ACARE Certification Workshop

2 October 2013 at EASA

Background

- Occurrence of ‚certification‘ in
  - FlightPath 2050: 8 times
  - SRIA Vol. 1: 87 times
  - SRIA Vol. 2: 130 times
- In the Context the 2050 goals:
  - Certification processes have decreased costs by 50%
  - Leading new generation of supporting standards is created
  - Total aviation approach, supported by new safety management and safety assurance methods, supports certification processes
  - Common systems and processes for certification and approvals
  - Use of emerging technologies (e.g. simulation and modelling) increase efficiency (e.g. incremental certification of applications), taking into account increased system complexity

Background

- Harmonised approaches, methods and tools for operational safety
- Use of methodologies to identify/mitigate emergence of future risks
- Advanced simulation tools & virtual design/certification capabilities.
- Certification practices are adapted to cope with the integrative role of new technologies and their potential to transform relations across a system-of-systems
- New capabilities to design-for-operations facilitate and contribute to more efficient time-to-market
- Certification, operator approval and licensing processes are joined-up in terms of identifying and managing system risk
- Safety and security in design phase are linked transparently to the operational phase of the system lifecycle

- But the way forward not clearly visible

Background

- Question are raised:
  - What are the enhancements already in place?
  - What are future enhancements that should be envisaged?
  - What are the remaining issues?
  - What are the recommended research topics?
  - What is the expected benefit of future research?

- In general what needs to be done to implement ACARE SRIA‘s envisaged capabilities / solutions, research needs?

- Note: ‚Certification‘ in the SRIA includes approval, acceptance, validation and verification, etc.

Workshop to develop the way forward

- Objectives:
  - Clarify how research and innovation may contribute to improving certification processes to meet Flightpath 2050 challenges and SRIA's enablers and envisaged capabilities / solutions, e.g.
  - Simulations, virtual tools versus actual (flight) tests
  - Time and cost efficiency, 50 % cost reduction
  - New certification methods addressing new technologies /advanced software /stochastic approaches / new concept of operations / ground/space elements, etc.
- Aims of the workshop:
  - Secure good quality contributions from the wide variety of participants,
  - Make efficient use of the valuable time of the contributors; and,
  - Capture the results of the workshop in a form that can be subsequently published as an official ACARE report.

Workshop to develop the way forward

- 5 focus areas on the way forward supported by future research:
  - new methods supporting the certification processes, addressing both current and future technologies
  - better integration of the certification process in the early phase of research and development,
  - reduced time to market of novel R&D results and reduction of certification efforts and costs,
  - synergies between civil and military certification processes,
  - education and training of future aviation experts involved in the certification processes

Agenda

1) Welcome, introduction, organisational issues
2) Commission's perspective
3) ACARE SRIA WG2 / WG4 projection to 2050
4) Where are we today?
   - Certification today: EASA
   - Industry's experience: Airbus
   - SESAR – novel certification / approval processes
   - Performance based certification of military aircraft in the context of SES
   - NSA viewpoint on where we are and issues to address
   - EDA's perspective
   - Research's role with regard to safety and certification
5) Focus Groups: What is needed for the 2050 timeframe? Discussion on the way forward
6) Conclusions, recommendations, necessary actions