

UNMANNED AIRCRAFT SYSTEMS AIRWORTHINESS AND SAFETY TRAINING

Operations of Unmanned Aircraft Systems (UA), through a variety of configurations, applications and types of operations, are increasingly becoming a reality in the world of civil aviation. New European Regulation, based upon risk-based approach, that has been put in place in June 2019 and has endorsed the three pillars concept of Open, Specific and Certified categories for UAS operations, has now become reality faced by anyone engaged in any UAS flight authorization process. EU regulation and related EASA guidance materials that are regularly being updated and completed may still appear as vast “forest” where one could get easily lost.

EUROCAE (through its dedicated Working Groups, initially WG-73 and WG-93 and WG-105 since November 2016) has played and is playing an active role in the UAS-rule making and standardisation activities. A number of standards and guidelines documents (ED and ER documents) have been already issued to handle various topics relating to UAS Airworthiness and Operational Safety and to enable the safe integration of UAS in the civilian airspace. This training course aims at familiarising the audience with the issues related to the UAS Airworthiness and Safety. In particular, it presents the essential tools to conduct System Safety and Operational Risk Assessment, based upon design and operational risk mitigation measures, which is a key element in getting flight authorization from Civilian Aviation Authorities (in the framework of Specific and Certified Categories, as per EC regulation 2019/947).

Course content

- The world of UAS and the world of certification: an overview
- UAS regulatory landscape and approach
- A glance at current EUROCAE UAS standards and guidelines
- Conducting UAS System Safety assessment and Operational Risk assessment (considering risk based approach)

Learning objectives

The course aims at encompassing the whole subject of UAS Airworthiness Certification (in EASA terminology “Specific” and “Certified” categories). It is hoped that the participants will subsequently get a quite complete picture while “zooming” into a number of peculiar issues, such as Safety Assessment process activities and Operational Risk Assessment. Whilst this three days course does not claim to make the participants technical experts in these latter disciplines, it should allow them to get a good appreciation of the various tools and methods supporting the UAS flight authorisation or airworthiness certification process.

The participant will be able to:

- Get a sufficient knowledge and comprehensive view of the UAS regulatory framework and flight approval / certification process as well as the related background and rationale;
- Identify the risks related to UAS operations;
- Get familiarised with the UAS Safety Assessment process;
- Apply the risk-based approach based upon design and/or operational mitigation measures;
- Prepare inputs to Operational Risk Assessment in line with SORA methodology (including due consideration on the forthcoming envisaged update) to support the granting of flight authorisation.

Who should attend?

Anyone involved in UAS design, manufacturing and operations who is involved in (and possibly struggling with) the process of flight authorisation granting by Civil Aviation Authorities. This includes managerial, technical and operational people (UAS Industry, Operators but also Authorities).

Benefits of attending

- Participants will get a clear understanding of the UAS Airworthiness and Safety Issues and get better prepared to the corresponding issues related to the UAS flight approval process
- Related EUROCAE ED-ER documents will be brought to life with classroom presentations and exercises.
- Sharing experiences with colleagues from other UAS stakeholders and countries.
- Top Level world expert instructor
- Certificate on completion of the course

Supporting Documents

The course will refer to a number of supporting documents that it would be useful for the participants to have in hands and in mind during the course and certainly after. The list of these documents, where they are applicable and the corresponding link for downloading, as well as a complimentary copy of some supporting EUROCAE documents will be provided prior to the course.

Instructor – Michael Allouche



Michael Allouche was born in France in 1953. He is an Aerospace Engineer (diploma from “Grande École” Supaéro, Toulouse in 1976). He has accumulated a vast experience of 46 years in the Aerospace Industry, including as Avionics Certification

Manager at Airbus Industries and UAS Airworthiness Manager at Israel Aerospace Industries (IAI) since 1992. Michael is a worldwide known and active figure in the field of UAS International Rule-making activities to this day, including EASA and JARUS Working Groups. He is a member of EUROCAE since 2006, where he first led the Airworthiness Subgroup of the UAS WG73 before becoming the UAS WG-105 co-chairman in 2016. In 2019, he was granted the EUROCAE Life-time achievement award. In March 2020, he retired from IAI and is now an independent Airworthiness Expert Consultant supporting various UAS companies in their flight approval effort and EUROCAE WG-105 Airworthiness Subgroup acting leader. His expertise and large experience made him most suited to instruct the EUROCAE UAS training Course on UAS Airworthiness and Safety

How to book

Places are limited to a maximum of 20 people, so you are advised to book early online here:

<https://www.eurocae.net/training/unmanned-aircraft-systems-airworthiness-and-safety-training/>

Terms and conditions

For terms and conditions please visit the EUROCAE website under <https://www.eurocae.net/training/terms-and-conditions/>

COURSE FORMAT: ONLINE

The training will be led by Mr. Michael Allouche, former EUROCAE WG-105 Co-chairperson, a well-recognised expert in the UAS area. It takes place over five sessions (with the focus put on Session 3 on Safety Assessment and Session 4 on Specific Operational Risk Assessment), and will be interactive,

including small group exercises to facilitate learning and enjoyment. The slides will be provided, as well as complimentary copies of the relevant EUROCAE ED-ER documents.

SESSION #1 <ul style="list-style-type: none">□ Introduction to the course□ The world of UAS: an overview□ The world of certification <p>Session 1 will first introduce the specific character of UAS as compared to manned aviation, before entering the World of certification through key concepts and principles, the aviation regulatory frame-work in general and the description of a Typical Airworthiness Certification process. This is viewed as an important prerequisite for the remainder of the course.</p>	SESSION #4 <ul style="list-style-type: none">□ Specific” category in EU regulation□ Overview of SORA methodology□ Illustrating example <p>Session 4 will concentrate on the Specific Category and go through the various steps of the required Specific Operational Risk Assessment (including an insight on forthcoming envisaged update SORA 2.5). Here also illustrating “Hands on” example will be presented to ease the understanding.</p>
SESSION #2 <ul style="list-style-type: none">□ UAS Regulatory landscape□ UAS rule-making issues□ An overview of UAS existing and emerging regulations <p>Session 2 will provide a holistic and synthetic view of the current UAS regulatory frame-work, the key stakeholders, the risk-based approach and the existing or emerging requirements. Emphasis will be put on the European regulatory context, albeit a glance on US FAA approach will also be provided.</p>	SESSION #5 <ul style="list-style-type: none">□ Concluding exercises (SSA and SORA)□ Summary and recap□ Concluding test□ Open Discussion <p>Session 5 constitutes in fact a concluding session. It will start with a review of exercises submitted as a follow-up of the illustrating examples of Session # 3 and Session # 4. A recap / summary of the whole training course will be presented and, as usual in EUROCAE training courses, the participants will perform a test with a series of questions offering multiple choice answers. At last, an open discussion will take place for any additional questions and feedback from the participants on the course.</p>
SESSION #3 <ul style="list-style-type: none">□ UAS Regulatory landscape□ UAS rule-making issues□ An overview of UAS existing and emerging regulations <p>Session 3 will open with the current UAS System Safety Assessment Objectives and Criteria before going through the main activities of the Safety Assessment process basically required in the framework of the Certified Category. Illustrating “Hands on” example will be presented to ease the understanding.</p>	