

# CTI's Self-Assessment Report

As part of the external review for:

- the renewal of CTI as a full member of the  
*European Association for Quality Assurance in Higher Education*

and

- the renewal of its registration in the *European Quality Assurance Register*



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# 1. Introduction

When the French *Commission des titres d'ingénieur* (CTI) was founded by the French government in 1934, CTI's missions included right from the start the accreditation of engineering programmes abroad. CTI's standards and guidelines referred to the ESG from 2006 on and describe the expected learning outcomes of all engineering programmes as fully compliant with the Bologna process. Based on this long experience of European and international openness and on the international dimension of the engineering profession, it was an obvious choice that CTI became a founding member of European organisations such as the *European Consortium for Accreditation* (ECA), the *European Network for the Accreditation of Engineering Education* (ENAE), the network of francophone quality assurance agencies (FrAQ-Sup) and applied for full membership to the *European Association for Quality Assurance in Higher Education* (ENQA) and for registration in the *European Quality Assurance Register* (EQAR).

CTI has been a full member of ENQA since 2005. In 2009, after an external evaluation coordinated by NVAO, and in 2014, after an external evaluation carried out by an ENQA review panel of experts, the renewal of CTI's ENQA full membership was confirmed. Based on these external evaluations, CTI was included into the EQAR in November 2010 and confirmed in 2014.

In November 2016, CTI sent a follow-up report to ENQA that presented CTI's response to the review panel's recommendations for improvement. This follow-up report was acknowledged by ENQA's board in February 2017 by expressing its "satisfaction with the progress that has been achieved".

The present report contains the results of a recent self-assessment process carried out by CTI with the objective of analysing the compliance of its procedures with parts 2 and 3 of the 2015 version of the *Standards and Guidelines for Quality Assurance in the European Higher Education Area* (ESG).

It has been prepared in the context of an external review organized with the objective of reconfirming CTI's full membership to ENQA as well as the renewal of CTI's registration in the EQAR before June 30<sup>th</sup> 2019.

The following activities of CTI are addressed in this document:

- Initial accreditation of study programmes in engineering of French institutions, in France and on branch campuses abroad
- Programme accreditation of existing programmes in engineering of French and foreign institutions, in France and abroad
- Evaluation of French and foreign engineering programmes in order to award quality labels

The preparation of this self-assessment report has been a privileged opportunity to take stock of CTI's procedures and the developments since the last review in close co-operation with its stakeholders.

The final draft report has been approved by CTI's general assembly on the 10th of July 2018 with a mandate to the working group and presidential team to submit the finalized version to ENQA by the end of July.

## 2. Development of the self-assessment report [SAR]

CTI's self-assessment is an ongoing process that is initiated through feed-back by CTI members, experts and permanent staff, satisfaction surveys, exchanges with stakeholders, meetings on specific topics, ... and co-ordinated through strategic steering groups, committees and working groups throughout the year.

The present SAR is an outcome of this permanent process. It took about nine months to be finalised and involved CTI members, staff and main stakeholders.

Apart from being a necessary step for the renewal of CTI's membership of ENQA and its registration in the European Quality Assurance Register, CTI wished to use the self-evaluation process to take stock of its activities and procedures. It was an essential moment to take the time for a global approach to review its missions, means and action plan.

For this reason, it seemed important to involve all CTI members and the permanent staff as much as possible in the self-evaluation process. A call for participation was made amongst all members to participate in the working group in charge of the SAR. Finally, the SAR working group was composed of eight persons, six CTI members (amongst whom the president and one vice-president) and two representatives of the permanent staff. The working group presented the work in progress and specific issues raised during its discussions at Board meetings and plenary sessions in order to involve all CTI members, get their feed-back and validate the draft versions of the report. The working group also consulted CTI's Quality and Communication Steering Committee as well as its International Relations Steering Committee during the preparation phase. CTI members, permanent staff and external advisors are part of these steering committees and allowed the working group to get a feed-back from another, specific, angle.

The self evaluation process was also a good opportunity to get a global feedback from CTI's main stakeholders and - where appropriate - to get a better awareness of their questionings. The involved stakeholders were: Ministry of Higher Education, Research and Innovation (MESRI); Ministry of Agriculture and Food (MAA); Association of Deans of Engineering Schools (CDEFI); National Association of Engineering Students (BNEI); Association of French Graduate Engineers and Scientists (IESF).

With some of these stakeholders, the SAR was discussed during scheduled meetings on different topics; all received the draft version of the report for feed-back and comments. Their contribution mostly consisted in factual changes to the text; they all agreed on CTI's SWOT analysis and upcoming challenges, which was very encouraging for CTI.

The detailed steps of the process are described below:

- ✓ November 2017: proposal of an internal work schedule by CTI's presidential and permanent staff teams.
- ✓ December 4<sup>th</sup> 2017, the renewal of ENQA membership and EQAR registration discussed at CTI's *Quality and Communication Steering Committee*.
- ✓ December 4<sup>th</sup> 2017, the renewal of ENQA membership and EQAR registration discussed at CTI's *International Relations Steering Committee*.
- ✓ December 14<sup>th</sup> 2017, decision of CTI's board to apply for the renewal of ENQA membership and the renewal of the EQAR registration. Approval of the internal work schedule. Nomination of a dedicated SAR working group.
- ✓ January 17<sup>th</sup> 2018, approval at CTI's plenary session of the application, internal work schedule and SAR working group.
- ✓ January 18<sup>th</sup> 2018, meeting of the presidents and vice-presidents of CTI and stakeholder CDEFI (association of the deans of engineering schools). Several topics were discussed, including CTI's SAR.
- ✓ January 23<sup>rd</sup> 2018, meeting of CTI's president and vice-president with stakeholder Ministry of Food and Agriculture. Several topics were discussed, including CTI's SAR.
- ✓ January 30<sup>th</sup> 2018, validation of the contract with ENQA and the *Terms of Reference* (ToR) by CTI's board, including the timeline proposed by ENQA.
- ✓ February 12<sup>th</sup> 2018, the renewal of ENQA membership and EQAR registration discussed at CTI's *Quality and Communication Steering Committee*.

- ✓ February 14<sup>th</sup> 2018, confirmation of the contract with ENQA and ToR at CTI's plenary session.
- ✓ March 13<sup>th</sup> 2018, meeting of the SAR working group. Identification of major issues regarding the former review and the follow-up of the recommendations. Distribution of the tasks for the next meeting. Definition of the list of stakeholders to be consulted.
- ✓ March 16<sup>th</sup> 2018, meeting with stakeholder Ministry of Higher Education, Research and Innovation. Several topics were discussed, including CTI's SAR.
- ✓ March 23<sup>rd</sup> 2018, meeting with stakeholder CDEFI (association of the deans of engineering schools) in order to discuss an issue that was part of the recommendations of the previous review: the publication of the site visit report.
- ✓ March 27<sup>th</sup> 2018, meeting of the SAR working group. Exchanges regarding the contributions to the contents of the SAR. Proposal for annexes. Nomination of CTI director of administration and international relations for writing the draft version of the SAR.
- ✓ Between April and end of July: continuous exchanges between members of the SAR working group, via exchanges of documents and sub-group meetings.
- ✓ May 15<sup>th</sup> 2018, presentation at CTI's plenary session of the finalised ToR and feed-back by the SAR working group on the progress made. Validation of the stakeholders to be consulted.
- ✓ May 29<sup>th</sup> 2018, presentation to CTI's board of version 1 of the draft SAR. After discussions and feed-back from CTI's board, editing of version 2 of the SAR.
- ✓ From June 6<sup>th</sup> to June 20<sup>th</sup> 2018, stakeholders' consultation. Version 2 of the draft SAR sent for feed-back to following stakeholders: Ministry of Higher Education, Research and Innovation; Ministry of Agriculture and Food (MAA); Association of Deans of Engineering Schools (CDEFI); National Association of Engineering students (BNEI); Association of French Graduate Engineers and Scientists (IESF).
- ✓ June 12<sup>th</sup> 2018, presentation of the first feed-back from stakeholders at CTI's plenary session.
- ✓ June 26<sup>th</sup> 2018, presentation of stakeholders' feed-back at CTI's board.
- ✓ July 10<sup>th</sup> 2018, presentation of version 3 of the draft SAR at CTI's plenary session. Mandate given to the SAR working group and presidential team to finalise and to submit the SAR.
- ✓ End of July 2018, final version of SAR sent to ENQA.

## 3. Higher education and QA of higher education in the context of the agency

### 3.1. The higher education system in France

In France, the higher education system (HES) is regulated by the ministry in charge of the higher education (in 2018: *ministère de l'Enseignement supérieur, de la recherche et de l'innovation*). Other ministries (such as the ministries of food and agriculture; economy; industry; telecommunications; defence; ecology and sustainable development) or a local authority supervise institutions in their technical domain. The provinces ("Régions") have no direct competencies in the HES, although they support the institutions and research centres and are involved in the apprenticeship centres in their area.

Higher education covers all studies after the secondary education final examination *baccalauréat* ('A' level equivalent). Two systems exist side by side:

- An open system in the universities. Most students study under this system. All *baccalauréat* holders have the right to enter this system. The universities offer an extremely wide range of studies.
- A selective system with a limited number of places. Admission is by competitive examination. This is the system in use for a limited number of university programmes such as law and medicine and for the *Instituts universitaires de technologie* (IUTs, university institutes of technology that offer short professional programmes to train mainly public-sector and private-sector senior and middle managers).

But the selective system is especially representative of the *Grandes écoles* (top graduate schools), such as the *Ecole Nationale d'Administration* (French Senior Civil Service School), *Ecole*

*Normale Supérieure* (national post-graduate school), the *Ecoles de gestion* (top business schools), the *Ecoles d'architecture* (graduate schools in architecture) and the *Ecoles d'ingénieurs* (graduate schools in engineering).

### 3.2. Types of HEIs in France

In France, Higher Education Institutions can be created and run by both public and private actors. There are two main categories of HEIs:

- institutions (private or mainly public owned) which are allowed by law to award national degrees, such as *licence*, master, doctorate, or accredited institutional degrees such as the engineering degree *Titre d'ingénieur diplômé*,
- institutions which can only award their own institutional diplomas.

To award a national or institutional accredited degree the institutions need an authorization by the Ministry in charge of Higher Education, based on an officially-recognized periodical assessment. As an example, the *diplôme d'ingénieur* is a degree that confers the academic grade of master and the professional title *Titre d'ingénieur diplômé* which can only be awarded by authorised institutions whose programmes have been assessed by CTI.

Higher education is offered by a variety of institutions: universities, colleges, *Grandes écoles*, ... The annual tuition fees are usually low in public owned institutions (a few hundred euros) and are more expensive in private schools (ranging from 6 000€ to 15 000€).

### 3.3. The French degree system and the *diplôme d'ingénieur*

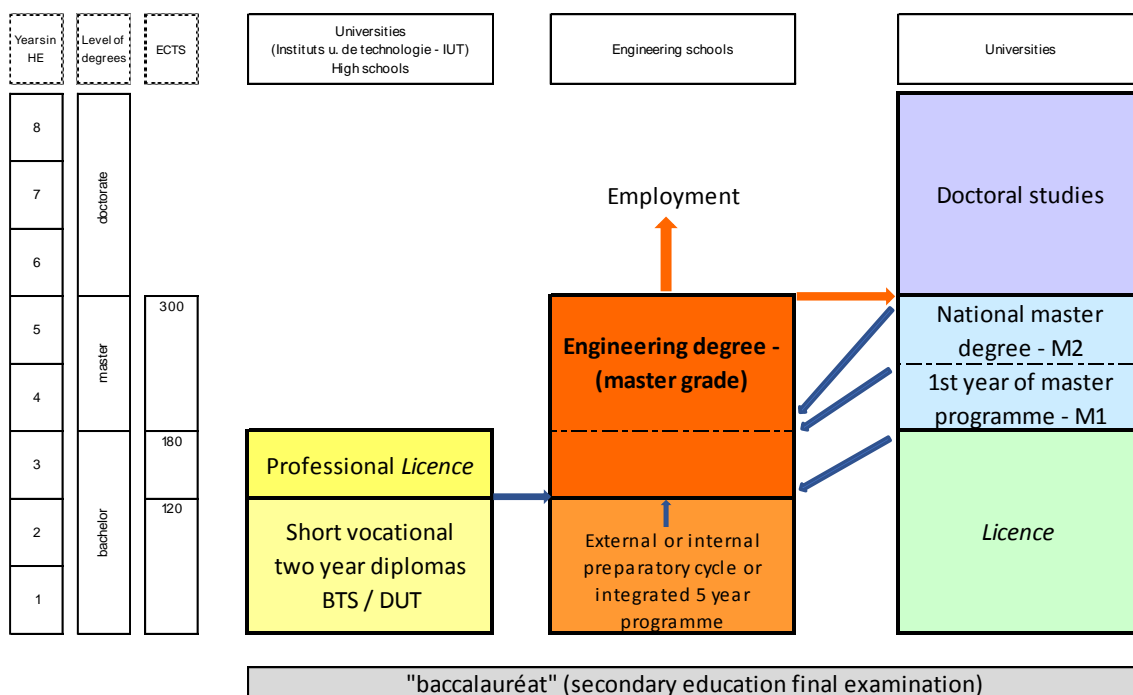


Figure 1. The *diplôme d'ingénieur* in the French higher education system

The French HE system fully complies with the European standards:

- the three-level Bachelor/Master/Doctorate degree system (plus short cycle qualifications, see following paragraph)
- the European Credit Transfer System (ECTS),
- an organization of the academic year in semesters and of the subjects in teaching units (modules),
- the definition of Learning Outcomes per module/course unit,
- the Diploma Supplement handed out to the graduates.

The main higher education degrees currently awarded in France are:

- **Short vocational two year diplomas** (120 ECTS) which are quoted in the EHEA Paris 2018 communiqué: "ECTS-based short cycle qualifications play an increasingly important role [...] We are therefore including short-cycle qualifications as a stand-alone qualification within the overarching framework of qualifications of the EHEA"
  - o *Diplôme universitaire de technologie* (DUT);
  - o *Brevet de technicien supérieur* (BTS).
- **Licence** (180 ECTS):
  - o *Licence*: Bachelor's degree with an academic orientation that opens the way to the master's programme;
  - o *Licence professionnelle*: vocational Bachelor's degree which aims at a professional integration.
- **Master** (120 ECTS):
  - o Master's degree with a professional or an academic orientation, admission for holders of a Bachelor degree.
- **Integrated master-level degrees** (300 ECTS) such as:
  - o management and engineering degrees, accredited as an outcome of an evaluation procedure by an official body (CTI in the case of the *diplôme d'ingénieur*).
- **Doctorat**:
  - o Doctorate awarded after three years of studies after a master's degree and the preparation of a doctoral thesis.

### The engineering degree *diplôme d'ingénieur*

The engineering profession is not regulated in France (there is no professional organisation of "chartered engineers") but the "titre d'ingénieur diplômé" is protected by law and considered in employment-related negotiations.

The engineering degree is listed at level 1 (highest) of the French *National Qualifications Framework* and at level 7 of the *European Qualifications Framework*.

According to the articles D612-33 to D612-36 of the national education code, the French engineering degree confers the academic grade of master and enables the graduates' direct access to doctoral studies.

Figure 1 above shows the place of the *diplôme d'ingénieur* within the French higher education system. Most engineering degrees are organized according to an initial founding two-year cycle (preparatory classes, *classes préparatoires aux grandes écoles* - CPGE) followed by a subsequent three-year engineering cycle.

There are also engineering programmes offered as an integrated 5 year syllabus.

After the *baccalauréat* degree, students may take different pathways to prepare for admission in the engineering cycle of the engineering schools:

- admission to the first year of a 5 year integrated programme,
- two years in external preparatory classes and entrance exams ("concours") to the first year of the engineering cycle (3<sup>rd</sup> year in HE),
- two years in an internal preparatory cycle directly organized by an engineering HEI followed by an internal selection procedure to be admitted to the first year of the engineering cycle (3<sup>rd</sup> year in HE),
- two years of a short vocational diploma (DUT or BTS) followed by a selective admission procedure to the first year of the engineering cycle (3<sup>rd</sup> year in HE),
- scientific bachelor's degree (*licence*) followed by a selective admission procedure to the first year of the engineering cycle (3<sup>rd</sup> year in HE),
- 1<sup>st</sup> year or completed master's degree in science followed by a selective admission procedure to the second year of the engineering cycle (4<sup>th</sup> year in HE).

Most engineering HEIs admit all types of applicants, but each engineering HEI has its own preferred application system.

Engineering degree programmes (*diplôme d'ingénieur*) aim to provide students with the knowledge, capacities and theoretical and practical skills necessary for engineering work over five

years after the baccalaureate degree. Since these degree programmes are career- oriented and since all institutions are different and encouraged to be diverse, engineering degrees are established within each institution rather than at the national level.

In order to be accredited to award an engineering degree, an institution must however comply with the CTI's standards and guidelines ([Références et Orientations](#)). The engineering programme must fulfil a set of minimum requirements, namely:

- ★ the degree is awarded upon successful completion of at least 10 semesters of studies in higher education and a total student workload of 300 European credits (ECTS)
- ★ admission to the programme is based on strict criteria and a structured procedure (entrance exam or parallel admission procedure for holders of prior qualifications)
- ★ the programme includes:
  - a solid core science programme to promote analytical capabilities and the capacity for long-term knowledge acquisition,
  - technical subjects and tools to guarantee the graduates' short term adaptability to a professional activity within a branch of engineering
  - an introduction to research and innovation to develop open-mindedness and creativity,
  - a structured contact with industry, particularly as regards internships and the participation of professionals in the teaching and the programme governance,
  - an international dimension (command of other languages, studies or internships abroad, incoming mobility, etc.),
  - a good foundation in humanities and social sciences in order to guarantee that the graduates take into account socio-cultural issues such as sustainable development, ethics, workplace organisation, health & safety, etc.
  - a varied range of teaching methods and a robust internal quality assurance system.

After graduation, most young engineers immediately start working, and some continue their education to get another degree, perhaps in a more advanced technical field or in sales or management. Finally, some of these graduates go on to doctoral studies in France or abroad, immediately or later on, in varying proportions depending on the field.

### **Engineering schools**

In France, most engineering programmes are offered by specific higher education institutions called *Ecoles d'ingénieurs*. These engineering schools may be run by the public or private sector, may or may not be part of a university, and may come under different ministries (higher education; food and agriculture; economy; industry; telecommunications; defence; ecology and sustainable development) or a local authority.

Engineering schools in figures (2018):

- ★ 201 engineering schools (53 private)
- ★ 560 engineering degrees and 1097 curricula
- ★ 163,000 engineering students
  - 35% beneficiaries of income based scholarships
- ★ 38,000 graduates per year
  - 28% women
  - 14% foreign nationals
  - 15% through an apprenticeship track
  - 3% via continuing education
  - 0.4% through validation of informal or non-formal learning (VAE)
- ★ 84% of engineering graduates in employment find a first job in less than 2 months

### 3.4. Quality assurance in French Higher Education

CTI was established in 1934 as a field specific accreditation organization and has been in charge since then of the accreditation procedures of engineering degree programmes.

A similar body was set up in 2001 for the accreditation procedures of management degrees of the business schools: the *Commission d'évaluation des formations et diplômes de gestion* (CEFDG).

At the same period of time, the ministry of higher education decided to set up a national commission in charge of the evaluation of the university institutes of technology (IUT) (that award short vocational diplomas, the *diplôme universitaire de technologie*), the *Commission consultative nationale des instituts universitaires de technologie* (CCN-IUT).

Finally, in 2006, the government founded the *Agence d'Évaluation de la Recherche et de l'Enseignement Supérieur* (AERES) with the mission to evaluate the HE institutions, research centres and bachelor-master-doctoral programmes.

After some years of working together in order to clarify their respective missions, a framework co-operation agreement between AERES and CTI was established in 2012.

As a consequence of the new law for higher education of 2013, the AERES was transformed into the [Haut Conseil de l'évaluation de la recherche et de l'enseignement supérieur](#) (Hcéres) and the two organisations redefined their respective positions and co-operation.

The missions of Hcéres include the validation of the evaluation procedures of all quality assurance agencies operating in France, with the exception of CTI. Indeed, the previous law of 1934 states that the responsibility for the evaluation of engineering programmes lies exclusively with CTI (see the [joint CTI-Hcéres communication](#) of February 2017 on this point).

A new agreement between CTI and Hcéres was signed in September 2016 for 5 years and a working committee has been set up for its follow-up. Its major aim is to work towards a co-ordination in the evaluation of engineering institutions and the accreditation procedures of engineering programmes, in particular to alleviate the workload for the HEIs, since some engineering HEIs are accountable to both CTI and Hcéres. See the [CTI-Hcéres co-operation agreement](#).

In November 2017, in the framework of the pre-event of the ENQA general assembly that was hosted by CIEP, CTI and Hcéres in Sèvres, the three organizing agencies signed a **joint declaration** that expressed their willingness to co-operate at national and international level. The signatories wish to create a shared space for the cross-fertilisation of the agencies and for the furthering of the quality assurance in French higher education. See the [déclaration de Sèvres](#).

## 4. History, profile and activities of the agency

### 4.1. History

The first French engineering school was founded in 1747 (*Ecole Nationale des Ponts et Chaussées*) with the aim to train high level scientists with technical skills who were capable of strategic planning in order to build the modern infrastructures the country needed. Other high level engineering schools followed in its steps, which still exist today under the authority of different ministries (higher education; food and agriculture; economy; industry; telecommunications; defence; ecology and sustainable development) or a local authority. At the beginning of the 19<sup>th</sup> century, the first private owned engineering schools were set up as a response to the fast growing needs of industry. At the beginning of the 20<sup>th</sup> century, in the twenties and thirties, the number of private HEIs was growing fast and when the quality of the

programmes became an issue, the government decided to set up a commission that would lead to the authorisation of the private institutions to award recognised degrees.

Thus, the *Commission des titres d'ingénieur* (CTI) was established by law in 1934 (French education code, article L.642-2 and following) with the aim to carry out three main missions that are still valid today:

- evaluation of new engineering programmes of private HEIs,
- evaluation of engineering programmes abroad leading to their recognition in France,
- advice on all issues regarding engineering education.

Although the external quality assurance procedures were compulsory only for new programmes of private HEIs, most public owned HEIs also applied for a CTI procedure when setting up a new programme.

By law in 1984, the evaluation by CTI of new programmes of French public owned HEIs became mandatory.

Since 1997 all existing engineering programmes (by private and public owned HEIs) have to undergo a periodical evaluation procedure by CTI.

Every year an inter-ministerial order publishes the list of accredited programmes upon an evaluation procedure by CTI, with the duration of the accreditation. Foreign accredited programmes are included in the list.

## 4.2. Missions

As seen above, CTI's missions have evolved over the years. Today they include:

1. Periodic **evaluation** of all **engineering programmes** offered by **French higher education institutions** across the country, that leads to the **accreditation** of the institutions to award the **engineering degree**.

The evaluation procedure is compulsory for the **existing** programmes and prior to the opening of a **new** programme, study track or branch campus. On request and subject to the support of the relevant authorities in the host countries, the CTI can also carry out evaluation procedures of engineering programmes provided by French institutions abroad, in order to extend the accreditation to the **foreign site**.

2. On request of the institutions and relevant governments, **evaluation** of existing **engineering programmes** run by **foreign higher education institutions**. The positive outcome of a CTI procedure may lead to the **recognition** of these degrees within France ("**Admission par l'Etat**"). This recognition is granted by the French Ministry of Higher Education.
3. Defining the **generic profile of the engineer** at master's level and drawing up **criteria and procedures** for awarding the engineering degree and for carrying out the CTI's missions. The CTI thus contributes to the **continuing development of engineering education**, adapting it to the needs of industry and society as a whole.
4. Issuing **opinions on all topics regarding the French engineering education**.
5. **Developing a quality assurance culture** within French engineering schools and the CTI itself, in line with the **Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG)** adopted by the Ministers of Higher Education of the European Higher Education Area. In this context, the CTI cooperates with other French and international quality assurance agencies, either under bilateral agreements (for example with ABET, AEQES, AAQ, Hcéres, IEAQA and others) or in networks such as FraQ-Sup, ECA and ENAEE. CTI is a full member of ENQA and listed on the EQAR.
6. Any actions to promote the **academic and professional recognition of the French engineering degree**. Since the engineering profession is not regulated in France and there is no institution of chartered engineers, the CTI is the natural point of contact for foreign engineering bodies (often in coordination with the alumni association of graduate engineers IESF, *Ingénieurs et Scientifiques de France*). The CTI is a member of various European and

international networks and associations, and in this capacity has signed co-operation and mutual recognition agreements with other quality assurance agencies.

7. Evaluation of French and foreign engineering programmes in order to award **quality labels**. The CTI is a founding member of the *European Network for Accreditation of Engineering Education* (ENAE) and is authorized to award its European quality label for engineering degree programmes EUR-ACE® (master's level). The CTI is also a member of the *European Consortium for Accreditation* (ECA) and is involved in awarding its *Certificate for Quality in Internationalisation* (CeQulnt).

### 4.3. Organisational structure

CTI is a "commission" of **32 members** from **academia** and **industry** who are appointed by the Minister in charge of Higher Education for a four-year term, renewable once.

In addition, around 100 **experts** from academia and industry provide assistance in areas of their proficiency, such as engineering, science, education, international affairs and quality assurance. These experts - as well as student experts - take an active part in the accreditation procedures.

CTI has also appointed a dozen **special advisors** from academia and industry to manage or participate in certain projects that require specific expertise.

A **permanent staff** team is responsible for day-to-day management and supporting CTI's governance.

**Registry** services are provided by the *General Directorate for Higher Education* within the Ministry of Higher Education.

CTI is an independent body, responsible for managing its own finances. Its administrative operator is a partner association, the association of the deans of engineering schools, the [\*Conférence des directeurs des écoles françaises d'ingénieurs\*](#) (CDEFI).

### 4.4. Distinctive features

When compared with the majority of the quality agencies in the EHEA, CTI presents significant distinctive features which it is interesting to mention.

- ✓ CTI is a **field specific agency** dealing exclusively with engineering programmes at master's level.
- ✓ CTI is both an **academic and a professional organization**. Its members consist of an equal number of representatives from academia (16 members) and from industry (16 members). They are officially appointed by the Minister in charge of Higher Education upon proposal by various organisations. The commission is composed as follows:
  - 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
- ✓ CTI members act on a **voluntary basis** and are involved in all areas of the organisation's life, such as participating in and chairing the expert panels; discussing and voting on the outcomes of the accreditation procedures; drawing up reference documents for engineering programmes; performing transversal analysis; sitting on advisory boards and working groups; representing the CTI to other stakeholders. The involvement of these members in CTI represents a significant (voluntary and unpaid) part of their professional duties (from about 50 working days per year for the "ordinary" members, to a full half-part time for the board members and a two thirds time for the president).
- ✓ CTI's responsibility in the accreditation decision varies according to the legal form of the HEIs: CTI takes accreditation **decisions** for private institutions and those run by Chambers of

Commerce; it issues **recommendations** to the relevant ministries for public owned higher education institutions.

- ✓ CTI has full responsibility for the **definition of the accreditation criteria** regarding the French engineering programmes (see chapter 4.2 above, mission 3).
- ✓ Since the engineering profession is not regulated in France and there is no institution of chartered engineers, the CTI plays a natural and important part in the **professional recognition** of the engineering title (see chapter 4.2 above, mission 6).
- ✓ Due to its long history and subject specific role, CTI has a significant **international** accreditation activity in Europe and worldwide. In those countries where there is no quality assurance in higher education or where quality assurance activities are evolving from programme towards institutional evaluation, there is a growing interest from faculties of engineering to guarantee the external quality assurance of their engineering programmes, either through a CTI accreditation or the EUR-ACE® label or both.

## 5. Higher education quality assurance activities of the agency

The below mentioned activities of CTI are within the scope of the ESG and addressed in this report.

### 5.1. Initial accreditation procedures for the programmes of French institutions, in France and on branch campuses abroad

Before being able to offer a new engineering programme or open an existing programme on a new campus, in France or abroad, the French HEIs must submit their project to CTI. In this case, there is a clearly defined procedure called "Lettre d'intention".

Two years before the possible opening of a new programme or a new site, the HEI must submit a short description of:

- the identified professional need for the specialisation or regional location;
- existing programmes at national and international level in the specific field;
- the intended learning outcomes of the programme;
- the pedagogical strategy to enable the achievement of the intended learning outcomes;
- the file for a new programme must include a copy of the application form to the national directory for professional certification ([\*Répertoire national des certifications professionnelles\*](#) -RNCP). This form describes the competencies and targeted professional positions of the graduates.

The first step of the procedure consists of a screening process based on the submitted application file. During this phase, CTI consults the ministry in charge of higher education and often the HEIs themselves, especially when issues are raised such as the local competition with existing similar programmes, the expected student number, the student life environment, the real need for a specific programme in this field, ...

When the application is considered to be consistent, the procedure follows the usual accreditation process (see chapter 6 below) that includes an on-site visit by an expert panel; a presentation at a plenary session of the Commission; a debate and vote on the positive or negative outcome of the procedure; the publication of the evaluation report and accreditation decision/recommendation.

This procedure also applies for new programmes by French institutions offered on a campus abroad. In that case, the government of the host country must give its written consent for the organisation of a French degree awarding programme in its country.

In the case of new programmes, CTI systematically grants a short accreditation of maximum 3 years and thus assures a follow-up after a short period of time.

## **5.2. Accreditation procedures for existing programmes in engineering of French and foreign institutions, in France and abroad**

### **5.2.1. Programme accreditation procedures of existing programmes in engineering of French institutions, in France and abroad**

Since 1997 all existing engineering programmes by French private and public owned HEIs have to undergo a periodical evaluation procedure by CTI.

In 2015, CTI agreed to change its periodicity calendar from 6 to 5 years as well as the regional division of the French territory for organizing the periodical evaluation procedures in order to align with the ministry's five year contracts with the institutions and the related Hcéres evaluation. In order to avoid a sudden increase of the workload for both the HEIs and CTI, the change of calendar and regional division is applied progressively and will be finalised in 2023-2024.

Nowadays, in the case of a positive outcome of the accreditation procedure, a programme is granted an accreditation for the maximum duration of 5 years. In the case of problems detected, the accreditation duration may be shorter (1-2-3 years); there might be a follow-up report requested after 2 or 3 years; there might be a request for "urgent action lines" to submit in 6 months' time.

CTI's accreditation procedure also applies for programmes by French institutions offered on a campus abroad. In that case, the government of the host country must give its written consent for the organisation of a French degree awarding programme in its country.

The whole accreditation procedure is described in chapter 6.

The list of programmes awarding the "Titre d'ingénieur diplômé" is published every year in the [\*Journal Officiel de la République Française\*](#). It is available through a link on CTI's website. All accredited programmes can be found via CTI's search engine on its website: <https://www.cti-commission.fr/accreditation>

### **5.2.2. Programme accreditation procedures of existing programmes in engineering of foreign institutions**

Upon demand of foreign institutions, CTI is authorized by the French law to evaluate engineering programmes abroad. The result of an accreditation procedure may, upon the concerned governments' request, result in "State admission" (*Admission par l'Etat*) of these degrees by the French government. *Admission par l'Etat* for a foreign degree allows the degree-holder the right to use the *Titre d'ingénieur diplômé* (graduate engineering title) in France. These engineers can then benefit from full engineer status in France.

Up to the current moment, CTI has led accreditation procedures of engineering programmes belonging to 40 institutions outside of France in 10 different countries (Belgium, Bulgaria, Burkina Faso, Cameroun, China, Lebanon, Morocco, Switzerland, Tunisia, Vietnam).

CTI's scope is master's level engineering degree programmes (level 7 in the *European Qualifications Framework*). These programmes may include an intermediate bachelor's programme with no professional orientation. CTI can evaluate programmes with different structures (integrated programmes, master's or second cycle programmes). In any case, CTI considers that the whole engineering higher education cycle (bachelor's plus master's) should have a minimum duration of 10 semesters (300 ECTS).

CTI can evaluate programmes whose main language of delivery is either French or English. However, as English is currently acknowledged as the global working language, a good command of English by all graduates of an accredited programme is expected. In the case of programmes aiming at *Admission par l'Etat*, graduates should also demonstrate a good command of French.

International accreditation can only be granted to existing programmes which are already fully set up: the programmes should have already graduates, or at least, the first students must have reached the last year of teaching. International accreditation cannot be awarded to programme projects.

CTI cannot evaluate engineering programmes which have recently obtained a negative accreditation decision by any accreditation body operating in the country of origin of the applicant HEI (ministry, accreditation agency, engineering professional body, etc.).

In any case, when performing accreditation missions outside France, CTI always proceeds with the agreement of the relevant national authorities (ministry of higher education, etc.) and in coordination with its national counterparts (national agencies, accreditation bodies, etc.).

Engineering programmes requesting a CTI accreditation procedure should be consistent with CTI's definition of the engineering profession and criteria for an engineering degree programme. A specific version of CTI's reference framework has been developed addressed to institutions abroad. Globally, the fundamental requirements are the same, but for certain aspects, the standards may be adapted to the local context. For example, a French engineering programme must include a minimum of 28 weeks of internships in industry. In the case of a foreign programme, the professional experience remains compulsory, but the duration of the internships might be shorter.

These accreditation missions abroad may be conducted in co-operation with other agencies. As an example, the *Agence pour l'Évaluation de la Qualité de l'Enseignement Supérieur* (AEQES) and CTI have conducted joint evaluation and accreditation missions in the French community of Belgium in 2012-2013 and 2015-2016. The objective of the collaboration was two-fold: the evaluation of engineering programmes by AEQES according to the Belgian legal requirements and the accreditation of these programmes according to CTI's reference framework. During the academic year 2018-2019 a simplified joint procedure will take place in order to renew a part of the accreditations.

The accreditation procedure is the same as for French HEIs as described in chapter 6, but some criteria may be adapted to the local context and national regulations.

In the case of a positive outcome of the accreditation procedure, a programme is normally granted an accreditation for the maximum duration of 6 years. In the case of problems detected, as for the French HEIs, the accreditation duration may be shorter (1-2-3 years); there might be a follow-up report requested after 2 or 3 years; there might be a request for "urgent action lines" to submit in 6 months' time.

The list of programmes awarding the *Titre d'ingénieur diplômé* is published every year in the [\*Journal Officiel de la République Française\*](#) (France's Official Journal). It is available on CTI's website and all accredited programmes, including those of foreign HEIs, can be found via CTI's [search engine](#).

## 5.3. Evaluation of French and foreign engineering programmes in order to award quality labels

CTI belongs to the quality assurance agencies that are authorized to award European quality labels to master's level engineering programmes.



### 5.3.1. The EUR-ACE® label

CTI is a founding member of the [European Network for Accreditation of Engineering Education](#) (ENAAEE), the European network which authorises accreditation and quality assurance agencies to award the EUR-ACE® label.

The [European System for Accreditation of Engineering Education](#) (EUR-ACE®) is the European quality label for engineering degree programmes at first cycle (bachelor's) and second cycle (master's).

The EUR-ACE® system encompasses all engineering branches and profiles, is internationally recognized, and facilitates both academic and professional mobility.

CTI is one of the 15 accreditation agencies (2018) entitled to award the EUR-ACE® label to second cycle (master's) engineering programmes. Upon request from the concerned HEI, CTI can award the EUR-ACE® label to programmes which fulfil EUR-ACE® criteria ([EUR-ACE® Accreditation Framework Standards and Guidelines](#) (EAFSG), 2015).

The CTI accreditation procedure for existing programmes of French and foreign HEIs takes into account the EAFSG framework. In this case, there is no specific difference between a CTI and an EUR-ACE® procedure.

In the case of a EUR-ACE® label attribution procedure with no CTI accreditation, the procedure will be based only on the specific EAFSG document.

There may be no ex-ante procedure for the EUR-ACE® label for new programmes, as the framework applies to existing programmes and includes a feed-back on the graduates' employment.

The label is awarded either for a maximum duration of 5 years in France and 6 years abroad or for a shorter period of 2 or 3 years.

In 2018, 539 programmes benefit from the label through CTI.



### 5.3.2. The CeQulnt label

The "Certificate for Quality in Internationalisation" (CeQulnt) is a label of the [European Consortium for Accreditation](#) (ECA), an association of European quality assurance and accreditation agencies. CTI belongs to the ECA members who are authorized to award the label to engineering programmes.

The aim of the label is to evaluate, enhance and reward the quality of the internationalisation of an institution or a programme. The label gives evidence of the achievement of the international and intercultural dimension in the objectives, the organisation and the implementation of the programme or the institution.

The CeQulnt assessment standards and criteria and the evaluation procedure are described in the

document [Frameworks for the Assessment of Internationalisation](#).

For CTI, the assessment of internationalisation is a voluntary procedure and is launched only upon the specific request by the HEI. It may however be organized as an extension of the periodical review of the programme by CTI. In that case, the part of the CTI self evaluation report that deals with the internationalization of the programme is replaced by the CeQulnt standards and criteria. During the site visit, the session dealing with internationalization is replaced by a supplementary day in order to comply with the CeQulnt procedure.

The [specific CTI methodology](#) includes a self-assessment report and a site visit of international experts.

Until now, there was no real interest among French HEIs for the label. A first label was awarded during the pilot phase in 2014; in 2018 the first HEI applied for the label for one programme and the procedure is currently carried out. A decision is expected at the plenary session of September 2018.

## 6. Processes and their methodologies

In chapter 6.1. below the common CTI and EUR-ACE® label procedure is described as it is currently organised. There are however a few evolutions to be foreseen in the close future, some of which are currently experimented in the pilot phase. These foreseen changes are explained in chapter 6.2.

### 6.1. Accreditation process of a CTI and a EUR-ACE® procedure

The below described procedure applies for a CTI accreditation procedure as well as for the EUR-ACE® label.

For French institutions, the EUR-ACE® and CTI procedures are joint. Upon receipt of a request from the concerned French HEI, CTI may award the EUR-ACE® label to those programmes which fulfil EUR-ACE® criteria for the same duration as the CTI recommendation for accreditation.

For foreign institutions which apply only for the EUR-ACE® label, the process is the same as for a CTI procedure, except for the standards and guidelines taken into account, which are in this case exclusively those of the label.

The accreditation process consists of five phases:

- Evaluation phase (6.1.1.)
- Accreditation phase (6.1.2.)
- Communication of results (6.1.3.)
- The follow-up phase (6.1.4.)
- Appeals procedure (6.1.5.)

#### 6.1.1. The evaluation phase

##### **Selection of CTI experts**

Apart from the president, all CTI members participate in the evaluation of the programmes. Their background and nomination process is described in chapter 4.4. above.

The evaluation teams are completed with national and international experts. The same rule applies for their background as for CTI members: they are representatives from academia and from industry. The profile of the experts is to be complementary with the profile of the members, in order to enlarge the field of expertise of the panels. Interesting profiles may be identified by CTI members or known thanks to individual applications. The CVs are analysed by the *Audit Steering Committee* and validated by the CTI board and then by the plenary assembly that votes the expert list for the 2 years to come.

The mandate of a CTI expert has a duration of two years, renewable for 2 terms. Each of the experts should be involved in at least one evaluation procedure per year.

Student experts participate in each evaluation team. They are selected by the national union of engineering students ([Bureau National des Éléves Ingénieurs - BNEI](#)) and validated by CTI. Part of the student experts are renewed every year.

CTI's annual surveys filled in by the members, the experts and the evaluated institutions as well as the feed-back of the panel chair may identify problems with a specific expert which may lead to his/her removal from the expert list.

### **Appointment and role of the audit teams**

The individual expert panels for the evaluations are set up by CTI's *Expert panel nomination committee* which is a subgroup of the *Audit Steering Group*, composed of three people (two CTI members and one permanent staff member). The expert panels are proposed once the yearly accreditation procedure schedule has been set up and confirmed by all CTI members at a plenary session.

The composition of the teams will vary depending on the characteristics of the programmes to be accredited (engineering fields, the number and size of the programmes, etc.). An expert panel is generally made up of four to six people, in accordance with the following criteria:

- at least two CTI members, representing academia and industry,
- at least one expert (specialist in a field related to the evaluation),
- one student expert,
- in the case of the periodical reviews, an international expert is part of the panel.

The composition of the expert panel is sent to the HEI for approval by the panel chair. In case of any known (real or perceived) conflicts of interest, the concerned expert is replaced.

One of the CTI members of the audit team acts as chair; he/she is responsible for co-ordinating the team activities and for presenting the evaluation conclusions to CTI's general assembly during the accreditation phase. All experts participate in the writing of the minutes of the site visit which constitutes the basis for the evaluation report.

In case of accreditations outside of France, observers from the country of the institution requesting the accreditation may be appointed, as may be foreseen in mutual recognition and other co-operation agreements established with other national quality assurance agencies. In France, the permanent staff members may participate to site visits as observers.

### **The preparation of the self-assessment report by the institution**

The first stage of the process for the HEIs is the preparation of a self-assessment report. The preparation of this report must form part of the programme self-evaluation process and include the participation of all relevant persons.

### **The site visit**

The CTI site visit must include meetings with all the relevant internal and external stakeholders and partners concerned with the programme, which are:

- management team of the programme and higher education institution senior management
- faculty
- administration and services staff
- students at various stages of the programme
- employers and external stakeholders
- alumni

Classrooms, research laboratories and other facilities and equipment are visited during the on-site visit.

The visit should also allow enough time to examine a number of relevant documents (examples of final year projects, exams, cooperation agreements, etc.) which should be provided to the panel during the visit.

Depending on the number of programmes for evaluation and the size of the institution, the visit could last from one single day to a whole week.

### **The external evaluation report**

After a site visit, the CTI expert panel writes down the minutes of the site visit with elements from the auto-evaluation report and prepares a standard presentation of the evaluation for the plenary assembly. Up to then these "minutes" are considered to be an internal work document that is sent

to the institution (without the conclusions) which may amend fact-based information before it is presented at CTI's plenary assembly. They may also make remarks regarding the contents which will be forwarded to the plenary session. Following the discussions and the vote at the plenary assembly, the SWOT analysis and conclusions proposed by the expert panel may be changed. The evaluation report is written after the outcome of the plenary assembly and voted at the following plenary. It includes an analysis of the programme and its institutional context; it identifies its main strengths and weaknesses; it includes a judgment on the compliance of the programme with CTI's standards and criteria and concludes with a decision for private owned institutions or a recommendation for state owned institutions and guidelines for the improvement of the programme(s).

### **6.1.2. The accreditation phase**

The plenary assembly is the main decision-making organ in CTI. It is responsible for making all accreditation decisions/recommendations on the basis of the HEI's self-assessment report, the minutes of the site visit by the expert team and the presentation of the conclusions of the expert panel at the plenary session. The final evaluation report with the decisions/recommendations is voted at the plenary following the plenary where the evaluation was presented.

CTI takes accreditation decisions for private institutions and those run by Chambers of Commerce; it issues recommendations to the relevant ministries for public owned higher education institutions. For public owned HEIs, the ministry in charge of higher education takes the accreditation decision - if applicable together with the supervisory ministry of the HEI. Over nearly 90 years, there is only one recorded case where the ministry(ies) did not follow CTI's recommendation regarding the accreditation of the programme of a public owned HEI.

In the case of the EUR-ACE® label, CTI is the decision making body, although the decision has to be confirmed by the ENAEE board before being made public.

Accredited programmes have the right to award the French engineering degree *Diplôme d'ingénieur* and/or benefit from the EUR-ACE® label.

Possible results of a CTI procedure are:

- accreditation for the maximum duration (5 years), if the programme substantially complies with all CTI/EUR-ACE® standards,
- accreditation for a shorter period (normally 2 or 3 years), if some important problems are detected,
- one year accreditation, if critical compliance problems are detected. This is the last warning before refusing accreditation to an existing programme the following year if no major changes have been undertaken,
- no accreditation, if critical compliance problems have been detected and the institution has made no efforts towards improvement. In practice, these cases regard essentially new programmes or sites. For existing programmes, it is very rare.

### **6.1.3. The communication of the accreditation result**

Following the adoption of a decision/recommendation by CTI at the first plenary assembly, the panel chair informs verbally the director of the HEI of the outcome of the procedure. After the following plenary assembly that validates the evaluation report, CTI sends the evaluation report with the decision/recommendation to the higher education institution and to the management team of the programme. CTI also sends the report to the ministry in charge of higher education which (after decision making for public-owned HEIs) sends an official notification of the outcomes of the procedure to the HEIs (private and public-owned and those supervised by other ministries). If the HEI's supervisory ministry is different from that of HE, it takes part in the decision making and informs its HEI of the outcome of the accreditation procedure.

All evaluation reports are published on the [CTI's website](#).

For French HEIs, this public information is completed by two further compulsory documents that are linked to the evaluation and public:

- a qualification framework form for each engineering degree programme must be published in the national directory ([Répertoire national des certifications professionnelles - RNCP](#))
- an annual "indicator survey" with certified data (*données certifiées*) must be filled in by the institutions and the results are published on [CTI's website](#).

The information on awarded EUR-ACE labels is registered in the [ENAAEE public data base](#).

In order to avoid any confusion, CTI has defined and published clear rules regarding the communication of accreditation results and the use of the CTI and EUR-ACE® logos by the HEIs, in specific charters: [CTI](#) and [EUR-ACE®](#).

An [annual inter-ministerial decree](#) lists all accredited programmes (including French programmes, foreign programmes that are "admis par l'Etat" and joint degrees) and is published on a governmental website.

#### **6.1.4. The follow-up of a CTI accreditation**

A periodical CTI evaluation procedure may result in a follow-up procedure that may take different forms:

- In the case of new programmes, CTI systematically recommends a short accreditation of maximum 3 years and thus assures a follow-up after a short period of time.
- In the case of existing programmes with a certain number of shortcomings, CTI recommends a short accreditation of 2 or 3 years only and organizes a new review of the whole programme after a short period of time (22,5% of programmes in 2016-2017).
- In the case of programmes with major problems identified, CTI has recently put into place a new procedure with compulsory "urgent action lines". In that case the institution has 6 months to forward a plan of actions to CTI; in the case of non-compliance or if the plan of action is not considered satisfactory, the HEI is requested to make a new proposal in a very short period of time.
- As for programmes with no major problems detected, there has been a significant increase in the number of guidelines for improvement in the final reports (from 120 guidelines in 2014-2015 to 505 in 2016-2017) as well as in the number of follow-up reports to be submitted after 2 or 3 years: the figures went up from 4 follow-up reports in 2013 to 18 follow-up reports in 2017 (38% of the applications).
- Apart from the outcomes of an evaluation procedure, CTI has put into place an annual "indicator survey" that must be filled in by the institutions. These "certified data" are certified by the head of the HEI and cover all essential aspects of a programme, from information on admission to feedback on employment. The certified data represent a useful tool for self-evaluation by the institutions; they can easily highlight the progress made and/or any inconsistencies. CTI considers this "indicator survey" as an efficient form of annual follow-up for all institutions. The results are published on [CTI's website](#).

#### **6.1.5. The complaint and appeal procedures**

##### **Complaint**

Apart from the satisfaction survey sent to all HEIs after an evaluation procedure, a HEI may address a complaint to CTI's president regarding the quality of the way a procedure was carried out by CTI (behaviour of one or more members of the expert panel, delays for the organisation of the site visit, lack of information, ...). In this case, CTI's *Audit Steering Committee* and the *Quality and Communication Steering Committee* (see chapter 7.1. below) deal with the complaint and - where appropriate - may submit suggestions for improvement to the Board and plenary assembly. According to the issue raised, the outcome may differ, for example: an evolution of CTI's bylaws; a new focus during training sessions; a warning given to a CTI member or expert; dismissal of an expert; ... ) A feed-back is given in any case to the HEI by CTI's president.

### **Application for a revision of the evaluation report**

Within two weeks after receiving the final evaluation report by CTI (before the official accreditation notification), a HEI may apply to CTI for a change of the evaluation report. This may happen when the HEI shows proof that important evidence has not been taken into account, that a criterion has not been considered, that a factual error persists in the final report, ...

In that case, CTI immediately informs the supervisory ministry in order to suspend the accreditation decision for public owned HEIs and the official notification for private HEIs.

An independent committee of external and knowledgeable personalities (3 former CTI members) nominated by CTI analyses the application and submitted evidence and forwards its conclusions to CTI's plenary assembly through the Board within one month. The committee provides its conclusions with an advice to change or to maintain the evaluation report. A new vote of the plenary assembly takes place and the revised or confirmed evaluation report is sent to the ministry and to the HEI. According to the law, the decision is final for private HEIs.

### **Appeal of public owned HEIs against an accreditation decision to their supervisory ministry**

A public owned HEI may submit an appeal to its supervisory ministry within 2 months after receiving the official accreditation notification.

If the supervisory ministry is different from the ministry in charge of HE, both ministries confer and take the decision together, whether to revise or not the accreditation decision.

### **Appeal against an accreditation procedure**

Within 2 months after the official accreditation notification, any HEI, private or public-owned, may address an appeal against the accreditation procedure to the *Conseil d'Etat* (State Council) which passes judgement exclusively on the regularity of the procedure.

After examination of the complaint which may last up to one year, the *Conseil d'Etat* may confirm or annul the accreditation decision. In the case of an annulment, a new procedure has to take place.

## **6.2. On-going developments regarding the programme accreditation process of a CTI procedure**

During the academic years 2016-2017 and 2017-2018, CTI started several projects and working groups on different aspects of its procedures. According to the outcomes of these works, some items of the above mentioned evaluation procedure may evolve in a short while.

### ***6.2.1. Consistency of the outcomes of an evaluation procedure***

The CTI members identified as a major issue for improvement the consistency of the accreditation decisions/recommendations taken at the plenary sessions. A working group was set up in 2016-2017 and started working on a template listing the main criteria and the programme's compliance with them. It became soon obvious that this template was closely linked to the minutes of the on-site visit and the evaluation report itself.

The first outcome of the working group was a draft template for a new global evaluation report, that could be used from the analysis of the written self-assessment report by the HEI and preparation of the on-site visit, to the minutes of the on-site visit, the presentation during the plenary session and the final report. This new template is tested during a pilot phase in 2017-2018 by the members of the working group in parallel with the usual documents.

In late autumn 2018, the working group will draw its conclusions and present them during a plenary session. In case of a decision to switch to the new template, CTI would announce it at the annual conference in February 2019 that launches the upcoming evaluation period. The new template could then be used from the accreditation campaign 2019-2020 on.

### ***6.2.2. Publication of the minutes of the site visit***

Today the minutes of the site visit is a working document between the expert panel and the HEI and contains confidential information that the HEIs do not wish to be published. The form and contents of the minutes may vary according to the expert panel and the evaluated programmes.

The above mentioned working group (6.2.1.) includes the minutes of the on-site visit and the evaluation report in its analysis. ENQA's and EQAR's request to publish the on-site visit report is now addressed in this working group.

CTI is committed to comply with this recommendation and to publish the site visit report as soon as the conclusions of the pilot phase for the new template will be drawn, either by using the new template or by adapting the existing one.

### **6.2.3. Simplified procedure**

In order to optimize the work load for both HEIs and CTI, the *Audit Steering Group* initiated a pilot phase that will be carried out during the academic year 2018-2019 for a new simplified procedure. According to this new rule, programmes that were previously accredited for the maximum duration without any major problems detected, would undergo a simplified procedure after five years and a complete review every ten years. In the case of a simplified procedure, the self-assessment report by the HEI focuses only on the internal evolutions since the last evaluation; the follow-up of CTI's guidelines for improvement; the taking into account of the evolutions of CTI's criteria and the ESG. CTI identified HEIs that qualified for the pilot phase and invited them to participate on a voluntary basis.

At the same time, during the academic year 2018-2019, CTI will carry out joint simplified follow-up reviews with its Belgium partner agency AEQES for francophone engineering programmes in Belgium.

After completion of both experiences, CTI will be able to draw conclusions and decide whether simplified procedures will be confirmed in its standards and guidelines.

### **6.2.4. Joint procedures with Hcéres**

A French engineering school has its engineering programmes evaluated by CTI and its governance, research and bachelor-master-PhD programmes by the [High Council for Research and Higher Education](#) (*Haut Conseil de l'évaluation de la recherche et de l'enseignement supérieur – Hcéres*).

As a first step to alleviate the workload for HEIs, CTI adapted its calendar and the regional division of the French territory in order to align with the ministry's five year contracts with the institutions and the related Hcéres evaluation.

Both agencies together went a step further by starting a pilot project in 2017-2018 that continues in 2018-2019 of joint CTI-Hcéres procedures. The participation of the HEIs is on a voluntary basis.

- In some cases, only the HEI's self-assessment report is common. It contains common parts and specific chapters for each agency. A joint template was worked out by the Hcéres-CTI working group.
- In other cases the on-site visit is organized by the two specific expert panels during the same days, with some common sessions.

According to the outcomes of the pilot phase, the joint procedures will be continued or dropped.

## **6.3. Assessment process for awarding the CeQulnt label**

CTI carries out procedures for the award of the CeQulnt label exclusively for engineering degree programmes at master's level and applies the CeQulnt [Frameworks for the Assessment of Quality in Internationalisation](#) and [Terms of Reference](#).

The CeQulnt procedure is very similar to a CTI procedure and may be launched independently at any chosen time or in the framework of a periodical CTI review. In latter case, the part of the CTI self evaluation report that deals with the internationalization of the programme is replaced by the CeQulnt standards and criteria. During the site visit, the session dealing with internationalization is replaced by a supplementary day in order to comply with the CeQulnt procedure.

The [specific CTI methodology for the CeQulnt label](#) is published on CTI's website.

### **CeQulnt expert panel**

The expert panel is composed of 4 experts from CTI's database (see chapter 6.1.1. for the selection of experts): two international experts, a national expert and a student. One of the experts (who is not the student) must be familiar with the national HE system and one expert (who is not the student) must be specifically trained by ECA for the assessment of internationalisation or must have more than three experiences in assessing the quality of internationalisation as a panel member.

### **Assessment phase**

As for a CTI procedure, following steps are part of the process:

- Nomination of the expert panel by the CTI's *Expert panel nomination committee* and validation by the plenary assembly.
- Self-assessment report in English by the HEI according to the [CeQulnt template for self-evaluation reports of programmes](#) and to the [Guide to Assessing the Quality of Internationalisation](#).
- Site visit by the expert panel  
The one day site visit takes preferably place during two half days, which allows the expert panel to organize a meeting at the end of the first afternoon and prepare complementary questions for the following morning. The panel is expected to interview the management, teaching staff, students, external stakeholders, and staff responsible for internationalisation activities (international officer, exchange coordinator, international students mentor, etc.). In case of a programme assessment, the panel reviews a sample of the actual student assessments.
- Assessment report  
For each criterion, the assessment panel presents (objective) findings and (subjective) considerations. Here, the panel is also expected to explicitly identify shortcomings and exemplary or good practices. Identified good practices will be published on ECA's *Internationalisation Platform*. For each standard, the assessment panel presents an overall conclusion. Here the panel substantiates its assessment on the basis of the criteria by which the standard is defined. This overall conclusion finishes off with a judgement. A programme or an institution is proposed to receive the *Certificate for Quality in Internationalisation* when at least three standards are assessed as good or excellent and no standard is assessed as unsatisfactory.

### **Decision making**

A specific internal *CTI CeQulnt committee* under the responsibility of the *International Steering Committee* checks the conformity of the applied methodology with the CeQulnt procedure and ensures the harmonization of the required level and of the evaluation of each criterion. If the analysis of the committee diverges from that of the expert panel, it may propose a change of the assessment of one or more criteria and the decision. The *CTI CeQulnt committee* forwards its conclusions and recommendation for a decision to CTI's plenary assembly which takes the formal decision.

The assessment report with the decision is sent to ECA. After due process by ECA, the relevant information and the assessment report is published on ECA's *Internationalisation Platform*. The award of the certificate is formalised once the assessment report is published by ECA.

In the case of CTI, the label is normally awarded for a duration of 5 years; in some cases for a shorter period in order to join the periodical accreditation period of the programme by CTI.

### **Appeals and complaints procedure**

A HEI which does not agree with a decision or wishes to complain about the way the evaluation was carried out, may appeal to CTI. The procedure follows the same steps as for a CTI complaint or appeal procedure (see above, chapter 6.1.5.).

## 7. CTI's internal quality assurance

CTI's internal cartography was developed in 2008. This cartography is composed of a general process diagram:

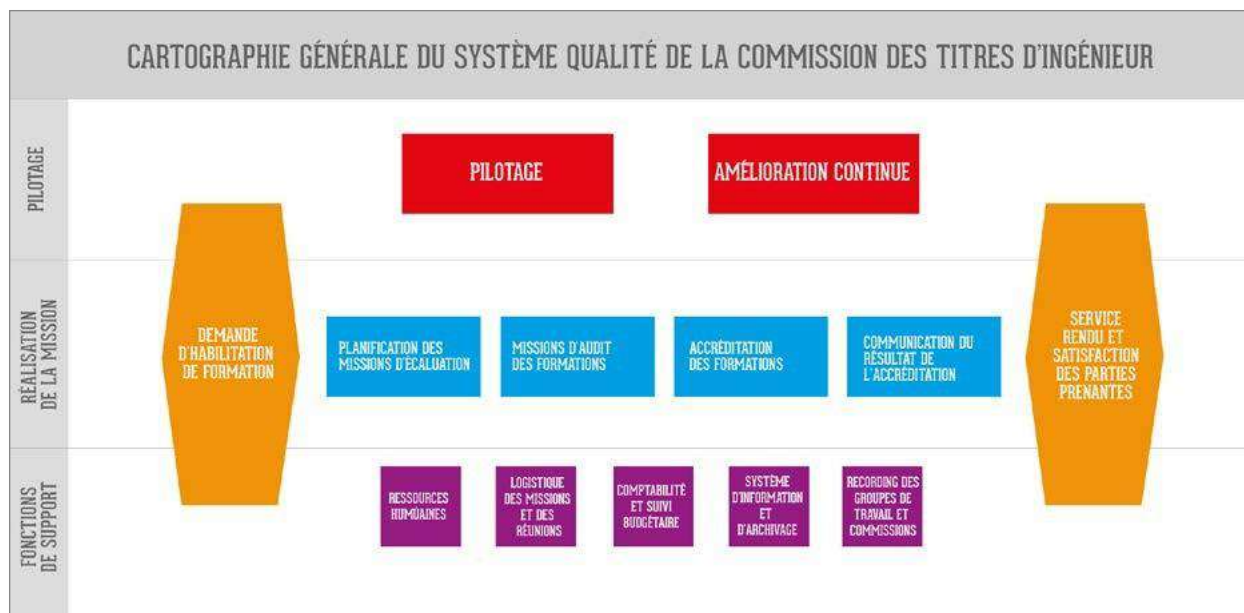


Figure 2. CTI's general process diagram

Particular parts of the general pattern are described below.

### 7.1. Piloting of the internal quality assurance

#### Steering committees

In autumn 2014, CTI reorganized its existing working groups that dealt with the improvement of its standards, guidelines and processes. Some working groups were redefined; others were completed by subject related commissions or steering groups. The participants to these committees are CTI members, experts, permanent staff and external advisors. According to the subjects, external stakeholders are invited to specific meetings. These committees meet at least quarterly, some on a monthly basis. Their objective is to exchange on core subjects and/or current issues and to submit strategic orientations to CTI's board.

Nowadays CTI's internal quality assurance is initiated and followed-up under the guidance of the **Quality and Communication Steering Committee**. The main objective of this steering group is the continuous improvement of CTI and its internal and external quality systems. It works on the development and implementation of tools and studies (surveys, information system, reports, communication, ...) and analyses procedures, past accreditation campaigns, results of surveys, ...

CTI also set up an **Audit Steering Committee**. Its main tasks are to follow-up and analyse the evaluation procedures and define measures for continuous improvement of the evaluation process. It works closely together with the *Quality and Communication Steering Committee*.

Other steering committees are:

- *International Steering Committee*;
- Commission in charge of the up-dating of CTI's standards and guidelines (R&O);
- *Financial Commission*;
- *CTI- Hcéres steering group*;
- *Strategic orientation committee*.

The steering committees may set up sub-groups to deal with specific issues such as described in chapter 6.2. above which currently work on issues such as consistency of decisions; publication of the minutes of the site visit; simplified procedures; joint procedures with Hcéres.

All proposed evolutions, strategic orientations, outcomes of the working sessions of these steering groups are submitted to the CTI board and - in the case of new rules or procedures - voted at the plenary assembly by all members.

## **7.2. By-laws and charters**

CTI's internal organisation is defined through its by-laws which were last up-dated in July 2018. The bylaws include the procedure for the renewal of the experts and the duration of their mandate.

The behaviour rules for members and experts and observers during an evaluation procedure are defined in deontology charters which all participants to a procedure must sign beforehand.

## **7.3. Periodic self-assessment of CTI**

Every year, CTI conducts an assessment of the results of its procedures and programme accreditation process. In order to conduct this assessment, CTI has put in place different internal and external feedback mechanisms:

### **Internal feedback mechanisms**

- Internal satisfaction survey (for CTI members and experts) every two years;
- Annual survey for French and foreign experts each year;
- Monthly board meetings and plenary sessions;
- Quarterly meetings between the presidential team and the permanent staff team;
- Internal on-line incident reporting tool.

### **External feedback mechanisms**

- Satisfaction survey addressed to the deans of the HEIs at the end of the accreditation procedure and presentation of the results at CTI's annual conference;
- Steering committees and specialised commissions which deal with strategic issues and come up with suggestions for improvement (cf chapter 7.1. above);
- Working groups with stakeholder participation which work on specific issues such as listed in chapter 6.2.;
- Questions and suggestions submitted via the contact form on CTI's internet site (about 20 messages per week);
- Annual CTI conference taking stock of the previous accreditation campaign and launching the upcoming campaign;
- Meetings with stakeholders on specific subjects;
- Transversal analysis on engineering education or quality assurance by CTI members and experts, partner organisation or other organisations (see [Références et Orientations, Livre 4](#));
- Periodical external evaluation procedures by ENQA, EQAR, ENAEE, CNEFOP (see chapter 9.7. below).

## **7.4. Training of experts**

In order to guarantee the respect of the procedures, the knowledge of the standards and criteria and the consistency of the outcome of the evaluation procedures, CTI organizes [training sessions](#) for its members and experts on a regular basis.

There are two training sessions for new CTI members before they sit on their first expert panel and at least one training session per year for all members and experts and one dedicated to the student experts. These training sessions include a specific part on internal quality assurance.

Apart from the members who all actively participate to CTI's annual conference, all experts and advisors are invited to attend this event, which is part of their training on internal and external quality assurance in CTI procedures.

## 7.5. Communication / Information

CTI's information and communication has been developed significantly thanks to the lead of the **Quality and Communication Steering Committee**.

The CTI **internet site** is constantly updated and contains all relevant documentation on quality assurance, CTI activities and the engineering degree. A FAQ section allows the stakeholders and general public, especially prospective students and their families, to gather information on accreditation issues. A "contact" form enables the public to ask specific questions on any issue linked to engineering and/or quality assurance.

All accreditation decisions/recommendations are published on the CTI internet site. The awarded EUR-ACE® labels are also published in the ENAEE database and CeQuInt labels in the ECA database.

In 2010, CTI developed its own **internal information system** that evolves constantly. It enables CTI members, experts, registrars and permanent staff to have access to the files and all relevant documents regarding a review procedure.

Since 2014, CTI publishes a **monthly newsletter** which may boast with 2000 subscribers (compared to 201 concerned HEIs). It enables CTI members, experts, stakeholders, media, general public to get information about the Commission's ongoing activities and major evolutions. The newsletter also represents an efficient way to spread analytical documents on the engineering profession and training and on quality assurance issues in higher education. It also includes announcements of events and articles by French and international partners and stakeholders.

Every year in February, CTI launches the upcoming campaign during its **annual conference**. It is not only attended by representatives from the HEIs which participate in the campaign, but also by many other HEIs and stakeholders who wish to update their information on CTI's standards and guidelines, procedures and evolutions. It has become an exchange platform for engineering higher education, with up to 400 attendees in 2018, including foreign participants. CTI members play an active part in the organisation of the conference and the experts are invited to participate as part of their training.

Traditionally, the one-day conference is preceded by an afternoon **workshop on international issues**.

CTI representatives participated in the working group in charge of the revision of the *EUR-ACE® Framework standards and guidelines* (EAFSG). CTI also contributed actively in the **translation of the ESG and the EAFSG** into French, in the framework of the network of quality assurance agencies from French speaking countries, FrAQ-Sup. This furthered a better awareness and understanding of the ESG and EAFSG amongst members, experts and stakeholders who are not native English speakers.

And last but not least, CTI representatives participate on a regular basis in national and international conferences and workshops, often as speakers and with **publications and communications** (see list [here](#)).

Many of the above mentioned information and communication tools are used to disseminate reports and documents of **thematic analysis**, as may be read in chapter 9.4. below.

## 8. Agency's international activities

A part of CTI's international activities is specifically considered by the French law of 1934 (Art. L642-1 to 12 of the Code of Education); in particular, the legal framework applicable to the accreditation by CTI of engineering programmes abroad and their recognition in France.

These "historical" missions have expanded with the development of the European Higher Education Area where CTI is an active player, and the international development of French engineering higher education institutions (specifically, the development of off-shore initiatives). Finally, due to the fact that the engineering profession is not regulated in France (no institution of chartered engineers), CTI acts as the natural counterpart for foreign professional bodies (together with the engineers' alumni association [Ingénieurs et scientifiques de France](#) - IESF).

Over the last 15 years, CTI has largely developed its international activities. In order to manage the choice of possible projects and the induced workload, CTI periodically defines its strategy for international relations.

### 8.1. Strategic priorities for international relations

For the period 2016-2018, CTI's international activities have been defined according to 4 strategic issues:

#### **Contribution of the French engineering HE to the EHEA**

- Continuous improvement and quality assurance of engineering programmes are at the forefront of CTI's priorities. CTI applies this quality requirement to its own organization and has aligned its criteria and procedures with those established by the ESG.
- Participation in different European organisations in charge of quality assurance in higher education.  
CTI is a full member of ENQA since 2005 and it is registered in EQAR since 2010. CTI is a founding member of ECA (*European Consortium for Accreditation*) since 2005, of ENAEE (*European Network of Accreditation for Engineering Education*) since 2006, of the network of francophone agencies, *FraQ-Sup* since 2014.
- Co-operations with other European and international quality assurance agencies such as: AEQES (Belgium), ANECA (Spain), NVAO (Netherlands and Flandres), AAQ (Switzerland), IEAQA (Tunisia); network of francophone quality assurance agencies *FraQ-Sup*, joint international projects and activities with Hcéres, ...

#### **Internationalisation of engineering HEIs**

- Gathering information, exchange of good practice and continuous analysis to guide the strategy and process of internationalisation of the engineering programmes (Bologna process, language proficiency, double and joint degrees, outgoing and incoming mobilities, internationalisation at home, ...);
- Contribution to the evolution of the CTI standards and guidelines (R&O) and the international criteria for accreditation.

#### **Support the French engineering degree as a model**

- Assessment of engineering programmes abroad (by CTI alone or through bilateral agreements with other accreditation or evaluation agencies), either for an *admission par l'Etat* or an EUR-ACE ® procedure.
- Considering the setting up of a *CTI label* for foreign programmes.

## **Furthering the recognition of the French engineering degree with the aim to facilitate the academic and professional mobility of the graduates**

- Relations and agreements with French and foreign organisations, such as for instance the ENIC-NARIC centre, the « Agence universitaire de la francophonie » (AUF), the Agence française de développement (AFD), ... and with professional engineering bodies such as the Accreditation Board for Engineering and Technology (ABET, USA); and in Canada: Engineers Canada-Ingénieurs Canada ; Ordre des Ingénieurs du Québec (OIQ) ; Ordre des Ingénieurs forestiers ; Ordre des Chimistes ; Ordre des Agronomes ; ...  
CTI is for instance among the signatories of professional qualification recognition agreements between Canadian institutions of chartered engineers and France.
- Implication in the EUR-ACE® system and evaluation procedures to award the label. In this framework, CTI signed the [\*Mutual Recognition of EUR-ACE® Labelled Engineering Degree Programmes\*](#) accord with the other authorised agencies.
- Formal approach to public and private bodies and providing certificates explaining the level of studies and professional qualification in order to assist the graduates' degree recognition.

## **8.2. International activities**

In recent years or currently, CTI has been involved in following international activities and projects:

- Evaluation procedures leading to the accreditation of French engineering programmes offered on campuses in other countries.
- Evaluation procedures regarding the award of the EUR-ACE® label to French engineering programmes at master's level.
- Accreditation procedures regarding foreign engineering programmes at master's level, either for an official recognition of the degree in France (*admission par l'Etat*) or for the EUR-ACE® label or both. In Europe (Belgium, Bulgaria, Germany, Italy, Spain, Switzerland) and abroad (Burkina-Faso, Cameroun, China, Ivory Coast, Lebanon, Morocco, Tunisia, Vietnam).
- Joint or co-ordinated accreditation procedures with other EQAR registered agencies (in 2018-2019 with AEQES for Belgian engineering degrees and with ASIIN for a joint French-German degree and previously with AAQ).
- Evaluation procedures regarding the award of the CeQuInt label to French or foreign engineering programmes at master's level.
- During the academic year 2016-2017, CTI worked with its French and Chinese counterparts Hcéres and CEAIE to the project of a Chinese-French quality label for Chinese-French Institutes. Due to a lack of funding, the project was put on hold before the beginning of the pilot phase that should have been started in 2017-2018.
- Constant dialogue, joint projects and reciprocal representation in the field of international relations with French partner agency Hcéres.
- Bilateral co-operation agreements with other QAA, for exchange of good practice and experts, joint procedures (AEQES, UNIBASQ, ...) or support in the case of developing countries as is the case with IEAQA in Tunisia these days.
- Participation in working groups and projects of European and international associations and networks such as ENQA, ENAEE, ECA:
  - o ENQA working group and occasional paper: *Current practices on external quality assurance of academic recognition among QA agencies*,

- ENAEE working group on the revision of the standards and guidelines for the *EUR-ACE® Framework standards and guidelines* (EAFSG),
- ECA co-ordinated European project that led to the implementation of the *Certificate of Quality in Internationalisation* (CeQulnt),
- ECA working group and publication of a document: *State of the arts in Learning outcomes*
- ECA working group 2 on *Innovation in QA and accreditation*
- ECA working group 3 on *Information strategies*
- ECA's QROSSROADS initiative (European data base of accredited programmes)
- Participation in European projects in 2017 and 2018:
  - European Commission mandated study co-ordinated by the *Council of Engineers' Chambers* (ECEC) on *Common training principles for engineers*
  - LIREQA: *Linking academic recognition and quality assurance*
  - MEDACCR: *On-line Quality Assurance and EUR-ACE Accreditation of Engineering Programmes in Mediterranean Area*
- Founding of the network of francophone quality assurance agencies FrAQ-Sup, with partner agencies Hcéres, AAQ and AEQES (2014); exchange of good practice, translation of the ESG and EAFSG; organisation of three conferences (last in June 2018 in Paris); co-operation with the francophone university association, *Association Universitaire de la Francophonie* (AUF), in the framework of a co-operation agreement; ...
- Active contribution to the exchanges and/or recognition agreements with academic associations, accreditation agencies and professional engineering organisations (Canada, USA, Australia, Pakistan, ...)
- Organisation of international events such as:
  - annual CTI international workshop the day before the annual conference
  - European conference on 5-6 April 2018 with stakeholder CDEFI (association of deans of engineering schools) in the framework of the ministerial conference of the Bologna process,
  - Training sessions organised by partners Hcéres and CTI for operators of the French *Agence française de développement* (AFD) which supports financially various projects in developing countries, including in the field of higher education,
  - Conference on the *Development of quality assurance in higher education in Africa* with partner organisations Hcéres and *Agence française de développement* (AFD).
- CTI representatives participate on a regular basis in international conferences and meetings, often as speakers and with [publications and communications](#).

## 9. Compliance with European Standards and Guidelines [Part 3]

### 9.1. ESG Standard 3.1 Activities, policy and processes for quality assurance

**Standard:** Agencies should undertake external quality assurance activities as defined in Part 2 of the ESG on a regular basis. They should have clear and explicit goals and objectives that are part of their publicly available mission statement. These should translate into the daily work of the agency. Agencies should ensure the involvement of stakeholders in their governance and work.

**Guidelines:** To ensure the meaningfulness of external quality assurance, it is important that institutions and the public trust agencies.

Therefore, the goals and objectives of the quality assurance activities are described and published along with the nature of interaction between the agencies and relevant stakeholders in higher education, especially the higher education institutions, and the scope of the agencies' work. The expertise in the agency may be increased by including international members in agency committees.

A variety of external quality assurance activities are carried out by agencies to achieve different objectives. Among them are evaluation, review, audit, assessment, accreditation or other similar activities at programme or institutional level that may be carried out differently. When the agencies also carry out other activities, a clear distinction between external quality assurance and their other fields of work is needed.

#### **Missions and objectives**

CTI was founded by law in 1934; since 1997 all existing engineering programmes have to undergo a periodical evaluation procedure by CTI. CTI's main mission, to carry out accreditation procedures for all French engineering programmes, is published in the legal texts by the government and CTI itself. CTI's role in the accreditation of engineering degree programmes is therefore well known by all actors of French higher education.

CTI defines its main missions as:

- Initial accreditation procedures of new study programmes in engineering and periodical accreditation procedures of existing programmes of French institutions, in France and abroad.
- Programme accreditation procedures of existing programmes in engineering of foreign institutions abroad.
- Defining the generic profile of the engineer at master's level and drawing up criteria and procedures for awarding the engineering degree and for carrying out the CTI's missions.
- Issuing opinions on all topics regarding the French engineering education.

CTI's complementary missions are in line with the main ones:

- Developing a quality assurance culture within French engineering schools and the CTI itself, in line with the Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG).
- Any actions to promote the academic and professional recognition of the French engineering degree.
- Evaluation of French and foreign engineering programmes in order to award quality labels.

CTI's daily work consists in carrying out these missions. (see chapter 6 on the procedures; chapter 7.1 on steering committees and working groups; chapter 9.5.1 on human resources).

CTI regularly defines its objectives and action line. The last version covers the period 2017-2020 and is published on CTI's website.

CTI also conducts on a regular basis a general revision of its long-term international strategy and priority action line (see chapter 8 above).

## Stakeholders

Two of CTI's main stakeholders are represented in the composition of the Commission itself: academia and industry, as described in chapter 4.4. above. (The same applies for the experts.) Apart from this direct involvement of the two main stakeholders in its governance, CTI encourages exchanges with all stakeholders at all levels (see chapter 7 above).

## Evidences and references

Evidence 9.1.1.: [CTI's brochure](#)

Evidence 9.1.2. : [CTI's missions, objectives and action plan 2017-2020](#)

Evidence 9.1.3. : [CTI's international strategy 2016-2018](#)

Evidence 9.1.4. : [Composition of CTI's commission 2018-2020](#)

## 9.2. ESG Standard 3.2 Official status

***Standard:*** Agencies should have an established legal basis and should be formally recognised as quality assurance agencies by competent public authorities.

***Guidelines:*** In particular when external quality assurance is carried out for regulatory purposes, institutions need to have the security that the outcomes of this process are accepted within their higher education system, by the state, the stakeholders and the public.

CTI was founded by a 1934 law; therefore, its existence and its duties and responsibilities may only be called into question by another law. Since 1934, all regulatory and legislative texts on higher education in France have reinforced CTI's official status.

In 2002, the legislator decided to clarify, organize and simplify all texts on education in France, in a Parliament-approved *Education Code*. This legal document lists and confirms all the legislative and regulatory provisions concerning CTI and the engineering degree *titre d'ingénieur diplômé*. The *Education Code* articles on CTI and the *titre d'ingénieur diplômé* which are particularly significant:

- decree updating CTI membership and organization (*State Council Decree* dated July 5, 1985).
- CTI must be consulted on all matters related to the *titre d'ingénieur diplômé* (Article L642-1).
- CTI takes the accreditation decision for private HEIs to award the *titre d'ingénieur diplômé* (Art. L642-4).
- The *titre d'ingénieur diplômé* is a master degree (*Education code*, article D 612-34).
- The ability to award the *titre d'ingénieur diplômé* to foreign engineering degree programmes (*Law of July 1934*).

When the government voted the new law for higher education in 2013 that transformed former agency AERES in the *Haut Conseil de l'évaluation de la recherche et de l'enseignement supérieur* (Hcéres), it did not mention any change in CTI's status. Hcéres' missions include the validation of the evaluation procedures of all quality assurance agencies operating in France, with the exception of CTI. Indeed, the previous law of 1934 and the *Education code* state that the responsibility for the evaluation of engineering programmes lies exclusively with CTI.

During 84 years of existence all subsequent laws and decrees have confirmed the legal status of CTI.

## Evidences and references

Evidence 9.2.1.: Extract from the French *Education code* regarding CTI: [Bylaws](#), annex 1 page 20