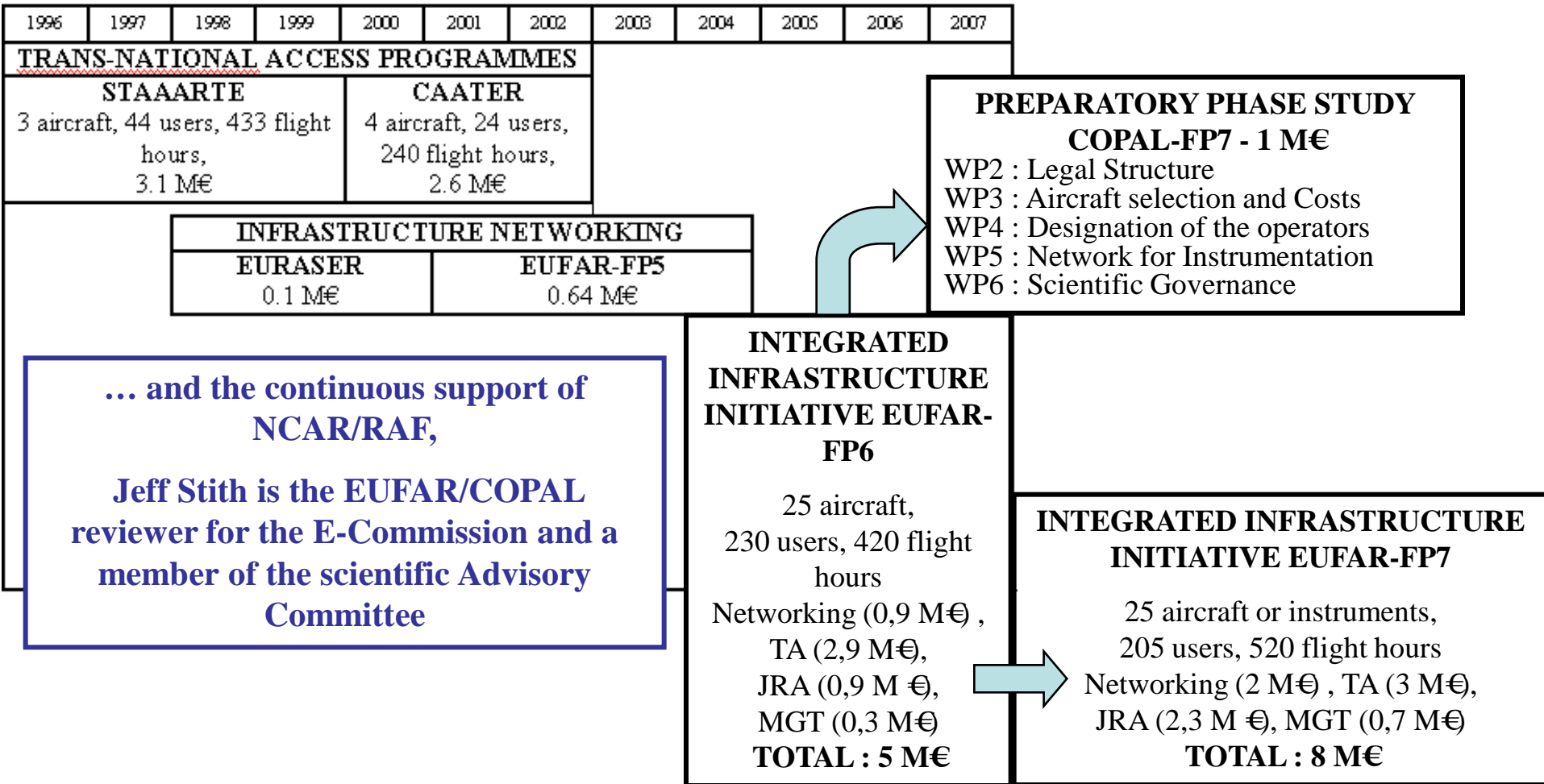


# EU-DG Research Work Program

## Objectives

- **To provide scientists with easy access to the most complete range of research infrastructures**
- To develop trans-national access to national infrastructures
- Reduce redundancy and fill the gaps
- Improve the service by strengthening expertise through exchange of knowledge, development of standards and protocols, constitution of data bases, and joint instrumental research activities
- Promote the use of research infrastructures, especially for young scientists from countries where such infrastructures are lacking

# European Support to Airborne Research Infrastructure



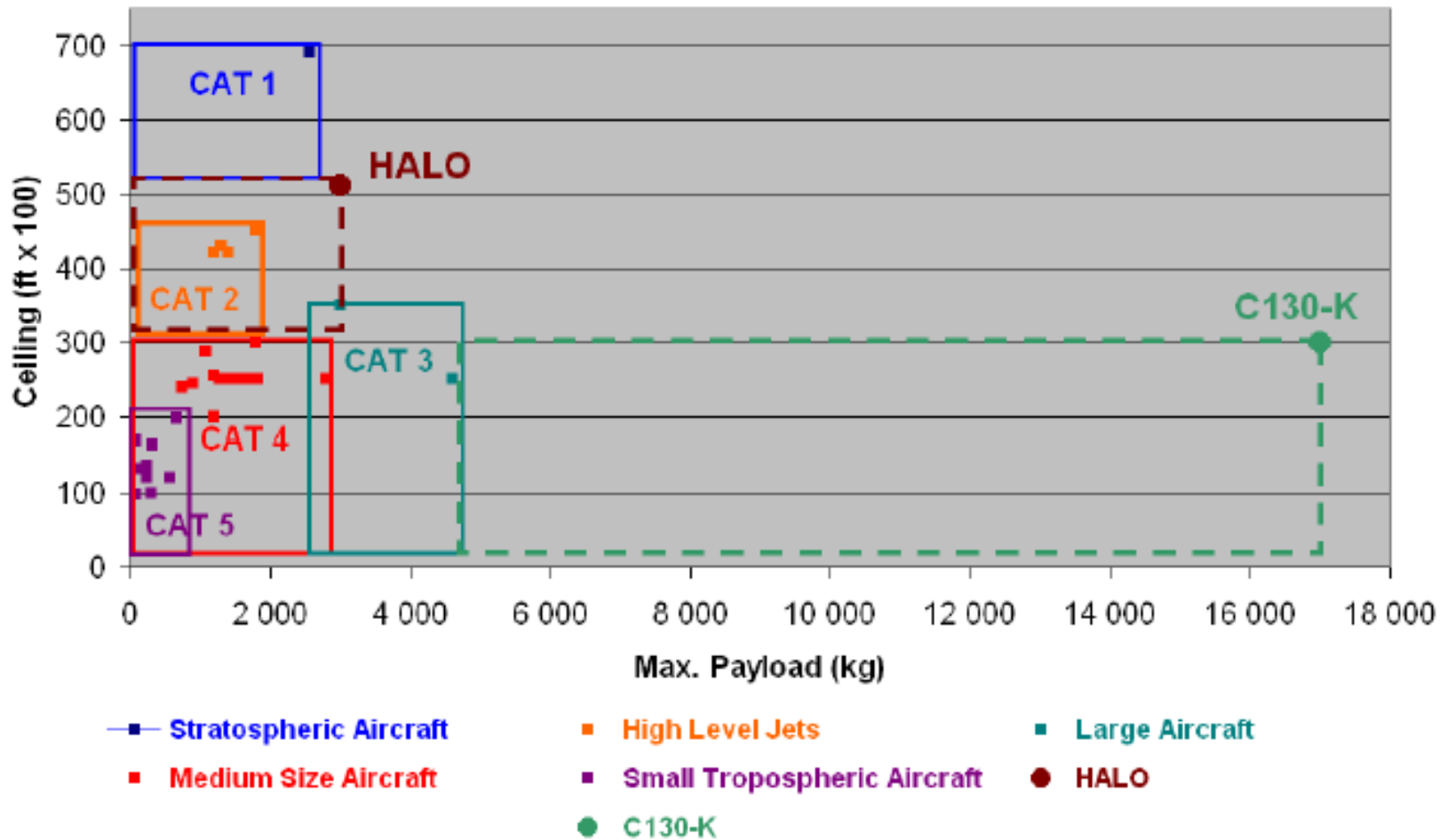
# The existing European Fleet

OPERATORS	CATEGORIES				
	1. Strato. jet	2. Jets	3. Large A/C	4. Medium A/C	5. Small A/C
Geophysica EEIG	Geophysica				
DLR		HALO		Cessna 208B	
NLR		Citation			
ENVISCOPE		Learjet			Partenavia
SAFIRE		F-20	ATR-42		Piper-Aztec
MetOffice			BAe-146		
NERC				Do-228	
INTA				2 CASA-212	
TAU				King-Air 200	
GTK				Twin-Otter Caravan	
TU-BS				Do-128	
FUB					Cessna 207 TMG-ASK-16
UNIMAN					C-182
CNR-IBIMET					ky-Arrow
IFU					Microlight
<b>TOTAL AIRCRAFT : 24</b>	<b>1</b>	<b>4</b>	<b>2</b>	<b>8</b>	<b>9</b>
<b>k€/flight hour:</b>	<b>16</b>	<b>9 - 28</b>	<b>9 - 11</b>	<b>3 to 6</b>	<b>0.8 to 3</b>



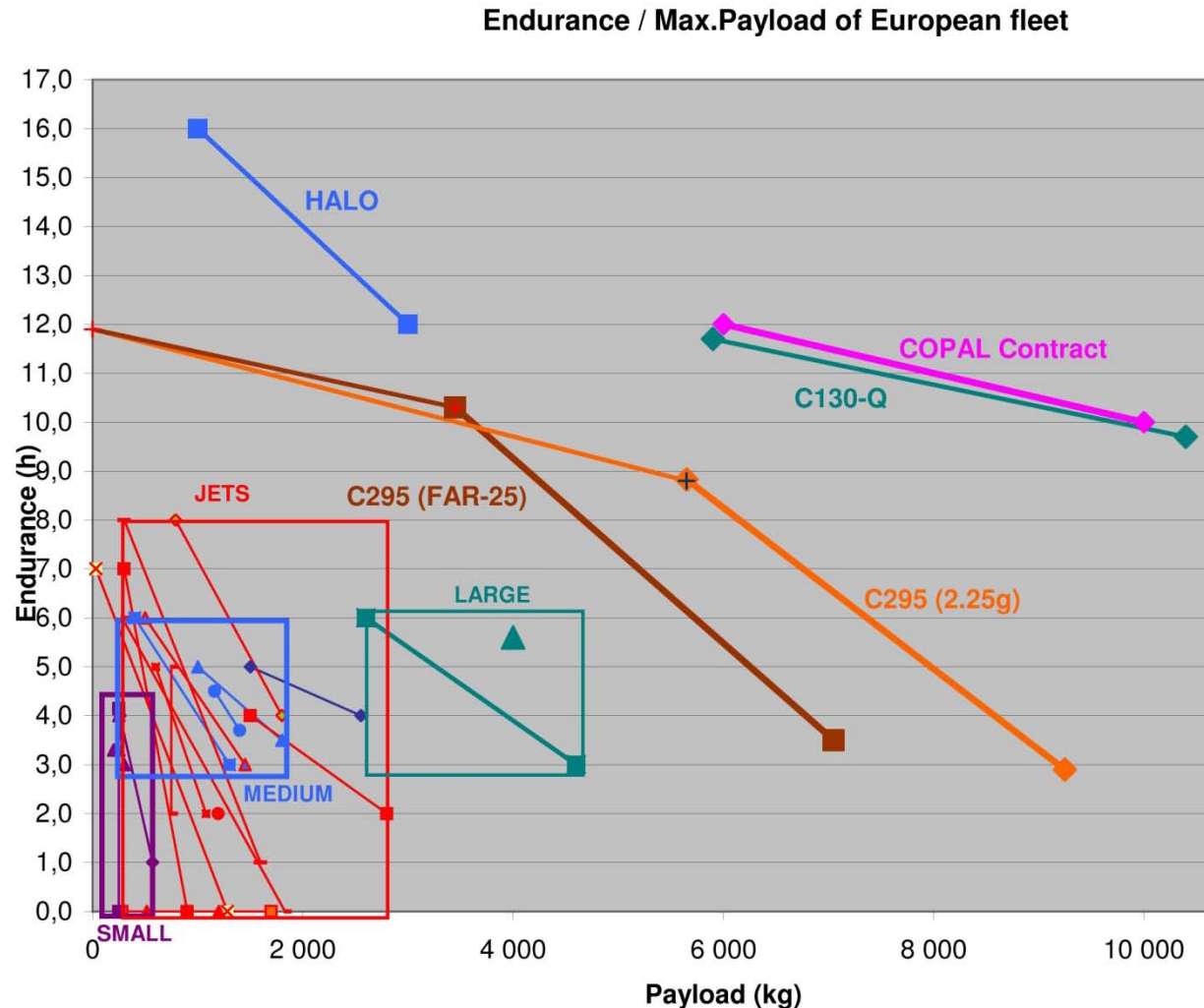
# The existing European Fleet

## Which aircraft model ? Pay-load / Ceiling



# The existing European Fleet

## Which aircraft model ? Pay-load / Endurance

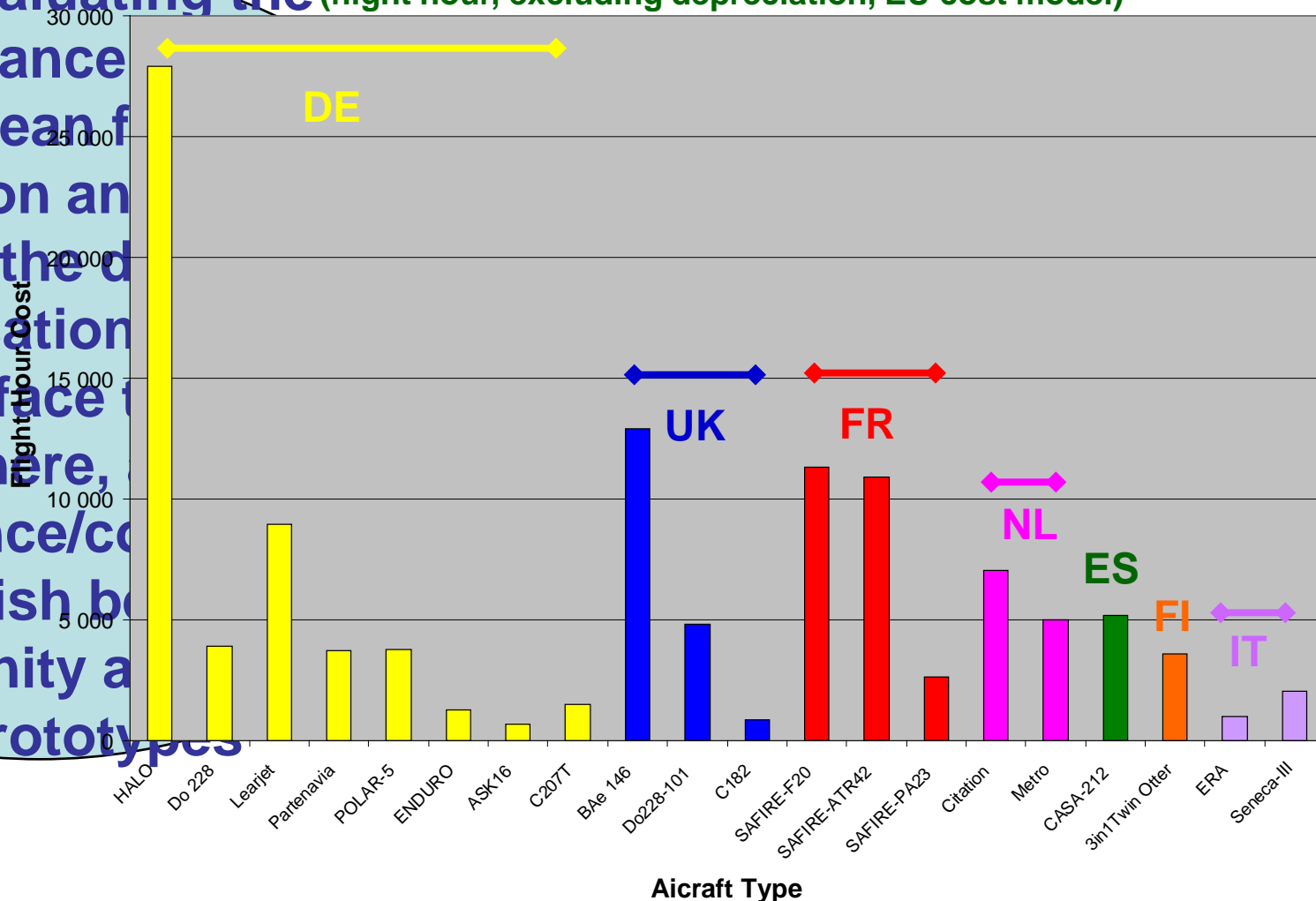


# The existing European Fleet

## Which aircraft model ? Cost

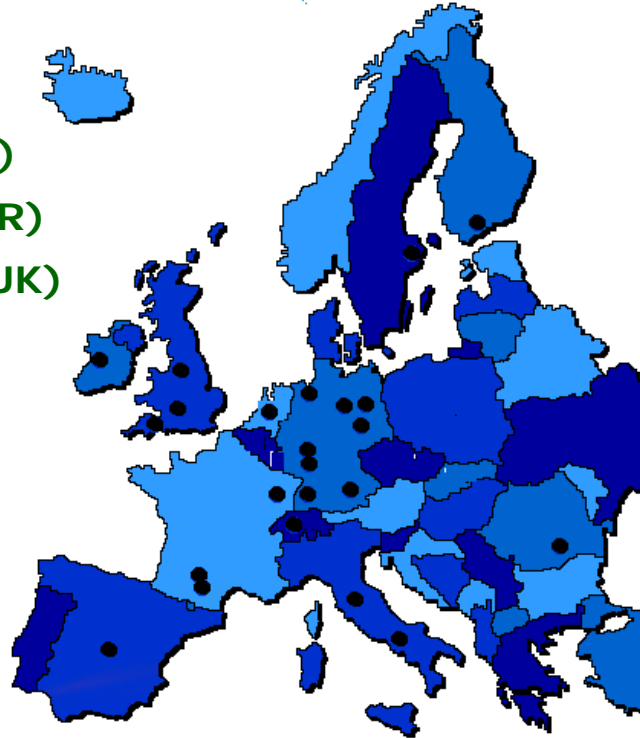
(flight hour, excluding depreciation, EU cost model)

When evaluating the performance of European aircraft, consider the duplication and consider the application of application of the surface of the stratosphere, performance/cost. Distinguish between "community aircraft" and "prototypes".



## The EUFAR-FP7 Consortium

- ▲ **Météo-France (FR)**
- ▲ **MetOffice (UK)**
- ▲ **DLR (DE)**
- ▲ **NLR (NL)**
- ▲ **Enviscope (DE)**
- ▲ **INSU-CNRS (FR)**
- ▲ **NERC-ARSF (UK)**
- ▲ **INTA (ES)**
- ▲ **GTK (FI)**
- ▲ **FUB (DE)**
- ▲ **FZK (DE)**
- ▲ **AWI (DE)**
- ▲ **CNR (IT)**
- ▲ **UNIMAN (UK)**
- ▲ **VITO (BE)**



- ▲ **FZJ (DE)**
- ▲ **JOGU (DE)**
- ▲ **BADC (UK)**
- ▲ **USZ (HU)**
- ▲ **UCAM (UK)**
- ▲ **UHEI (DE)**
- ▲ **UWAR (PL)**
- ▲ **COSINE (NL)**
- ▲ **IRSN (FR)**
- ▲ **COMAT (FR)**
- ▲ **VKI (BE)**
- ▲ **UZH (CH)**
- ▲ **WU (NL)**
- ▲ **ISBE (CZ)**
- ▲ **TAU (IL)**
- ▲ **UEDIN (UK)**
- ▲ **GFZ (DE)**
- ▲ **PML (UK)**

# The EUFAR-FP7 Activities

## •Management (0,6 M€)

## •Networking Activities (2 M€)

- N1. Scientific Advisory Committee (CNRM-FR)
- N2. TA coordination (MetOffice-UK)
- N3. Future of the Fleet (Jülich-DE)
- N4. Expert Working Groups (U Mainz-DE)
- N5. Education and Training (VITO-BE)
- N6. Standards and Protocols (DLR-DE)
- N7. Airborne Data Base (BADC-UK)
- N8. e-Communication (CNRM-FR)
- N9. Sustainable Structure (CNRM-FR)

## •Trans-National Activities (TA) (3 M€)

## Joint Research Activities (JRA) (2,4 M€)

- JRA1 Evaluation of hygrometers (Jülich-DE)
- JRA2 Quality layers for hyperspectral imaging (VITO-BE)
- JRA3 Optical cloud drop spectrometer (IRSN-FR)



## **N1-SAC**

To provide the EUFAR Consortium with independent strategic recommendations on EUFAR objectives and long term developments

## **N2-TAC**

To co-ordinate EUFAR Trans-national Access activities

## **N3-FF**

To evaluate the performance of the existing fleet and identify gaps. To provide solutions for the long-term development of the fleet.

## **N4-EWG**

**Over the period 2005-2008, 15 expert workshops have been organized**

### **Support to airborne measurements:**

[Cal/val](#)

[Certification and Operations](#)

[Data issues](#)

[Data Processing](#)

[Imaging sensors](#)

[Instrum. Design & Install.](#)

[Polar Research](#)

[Stratospheric Measurements](#)

### **Specific measurement fields:**

[Active remote sensing](#)

[Aerosols](#)

[Cloud Microphysics](#)

[Gas phase chemistry](#)

[Hyperspectral Applications](#)

[Imaging remote sensing](#)

[Radiation](#)

[Solid-Earth Geophysics](#)

[Thermodynamics](#)

[Turbulence](#)

# The EUFAR-FP7 Activities NETWORKING

Over the period 2005-2008,  
2 Training Courses on  
Airborne Research  
Methodology have been  
organized

**Boundary layer**

**Roumania 10-20/07/2007**

**40 candidates, 27 selected**

**Aerosol/cloud**

**The Netherlands 14-25/04/2008**

**53 candidates, 20 selected.**



## Welcome to EUFAR.NET



EUFAR is an Infrastructure Cooperation Network of the European Commission HPRI programme under FP5/FP6. EUFAR aims at coordinating the operations of the European fleet of instrumented aircraft in the field of environmental research in the atmospheric, marine, terrestrial and Earth sciences.

[Read More](#)

### Transnational Access

**Get 100% funded flight hours for your experiments!**  
The European Commission supports access to EUFAR research aircraft for research campaigns.

Flight hours   
TA Application form

### Education & Training

**Training for university students:**  
- Get 100% funded flight hours for your scientific experiment using aircraft  
- Join existing research campaigns  
- Attend EUFAR summer schools on airborne research

Education & Training   
Activities

### Expert working groups

**12 Expert Working Groups** meet at workshops and provide recommendations to aircraft operators, funding institutions and researchers.  
If you are an experienced researcher involved in airborne measurements, how about joining them!

Expert Working   
Groups

What's New?

Contact : [bureau@eufar.net](mailto:bureau@eufar.net)

### Members

Login :

Password :

- [Forgotten your password?](#)
- [Join the EUFAR network](#)



### fast Access

-Select an aircraft-

-Select a working group-

### ? Help

- [Frequently Asked Questions](#)
- [Help](#)
- [Report bugs](#)

# The EUFAR-FP7 Activities

## NETWORKING

### **N6-SP**

To develop common protocols for airborne hyperspectral remote sensing  
To support users and operators with recommendations on best practice and state-of-the-art software for airborne data pre-processing  
To develop and publish open source software toolboxes for higher level data products, and data analysis  
To define standards for data transfer in real-time

### **N7-DB**

To provide a centralised gateway to data acquired onboard aircraft (both in situ and remote sensed) along with supporting metadata, collected by the aircraft of the EUFAR Fleet.

### **N8-EC**

To elaborate solutions on Internet for the dissemination of the EUFAR information, for facilitating the electronic submission of trans-national access proposals, and their evaluation by the EUFAR User Group Selection Panel, and for providing all EUFAR working groups with a secured domain for collaborative activities.

### **N9-SST**

To develop a framework for a sustainable EUFAR structure, by

- evaluating possible models of legal structure for a joint management of the network,
- promoting the extension of trans-national access beyond Community support
- compiling information on the activities of the fleet and their scientific impact to support strategic decisions
- developing coordination with the COPAL Preparatory Phase study and the international community of research aircraft operators

# The EUFAR-FP7 Activities NETWORKING

## ISPRS-WG I/1 - Standardization of Airborne Platform Interface

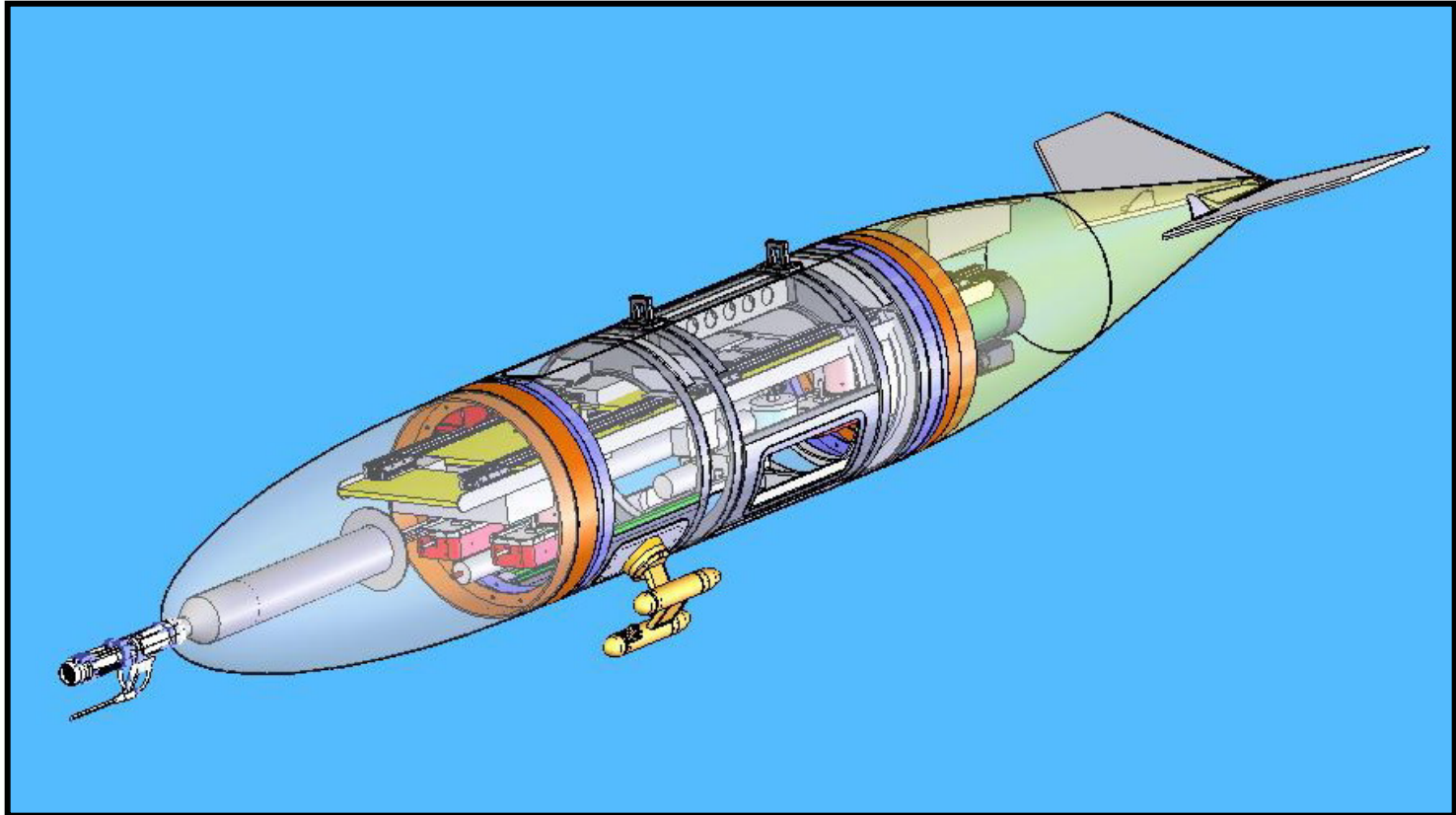
1. Chair : Andrew Roberts / USA / NASA / [andrew.c.roberts@nasa.gov](mailto:andrew.c.roberts@nasa.gov)

2. Co-Chair: Jean-Louis Brenguier / France / Meteo / [jlb@meteo.fr](mailto:jlb@meteo.fr)

Secretary: James Huning / USA / SAIC / [jimhuning@gmail.com](mailto:jimhuning@gmail.com)

- 1) Coordinate a forum for discussion between the international airborne science communities
- 2) Develop airborne sensor interface format standards in coordination with other working groups to promote maximum sensor portability between aircrafts increasing science yield from the sensors.
- 3) Develop airborne satellite data relay systems use for science research programs between aircraft and ground in coordination with other working groups
- 4) Develop an airborne science literature search to identify peer reviewed published papers and citations and make a available in a data base.
- 5) Support the regulatory agencies in supporting airborne science sensor certification and approval requirements for Lidar, Dropsonde and electromagnetic spectrum emissions.
- 6) Maintain an inventory of the international airborne science capabilities and report annually.
- 7) Develop a forum to discuss transnational access system(s) for airborne users.
- 8) Support the use of UAS vehicle activity for science observations in civil and restricted airspace on an international basis and engage the ICAO.
- 9) Promote the education and outreach on an international basis of airborne based science activity.
- 10) Develop a forum to coordinate expert international workshops in categories of airborne science sensors for both Remote Sensing and insitu systems.

# The EUFAR-FP7 Activities JOINT RESEARCH



**Over the period 2005-2008, there was only one JRA, for the development of two instrumented containers for measurements of aerosol microphysical and optical properties (see presentation Wednesday)**

# The EUFAR-FP7 Activities TRANS-NATIONAL ACCESS

## **Trans-national Access to 25 aircraft of the EUFAR fleet, evaluation of access proposals**

**During FP6, 74 proposals were submitted, 46 selected, for 230 users, 412 flight hours, 3 M€ allocated**

- Objectives**
- **Feasibility Study for procurement, refurbishing, modification and instrumentation of a heavy-payload (8 Tons) and long-endurance (10 hours) aircraft for research in the lower and middle troposphere.**
  - Propose a legal structure for joint management of the COPAL aircraft
  - Quantify the costs for procurement, refurbishing, modification for research, certification, and operation of the COPAL aircraft
  - Designate the aircraft operator and scientific operator of the COPAL aircraft
  - Constitute a network of academic laboratories and SME for development, maintenance and operation of research instrumentation
  - Define the governance model for access proposals evaluation and allocation of flight time