



ASCOS
safety certification



www.ascos-project.eu

WHAT IS ASCOS?

ASCOS is an innovative EU funded research project, dealing with Aviation Safety and Certification of new Operations and Systems. ASCOS contributes to the Area/Topic *Operational Safety* in the Activity *Ensuring Customer Satisfaction and Safety* of the EU 7th Framework Programme *Aeronautics and Air Transport*.

SAFETY

ASCOS focuses on safety improvements in priority risk areas in the total aviation system. ASCOS contributes to the ACARE Vision 2020 safety, being a reduction of the accident rate by 80% and a drastic reduction of the impact of human error and its consequences.

CERTIFICATION

ASCOS will introduce innovative certification adaptations, which will ease the certification and approval process of safety enhancement systems and operations. Supporting new methods and tools for safety based design and continuous safety monitoring are developed.

Aviation Safety and Certification

PROJECT SUMMARY

Fundamental changes in the institutional arrangements for aviation regulation in Europe, the introduction of new technologies and operations, and demands for higher levels of safety performance, call for the adaptation of existing certification processes.

The objective of ASCOS is to develop innovative certification process adaptations and supporting safety driven design methods and tools to ease the certification of safety enhancement systems and operations while, at the same time, increasing safety. ASCOS aims to better account for the human element, already from the early stages of the certification process, and thus reducing consequences of human error and increasing safety.

The project will follow a total system approach, dealing with all aviation system elements in an integrated way over the complete life-cycle. To investigate how dealing with all safety and certification aspects in an integrated manner may be made possible using a new process, new methods and new tools, ASCOS contains work packages on Certification processes, Continuous Safety Monitoring, and Safety Risk Management.

Four case studies will be conducted to validate the processes, methods and tools proposed. The case studies deal with the certification of aircraft failure management systems, a future ATM/CNS system for improved surveillance, aircraft systems for improved controllability in flight, and aircraft ground handling operations. A User Group will keep the project focused and facilitate the uptake of project results.



WHY ASCOS?

Many innovative technologies and operational concepts are not developed for reasons of implementation risk or too much time to reach implementation. Many operators and users are eager to make use of new developments. To ease the introduction of safety enhancement systems and operations, a novel and innovative approach towards certification is required that:

- Is more flexible with regard to the introduction of new products and operations;
- Is more efficient, in terms of cost, time and safety, than the current certification processes;
- Considers safety impact of all aviation system elements and the entire system life-cycle in a complete integrated way.

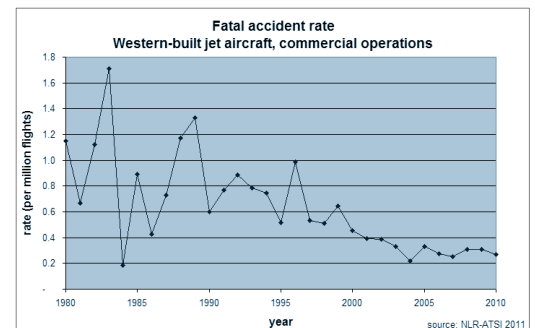
Moving towards performance based regulation, based upon agreed safety performance in combination with a risk based approach to standardization, is expected to lead to improvements in the way that safety risks are controlled. Anticipating on future risks by using a “proactive approach” helps to make the certification process robust to new developments. Introducing ‘continuous safety monitoring’ ensures that new essential safety data is effectively used immediately after it will be available.

WHAT ISSUES WILL ASCOS ADDRESS?

ASCOS focuses on safety improvements in priority risk areas in the total aviation system. ASCOS will focus on safety enhancements that will lead to a reduction of fatal accidents due to:

- Loss of control in flight
- Aircraft system or component failure or malfunction
- Aircraft ground handling aircraft damage
- Air Traffic Management related incidents/accidents

It is well known that there exists little to no improvement of aviation safety worldwide from about 2004 onwards. Europe, United States and other ‘western’ regions show a similar trend. ASCOS will therefore ease the introduction of new operations and systems that have a significant impact on a reduction of the accident rate and a reduction of human error and its consequences in the ‘western’ regions.



FATAL ACCIDENT RATES OVER THE PERIOD 1980 UNTIL 2010

WHO CAN BENEFIT FROM ASCOS?

- Research community
- Regulators, policy/decision makers
- Airlines
- Air Navigation Service Providers
- Airports
- Manufacturers

CONSORTIUM:



STICHTING NATIONAAL LUCHT- EN
RUIMTEVAARTLABORATORIUM
(COORDINATOR)

THALES

THALES AIR SYSTEMS & ELECTRON
DEVICES GMBH
THALES AIR SYSTEMS S.A.



APSYS SA



CIVIL AVIATION AUTHORITY UK



INGENIERA DE SISTEMAS PARA LA
DEFENSA DE ESPANA SA



CERTIFLYER BV



AVANSSA LDA



EBENI LIMITED EBE



DEEP BLUE SRL



JRC - JOINT RESEARCH CENTRE-
EUROPEAN COMMISSION JRC



JEAN-PIERRE CLAUDE MAGNY



TECHNISCHE UNIVERSITEIT DELFT



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