ENAEE: A network to ensure quality and accredit engineering programmes of European Universities; the EUR-ACE® label the EUR-ACE® system

Giuliano Augusti
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President, ENAEE
Educational Systems in Europe are very different from each other, because of historical reasons. Also, significance and procedures for accreditation of engineering education vary greatly from one European country to the other.

Typical examples (1-2):

- in GREAT BRITAIN and IRELAND, accreditation standards and procedures are the responsibility of professional Institutions, and Higher Education Institutes (HEIs) are only involved through the assessment of education programmes, although sometimes they have to adapt the curricula in order that their programmes be accredited;

- in FRANCE, since as early as 1934, “habilitation” is granted to engineering programmes and HEIs by the “Commission des Titres d’ Ingénieur” (CTI), in which the academic world, the profession and the employers are represented on a parity basis;
Educational Systems in Europe are very different from each other, because of historical reasons. Also, significance and procedures for accreditation of engineering education vary greatly from one European country to the other. Typical examples (3-4):

- in ITALY, like in some other “continental” countries, the conformity of an academic programme to rules set by the Ministry of Education (or another national authority) is seen as making an HE programme automatically accredited (fortunately, this viewpoint is changing and QA is being introduced…);
- in GERMANY, the “new” Bachelor and Master programmes must be accredited (for “old” programmes accreditation is voluntary): the governmental “German Accreditation Council” authorizes independent Agencies to accredit programmes (meta-accreditation). ASIIN (formerly, ASII) is one of these Agencies, specialized in engineering, informatics and science programmes.
Europe lacks an accreditation system of engineering education accepted on the continental scale.

This fact, notwithstanding the prestige of many National systems and of some Academic titles, in a global job market puts the European engineer in an objectively weak position, when confronted with the several international recognition agreements, existing or on the making.

This was the basic motivation behind the EUR-ACE project (EURopean ACcredited Engineer) and ENAEE European Network for Accreditation of EE.
Accreditation of an Engineering Education Programme
(according to EUR-ACE and ENAEE)

• Result of a process to ensure suitability of programme as entry route to profession
• Periodic assessment against accepted standards
• Peer review of written and oral information by trained and independent panels including academics and professionals
• Accreditation of programme, not of Department or University
• Accreditation of education, not of whole formation

Quality of accredited degrees guaranteed at all “levels”
The EUR-ACE project (2004/2006) proposed an European accreditation system that should

• ensure consistency between existing national “engineering” accreditation systems;
• add an European “quality label” to accreditation;
• introduce “accreditation” in other countries;

and thus

improve quality of education
facilitate trans-national recognition
facilitate (physical and virtual) mobility

EUR-ACE has been supported by the European Commission (DG EaC) within SOCRATES and TEMPUS programmes.
Main EUR-ACE output document: A1) EUR-ACE Framework Standards for the Accreditation of Engineering Programmes (including a Template for Publishing Results)

These “Framework Standards” specify the Programme Outcomes that must be satisfied. They:

- Are valid for all branches of engineering and all profiles
- Distinguish between First and Second Cycle programmes, as defined in the European Qualification Framework
- Are applicable also to “integrated programmes”, i.e. programmes that are designed to lead directly to a Second Cycle degree
- Describe what is to be achieved but not how
- Can accommodate national differences of educational and accreditation practice
Six categories of Programme Outcomes

- Knowledge and Understanding
- Engineering Analysis
- Engineering Design
- Investigations
- Engineering Practice
- Transferable (personal) Skills

For each category, the EUR-ACE Framework Standards list the Programme Outcomes of First Cycle and Second Cycle:
The EUR-ACE project elaborated also the other document

A2) Organization and Management of the EUR-ACE Accreditation System: a proposal which we are now trying to implement.

I shall devote to these aspects the rest of my talk.

First of all, the European Network for Accreditation of Engineering Education ENAEE has been established as an international not-for-profit Association.
ENAEE: how was it born?

SOME HISTORICAL BACKGROUND

1998-2000: Three EWAEPs: European Workshops on Accreditation of Engineering Programmes, promoted by wg2 of Thematic Network H3E

Paris, 9 September 2000: the representatives of six Associations sign an Agreement

“intended to build confidence in systems of accreditation of engineering degree programmes within Europe […]

[…] to assist national agencies and other bodies in planning and developing such systems

[…] to facilitate systematic exchange of know-how in accreditation and permanent monitoring of the educational requirements in engineering formation”
The agreement established also the European Standing Observatory for the Engineering Profession and Education (ESOEPE).

**Founding members**
- UK: EC
- FR: CTI
- DE: ASII (*now ASIIN*)
- PT: OE (Ordem...)
- IT: CoPI
- EU: E4 (*now TREE*)

**Later members**
- EU: FEANI
- EU: SEFI
- RO: CNEAA
- RO: UAICR
- RU: RAEE
- IE: IEI
April 2004: ESOEPE is instrumental in preparing and submitting the EUR-ACE project application

October 2005: In view of EUR-ACE, it is decided to transform ESOEPE from an “observatory” into a non-profit registered Association:

The EUR-ACE accreditation system is being set up within ENAEE, monitored by an ad-hoc Working Group (EUR-ACE Label Committee)

European Network for Accreditation of Engineering Education
Membership defined by the Statutes:

Full Members: now 14 (founding) + 2 – 1 (withdrawn)

a) Accreditation organizations for engineering programmes within the European Higher Education Area;
b) other organizations having the development of engineering education accreditation procedures among their main objectives and organizations whose mission is to foster the interests of the profession of engineers.

Associate Members: none at present

a) Educational and training institutions and their associations.
b) Organisations representing engineering students
Official birth date: 8 February 2006

European Network for Accreditation of Engineering Education

Founding members:

- **FEANI** *(acting Secretariat)*
- **SEFI**
- **UNIFI/TREE**
- **EUROCADRES**
- **EC** (UK)
- **CTI** (FR)
- **ASIIN** (DE)
- **RAEE** (RU)
- **CoPI** (IT)
- **IEI-EngineersIreland**
- **OE** (Ordem…) (PT)
- **UAICR** (RO)
- **IDA** (DK)
- **FOTEP** (CH)
First General Assembly: 30 March 2006
Second " “ : 17 November 2006

New members admitted at the Second General Assembly
(17 November 2006)

CLAIU
MÜDEK
General Assembly

One voting delegate of each Full Member
One non-voting delegate of each Associate Member

The GA elects:
The Administrative Council (5 to 7 members: 3 years)
The President and the Treasurer (among AC members)
Administrative Council (2006/09)
G. Augusti (IT, President),
A. Chuchalin (RU),
C. Forslund (SE),
A. Pugh (UK),
J. M. Siwak (FR),
I. Wasser (DE),
P. Wauters (BE, Treasurer)
At present, ENAEE is an essential partner of two projects:

**Under the “Socrates” programme:**
**EUR-ACE IMPLEMENTATION** (in the EU)

**Under the “Tempus-Tacis” programme:**
**PRO-EAST:** PROmotion and implementation of the EUR-ACE Standards (in Russia)

and is involved in a project under “Tempus-Meda” programme:
**LEPAC:** Creation of a Lebanese Engineering Programs Accreditation Commission
EUR-ACE IMPLEMENTATION

A project aimed at implementing the EUR-ACE system in the EU
(1 September 2006 / 31 July 2008)

Contracting Institution: UNIFI (C. Borri, Legal Representative)

Partner Institutions:
ENAEE (G. Augusti, Coord.)
FEANI
SEFI
EUROCADRES
EUA
IDA (DK)
ASIIN (DE)
AUA (USAEE)
C.T.I. (FR)

IEI: Engineers Ireland
CoPI (IT)
CRUI (IT)
NVAO (NL)
OE (PT)
EC (UK)
UAICR (RO)
MUDEK (TR)
RAEE (RU); OPET/BBT (CH)
In parallel to EUR-ACE IMPLEMENTATION, a project under the TEMPUS-TACIS programme:

**PROmotion and implementation of the EUR-ACE Standards [ PRO-EAST ]**

- Participating Institutions: **UNIFI, RAEE, FEANI, CoPI, SEFI, TPU**
- Project coordinator: **Oleg Boev**
- Deputy coordinator for EU: **Giuliano Augusti**
- External experts: Iring Wasser, Ian Freeston, etc.

This project will last 12 months and include:
- dissemination of the EUR-ACE results
- the first EUR-ACE accreditations in the Russian Federation
Another relevant project within the TEMPUS-MEDA programme started in January 2007:

**LEPAC:** Creation of a Lebanese Engineering Programs Accreditation Commission

Contracting Inst.: **FEANI** (Philippe Wauters: Legal Repr.)
Project coordinator: **Haissam Ziade**
Grant Coordinator: **Giuliano Augusti**
Participating Inst. from EU: **ASIIN, CTI, UNIFI, TUAachen**
Participating Institutions from Lebanon:
- Ministry of Education, Directorate for HE
- Orders of Architects and Engineers, Beirut & Tripoli
- 4 Lebanese Universities

ENAEE and the three projects work in close collaboration
From the ENAEE General Policy Statement
(General Assembly, 17 Nov. 2006) [1]

ENAEE will actively contribute to running the EUR-ACE IMPLEMENTATION and PRO-EAST projects, in full coherence with the objectives indicated in the Final Documents of the EUR-ACE project, to which ENAEE is fully committed. Therefore, in accord with the quoted EUR-ACE objectives, ENAEE will try and establish gradually a bottom-up European system for accreditation of engineering education, as wide as possible and consistent with the general indication of the Bologna process, and in particular with the ENQA “Standards and Guidelines for Quality Assurance in the EHEA” and the “Framework for Qualifications in the EHEA”.

In the EUR-ACE system, national or regional agencies will accredit the educational programmes, and ENAEE, on the advice of an appropriate Committee, will authorize to add the EUR-ACE quality label to the accreditation. The EUR-ACE label will be distinguished into “EUR-ACE Bachelor” (“European Accredited Engineering Bachelor”) and “EUR-ACE Master” (“European Accredited Engineering Master”) respectively when the programme is accredited at the FC or SC level. ENAEE will monitor and respond to the development of all future degree programmes that may come within its scope.
IMPLEMENTING EUR-ACE:

Remember KEY POINTS of the EUR-ACE system:

- NOT an European Directive
- NOT an European Accreditation Board
- A bottom-up agreement towards a decentralized accreditation system in which:
  - Accreditation is awarded by (present and future) National (or Regional) Agencies that satisfy the EUR-ACE Standards.
  - The EUR-ACE label is “added” to the “national” accreditation, thus giving it an added value,
  - and is recognized by all participating Agencies
Six Agencies fulfill already the EUR-ACE Standards:

ASIIN (DE)
EC (UK)
IEI-EngineersIreland
CTI (FR)
OE (PT)
RAEE (RU)

These Agencies will be the initial “core” of the EUR-ACE system; their representatives sit in the EUR-ACE Label Committee.

Higher Educations Institutions in these six countries can apply to get the EUR-ACE Label in addition to the national accreditation.
Two main ways to enlarge the EUR-ACE system beyond the initial core:

a) **In countries without any accreditation system:** Create a new Engineering Accreditation Agency. In the meantime, programmes should be accredited by an Agency already operative in the system.

b) **In countries with established “general” accreditation agencies,** these can be authorized to award the EUR-ACE label if they apply the EUR-ACE Standards when accrediting engineering programmes.
To implement the procedures, the EUR-ACE Label Committee has drafted three documents that have been confirmed by the ENAEE Administrative Council on 23 February 2007:

The fundamental one contains the “Standards and Guidelines” that will be applied
a) to confirm the authorization to the six Agencies of the initial “core”,
b) to examine applications from other Agencies, members of ENAEE and not:
ENAEE

Standards and Guidelines for Accreditation Agencies

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Application Form for Accreditation Agencies – Authorisation to award the EUR-ACE® Label

I. Background

1. Please list below the address of the agency applying for authorisation, and the name, position, phone number and e-mail address of the person to whom any questions should be addressed:

<...>
EUR-ACE Label Committee

Procedures for Evaluating Applications from Agencies.

Abbreviations used:
AC. Administration Council of ENAEE.
CRT. Chairman of Review Team.
LC. Label Committee.
SGA. Standards and Guidelines for Accreditation Agencies.
Большое спасибо за внимание

from

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www.feani.org (EUR-ACE ; ENAEE)
www.enaee.eu (not yet operative)
Many thanks for your attention

from Giuliano Augusti
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