

## OPENAIR Partners

### ● INDUSTRY

AEROSTAR (RO)  
Airbus Operations Gmbh (DE)  
Airbus Operations SAS (FR)  
Airbus Operations Ltd (UK)  
Aircelle (FR)  
Avio (IT)  
Bombardier (UK)  
Dassault (FR)  
EADS (DE)  
GKN Aerospace (UK)  
ITP (ES)  
Messier-Dowty (FR)  
PFW Aerospace (DE)  
QinetiQ (UK)  
Rolls-Royce DE (DE)  
Rolls-Royce UK (UK)  
Snecma Propulsion Solide (FR)  
Volvo Aero (SE)

### ● SME

ARTTIC (FR)  
ATMOSTAT (FR)  
CTTM (FR)  
FFT (BE)  
INASCO (GR)  
NASTECH (IT)  
Microtech (PL)

### ● RESEARCH CENTERS (private, public, university)

Andreyev Acous. Inst. (RU)  
ASU Cairo (EG)  
CEPr (FR)  
Chalmers (SE)  
CIRA (IT)  
CNRS (FR)  
COMOTI (RO)  
DLR (DE)  
EPFL (CH)  
Imperial College London (UK)  
IVTAN (RU)  
KTH Stocholm (SE)  
NLR (NL)  
ONERA (FR)  
Tsagi (RU)  
VTT (FI)  
Univ. of Patras (GR)  
Univ. Polit cnica de Madrid (ES)  
Univ. of Roma Tre (IT)  
Univ. of Southampton (UK)  
Univ. of Cambridge (UK)



The OPENAIR project  
received funding from the  
European Commission's 7th  
Framework Programme  
(Agreement No. 234313).

**Total budget: €30 million**  
**EC contribution: €18 million**

#### For more information contact:

Eugene KORS – Snecma  
Project Coordinator  
<http://openair.xnoise.eu>



**OP**timisation  
for low  
**Environmental**  
**Noise impact**  
**AIR**craft

2009-2013

OPENAIR is a European Research & Technology  
programme that aims to reduce aircraft and  
engine noise.

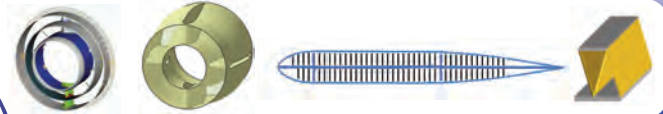
**Optimisation for low Environmental Noise impact Aircraft**  
2009-2013

## Objectives

- Reduce noise at the source by 2.5 dB beyond what the SILENCE(R) programme achieved.
- Validate "Generation 2" technologies up to TRL5, based on:
  - introduction of electronically-assisted solutions;
  - enhanced application of computational aeroacoustics in all areas;
  - new, more affordable sound-absorbent materials;
  - noise attenuation solutions for the airframe.
- Identification of applicability for all aircraft types.
- Analysis of benefits for different market segments.

Optimised inlet stators

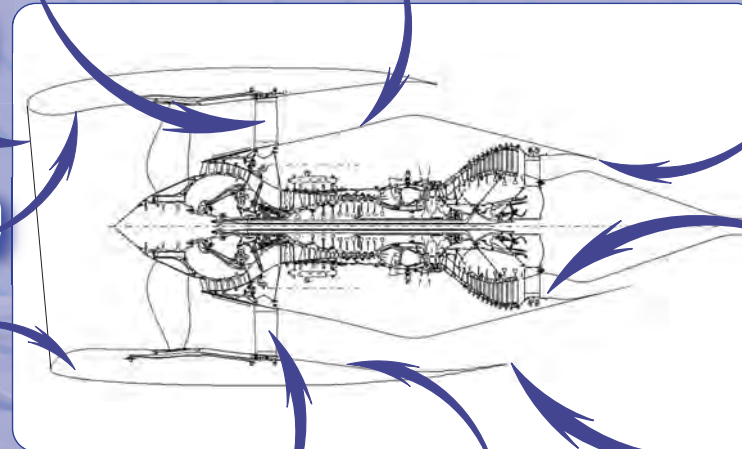
Lined bifurcations, struts & splitters



Virtual scarfed Inlet

Low frequency liners

Variable impedance liners



Micro-jets



Lined core stators

Scarfed nozzle



Active stator

Optimised bypass duct liners



Adaptive slat gap

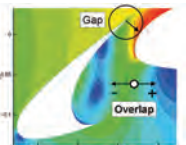


Low noise LG design



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Quiet slat design



Flap side edge treatment

