



International Cooperation with EU - FP7 Aeronautics Research



European Commission - DG Research
Transport Directorate
Aeronautics Research unit

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International Cooperation EU Aeronautics Research

WHAT is ?

- ◆ EU Research – FP7
 - ◆ FP7 Aeronautics
 - ◆ International Cooperation
- Scope
 - Definitions
 - Classification

WHY Cooperation in Aeronautics? - Drivers

HOW to cooperate ? - Modes & Examples

WHO define the topics? - Work-programme

WHICH proposals succeed? - Evaluation criteria

7th FRAMEWORK PROGRAMME FP7 (2007-2013)

4 Specific Programmes



Cooperation

32 413 M€

Trans-national cooperation in 10 research themes through consortia



Ideas

7 510 M€

Investigator-driven "**frontier research**", supported by an autonomous **European Research Council**



People

4 750 M€

Training, mobility, career development of researchers, ("**Marie Curie**" actions) - incl. **International grants**



Capacities

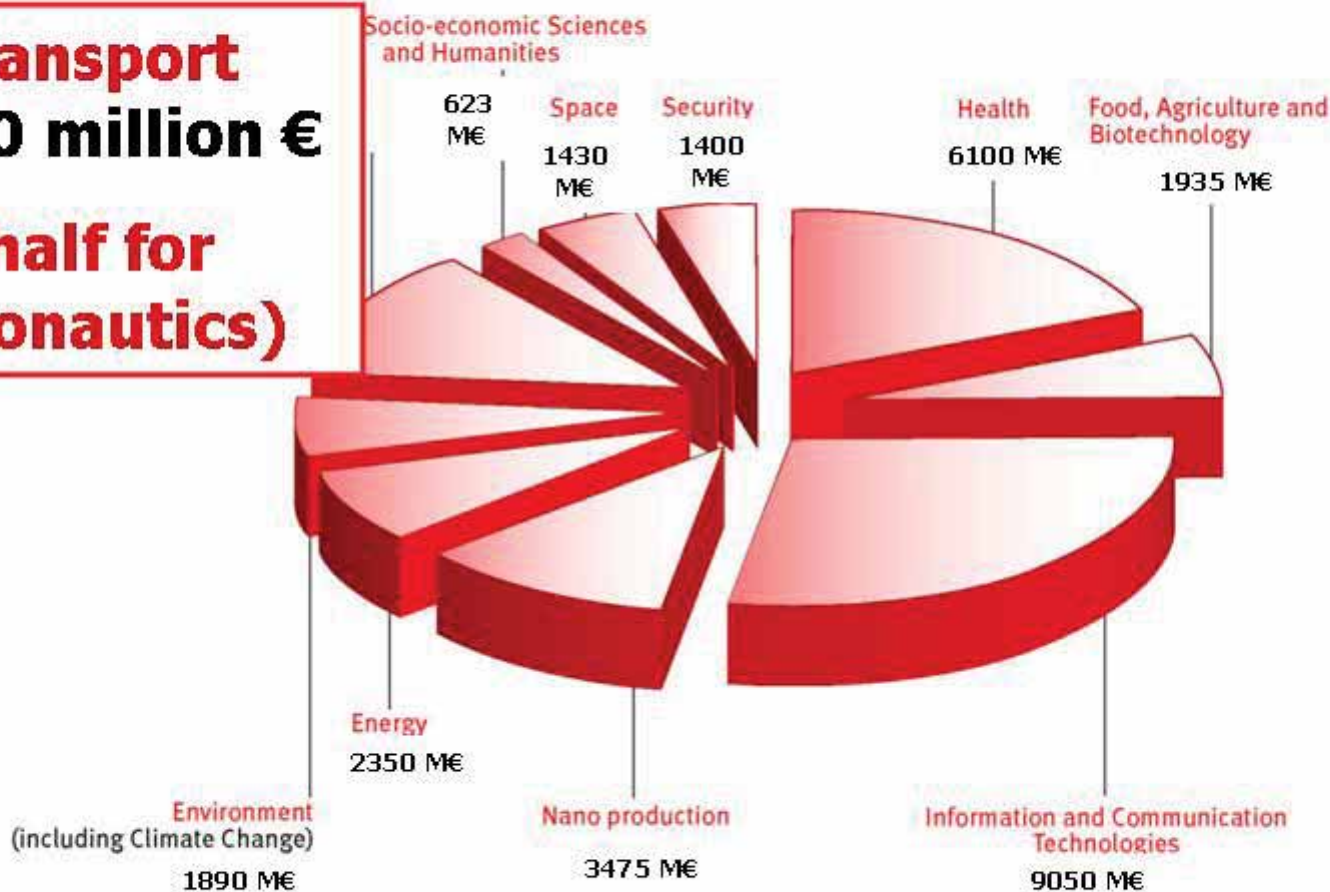
4 097 M€

Research infrastructures; research specific for SMEs; regional research driven clusters

FP7 COOPERATION PROGRAMME

10 Themes

Transport
4 160 million €
(half for Aeronautics)



Total budget: 32 413 million €

FP7 Research Framework Programme Cooperation / Transport (incl. Aeronautics)

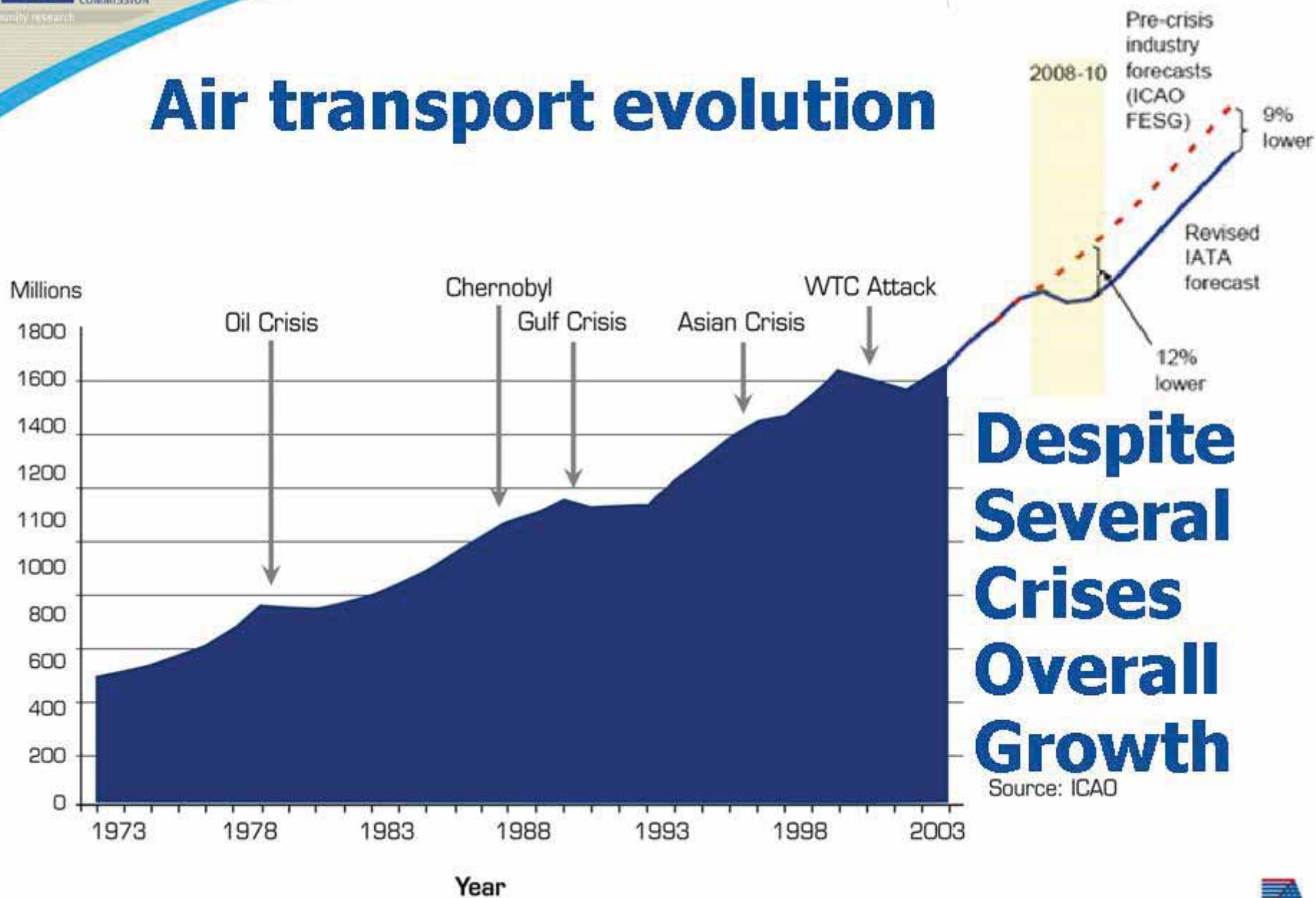
Overall Objectives

CIVIL ONLY !

- ◆ Develop “**safer**”, “**greener**” and “**smarter**” transport systems for:
 - respecting environment and natural resources
 - the benefit of citizens and society

- ◆ Secure and develop the **competitiveness** of European **industry** in the global market

Air transport evolution





FP7 COOPERATION AERONAUTICS R&T

Structure and Schemes

◆◆◆ **Level 3: Combination**, final **proof** in fully **integrated** system of systems, as Public-Private-Partnerships:

- SESAR (ATM), **CLEANSKY** (800 M€ EC+800 M€ Ind.)



◆◆ **Level 2: Downstream R&TD**,

Multidisciplinary **integration & validation**

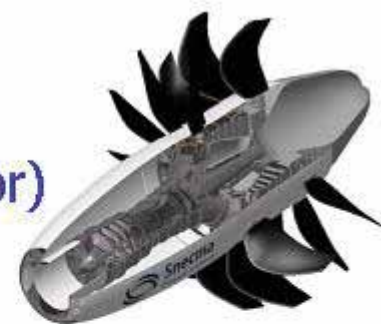
- Collaborative Projects < 50 M€ EC fund

Example: DREAM

Rolls-Royce, SNECMA, ...

Validation of Radical Engines Architecture Systems (Open Rotor)

44 partners, 40 M€ costs (25 M€ EC funding), 2008-2010



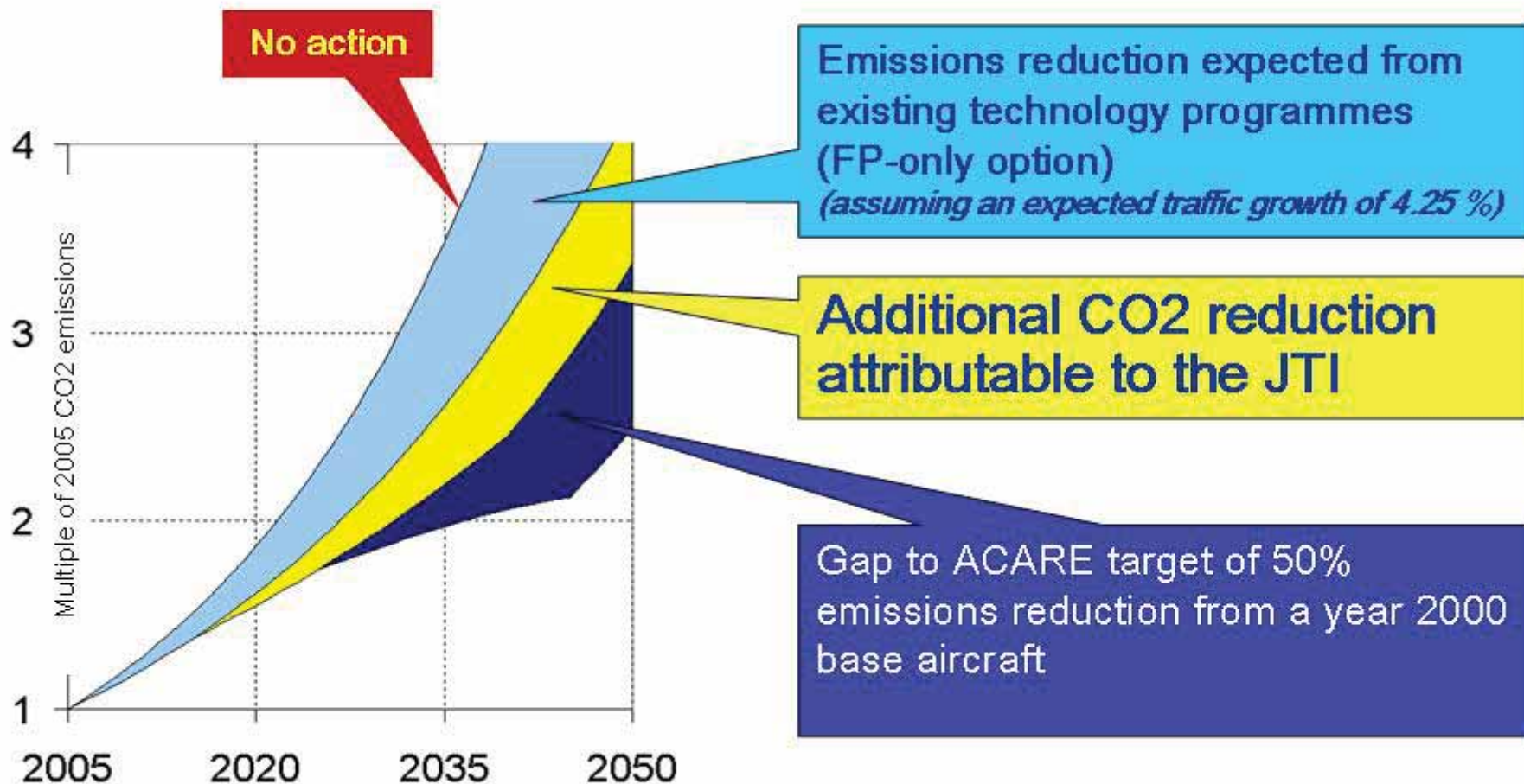
◆ **Level 1: Upstream R&TD**

up to validation at component or subsystem level

- Collaborative Projects < 5M€ EC funding

* **Coordination Actions, Support Actions** (no research)

Environmental Impact



Integrated Technology Demonstrators

SMART Wing Aircraft

Airbus (F, D, UK, E) + SAAB (SE)

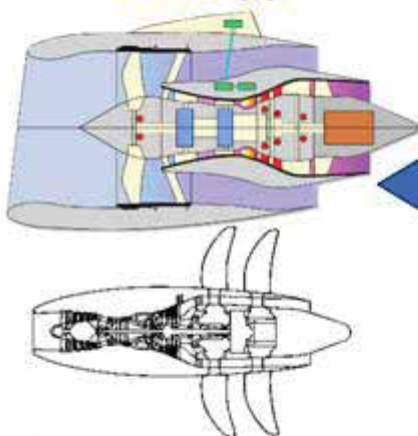


Regional Air Transport

Alenia (I) +
EADS-CASA (E)

Green Engines

Rolls-Royce (UK) +
Safran (F)



Technology Evaluator

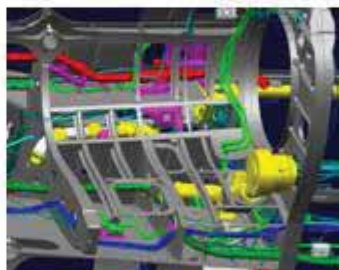


Simulator Platform AC, ATM, AP (flight segment)
ATS Model



Green Rotorcraft

AgustaWestland (I, UK)
+ Eurocopter (F, D)



Eco-Design

Dassault (F) + Fraunhofer (D)



Systems for Green Operation

Thales (F) + Liebherr (D)

Linked to "SESAR" Joint Undertaking



International Cooperation in Aeronautics Research

WHAT is "INTERNATIONAL" ? - beyond EU-27 MS

"Associated country" = agreed, financial contribution
e.g. Switzerland, Israel; Norway, Iceland and Liechtenstein;
Turkey, Croatia, Serbia, Bosnia, Albania;

"International European interest organisation"

- Majority of members = EU-Member or Associated
- To promote technical cooperation in Europe e.g. EASA, ESA

"International Cooperation Partner Country"

Low, middle-income: see Annex 1 to work-programme:
e.g. Russia, **Ukraine**, China, India, Brazil, Argentina, S.Africa, ...

"High income", not associated
e.g. US, Canada, Japan, Korea, Australia, ...

EU
+
Assoc.
States

ICPC

High
Income

Examples of International Participations in FP6 & FP7 Aeronautics

Direct - or Indirect through European subsidiaries





International Cooperation in Aeronautics Research

WHAT is "INTERNATIONAL COOPERATION" ?:

- ◆ **Collaborative** projects: min. **3 partners** from different **EU** or **Associated States**
- ◆ **Support** actions: min. **one** legal entity.
- **Once minimum met, OPEN to Third countries** ----
- ◆ **Participation:** any Company, University, R&D centre, Org. or Individual, legally established in any country.
- ◆ **EC Funding** for **EU, Associated** and ICPC as **Ukraine**.

European Commission contribution rates:

- ◆ **50%** Demonstration activities; RTD activities, except:
- ◆ **75%** RTD if Non-profit public/education/SMEs:
- ◆ **100%** Coordination & Support Actions, management



International Cooperation in Aeronautics Research

FOR WHAT ? – Drivers / Objectives

- **Market:** attraction
 - ◆ R&T: a vector for market penetration
 - ◆ pre-normative research for **standardisation**
 - ◆ management of **global supply chain**
- **Science & Technology:** acquisition
 - ◆ **complementary to EU knowledge**
 - ◆ **mutual benefit**
- **Global issues:** tackling:
 - ◆ needs as **climate change, safety, security**
 - ◆ **systems, infrastructure, interoperability**
 - ◆ **regional assistance**

1. Greening

2. Time
efficiency

3. Customer
& **Safety**

4. Protection

5. Cost
efficiency

6. **Pioneer**



International Cooperation in Aeronautics Research

HOW to cooperate in FP7 ? – Evolution

< 2007 2008 (2009) **2010** 2011 2012 2013

...OPENING.....

..... **SUPPORT ACTIONS**

(China, **Ukraine**, South-Africa, L.America;...USA, India; ...)

COORDINATED CALLS

(China, Russia, ...)



More
focused
& balanced

- Co-participation
- Co-funding =
each-side-pays-its-nationals
- Co-evaluation (peer review)

RECIPROACITY

... ASSOCIATE TO FP7?

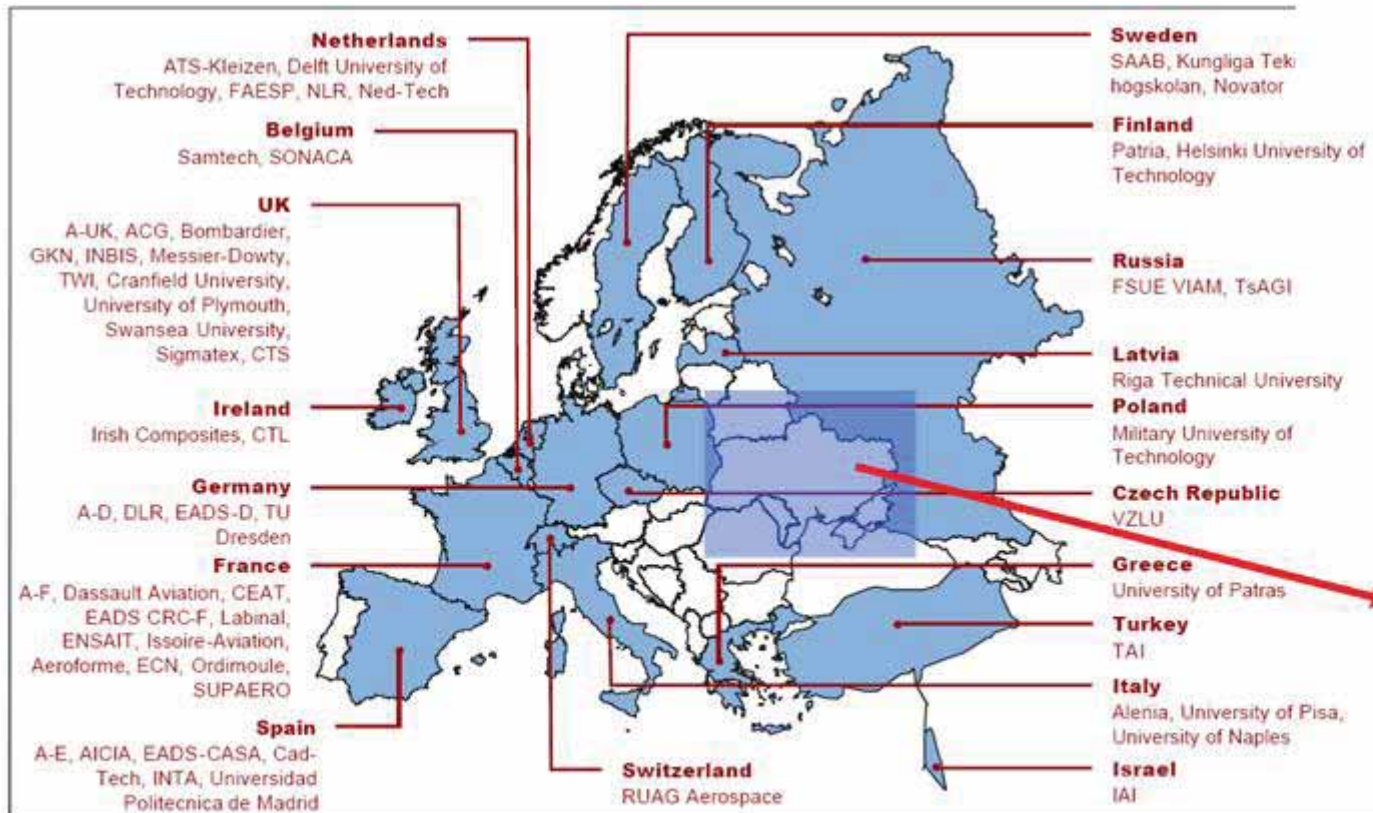
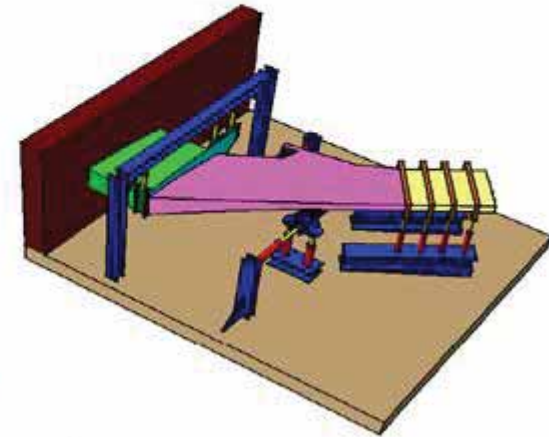


International Cooperation in Aeronautics Research

HOW to cooperate ?

Example FP6 Integrated project (Level 2)

ALCAS Advanced Low Cost Aircraft Structure



Start: Feb. 2005

Duration: > 4 years

Total Cost: 101 M€
EC grant: 53 M€

Coord: Airbus – UK

59 partners in EU, Israel, Turkey, Russia, and Ukraine:

National Aerospace University Kharkiv



International Cooperation in Aeronautics Research

HOW to cooperate ?

Example FP6 Collaborative Project (Level 1)



UFAST Unsteady Effects of Shock Wave Induced Separation

- ◆ 42 months, 3.8 M€ cost (2.4M€ grant)
- ◆ Coordinator: Polish Academy of Sciences - Institute of Fluid Flow Machinery IMP-PAN
- ◆ Ukrainian Partner: Podgorny Institute for Mechanical Engineering Problems – National Academy of Sciences
- ◆ 21 Partners (mainly Universities, Research Centres + NUMECA + EADS-M Germany)



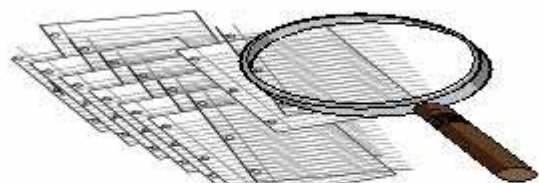
Work-programme Preparation Consultation with Stakeholders

- Manufacturing Industry (ASD-IMG4, etc) www.asd-europe.org
- Aeronautical Research Centres (EREA, etc) www.erea.org
- Universities (EASN) www.easn.net

- EUROCONTROL
- European Aviation Safety Agency (EASA)
- **EUROPEAN COMMISSION**
 - **DG Research**, DG Transport and Energy
 - DG Environment
 - DG Enterprise (Space and Security)

- * Personalities: Transport Advisory Group
- * **Committee EU Member States + FP7 Associate States**

FP7 Cooperation Aeronautics Research Proposals Selection



Eligibility Check: Commission

EVALUATION: Peer review principles/
independent experts

<https://cordis.europa.eu/emmp7/>



**MARKING AND
PRIORITY ORDER
OF PROPOSALS**

Panel (optional)

**FUNDING
SCENARIO(s)**

Commission

INFORMATION
Programme Committee



NEGOTIATION

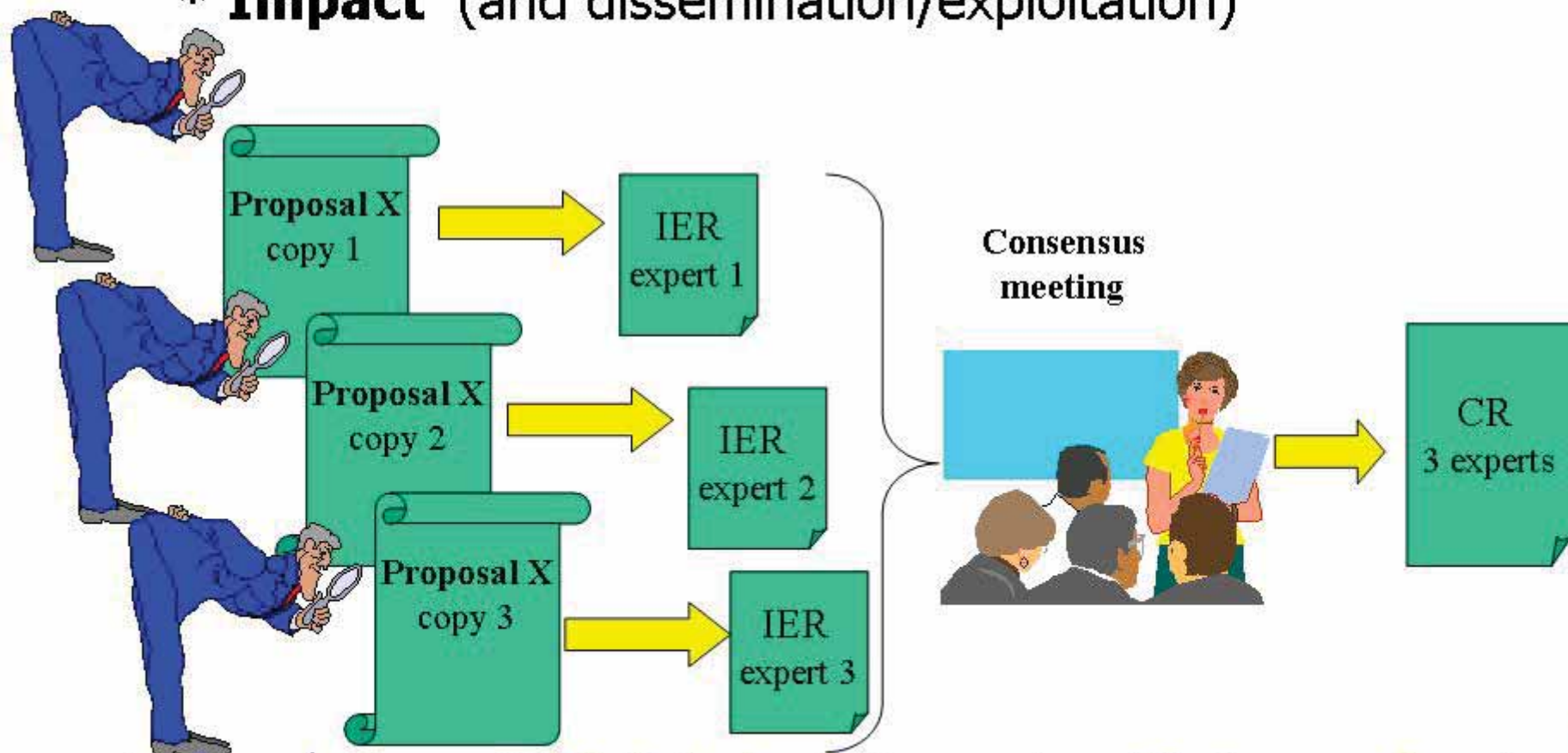


SIGNATURE

FP7 Aeronautics Proposals Evaluation

3 criteria

- * **S&T Quality** (Concept, state-of-art progress, work-plan)
- * **Implementation** (Consortium, Resources, Management)
- * **Impact** (and dissemination/exploitation)



min. 3 evaluators IER=Individual evaluation report CR=Consensus Report

Central-Eastern EU Member States

Employment: – approx. 40.000 (6.5% of EU Aerospace Ind.)

ASD: CZ and PL Members;

EREA: VZLU/ CZ, INCAS/ RO and ILOT/ PL



Estonia, Latvia, Lithuania, Slovakia

Some Aero-Industry, remarkable academia and research potential

Czech Republic, Poland, Romania

Aero-Industry already developed
Academia & Research potential

Hungary Emerging Aero-Industry

Bulgaria, Slovenia

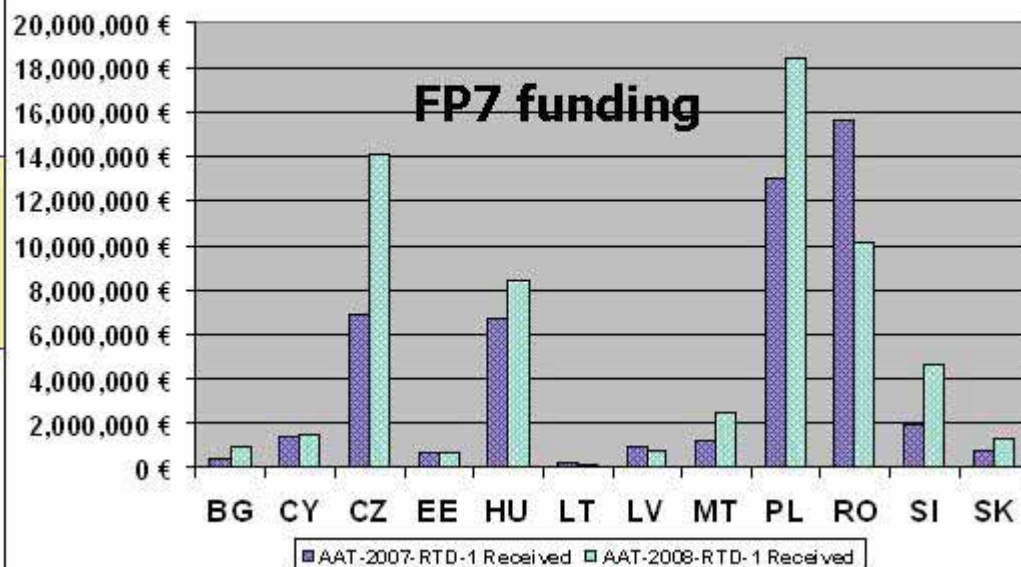
Ambition to create Aero-industry

EU-15

EU-12

Assoc

A dedicated FP7 support action





International Cooperation in Aeronautics Research

Thanks for your attention & Good Cooperation!

→ Visit our web: www.ec.europa.eu/research/aeronautics/index_en.html

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The screenshot shows a Microsoft Internet Explorer browser window displaying the website http://www.ec.europa.eu/research/transport/transport_modes/aeronautics_en.htm. The page has a blue header with the word 'RESEARCH' in yellow. The main content area is titled 'Towards future air transport' and includes a sub-section 'Issues and challenges: New concepts and breakthrough technologies for a better air transport future'. The page also features a navigation menu on the left, a search bar, and a list of news items on the right.