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# The 7th Research Framework Programme of the European Union

## An Opportunity for Joint Research in Aerospace and Related Technologies



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European Commission  
DG Research-H.3 Aeronautics



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# Content

- **Overview FP7**
- **Aeronautics and Air Transport in FP7**
- **Overview of JTI “Clean Sky” and JU “SESAR”**
- **Space Activities in FP7**
- **Training and Mobility of Researchers**



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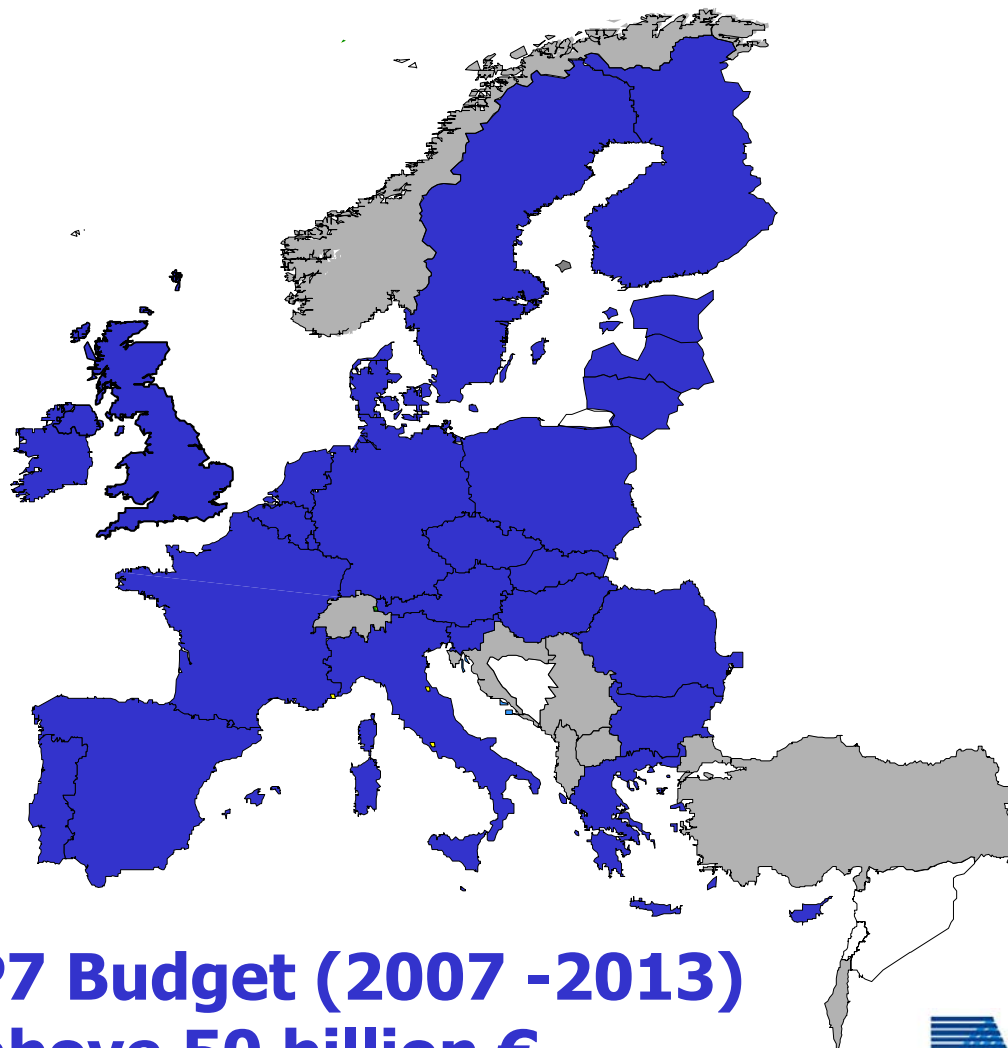
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# States Contributing to FP7 7th EU Research Framework Programme

■ 27 EU Member States

■ FP7 Associated States

- Iceland
- Norway
- Switzerland
- Croatia
- Turkey
- Albania
- Israel
- Macedonia
- Montenegro
- Serbia
- Others to join



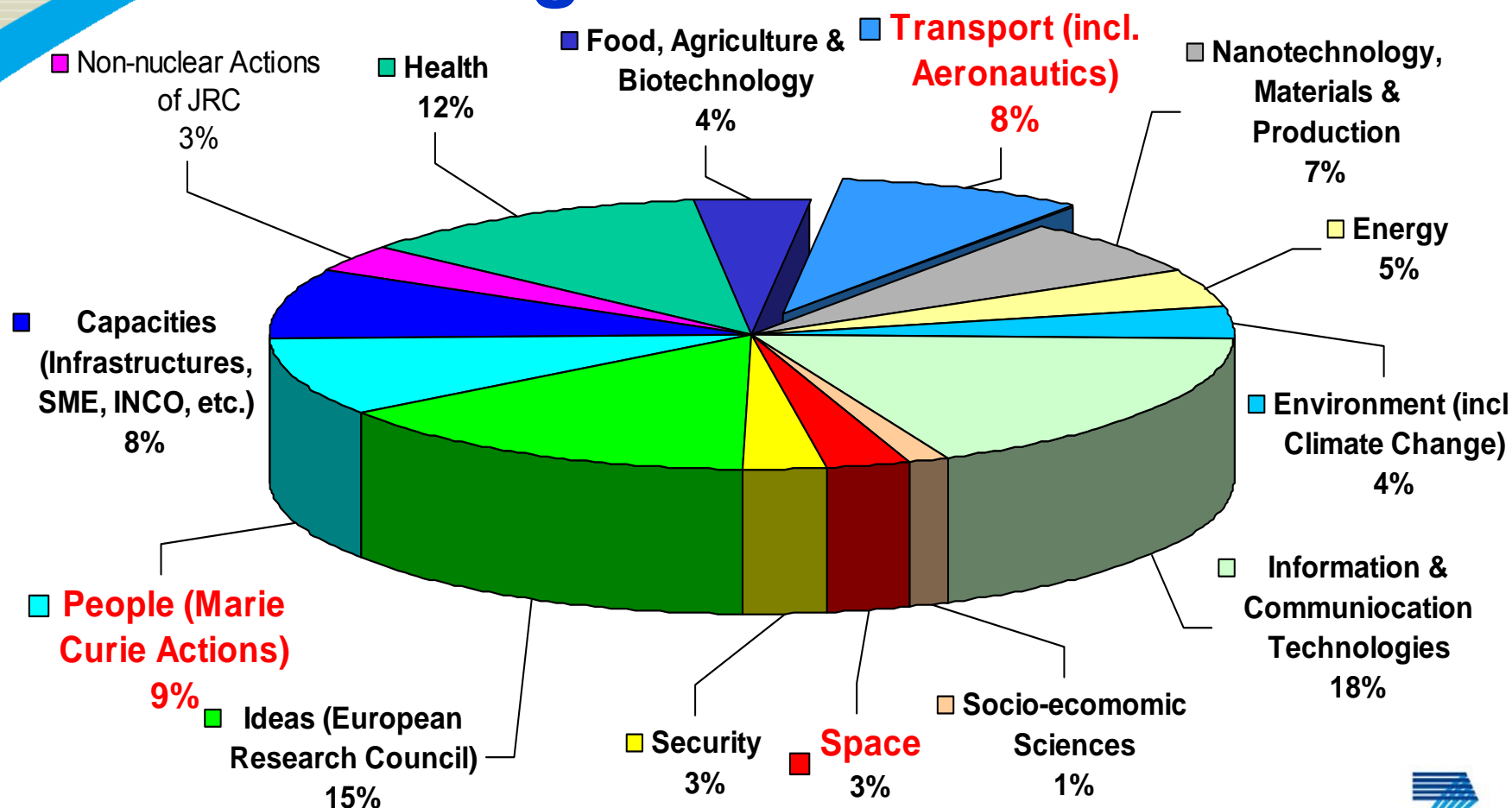
**Total FP7 Budget (2007 -2013)  
above 50 billion €**



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# 7th Research Framework Programme Budget Breakdown



**Budget 2007 - 2013: 50.521 million Euro (+ nuclear JRC and EURATOM)**

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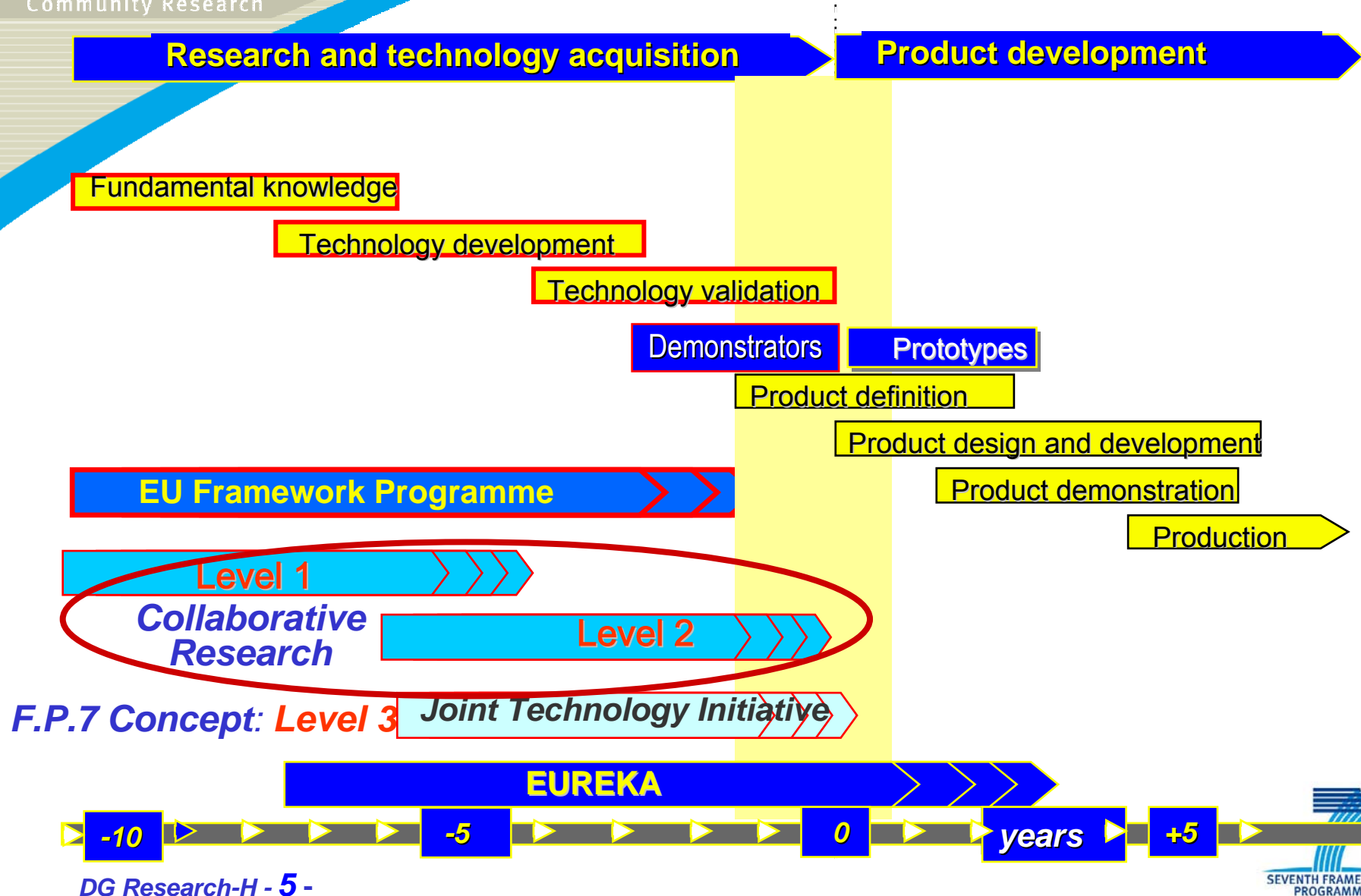




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# Research / Technology and Product Development in Aeronautics



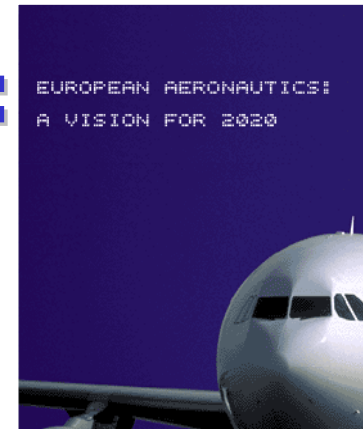


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# European Aeronautics: A Vision for 2020

## *The Goals for 2020*



- 80% cut in NO<sub>x</sub> emissions
- Halving perceived aircraft noise
- Five-fold reduction in accidents
- Air traffic system capable of handling 16 million flights a year
- 50% cut in CO<sub>2</sub> emissions per pass-Km
- 99% of all flights within 15 minutes of timetable
- 50% reduction of time to market





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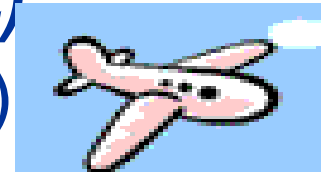
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# The “Transport” Theme

## *(Tentative Budget Breakdown)*

- **Aeronautics & Air Transport (2.100 mio €)**

- Collaborative Research (L1 & L2)
- JTI “Clean Sky”(800 mio €) (L3)
- Support to SESAR (350 mio €)



- **Surface Transport (1.108 mio €)**

- Road (including urban)
- Rail (including urban)
- Waterborne (maritime & inland)



- **Support to the European Navigation Satellite System (Galileo) (518 mio €)**





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# *FP7 - Aeronautics and Air Transport* *(2007 – 2013)*

## **Calls for Proposals**

- ***Calls until now***
  - 2007 Call: 215 M€ (Level 1 and Level 2 projects, CSA)
  - 2008 Call: 204 M€ (Level 1 and Level 2 projects, CSA)
- ***Future Calls with Annual Budget***
  - 2010 Call 104 M€ (estimated) (open in 2009, only Level 1 projects and CSA)
  - 2011 Call 132 M€ (estimated) **To be decided when which**
  - 2012 Call 163 M€ (estimated) **instruments will be used**
  - 2013 Call 144 M€ (estimated)
- ***Max. funding to Level 1 projects proposed limit of 5.0 M€***
- ***Max. funding to Level 2 projects proposed limit of 40 M€***





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# *7<sup>th</sup> Framework Programme* **Aeronautics & Air Transport** *(2007 – 2013)*

## **Success Rate by Instrument of the Call 2007 and the Call 2008**

- **Level 1:** Call 2007: 26 out of 167 proposals  
Call 2008: 32 out of 223 proposals\*
- **Level 2:** Call 2007: 4 out of 5 proposals  
Call 2008: 4 out of 6 proposals
- **CSA:** Call 2007: 6 out of 20 proposals  
Call 2008: 11 out of 24 proposals

*\*) Including 4 proposals of the Reserve List*



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## *FP7 - Aeronautics and Air Transport* *(2007 – 2013)*

### **Future Call for Proposals 2009/ 2010**

The Workprogramme 2010 will focus on the Specific Programme activities of greater strategic importance

- ***The Greening of Air Transport***
- ***Improving Cost Efficiency***
- ***Pioneering the Air Transport of the Future***

Some topics also be on **Safety, Time Efficiency** and **Security**  
*(only topic areas not covered in the first two Calls)*

- Publication of the 3<sup>rd</sup> Call
- Closing of the 3<sup>rd</sup> Call

30th July 2009

**14th Jan. 2010**



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# JTI “Clean Sky”

*Integrated Technology Demonstrators (ITD)*

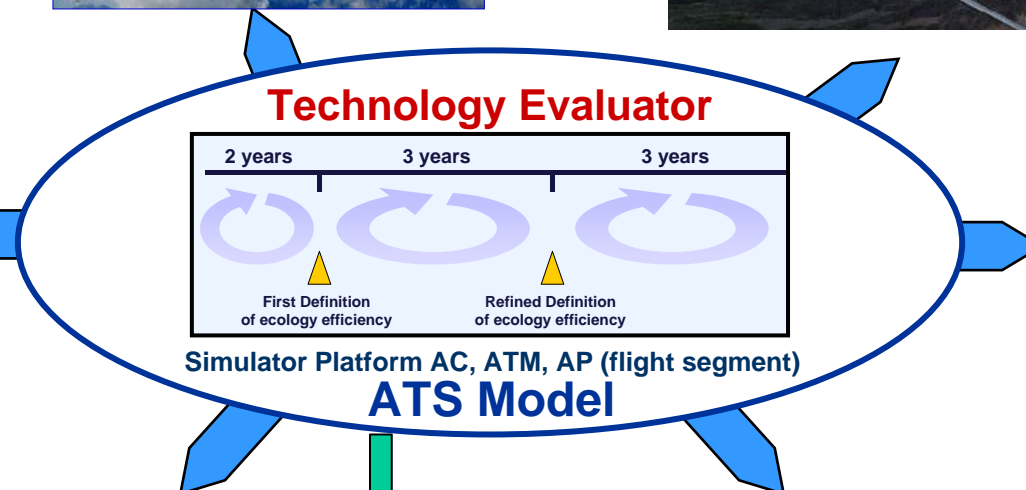
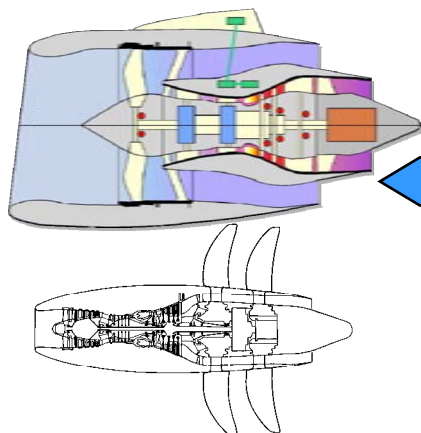


## SMART Wing Aircraft

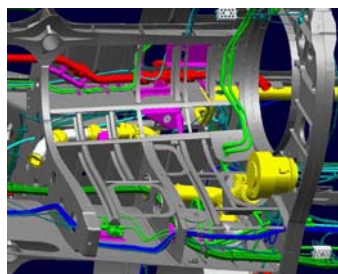


## Regional Air Transport

## Green Engines



## Green Rotorcraft



## Eco-Design



## Systems for Green Operation

Linked to “SESAR” Joint Undertaking








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# JTI "Clean Sky" – Targets

## Technology Evaluator

ITD	Smart Fixed Wing Aircraft	Green Regional	Green Rotorcraft	Sustainable & Green Engines	Systems for Green Operations	Eco Design
Activities	Active Wing  New Aircraft Configurations	Advanced Aerodynamics (Low Drag & Noise)  Low Weight Structures	New Powerplants  Innovative Blades & Rotors  New Aircraft Configurations	Advanced LP & HP System Technology  New Engine Concepts (i.e. Open Rotor)	Mission & Trajectory Management  Aircraft Energy Management	Whole Life Cycle Environmental Impact Analysis
Targets	CO <sub>2</sub> ~12 to 20% Noise ~10dB	CO <sub>2</sub> ~10 to 20% Noise ~10dB	CO <sub>2</sub> ~26 to 40% NO <sub>x</sub> ~53 to 65% Noise ~10dB	CO <sub>2</sub> ~15 to 20% NO <sub>x</sub> ~15 to 40% Noise ~15dB	CO <sub>2</sub> ~10 to 15% Noise ~17dB	CO <sub>2</sub> ~10% Noise ~10dB

Products	Widebody 2020	Narrowbody 2015	Regional 2020	Corporate 2020	Rotorcraft 2020
					
	CO <sub>2</sub> -30% NO <sub>x</sub> -30% Noise -20dB	CO <sub>2</sub> -20% NO <sub>x</sub> -20% Noise -15dB	CO <sub>2</sub> -40% NO <sub>x</sub> -40% Noise -20dB	CO <sub>2</sub> -30% NO <sub>x</sub> -30% Noise -10dB	CO <sub>2</sub> -30% NO <sub>x</sub> -60% Noise -10dB

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Note: Targets shown represent the **incremental impact** of JTI

SEVENTH FRAMEWORK  
PROGRAMME



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# JTI “Clean Sky” Call for Proposals (CfP)

## *Call for Proposal Process and Competitive Selection*

- Proposals will be selected according to open and transparent competitive procedures
- The selection will be done with the assistance of independent experts
- Call for Proposals will contain clear details of the assessment criteria that will be defined to select the best proposals having regard to all relevant factors.
- First series of Calls published in June 2009 with a closing date of 31st August 2009
- Calls published under: [www.cleansky.eu](http://www.cleansky.eu)



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# Single European Sky ATM Research SESAR

## The Goals of SESAR

Enabling EU skies to handle 3  
times more traffic

Improving safety by a factor of 10

Reducing the environmental  
impact per flight by 10%

Cutting ATM costs by 50%

## Joint Undertaking

**European  
Commission**

**EUROCONTROL**

**Industry**

=

Public – Private  
Partnership

**700M€**

**700M€**

**700M€**

**2 Funding members**

**3rd funding member**

Created by the European Union Council Reg No 219/2007

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## Space in the EU Research Framework Programmes

### A new activity, first introduced by the 6th Framework Programme - FP6 (2002-2006):

- About € 230 million over five years.
- Earth observation (GMES), Satcom, Satnav
- Focused on applications and services

### 7th Framework Programme - FP7 (2007 – 2013)

- About €1.4 billion over 7 years
- GMES + Strengthening Space Foundations
- Services but also technology development



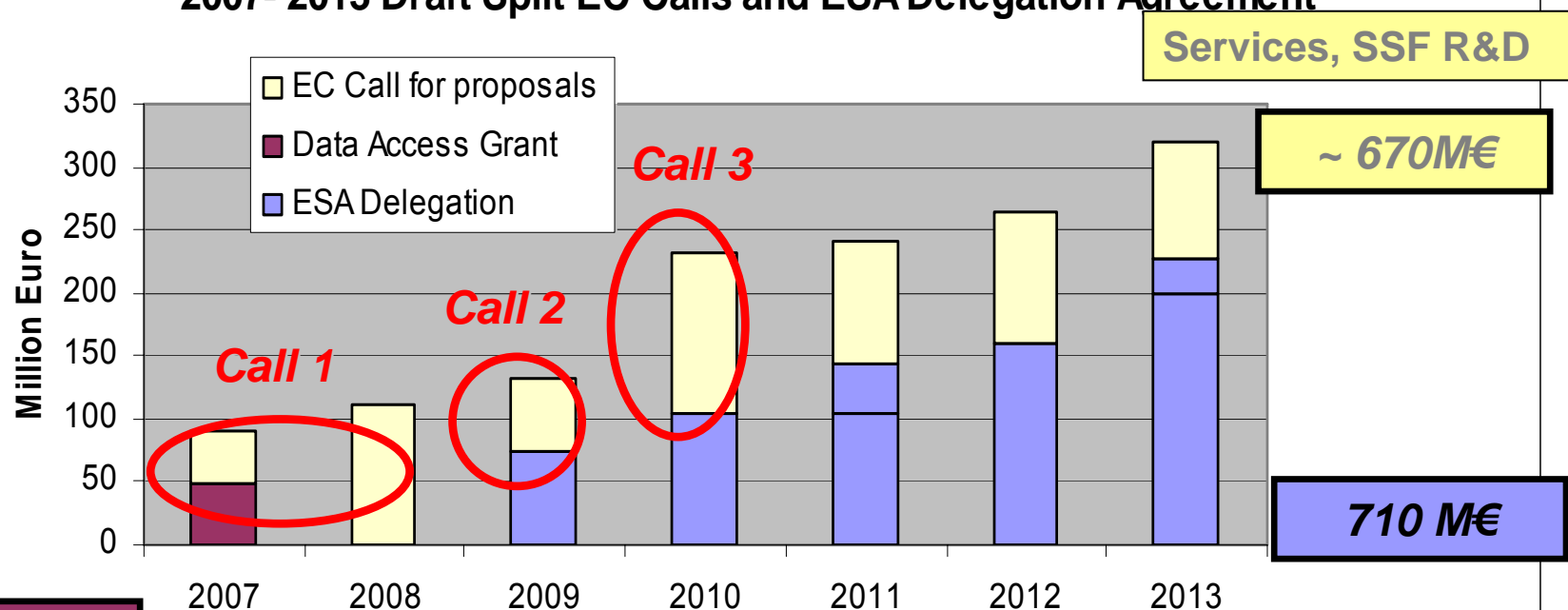
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# Breakdown of FP7 Space Funding

2007- 2013 Draft Split EC Calls and ESA Delegation Agreement



48 M€

Space data

Space Infrastructure



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# The FP7 Space Programme

## *Main Topics*

### I. GMES\*/ Kopernikus:

- Land, Marine, Emergency, Atmosphere, Security

➤ Major investment in the space component and operational services

### II. Strengthening Space Foundations

Up-stream research in:

- Space Technologies, Exploration, Space Transportation, Space Science

\*) *Global Monitoring for Environment and Security*

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# Space Exploration

**To improve in the long term**

- **the capability for interplanetary travel**
- **the access to planets' surfaces**
- **the capability to select, collect and return samples**
- **to perform their analysis**



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# Space Transportation

- **To ensure European access to space**
- **To contribute to the new generation of innovative propulsion systems**
  - e.g. new generation of solid, electric and cryogenic propulsion
- **Examples from the 1st Space Call:**
  - Electric propulsion (HiPer, HPH.com)
  - Green propellants (GRASP)
  - Hybrid propulsion (ORPHEE)
  - Cryogenic propulsion (ISP-1)
  - Aerocapture technology, i.e. using atmospheric drag to slow spacecraft on entry or re-entry (AEROFAST)



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# Five Core Services *Five FP7 Integrated Projects*



Atmosphere: **MACC**



Emergency Response: **SAFER**



Land: **geoland2**



Marine: **MyOcean**



Security: **G-MOSAIC**





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# Space Work Programme 2010 (1)

## Main Topics in GMES

- **Stimulating the development of specific downstream services**
  - Water management/hydrological cycle/water scarcity
  - Biodiversity
  - Forest Monitoring
  - Agriculture and agri-environment
- **Developing pre-operational service capabilities for Maritime Surveillance**



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## **Space Work Programme 2010 (2)**

### **Main Topics in Space Foundations**

- **Exploitation of space science and exploration data**
- **Space transportation for space exploration**
- **Critical space technologies**
- **Safety of space assets from space weather events and from in-orbit collisions**

**3rd Call to be published in July 2009**



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# PEOPLE Marie Curie Actions in FP7

## Overall Scope

- Human resource development in R&D in Europe
- For more numerous, well-trained, motivated researchers
- Attract students to research careers
- Skills and sustainable career development
- Connect with industry
- Consolidate careers of women in science
- structuring the impact of EU fellowships

**PEOPLE: Overall budget 4 750 million Euro (+ 40% p. annum to FP6)**



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# ***FP7 - Marie Curie International Dimension***



## **Main Activities**

- Intra-European Fellowships
- International Outgoing Fellowships
- International Incoming Fellowships
- International Research Staff Exchange Scheme
- International Reintegration Grants

## **Open Calls**

- Intra-European Fellowships
- International Outgoing Fellowships
- International Incoming Fellowships

***Call date: 18 March 2009 - Closing date: 18 August 2009 at 17:00 Brussels time***

- Reintegration Grants (ERG and IRG)

***Call date: 9 October 2008 – next Cut-off date: 8 October 2009 at 17:00 Brussels time***





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# Outgoing Fellowships

## *Which are the preferred countries?*



**302** fellows funded in FP6,  
out of **1550** proposals

Success rate **21,6%** ,

**1.** US 228 = 75%

**2.** AU 33  
CA 26 } 20%

**3.** NZ 4  
JP 3 } 2,5%

**4.** CN, IN, LK ,  
PA, SG, TH, ZA 1 } 2,5%



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# Conclusions

## The FP7 of the EU . . .

- is the largest international RTD collaboration programme
- is open to world-wide research co-operation
- addresses industry, research institutions and individual scientists
- aims to enhance the industrial competitiveness
- aims to target the society needs (*environment, safety, etc.*)
- has a wide interest of the RTD actors (*high numbers of proposals to most calls*)



*Thank you for your Attention !*





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# ***Aeronautics*** **Contacts**

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## ***Specific assistance for SME***

AEROPORTAL: <http://www.aeroportal.eu>

## ***Specific information on F.P.7***

<http://cordis.europa.eu>

<http://ec.europa.eu/research>