European Research in the Area of Aeronautics and Air Transport

Dietrich Knoerzer
European Commission
DG Research - Transport

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Policy Issues on European RTD

● New Commission in office since a few months
  – DG RTD - Research and Innovation
  – DG MOVE – Mobility and Transport
  – Transport Research programme will report to both

● Commission launched a “Recovery Plan” in November 2008 as reaction on the global crisis. In future emphasis on upraising research areas (e.g. Green Car Initiative, renewable energies,)

● Mid-term Review of FP7 is ongoing in 2010

● RTD Agreements with key countries – the concept of Europe for International Co-operation
Air Transport Evolution

Despite several crises an overall growth of global Air Transport

Source: ICAO

Year

Millions

Passengers Carried


Oil Crisis Chernobyl Gulf Crisis Asian Crisis WTC Attack

Pre-crisis industry forecasts (ICAO FESG)

Revised IATA forecast

9% lower

12% lower
CO₂ Emissions from Commercial Airlines Global Fuel Burn (Economic Model)

- Frozen technology 5% p.a. (air traffic growth)
- Fleet replacement by new technology aircraft -1.3% p.a.
- Better aircraft utilisation -0.3% p.a.
- Operational measures -0.1% p.a.
- Infrastructure measures -0.2% p.a.
- Technology retrofits -0.1% p.a.
- Biofuels -0.7% p.a.
- Economic measures -2.2% p.a.

This model comprises the benefits of all measures considered.

* Only under very beneficial conditions all of them will be realised.
* Depending on governments mainly for infrastructure (e.g. SES).
Joint Strategic Approach for Aeronautics Research in Europe

Vision 2020

SRA-1

June 2000

SRA-2

October 2002

Addendum

November 2008

October 2004

2010 onwards

Future vision 2050 & future SRA

To start soon!
Goals of the Strategic Research Agenda (SRA) of ACARE (Examples)

Environment
- 50% cut in CO² emissions per pass-Km
- 80% cut in NOx emissions
- Halving perceived aircraft noise (eliminate noise nuisance outside the airport boundary by day and night)

Quality and Affordability
- 99% of all flights within 15 minutes of timetable

Safety
- Five-fold reduction in accidents

Air Transport System
- Air traffic system capable of handling 16 million flights a year with 24-hour operation of airports
- Pax-conscious travel with choice, comfort and convenience
Aeronautics Research: Framework Programme Budgets

Average budget per year, M€
(Overall FP, M€)

Average budget: 49 (245)

FP5: 1998 - 2002
Average budget: 140 (700)

FP6: 2002 - 2006
Average budget: 180 (900)

FP7: 2007 - 2013
Average budget: 114 (800)
Collaborative Research: 137 (960)

FP7: plus 350 M€ contribution to SESAR
Next Steps in Wake Vortex Research

Characterization, wake decay, design for more benign aircraft wakes

Application of reduced aircraft separations

Systems for detection of the wake

National Projects...

International Co-ordination of Wake Vortex Activities
Aeronautics and Air Transport in FP7
Roadmap of Calls for Proposal for 2007-2013

1st Call 2007
€220.6 million
31 projects

2nd Call 2008
€211.7 million
35 projects

3rd Call 2009
€108 million

4th Call 2010
€127 million

5th Call 2011
€157 million

6th Call 2012
€136 million

2013
Aeronautics and Air Transport in FP7

3rd Call – 2010 (Closed on 14 January 2010)

108 million €
- 98 million € – Level 1
  (focused on Greening, Cost Efficiency and Pioneering)
- 3 million € - SA
- 4 million € - Coordinated Call with Russia (5 topics)
- 3 million € - Coordinated Call with China (3 topics)

Evaluation March 2010
Negotiations From May 2010

4th Call – 2011 (Planned to be open in July 2010)

127 million €
- 112 million € – Level 2 (6 topics)
- 12 million € – Level 1 (Pioneering only)
- 3 million € – SA

Final Endorsement by the PC Transport in July 2010
Aeronautics Call 2011

FP7- AERONAUTICS and AIR TRANSPORT (AAT)-2011-RTD-1

(Commission Proposal)

**Six Topics for Level 2 Proposals**

- Systems approach to improved core engine thermal efficiency
- Integrated approach to total airport management for operational efficiency
- Integrated approach to a human-centred cabin physical environment
- Integrated approach to smart airframe structures
- Integrated approach to efficient propulsion and related aircraft systems for small-size aircraft
- Integrated modular actuation systems for the future all-electric aircraft

**Upstream RTD Topics for Level 1**

- Breakthrough and emerging technologies
- Step changes in air transport operation
- Promising pioneering ideas in air transport
Aeronautics Call 2011

FP7- AERONAUTICS and AIR TRANSPORT (AAT)-2011-RTD-1
(Commission Proposal)

Tentative Time Schedule

Call title:
FP7- AERONAUTICS and AIR TRANSPORT (AAT)-2011-RTD-1

Call identifier: FP7-AAT-2011-RTD-1

- Date of publication: 30th July 2010
- Deadline: 2nd December 2010
- Evaluation: February 2011
- Start of Negotiations: April 2011
Aeronautics Days 2011
"Innovation for Sustainable Aviation in a Global Environment"

Madrid/ Spain
Palacio Municipal de Congresos
30th & 31st March and 1st April 2011

• Up to 1000 participants expected
• Substantial parallel sessions structured by the Challenges of SRA2 and addressing key activities of FP7
• Additionally special sessions on International Co-operation, National activities, JTI 'Clean Sky', SESAR, etc.

Keynote and Plenary speeches by high-level actors from RTD policy, aeronautics industry and research
Thank you for your attention!

AWIATOR Project A340 Flight Test (Nov. 2006)