The European framework and the prospects for accreditation of Engineering Degree Programs

José Carlos Quadrado, ENAEE VP

Septembre 2019
QUACING, Rome

European Accreditation of Engineering Programmes
EUR-ACE®

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XX Century Professional Training Paradox

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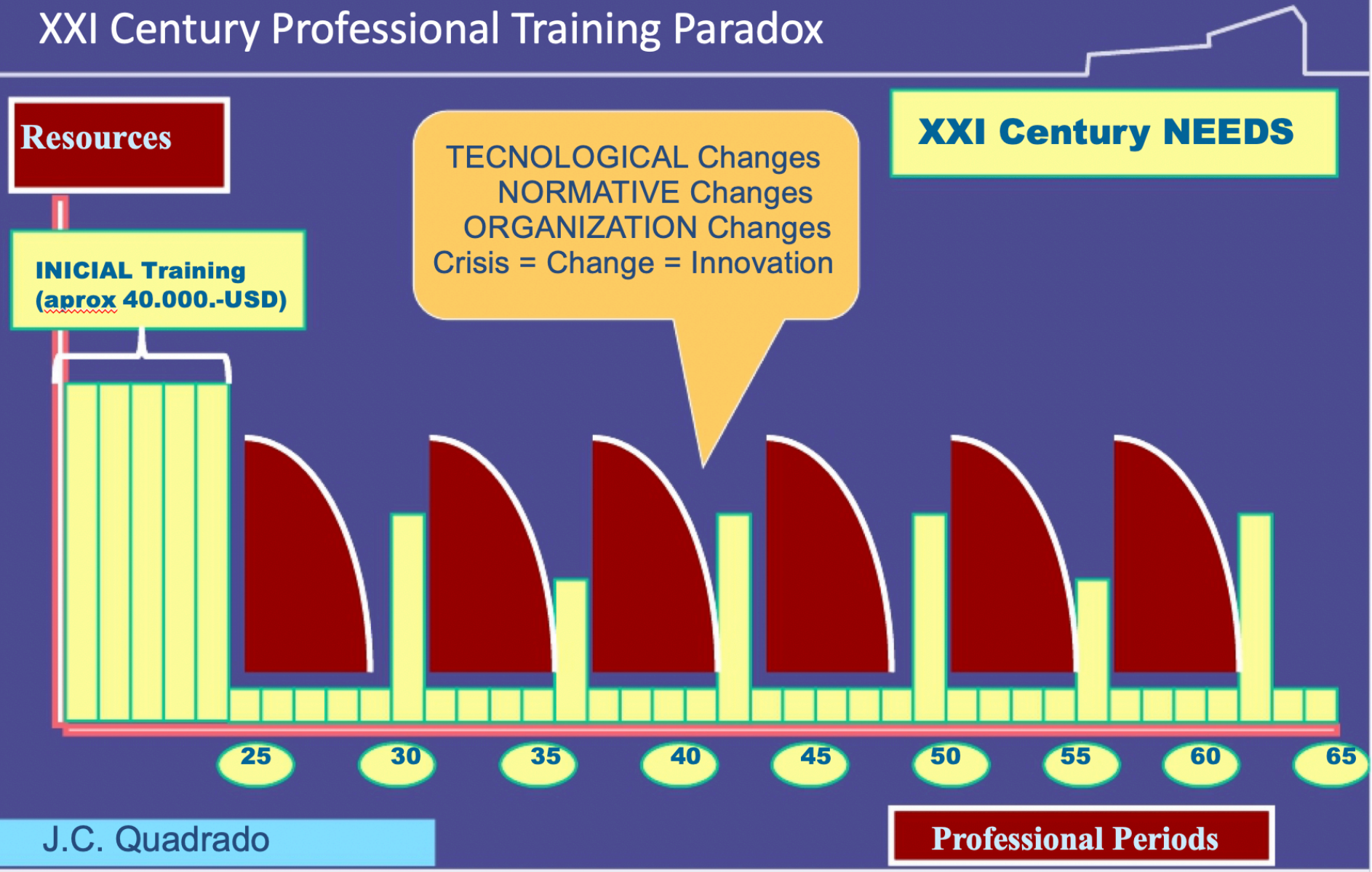
XXI Century Professional Training Paradox



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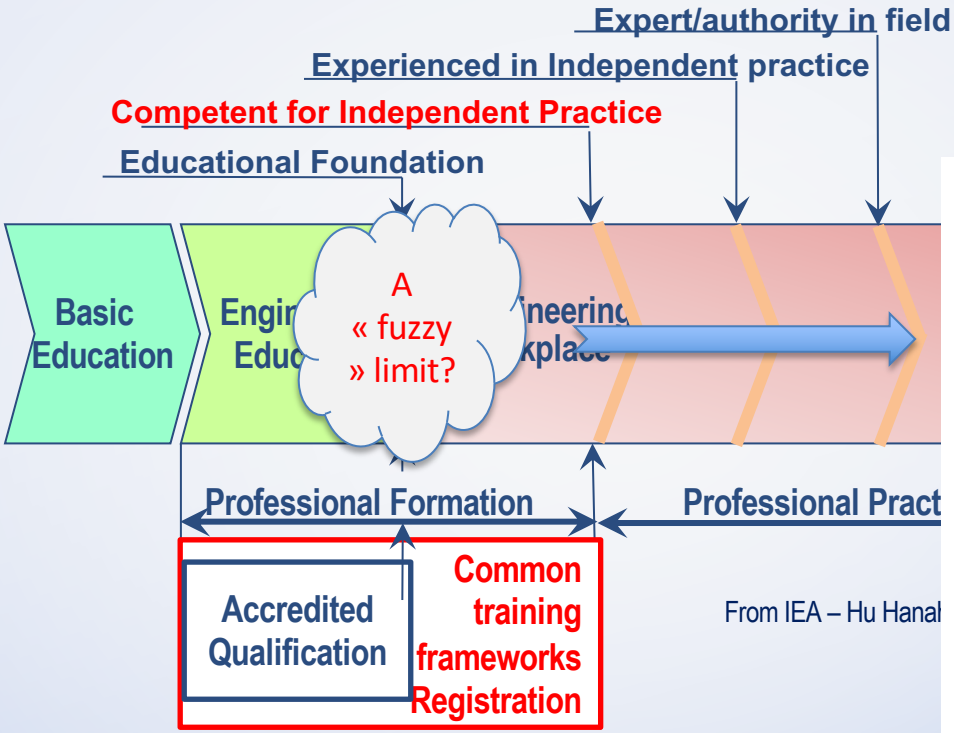
Frameworks for engineers

- Engineers activities have a strong impact on society and economy; they engage their responsibility, like medical doctors, nurses, architects…

- Need to secure the engineering education as an ***entry route to the engineering profession*** (pre-professional accreditation)

Global vision of the engineer professional trajectory



Depending on the country and/or on the university

Responsibility for the training to soft and professional skills lies either

- more with the HEI

or

- more with the company

THE EXPECTED CAREER OF ADAPTABLE ENGINEERS

The discussion about the engineering profession !

We need more qualified engineers!

The requirements of the engineers role have changed!

Engineering Education requirements

- The engineering education needs to be more intensive and more attractive !
- The engineering education needs to be more adapted to the new realities!

In reality...

A worldwide trend

- Requirements and goals for the educational system to provide engineering graduates with the expected outcomes,
  - ✓ Quality Assurance for the programme providers and for the accreditation agencies

- What an engineering graduate is supposed to know and be able to do,
  - ✓ Programme outcomes/graduate attributes


How to improve quality in higher education?
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The European Higher Education Area (1999-…)

Qualification frameworks
Knowledge, Skills, Competencies expected from graduates

Quality Assurance
Accountability, comparability, trust building
European Standards and guidelines

ECTS, Erasmus, diploma supplement, etc…

The 'Europe 2020 Strategy' and other EU initiatives call for more excellence in Europe's higher education institutions in order to improve their performance, international attractiveness and competitiveness. In this context the relevance of quality in higher education gained momentum.

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Higher education issues

- Globalization and economic challenges and future workforce needs
- More diverse, older student body
- Pipeline issues in S&T fields
- Greater emphasis on external funding
- Facilities: new and repair needs
- Accountability (quality of graduates, use of resources)
- Access, equity
- Accreditation
- …

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Continuous quality improvement in higher education means

- Striving for excellence through planning, execution and continuous evaluation
  - Strategic planning at all levels
  - Outcomes and performance assessment at all levels
  - Using data for decision-making
  - Linking planning to resource allocation

- Involving all stakeholders, especially those that collaborate in multiple dimensions (hiring students, research, etc)
- Seeking program and institutional accreditation for public accountability and employer confidence

Challenges and opportunities for improving higher education

Challenges

- Tradition
  - Teaching
  - Academic/administrative processes
  - Tenure
  - Student/faculty/administration inertia
- Little space/interest for change
- Little/no accountability
- University administrators with little/no management experience
- …

Opportunities

- New faculty, new energy, new ideas
- Good benchmarking models out there
- Globalization
- Partnerships to accelerate rate of change
- Technology
- …

Drivers for improvement

- Internal
  - Institution wants to grow, excel
  - Compete with best, recruit the best
  - Use resources effectively
  - Increase research
  - Respond to country's needs
  - …
- External
  - Government/stakeholder accountability
  - Competitiveness
  - Accreditation
  - …

Improvement happens when an institution's leadership takes advantage of all the outcomes and process assessment findings and mobilizes the institution to action.

Strong leaders also recognize that quality improvement is a continuous process that proceeds from one assessment cycle to the next without interruption.

QUALITY CULTURE

Adapted from CHEA (Council for Higher Education Accreditation)
Presidential Guideline, Vol. 5, April 2007

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Quality
"Do the things right"

+

The strategic Direcion
"Do the right things"

=

Do the right things right

=

EXCELENCE

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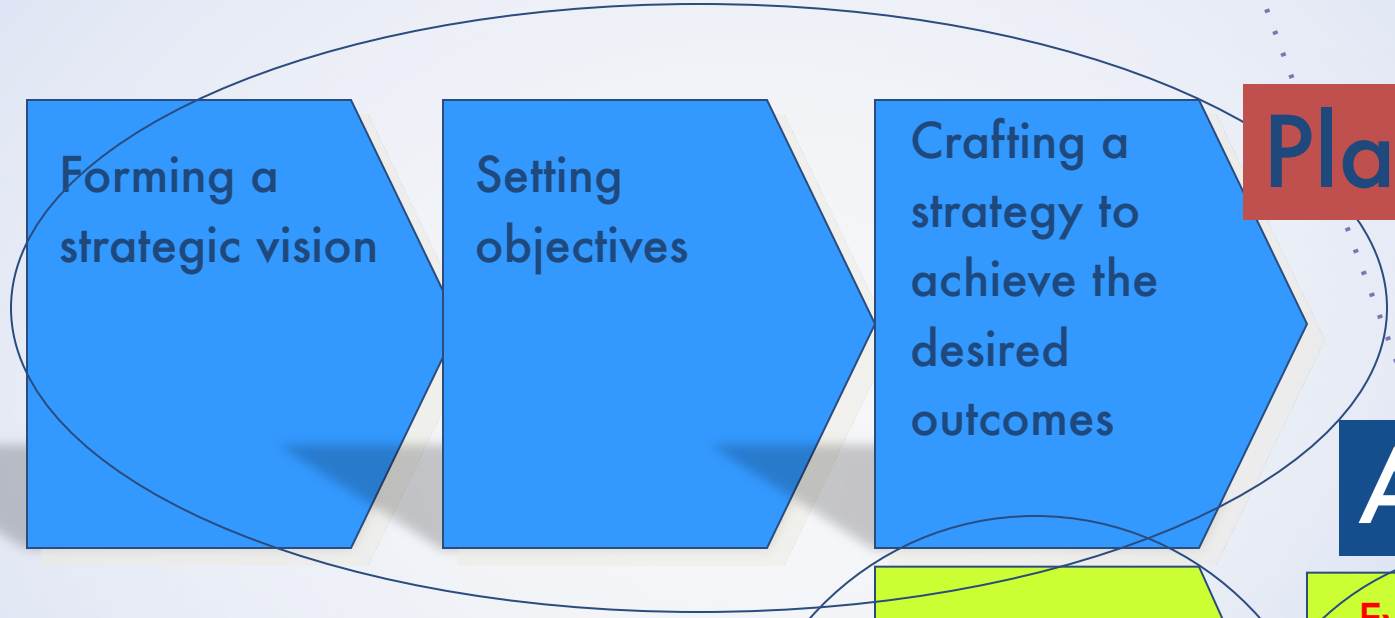
Roadmap for Excellence



Analysis

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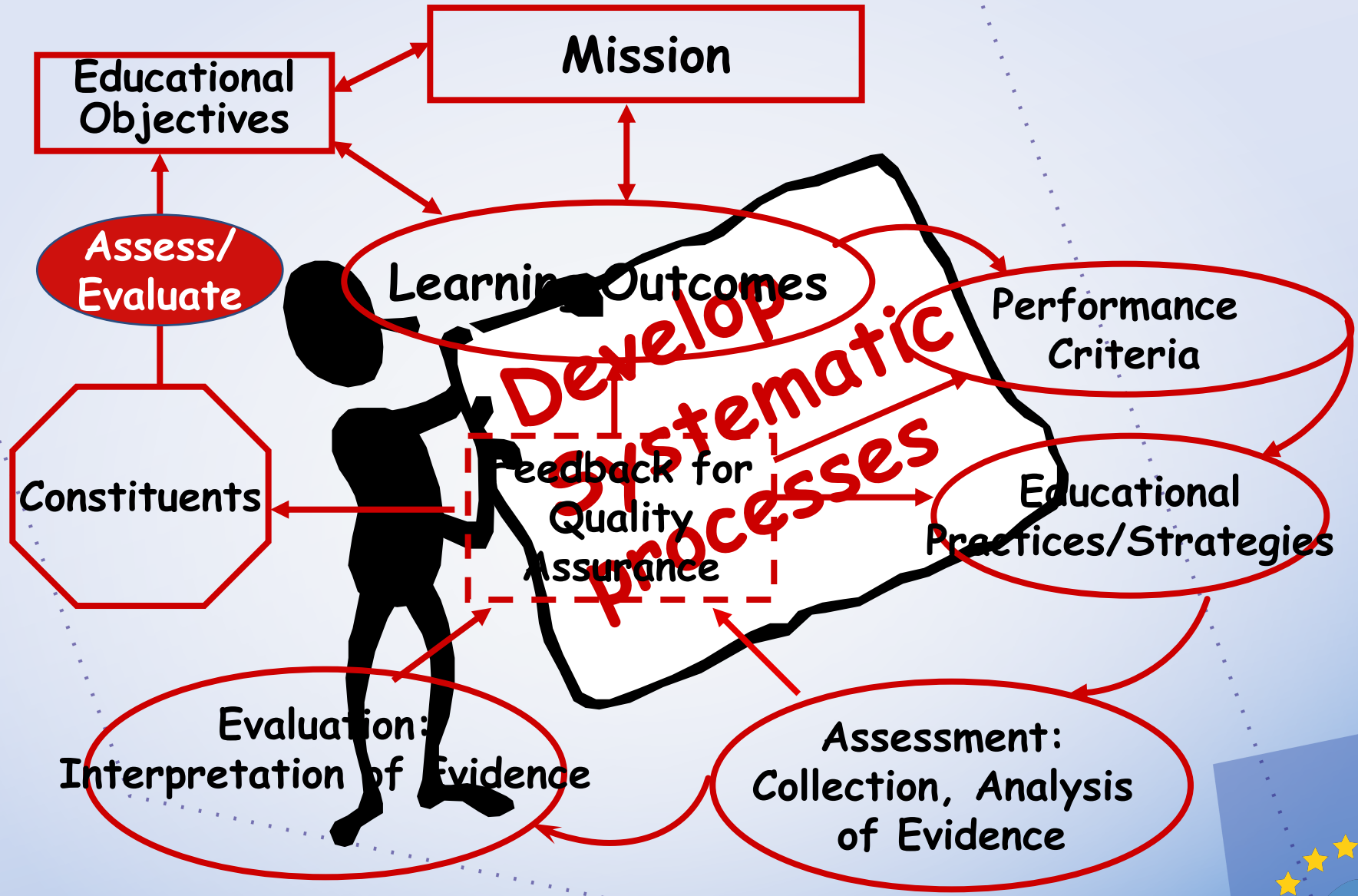

Assessment for Quality Assurance

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Accreditation is the way to ensure quality
1555
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Accreditation

"The main purposes of Quality Assurance include quality enhancement, guaranteeing minimum standards, information provision and the creation of trust, internationally"*.

"Accreditation of engineering educational programmes as entry route to the engineering profession (…) to improve at the same time academic quality and relevance for the job market"

EUR-ACE is programme accreditation; to qualify it better, it can be called "pre-professional accreditation".

*UNIVERSITY QUALITY INDICATORS: A CRITICAL ASSESSMENT
Report to the European Parliament - 2015

ENGINEERING EDUCATION ACCREDITATION

- Motivated by an increasing demand for <u>transparency</u> in order to favour mobility of students and engineers within Europe and beyond.
- "Standardisation" <u>should not</u> be understood as an attempt to arrive at a uniform EE in EU (Bologna Process).

http://www.cartoonstock.com/directory/l/lateral_thinker.asp

European Accreditation of Engineering Programmes
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DEFINITION

Accreditation of Eng. Programmes

"Accreditation of an engineering programme is the result of a process used to ensure the suitability of that programme as the entry route to the engineering profession",

obtained by

"peer review of written and oral information by trained and independent panels including academics and professionals".

EUR-ACE Framework Standards

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European Accreditation of Engineering Programmes EUR-ACE®

Challenge: accreditation as a dynamic process

Should be	Should not be
An understanding of the faculty project	A judgment on the faculty project
A view of the dynamics of the programme	A frozen picture of the programme
An analysis of the processes which insure that the contents are up-to-date and updated	A detailed analysis of the contents
A global perception of the stakeholders' view	A discussion between specialists
A collective expression of a team	The expression of the experts' personnal opinion on HE
Proposals for continuous improvement	An account of bad and good marks

Quality assurance.
The world experience

- Validation and state accreditation of Higher Education Institutions and programs
- Professional accreditation of educational programs
- Certification of professional qualifications (Register of professional engineers)

International Experience

A two-stage quality assurance system was implemented worldwide in the training of specialists in the field of engineering - professional engineers.

The first stage - professional accreditation of engineering education programs in universities (WA, EUR-ACE and others).

The second stage - certification and registration of engineering professionals [NCEES (USA), ECUK (United Kingdom), engineers Canada (Canada), IPEJ (Japan) and others].

International Experience

The national professional organizations created international structures (FEANI, Engineer APEC Registry, IPEA / EMF), forming agreed criteria for the certification of professional engineers,

as well as

International organizations, or international consortiums (ENAEE, Washington Accord, RIACES, ARCUSUR ...) develop the criteria for quality and accreditation of educational programs in engineering of higher education institutions.

2 global frameworks for engineering education

International Engineering Alliance

- Washington accord (1989-Engineers)
- Sydney accord (2001- Technologists)
- Dublin accord (2002- Technicians)

« Best practice in accreditation of engineering programmes » 2015

Learning outcomes / Graduate attributes

The European Network for accreditation of engineering education (2006-ENAEE)

EUR-ACE accord (2014):

- EUR-ACE Label (Bachelor)
- EUR-ACE Label (Master)

Washington Accord: full members

1. **Australia** - Engineers Australia (EA) (1989)
2. **Canada** - Engineers Canada (EC) (1989)
3. **China** - China Association for Science and Technology (CAST) (2016)
4. **Chinese Taipei** - Institute of Engineering Education Taiwan (IEET) (2007)
5. **Hong Kong China** - Hong Kong Institution of Engineers (HKIE) (1995)
6. **India** - National Board of Accreditation (NBA) (2014)
7. **Ireland** - Engineers Ireland (EI) (1989)
8. **Japan** - Japan Accreditation Board for Engineering Education (JABEE) (2005)
9. **Korea** - Accreditation Board for Engineering Education of Korea (ABEEK) (2007)
10. **Malaysia** - Board of Engineers Malaysia (BEM) (2009)
11. **New Zealand** - Institution of Professional Engineers New Zealand (IPENZ) (1989)
12. **Russia -** Association for Engineering Education Russia (AEER) (2012)
13. **Singapore** - Institution of Engineers Singapore (IES) (2006)
14. **South Africa** - Engineering Council South Africa (ECSA) (1999)
15. **Sri Lanka** - Institution of Engineers Sri Lanka (IESL) (2014)
16. **Turkey** - Association for Evaluation and Accreditation of Engineering Programs (MÜDEK) (2011)
17. **United States** - Accreditation Board for Engineering and Technology (ABET) (1989)
18. **United Kingdom** - Engineering Council United Kingdom (ECUK) (1989)
19. **Pakistan** - PakistanEngineering Council (PEC) (2017)
20. **Peru** – Instituto de Calidad Y Acreditacion de Programas de Computacion, Ingeneria Y Technologia (ICACIT) (2018)

INTERNATIONAL ENGINEERING ALLIANCE

Washington Accord: provisional members

1. **Bangladesh** - Board of Accreditation for Engineering and Technical Education (BAETE)
2. **Costa Rica - Colegio Federado de Ingenieros y de Arquitectos de Costa Rica (CFIA)**
3. **Mexico - Consejo de Acreditación de la Enseñanza de la Ingeniería (CACEI)**
4. **Philippines – Philippine Technological Council (PTC)**
5. **Chile – Agencia Acreditadora Colegio de Ingenieros de Chile (Acredita CI)**

European Network for the Accreditation of Engineering Education (ENAEE)

Awards the EUR-ACE® label

(2018- 15 authorized agencies – over 3000 programs with label)

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Full members

ENAEE Members

1. **FEANI**- Bélgica - http://www.feani.org
2. **ENGINEERING COUNCIL** – Reino Unido - http://www.engc.org.uk
3. **CTI – Commission des Titres d'Ingénieur** – Francia - http://www.cti-commission.fr
4. **ASIIN** – Alemania - http://www.asiin-ev.de/pages/de/asiin-e.-v.php
5. **ORDEM DOS ENGENHEIROS** -Portugal - http://www.ordemdosengenheiros.pt
6. **CoPI** – Conferenza dei Presidi delle Facolta' di Ingegneria Italiane – Italia - http://www.confpresing.it
7. **ENGINEERS IRELAND** - Irlanda -http://www.engineersireland.ie
8. **AEER** – Association for Engineering Education in Russia - Rusia - http://aeer.ru/en
9. **EUROCADRES** – Conseil des Cadres Européens - Bélgica - http://www.eurocadres.eu
10. **UNIFI** – Scuola di Ingegneria dell'Universita degli Studi di Firenze - Italia- http://www.unifi.it
11. **IDA** – The Danish Society of Engineers - Dinamarca -http://www.ida.dk
12. **BBT** – Suiza - http://www.bbt.admin.ch
13. **MÜDEK** – Association for Evaluation and Accreditation of Engineering Programs - Turquía - http://www.mudek.org.tr
14. **IIE** – Instituto de la Ingenieria de Espana - España - http://www.iies.es
15. **ARACIS** – The Romanian Agency for Quality Assurance in Higher Education - Rumania - http://www.aracis.ro
16. **TEK** – Finnish Association of Graduate Engineers - Finlandia - http://www.tek.fi
17. **QUACING** – Italia - http://www.quacing.it

ENAEE Members

Associate members

1.**CLAIU**- Bélgica - http://www.claiu.org
2.**SEFI** – Société Européenne pour la Formation d'Ingénieur – Bélgica - http://www.sefi.be
3. **IGIP** – International Society for Engineering Education -Austria- http://www.igip.org
4. **LACCEI** - Latin America – http.//laccei.org

2 global frameworks for engineering education

Best practice in engineering programme accreditation (IEA/ENAEE 2015)

« A significant achievement : agreement and common understanding of best practice in engineering accreditation by the 30 countries involved in the 2 organizations worldwide »

A document on *Best Practice in Engineering Programme Accreditation* was jointly adopted and published in July 2015 by the European Network for Accreditation of Engineering Education (ENAEE) and the Washington, Sydney and Dublin Accords, the constituent educational agreements within the International Engineering Alliance (IEA).

This is a significant achievement as it represents the agreement and common understanding of best practice in engineering accreditation by the 30 countries/accreditation agencies involved in the two organisations worldwide. The elements of best practice in the document are those that have been found to ensure best functioning of accreditation systems. Such peer review accreditation systems are in turn major contributors to the development of high quality engineering education.

European Network for Accreditation of Engineering Education

INTERNATIONAL ENGINEERING ALLIANCE

BEST PRACTICE IN ENGINEERING PROGRAMME ACCREDITATION

ENAEE and the IEA Accords are committed to best practice in the accreditation of engineering programmes and have given effect to this commitment through the joint development of this document. It serves both ENAEE and IEA in their ongoing operations, and is of interest to bodies either forming new agencies or developing accreditation systems to the level required by either EUR-ACE® or the IEA Accords.

A best practice is a technique or methodology that, through experience and reflection, reliably leads to a desired result, superior to those achieved with other means. Acknowledged best practice therefore provides a benchmark for an accreditation system in evaluating programmes.

The *Best Practice in Engineering Programme Accreditation* document contains elements that are both specific to accreditation of engineering programmes and those that are generally applicable in programme accreditation. It is not concerned with institutional review/audit for quality assurance.

The best practice identified is consistent with the applicable sections of the good practice guidelines published by INQAAHE and the European Standards and Guidelines of ENQA as applicable to programme accreditation. Best practice in both the IEA Accord Rules and Procedures and the EUR-ACE® Framework Standards and Guidelines are reflected in its compilation.

The document is intended for use as follows:

- Bodies setting up as accreditation agencies, or operating or improving engineering education accreditation systems will be guided by these elements.
- Bodies facilitating recognition of accredited engineering programmes, such as ENAEE and the IEA Accords, which develop and are guided by best practice in defining, operating and improving policy, processes and accreditation criteria.

The document does not impact directly on education providers but rather helps to shape the accreditation system that each provider experiences:

- The best practice described assumes particular relationships between the programme providers and the accrediting agency.
- The provider designs and executes a programme to satisfy a stated purpose.
- Execution involves resourcing and conducting a teaching and learning process, including assessment of students.

Programme design is informed by the standards and other accreditation criteria laid down by the accrediting agency. The agency is not involved in the design and delivery of the programme. Once a programme is in operation and producing graduates the accrediting agency evaluates the programme periodically against its standards using its defined processes.

The document includes the following key sections:

- Glossaries and additional definitions of key terms.
- Background material on best practice in accreditation.
- Best practice for the constitution, scope and governance of an accreditation agency, acknowledging that best practice accreditation systems may be operated by a range of types of bodies.
- Criteria for accreditation in a system operating according to best practice.
- Elements of best practice in the accreditation process itself. The process of accreditation of programmes, including preparation, evaluation, reporting, decision-making and follow up conforms to generally accepted principles, which are outlined in the document.
- Elements relating to the agency's capacity for current operation and long-term sustainability of the accreditation agency and its process.

This brochure is intended only to be a summary of the Best Practice in Engineering Programme Accreditation document. To read or download the full document please visit:
www.enaee.eu/documents/XXXX or www.ieagreements.org/policies-and-procedures.cfm

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European Accreditation of Engineering Programmes EUR-ACE®

global agreement on the process of ccreditation in engineering education – key ideas

- Autonomy
  - The agency is independent and acts autonomously in respect of accreditation . It has full responsibility for its s and operation and accreditation decisions should be taken without third party influence…
  - The agency has the support of and well established links with key stakeholders in the engineering academic and industry communities…
  - Providers of education programmes, while key stakeholders in the accreditation agency, do not have a controlling power over standards, policies and accreditation decisions of the accreditation agency
  - If the agency has mentoring procedures to help applicants, these activities are clearly separated from the accreditation activities.

- Criteria for accreditation
  - The agency develops and reviews standards, criteria and policies by a process with peer input and public comment, including that from relevant engineering stakeholders

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A global agreement on the process of accreditation in engineering education – key ideas

- Criteria for accreditation
  - …
  - The agency develops and reviews standards, criteria and policies by a process with peer input and public comment, including that from relevant engineering stakeholders
  - Ongoing reviews and continuous improvement of the programme and its delivery are undertaken by the provider with input from students, employers, graduates and other stakeholders.
  - A process for appealing adverse accreditation decisions is available involving only persons with no prior involvement in the decision being appealed and no conflict of interest
  - A clear conflict of interest policy exists for all involved in the accreditation process including visiting teams, accreditation decision-makers and policy-makers
  - Evaluations of programmes are conducted by peer reviewers, with disciplinary knowledge of the programme(s) being reviewed with a balance between engineering practitioners and academics.
  - Where the practice is to have a student member(s) of the visiting team, …….

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A global agreement on the process of accreditation in engineering education

- Criteria for accreditation
  - …
  - The agency follows defined reporting protocols…
- The agency's capacity to conduct accreditation activities
  - …
  - An effective process is applied for the recruitment, selection, training & evaluation of programme evaluators. Appropriate eligibility criteria are applied in the selection of evaluators.

https://www.enaee.eu/engineering-accreditation/engineering-programme-accreditation/

European Accreditation of Engineering Programmes EUR-ACE®

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ENAEE authorizes accreditation agencies to award the EUR-ACE® Label to engineering degree programmes they accredit, at Bachelor and Master degree level.

Accreditation Agencies

Bachelor & Master Engineering Degree Programmes

EUR-ACE® Label

European Accreditation of Engineering Programmes EUR-ACE®

The **EUR-ACE® label**,
listed by the European Commission among the "**European Quality Labels**"

European Accreditation of Engineering Programmes EUR-ACE®

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European education frameworks for engineers

Quality assurance

Bergen Communiqué (2005)
« Guarantee of Quality in HE »

European Standards and Guidelines (ESG, ENQA,…)

QA Register (EQAR)

EUR-ACE Framework Standards and guidelines (EAFSG)

Learning outcomes

European Qualification Framework

Dublin descriptors

EUR-ACE Framework Standards and guidelines (EAFSG)

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The 2 pillars of ENAEE « wisdom »

Quality assurance

Assessment of the processes and procedures:

- Programme aims
- Teaching and learning procedures resources
- Students (from admission to graduation)
- Internal quality assurance

Compliant with the

- ESG -European standards and guidelines for Quality Assurance in the EHEA-
- « Best practice in engineering programme accreditation » (IEA/ENAEE)

Programme outcomes

What an engineering degree must enable a graduate to demonstrate

8 domains for the knowledge, understanding, skills and abilities

- Knowledge and Understanding;
- Engineering Analysis;
- Engineering Design;
- Investigations;
- Engineering Practice;
- Making Judgement Skills;
- Communication and Team-working Skills;
- Learning Skills

The equivalences of the EUR-ACE and IEA systems is still an issue.

European Accreditation of Engineering Programmes EUR-ACE®

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EUR-ACE Accord

On 19th November 2014, the 13 (15 in 2017) authorised agencies signed a Mutual Recognition Agreement whereby they accept each other's accreditation decisions in respect of Bachelor and Master of Engineering degree programmes which they accredit.

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European Network for Accreditation of Engineering Education

MUTUAL RECOGNITION OF EUR-ACE® LABELLED ENGINEERING DEGREE PROGRAMMES

Definitions

Mutual recognition of EUR-ACE® labelled engineering degree programmes by agencies authorised by ENAEE to award the EUR-ACE® label (hereinafter referred to as authorised agencies), means that an authorised agency in any country recognises that EUR-ACE® labelled degree programmes from authorised agencies in other countries meet the EUR-ACE® Framework Standards requirements at the relevant Bachelor or Master level.

All authorised agencies therefore agree that:

A) Accreditation standards and policies, procedures and schedules of agencies authorised to award the EUR-ACE® label are comparable.

B) EUR-ACE® labelled programmes are deemed to satisfy the EUR-ACE® Framework Standards. Therefore, accreditation decisions made by one of these bodies are acceptable from the point of view of meeting the EUR-ACE® Framework Standards in all authorised agencies, in respect of conferring degree programmes which they accredit.

C) Each authorised agency should make every reasonable effort to ensure that its bodies support the:

1) for recognising engineering qualifications

- student

2) for engineering as licensing professional engineers to practise in its country or jurisdiction,

axiom the corresponding of EUR-ACE® labelled programmes accredited by authorised agencies.

D) Each authorised agency should make every reasonable effort to promote this agreement to employers, higher education institutions students and graduates in its jurisdiction.

Such a mutual recognition agreement is expected to:

1) Facilitate licensing of professional engineering practice in the jurisdictions of its covered agencies and to support mobility of professional engineers.

2) Facilitate,

- academic mobility of engineering graduates through international recognition of degrees and
- the development of new programmes, joint programmes, etc.

3) Enable easier transfer of students from Bachelor to Master to PhD programmes using the ENAEE database of EUR-ACE® labelled engineering programmes.

Signed on behalf of each authorised agency:

Association for Engineering Education in Russia (AEER)

National Agency for Quality Assessment and Accreditation of Spain (ANECA), in association with IIE – Instituto de la Ingeniería de España

The Romanian Agency for Quality Assurance in Higher Education (ARACIS)

Deutsche Akkreditierungsagentur für Studiengänge der Ingenieurwissenschaften, der Informatik, der Naturwissenschaften und der Mathematik e.V. (ASIIN), Germany

Commission des Titres d'Ingénieur (CTI), France

Engineers Ireland

The Engineering Council (United Kingdom), (EngC)

Polish Education Evaluation Center, (PNEEC)

Kazakh Accreditation Center Technicznych, Poland, (KACT)

Association for Evaluation and Accreditation of Engineering Programs (NOKUT), Norway

Swiss center of accreditation and quality assurance in higher education, (OAQ)

Ordem dos Engenheiros – Portuguese Engineers Association, (OE)

QUACING - Agenzia per la certificazione della qualità e l'accreditamento EUR-ACE® dei corsi di studio in ingegneria, Italy

Brussels, 19th of November 2014

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European Accreditation of Engineering Programmes EUR-ACE®

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ENAEE overall objectives

- Not only to award labels
- To define the common academic core of competences of European Training Frameworks for professional engineers
- To enhance the overall quality of Engineering education in Europe
- To develop national QA systems for engineering education
- To foster academic and professional mobility between countries with a wide diversity of education systems and professional regulations

European Accreditation of Engineering Programmes EUR-ACE®

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ENAEE Authorized agencies (2019)

1. France - CTI
2. Germany – ASIIN
3. Ireland - Engineers Ireland
4. Italy - QUACING
5. Portugal – OE
6. Russia - AEER
7. Romania – ARACIS
8. Turkey - MUDEK
9. United Kingdom - EC UK
10. Poland – KAUT
11. Switzerland – OAQ
12. Spain - ANECA
13. Finland – FINEEC
14. Slovakia – ZSVTS
15. Kazakhstan – KazSEE

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Common bases for the accreditation bodies (1)

- Involve all stakeholders (academia, employers, society, students)
- Autonomy in their processes and their decisions
- Integrity and fairness (staff and experts)
- Accountability, public information.

Common bases for the accreditation bodies (2)

- Enforce the EUR-ACE framework standards and guidelines (EAFSG, revised in 2014)
- Enforce the Quality Assurance standards for the HEI's and for itself (European standards and guidelines ESG)
- Implement the EUR-ACE accord (mutual recognition agreement)

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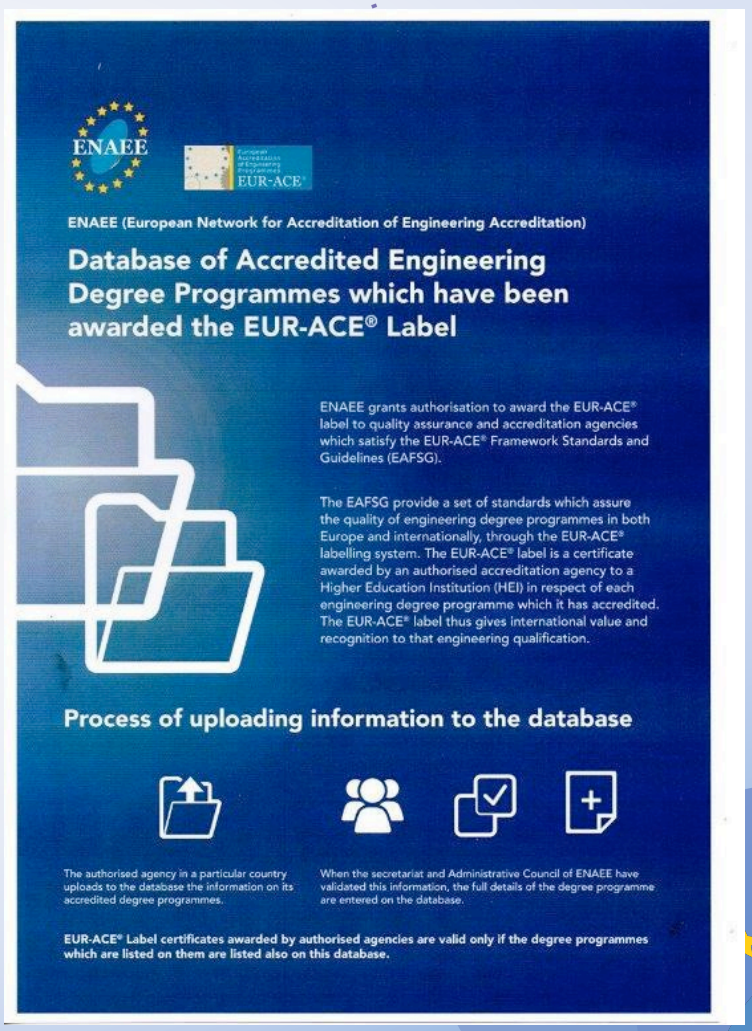
EUR-ACE® Database

A database of accredited Engineering Degree programmes which have been have been awarded the EUR-ACE® label



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EUR-ACE Label awarding. ENAEE webpage

CTI	CESI	Électronique	Diplôme d'ingénieur- grade de master	Second cycle degree integrated	France	2012-2018
CTI	CESI	Génie industriel	Diplôme d'ingénieur- grade de master	Second cycle degree integrated	France	2012-2018
ASIIN	Christian-Albrechts-Universität zu Kiel	Master of Science	Wirtschaftsingenieurwesen Elektrotechnik u. Informationstechnik	Second cycle degree	Germany	2010-2016
ASIIN	Christian-Albrechts-Universität zu Kiel	Master of Science	Elektrotechnik u. Informationstechnik	Second cycle degree	Germany	2010-2016

EUR-ACE Label awarding. ENAEE webpage

Program Accreditation Cerificate

European Accreditation of Engineering Programmes
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This is to certify that the programme

Technology, equipment and automation engineering industries

Технология, оборудование и автоматизация машиностроительных производств

provided by

Vladimir State University

accredited by

the Association for Engineering Education of Russia

on 29 December 2012 until 29 December 2017

satisfies the outcomes of First Cycle programmes specified in

the EUR-ACE Framework Standards

for the Accreditation of Engineering Programmes,

and therefore for the above period of accreditation is designated as

a First Cycle European Accredited Engineering Programme.

For the European Network for Accreditation of Engineering Education (ENAEE)

The President
Dr. Iring Wasser

Brussels, 10 January 2013

For the Association for Engineering Education of Russia (AEER)

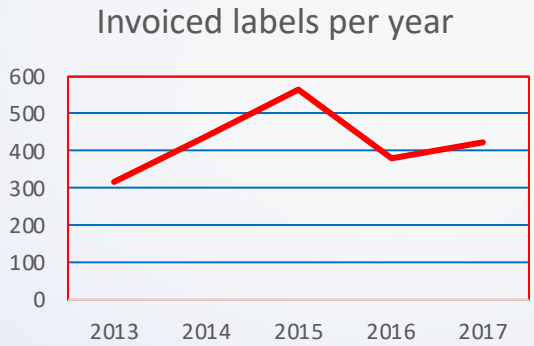
The President
Prof. Yuri Pokholkov, Sc.D.

Moscow, 29 December 2012

RU-000126

Labels Awarded

An average of 450 labels/year
About 3 000 programmes accredited in Europe and worldwide (5%)



Bachelors	44%
Masters	31%
Integrated Masters	25%

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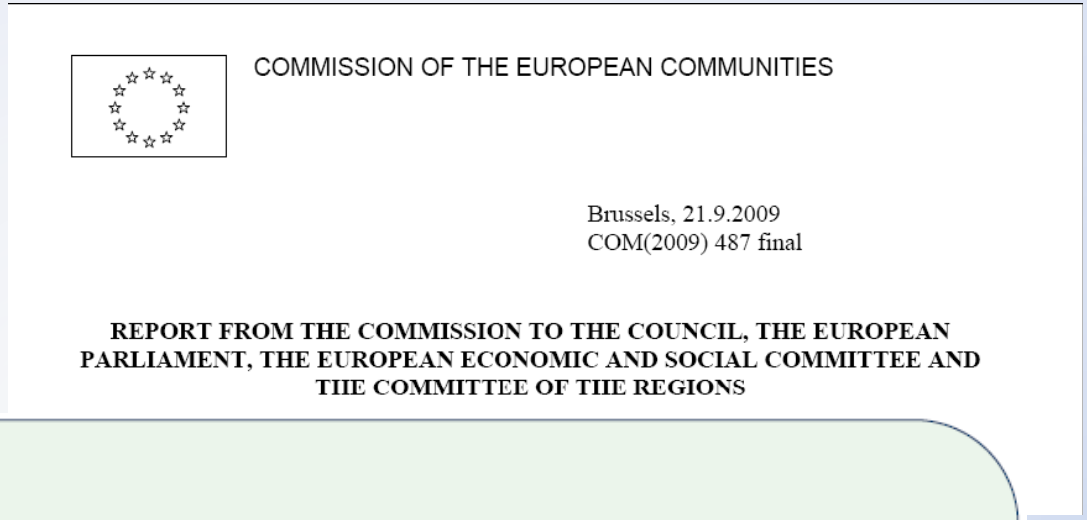
Best practices…



COMMISSION OF THE EUROPEAN COMMUNITIES

Brussels, 21.9.2009
COM(2009) 487 final

REPORT FROM THE COMMISSION TO THE COUNCIL, THE EUROPEAN PARLIAMENT, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS

Good practice

.....

The EUR-ACE label in engineering exists at the bachelor and master level. Standards were defined at European level, but are applied through national quality assurance agencies that are authorised to issue EUR-ACE "labels" together with their national accreditation. Several hundred labels have already been awarded, but they are still available from only seven national agencies

Benefits and Challenges of continuous quality improvement and accreditation?

J.C. Quadrado

Roles of accreditation

- Assure quality in education
- Allow access to external funds
- Ease transfer of courses and programs
- Employer confidence

Benefits from EUR-ACE

The EUR-ACE ® is internationally recognized

and

Facilitates the academic and professional mobility

EUR-ACE Accreditation Benefits

Benefits for HEIs

- Is an additional verification of high-quality engineering education– it meets the quality standards set by the engineering profession
- Provides an incentive for prospective students to choose a EUR-ACE® labelled program
- Provides reliable information on the quality of First Cycle programs for admission to Second Cycle programs
- Provides reliable information on the quality of Second Cycle programs for admission to doctoral programs

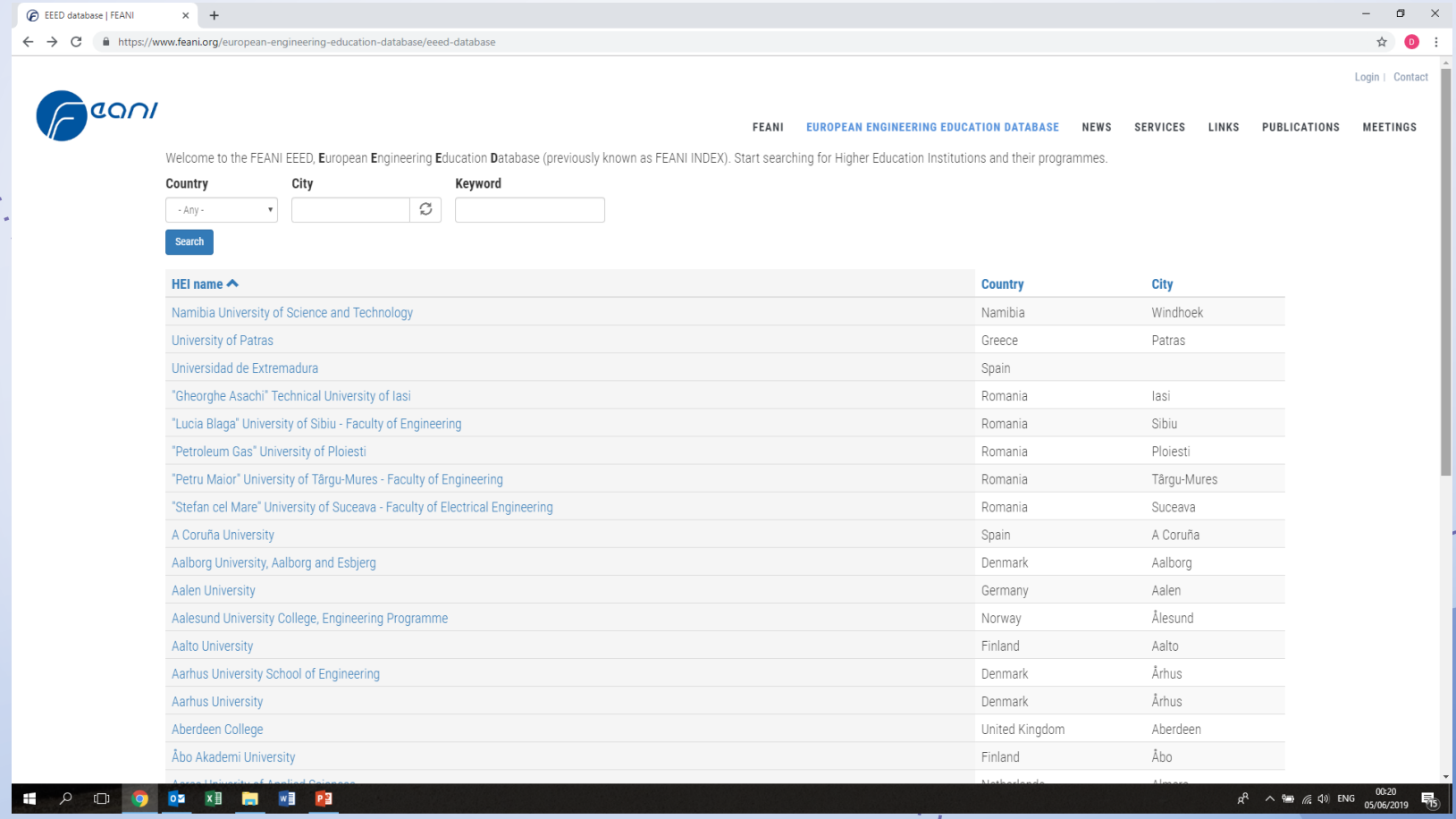
EUR-ACE Accreditation Benefits

Benefits for students & engineering graduates

- Assurance that the EUR-ACE®labelled program meets high European and international standards and is recognised by employers in Europe
- Facilitates application to EUR-ACE® Master and doctoral programs in other Higher Education Institutions
- In countries where the engineering profession is regulated, EUR-ACE®labelled programs meet the educational requirements for becoming a Registered or chartered engineer.
- The EUR-ACE® label facilitates graduate mobility as promoted by the EU Directive on Recognition of Professional Qualification.
- The EUR-ACE® label is the educational standard for the professional card as promoted by FEANI.
- FEANI automatically includes EUR-ACE® labelled programs in its Index which lists educational requirements for the Eur Ing title.

European Engineering Education Database

- https://www.feani.org/european-engineering-education-database/eeed-database



HEI name	Country	City
Namibia University of Science and Technology	Namibia	Windhoek
University of Patras	Greece	Patras
Universidad de Extremadura	Spain	
"Gheorghe Asachi" Technical University of Iasi	Romania	Iasi
"Lucia Blaga" University of Sibiu - Faculty of Engineering	Romania	Sibiu
"Petroleum Gas" University of Ploiesti	Romania	Ploiesti
"Petru Maior" University of Târgu-Mures - Faculty of Engineering	Romania	Târgu-Mures
"Stefan cel Mare" University of Suceava - Faculty of Electrical Engineering	Romania	Suceava
A Coruña University	Spain	A Coruña
Aalborg University, Aalborg and Esbjerg	Denmark	Aalborg
Aalen University	Germany	Aalen
Aalesund University College, Engineering Programme	Norway	Ålesund
Aalto University	Finland	Aalto
Aarhus University School of Engineering	Denmark	Århus
Aarhus University	Denmark	Århus
Aberdeen College	United Kingdom	Aberdeen
Åbo Akademi University	Finland	Åbo

European Accreditation of Engineering Programmes EUR-ACE®

ENAEE

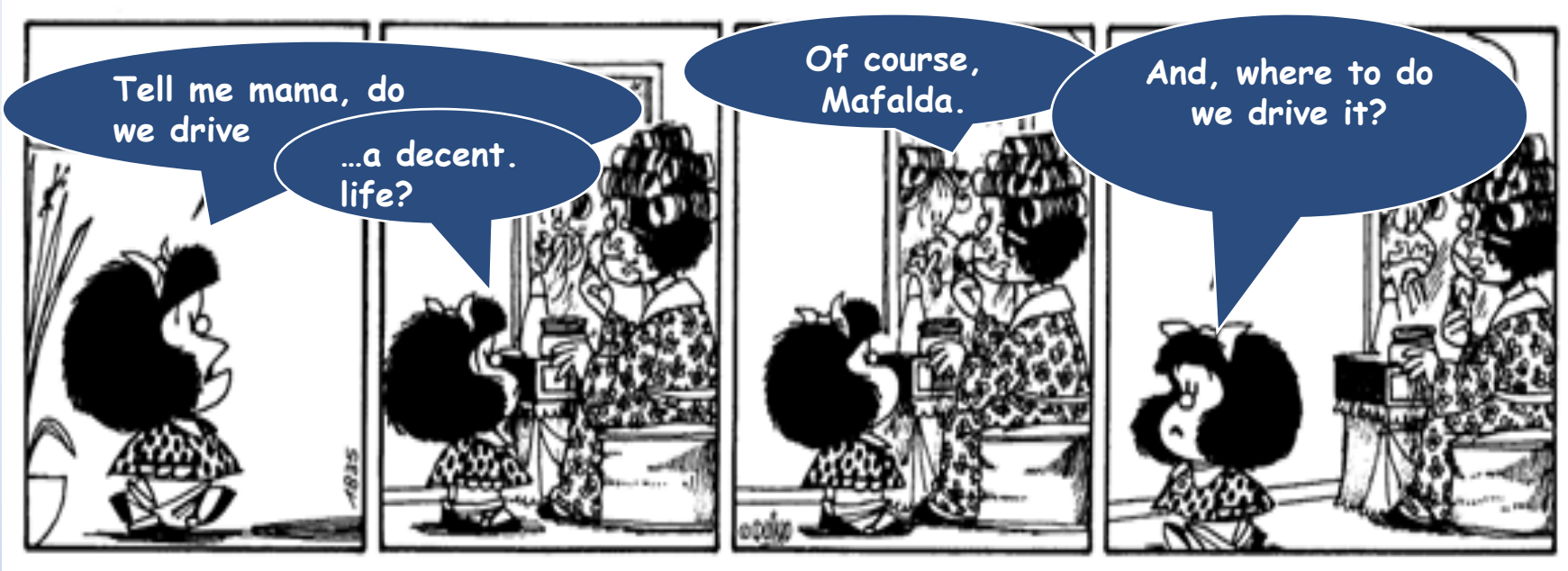
EUR-ACE Accreditation Benefits

Benefits for Accreditation Agencies

- Offers an additional quality label to stakeholders (Higher Education Institutions)
- Certification of quality of accreditation agency according to European Standards and Guidelines for Quality Assurance in Higher Education in the European Higher Education Area (ESG) and employers' requirements
- Integration into the European network of engineering professionals
- Possibility of accrediting in other European countries and worldwide
- Emphasises outcome-based accreditation of engineering programs
- Dialogue between ENAEE and other similar organisations such as the International Engineering Alliance with the objective of facilitating worldwide mobility of engineers

ENSURING QUALITY RECOGNITION

The Future of Accreditation



- Do we drive the accreditation?
- And where do we drive it to?

J.C. Quadrado

Challenges for the future of EUR-ACE®

- Meeting the diversity of stakeholders' expectations (students, employers, academia, society)
- Coping with the accreditation "fatigue"
- Institution vs. programme accreditation

European Accreditation of Engineering Programmes EUR-ACE®

ENAEE


"He who stops being better stops being good."
Oliver Cromwell
There is always room for improvement...
J.C. Quadrado

Gracias!

Thank you!

धन्यवाद

Спасибі !

Hvala!

Aitäh!

Teşekkürler !

Danke!

Takk!

Díky!

Obrigado!

Grazie!

www.enaee.eu

jcquadrado@gmail.com

спасибо !

شکریہ

Tack!

Merci!

Dzięki !

Paldies!

Köszönöm!

მადლობა

Kiitos!

Gràcies!

ευχαριστίες !

Ačiū !

Multumesc!

Eskerrik asko !

European Accreditation of Engineering Programmes EUR-ACE®

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