EUROPEAN COMMISSION

Community Research

Aeronautics and Air Transport Research FP7

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DG RTD-H.3 - Aeronautics

Greek Energy & Transport Info Day, Athens, 30 September 2010

SEVENTH FRAMEWORK PROGRAMME

Outline

- Past calls for proposals (2007, 2008, 2010)
- Current call (2011)
- Hints from lessons learnt
- Next calls (2012, 2013)

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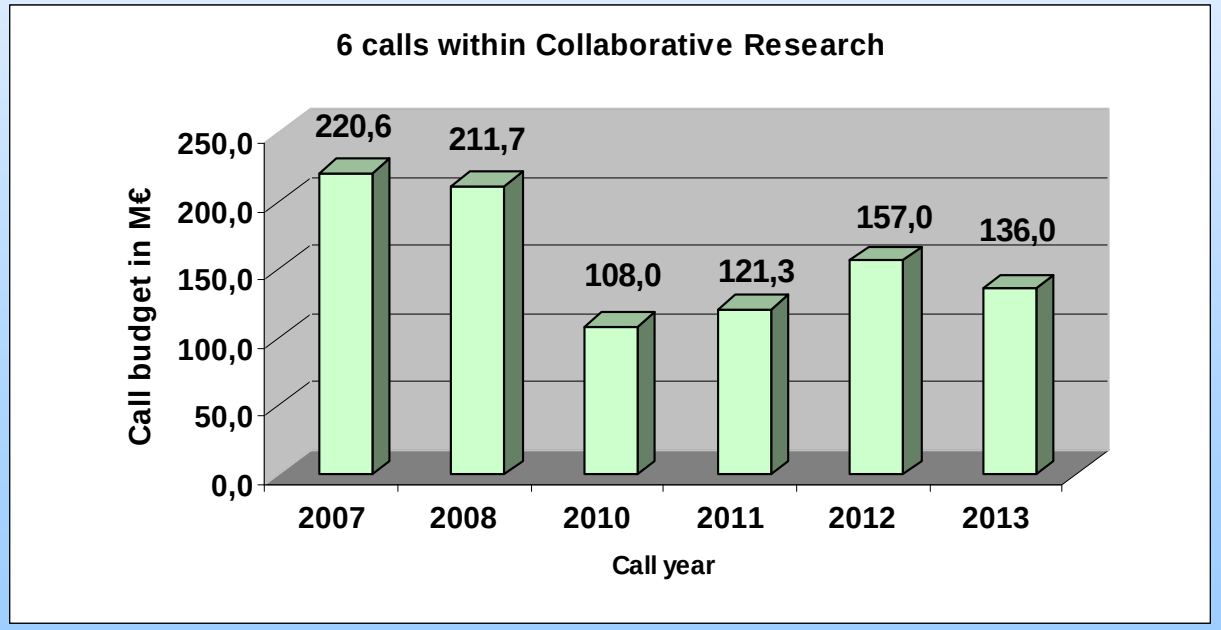
Aeronautics research in FP7

- Overall budget 2.15 billion €
  - 955 million € Collaborative RTD
  - 800 million € Clean Sky
  - 350 million € SESAR
- 6 calls within Collaborative RTD



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Aeronautics and Air Transport Workprogramme Collaborative Research (955 million Euro)

Activities

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

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

Budget 108 million Euro

Level 1 + CA

160 proposals - 529 million requested funding –

27 projects selected – 97 million recommended funding -

Support Actions (SA)

25 proposals - 9 million requested funding –

10 projects selected – 3 million recommended funding –

Russia Coordinated Call

8 proposals - 11 million requested funding –

3 projects selected – 4 million recommended funding –

China Coordinated Call

4 proposals - 6 million requested funding –

2 projects selected – 3 million recommended funding -

About 1/3 of contracts ready for signature,
the others will be sent to coordinators in the next days

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Aggregated Results 1st Call + 2nd Call + 3rd Call

- 89 Level 1 projects : 323.0 million (Incl. Russia and China calls)
- 8 Level 2 projects : 200.2
- 2 CA : 2.9
- 23 SA : 9.7
- Air-TN (CA) : 1.9
- Clean-Sky (SA) : 2.0

539.7 million

Distribution of the 323.0 million (Level 1)

•Greening	66.4 million	(21%)
•Time Efficiency	7.1	(2%)
•Customer + Safety	42.1	(13%)
•Cost Efficiency	165.1	(51%)
•Security	9.1	(3%)
•Pioneering	33.2	(10%)
	323.0 million	(100%)

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4th Call Aeronautics and Air Transport - 2011

- **Budget: 121.3 million Euro**
  - Level 2: 6 topics open, 107 million €
  - Level 1 and CA: only the activity “Pioneering” open, 11.3 million €
  - SA: 3 million €
- **Time schedule**
  - Call opening date: July 20th 2010
  - Call closing date: December 2nd 2010 17:00 h Brussels local time
  - Evaluation phase: January 24th to February 24th 2011
  - Start of first projects: June to July 2011

Workprogramme Scope

- *Includes:*

  *Technologies, services and operations of all components of the **air transport system** from airport kerbside to airport kerbside (i.e. aircraft, airport and air traffic management)*

- *Excludes:*

  Non-travel aspects, ticketing and ground vehicles

Aeronautics & Air Transport Workprogramme Approach

Level 1 (EU–funding: max. up to 4 million €)

Upstream research and technology development activities **from basic research to validation at component or subsystem level** through analytical and/or experimental means in the appropriate environment – **CP-FP, CSA(Coordinating)**

Level 2 (EU–funding: minimum 6 million €, max. 40 million €)

Downstream research and technology development activities up to higher technology readiness, centred on the multidisciplinary integration and validation of technologies and operations at a system level in the appropriate environment (large scale flight and/or ground test beds and/or simulators) **– CP-IP**

Level 3

Research and technology development activities up to the highest technology readiness, in fully integrated system of systems in the appropriate operational environment – Clean Sky JTI, SESAR JU

Managed by Clean Sky JTI

Supporting Programme implementation (EU–funding: max. 300 K€)

Activities aiming at **setting mechanisms or developing strategies** for programme implementation – **CSA(Supporting)**

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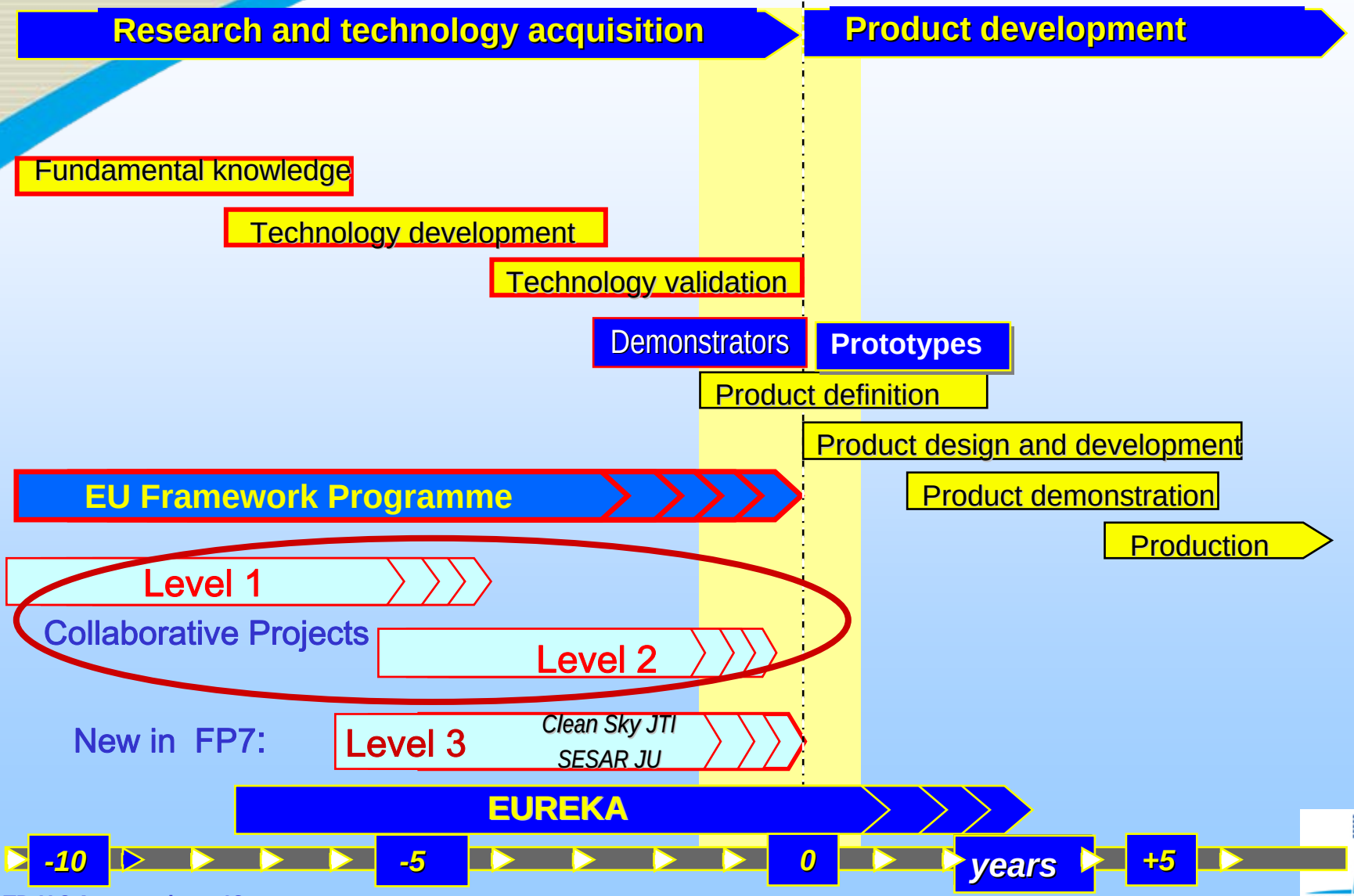
Research, Technology & Product Development



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Level 1 and Coordination Actions

Activity open:

6. **Pioneering** the air transport of the future

Activities closed:

1. The **greening** of air transport
2. Increasing **time efficiency**
3. Ensuring **customer** satisfaction and safety
4. Improving **cost** efficiency
5. **Protection** of Aircraft and Passengers

Level 1 - Pioneering the Air Transport of the Future (CP-FP and CSA-CA) Up to 4 million € funding/project

Goals

Setting the foundations of new paradigms and technologies enabling step changes in air transportation in the 2nd half of 21st century

Breakthrough 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***
- ***New sources of aircraft main propulsive power***

4th Call Aeronautics and Air Transport – 2011

Level 2 - (CP-IP) Up to 40 million € funding/project

Six Topics open in four Activities:

1. The greening of air transport
   - **Systems approach to improved core engine thermal efficiency**
2. Increasing time efficiency
   - **Integrated approach to total airport management for operational efficiency**
3. Ensuring customer satisfaction and safety
   - **Integrated approach to a human-centred cabin physical environment**
4. Improving cost efficiency
   - **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**

Level 2 - (CP-IP) 1/3

AAT.2011.1.4-2. Systems approach to improved core engine thermal efficiency

Objective: **Increase engine thermal efficiency above OPR 50:1 for reduced CO_2 emissions minimising NO_x increase**

Scope: **Integration of key technologies:**

- **Innovative compressor for ultra-high pressure ratio cycle**
- **HP-LP compressor inter-cooling**
- **Low NO_x combustion**
- **Advanced structural components for high OPR**

AAT.2011.2.3-3. Integrated approach to total airport management for operational efficiency

Objective: **Overcome fragmentation of airport activities –land side and air side-**

Scope: **Innovative integration of all airport operations (system of systems):**

- **Passenger flow**
- **Baggage flow**
- **Apron operation**
- **Fleet management**
- **Security monitoring**
- **Air quality and noise monitoring**
- **IT architecture for single information management system**

Level 2 - (CP-IP) 2/3

AAT.2011.3.5-1. Integrated approach to a human-centred cabin physical environment

Objective: **Place human needs at the centre of future cabin designs regarding health, safety, comfort as well work-load conditions for crew**

Scope: **Integration of technologies and concepts key to physical environment :**

- **Noise and vibration**
- **Air quality and cabin pressure**
- **Materials and systems**
- **On-board safety related systems and procedures**
- **Lighting and virtual environments**
- **Human factor issues**

AAT.2011.4.4-3. Integrated approach to smart airframe structures

Objective: **Step change in 'intelligent' structures regarding self-sensing, multifunctional materials and morphing for reduced operational costs**

Scope: **Integration of key technology developments, including supporting modelling tools, focusing on two major applications:**

- **Wing morphing for improved lift and reduced drag during take-off, cruise and landing**
- **Self-sensing and multifunctional materials for smart process control and quality assurance in manufacturing and for smart in-service self-monitoring and self-healing of structures.**

Level 2 - (CP-IP) 3/3

AAT.2011.4.4-4. Integrated approach to efficient propulsion and related aircraft systems for small-size aircraft

Objective: **Improve the capability to develop environmentally acceptable, safe, reliable and economic propulsion units that the small size aircraft industry (up to 19 pax. fixed-wing and rotorcraft) needs**

Scope: **Integration of key technologies for a range of small gas turbine engines and propulsion related systems. Two fronts of action:**

- **Performance improvements of key engine components, including modern engine control technologies**
- **Airframe-propulsion integration with regard to aircraft overall configuration**

AAT.2011.4.4-5. Integrated modular actuation systems for the future all-electric aircraft

Objective: **Introduce full electric actuation in all aircraft systems as a definite step in the elimination of on-board hydraulics for a full electric aircraft**

Scope: **Scalable systems approach through modular components to demonstration of full electrical actuation for a broad range of aircraft types on:**

- **Primary and secondary flight controls**
- **Landing systems**
- **Thrust reversers and doors**

Embracing sensors, motors, controller, materials, wireless data flow ...

Supporting Programme Implementation (CSA-SA)
Up to 300 K€ funding per project

	1.	*Supporting the organisation of conferences and events of special relevance to aeronautics and air transport research*
	2.	*Stimulating the participation of small and medium size enterprises (SME) and other small organisations for improved integration of the European Research Area*
New	3.	*Assessing the role and needs of air freight in air transport*
New	4.	*Exploring opportunities and stimulating research cooperation with Canada*
New	5.	*Exploring opportunities and stimulating research cooperation with Japan*
New	6.	*Assessing the educational needs of engineers and researchers in aeronautics and air transport*
New	7.	*Technology support for crisis coordination for the air transport system following major disruption events*

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FP7 Aeronautics – 4th Call

	Greening	Time	Customer & Safety	Cost	Security	Pioneer
◆◆ Level 2 Max. 40 M€ EC grant /project	Open for 1 Topic	Open for 1 Topic	Open for 1 Topic	Open for 3 Topics	CLOSED	
◆ Level 1 (& Coord. Actions) Max. 4 M€ EC grant / project	CLOSED					Open
Support Actions	Open for 7 Topics					
Networks of Excel.	CLOSED					

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- 1st FP7 Call 2007 - 220 M€ available - 194 proposals (829 M€) - 36 retained
- 2nd FP7 Call 2008 - 210 M€ - 253 (918 M€) - 43
- 3rd FP7 Call 2010 -108 M€ - 203 (556 M€) – 42

….the increasing **number of submitted proposals** and
….the **limited budget** available for this and next calls

For a proposal to be successful it must show a very high quality

Although trivial ….

Start with the **eligibility** of your own proposal….

- Do it yourself….
- It is sad to see good proposals ***not eligible*** because of:
  - **Too late submission,** *(2nd Dec. 2010, 17h00 Brussels time)*
  - **Exceeding budget max limit*,**
  - **Provided incomplete Part A & B**

***)** *For Collaborative Projects of small or medium-scale (CP-FP) a **maximum requested Community contribution** of up to **4.0 million €** is an additional eligibility criterion.*

Although trivial ….

Focus to the Evaluation criteria applicable to:

- **Collaborative Projects**
- **Coordination and Support Actions**

Understand the criteria well and address them all

- **Put yourself in the “shoes” of the evaluator.**
- **Do not use your company’s acronyms without additional information.**

Although trivial ….

Be specific:

- e.g. Main concept and objectives clearly stated,
- State-of-the-art,
  - address all aspects (experimental, numerical, etc)
  - include references,
  - include your own work,
- What **You will do beyond** the state-of-the-art?
  - Clear description of Work Packages,
  - Realistic Timetable,
  - Specific and measurable deliverables,

Although trivial ….

Remember:

E. g.: "Management" in FP7 does *not* cover the "technical management"

- linking together all the project components,
- maintaining communications with the Commission, etc
- The allocated budget should reflect these activities.

Although trivial ….

Calculate properly (Form A3):

Maximum reimbursement rates of eligible costs:

- Research and technological development = 50% or 75%*
- Demonstration activities = 50%
- Other activities (including management) = 100%

*) For participants that are non profit public bodies, secondary and higher education establishments, research organisations and SMEs.

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Aeronautics and Air Transport
5th & 6th calls

Tentative

5th Call: 157 Mio

6th Call: 136 Mio

- Share between Level-1 & Level-2 **in WP2012 and WP2013 → 50:50 at the end of FP7**
- Introduction of Level-0
  - incubate new fundamental knowledge & disruptive ideas
  - strong potential for innovation
- Level-1 + CSA-CA
  - Focus on greening, cost-efficiency, pioneering
- Level-2
  - Complementing previous L2 research projects & ongoing demonstration work in the 'Clean Sky' Integrated Technology Demonstrators

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THANK YOU !

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