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 retains to certify some novel aircraft architectures such as electrical aircraft, VTOLs or airships;
• 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.

Practical information and registration

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Key elements

Dates: 16 - 20 March 2020
Duration: 19 hours
For whom: recent graduates, jobseekers and experienced employees
Location: ISAE-SUPAERO, Toulouse
Course fees: 1 800 €
Language: English

Highlights

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