



Turbomachinery Noise Radiation through the Engine Exhaust

Fact Sheet

Project Information

TURNEX

Grant agreement ID: 516079


Start date
1 January 2005

End date
30 June 2008

Funded under
FP6-AEROSPACE

Overall budget
€ 4 695 921

EU contribution
€ 2 899 818

Coordinated by
**UNIVERSITY OF
SOUTHAMPTON**
 United Kingdom

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Objective

Research is needed to develop innovative concepts and enabling technologies to

reduce aeroengine noise at source. Turbomachinery noise radiating from the bypass and core nozzles is becoming the dominant noise source on modern aircraft, but, while recent EU research programmes have made significant progress in reducing both the generation of turbomachinery noise and the radiation of noise from the intake, little work has been conducted on reducing the radiation of turbomachinery noise from exhaust nozzles.

TURNEX will address this shortfall by delivering improved understanding and validated design methods, and by evaluating a number of low-noise nozzle configurations aimed at a source noise reduction of 2-3dB. To achieve that goal, TURNEX will exploit the noise technology and methodology acquired in EC-funded projects and national programmes.

TURNEX has four focussed objectives:

1. To test experimentally at model scale innovative noise reduction concepts and conventional engine exhaust configurations utilising novel simulated turbomachinery noise sources and innovative measurement techniques.
2. To improve computational prediction methods for turbomachinery noise radiation through the engine exhaust and to validate these methods with the experimental data.
3. To conduct a parametric study of real geometry/flow effects and noise reduction concepts as applied to current and future aircraft configurations.
4. To assess technically the relative merits of different approaches to testing fan rigs in European noise facilities.

The consortium consists of two leading airframe manufacturers, three leading engine manufacturers, an SME that specialises in computational aeroacoustics software, three leading research centres and three leading universities from France, Germany, Belgium, the Netherlands, Italy, Turkey and the UK. This mix of partners forms the basis for delivering the ambitious project objectives.

Programme(s)

Topic(s)

Call for proposal

FP6-2003-AERO-1

Funding Scheme

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