

PEGASUS

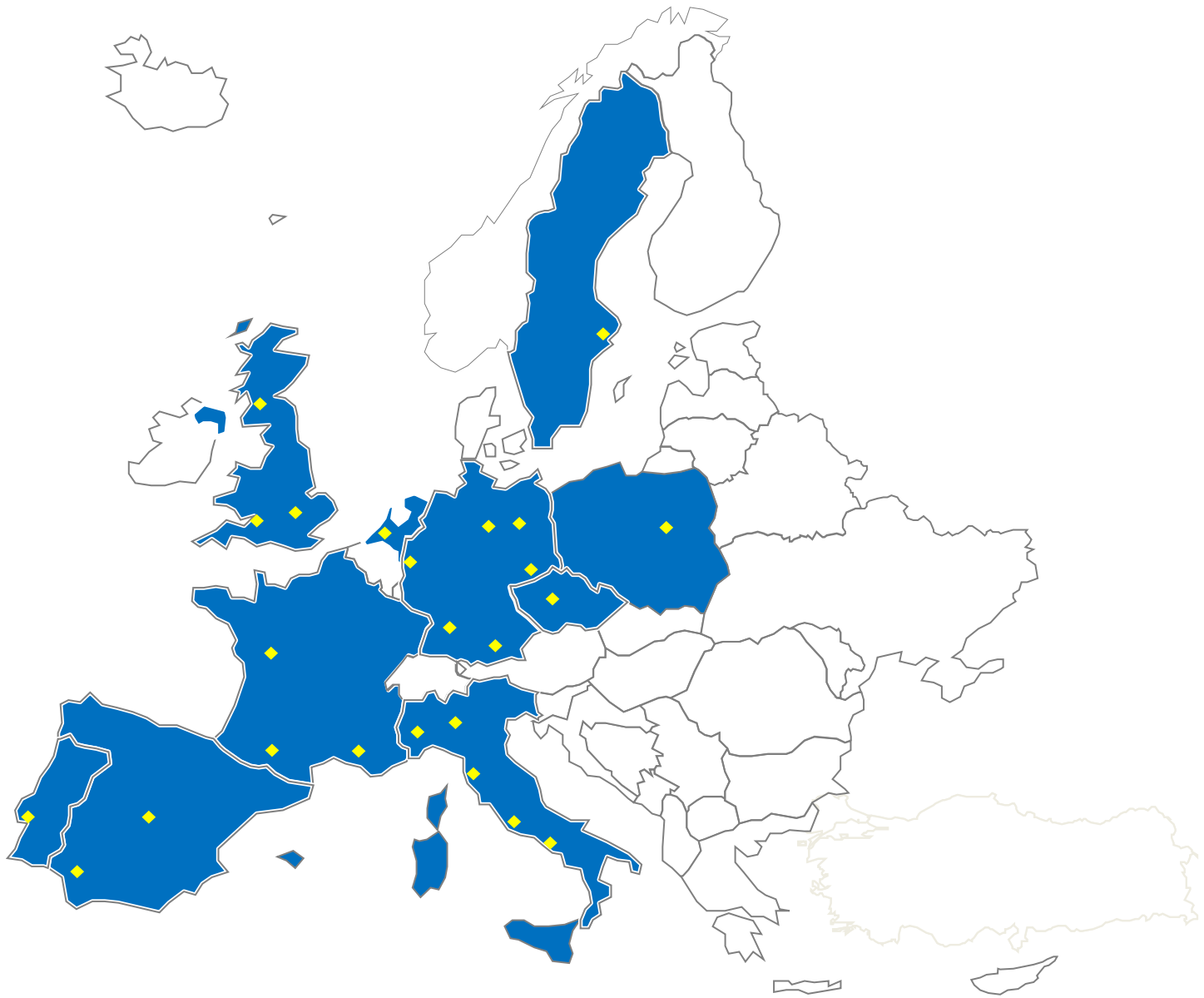
Partnership of a European Group of Aeronautics and Space Universities

THE ROADMAP FOR EXCELLENCE IN THE FORMATION OF AEROSPACE ENGINEERS

P. BAUER – ENSMA - Poitiers

The PEGASUS Network

- PEGASUS partners are public and/or non-profit institutions of higher education in aeronautical / aerospace engineering located in the EU.
- 20 Founding Members in 1998
- Presently 25 member Institutions
- 10 European countries represented
- Yearly output: more than 2500 BAC+5 graduates in aerospace engineering from the whole network
- website: www.pegasus-europe.org
- PEGASUS is open to all EU institutions providing a sufficiently qualified education in aerospace engineering (e.g.: Bac+5 curricula with a well balanced blend of subjects, education combined with research ...)



Cti - International workshop on Quality Labels

PEGASUS Partners

Country	Institution
	Politecnico di Milano Politecnico di Torino Università degli Studi di Napoli Università degli Studi di Pisa Università degli Studi di Roma
	Ecole-air de Salon de Provence ENAC Toulouse ENSMA Poitiers ISAE Toulouse
	TU Delft
	UPM/ETSIA Madrid US/ESI Sevilla
	IST Lisboa

Country	Institution
	RWTH Aachen TU Berlin TU Braunschweig Universität Stuttgart TU München TU Dresden
	Cranfield University University of Bristol University of Glasgow
	KTH Stockholm
	CVUT Prague
	Politechnika Warszawska

PEGASUS Associate Partners

Country	Institution
	Kazan State Technical University Ufa State Aviation Technical University

Country	Institution
	Kharkiv Aviation Institute

PEGASUS Objectives

- Contribute to the development of a **quality system** for the European higher education in Aerospace Engineering.
- Improve educational process** and curricula to specifically serve the needs of the aerospace industry.
- Show similarities and differences of European curricula to the aerospace world.
- Co-operate with other groups and networks to **fulfil the EU policy lines in higher education**.
- Increase **co-operation between partners and industry as well as national and European research agencies**.
- Contribute to attract non-European students and engineers through competitive curricula and continuing educational services.

PEGASUS Achievements (1)

- **PEGASUS Foundation**

- Foundation is a Legal Body representing the Network
- Signing of the Foundation Act on July 6, 2007
- Registering by the Chamber of Commerce Rotterdam

- **PEGASUS-Industry Alliance**

- PEGASUS Council established a body, called “PEGASUS-Industry Alliance”, in which the aerospace industrial community and the PEGASUS network are equally represented to discuss all issues relevant to this subject.
- The main objective of the PEGASUS-Industry Alliance is to contribute to reinforcement of the European academic and industrial relations for mutual benefits.
- The basic criteria for selecting the industrial partners are both the size of the company and the pan-European dimension of its activities.

PEGASUS Achievements (2)

- **PERSEUS label** (PEGASUS European Recognition of Scientific Excellence of Universities)
 - PEGASUS agrees that a new European system for [QA in Aerospace Engineering Education](#) should be applied for on a voluntary basis and if possible should not duplicate existing accreditation systems.
 - The new system should focus on [the qualifications and skills of the graduates right after graduation](#), taking into account the requirements of the European aerospace sector.
 - PEGASUS, as the only European network of excellence in Aerospace Engineering education, is able to lay the foundation for a sort of European society for QA in Aerospace Engineering Education.

PEGASUS Achievements (3)

- PEGASUS, through the newly created PEGASUS-Industry Alliance, has established an entity for developing a quality/excellence label, PERSEUS, including peer reviews and site visits.
- PEGASUS will first focus its efforts on programmes in its own domain of excellence which is:
 - Aerospace Engineering Programmes;
 - At Master level (level 5 of Bologna process);
 - Excellence (backed by research) and strong international cooperation.
- First audits for PEGASUS programmes in 2012.

PERSEUS label (1)

(PEGASUS European Recognition of Scientific Excellence of Universities)

PERSEUS label: A GOLD MEDAL, HOW ?

1. Self assessment : the questionnaire
2. Peer reviews and site visits

PERSEUS label (2)

(PEGASUS European Recognition of Scientific Excellence of Universities)

The questionnaire: an example

1. CORE KNOWLEDGE in AEROSPACE ENGINEERING

Fluid Dynamics, Aerodynamics

2. LEARNING OBJECTIVES

- 1.1 Understanding the principles & theory of fluid dynamics, specifically aerodynamics, compressibility, viscosity,...
- 1.2 Knowledge & practice of state-of-the-art Computational Fluid Dynamics software / methods

None Basic Interm Advanced

PERSEUS label (3)

(PEGASUS European Recognition of Scientific Excellence of Universities)

Peer reviews and site visits

- **Purpose of the team visit**

Main purpose of the Audit Team Visit is to supplement the information provided by the [PERSEUS Questionnaire](#) and (in the case of PEGASUS Partners) by the [PEGASUS Admission Questionnaire](#)

PERSEUS label (4)

(PEGASUS European Recognition of Scientific Excellence of Universities)

• Structure of the Visiting Team Report (VTR)

Provide a judgement on the fitness-for-purpose of the programme contents as seen by the [aerospace stakeholders](#) (industrial counterparts, airlines ...)

Express, if appropriate, a criticism on the information provided by the [PERSEUS Questionnaire](#)

Present an objective analysis of the [strengths and weaknesses of the aerospace programme\(s\)](#) offered by the evaluated academic Institution.

Provide an evaluation of the programme together with a recommendation to [support PIA's decision](#).

• Specific objectives of the aerospace educational programme(s)

PERSEUS label (5)

(PEGASUS European Recognition of Scientific Excellence of Universities)

• Study performance of the programme(s)

1. Number of degrees awarded by the programme (average and trend over the past five years).
2. Overall employment rate of the graduates and percents of aerospace and non-aerospace employment.
3. Evidence (materials) reviewed by the visiting team demonstrating achievement of the general and programme-specific outcomes (are alumni satisfied about what they learned?).

PERSEUS label (6)

(PEGASUS European Recognition of Scientific Excellence of Universities)

• Relations with Industry

1. Involvement of industry as an advisory board for the programme(s).
2. Are students involved in design or research projects conducted with the aerospace industry?
3. Teaching contributions from external experts.

• International relations

1. International orientation of the programme(s) and the graduates
2. Percent of students involved in international exchanges
3. Preferred partners in student exchange

Conclusion

Equation for excellence in aerospace engineering education

Strong scientific knowledge

+

Research laboratories

+

Industrial partner

+

National networking

+

International networking

=

PEGASUS

Thank you for your attention

QUESTIONS

