SEGMENTED EXTENSION
SLOTTED FLAP for General Aviation

SESF - GA

NOVEL TRAILING EDGE HIGH LIFT DEVICE CONCEPT

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General Aviation and European Air Transport System - Third Call FP7
SESF CONCEPT

Developed within a framework of Airbus HELIX Programme

HELIX baseline

SESF concept

- New Geometry
- New Extension Mechanism
- Outstanding Performance
SESF BENEFITS

• **Lighter and cheaper airplane**
  
  – TOFL: 21% shorter  
  – $V_{\text{approach}}$: 13% lower  
  – DOC: 3.9% lower  
  – Fuel consumption: 4.1% lower
THE WAY TO SUCCESS

- Conceptual design – engineering methods
- CFD calculations: 2D and 3D at IoA
- First wind tunnels tests at IoA
- CFD 3D by Airbus UK
- TADPOL trade analyses by Airbus and FET by Israel Aircraft Industry
- Wind tunnel test by QuinetiQ (UK) – 5 m pressurized wind tunnel
EUROPEAN COMPETITION WINNER

Airbus HELIX Programme: 21 Competitors from 13 Countries
SESF FURTHER DEVELOPMENT

• Leading Edge Device
• The whole mission:
  – Climb and acceleration
  – Cruise – Variable Camber
  – Descent and deceleration
• Flight Demonstrator
• Adaptive Wing / Airplane

• LARGE POTENTIAL for GENERAL AVIATION
• INCREASED COMPETITIVENESS of EUROPEAN GENERAL AVIATION
FP7 3rd CALL PROPOSALS

• THE GREENING OF AIR TRANSPORT
  – Aerostructure
  – Flight Physics
  – Flight Profiles
  – Maintenance – Operating Cost

• IMPROVING COST EFFICIENCY
  – Aerostructure
  – Flight Physics

• PIONEERING THE AIR TRANSPORT OF THE FUTURE
  – Lift
  – Novel Air Transport Vehicles
THE END
THANK YOU
FOR YOUR ATTENTION

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