



European Aeronautics Science Network



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european aeronautics science network

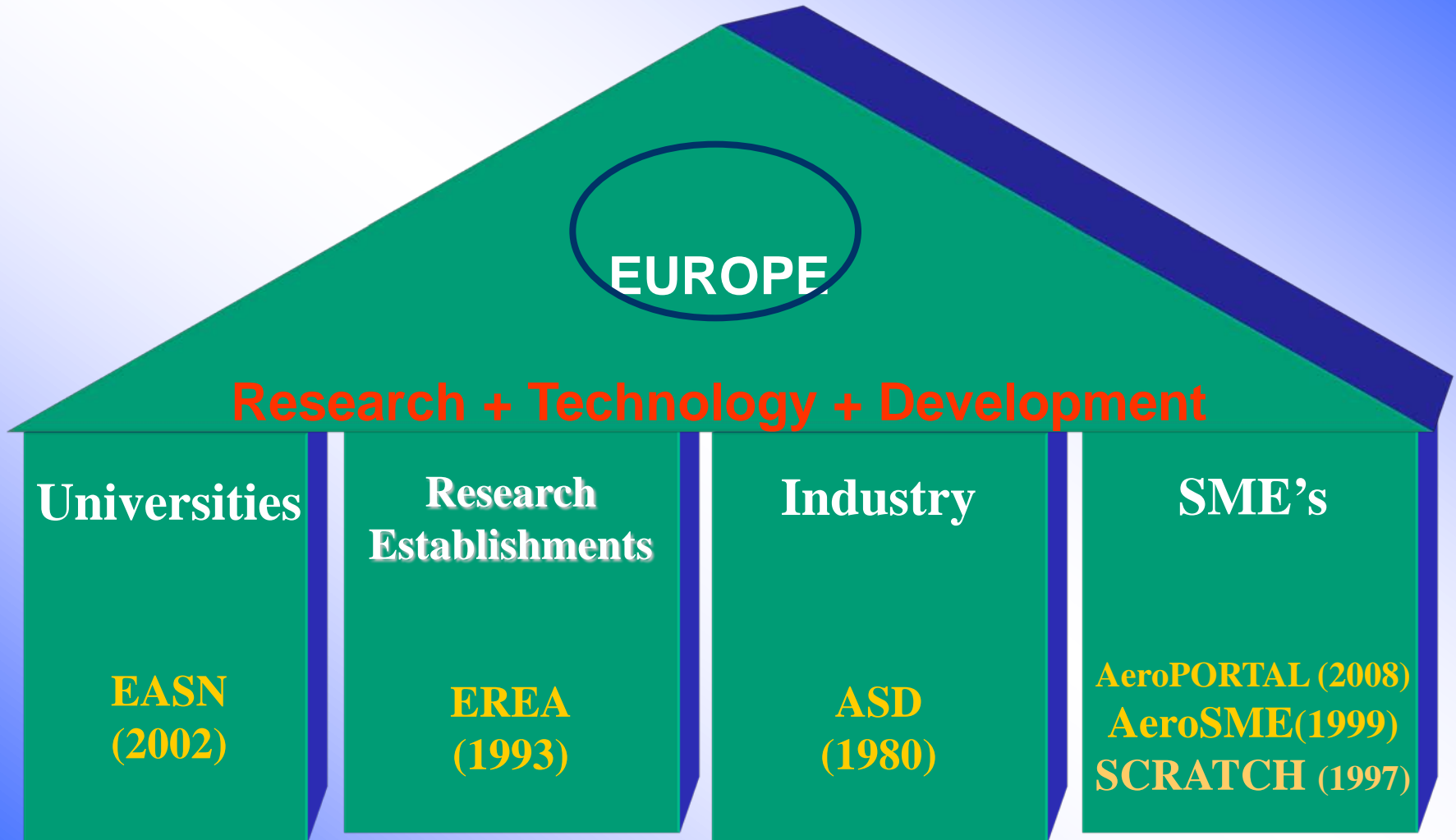
**Aero-Ukraine Workshop
Zaporozhe, October 5th 2010**

Dr. Michael Papadopoulos
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Although the European Universities have succeeded to provide top level Aeronautics education, a *series of barriers* impede Universities fulfilling their indispensable role in the Aeronautics research chain at a level which would better reflect the importance and excellence of research work carried out by the European Universities.

- Fragmentation
 - Inefficient communication mechanisms
 - Lack of incubator mechanisms for developing new knowledge and technological innovation
- Lack of a common University research strategy for the sector of Aeronautics
- Lack of a collective University voice in Aeronautics research related issues are the main obstacles to this target



What is the role of Universities in Aeronautics research

- European Universities have a key role in the chain of the European Aeronautics Stakeholders by providing education of scientists as well as generating basic research and incubating technological innovation and breakthrough technologies.
- In addition, for the new member states Universities can act as technology transfer and adoption mechanism such as to facilitate the integration of these countries in the European Aeronautics RTD chain.
- Especially for the countries with limited Aeronautical industry, Universities are the key players concerning Aeronautics related research, whereas the Aeronautics industry of these countries is mainly represented by SMEs.



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The long-term goal by establishing EASN was to built up an open, unique European platform in order to structure, support and upgrade the research activities of the European Aeronautics Universities as well as to facilitate them to respond to their key role in realizing the European Research Area.

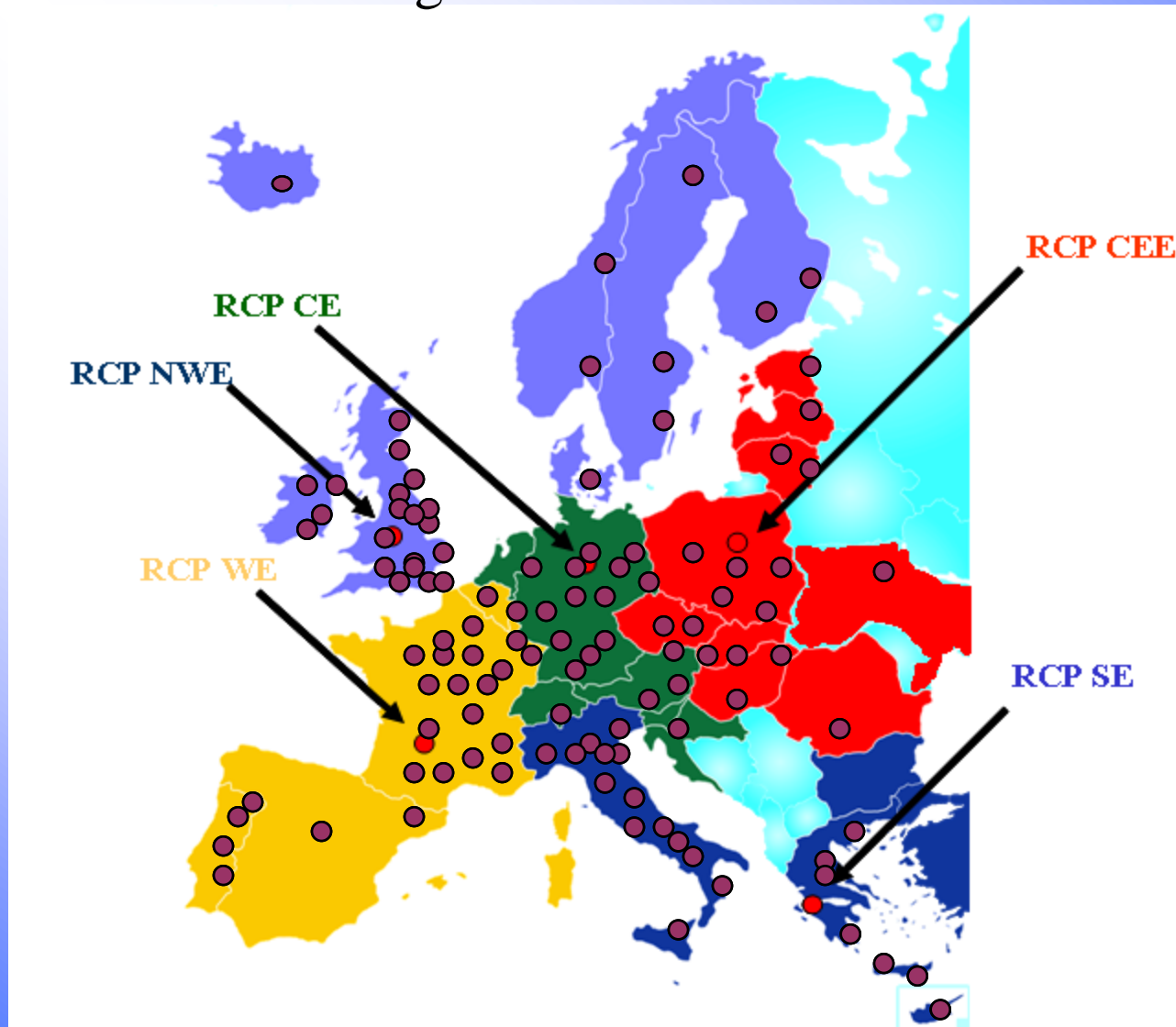
The European Aeronautics Science Network principles have obtained the support of the commission thanks to two funded Specific Support Actions (SSAs) with durations from 01.01.2002 up to 30.06.2005 and from 01.10.2006 up to 31.3.2009



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The regional EASN structure





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Human Potential of the University Laboratories connected to EASN

Current Members

EASN currently has about **80 registered active members**

- Effective members (individuals)
- Associate members (Labs, Universities, Associations, Organizations etc.).

Current database

The number of profiles displayed in the open EASN database is 285, with 750 registered individuals.



The Thematic EASN Structure

- In order to produce a map of capabilities of academic institutions in the area of Aeronautics in each region, the available data have been analysed to obtain an overview of the research activities in each region with regard to their technological subject.
- For the classification the technological areas of the ASTERA/ACARE taxonomy have been adopted.



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Areas of Research according to the Astera/Acare Taxonomy

1. **Flight Physics**
2. **Aerostructures**
3. **Propulsion**
4. **Aircraft Avionics, Systems and Equipment**
5. **Flight Mechanics**
6. **Integrated Design & Validation**
7. **Air Traffic Management**
8. **Airports**
9. **Human Factors**
10. **Innovative Concepts and Scenarios**



EASN Interest Groups

- The EASN Interest Groups (IGs) represent the active technological and scientific cells of EASN.

The existing EASN IGs are exploited to:

- provide a mechanism for incubating innovation, new technologies and breakthrough concepts
- provide input towards the development of a University Research Strategy for the sector of Aeronautics

An outcome of the activities of the EASN IGs has been the suggestion of research subjects relevant to FP6 and FP7 which are expected to lead to new knowledge, innovative concepts and breakthrough technologies.

- In the frame of EASN a number of **21** Interest Groups currently exist for different research fields resulting from the needs expressed through the EASN network corresponding to the classification of Aeronautics given by the ACARE Taxonomy



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Objectives of the Interest Groups

- Enhance closer cooperation between scientists from the European academia with joint scientific and technological interests in Aeronautics and facilitate research cooperation with research establishments, industry and SMEs by focusing on innovative ideas and upstream research
- Identify the capabilities existing across Europe
- Facilitate communication between individuals and stimulate the transfer of know-how
- Provide information on research opportunities
- Promote awareness for scientific and technological aspects in Aeronautics
- The I.G.'s provide the basis for a knowledge incubation mechanism which is urgently needed to achieve Europe's strategic objectives in Aeronautics. A side effect of the I.G.'s has been the submission of several University driven proposals with a success rate well above the European average.

EASN PROPOSALS FOR THE 4th FP7 CALL

N ^o	TITLE/ ACRONYM	PROPOSED BY/ INSTITUTION	AREA
1.	<p style="text-align: center;">FlexFlight</p> <p style="text-align: center;">Nonlinear Flexibility Effects on Flight Dynamics and Control of Next-Generation Aircraft</p>	<p style="text-align: center;">University of Liverpool, UK</p>	<p style="text-align: center;">AAT.2011.6.1-1 Lift AAT.2011.6.2-1 Novel air transport vehicles</p>
2.	<p style="text-align: center;">UNChARTED</p> <p style="text-align: center;">Unsteady Methodology for Compressor and Turbine Stages Design</p>	<p style="text-align: center;">University of Florence, Italy</p>	<p style="text-align: center;">AAT.2011.6.1-2 Propulsion</p>
3.	<p style="text-align: center;">SAB-P</p> <p style="text-align: center;">Smart based air power system</p>	<p style="text-align: center;">University of Patras, Greece</p>	<p style="text-align: center;">AAT.2011.6.3-2 Take-off and landing with ground-based power</p>
4.	<p style="text-align: center;">ELCO</p> <p style="text-align: center;">Electro-chemical combustion processes for new generation of gas-turbine engines</p>	<p style="text-align: center;">“Kharkiv Aviation Institute” (KhAI), Ukraine</p>	<p style="text-align: center;">AAT.2011.6.1-2 Propulsion</p>
5.	<p style="text-align: center;">RECOSCO</p> <p style="text-align: center;">Repair of aircraft components by cold spray coating</p>	<p style="text-align: center;">Politecnico di Milano</p>	<p style="text-align: center;">AAT.2011.6.1-4. Life-cycle</p>

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On 06.05.2008, the EASN Association was founded by 22 founding members and the support of the Commission and several University professors throughout Europe.

Main features of the EASN Association:

- Self funded and self sustainable
- International association
- Coordinated and run by a board of directors who are elected by the general assembly for a 3 year term. The position of a board member is unsalaried
- All steps and actions are taken in accordance with the statutes of the Association and the decisions of the Annual General Assembly.



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The *primary aim of the EASN Association* is the advancement of the aeronautics sciences and technologies.

Further aims of the Association are:

- to promote, encourage, coordinate and focus joint efforts between Universities, Research Organizations, Industry and SMEs which are active in Europe in the field of aeronautics and aerospace.
- The advancement of aeronautics technologies through the support of innovative research in general and the support of European Universities, University Departments and Institutes as well as University research staff to perform aeronautics related research in particular.
- The support of scientific and technological cooperation and human mobility within the area of its cognitive subject and the organization of and the participation to relative activities.



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- The support of and the participation to activities aiming to incubate new knowledge, technological innovation and breakthrough technologies.
- The dissemination of knowledge and technological innovation and the execution of dissemination work through its participation either on its own or within the framework of consortia in national or international projects and research programs related to aerospace.
- The support, organization and participation to activities related to scientific knowledge and technology transfer within the area of its cognitive subjects.
- The execution of studies for the development of national and international policies on subjects related to the aims of the Association and the provision of consultancy services for the development of education, research and development policies and activities in aerospace.
- Collaboration with Universities, other academic Research Institutions, Research Establishments, the Industry, governmental and state authorities, the European Commission, etc. to support the aims of the Association.
- The assignment to Universities and other entities of contract work in the frame of its activities.



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EASN Association members

Effective members (with voting rights)

- Individuals from European Academia or other University-similar organisations, who are active in Aeronautics related research.

Associate members

- Individuals from Research establishments, SMEs and Industries, who are active in aeronautical research activities and cooperate with the academia.
- Entities such as Universities, University departments, REs, SMEs, Industries, other associations, professional organisations or governmental agencies (e.g. EEC) subscribing to the objectives of the Association.
- Each entity will be represented by a single person.

Honorary members

- The title of Honorary Member or Honorary President may be granted by the General Assembly to persons who have rendered outstanding services to the Association.
- Honorary President take *juris et de jure* part in the General Assembly and Board meetings with a consultative vote.



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General Assembly



Board of Directors



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Further information about EASN and its activities can be found on the EASN website

www.EASN.net

All colleagues are cordially invited to join the EASN Association. Registration to the EASN database can be made on-line through the EASN website.