AW6 - Normal-category Aircraft and Unconventional Products Certification

From the Advanced Master ASAA

(Aviation Safety Aircraft Airworthiness)

Key elements

Period: **Mid-March**

Estimated duration: **25 hours**

For whom:
recent graduates, jobseekers and experienced employees

Location:
ISAE-SUPAERO, Toulouse

Language: **English**

Highlights

- EASA Performance-based approach
- Hybrid-electric aircraft
- VTOLs and UAVs

Aeronautical engineering has always been at the leading edge of technological innovation. In order to foster this innovation and allow entry into service of novel aircraft architecture, while ensuring the high level of safety, regulation and certification standards incorporate proportional and performance/risk-based approaches. This module provides an overall understanding of recent development in certification process to cope with technological evolution and novel aircraft architectures.

Prerequisites

- Good engineering and aeronautical background
- Aircraft certification process and procedures
- System safety objectives and requirements

Learning objectives

After completing this course, participants will be able to:

- Describe the proportionality philosophy introduced in regulation by aviation authorities;
- Describe the process and certification key points underlined in EASA CS23 Amdt 5 and EASA Basic regulation/Part-21;
- Describe the approach to certify some novel aircraft architectures such as electrical aircraft or VTOLs;
- Describe the proportional approach and coupling of design and operations implement by EASA for UAVs;
- Collect and analyze in-depth and autonomously relevant regulatory certification documents to develop a certification approach for a novel vehicle.

Information and registration

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Course content

Performance-based approach and proportionality

- EASA Basic regulation and Part-21 performance-based approach and proportionality
- EASA CS23 Amdt 5 certification philosophy
- Acceptable means of compliance development and standardization bodies

Technological innovation and certification

- Certifiability analysis and evaluation scale
- Strategy to certify innovation

Electric and hybrid aircraft

- Electric/hybrid aircraft architectures
- Certification of electrical and hybrid propulsion system and powertrain

Unmanned aerial vehicles (UAVs)

- EASA certification and operation approach for UAVs

New air mobility challenges

- Urban Air Mobility and VTOLs aircraft architectures and certification roadmap
- Challenges for unconventional products such as airship

Vertical flight and New air mobility challenges

- Rotorcraft certification
- Urban Air Mobility and VTOLs aircraft architectures and certification roadmap
- Challenges for unconventional products such as airship

Teaching methods

Teaching methods	Yes
Lectures / tutorial	X
Collaborative learning	
Flipped classroom	
Blended learning (online and face to face)	
Learning by doing	X
Project-based	
Simulation	
Case study	

Assessment

Written exam