



FP7 Aeronautics: Opportunities at the 3rd Call for Proposals



European Commission - DG Research
Transport Directorate
Aeronautics Research unit

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Outline

FP7 Aeronautics:

- Areas (Technical)
- Activities (Purposes)
- Schemes (Maturity)

Focus in **3rd call:**

- Level 1 (upstream)
- Support Actions
- Examples of opportunities

Practical aspects:

- Budget
- Timing
- Preparation

Technical Areas for Collaborative Projects

- *Following the ACARE Taxonomy* -

- Flight Physics
- Aero-structures
- Propulsion
- Systems & Equipment
- Avionics
- Design Systems & Tools
- Production
- Noise and Vibration
- Maintenance
- Flight Management
- Airports
- Human Factors
- Novel Concepts
- (Air Traffic Management only through SESAR)



Technologies, services and operations of all components of the **civil commercial air transport system** from airport kerb-side to airport kerb-side (i.e. aircraft, airport and air traffic management)
Excludes: Non-travel aspects, ticketing and ground vehicles

6 Activities – different purposes

- ◆ 1. The **Greening** of air transport
- ◆ 2. Increasing **Time** efficiency
- ◆ 3. Ensuring Customer **Satisfaction** and **Safety**
- ◆ 4. Improving **Cost** efficiency
- ◆ 5. **Protection** of the aircraft and passengers
- ◆ 6. **Pioneering** the air transport of the future

Research vs. Product Development

Non research: Support & Coordination Actions

European Research Council
Frontier Research

Research and technology acquisition
(Applied Research)

Product development

Fundamental knowledge

Technology development

Technology validation

Demonstrators

Prototypes

Product definition

Product development

Product demonstration

Framework Programme

Level 1 COLLABORATIVE PROJECTS (CP)

FP6 STREP - FP7 CP-Focussed

Production

Level 2 FP6 IP - FP7 CP-Integrating

Competitiveness - Innovation

Level 3

PPPs:
JTIs
SESAR JU



-10

-5

0

years

+5

FP7 Aeronautics - 3rd Call - Background: Work-program 2010 -

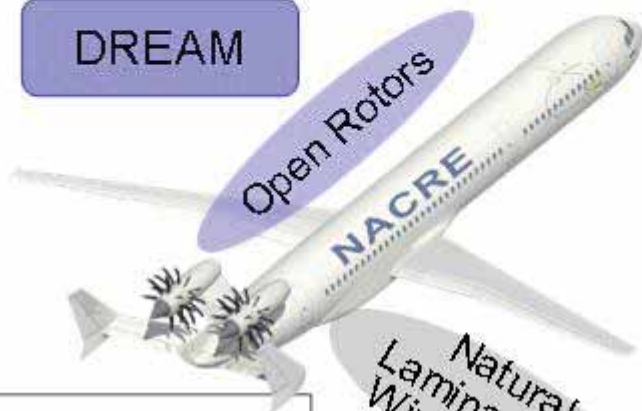
- **Focus** by avoiding potential overlaps with:
 - projects funded in previous calls,
 - parts of FP7:
 - * Security,
 - * SESAR (Air Traffic Management,
Public-Private Partnership),
 - * Fuel Cells & Hydrogen JTI
(Public-Private Partnership).
- Budget constraints (annuality)
- Max. EC funding to Level 1 projects: **5 M€**

FP7 Aeronautics - Activities

1. The Greening of Air Transport



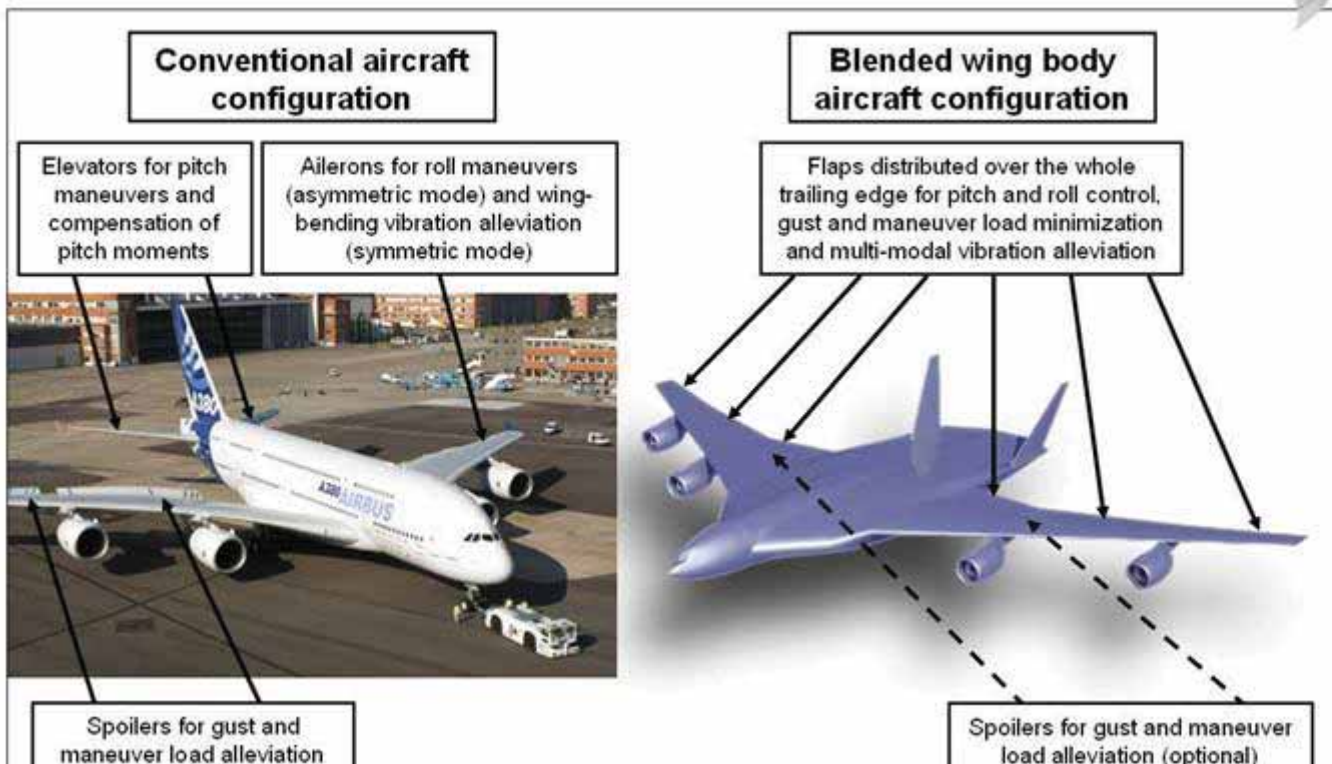
DREAM



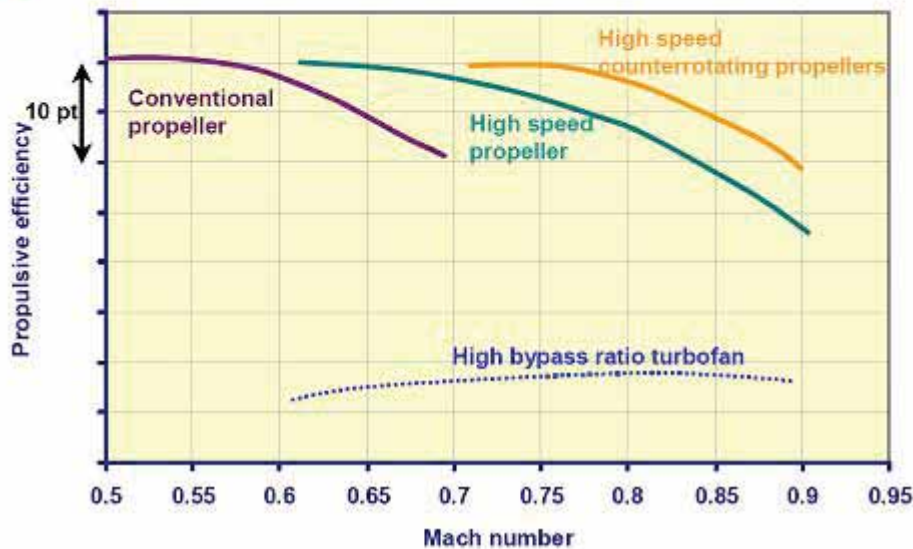
Natural Laminar Flow Wing Design

SADE

ACFA2020



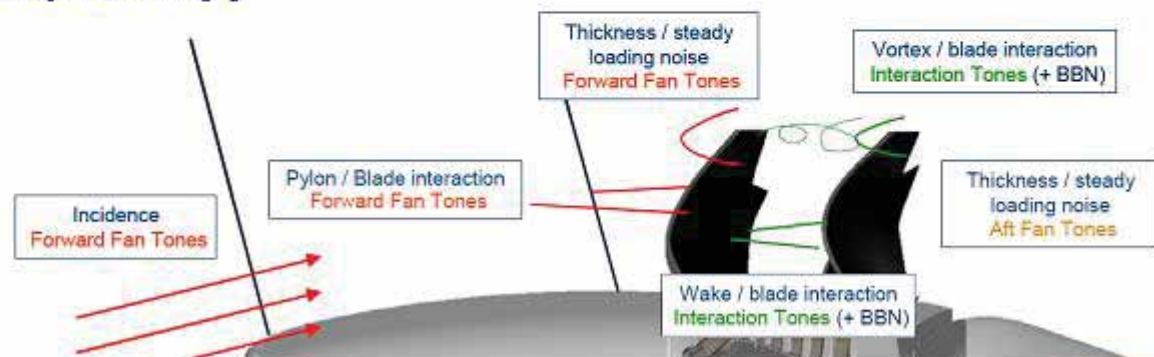
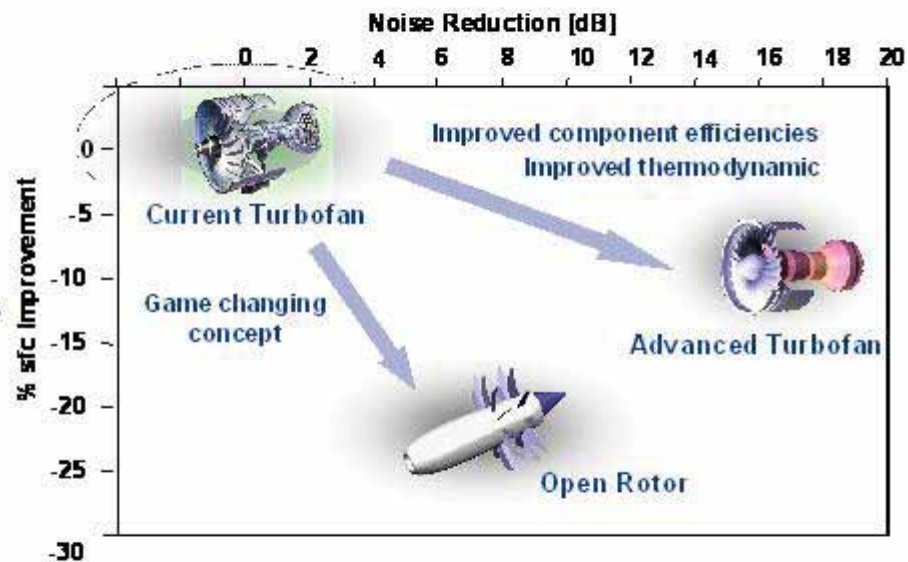
Open Rotor



Engine tested on Antonov (1994)

GE36 UDF

- Much lower Fuel Consumption
- Contra-rotating (complexity)
- Noise
- Must be fail safe



DREAM, Rolls-Royce

Validation of Radical Engines Architecture Systems
2008-2011

FP7 Aeronautics - Activities

2. Increasing Time Efficiency

Reduction of journey time

maintaining flight time within **schedule**
 minimising time passengers at **airports**
 in the travel-related process.

◆ Improved Aircraft Throughput

~~Systems and Equipment~~

~~Avionics, Maintenance~~

~~and Repair~~

◆ Time Efficient

Operations

~~Air Traffic Management (only SESAR!),~~

Airports: passenger & luggage **flow**; **planning** of airport ops;
fleet management; **freight** operations; decision making...

Goals 2020

x3 a/c
 movements

99% flights
 within 15
 min schedule

Time in
 airports:
 15 min for
 short-haul
 30 min for
 long-haul



ACARE SRA2
 Highly Time Efficient HLTC

FP7 Aeronautics - Activities

3. Safety & Customer Satisfaction

Reduction in **accident** rate and
leap in passengers **choice**
and **schedule flexibility**

◆ Aircraft Safety:

- Aero-structures
(crash, impact, blast; aging),
- Systems & Equipment (fire),
- Avionics (small aircraft)

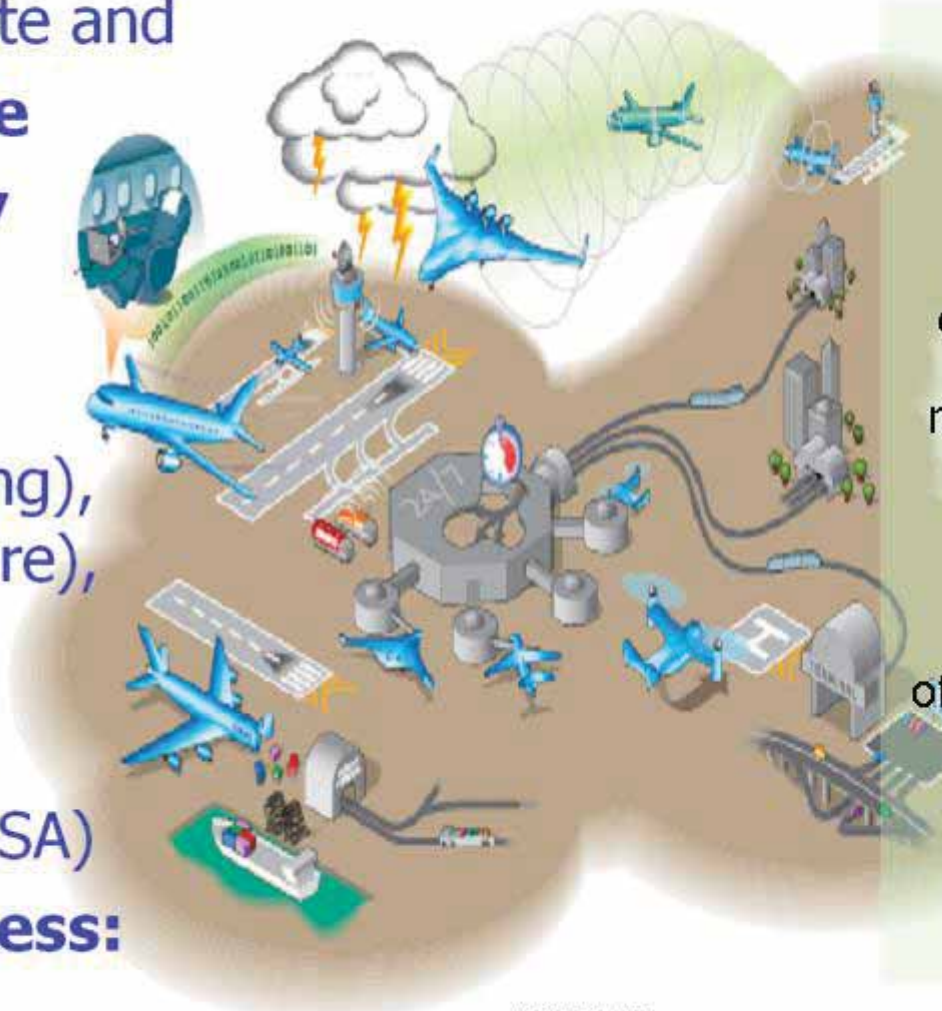
◆ Operational Safety:

- Support Certification(EASA)

◆ Passenger Friendliness:

Noise and Vibration,

Design, Systems & Equipment



Goals

- 80%
accident
rate
- +
elimination
and
recovery of
human
errors
- +
mitigation
of effects of
survivable
accidents
- +
passenger
choice

ACARE SRA2
Highly Customer Oriented HLTC

FP7 Aeronautics - Activities

4. Improving Cost Efficiency

Reduction in **cost** in the **whole air system design** and **operation**

◆ Aircraft Development Cost:

Design Systems and Tools, Aero-structures, Systems & Equipment, Avionics, Production

◆ Aircraft Operational Cost

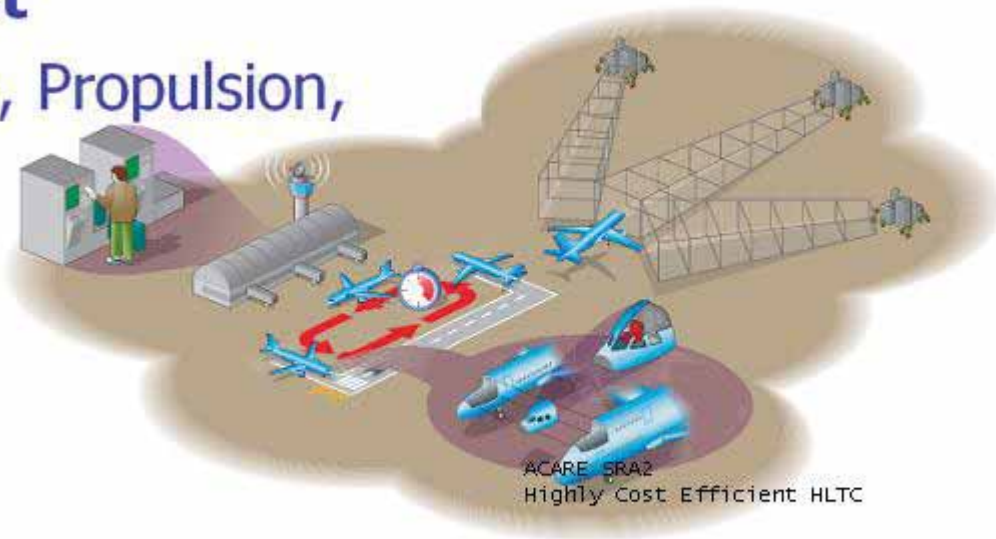
Flight Physics, Aero-structures, Propulsion, Systems, Avionics, Maintenance

◆ ATS Operational Cost:

ATM (only SESAR!), Airports, Human Factors

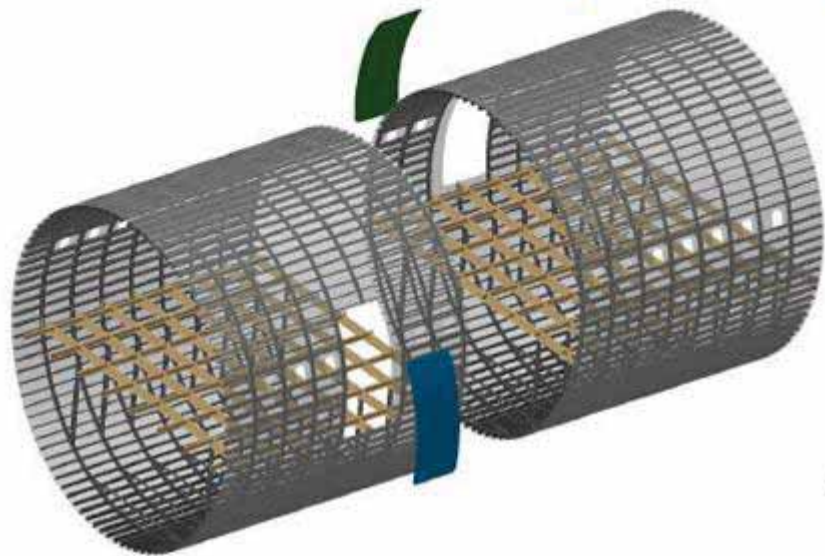
Goals 2020

- 50% aircraft development cost
- 50% time to market
- 50% aircraft operating costs
- travel charges

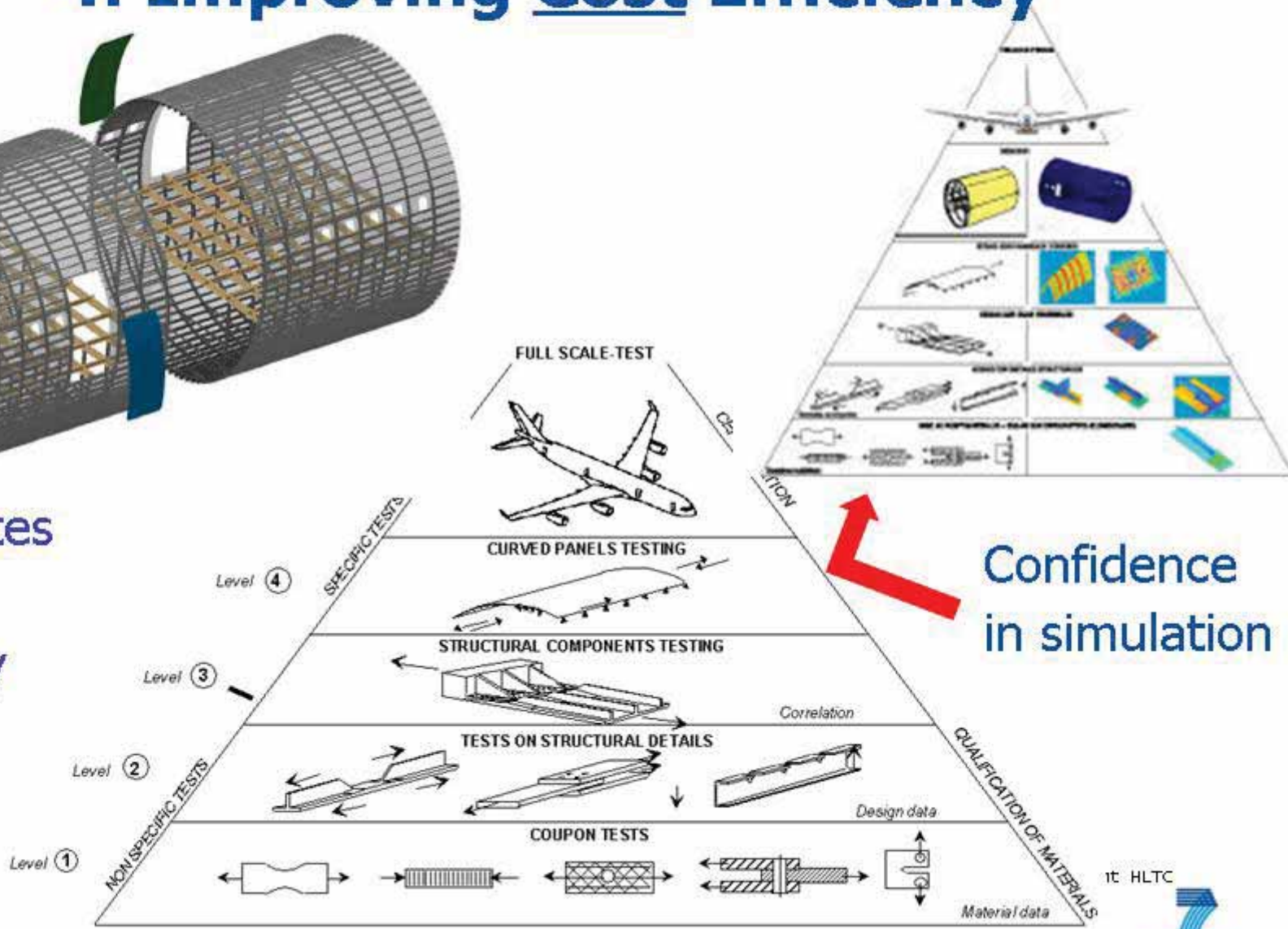


FP7 Aeronautics - Activities

4. Improving Cost Efficiency



Composites
Sections
Assembly



it HLTC



FP7 Aeronautics - Activities

5. Protection of Aircraft & Passengers

THIS SECURITY ACTIVITY IS CLOSED IN 3rd CALL

Aims at making **impossible** that an **attacking** force of any kind succeeds in creating **injury, loss, damage or disruption** either on the travellers or on citizens.

◆ Aircraft Security

Aero-structures,
Systems and Equipment,
Avionics

◆ Operational Security

Airports, Human Factors,
Air Traffic Management (only SESAR!)



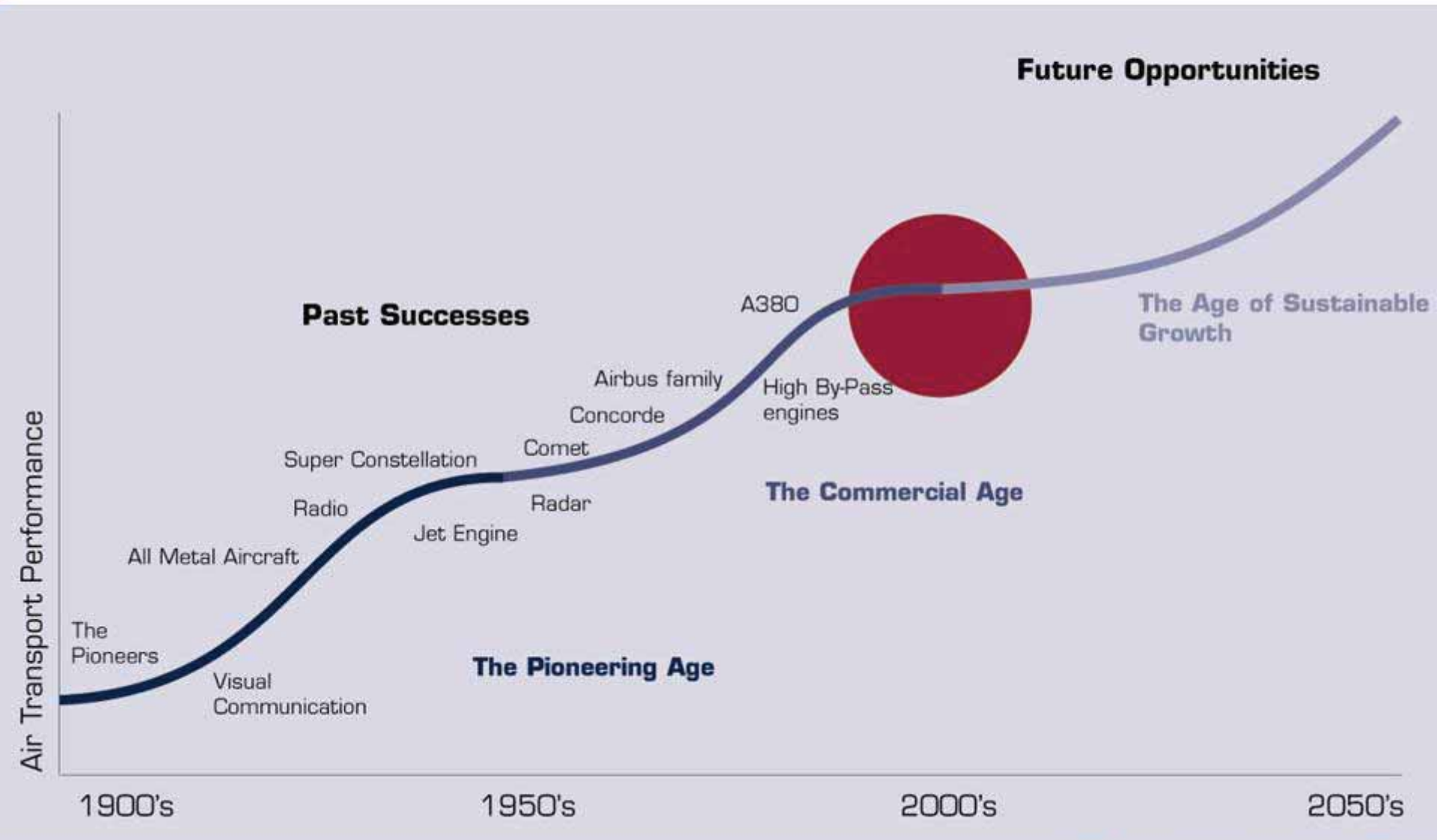
Goals

0% hostile
on-board or
external actions
against aircraft
or
against the air
transport system

ACARE SRA2
Ultra Secure HLTC



Aeronautics Evolution



FP7 Aeronautics - Activities

6. Pioneering Future Air Transport

Radical, revolutionary technologies - Step changes required for **second half of this century.**

Goals

Setting the foundations of new technology base & new paradigms

◆ **Breakthroughs & Emerging Technologies**

Lift, Propulsion, Air Vehicles, Interior space, Life-cycle

◆ **Step Changes in Air Transport Operation**

*Novel air transport vehicles,

*Guidance&control,*Airports

Promising Pioneering Ideas:

- The cruiser/feeder concept, - Take-off & landing with ground-based power, - Personal air transport systems, - New sources aircraft main propulsive power (Cf. ACARE's "Out-of-the-Box")



FP7 Aeronautics – Focus in 3rd Call

	Greening	Time	Satisfy & Safe	Cost	Protect	Pioneer
◆◆◆ Level 3	CLEAN SKY - 1st Call Proposals over, 2 nd Call in 2010					
	SESAR Joint Undertaking					
◆◆ Level 2	CLOSED					
◆ Level 1 (& Coord. Actions) < 5 M€ EC grant	OPEN	LIMITED to Airports	FOCUSED to Impact Crash Fire and Noise & Vibration	OPEN except Maintenance and Airports	CLOSED	OPEN
Support Actions	OPEN					
Networks of Excel.	CLOSED					

Support Actions - Work-programme 2010 -

- Assessing & developing the role of small aircraft
- Improving passenger choice (**new vehicles**) (intact)
- **Retrofitting** for sustainability and economic viability
- Platform to stimulate the development of **breakthrough** ...
- Stimulating **SMEs** and other small organisations:
"Particular attention will be dedicated to Member States who have a deficit of integration to the European Research Area"
- Observation platform - assess achievements of Vision 2020
- Updating strategic research agenda (new Vision, 2030+)
- Stimulating research with INCO partner countries (e.g **India**)
- Exploring collaboration with **USA**
- Conferences /events: **broad** policy issues
- Socio-economic/financial incentives and barriers to innovation in air transport (DG TREN call for tender)

FP7 Aeronautics - 3rd Call - Work-programme 2010 -

Coordinate Calls – Level 1 projects (co-participation, co-evaluation, co-funding)

- **Russia (paying their partners)**

while EC 4 M€ funding for Member / Assoc. States partners

- Novel composite geodesic structures
- High aspect ratio and High-lift aerodynamics
- Maintenance and safety
- Plasma actuators for engine noise control
- Propulsion advanced simulation

- **China (paying their partners)**

While EC 3 M€ EU funding for Member / Assoc. States partners

- Aircraft noise reduction methods
- Casting of large Titanium components
- Flow control for drag reduction*



FP7 Aeronautics - 3rd Call - Work-programme 2010 -

Practical Aspects – How much ?

Budget: 108.29 million Euro

- 101.29 million Main Call
 - 98.29 million for Level 1 and CSA – Coordinating
 - 3 million for Support Actions (CSA – Supporting)
- 4 million for EU beneficiaries in Coord. Call Russia
- 3 million for EU beneficiaries in Coord. Call China

Past & Future evolution

- 1st Call (2007): 220 Million € (finished) Level 1 & Level 2 + CSAs
- 2nd Call (2008): 210 Million € (finished) Level 1 & Level 2 + CSAs
- 3rd Call (2010): 108 M€ Level 1 + Coord./Support
- 4th Call (2011): 127 M€ Level 2 mainly (some L1) - tbc
- 5th Call (2012): 157 M€
- 6th Call (2013): 136 M€

FP7 Aeronautics - 3rd Call - Work-programme 2010 -

Practical Aspects – When?

Publication:	30 July 2009
Deadline:	14 January 2010
Proposals evaluation:	March 2010
First contracts:	September 2010 ?

Competition is high.

Success rate in Level 1 projects:

- 3rd call FP6: **1/3**
- 1st call FP7 **1/6** (26 out of 167)
- 2nd Call FP7 **1/7** (28 out of 223)

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

Volume 1

Volume 2



Synopses books

(each project 2-page description
incl. budget, partners, contact)

[http://ec.europa.eu/research/transport/more_info/
publications_en.cfm](http://ec.europa.eu/research/transport/more_info/publications_en.cfm)

FP7 1st and 2nd call synopses
book is in preparation

-- titles already on web page --

- Stay informed about **running** projects that are of interest to you (<- see **synopses books** or/and **projects web-sites**)
- 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 to get into EC Funded Research



www.aero-ukraine.eu

National Contact Points (NCPs)
in each Member & Associate State

http://cordis.europa.eu/fp7/ncp_en.html

EU 3rd call Info-Day in Brussels:
29 September 2009



are merged into



- Aeronautical Industry (ASD) www.asd-europe.org
- Aeronautical Research Centres (EREA, etc) www.erea.org
- Aeronautical Universities (EASN) www.easn.net

Thanks for your attention & good luck! Дякую & Щастя !

Спасибо & Удачи!

European Commission

DG Research:

Directorate H "Transport":

Aeronautics (H3)

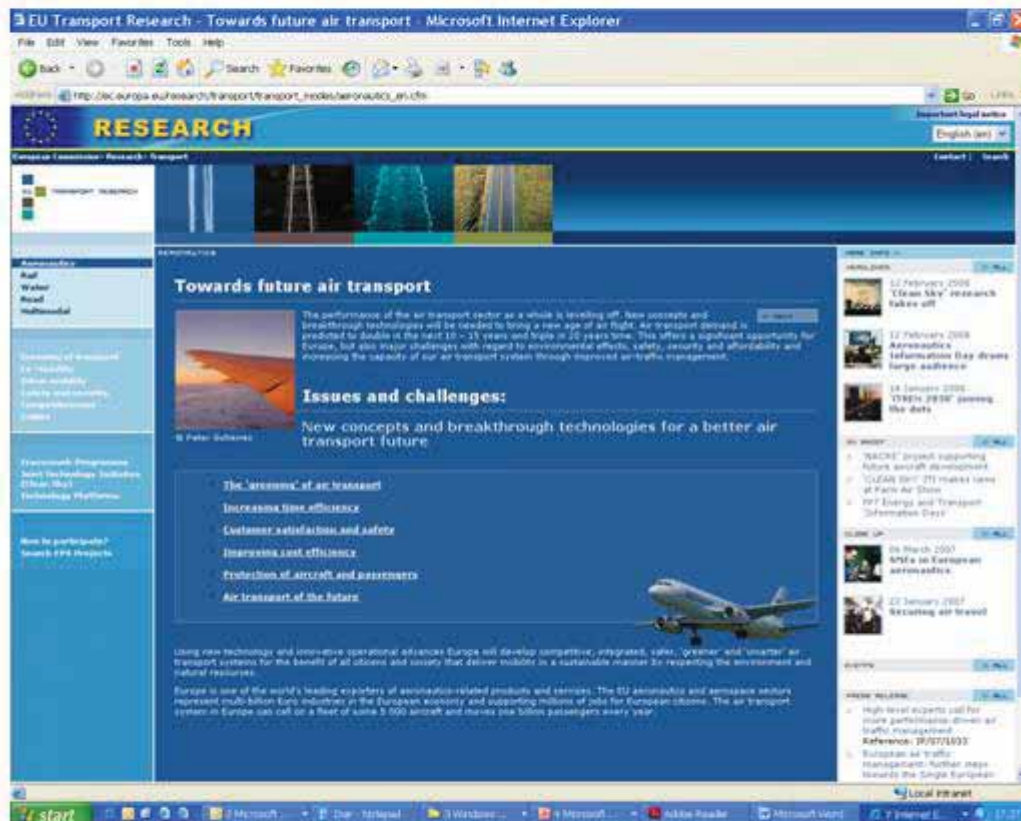
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Visit our webs: <http://ec.europa.eu/research/aeronautics>

www.cordis.europa.eu

Aero-Ukraine – FP7 Workshop - 28 October 2009 - Kiev