



Aviation Safety Research Benefit and Strategic Approach

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Safety

Safety is the state in which the risk of harm to people or property damage is reduced to, and maintained at or below, an **acceptable level** through a continuing process of **hazard identification** and **risk management**.

- **Safety is the key element of aviation regulations and rests of 3 pillars**
 - ★ **the technology, systems design and operations,**
 - ★ **regulations including certification and qualification,**
 - ★ **the human performance to operate the whole chain of Air Transport activities**

Pan-European Aviation Safety Management

- ICAO has promoted the principles of safety management
 - ✦ Safety Management Systems (SMS) for industry organisations
 - ✦ State Safety Programmes (SSP) for contracting states.
- European Aviation Safety Advisory Committee (EASAC) tasked to developed an approach for European aviation safety:
 - ✦ Safety Strategy - set of European policies and objectives.
 - ✦ Safety Programme - integrated set of regulations and activities for safety improvement
 - ✦ Safety Plan - high level safety issues, assessment and related action plan.
- European Aviation Safety Programme (EASP) places the management of safety at the core of the system.

<http://easa.europa.eu/sms>

Certification

Establishing that the particular design of a civil aircraft, engine, or propeller fulfills the regulating bodies' current prevailing **airworthiness requirements** for the **safe** conduct of flights under all normally conceivable conditions.

Safety & Research

- Safety is not solely a research issue but **research** has the great potential to support safety improvements and to justify safety related regulatory actions.

Research

Why research by the Regulators

- Fast and focused reaction on safety issues
- Get precise answers to very specific issues
- Develop and maintain knowledge basis within the Regulators' remits
- Ensure independence and impartiality
 - ★ Promotes fairness and openness
 - ★ Unbiased scientific evidence
- Have full access the research results

Research

- Research can save money
 - ★ Costs of misguided rules is high
 - ★ Lowers risk of implementation
- Contribution to high level objectives;
e.g. Flightpath 2050 and ACARE
Strategic Research and Innovation
Agenda

<http://www.acare4europe.org/html/documentation.asp>

Research

- **Regulator's research needs driven by:**
 - ✦ **novel technologies and designs,**
 - ✦ **growing air transport,**
 - ✦ **citizens' expectations in safety and environmental protection**
 - ✦ **High level goals as in Flightpath 2050**
 - ✦ **Methodologies to assess future risks**

Three fields of actions to reach safety goals

1. Large research projects should take into consideration:

- ★ the safety aspects of new product,
- ★ implication on the overall safety of the air transport system,
- ★ the potential necessity to adapt and amend existing regulations.

Three fields of actions to reach safety goals

2. Specific thematic programmes and research projects

- ★ originating from pan-European initiatives, e.g. ESSI, EARPG and
- ★ dedicated to safety

should be included in research programmes and plans, e.g. EASA, NAAs, ACARE, FPs & national programmes.

Three fields of actions to reach safety goals

3. Facilitate specific areas for research

- ★ assisting safety improvement
- ★ contributing to FlightPath 2050 safety goals,
- ★ taking into consideration: reported safety issues, accidents, incidents, occurrences, safety recommendation, in-service experience, and others.

Way to visible safety research programmes

- Create network of those
 - ★ who have the knowledge of safety issues
 - ★ and those who have a leading role in providing advice to defining research programmes such as ACARE.
- Key players of such a network could be ACARE, EASA, EARPG, ESSI, ANSPs/EUROCONTROL, ASD-IMG4, EREA-ARG, and others.
- **Further benefit:** Reduced time-to-market and certification cost

**Strategy for safety and
environmental protection research
is key enabler for safe and
environment friendly total air
transport system**