



EUROPEAN
COMMISSION

Community Research

AeroPortal Workshop
15/10/2009
Bruxelles

Third Call for Proposals in Aeronautics and Air Transport (AAT)



Rémy DENOS
Project Officer 'Aeronautics'
Directorate 'Transport'
Directorate-General for Research
European Commission



Air Transport & Environment in the EC an Important Concern

Directorate General for Research

Directorate H: Transport, Unit 'Aeronautics'

Directorate I: Environment
(Framework Programme)



Directorate General
for Energy and Transport

Directorate General for
Environment

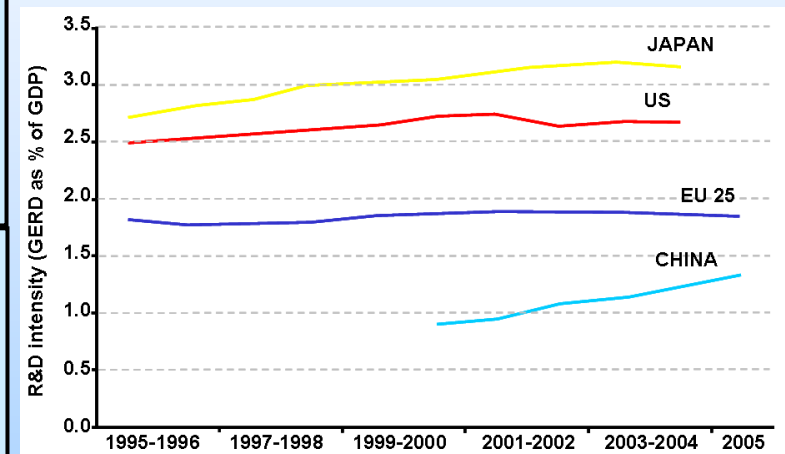
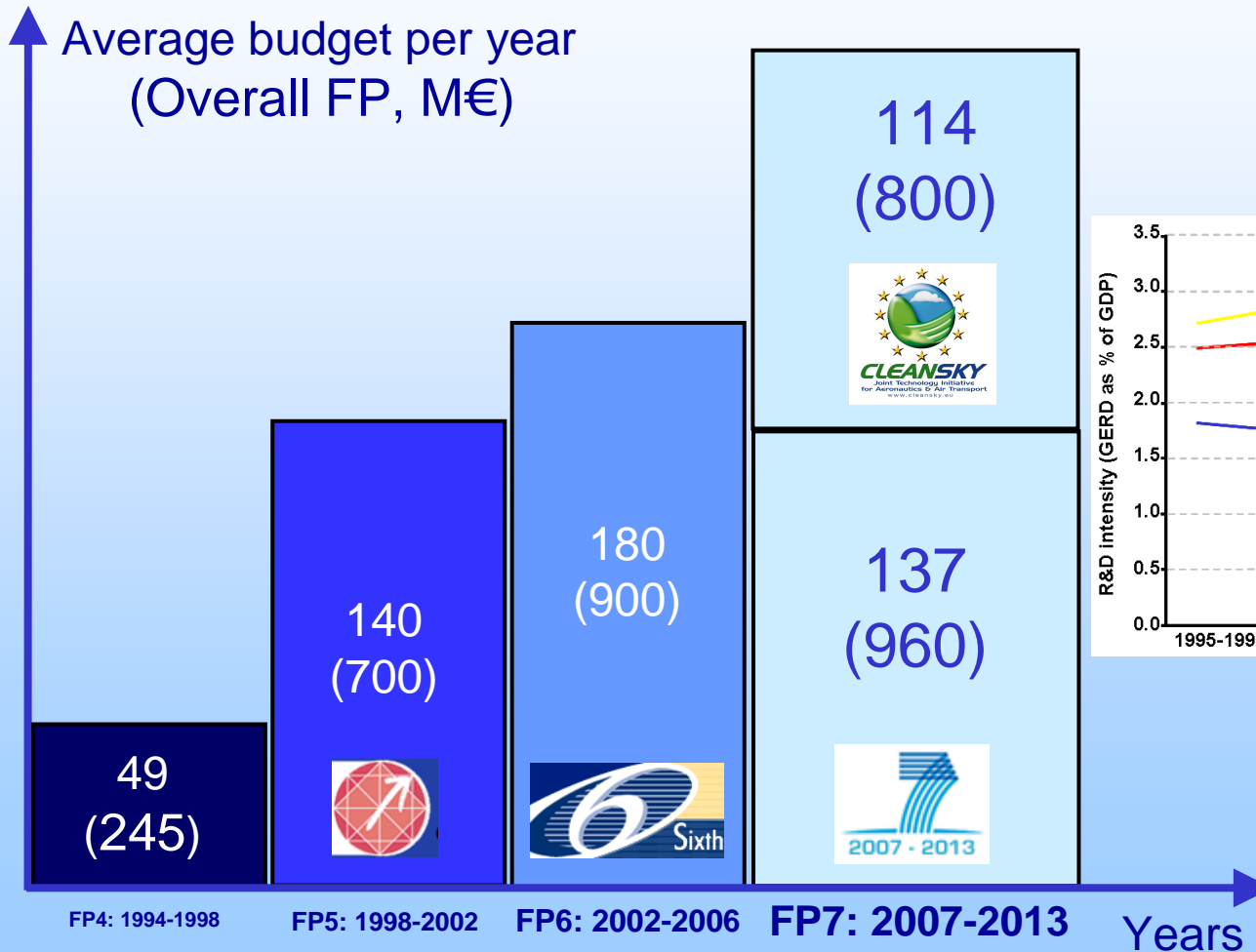


Directorate F: Air Transport

Directorate C: Climate Change & Air
(ETS: European Trading Schemes)



Aeronautics Research: FP Budgets



Workprogramme Structure and ACARE

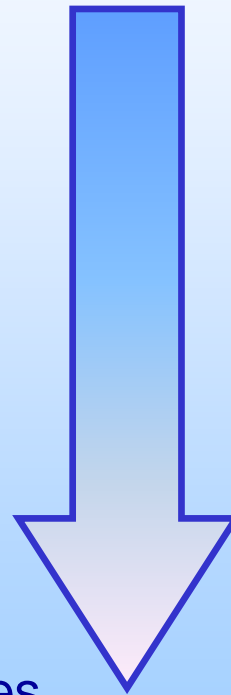
SRA-1 (2002)

Strategic Research Agenda Executive Summary

Advisory Council
For Aeronautics
Research in Europe
October 2002

- ➔ 80% cut in NO_x emissions
- ➔ Halving perceived aircraft noise
- ➔ Five-fold reduction in accidents
- ➔ Air traffic system capable of handling 16 million flights a year
- ➔ 50% cut in CO₂ emissions per passenger/km
- ➔ 99% of all flights within 15 minutes of timetable

2000



2020

SRA-2 (2004)



- ➔ Highly Customer Oriented
- ➔ Highly Time Efficient
- ➔ Highly Cost Efficient
- ➔ Ultra Green
- ➔ Ultra Secure

The Advisor Council for Aeronautics Research in Europe (ACARE) involves representatives from Member States, Manufacturing Industry, Airlines, Airports, Regulators, Research Establishments, Academia, Eurocontrol and the European Commission.



Community Research



<http://www.galileoju.com>

Work Programme Structure



<http://www.cleansky.eu>

The **greening** of air transport

Increasing **time** efficiency

Ensuring **customer** satisfaction and safety

Improving **cost** efficiency

Protection of the aircraft and passengers

Pioneering the air transport of the future



<http://www.sesarju.eu>

Total Budget: ~1 000 M€ over 7 years
- 1st call: 217 M€
- 2nd call 200 M€



Work Programme Content Consultation with Stakeholders

External consultation has involved all relevant stakeholders, including:

- Manufacturing Industry (IMG4, etc)
- Aeronautical Research Centres (EREA, etc)
- Universities (EASN)
- EUROCONTROL
- European Aviation Safety Agency (EASA)



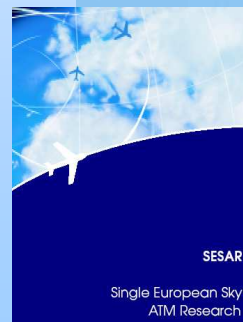
Internal consultation has involved, in addition to DG RTD and DG TREN:

- DG Environment
- DG Enterprise (Space and Security)

**And
Transport Advisory Group
Transport Programme Committee**

Subjects for Focussed Research Collaborative Projects (Level 1 or CP-FP) and Support Actions (Coordinating, CSA-CA)

- Flight Physics
- Aero-structures
- Propulsion
- Systems & Equipment
- Avionics
- Design Systems and Tools
- Production
- Maintenance
- Flight Management
- Airports
- Human Factors



Roadmap for AAT Calls Collaborative Research 2007- 2013

Past Calls:

1st Call (2007): 220 M€ (closed)

2nd Call (2008): 210 M€ (closed)

Current Call:

3rd Call (2010): 108 M€ (open)

Future Calls (Tentative):

4th Call (2011): 127 M€ (Level 2)

5th Call (2012): 157 M€

6th Call (2013): 136 M€

Results from 2nd Call : Level 1

28 projects
retained

Average
indicative
funding per
project 3.7 M€

Success Rate:
12%

Materials/Structures ▶ innovative repair of aerospace structures with curing optimization and life cycle monitoring abilities; large infusion composite parts; improved reliability inspection, generic linking of finite element based models; validation and improvement of airframe noise prediction tools

Engine ▶ cooling technology; hydrogen by kerosene reforming; unconventional manufacturing; knowledge for ignition, acoustics and instabilities

Emissions ▶ fuel burn reduction; engine lubrication system technologies; community oriented solutions to minimise aircraft noise annoyance

Customer and safety ▶ Advanced fault diagnosis for safer flight guidance and control, airframe noise prediction tools; ice detection and monitoring, innovative systems for personalized aircraft cabin environment; demonstration of lidar based clear air turbulence detection; turnaround integration in trajectory and network

Equipment/cabin ▶ Single interactive cockpit display; photonics network; system health monitoring; compact and reliable electronic integrated in actuators and motors

Flight physics ▶ Advanced turbulence simulation; useful plasma for aerodynamic control; future high-altitude high-speed transport

Security ▶ Behavioral modeling for security in airports

Results from 2nd Call : Level 2

Acronym	Rank	Recommended Grant (M€)	Keywords
CRESCENDO	1	32.4	Robust Engineering, Simulation, (Vivace)
SANDRA	2	15.6	Seamless Network Data Links, Radios, Antenna
OPENAIR	3	18.3	Noise, aircraft, engine (Silencer)
ALICIA	4	27.9	Innovative Cockpit, all condition Operations
		94.3	
ISAP	5	24.4	Integrated systems, Airport Protection
QUANTOM	6	26.2	Engine Health Monitoring and management

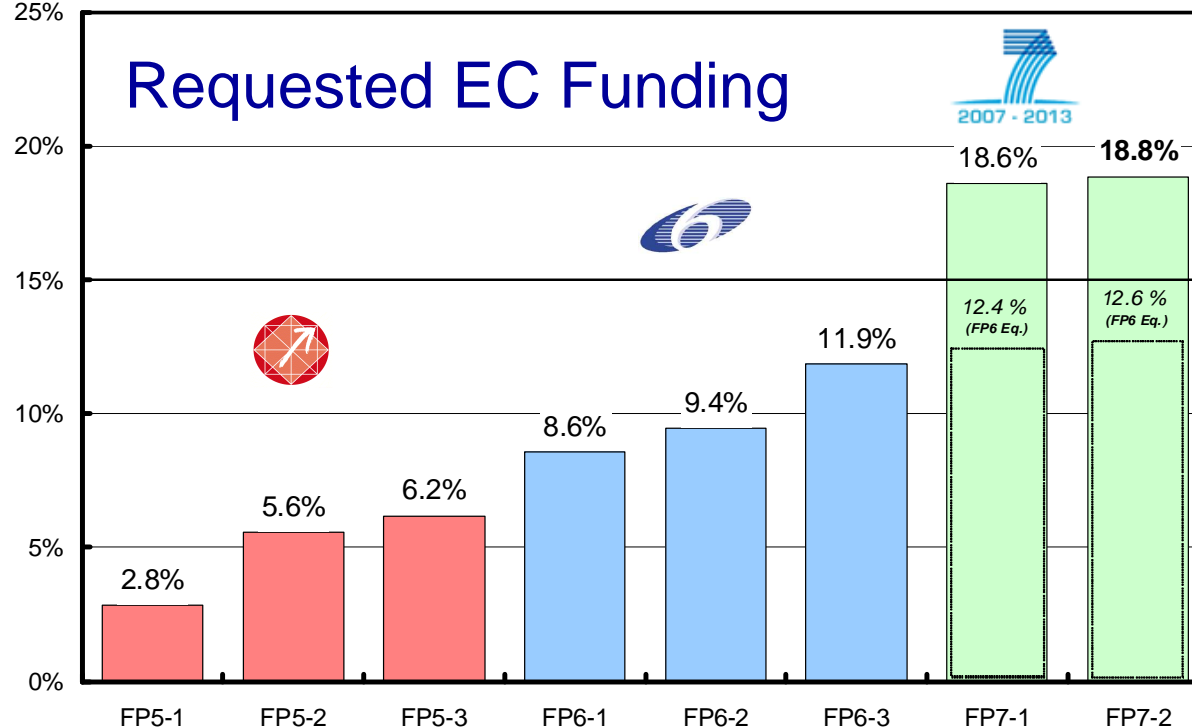
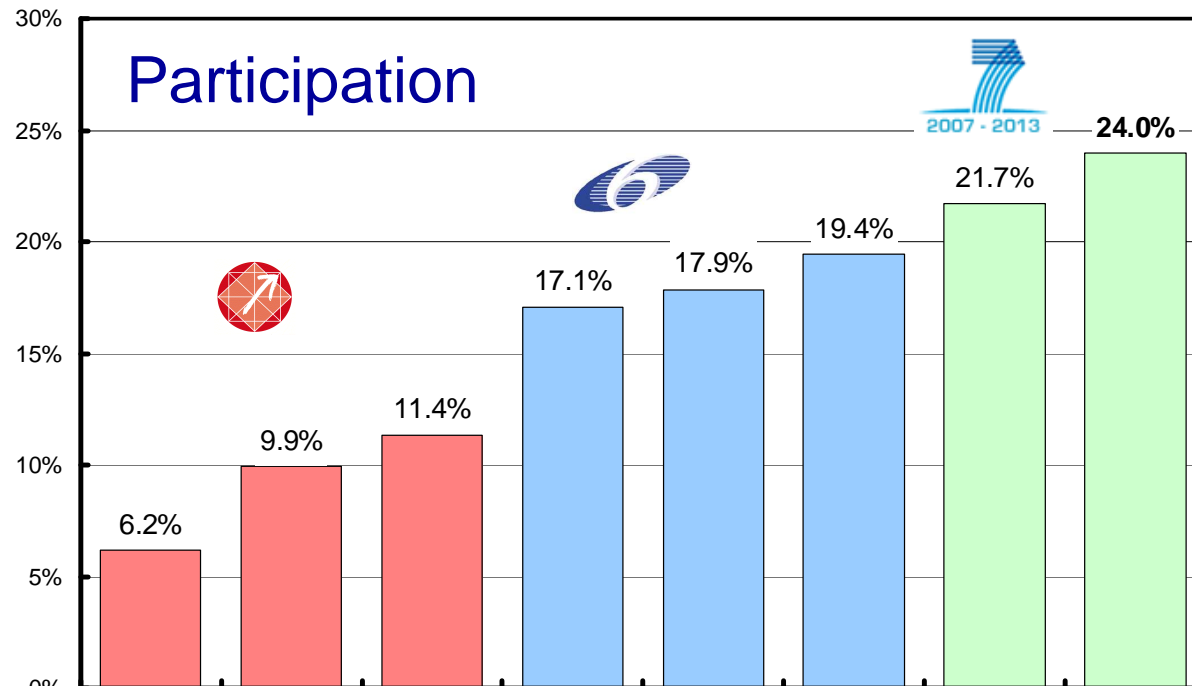
Indicative average Funding 23 M€ Success Rate: 67%

Indicative
average funding
per project
272k€

Success Rate:
61%

Acronym	Rank	Recommended Grant (k€)
MONITOR	1	529
EUROTURBO 8	2	15
AeroAfrica	3	363
Green horizons	4	75
FUSETRA	5	397
REStARTS	6	253
AERO-UKRAINE	7	202
ICOA.10.09	8	56
ARPE	9	62
CoopAIR-LA	10	333
E-CAERO	11	713

Total: 2 999k€



143 SMEs in the Ranked List
 (CP-FP:81, CP-IP:44, CSA-SA:18)
 Total number of participations 596

Evolution of the Participation of SMEs in the 2nd Call of FP7

40.4 M€ Requested Funding
 (CP-FP: 23.6M€, CP-IP:15.8M€, CSA-SA:1.0M€)
 Total requested funding 214.5 M€



3rd Call Aeronautics and Air Transport 2010

Workprogramme Scope

- Includes:

Technologies, services and operations of all components of the Air Transport System from airport kerbside to airport kerbside

- Excludes:

Non-travel aspects, ticketing and ground vehicles

- 101 M€ Main Call

98 M€ for L1 and CSA – Coordinating

3 M€ for CSA - Supporting

No Level 2 topics !

No Networks of Excellence !

Max funding per project (L1): 5 M€

- 4 M€ Coordinated Call Russia



Focus of Work Programme 2010

	1) Greening	2) Time	3) Customer & Safety	4) Cost	5) Security	6) Pioneering
◆◆◆ Level 3	CLEAN SKY - 1st Call Proposals: 26.6 M€ till 31 Aug 2009					
	SESAR Joint Undertaking					
◆◆ Level 2	CLOSED					
◆ Level 1 (& Coord. Actions) Max. 5 M€ EC grant / project	OPEN	LIMITED	FOCUSED	OPEN	CLOSED	OPEN
Support Actions	OPEN					
Networks of Excel.	CLOSED					



1. The Greening of Air Transport

Embraces both the **global issue of climate change** (CO₂, NO_x, soot, water vapour, particulates) as well as the **local issues of noise and air quality**

Green Aircraft; Flight Physics, Aerostructures, Propulsion, Systems and Equipment, Avionics

Ecological Production and Maintenance;
Production, Maintenance and Disposal

Green Air Transport Operations;
Flight procedures, Airports,
Environmental modelling

Goals

- **50% CO₂ reduction**
- **80% NO_x reduction**
- **50% noise reduction
= decrease of 10 dB**
- **Aircraft recycling**
- **Clean maintenance**

4. Improving Cost Efficiency

Embraces all the costs that arise in the air transport system design and operation, enhancing **the whole enterprise process** from conceptual design to product development and manufacturing including in-service operations

Aircraft Development Cost; Design Systems and Tools, Aerostructures, Systems & Equipment, Avionics, Production

Aircraft Operational Cost; Flight Physics, Aerostructures, Propulsion, Systems, Avionics, ~~Maintenance~~

ATS Operational Cost; ~~Design Systems and Tools, Air Traffic Management (SESAR!), Airports, Human Factors~~

Goals

- **50% aircraft development cost reduction**
- **50% time to market reduction**
- **50% aircraft operating costs reduction**
- **Reduction in travel charges**

6. Pioneering the Air Transport of the Future

Relies on **stimulating ideas** across all stakeholders, particularly academia and research institutions and on setting technology incubators **to nurture the future**

Breakthroughs and Emerging Technologies;

Lift, Propulsion, Interior Space, Life-cycle

Step Changes in Air Transport Operation;

Novel Air Transport vehicles, Guidance and control, Airports

Promising Pioneering Ideas in Air Transport;

The cruiser/feeder concept, Take-off and landing with ground-based power, Personal air transport systems, New sources of aircraft main propulsive power

Goals

- **Setting the foundations of technology base and of new paradigms for step changes in air transportation**



2. Increasing Time efficiency

Only the "Airport" topic is open (i.e. passenger & luggage flow; planning of airport operations; fleet management; freight operations; strategic decision making, etc)

3. Customer Satisfaction and Safety

"Passenger Friendliness" reduced topic on noise and vibration

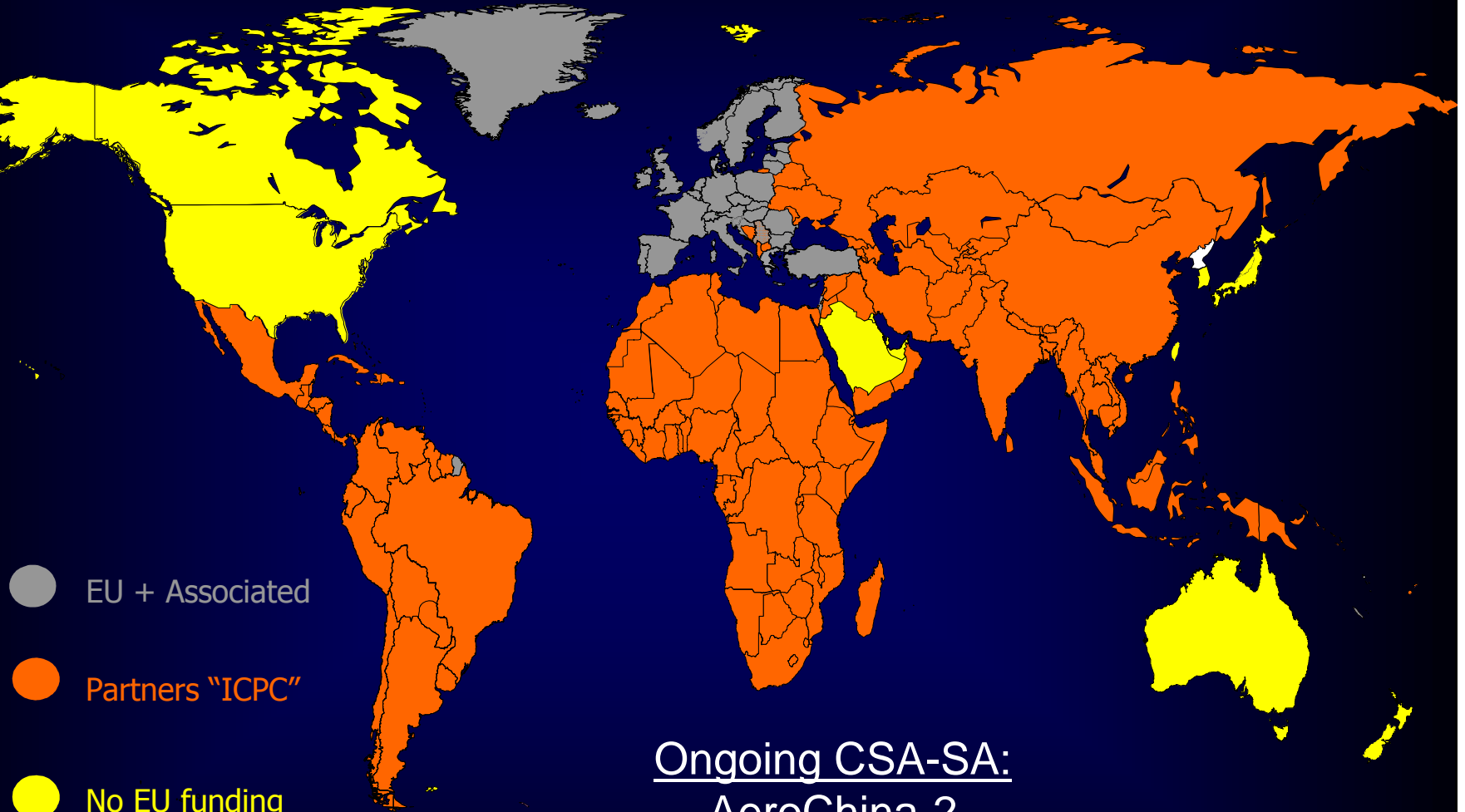
"Aircraft Safety" substantially reduced to crashworthiness, fire-worthiness, small aircraft safety

"Operational Safety" reduced research in support of certification

Supporting Programme Implementation (Instrument: CSA - Supporting)

- Improving passenger choice with the incorporation of new vehicles
- **Retrofitting** for improved sustainability and economic viability
- Stimulating cooperation with **ICPC** countries
- Supporting the organisation of conferences and events of special relevance
- Stimulating the participation of **SME** and other small organisations
- Assessing and further developing the role of small aircraft in the **ATS**
- Observation platform to assess the fulfilment of Vision 2020 goals
- Platform to stimulate the development of breakthrough technologies
- Updating the strategic research agenda
- Exploring opportunities and stimulating research cooperation with the **USA**
- Socioeconomic incentives and barriers to innovation in air transport

International Cooperation Partner Countries



- EU + Associated
- Partners "ICPC"
- No EU funding
- No cooperation

Ongoing CSA-SA:

- AeroChina-2
- Aero-Africa-EU
- Aero-Ukraine
- CoopAIR-LA

Coordinated Calls

Coordinated Call with Russia

- 4 M€ EU funding to fund the European partners
- 5 topics identified:
 - Novel composite structures
 - High-lift aerodynamics
 - Maintenance and safety
 - Plasma actuators for engine noise control
 - Simulation tools in propulsion

Coordinated Call with China

- 3 M€ EU funding to fund the European partners
- 3 topics identified:
 - Aircraft noise prediction and control methods
 - Flow control for drag reduction and wing aeroelastic optimisation
 - Casting of large Ti components

TPT 3rd Call

Call title: FP7-TRANSPORT (TPT)-2010-RTD-1

Budget: 6 M€

Structure

- Socio-economic research and technology foresight
- Integration of transport modes and cross-cutting research
- Strengthening the European Research Area and encouraging participation
- Dissemination and awareness of research results

Funding schemes

- CP-FP, CP-SICA (Max. 1.5 M€)
- BSG-CSO, CSA-CA, CSA-SA

Attention is drawn in this Call on the need to address inter-modality, co-modality and issues of interest to **more than one transport mode !!!**

Topics of Specific Interest for Aeronautics in TPT

- Overall 11 topics
- TPT-2010- 4 & 5: intermodality, co-modality
- TPT-2010-6: Alternative Fuels in Transport
- TPT-2010-7: Noise Mitigation in Transport
- TPT-2010-11: Environmental Transport Database

Proposal Evaluation Process

- **Independent experts**

Appointed by EC

- **Evaluate and grade the projects**

Each criteria, separately 1/2 day
per project / per expert: the proposal
must be extremely well-written,
e.g. a coherent short core text
with annexes for details

- **Consensus meeting:**

Each expert give his opinion, general agreement -> average grades
If disagreement: discussion starts, EC Officer acts as moderator

- **Panel Meeting:**

Harmonization of the different panels

- **Ranked list**

Project will be financed depending on the available budget and the
rank in the list

Success rate CP-FP:

3rd call FP6 ~1/3, 1st call FP7 1/6, 2nd Call FP7 1/7

FP7 Criteria

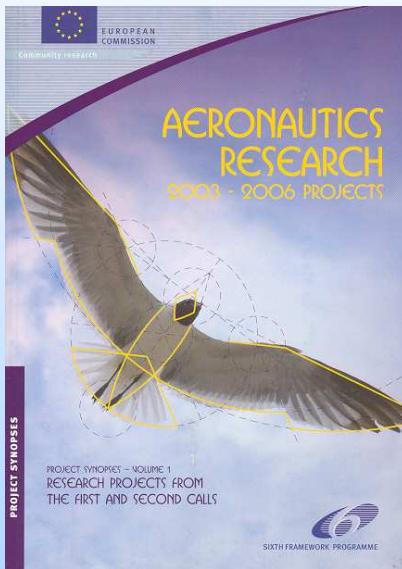
-S&T Excellence (/5)

- Implementation (/5)

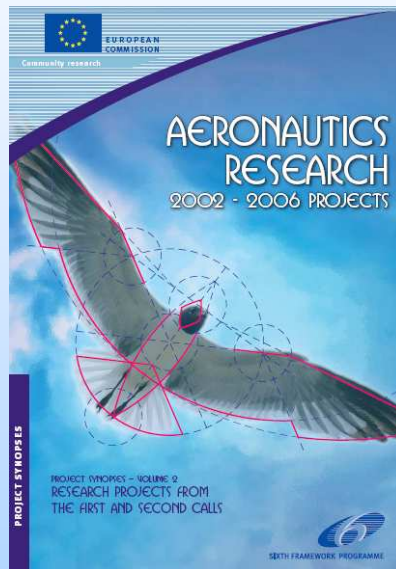
- Impact (/5)

How to be Involved in a Research Proposal as a Partner ?

Volume 1



Volume 2



Synopses books

pdf version on DG RTD Aeronautics Web site
http://ec.europa.eu/research/aeronautics/info/documents_en.html

- Stay informed about running projects that are of interest to you
- Try to know whether or not a continuation of a project is planned
- Inform potential coordinators of your willingness and your capacities
- Be ready
- Be pro-active

Helping SMEs to Participate in EC Funded Research

Informing SMEs about
Possibilities



<http://www.aeroportal.eu>

Setting-up Collaborative
Research Project Led by
SMEs



Promoting RTD in SMEs from
Poland, Romania and Turkey

<http://www.kpk.gov.pl/donqair>

Informations on Calls: CORDIS

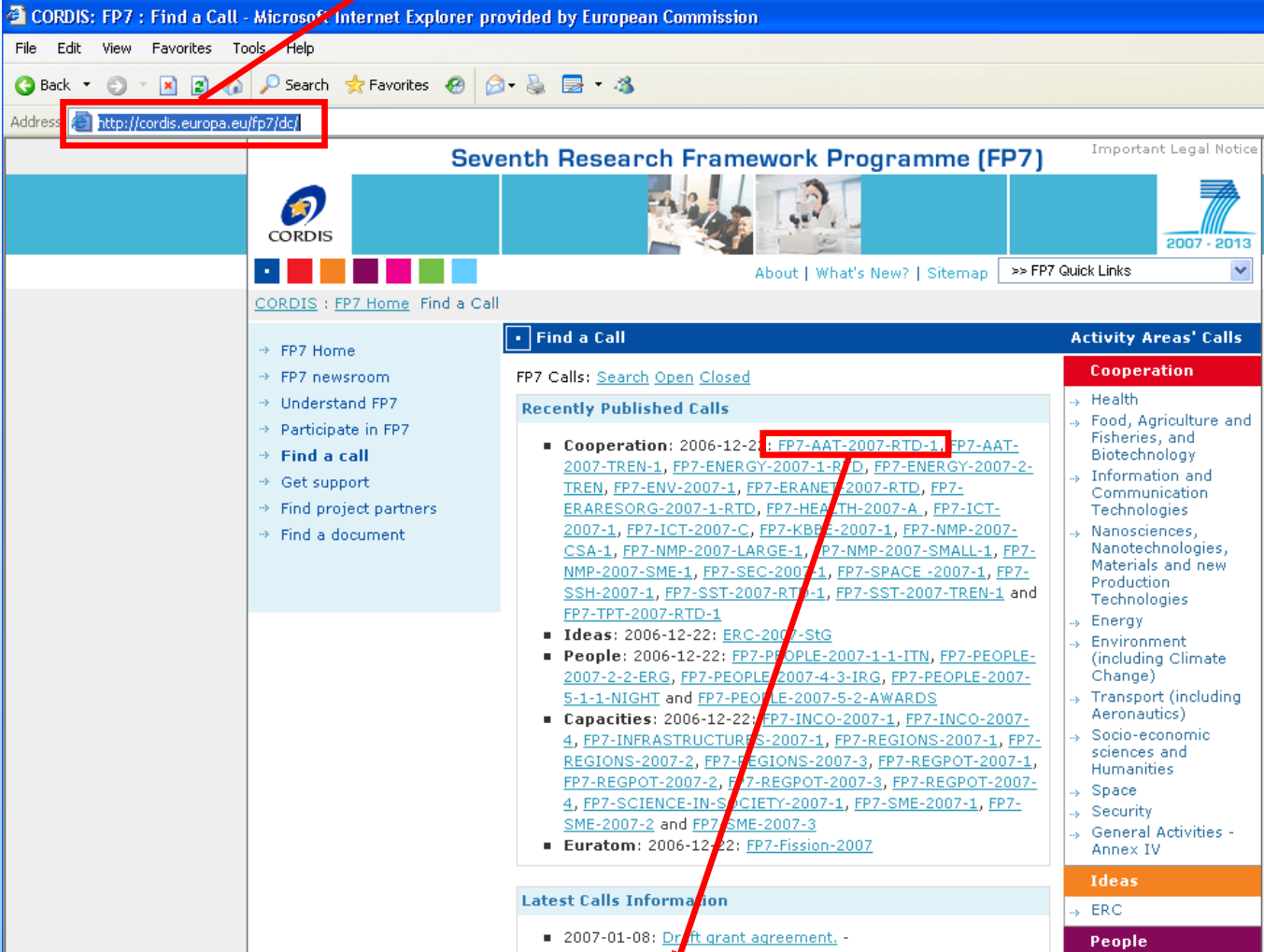
<http://cordis.europa.eu/fp7>

Call opened:
30th July 2009

Call will close:
14th January 2010

Proposals evaluation ~
March 2010

First Grant Agreements ~
September 2010 ?



CORDIS: FP7 : Find a Call - Microsoft Internet Explorer provided by European Commission

Address: <http://cordis.europa.eu/fp7/dc/>

Seventh Research Framework Programme (FP7) Important Legal Notice

CORDIS : [FP7 Home](#) [Find a Call](#)

Find a Call

Activity Areas' Calls

Cooperation

- Health
- Food, Agriculture and Fisheries, and Biotechnology
- Information and Communication Technologies
- Nanosciences, Nanotechnologies, Materials and new Production Technologies
- Energy
- Environment (including Climate Change)
- Transport (including Aeronautics)
- Socio-economic sciences and Humanities
- Space
- Security
- General Activities - Annex IV

Ideas

- ERC

People

Recently Published Calls

- Cooperation: 2006-12-22: [FP7-AAT-2007-RTD-1](#), [FP7-AAT-2007-TREN-1](#), [FP7-ENERGY-2007-1-RTD](#), [FP7-ENERGY-2007-2-TREN](#), [FP7-ENV-2007-1](#), [FP7-ERANET-2007-RTD](#), [FP7-ERARESORG-2007-1-RTD](#), [FP7-HEALTH-2007-A](#), [FP7-ICT-2007-1](#), [FP7-ICT-2007-C](#), [FP7-KBBE-2007-1](#), [FP7-NMP-2007-CSA-1](#), [FP7-NMP-2007-LARGE-1](#), [FP7-NMP-2007-SMALL-1](#), [FP7-NMP-2007-SME-1](#), [FP7-SEC-2007-1](#), [FP7-SPACE-2007-1](#), [FP7-SSH-2007-1](#), [FP7-SST-2007-RTD-1](#), [FP7-SST-2007-TREN-1](#) and [FP7-TPT-2007-RTD-1](#)
- Ideas: 2006-12-22: [ERC-2007-StG](#)
- People: 2006-12-22: [FP7-PEOPLE-2007-1-1-ITN](#), [FP7-PEOPLE-2007-2-2-ERG](#), [FP7-PEOPLE-2007-4-3-IRG](#), [FP7-PEOPLE-2007-5-1-1-NIGHT](#) and [FP7-PEOPLE-2007-5-2-AWARDS](#)
- Capacities: 2006-12-22: [FP7-INCO-2007-1](#), [FP7-INCO-2007-4](#), [FP7-INFRASTRUCTURES-2007-1](#), [FP7-REGIONS-2007-1](#), [FP7-REGIONS-2007-2](#), [FP7-REGIONS-2007-3](#), [FP7-REGPOT-2007-1](#), [FP7-REGPOT-2007-2](#), [FP7-REGPOT-2007-3](#), [FP7-REGPOT-2007-4](#), [FP7-SCIENCE-IN-SOCIETY-2007-1](#), [FP7-SME-2007-1](#), [FP7-SME-2007-2](#) and [FP7-SME-2007-3](#)
- Euratom: 2006-12-22: [FP7-Fission-2007](#)

Latest Calls Information

- 2007-01-08: [Draft grant agreement](#).

FP7-AAT-2010-RTD

AAT: Aeronautics and Air Transport