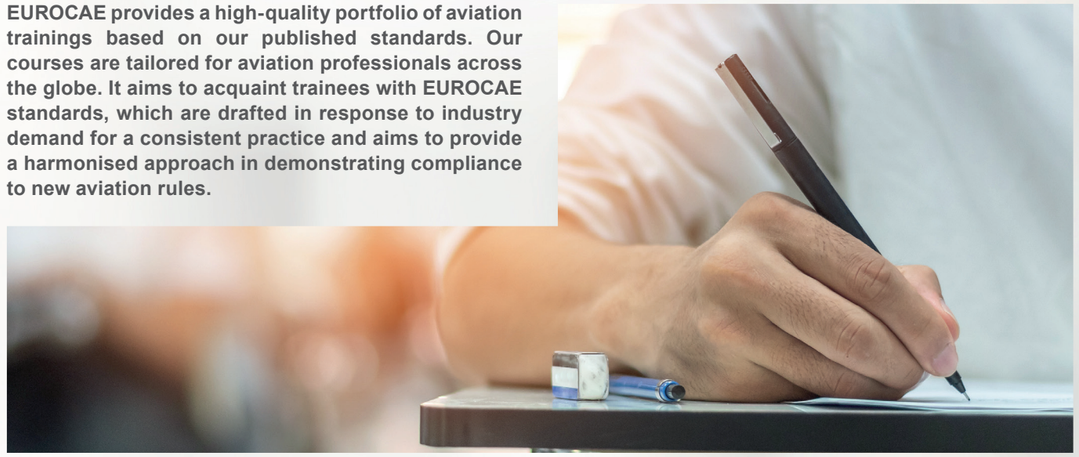
Never before have we seen such rapid developments in technology, knowledge, and need in the ATM industry. That’s why getting the global community together is so crucial. It is only together that we can define and deliver our future skies.

The leaders of the nine European aviation organisations. Among them EUROCAE's Director General, Anna von Groote

Overview & Dates

Trainings

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



Voice over Internet Protocol (VoIP)

With this course, trainees will obtain sufficient knowledge and s comprehensive view of the different components of a VoIP ATM system and their mutual interfaces through a full overview of the worldwide recognised standards:

- ED-136 ‘VoIP ATM System Operational and Technical Requirement’,
- ED-137 ‘Interoperability Standard for VoIP ATM Components – Radio & Telephone’, and
- ED-138 ‘Network requirements and performances for VoIP Air Traffic Management’.

Next dates:

- 26-27 September
- 5-6 December

Unmanned Aircraft Systems Airworthiness and Safety

The course covers the entire subject of UAS Airworthiness Certification (in EASA terminology, specific, and certified categories). Participants obtain an overall understanding of the field and a detailed knowledge on areas such as the safety assessment process and operational risk assessment. Trainees will be able to identify risks related to UAS operations and prepare inputs for risk assessments, in line with Specific Operations Risk Assessment (SORA) methodology.

Next dates:

- 26-28 June
- 24-26 October

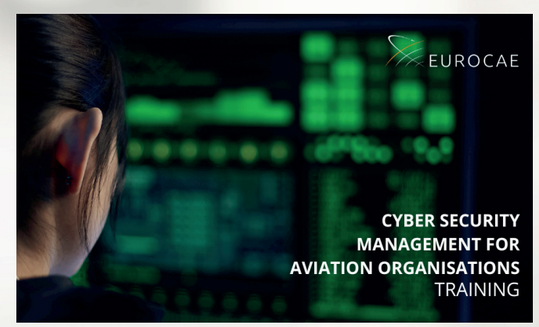
Aircraft Cyber Security and Continuing Airworthiness

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. Trainees will be able to identify basic principles, their implementation, and effects of cyber security in the aviation environment, and understand how cyber security impacts different actors in this sector.

Next dates:

- 3-5 May
- 3-5 October
- 28-30 November



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 join either part or a combined training.

Next dates:

- 15-17 May
- 17-19 October
- 12-14 December

Aviation Software Standards - Airborne

EUROCAE ED-12C (equivalent to RTCA DO-178C) has been the basis for airworthiness approvals of airborne software since almost 30 years and is recognised by all certification authorities. Knowlegde of this standard is a prerequisite for any person involved in the development or approval of airborne software. The objective of the course is to provide the basics to understand ED-12C principles and how to build a software design system capable of fulfilling ED-12C's objectives. The course also addresses tool qualification (ED-215) and introduces the technological supplements (ED-216, ED-217, ED-218).

Next dates:

- 6-7 June
- 7-8 November

Design Assurance Guidance for Airborne Electronic Hardware

EUROCAE ED-80 (technically equivalent to RTCA DO-254) is the standard applicable to the qualification of electronic hardware in airborne systems, and especially to complex electronic hardware (namely ASICs and FPGAs). The purpose of the training is to enable participants to understand ED-80 and how it is used and complemented by major certification authorities.

Next dates:

- 23-24 May
- 10-11 October

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.

Next dates:

- 20-21 September
- 15-16 November

Aviation Software Standards - ATM

The purpose of this training is to provide participants with an overview of relevant EUROCAE standards for systems and software development for ATM systems (ED-109A and ED-153). This course allows participants to identify basic principles, their implementation, and consequences of good software engineering practices in the aviation domain. Furthermore, a detailed description of how software safety regulations, standards, and certification affect different actors in aviation is provided, which allows participants to understand how standards can enable the effective management of software development costs in safety critical systems.

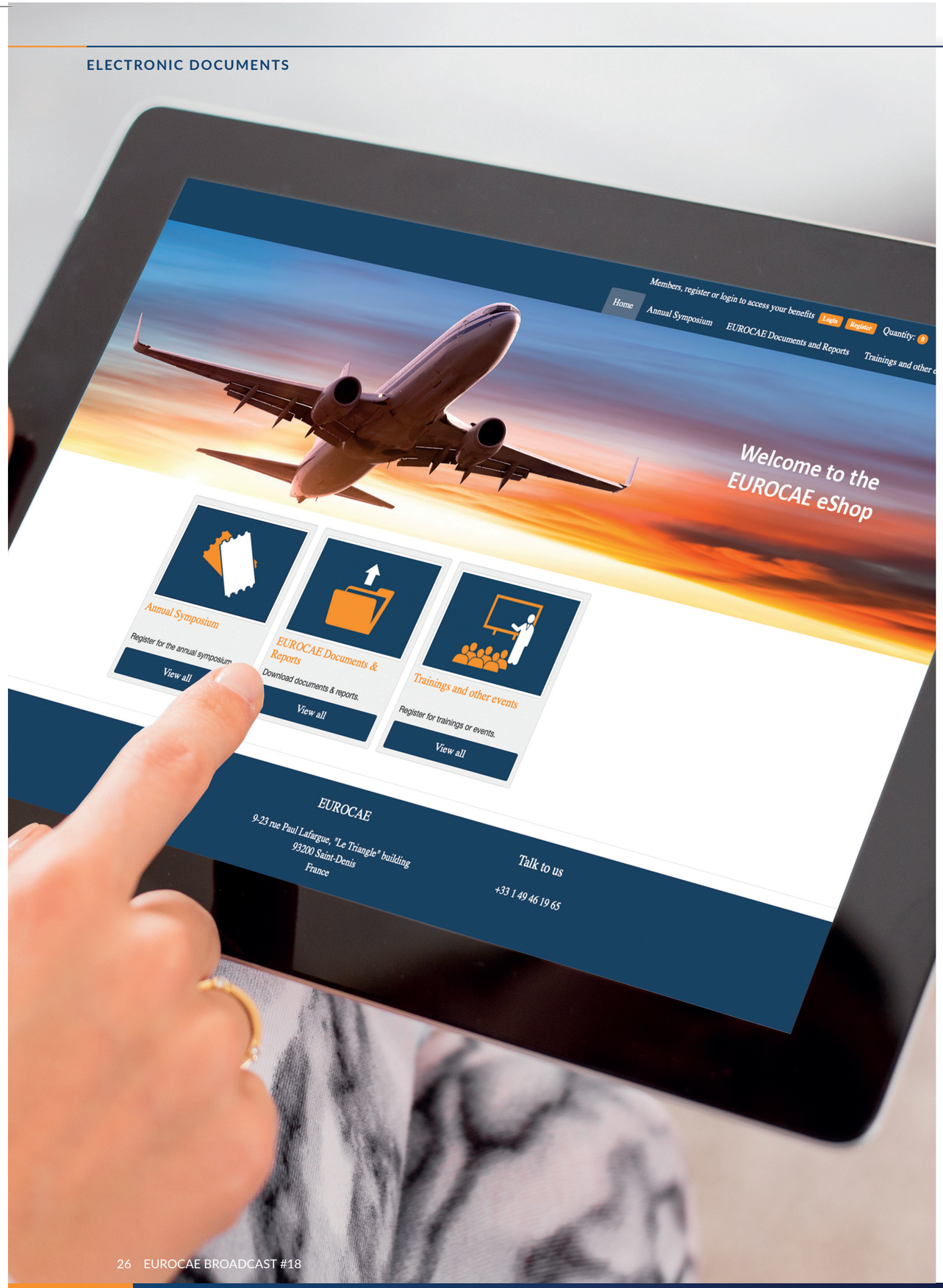
Next dates:

- 13-14 June
- 14-15 November

How to book trainings:

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

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



EUROCAE

New publications

EUROCAE Documents (ED) are developed by Working Groups bringing together renowned experts in their area, and following a well-established process.

They are often developed jointly with our international partners and recognised worldwide for their high quality and as state of the art technical specifications. These EDs can be system or equipment performance specifications, safety and performance require-ments, interoperability requirements, technical specifi-cations 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.

EDs are widely referenced as a Means of Com-pli-ance to regulatory documents by EASA, the European Commission, and ICAO.

All the documents are available in our eShop. Please scan this QR code:

ED reference	ED TITLE	PUBLICATION DATE
ED-114B change1	MOPS Global Navigation Satellite GBAS Ground Equipment to support Precision Approach and Landing	16/11/2022
ED-307	Guidance on the Demonstration of Acceptable Occupant Safety - Emergency Egress	7/11/2022
ED-300	Guidance on Conducting an Aircraft Functional Hazard Assessment and Preliminary Aircraft Safety Assessment for a VTOL Using a Generic Example	7/11/2022
ED-306	Design Considerations for VTOL Aircraft Protection From Uncontained High-Energy Fragments and Sustained Imbalance	21/10/2022
ED-304	Technical Standard for Passenger and Crew Seats in Advanced Air Mobility (AAM) Aircraft	7/10/2022
ER-023	Development Assurance Principles for Aerospace Vehicles and Systems	7/10/2022
ED-308	Guidance on VTOL Charging Infrastructure.	24/02/2023
ED-309	Guidance on VTOL Energy Level Information Provided to the Crew	3/02/2023

EUROCAE

New members

FULL MEMBERS:

Tern Systems ehf	Iceland	TERN SYSTEMS
Mu Aviation BV	Netherlands	Europe uAvionix
Midlands Aerospace Alliance	United Kingdom	midlands aerospace alliance
LICRIT s.r.o.	Czech Republic	LICRIT
AEROSPACE, SECURITY AND DEFENCE INDUSTRIES ASSOCIATION OF EUROPE	Belgium	ASD
H55	Switzerland	H55
SEAL Aeronautica	Spain	
Kookiejar of Sweden AB	Sweden	kookiejar
Metavonics	France	Metavonics
DMD Solutions	Switzerland	DMD SOLUTIONS
TEYDE 2010 S.L	Spain	TEYDE INGENIERÍA Y SERVICIOS
FALIKSSON AB	Sweden	FALIKSSON
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Ferrovial Vertiports	United States	ferrovial vertiports
FMV	Sweden	FMV
Wake Engineering Sl.	Spain	WAKE
Central European Aerospace Corporation s.r.o.	Czech Republic	CEAC AEROSPACE
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To70	Netherlands	to70
FSQ Experts	Germany	FSQ EXPERTS FUNCTIONAL SAFETY & QUALITY EXPERTS GmbH

EUROCAE MEMBERSHIP

EUROCAE

Membership benefits

AS FULL MEMBER OF EUROCAE, YOUR COMPANY WOULD RECEIVE:

- Privileged access to all the EUROCAE publications (ED an ER) relevant to your business today (ATM, Systems, Avionics).
- Regular information keeping you up to date with all the activities in standardisation from Europe and beyond.
- An invitation to and special rates for the EUROCAE Annual Symposium as well as information from other regional and global players in aviation.

AS FULL MEMBER OF EUROCAE, YOUR COMPANY COULD CONTRIBUTE TO:

- The work that leads to the introduction of new industry standards.
- The planning for new activities, potentially leading to new standards.
- The future direction of industry standards.
- The leadership of new activities under the EUROCAE banner.
- The governance of EUROCAE and be elected as Council member.

AS FULL MEMBER OF EUROCAE, YOUR COMPANY IS PART OF:

- The only European aviation standardisation body representing your interests and supporting you business opportunities today and tomorrow.
- Developing the Means of Compliance with European and global regulations.
- A network of partners - private and public - that are the key actors of future aviation changes (the European Commission, SESAR JU, EASA, EUROCONTROL, RTCA, SAE, SDM, ICAO,...)
- A trusted group of professionals with a global reputation for setting the standard and leading developments, rather than following and living with the decisions of others.

AS FULL MEMBER OF EUROCAE, YOUR COMPANY WOULD BENEFIT BY:

- Having a clear understanding of the context behind relevant standards and the knowledge to exploit them to best effect.
- Being able to adjust and adapt your company's investments and developments early with well-informed knowledge of the latest trends.
- Achieving significant influence within the industry.
- Maintaining a reputation with my customers and suppliers as a leader in my field.
- Being better prepared to respond to customer's and regulator's expectations.
- Establishing a value for money investment both for now and for the future.

LIMITED MEMBERSHIP

Limited Membership may interest companies or organisations wishing to participate in a single Working Group, as far as they have the right competence. They are not entitled to be WG Chairperson or Secretary (except upon decision from the Council or the Director General). Limited Members are informed about ongoing activities of the specific WG, in which they participate, and benefit from free soft copies of any EUROCAE Document developed by this particular WG. They also benefit from 30% discount for the purchase of any EDs of the EUROCAE catalogue.