



WEBINAR ON SUBJECT-SPECIFIC APPROACHES

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An example: External quality assurance of
engineering programmes in France

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- General presentation of the agency,
its context and activities
- Specificities
- Essence of subject-specific quality assurance
- Cooperation at national/international level



- General presentation of the agency,
its context and activities



- Founded by law in 1934
- “Commission” of 32 members
nominated by ministry of HE, 4 year mandate
 - 16 members from academia
 - 16 members from industry



- Experts (national, international, students)
- Advisers
- Permanent staff and administrative operator
- Registry (Ministry of higher education)
- Equivalent of 14 full time staff



- 200 engineering schools
- Different status:
 - 41% public owned / 27% private
 - 32% internal in a public owned university
- Different relevant ministries:
 - 55% HE / 18% other ministries / 27% private
- 39 000 engineering graduates per year in France
 - 28% women / 14% foreigners / 15% apprenticeship track
 - 3% continuing education / 0,4% informal learning
- 850 000 engineers in activity

- **Compulsory periodical accreditation**
 - duration according to the outcome of the procedure:
5 years / 3 years / 2 years / 1 year
 - with guidelines for improvement
 - with or without a follow-up report (systematic in 2020)
 - sometimes with “urgent action lines”
- Decision: for private HEIs = CTI
for public owned HEIs = relevant ministry upon CTI recommendation
- 2018-2019: 69 HEIs – 310 programmes
- The EUR-ACE® label
European Network for Engineering Accreditation, since 2006



- Accreditation procedures **upon request**:
2018-2019: 16 HEIs – 23 programmes
- Two procedures, that may be combined:
 - “admission par l’Etat” (recognition in France)
 - EUR-ACE® label
- Information/co-operation with **relevant authorities & agencies** in the country
- Master level engineering programmes
- **In Europe** (Belgium, Bulgaria, Germany, Italy, Spain, Switzerland)
and abroad (Burkina-Faso, Cameroun, China, Ivory Coast, Lebanon, Morocco, Tunisia, Vietnam)

- **Specificities**



- Engineer = scientist, technician, manager
- 5 year (10 semesters) programme = 300 ECTS
- Master level, no intermediate degree (no bachelor)
- **Profession not regulated**
(no professional institution of chartered engineers)
- **Engineering degree protected by law**
- Engineering degree =
academic grade & professional qualification
“titre d'ingénieur diplômé - grade de master”



- 1- Accreditation procedures in France
- 2- Accreditation procedures abroad (“admission par l’Etat”)
- 3- **Defining the generic profile of the engineer and drawing up standards and guidelines (R&O)**
- 4- **Advice on all issues relating to the engineering education and profession**
- 5- Development of the quality culture in HE (HEIs & CTI)
- 6- **Actions in favour of the recognition of the engineering degree & professional qualification**
- 7- Quality labels



- Subject-specific quality assurance



Since CTI is in charge of the definition of the **expected generic profile of the engineer** and of defining the criteria and procedures for awarding the engineering degree, it is obvious that CTI must continuously analyse the **societal evolutions**, the **needs of industry** and provide opinions on all topics regarding the engineering education & profession and its quality assurance.

This requires a **special emphasis** on:

- **Composition of the expert panel** (ESG 2.4)
- **Stakeholders' involvement** (ESG 2.2 & ESG 3.1)
- **Thematic analysis** (ESG 3.4)



- Each expert panel, at least:
 - 1 CTI member representing academia
 - 1 CTI members representing industry
 - 1 expert from the engineering field
 - 1 international expert
 - 1 student expert

- Sometimes abroad:
 - An observer from the national system



- **Composition of the Commission:**
 - 8 professionals representing employers' organizations
 - 8 professionals representing trade unions and engineers' associations
 - 8 academic staff from HEIs under the ministry of HE
 - 5 academic staff from HEIs under other ministries
 - 3 experts in science and technology
- **Experts**
from industry & academia (national & international)
& students
- **External special advisers** (from industry & academia)



- Close links to various national stakeholders:

National authorities

- Ministries (HE, Agriculture, Economy & Industry, Armies, Telecommunications, Ecology)

HE & QA organisations

- **Association of deans of engineering schools (CDEFI)**
- Union of “Grandes ecoles” (CGE)
- **High Council for the Evaluation of Research and Higher Education (Hcéres)**
- **Students’ Union (BNEI)**
- Office national d'information sur les enseignements et les professions (ONISEP)
- Association of language teachers (UPLEGESS)

- Close links to various national stakeholders:

Professional organisations

- **Association of engineering alumni (IESF)**
- Mouvement des entreprises de France (MEDEF)
- **Commission nationale de la certification professionnelle (CNCP)**
- National Council for Employment, Training and Professional Orientation (CNEFOP)

International organisations

- Agence Française du Développement (AFD)
- Enic-Naric Centre France
- Centre international d'études pédagogiques (CIEP)



- Close links to international stakeholders

Professional organisations and associations

- Engineers Australia, Ordre des Ingénieurs du Québec, Société européenne pour la formation des ingénieurs (SEFI), ...

Quality assurance networks & organisations

- ENQA, ENAEE, ECA, FraQ-Sup, ABET, ...



- CTI's stakeholders are involved at different levels:
 - CTI's Board & Plenary Session
 - Working Groups & Steering Committees (example 1)
 - Periodical revision of standards & guidelines
 - Annual CTI conference (example 2)
 - Occasional conferences & seminars (example 2)
 - Annual CTI-Hcéres seminar (example 2)
 - Co-ordinated procedures with Hcéres



- CTI's stakeholders are involved at different levels:
 - Communications & publications at various events
 - “Focus” initiative (example 3)
 - Surveys
 - Annual graduate placement analysis
 - Individual meetings with HEIs & clusters



- Various means:
 - Presentations & exchanges on specific subjects at CTI Board meetings & Plenary Sessions
 - Periodical updating of CTI's standards & guidelines and expected programme outcomes
 - Publication of outcomes of Working Groups and Steering Committees (example 1)
 - Publication of the proceedings of CTI's annual conference and joint Hcéres-CTI seminar and occasional events (example 2)
 - Analysis of the annual surveys (addressed to HEIs, members, experts)



- Various means:
 - Annual analysis on main guidelines for improvement addressed to HEIs
 - Analysis of annual graduate placement (with stakeholder alumni association IESF)
 - Monthly CTI Newsletter & internet site
 - Bi-annual activity reports
 - Communications & publication at events

- ⇒ Specific volume 4 of R&O



■ Working groups & Steering Committees

- **Evolution of standards & guidelines** (R&O)

- **Impact on procedures**

Focus on HEI's internal QA; preparation of on-site visit, ...

- **Impact on criteria**

Compulsory proficiency in English; duration of study/work abroad periods; balance between subject groups (further science, applied engineering science, human sciences, link to research, ...); pedagogical methodology (laboratory exercises, project approach, Moocs, ...); ...



- **Annual CTI conference & occasional conferences**
 - Workshops: exchanges with stakeholders (HEIs, ministries, companies, students, ...)
 - Large variety of covered topics such as:
 - Quality assurance as a means for developing industrial relations
 - How to ensure the quality of student services
 - Quality assurance in joint international projects
 - Assessment of competencies
 - Continuing education, unformal and informal learning
 - The implementation of the Bologna process in engineering schools
 - Publication of the proceedings



- **“Focus” initiative** in the framework of an EQA procedure
 - Short presentation by HEI on how it deals with specific topics, such as:
 - innovation and entrepreneurship
 - sustainable development & societal responsibility
 - health & safety at work
 - digitalisation (pedagogical innovation / programme contents / programme & HEI management / monitoring of the professional evolutions / assessment)
 - Published analysis of the documents



- International cooperation



Quality assurance organisations

Shared reference:

Standards and Guidelines for Quality Assurance in the European higher education area (ESG)



- *European Association for Quality Assurance in Higher Education (ENQA)*

Association of quality assurance agencies of the EHEA
CTI = full member since 2005



- *European Quality Assurance Register (EQAR)*

Register of agencies whose procedures comply with the ESG

CTI = since 2010



International co-operation

Quality assurance organisations



- ENAEE (EUR-ACE® label)
(*European Network for Accreditation of Engineering Education*)



- FrAQ-Sup, Francophone network of quality assurance agencies in higher education, founded in 2014



Bilateral co-operation agreements

- QA agencies, HE networks, professional associations, international organisations:
 - Agence universitaire de la francophonie (AUF)
 - Agence pour l'évaluation de la qualité de l'enseignement supérieur (AEQES, Belgium)
 - Instance nationale de l'évaluation, de l'assurance-qualité et de l'accréditation (IEAQA, Tunisia)
 - Agence Française du Développement (AFD)
 - **Société européenne pour la formation des ingénieurs (SEFI)**
 - **Ingénieurs et scientifiques de France (IESF, France)**
 - **Accreditation board for engineering and technology (ABET, USA)**
 - **Engineers Canada-Ingénieurs Canada**
 - **Engineers Australia**

- Exchange of good practice
- European projects
- Joint procedures
- Thematic analysis on shared issues
- Access to international experts
- Recognition of professional qualifications
- ...



Thank you for your attention!

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Any questions?

