APPLICATION FOR RE-AUTHORISATION TO AWARD THE EUR-ACE® LABEL (MASTER LEVEL)

November 2018

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I. BACKGROUND

I.1. Official designation and contact

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I.2. Motivation of the re-application

CTI's core activity is the national accreditation of all French master-level engineering degrees (*"diplôme d'ingénieurs"*).

In addition to this core activity, one of the main goals of CTI's activity is to improve the professional and academic recognition of these French engineering degrees in Europe and abroad. In this context, being part of the EUR-ACE® system is of strategic importance for CTI. Over the years, we have witnessed real advances that can be directly attributed to the EUR-ACE® label, including recognition of French degrees by certain professional orders (particularly in UK, Australia and New Zealand).

CTI is a founding member of ENAEE and was first authorized to award the EUR-ACE® label (Master level) in 2008. Since then, CTI has continued to be a major contributor to the expansion of the EUR-ACE® label in France and abroad, in such countries as Belgium, Bulgaria, Cameroon, China, Morocco, Switzerland, Tunisia, or Vietnam. Evaluations for the label in other countries (Ivory Coast, Lebanon…) have also been planned for the coming year (2018-2019).

CTI receives an increasing number of label attribution requests, especially from outside France. Re-authorization to award the EUR-ACE® Master label is a key component of CTI's international strategy and profile.

As part of its international strategy, CTI has also been a full member of ENQA (European Association for Quality Assurance in Higher Education) since 2005 and has been registered on EQAR (European Quality Assurance Register) since 2010. CTI also participates in the work of ECA (European Consortium for Accreditation).

I. BACKGROUND

More than 570 engineering programmes were awarded the label by CTI since 2008 are currently in the EUR-ACE® database.

However, the number of programmes accredited by CTI and present in the ENAEE database is only a proportion of all the programmes that CTI has pronounced eligible for the EUR-ACE® Master Label over the years.

Application for the EUR-ACE® Master Label by a foreign Higher Education Institution (HEI) is voluntary and specific. An agreement document is signed by both CTI and the HEI. The foreign HEI can apply for French State recognition (*"Admission par l'Etat"*), or for the EUR-ACE® Master Label, or for both at the same time. When a foreign programme has requested the EUR-ACE label and been pronounced eligible by CTI, CTI launches the certificate request and database registration with ENAEE.

There is a different label attribution process for most French programmes evaluated by CTI. CTI's R&O ("References et Orientations") criteria fully cover the EAFSG standards. Every master-level engineering programme which awarded degrees over the past year(s) is therefore systematically assessed for EUR-ACE® label attribution during CTI's accreditation procedure. CTI's accreditation report states whether any given programme is eligible for the EUR-ACE® Master label, and when it is, reminds the HEI that a formal request has to be sent to CTI in order to obtain the actual certificate and appear in the ENAEE database. French HEIs do not always ask for EUR-ACE® Master label certificates and registration in the ENAEE database, even though some of their programmes have been pronounced eligible by CTI.

CTI's policy of always stating, when possible, eligibility for the EUR-ACE® label for French programmes, is part of its general work of communication and providing information for HEIs.

Given the growing number of requests from foreign HEIs, CTI has reinforced and updated its information and communication. Recent improvements include clarification regarding duration of accreditation for foreign HEIs, when the EUR-ACE® Master label alone is requested **(E.I.2.A)**, and a charter regarding their use of the EUR-ACE® label logo **(E.I.2.B).**

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EVIDENCE AND REFERENCES

E.I.2.A

Deliberation on the awarding of the EUR-ACE® label to foreign HEIs (*"Délibération n° 2018/06-02 Relative à l'attribution du Label EUR-ACE® aux établissements étrangers"*) https://www.cti-commission.fr/wp-content/uploads/2018/06/Deliberation_Duree_accreditation_Label_EUR-ACE_201806_02.pdf

E.I.2.B

(*"CHARTE D'UTILISATION DU LOGO EUR-ACE®, A destination des écoles d'ingénieurs étrangères ayant une ou plusieurs formations d'ingénieurs auxquelles le label EUR-ACE®*

(seul) a été délivré par la CTI, agence habilitée EUR-ACE.")
[Charter for the use of the EUR-ACE® label logo for foreign engineering schools with one or more engineering programmes for which the EUR-ACE® label (only) has been awarded by CTI, a EUR-ACE authorised agency]
https://www.cti-commission.fr/wp-content/uploads/2018/06/CHARTE_utilisation_-LOGO_label_EURACE_-seul_201806.pdf

I.3. General information about the agency

The history and development of the agency is described in parts **I.3.1, 2** and **3.**

The latest data on ENAEE authorization to award the EUR-ACE® label is provided in part **I.4.** of this application file.

I.3.1. History and development

The first French engineering school was founded in 1747 *(Ecole Nationale des Ponts et Chaussées)* in order to provide high-level scientists with technical skills. They had to become capable of the strategic planning required for building the modern infrastructure the country needed. Other high level engineering schools soon followed, and they still exist today under the supervision of different ministries (*"Ministère de l'Enseignement supérieur, de la Recherche et de l'Innovation"* for higher education; *"Ministère de l'Agriculture et de l'Alimentation"* for food and agriculture; *"Ministère de l'Économie et des Finances"* for the economy, industry and telecommunications; *"Ministère des Armées"* for defence and the armed forces; *"Ministère de la Transition écologique et solidaire"* for ecology and sustainable development) or local authorities. At the beginning of the 19th century, the first private engineering schools appeared in response to the rapidly growing needs of industry. In the early 20th century, in the twenties and thirties, the number of private HEIs grew quickly. The quality of programmes then became a real issue, and the government decided to set up a commission to authorise private institutions to award recognised degrees.

The Commission des titres d'ingénieur (CTI) was thus established by law in 1934 (French education code, article L.642-2 and following), with the aim of carrying out three main missions that remain the same 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 external quality assurance procedures were compulsory only for new programmes of private HEIs, most public HEIs also applied for a CTI procedure when setting

up a new programme.

The evaluation by CTI of French publicly-owned HEIs' new programmes became legally mandatory in 1984.

Since 1997, all existing engineering programmes (by private and publicly-owned HEIs) have had to undergo a periodical evaluation procedure by CTI every five years.

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

Since the 1990s and the ever-increasing mobility of careers and people around the world, and the development of the European Higher Education Area, CTI's international work and networking for quality assurance and transnational degree recognition has continually increased. It therefore naturally became a founding member of ENAEE in 2006, and obtained its first authorization to award the EUR-ACE® Master label in 2008.

I.3.2. Organisational structure

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

In addition, around **100 experts** from academic and socio economic backgrounds provide assistance in areas for which they are competent, such as engineering, science, education, international affairs and quality assurance. These experts – together with student experts – take an active part in the accreditation procedures.

CTI has also appointed **a dozen special advisors** from academia and socio-economic groups to manage or participate in projects that require specific expertise.

A **permanent staff** team (4 people full time) is responsible for day-to-day management and supporting CTI's governance.

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

CTI is an independent body, responsible for managing its own finances. Its administrative operator is a partner association, the Conference of Deans of French Schools of Engineering, the Conférence des directeurs des écoles françaises d'ingénieurs (CDEFI).

I.3.3. Distinctive features

Compared with the majority of quality assurance agencies within the EHEA, CTI has a number of significant distinctive features:

* CTI is a **field specific agency** dealing exclusively with engineering programmes at

master's level. (For a full description of the French degree system and a contextual overview of the engineering degree / "*diplôme d'ingénieur*", see **Appendix 1:** Description of the French degree system and contextual overview of the engineering degree / "*diplôme d'ingénieur*")

* CTI is both an **academic and professional organization.** Its members consist of an equal number of representatives from academia (16 members) and from socio economic groups (16 members). They are officially appointed by the Minister in charge of Higher Education upon proposal by various organisations. The commission is made up as follows:
8 professionals representing employers' organizations
8 professionals representing trade unions and engineers' associations
8 academic staff from HEIs under the ministry of higher education
5 academic staff from HEIs under other ministries
3 experts in science and technology

* CTI members work 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 accreditation procedures; drawing up reference documents for engineering programmes; performing transversal analysis; sitting on advisory boards and working groups; acting and speaking as delegates of the CTI in various meetings with 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 "ordinary" members, to a full quarter-time for board members and two-thirds time for the president).

* CTI's responsibility in the accreditation **decision** varies depending on the legal form of the HEIs: CTI makes accreditation decisions for private institutions and those run by Chambers of Commerce; it issues **recommendations** to the relevant ministries for publicly-owned higher education institutions.

* CTI has full responsibility for **defining the accreditation criteria** for French engineering programmes.

* Since the engineering profession is not regulated in France and there is no institution of chartered engineers, the CTI plays a natural and important role in the **professional recognition** of the *diplôme d'ingénieur.*

* Due to its long-standing and domain-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 to institutional evaluation, faculties of engineering are showing growing interest in external quality assurance for their engineering programmes, either through CTI accreditation or the EUR-ACE® label, or both.

In the light of how it has evolved over the years, its organisational structure and distinctive features, CTI needed to clearly state and present its mission to its stakeholders and the general public. This will be described later on in **III.4.**

I.4. Agency's follow-up of the recommendations

CTI was granted the authority to award EUR-ACE® labels to Engineering programmes at master level from June 2015 to 31 December 2019 (See **Appendix 3:** ENAEE Authorization report, and **Appendix 4:** List of ENAEE Recommendations).

The recommendations were as follows:

1. Put more emphasis in the R&O, the self-evaluation report and the audits on the achievements of CTI programmes outcomes. Require from the HEIs the provision of additional evidence that a programme and learning outcome assessment related to the programme objectives and CTI required outcomes is in place.

2. Provide more time in the agenda of the audit visits to analyse and assess the programmes and the factual contribution of the different modules to the achievement of programme outcomes in more detail, e.g. by limiting the time of presentations.

3. Continue to carefully monitor the programmes in apprenticeship mode: Require from the HEIs the provision of evidence that with these programmes the same or at least substantially equivalent learning outcomes in content and level are achieved as with the traditional format.

CTI responded to the above recommendations in the following way:

I.4.1. Recommendation 1

Put more emphasis in the R&O, the self-evaluation report and the audits on the achievements of CTI programmes outcomes. Require from the HEIs the provision of additional evidence that a programme and learning outcome assessment related to the programme objectives and CTI required outcomes is in place.

CTI's reference framework and documentation are updated on a regular basis in line with its standards and guidelines, for continuous quality improvement. Following the last ENAEE audit for EUR-ACE® re-authorisation (2015), CTI modified and improved the R&O framework **(E.I.4.1.A),** the self-evaluation report for HEIs **(E.I.4.1.B)** and the auditing process.

CTI criteria for programmes are now more complete and precise, and the presentation and assessment of the learning outcomes is clearly linked to the definition of the programme objectives:

Ex:

R&O_Volume_1_Chapter_"C.3.3
"DÉCLINAISON DU PROGRAMME DE FORMATION
Il répond aux objectifs de la formation dispensée.
Le syllabus des enseignements est disponible en interne et en externe, il est clair et structuré.
Chaque enseignement et chaque activité pédagogique (incluant les projets, les stages et les périodes en entreprise dans le cadre de l'alternance) est caractérisé par les acquis attendus de l'apprentissage et leurs modalités d'évaluation."

["BREAKDOWN OF THE TRAINING PROGRAMME
Meets the programme objectives.
The teaching syllabus is available internally and published for external parties, and it is clear and structured.
All teaching themes and activities (including projects, work placements and periods in companies for work-linked training) are characterised by expected learning outcomes and assessment methods"]

The R&O 2016 edition, as opposed to the 2012 edition **(E.I.4.1.C),** includes an extensive chapter that details the learning outcomes approach **(E.I.4.1.D).** It stresses its relevance and explains its professional origin and logic. It also gives a clear definition of a learning outcome, and provides a detailed list of learning outcome examples **(E.I.4.1.E, and E.I.A.1.F).**

During the site visits, reviewers systematically check how the learning outcomes process has been deployed and is monitored by the HEI, and review the list of learning outcomes, how they may be acquired throughout the curriculum and the courses, and how the HEI assess whether students have achieved the learning outcomes.

EVIDENCE AND REFERENCES

E.I.4.1.A

CTI_ R&O2016_Volume_1
RÉFÉRENCES ET CRITÈRES MAJEURS D'ACCRÉDITATION
[STANDARDS AND GUIDELINES AND MAJOR CRITERIA FOR ACCREDITATION]
(full standards and guidelines as a .pdf):
https://api.cti-commission.fr/uploads/documents/backend/document_15_fr_references-et-orientations-livre-1_30-11-2015.pdf

CTI_ R&O2016_Volume_1
V – LES CRITERES MAJEURS D'ACCREDITATION
[MAJOR CRITERIA FOR ACCREDITATION]
https://www.cti-commission.fr/fonds-documentaire/document/15/chapitre/1127

E.I.4.1.B

CTI_ R&O2016_Volume_2
GUIDE D'AUTO EVALUATION DES ECOLES EN VUE DE L'ACCREDITATION
[SELF-EVALUATION GUIDE FOR ENGINEERING SCHOOLS SEEKING ACCREDITATION]
(full self-evaluation guide as a .doc):
https://api.cti-commission.fr/uploads/documents/backend/document_17_fr_references-et-orientations-livre-2-guide-d-autoevaluation_30-11-2015.docx

E.I.4.1.C

CTI_ R&O2012_Volume_1
See: Chapter_T1_A.3.3.4.
(Full 2012 reference frameworkas a .pdf):
https://www.cti-commission.fr/wp-content/uploads/2014/06/cti-r_o-tome1-2012-2015.pdf

E.I.4.1.D

CTI_ R&O2016_Volume_1_Chapter 4.1
L'APPROCHE COMPETENCES DE LA FORMATION
[THE LEARNING OUTCOMES APPROACH]
https://www.cti-commission.fr/fonds-documentaire/document/15/chapitre/1119

E.I.4.1.E

CTI_ R&O2016_Volume_1_Chapter 4.2
LES COMPETENCES ATTENDUES DES FORMATIONS D'INGENIEUR
[THE EXPECTED PROGRAMME OUTCOMES]
https://www.cti-commission.fr/fonds-documentaire/document/15/chapitre/1125

E.I.4.1.F

CTI_ R&O2016_Volume_2_Chapter_C3.1
(self-evaluation report)
COHERENCE DU CURSUS AVEC LES COMPETENCES RECHERCHEES
[CONSISTENCY OF THE PROGRAMME WITH THE EXPECTED LEARNING OUTCOMES]
https://www.cti-commission.fr/fonds-documentaire/document/17/chapitre/264?a=1

For more details see also Part **II.1** below: Accreditation Standards and Procedure - Programme outcomes and related Evidence.

I.4.2. Recommendation 2

Provide more time in the agenda of the audit visits to analyse and assess the programmes and the factual contribution of the different modules to the achievement of programme outcomes in more detail, e.g. by limiting the time of presentations.

Here again the R&O 2016 standards have been updated in order to improve the quality of the site visit and take into account this recommendation. The third volume of the 2016 edition **(E.I.4.2.G),** dedicated to procedures, suggests a detailed structure and model for the organization of CTI's visit to the HEI **(E.I.4.2.H).**

This detailed model suggests a duration of one hour for the Deans' presentation of the HEI, thereby limiting it to a small proportion of the full visit. It also schedules a dedicated time for reviewers to check the evidence that students acquire the learning outcomes, by reviewing documentation and student work.

This detailed model also provides a detailed list of the documents and evidence that may be requested by the review team during the visit **(E.I.4.2.I),** and which includes documents on programmes (*Formation*) and graduates' employment (*Recrutement et emploi*).

The main part of the visit is therefore allotted to discussions with HEI management and with various representative panels of the HEI and its stakeholders, during which subjects and priorities are brought up by the review team's questions. If relevant, missing documents and additional evidence can be requested. The reviewers can focus better on the achievement of programme outcomes, and compare them to programme objectives, rather than depend on the deans' prepared presentations.

EVIDENCE AND REFERENCES

E.I.4.2.G

CTI_ R&O2016_Volume_3
PROCEDURES D'ACCREDITATION
[ACCREDITATION PROCEDURES]
(full reference framework as a .PDF):
https://api.cti-commission.fr/uploads/documents/backend/document_16_fr_references-et-orientations-livre-3_30-11-2015.pdf)

E.I.4.2.H

CTI_ R&O2016_Volume_3_Chapter_V.3.2 – 2
L'ORGANISATION DE LA VISITE SUR SITE
[ORGANISATION OF THE SITE VISIT]
https://www.cti-commission.fr/fonds-documentaire/document/16/chapitre/1138

E.I.4.2.I

CTI_ R&O2016_Volume_3_Chapter_V.3.1
LES DOCUMENTS À METTRE À DISPOSITION LORS DE LA VISITE
[DOCUMENTS TO BE PROVIDED DURING THE VISIT]
https://www.cti-commission.fr/fonds-documentaire/document/16/chapitre/1137

I.4.3. Recommendation 3

Continue to carefully monitor the programmes in apprenticeship mode: Require from the HEIs the provision of evidence that with these programmes the same or at least substantially equivalent learning outcomes in content and level are achieved as with the traditional format.

A brief presentation of learning modes (FISE, FISA and FC) is included in the last part of **Appendix 1** (Description of the French degree system and contextual overview of the engineering degree / "*diplôme d'ingénieur*": Programme learning modes for obtaining an engineering degree in France).

Nowadays engineering students have a good knowledge of the advantages and requirements of the FISA, or apprenticeship-learning mode, and employers recognize the added value of hiring young professionals who have early and extended practical experience in industry and/or services, as well as the solid scientific and technical knowledge acquired within an HEI.

Diplomas and certificates do not specify the learning acquisition pathways, and the learning outcomes should be the same whatever the learning mode. Common activities should also be shared as often as possible by students, within HEIs that have the two or three modes available. CTI, through the auditing process, is responsible for ensuring that this process is working.

The first volume of R&O 2016 has a dedicated Appendix about these *"Formations initiales sous statut d'apprenti (FISA)"*, which helps the review teams and the HEIs keep in mind CTI's expectations and recommendations, within the specific constraints of this mode. Volume 2 also helps HEIs perform detailed self-evaluation of their apprenticeship programmes. **(E.I.4.3.J).**

As with the FISE "regular" mode, CTI requires extensive information on the list of learning outcomes provided by the programme, and checks the way they are assessed and achieved (in the company or school). The balance between the time spent at the engineering school and in the company is taken into consideration along with how and how many ECTS are distributed. **(E.I.4.3.K).**

The number of programmes available through apprenticeship status, in France, increases regularly in France. There are currently 191 EUR-ACE® accredited engineering programmes offering apprenticeships, compared to 156 in 2016.

EVIDENCE AND REFERENCES

E.I.4.3.J.

CTI_ R&O2016_Volume_1_Chapter_VI.3_Annexe_3
FORMATION INITIALE SOUS STATUT D'APPRENTI (FISA)
[INITIAL TRAINING UNDER APPRENTICESHIP (FISA)]

CTI_R&O2016_Volume_2
Page 38
FISA

E.I.4.3.K.

CTI_ R&O2016_Volume_3_Chapter_VI.2
LA PROCÉDURE ET LES DOCUMENTS POUR LA VOIE DE L'APPRENTISSAGE
[PROCEDURE AND DOCUMENTS FOR PROGRAMMES THROUGH APPRENTICESHIP STATUS]
https://www.cti-commission.fr/fonds-documentaire/document/16/chapitre/1141

II. ACCREDITATION STANDARDS AND PROCEDURE

II.1 Programme Outcomes

II.1.1 Compliance with section 2 of the EAFSG [2015]

CTI accreditation criteria are compiled in the first volume of the document *"Références et Orientations"* (References and Orientations - R&O) published in 2016. A new version of this document will be released in February 2019.

The reference framework is composed of six sections:

A.   Mission and organization of the engineering school

B.   External links and partnerships

C.   Training programme and process

D.   Student admission and selection

E.   Graduate employment

F.   Quality assurance (at school level)

Part C of the standards (and specifically sections C3 and C4 in R&O2016_volume_1) describes the programme output standards applied by CTI **(E.II.1.1.A):**

*   Each part of the curriculum needs to be related specifically to the relevant training objectives and expressed in terms of programme outcomes.

*   The student workload and programme outcomes framework comply with Level 7 of the EHEA Qualifications Framework, and show an appropriate balance of European Credit Transfer System (ECTS) and semesters.

To supplement this first volume of R&O, CTI also issued a second volume, a "self- evaluation guide" containing detailed information on how these outcomes could be assessed **(E.II.1.1.B).** In particular, a list of potential evidence is provided for each CTI output standard. This self-evaluation guide is intended for both higher education institutions (who can use it as a basis for internal assessment of their programmes) and CTI members and experts (who use it as a basis for the external evaluation). CTI's accreditation criteria and self-evaluation guide can be consulted on CTI's website (see list of evidence in this section).

II. ACCREDITATIONS STANDARDS AND PROCEDURE

The first volume of R&O 2016 in French details the main CTI criteria for evaluation and also includes an appendix setting out EUR-ACE® label requirements and outcomes. **(E.II.1.1.C).** This allows HEIs and review teams to observe, in the same booklet or document, the proximity of the two sets of standards (further described in the table below) used evaluating curricula and programme outcomes.

CTI also clearly states that French HEI programmes undergoing an evaluation process are systematically considered with reference to the EUR-ACE® label standards **(E.II.1.1.D).**

In November 2017, CTI published standards and guidelines (in English) for transnational accreditation procedures, called "Accreditation Criteria, Guidelines and Procedures" **(E.II.1.1.E),** based on the same overall structure as the full French R&O. This reference document is primarily aimed at foreign HEIs asking for *"Admission par l'Etat"* (recognition by French State) and is meant to facilitate communication between all participants during the evaluation visits, by providing them with common language elements that can be found easily. It is deliberately less comprehensive than the full French R&O volumes (volume 1 on standards, and volume 3 on procedures) that fully detail CTI criteria and expectations.

This shorter English version allows:

* CTI members and experts, i.e. the review teams, to be more open to the specificities of higher education abroad and how foreign HEIs respond to those specificities.

* Directors and staff of foreign HEIs to better understand and memorize the standards for the upcoming evaluation

CTI clearly explains the differences between *"Admission par l'Etat"* and the option for foreign HEIs to only apply for the EUR-ACE® label through a CTI evaluation procedure, in which case CTI uses the EAFSG as a reference document. **(E.II.1.1.F)**

For both procedures, CTI provides an adapted shorter form to foreign HEIs for them to certify their data and key indicators, and add them to their self-evaluation report (see **II.2** below).

Evaluation types and references used by CTI:

HEI location	Evaluation purpose and result	References used
France	Accreditation to award the engineering degree in France + EUR-ACE® Master label	CTI R&O (EAFSG are fully integrated into the CTI R&O)
Abroad	French State Admission + EUR-ACE® Master label	CTI Accreditation Criteria, Guidelines and Procedures + CTI R&O
	EUR-ACE® Master label only	EAFSG

II. ACCREDITATIONS STANDARDS AND PROCEDURE

The table below presents a comparison of learning outcomes as described in the EUR-ACE® label standards and in the CTI R&O standards. It is based on the reference document in English, "Accreditation Criteria, Guidelines and Procedures" in order to make the similarities more obvious.

Analysis of this table reveals that the CTI standards cover all EUR-ACE® label standards, although the criteria are organized differently.

The CTI criteria are structured into 3 different parts. The six first CTI criteria focus on the acquisition of technical and scientific knowledge. The second part (criteria 7 to 10), focuses on the adaptation of graduates to the requirements of companies and society. The third and last part (criteria 11 to 14) takes into account the organizational, personal and cultural dimension (i.e. soft skills and transverse activities of students…).

A more detailed comparative analysis of the two sets of standards, based on Section 2 of the "EUR-ACE® Framework Standards and Guidelines (2015)" [EAFSG] has also been included in CTI's *"Notes d'approfondissement thématique 2016-2018"*, the fourth volume of the *"Références et Orientations (R&O)"*. **(E.II.1.1.G)**

EUR-ACE® Framework Standards and Guidelines (EAFSG) March 2015 version	CTI Accreditation Criteria, Guidelines and Procedures, Published November 2017. (1.E) Based on CTI R&O_2016
Programme Outcomes for Master Degree Programmes	CTI PROGRAMME OUTCOMES FRAMEWORK, 3 chapters : * SCIENTIFIC AND TECHNICAL KNOWLEDGE (criteria 1 to 6) * ADAPTATION TO THE SPECIFIC REQUIREMENTS OF THE COMPANY AND SOCIETY (criteria 7 to 10) * TAKING INTO ACCOUNT THE ORGANISATIONAL, PERSONAL AND CULTURAL DIMENSION (criteria 11 to 14) **This can be demonstrated by the answers that any HEI gives to parts C of CTI R&O in its SER**
KNOWLEDGE AND UNDERSTANDING * in-depth knowledge and understanding of mathematics and sciences underlying their engineering specialisation, at a level necessary to achieve the other programme outcomes; * in-depth knowledge and understanding of engineering disciplines underlying their specialisation, at a level necessary to achieve the other programme outcomes; * critical awareness of the forefront of their specialisation; * critical awareness of the wider multidisciplinary context of engineering and of knowledge issues at the interface between different fields.	* Knowledge and understanding of a broad field of basic and applied sciences; the capacity for analysis and synthesis of information associated with them (1) * Ability to mobilise resources from a specific scientific and technical field (2) **The HEI demonstrates this through C3.1 in its SER**

II. ACCREDITATIONS STANDARDS AND PROCEDURE

EUR-ACE® Framework Standards and Guidelines (EAFSG) March 2015 version	CTI Accreditation Criteria, Guidelines and Procedures, Published November 2017. (1.E) Based on CTI R&O_2016
ENGINEERING ANALYSIS * ability to analyse new and complex engineering products, processes and systems within broader or multidisciplinary contexts; to select and apply the most appropriate and relevant methods from established analytical, computational and experimental methods or new and innovative methods; to critically interpret the outcomes of such analyses; • ability to conceptualise engineering products, processes and systems; • ability to identify, formulate and solve unfamiliar complex engineering problems that are incompletely defined, have competing specifications, may involve considerations from outside their field of study and non-technical – societal, health and safety, environmental, economic and industrial – constraints; to select and apply the most appropriate and relevant methods from established analytical, computational and experimental methods or new and innovative methods in problem solving; • ability to identify, formulate and solve complex problems in new and emerging areas of their specialisation.	* Knowledge and understanding of a broad field of basic and applied sciences; the capacity for analysis and synthesis of information associated with them (1) * Command of engineering methods and tools: identification, modelling and resolution of even unfamiliar and incompletely defined problems, use of computer tools, analysis and design of systems (3) * Ability to take into account the issues and needs of society (10) * Ability to take into account the company's challenges: financial dimension, respect for quality, competitiveness and productivity, business requirements, economic intelligence (7) * Ability to take environmental issues into account, in particular by applying the principles of sustainable development (9) **The HEI demonstrates this through C3.1 and C4.2 in its SER**
ENGINEERING DESIGN * ability to develop, to design new and complex products (devices, artefacts, etc.), processes and systems, with specifications incompletely defined and/or competing, that require integration of knowledge from different fields and non-technical – societal, health and safety, environmental, economic and industrial commercial – constraints; to select and apply the most appropriate and relevant design methodologies or to use creativity to develop new and original design methodologies. * ability to design using knowledge and understanding at the forefront of their engineering specialisation.	* Command of engineering methods and tools: identification, modelling and resolution of even unfamiliar and incompletely defined problems, use of computer tools, analysis and design of systems (3) * Ability to design, implement, test and validate innovative solutions, methods, products, systems and services (4) * Ability to take into account the company's challenges: financial dimension, respect for quality, competitiveness and productivity, business requirements, economic intelligence (7) * Ability to take environmental issues into account, in particular by applying the principles of sustainable development (9) * Ability to undertake and innovate, through personal projects or initiative and involvement in entrepreneurial projects within the company (12) **The HEI demonstrates this through C4.1, C4.3 and C5.2 in its SER**

II. ACCREDITATIONS STANDARDS AND PROCEDURE

EUR-ACE® Framework Standards and Guidelines (EAFSG) March 2015 version	CTI Accreditation Criteria, Guidelines and Procedures, Published November 2017. (1.E) Based on CTI R&O_2016
INVESTIGATIONS * ability to identify, locate and obtain required data; * ability to conduct searches of literature, to consult and critically use databases and other sources of information, to carry out simulation in order to pursue detailed investigations and research of complex technical issues; * ability to consult and apply codes of practice and safety regulations; * advanced laboratory/workshop skills and ability to design and conduct experimental investigations, critically evaluate data and draw conclusions; * ability to investigate the application of new and emerging technologies at the forefront of their engineering specialisation.	* Ability to find, evaluate and exploit relevant information: information literacy (6) * Ability to carry out fundamental or applied research activities, to set up experimental devices, to open up to the practice of collaborative work (5) **The HEI demonstrates this through C4.2 and C4.3 in its SER**
ENGINEERING PRACTICE * comprehensive understanding of applicable techniques and methods of analysis, design and investigation and of their limitations; * practical skills, including the use of computer tools, for solving complex problems, realising complex engineering design, designing and conducting complex investigations; * comprehensive understanding of applicable materials, equipment and tools, engineering technologies and processes, and of their limitations; * ability to apply norms of engineering practice; * knowledge and understanding of the non-technical – societal, health and safety, environmental, economic and industrial – implications of engineering practice; * critical awareness of economic, organisational and managerial issues (such as project management, risk and change management)	* Ability to design, implement, test and validate innovative solutions, methods, products, systems and services (4) * Command of engineering methods and tools: identification, modelling and resolution of even unfamiliar and incompletely defined problems, use of computer tools, analysis and design of systems (3) * Ability to take into account the company's challenges: financial dimension, respect for quality, competitiveness and productivity, business requirements, economic intelligence (7) * Ability to take into account the issues of workplace relations, ethics, responsibility, safety and health at work (8) * Ability to take environmental issues into account, in particular by applying the principles of sustainable development (9) * Ability to take into account the issues and needs of society (10) **The HEI demonstrates this through C4.1, C4.3,C4.5 in its SER**

II. ACCREDITATIONS STANDARDS AND PROCEDURE

EUR-ACE® Framework Standards and Guidelines (EAFSG) March 2015 version	CTI Accreditation Criteria, Guidelines and Procedures, Published November 2017. (1.E) Based on CTI R&O_2016
MAKING JUDGEMENTS * ability to integrate knowledge and handle complexity, to formulate judgements with incomplete or limited information, that include reflecting on social and ethical responsibilities linked to the application of their knowledge and judgement; * ability to manage complex technical or professional activities or projects that can require new strategic approaches, taking responsibility for decision making.	* Ability to find, evaluate and exploit relevant information: information literacy (6) * Ability to take into account the company's challenges: financial dimension, respect for quality, competitiveness and productivity, business requirements, economic intelligence (7) * Ability to take into account the issues of workplace relations, ethics, responsibility, safety and health at work (8) * Ability to take into account the issues and needs of society (10) **The HEI demonstrates this through C4.2, C4.5 and C5.2 in its SER**
COMMUNICATION AND TEAM WORKING * ability to use diverse methods to communicate clearly and unambiguously their conclusions, and the knowledge and rationale underpinning these, to specialist and non-specialist audiences in national and international contexts; * ability to function effectively in national and international contexts, as a member or leader of a team, that may be composed of different disciplines and levels, and that may use virtual communication tools.	* Ability to integrate into professional life, to integrate into an organisation, to coordinate and develop it: exercise of responsibility, team spirit, commitment and leadership, project management, work control, communication with specialists and non-specialists (11) * Ability to take into account the issues of workplace relations, ethics, responsibility, safety and health at work (8) * Ability to work in an international context: mastery of one or more foreign languages and associated cultural openness, ability to adapt to international contexts (13) **The HEI demonstrates this through C3.1, C4.4 in its SER**
LIFELONG LEARNING * ability to engage in independent life-long learning; * ability to undertake further study autonomously	* Ability to know oneself, to self-assess, to manage one's competencies (especially as part of lifelong learning), to make professional choices (14) **The HEI demonstrates this through C3.1 in its SER**

EVIDENCE AND REFERENCES

E.II.1.1.A

R&O_Volume_1_Chapter_V.C.3.1
COHÉRENCE DU CURSUS AVEC LES COMPÉTENCES RECHERCHÉES
[CONSISTENCY OF THE PROGRAMME WITH THE EXPECTED LEARNING OUTCOMES]
https://www.cti-commission.fr/fonds-documentaire/document/15/chapitre/264?a=1

R&O_Volume_1_Chapter_V.C.3.2
ORGANISATION ET LISIBILITÉ DES CURSUS NOTAMMENT À L'INTERNATIONAL
(SEMESTRIALISATION, CRÉDITS…)
[ORGANISATION AND CLARITY OF PROGRAMMES, ESPECIALLY IN AN
INTERNATIONAL CONTEXT (SEMESTER FORMAT, CREDITS, etc.)]
https://www.cti-commission.fr/fonds-documentaire/document/15/chapitre/265?a=1

R&O_Volume_1_Chapter_V.C.4
ÉLÉMENTS DE MISE EN ŒUVRE DES PROGRAMMES
[PROGRAMME IMPLEMENTATION]
https://www.cti-commission.fr/fonds-documentaire/document/15/chapitre/267?a=1

E.II.1.1.B

R&O, Volume_2_Chapter_C.3
CURSUS DE FORMATION
[PROGRAMME CONTENTS]
https://www.cti-commission.fr/fonds-documentaire/document/17/chapitre/263?a=1

E.II.1.1.C

R&O_Volume_1_Annexe_VI.4
CRITÈRES DU LABEL EUR-ACE®
[EUR-ACE® FRAMEWORK STANDARDS AND GUIDELINES]
https://www.cti-commission.fr/fonds-documentaire/document/15/chapitre/1183

E.II.1.1.D

R&O_Volume_1_Chapter_III.6
RECONNAISSANCE EUROPÉENNE DU TITRE D'INGÉNIEUR DIPLÔMÉ :
LE LABEL EUR-ACE®
[EUROPEAN RECOGNITION OF TITRE D'INGÉNIEUR DIPLÔMÉ STATUS:
THE EUR-ACE® LABEL]
https://www.cti-commission.fr/fonds-documentaire/document/15/chapitre/1116

E.II.1.1.E

Accreditation Criteria, Guidelines and Procedures
(full document as a .pdf)
https://www.cti-commission.fr/wp-content/uploads/2017/12/cti-references-guide-lines-2018_web_201712.pdf

E.II.1.1.F

Accreditation Criteria, Guidelines and Procedures, Part I.B. Why apply for CTI accreditation
EUROPEAN RECOGNITION OF CTI ACCREDITATION: THE EUR-ACE® LABEL —
EUROPEAN SYSTEM FOR ACCREDITATION OF ENGINEERING EDUCATION (EUR-ACE®)
Page 22.

E.II.1.1.G

R&O_2016_"Volume_4"
https://www.cti-commission.fr/fonds-documentaire,
and specifically:
Program Outcomes and Institutions Management Frameworks as Seen by EUR-ACE® and by CTI: A Comparison of Criteria, Anne-Marie Jolly, 2018
https://www.cti-commission.fr/wp-content/uploads/2018/07/RetO_L4_Pg_outcomes_HEImanagt_EURACE_CTI_2018.pdf

II.1.2 Assessment of the HEIs Programme Outcomes

Achievement of Programme Outcomes on the HEI side

Before CTI's visit, HEIs submit their programme schedules and extensive documentation about programmes together with their self-evaluation report, as proposed in part C of the second volume of R&O. **(E.II.1.2.A).** A list of relevant documents that reviewers can require for programme assessment during the visit, if they are missing in the HEI self-evaluation report, is also detailed in Volume 3 of R&O **(E.II.1.2.B).**

In addition to their self-evaluation report and evidence provided when a new evaluation process is launched, accredited HEIs must also fill in and send, every year, key indicators and data *("données certifiées par la direction de l'école")* **(E.II.1.2.C).** The review team also studies this data thoroughly.

In the 2018 form that CTI asked French HEIs to complete (see **Appendix 5:** The 2018 CTI (empty) form for collection of yearly data certified by French HEIs):

* Part II, about programmes, gives a breakdown of hours dedicated to scientific and technical knowledge, to socio-economics and humanities, to languages and to sports, as well as an idea of the time spent by students in companies or in a research lab. HEIs are also requested to provide figures and examples on digital training.

* Part III collects figures about how students benefit from a suitable research environment.

* Part VI explores the possibilities for students to launch their own businesses and start-ups.

* Part VII allows the review teams to see how much time students spend within companies (internships) during the programme, and

* Part VIII shows how many students benefited from experiences abroad.

During the site visit, there are, for each evaluated programme:

* discussions with the teaching staff about the framework and contents of programmes

* a specific session reserved for examining the documents provided by the school, including student work and any documents showing the assessment methods selected by the HEI.

Achievement of Programme Outcomes on the student and professional side

Part IX of the HEI's yearly data gives results and figures from employment surveys performed by the school. These are surveys sent to their newly graduated students and to students who graduated one year earlier. These surveys give an idea of how easy or difficult it is for them to start professional life as new engineers.

During the visit to the HEI, there are also discussions with alumni and employers, which can help evaluate the achievement of the programme outcomes on the student side.

EVIDENCE AND REFERENCES

E.II.1.2.A

R&O2016_Volume_2_Chapter_C, pages 30-54
FORMATION DES ÉLÈVES INGÉNIEURS
[TRAINING OF ENGINEERING STUDENTS]

E.II.1.2.B

R&O2016_Volume_3_Chapter_V.3.1
LES DOCUMENTS À METTRE À DISPOSITION LORS DE LA VISITE
[DOCUMENTS TO BE PROVIDED DURING THE VISIT]
https://www.cti-commission.fr/fonds-documentaire/document/16/chapitre/1137

E.II.1.2.C.

Data certified by management of a French HEI
See search engine on:
https://www.cti-commission.fr/accreditation
RECHERCHER UNE ÉCOLE OU UNE FORMATION
[HEI OR PROGRAMME SEARCH]

and
Appendix 5: the 2018 CTI (empty) form for collection of yearly data certified by French HEIs

II.2 Continuous Improvement

The self-evaluation guide (R&O_Volume_2) contains an extensive specific part that relates to section F of the CTI standards on *"Démarche qualité et amélioration continue"* (or "Quality Assurance at School Level" in the English reference document). It helps HEIs report on how they implement their internal quality assurance system and processes and the way they keep assessing and improving them. **(E.II.2.A)**

In its published accreditation reports released after the CTI plenary assembly vote, the CTI includes specific and detailed recommendations. CTI can also request the HEI to submit a follow-up report based on these recommendations for a specific date before the following periodical evaluation. **(E.II.2.B).** Upon receipt of this follow-up report, CTI appoints a CTI member to analyse it. No specific format is requested by CTI for this report, but HEIs are invited to answer each recommendation and show evidence on how they acted on it. The follow-up report is added to the internal archives that CTI uses as a reference from one evaluation to another within the same HEI.

When CTI's accreditation report lists recommendations (*"recommandations"* or strong advice) related to specific programmes or to the HEI itself, and a follow-up report is requested, the feedback to the HEI is limited to factual information (receipt, presentation to the Board). When the accreditation report officially requires (through some an *"injonction"* or warning) (E.2.2.C) that the HEI to acts on a specific weakness that the review team has pointed highlighted as an absolute priority, within a specific and shorter deadline, the Board and Plenary Assembly examine the evidence of action taken by the HEI, and give the HEI feedback on how these actions comply with the guidelines.

The yearly data (*"données certifiées par la direction des écoles"*) that French HEIs certify every year is requested by CTI as an important step in its overall evaluation, in order to allow close examination of their development and progress in key areas and aspects. Until now, CTI used to collect data on international experience and employment at institutional level only. From 2018 on, this data will be requested at programme level. In the new form, parts II (programme framework), VIII (international experience within the programme curricula) and IX (graduate employment) now allow CTI to closely study changes for each programme, related to criteria V.C.4. and V.E in CTI's R&O 2016, and to the corresponding EAFSG criteria.

Providing this very detailed data every year is sometimes a heavy workload for schools, but over the years, HEIs are getting increasingly used to the indicators and questions, and the data they provide also allows them to monitor and closely follow their own development for improved governance. The form that CTI has adapted for collecting data from foreign HEIs has a similar but less extensive structure. An analysis of how this yearly-certified data contributes to better implementing quality culture and processes within HEIs was presented at the ENQA general assembly in October 2017 **(E.II.2.D).**

The final and eleventh part of the form allows the HEI to express what kind of quality assurance processes they have implemented internally, and the external quality labels they have obtained (see **Appendix 5:** the 2018 CTI (empty) form for collection of yearly data certified by French HEIs). It corresponds to part F of the CTI standards, presented in volumes 1 (criteria) and volume 2 (self-evaluation guide) of R&O **(E.II.2.E),** and allows CTI to follow the HEI's progress in between periodical evaluations and accreditation reports.

As part of any evaluation process, whether periodical and compulsory (France), or upon a specific request (abroad), CTI requests that HEIs include their certified data (all available years) with their self-evaluation report. **(E.II.2.F)**

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EVIDENCE AND REFERENCES

E.II.2.A

Références et orientations - Livre 2 - Guide d'autoévaluation
F - DÉMARCHE QUALITÉ ET AMÉLIORATION CONTINUE
[F – QUALITY APPROACH AND CONTINUOUS IMPROVEMENT]
https://www.cti-commission.fr/fonds-documentaire/document/17/chapitre/298?a=1

E.II.2.B

An example of a CTI accreditation report, including a very detailed list of recommendations at programme level.
https://www.cti-commission.fr/wp-content/uploads/2018/07/cesi_paris_decision_20180605.pdf
See: "Les recommandations pour chaque formation sont les suivantes"

E.II.2.C

An example of a CTI accreditation report, which includes an "injunction" or warning:
https://api.cti-commission.fr/uploads/audits/1/3/8/0/audit/avis.pdf
See : "La Commission adresse à l'école une injonction relative à …"

E.II.2.D

CTI's certified data, an enhancement tool for quality culture,
[Poster presentation at the ENQA General Assembly, October 2017]
https://www.cti-commission.fr/wp-content/uploads/2017/11/cti-affiche-A1-HD_BAT.pdf
https://www.cti-commission.fr/retour-sur-lassemblee-generale-enqa

E.II.2.E

R&O2016_Volume_1_Chapter_V.F.5.2
Autres évaluations et certifications
[Other evaluations and certifications]
https://www.cti-commission.fr/fonds-documentaire/document/15/chapitre/305?a=1

R&O2016_Volume_2_Chapter_ F.5.2
Autres évaluations et certifications
[Other evaluations and certifications]
https://www.cti-commission.fr/fonds-documentaire/document/17/chapitre/305?a=1

E.II.2.F

R&O_Volume_3_Chapter_V.1
V.1 - LES CONTENUS DU DOSSIER DE DEMANDE D'ACCRÉDITATION (DDA)
[V.1 – ACCREDITATION REQUEST FILE (DDA) CONTENT]
See: item 6 in lists and suggestions for all kinds of self-evaluation reports

II.3 Programme Organisation

A substantial part of the CTI reference framework deals with the institutional conditions and key processes to ensure appropriate organization and management of engineering programmes:

* Part A of the reference framework, and particularly section A.3 (organization and management) provides some details on CTI's perspective on the strategic and organizational environment and how it is adapted to engineering education. Stakeholder involvement, strong governance and clear decision-making mechanisms are some of the key aspects **(E.II.3.A)** together with means (human and financial resources).

* Part F develops the standards with regard to the institution's internal quality assurance system. This IQA system includes management, teaching and research as well as management and supporting services **(E.II.3.B)** and in recent years it has included management of the institution's sustainable development policy.

* In addition to this, sections C1 and C2 of R&O deal with the design and updating of study programmes. As a general rule, CTI focuses a lot on whether all stakeholders concerned have been involved in designing the programme. Design should reflect the needs of economy and society **(E.II.3.C).**

Beyond the institutional conditions detailed above, in part C of the reference framework, CTI checks that the programme outcomes are well defined **(E.II.3.D),** that the content and teaching methods correspond to the objectives fixed **(E.II.3.E)** and that they are properly assessed **(E.II.3.F).**

The corresponding section of CTI's self-evaluation guide suggests a number of items and evidence which would indicate compliance with the above mentioned criteria.

During a CTI visit at an HEI, CTI members and experts also spend a large amount of time discussing the organisation and management of programme outcomes with various

panels. After a presentation of the HEI by management, they continue with a discussion with the management team. Nevertheless, a large amount of time is allocated to discussing with groups that do not include HEI management: academic staff, research and lab staff, administrative teams, students, etc. This way of working is intended to check that every group met is well aware of the programme outcomes, and how the HEI tries to achieve them in practice.

EVIDENCE AND REFERENCES

E.II.3.A

R&O_2016_Volume_1_Part_A (accreditation criteria)

MISSION ET ORGANISATION (FORMATION / ÉCOLE / ÉTABLISSEMENT)
[MISSION AND ORGANISATIONAL STRUCTURE (PROGRAMME / SCHOOL / INSTITUTION]
https://www.cti-commission.fr/fonds-documentaire/document/15/chapitre/224?a=1

E.II.3.B

R&O_2016_Volume_1_Part_F (accreditation criteria)
DÉMARCHE QUALITÉ ET AMÉLIORATION CONTINUE
[QUALITY APPROACH AND CONTINUOUS IMPROVEMENT]
https://www.cti-commission.fr/fonds-documentaire/document/15/chapitre/298?a=1

F.1 - POLITIQUE ET ORGANISATION DE LA DÉMARCHE QUALITÉ
[F.1 – QUALITY APPROACH POLICY AND ORGANISATION]
https://www.cti-commission.fr/fonds-documentaire/document/15/chapitre/299?a=1

E.II.3.C

R&O_2016_Volume_1_Part_C2 (accreditation criteria)
ÉLABORATION ET SUIVI DU PROJET DE FORMATION
[DEVELOPMENT AND MONITORING OF THE TRAINING PROJECT]
https://www.cti-commission.fr/fonds-documentaire/document/15/chapitre/251?a=1

E.II.3.D

R&O_2016_Volume_1_Part_C.2.3
FORMALISATION DU PROJET DE FORMATION
[FORMALISATION OF THE TRAINING PROJECT]
https://www.cti-commission.fr/fonds-documentaire/document/15/chapitre/261?a=1

E.II.3.E

R&O_2016_Volume_1_Part_C.3.1
COHÉRENCE DU CURSUS AVEC LES COMPÉTENCES RECHERCHÉES
[CONSISTENCY OF THE PROGRAMME WITH THE EXPECTED LEARNING

OUTCOMES...]
https://www.cti-commission.fr/fonds-documentaire/document/15/chapitre/264?a=1

E.II.3.F

R&O_2016_Volume_1_Part_C.4
ÉLÉMENTS DE MISE EN ŒUVRE DES PROGRAMMES
[PROGRAMME IMPLEMENTATION]
https://www.cti-commission.fr/fonds-documentaire/document/15/chapitre/267?a=1

II.4 Accreditation Procedure

II.4.1. Description of the accreditation procedure

Since CTI's creation in 1934, the external accreditation processes put in place by the agency have continuously evolved to respond to the new challenges faced by engineering higher education institutions in France.

These changes can result in the development of new ad-hoc external accreditation processes and modifications to accreditation criteria or expected learning outcomes for a graduate engineer programme established by CTI. Some significant examples of these developments include:

* The development of specific accreditation procedures and criteria **(E.II.4.1.A)** for engineering programmes organised under apprenticeship status *(formations en apprentissage)*. Every student involved in one of these programmes is employed part-time by a company, where they acquire some of the expected learning outcomes. Programmes of this type have become increasingly numerous over recent years.

* The introduction of new accreditation criteria regarding the level that master-level engineering graduates in French HEIs must obtain in foreign languages at the end of their curriculum; specifically, a minimum B2 in the Common European Framework of Reference for Languages (CEFR) level is required for all engineering graduates **(E.II.4.1.B).** A B1 level in a second foreign language is also recommended. These criteria emerged from a need expressed by companies, who complained that the English level of graduates was not satisfactory in 2000. After a number of years of implementation, CTI is currently considering raising the requirement level to C1, which constitutes an example of how CTI tries to encourage the continuous improvement of French engineering programmes.

* The development of a specific procedure and criteria for the recognition of prior learning *(VAE-Validation des acquis de l'expérience)* **(E.II.4.1.C).**

* The development of a specific accreditation process for engineering programmes awarded abroad **(E.II.4.1.D),** either as part of programmes awarded by a French institution or as programmes awarded by a foreign institution.

* The development of a certified data sheet in order to increase transparency of the French engineering higher education system (see section **III.6.1** of this document for further information).

* A number of developments and changes in the accreditation process so as to reduce delays and improve efficiency, such as the modification of templates and procedures for plenary assembly presentations and the production of final accreditation reports. A dedicated working group is currently working, for instance, on a new and simplified template for "overall evaluation reports". This template should help the review team, within the same document:

  ° to analyse the HEI self-evaluation report and prepare the on-site visit,

  ° to co-produce the external evaluation report, after the visit (and also compile it with the HEI responses to its communicated parts)

  ° to better summarize and present their evaluation and decision proposals in plenary assembly.

  Extra summary tables presenting the programme characteristics in relation to CTI's key criteria will also help other CTI members to better visualize the key features while voting in plenary assembly meetings. This new model, as compared with the current version of the external evaluation report template (see **Appendix 6**) will provide an improved preparatory outline for the production of the final accreditation report.

* We have also had to consider simplification procedures in order to synchronize calendars.: Since the ministry signs its contract with institutions every 5 years, we had to manage some accreditations before the due deadline. To this end, we have come up with "lean" accreditations.

* Moreover we have had to consider joint procedures with Hcéres (see **III.1.1.** below). This led us to a joint self-evaluation report (SER) and even some coordinated reviews. Pooling of resources, shared procedures and dialogue with other quality agencies (for example joint lean procedures of French-speaking engineering programmes in Belgium with the agency AEQES) is an important avenue for analysis and improvement for CTI, and is also reflected through the satisfaction surveys that are regularly sent to CTI members, experts and HEIs as part of CTI's quality assurance processes.

The development of these new CTI processes is always conducted in collaboration with all CTI stakeholders concerned. CTI has put in place various discussion and feedback mechanisms (see **III.6.2** below), including, in particular, working groups which cover issues

related to engineering education, academia-industry relationships and international matters. These working groups include representatives of the main CTI stakeholders (particularly HEIs, students and companies) **(E.II.4.1.E).**

At strategic level, the president of CTI holds periodic meetings with the president of the Conference of Deans of French Schools of Engineering *(CDEFI - Conférence des Directeurs des Écoles Françaises d'Ingénieurs)*, the French Engineering Students Association *(BNEI - Bureau National des Éleves Ingénieurs)* and the French Engineers and Scientists Association *(IESF - Ingénieurs et Scientifiques de France)*. These meetings give opportunities for discussing the current trends in the engineering education and profession in France.

The higher education and engineering profession context, both French and international, requires CTI to regularly adapt its criteria. The regular revision of the criteria also leads CTI to revise and improve its procedures. The development of Volume 1 (standards) and Volume 3 (procedures) of R&O 2016 reflect this loop, and CTI members and experts both adapt their practical evaluation processes to the current R&O and give feedback and suggestions for R&O updates based on their practical experience. The ongoing work on the self-evaluation guide (Volume 2) also demonstrates this permanent quest for improvement based on both self-evaluation and consultation of users and stakeholders.

CTI's external accreditation processes and criteria are described in the document References and Orientations *(Références et Orientations - R & O)*. R&O is accessible on the CTI website, and is updated every three years in line with the following procedure:

* An ad-hoc working group prepares a draft of the new version of the reference framework based on the conclusions of the above-mentioned working groups.

* After debate within CTI's board, the draft is presented to the plenary assembly, which, after a discussion session, endorses the document.

* The new document is published via CTI's website. A formal letter is sent to HEI deans to inform them of the publication of the new version.

* The new version of the reference framework is formally presented during CTI's annual conference in February, where a specific presentation is devoted to this issue. This conference, which serves to launch the annual accreditation campaign, includes more than 300 representatives from engineering HEIs and other significant CTI stakeholders. A number of workshops during this conference are devoted to discussions on the developments concerning the accreditation process and criteria.

* The quality loop closes with a questionnaire, filled in by deans and experts at the end of the procedure, which includes a specific section on CTI's accreditation processes and criteria.

EVIDENCE AND REFERENCES

E.II.4.1.A

R&O_2016_Volume_1_Chapter_II.3.2 on apprenticeship
LA FORMATION INITIALE SOUS STATUT D'APPRENTI (FISA)
[INITIAL TRAINING UNDER APPRENTICESHIP (FISA)]
https://www.cti-commission.fr/fonds-documentaire/document/15/chapitre/1102

R&O_2016_Volume_1_Appendix_VI.3
FORMATION INITIALE SOUS STATUT D'APPRENTI (FISA)
[INITIAL TRAINING UNDER APPRENTICESHIP (FISA)]
https://www.cti-commission.fr/fonds-documentaire/document/15/chapitre/1176

R&O_2016_Volume_3_Chapter_ VI.2 on apprenticeship
LA PROCÉDURE ET LES DOCUMENTS POUR LA VOIE DE L'APPRENTISSAGE
[PROCEDURE AND DOCUMENTS FOR PROGRAMMES THROUGH APPRENTICESHIP
STATUS]
https://www.cti-commission.fr/fonds-documentaire/document/16/chapitre/1141

E.II.4.1.B

R&O_2016_Volume_1_Chapter_ C.4.4.2 on foreign languages level:
MAITRISE DES LANGUES (DONT NIVEAU D'ANGLAIS)
[LANGUAGE PROFICIENCY (INCLUDING ENGLISH LEVEL)]
https://www.Re.cti-commission.fr/fonds-documentaire/document/15/chapitre/273?a=1

E.II.4.1.C

R&O_2016_Volume_1_Chapter_ II.3.4 on Validation des Acquis de l'Expérience:
L'OBTENTION DU TITRE D'INGÉNIEUR DIPLÔMÉ D'UNE ÉCOLE PAR LA VALIDATION
DES ACQUIS DE L'EXPÉRIENCE (VAE)
[AWARDING THE TITRE D'INGÉNIEUR DIPLÔMÉ BY A SCHOOL VIA RECOGNITION OF
PRIOR LEARNING (VAE)]
https://www.cti-commission.fr/fonds-documentaire/document/15/chapitre/1105

R&O_2016_Volume_3_Chapter_VI.5 on Validation des Acquis de l'Expérience
LA PROCÉDURE ET LES DOCUMENTS POUR LA VOIE DE LA VAE
[PROCEDURE AND DOCUMENTS FOR RECOGNITION OF PRIOR LEARNING (VAE)
APPROACH]
https://www.cti-commission.fr/fonds-documentaire/document/16/chapitre/1146

E.II.4.1.D

R&O_2016_Volume_3_Chapter_VI.10 on French State Admission
LA PROCÉDURE ET LES DOCUMENTS POUR LA RECONNAISSANCE D'UNE
FORMATION À L'INTERNATIONAL
[PROCEDURE AND DOCUMENTS FOR RECOGNITION OF A FOREIGN PROGRAMME]
https://www.cti-commission.fr/fonds-documentaire/document/16/chapitre/1151

Corresponding part in the English reference framework used for Foreign HEIs:
"Accreditation Criteria Guidelines and Procedures"
Full "Accreditation Criteria Guidelines and Procedures" document aimed at foreign HEIs (pdf):
https://www.cti-commission.fr/wp-content/uploads/2017/12/cti-references-guide-lines-2018_web_201712.pdf
And especially part 3.

E.II.4.1.E

CTI bylaws. Section on working group processes:
See chapter IV.6, p. 11.
Les comités de pilotage et les groupes de travail.
[Steering committees and working groups.]
https://www.cti-commission.fr/en/la-cti/reglement-interieur

II.4.2. Compliance of the procedure with Appendix 2 of the "EAFSG [2015], pages 19-20"

CTI's programme assessment and accreditation process fully complies with APPENDIX 2 "GUIDELINES ON PROGRAMME ACCREDITATION PROCESS in the 2015 EAFSG", as will be demonstrated below.

Application

All HEIs are requested to prepare a self-evaluation report covering all the major criteria in the CTI reference framework. This preparation by the HEI includes the participation of all relevant stakeholders. The structure of this report can be found in R&O **(E.II.4.2.A).**

Together with the report, the HEIs are also required to submit a set of certified data (around 50 quantitative key indicators which CTI considers essential for accreditation and which cover and illustrate CTI's major criteria developed in R&O) to CTI. This data, which has to be updated every year, is published by CTI through its website **(E.II.4.2.B).**

According to CTI rules, the HEI's self-evaluation reports must be available at least 1.5 months before the site visit **(E.II.4.2.C).**

Composition of the accreditation panel

On receipt of the self-evaluation report, CTI appoints a review team to evaluate the programme. The composition of the team will vary depending on the characteristics of the programmes to be accredited (engineering branches, the number and size of the programmes, etc.). It is generally made up of three to six people, in accordance with the following criteria:

* Two CTI members (one academic, one socio economic)

* Experts chosen in relation with the field of the programme,

* One international expert,

* An engineering student expert

One of CTI's members acts as chair of the review team; he/she is responsible for coordinating the team's activities and for presenting the external evaluation report to CTI's general assembly.

For accreditations outside France, observers from the country of the institution requesting the accreditation may be appointed, as may be required in mutual recognition and other collaboration agreements established with other national quality assurance agencies.

One of the main specificities of CTI as an accreditation agency is that its members, who make up the plenary assembly, also take part in the evaluations. At least two members (see above) are part of all review teams and are present during the visits.

Apart from its members, CTI's assessment activities are carried out using an extensive network of national and international experts. The list of experts is updated every two years. Experts are proposed by various stakeholders and appointed by CTI's board. **(E.II.4.2.D)**

A member of the CTI board is responsible for analysing the needs for appointments in terms of domains of expertise. This analysis is performed yearly after studying the list of HEIs and programmes planned for the accreditation campaign about to start.

CTI's pool of experts includes around 30 international experts from the academic and corporate world, as explained in CTI's bylaws **(E.II.4.2.E).** International experts are systematically appointed for the periodical renewal of French accreditations, i.e. what CTI calls "dossiers A" or "A files" in R&O2016, volume 3, Chapter III.3.1. Other procedures do not always involve international experts.

The participation of international experts in these missions has steadily increased since 2010:

* **2013-2014:** 13 international experts covered 40 days of HEI visits

* **2014-2015:** 12 international experts covered 30 days of HEI visits

* **2015-2016:** 29 international experts covered 51 days of HEI visits

* **2016-2017:** 30 international experts covered 55 days of HEI visits

Like CTI members, appointed experts must attend training sessions and sign a delontology chart **(E.II.4.2.F).**

CTI regularly organises training sessions for its members and experts. These sessions may take various forms: regular one-day training programmes for members and experts, or one-day workshops or shorter tutoring sessions for small groups with specific profiles (new members, student experts, etc.), specific topics (joint procedures, role of different panel members, etc.) or working on updates (changes to CTI standards and guidelines, EUR-ACE®, ESG, etc.)

Since September 2010, training and discussion sessions have been organized twice a year, jointly led by CTI staff and experienced members and experts, in order to clarify all aspects related to CTI's evaluation and accreditation missions.

In addition, training of CTI members is provided through specific sessions of Plenary Assembly meetings, and during working groups and steering committees. Since July 2017, CTI has also been experimenting with individual tutoring of new members by experienced members. CTI's annual conference is also part of the continuous training offered to CTI members and experts.

With regard to student experts CTI signed a co-operation agreement with the French Engineering Students Association (BNEI) in 2010. Since then, CTI has systematically appointed one student expert in all its national periodical evaluation missions. Student experts are increasingly frequently appointed for missions abroad. Students participate on the basis of the conditions defined in the co-operation agreement **(E.II.4.2.G).**

A specific training session for student experts is periodically organized, and relevant internal procedures (including a specific deontology chart) have been developed. The training session is co-organized and co-led by CTI and the BNEI. Participation in this session is a mandatory condition for serving as an expert.

BNEI also runs continuous training for student experts through regular events, digital tools and discussions, and side events at the BNEI conference. BNEI members are also invited and usually take an active part in all CTI working groups, which allows them to report on needs and questions from student experts.

In addition to their participation in HEI site visits, CTI student experts are also invited to CTI's annual conference.

Duration of Site Visit and Agenda for Site Visit

The standard duration of a visit is two days, but they can run from one single day (follow-up visits only) to a whole week (E.II.4.2.H) or more, depending on the size of the HEI, the number of programmes to be evaluated, and the number of sites registered for the programmes.

The working language during the visit can be either French (always, for HEIs based in France) or English. In the case of higher education institutions in non-French and non-English speaking countries, an interpreter provided by the higher education institution should be present during the visit.

In any case, the visit should have the following components:

Preparatory meeting

Before the beginning of the actual site visit, members of the review team hold a private meeting in order to discuss the self-evaluation report and complete their preparation for the visit.

Discussion with the programme management team and HEI management

Important issues to be discussed include: strategy and management of the programme (quality management, transparency, resources, communication, skills profile and recruitment, etc.), degree of autonomy of the programme management team, overall organization.

Discussion with the academic management staff (department directors, course coordinators, etc.)

Important issues to be discussed include: organization of the curriculum regarding learning outcomes strategy, coordination mechanisms and assessment tools, teaching initiatives and tools.

Discussion with the teaching staff

Important issues to be discussed include: implementation of the programme through teaching methods (for courses and other teaching activities), organization, career development opportunities for staff members, internal communication and motivation of teaching staff, teaching staff participation in the programme management and quality improvement, teaching staff satisfaction.

Discussion with students at various stages in their studies

Important issues to be discussed include: overall organization of the curriculum (workload, course content and examinations), student profile and motivations, student life, diversity and equal opportunities, student participation in programme management and quality improvement, student satisfaction.

Discussion with administration and services staff

Important issues to be discussed include: general organization, internal communication and motivation of administration and services staff, career development opportunities, staff participation in programme management and quality improvement, staff satisfaction.

Examination of documentation (final year projects, examinations and their assessments, coordination and other meeting minutes, etc.)

These documents should provide evidence that students have achieved final programme outcomes, and that the programme is operating as stated.

Discussion with alumni

Important issues to be discussed include: graduate profile, employability opportunities and career development, existence of an active alumni network, alumni participation in programme development and quality improvement, alumni satisfaction.

Discussion with employers' representatives

Important issues to be discussed include: graduate profile, employability opportunities and career development, employers' satisfaction, employers' participation in programme development and quality improvement.

Discussion with representatives of the regional government or with local partners

Important issues to be discussed include: needs and opportunities for programme development in the area, regional and local support for HEI activities…

Visit of the facilities and equipment (classrooms, research laboratories, etc.)

Internal discussion by the review team

Concluding discussion with the programme management team

The review team summarizes its impressions through a SWOT analysis.

Documents to be presented during the on-site visit

Certain documents are requested in order to provide evidence that students have achieved final programme outcomes, and that the programme is operating as stated. This section provides a non-exhaustive list of documents that are usually requested during site visits or provided through a website dedicated to the panel members:

* Organizational structure

* Minutes of the key organizational meetings and councils (management, coordination, quality management meetings)

* Financial documents, balance sheets

* Contracts with partners

* Programme

* Academic regulations

* Leaflets and promotional material

* Evidence that students have achieved programme outcomes: examples of final year projects, examinations, internship reports

* Quality assurance

* Stakeholder surveys (especially student surveys)

* Employability analysis

* Apprenticeship agreements or vocational training contracts from companies

* Quality manual, process description, minutes of quality assurance coordination meetings.

Throughout the visit, the accreditation review team may request extra documents which are considered necessary.

Programme Evaluation

According to CTI's procedures, an external evaluation report is prepared by the review team under the supervision of the chair, based on the site visit.

The report includes a thorough analysis of the programme and its institutional context. It identifies its main strengths and weaknesses and includes an assessment of the compliance of the programme with CTI and ENAEE accreditation standards.

The draft report project, excluding the reviewers' conclusions (i.e specific recommendations and accreditation proposals), is sent to the management team of the programme for comment. These comments are then sent to the review team before the final external evaluation report is drawn up.

This final external evaluation report, including the comments of the HEI, is sent to CTI's registry which then forwards it to CTI's plenary assembly. This report is considered an input for the accreditation phase, and is not published by CTI, but includes a section which will be included (with the necessary amendments) in the official report (accreditation report).

The plenary assembly is CTI's main decision-making body. It is responsible for making accreditation recommendations and decisions on the basis of the final external evaluation report prepared by the review team (see also the detail of this decision making process in **III.6.3** below).

Possible outcomes of the plenary assembly vote are:

* accreditation for the maximum duration if the programme substantially complies with all CTI/EUR-ACE® standards. This maximum duration is usually 5 years, but the French territorial reorganisation (*régions*) and adapted new calendar sometimes shorten that maximum duration.

* accreditation for a shorter period (normally 2 or 3 years), if some important problems are detected, or if the programme is really new and requires a specific follow-up. (see **II.4.3** below)

* 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. (CTI is also committed to allowing all

students who entered the first year of an accredited programme to be able to finish it with the full effect of the initial accreditation).

* no accreditation, if critical compliance problems have been detected and the institution has made no effort to improve. In practice, these cases regard only new programmes or sites.

For French HEIs, CTI also systematically assesses eligibility for the EUR-ACE® label for programmes which fulfil CTI's accreditation criteria. A specific vote takes place during the plenary assembly meeting concerning the award of this label.

Upon receipt of a request from the foreign HEI concerned, CTI's plenary assembly votes on the awarding of this label for programmes which fulfil the relevant standards (CTI criteria, or only the EAFSG if the foreign HEI only asked for the EUR-ACE® label).

Final recommendation and communication of results

Following the adoption of a decision/recommendation by CTI at the first plenary assembly, the panel chair verbally informs the director of the HEI of the outcome of the procedure.

After the following plenary assembly that confirms or amends the accreditation proposal and recommendations, CTI sends the accreditation report with both the accreditation decision and recommendations to the HEI and the programme management team.

CTI also sends the report to the in charge of Higher Education which (after decision-making for publicly-owned HEIs) sends an official notification of the outcomes of the procedure to the HEIs (private and publicly-owned and those supervised by other ministries). If the HEI's supervisory ministry is different from the Ministry in charge of Higher Education, it takes part in decision-making and informs its supervised HEI of the outcome of the accreditation procedure.

CTI's accreditation reports have been designed to respond to the needs of CTI's main stakeholders (higher education institutions, Ministry in charge of Higher Education and general public). They have an approximate length of three pages per engineering programme, and are structured as follows.

* Brief introduction on the characteristics and history of the institution and of the results of past CTI accreditations.

* Brief description of the engineering programme and its evolution

* Follow up of CTI's recommendations

* Analysis and accreditation result

All CTI's accreditation reports are sent to the concerned institutions and published on CTI's website together with the minutes of the Plenary Assembly meetings **(E.II.4.2.I)**

The reports for each institution are also accessible through CTI's research engine **(E.II.4.2.J).**

Apart from CTI's website, a number of additional publication mechanisms exist at national level:

* The official list of programmes evaluated by CTI and authorized by the French government is published every year **(E.II.4.2.K)**

* Under the supervision of CTI, the main features of the accredited programmes, and in particular expected skills, are published in the *"Repertoire National des Certifications Professionnelles"*, RNCP, in www.cncp.gouv.fr **(E.II.4.2.L)**

EVIDENCE AND REFERENCES

E.II.4.2.A

Structure of the HEI's self-evaluation report
R&O_2016_Volume_3_Chapter_IV.1.1
LE PROCESSUS QUALITÉ ET L'AUTOÉVALUATION
[THE QUALITY AND SELF-EVALUATION PROCESS]
https://www.cti-commission.fr/fonds-documentaire/document/16/chapitre/1103

E.II.4.2.B

The HEI's certified data (données certifiées par la direction de l'école) is available through the search engine in the accreditation area of CTI's website.
https://www.cti-commission.fr/accreditation

E.II.4.2.C

Calendar of the 2018-2019 accreditation campaign
https://www.cti-commission.fr/wp-content/uploads/2017/01/Programmation_2018-2019_20180118.pdf
updated calendars available from:
https://www.cti-commission.fr/calendrier-des-campagnes-d-accreditations

E.II.4.2.D

Lists of CTI experts:
https://www.cti-commission.fr/la-cti/organisation/les-experts-par-categorie

E.II.4.2.E

CTI's bylaws (see chapter III, regarding experts)
III. Les experts et les chargés de mission…. page 7
[III. Experts and special advisors….page 7]
https://www.cti-commission.fr/en/la-cti/reglement-interieur

E.II.4.2.F

CTI's deontology charts:
https://www.cti-commission.fr/chartes-deontologie

E.II.4.2.G

Agreement between CTI and BNEI:
https://www.cti-commission.fr/la-cti-et-le-bnei-renouvellent
https://www.cti-commission.fr/wp-content/uploads/2012/02/Convention_CTIBNEI.pdf

E.II.4.2.H

R&O_Volume_3_Chapter_IV.2.1
Documents and procedures for CTI's on-site visit:
LA VISITE SUR SITE(S)
[ON-SITE VISIT(S)]
https://www.cti-commission.fr/fonds-documentaire/document/16/chapitre/1121

E.II.4.2.I

Accreditation reports ("avis" and "décisions" on CTI's website)
ASSEMBLÉES PLÉNIÈRES : RELEVÉS DE CONCLUSIONS, AVIS ET DÉCISIONS
CONCERNANT LES FORMATIONS
[PLENARY ASSEMBLIES: REPORTS ON CONCLUSIONS, OPINIONS AND DECISIONS
ON PROGRAMMES]
https://www.cti-commission.fr/category/site-public/
assemblees-plenieres-releves-de-conclusions-avis-et-decisions-concernant-les-formations

E.II.4.2.J

Search engine for accredited programmes on CTI's website:
RECHERCHER UNE ÉCOLE OU UNE FORMATION
[HEI OR PROGRAMME SEARCH]
https://www.cti-commission.fr/accreditation

E.II.4.2.K

Official list of programmes evaluated by CTI and authorized by the French government:
https://www.legifrance.gouv.fr/affichTexte.do?dateTexte=&categorieLien=id&cidTexte=JOR-
FTEXT000036590636&fastPos=1&fastReqId=541452732&oldAction=rechExpTexteJorf
Arrêté interministériel du 24 janvier 2018 fixant la liste des écoles accréditées à délivrer
un titre d'ingénieur
[Interministerial order dated 24 January 2018 establishing the list of schools accredited
to issue a titre d'ingénieur qualification]

E.II.4.2.L

Link to RNCP's database:
http://www.rncp.cncp.gouv.fr/

II.4.3. Processes used by the agency

Processes listed in ENAEE's application form

a. a self-assessment or equivalent procedure by the subject of the accreditation process;

b. an external assessment by a group of experts, including, as appropriate, (a) student member(s), and site visits as decided by the agency;

c. preparation of a report, including any judgements, recommendations or other formal outcomes

d. a follow-up procedure to review actions taken by the subject of the accreditation process in the light of any recommendations contained in the report

e. procedures for selection and training of reviewers;

f. any other processes and procedures.

CTI's accreditation process has been designed in line with a review model that includes:

* a self-evaluation (a),

* a site visit (b),

* a draft and then published report (c),

* and a follow-up (d) procedure. (see section **II.4.2** of this document).

As for the selection and training of reviewers (e), this process is described in part **II.4.2 "composition of the accreditation panel"** above.

Other specific CTI processes (f):

Follow-up, interim report and CTI analysis

With regard to the follow-up procedure (d), all CTI's accreditation reports include a SWOT analysis and conclude with recommendations for action. Follow-up of these recommendations by CTI works to different scales and timelines, depending on the type of problems detected during the evaluation process and the programme's level of maturity.

* *Mature programmes and no major problems detected:* Mature programmes in which no major problems are detected are accredited for 5 years. Follow up of the recommendations is normally analysed during the following CTI accreditation and no intermediate formal inspection is conducted.

* *New programmes or significant problems detected:* New programmes or programmes where significant problems are detected are normally accredited for 2 or 3 years. The length of the accreditation could be shorter if important issues are raised. The minimum accreditation length for a programme which is already in operation is 1 year.

Regardless of the accreditation duration, in some cases, CTI requires the HEI to report on the implementation of certain recommendations by submitting an interim report. A CTI member is appointed in order to analyse the progress report and present his/her conclusions to the plenary assembly. When problems or difficulties are detected at this stage, specific procedures must be set up. Meetings can be also organized at any time between two accreditation processes at the request of the institutions concerned.

CTI Appeals procedure

Because of the historical development of CTI's role and related laws, and because of the various possible legal forms of HEIs in France (see above, part **I.3.1)**, CTI is the decision-maker for private institutions (this part of accreditation reports are officially called CTI *"décisions"*) and provides opinions/recommendations for publicly-owned institutions (this part of the accreditation reports is called CTI *"avis"*). The full appeals procedures also takes into account these official distinctions and is described in part II.4.5 of this document.

The different appeals procedures are also explained in CTI's bylaws, which can be accessed via the CTI website **(E.II.4.3.A)**

EVIDENCE AND REFERENCES

Section **II.4.2** of this document

E.II.4.3.A

Link to the bylaws on CTI's website:
https://www.cti-commission.fr/en/la-cti/reglement-interieur

II.4.4. Description of the decision making process

All formal CTI decisions are based on explicit published criteria. All CTI processes and criteria are described in the document *Références & Orientations* (R&O_2016, References and Guidelines).

A number of structural and functional elements ensure consistency of decisions:

1. *CTI's plenary assembly:* in order to encourage consistency of decisions, all CTI accreditation decisions are made by the Plenary Assembly. All discussions during Plenary Assembly meetings are recorded by the secretary of the session, and recordings are

used to prepare a written account of the meeting. The minutes are sent to all CTI members and are formally approved during the following Plenary Assembly meeting. It should be emphasized that the external evaluation report (from the site visit and from CTI's analysis of the self-evaluation report) is not published, and is simply used as a working document for CTI's deliberations (see **II.4.2** above). During plenary assembly meetings, all members discuss the report, contributing their experience. In this way, a collective memory is developed which helps to avoid discrepancies between decisions for similar situations.

2. *Presence of CTI members during on-site visits:* at least two CTI members (one from the academic world and another from the socio economic world) are appointed to be part of the review team at all CTI visits. The presence of CTI members helps to ensure that the information gathered during the mission is enough to support CTI's general assembly decisions, which is essential to ensure consistency.

3. *Development and documentation of new jurisprudence:* during the Plenary Assembly meetings, significant time is devoted to the discussion of the accreditation criteria, in order to ensure a common understanding by all CTI members. These discussions also allow CTI to clarify or detail certain criteria. The conclusions are then published through CTI's website in the section "Déliberations" **(E.II.4.4.A)**

4. *Member renewal:* CTI members are appointed for a term of 4 years, renewable once. In order to assure continuity and to limit knowledge loss, only a quarter of the commission is renewed every two years. Former members who have played a key role at CTI often continue to be linked to the organization as experts or advisors.

EVIDENCE AND REFERENCES

Part **II.4.2** of this document.

E.II.4.4.A

Deliberations area on CTI's website.
https://www.cti-commission.fr/documents-de-reference/deliberations-par-theme

II.4.5. Description of the appeals system

CTI's Appeals system takes into account the specificities of the accreditation process for private vs public HEIs, and also the various steps or part(s) of the full accreditation process that the HEI may want to dispute.

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 in the

organisation of the site visit, lack of information, etc.). In this case, CTI's *Audit Steering Committee and the Quality and Communication Steering Committee* deal with the complaint and - where appropriate – may submit suggestions for improvement to the Board and plenary assembly. Depending on the issue raised, the outcome may differ, including. for example: changes to CTI's bylaws; a new focus in training sessions; a warning given to a CTI member or expert; dismissal of an expert; etc. Feedback is given in all cases to the HEI by CTI's president.

Application for a revision of the accreditation report

Within two weeks of receiving the final **accreditation report** from CTI (before the official accreditation notification), a HEI may apply to CTI to change the accreditation report. This can happen when the HEI demonstrates 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, or more.

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

An independent committee of external and individuals with CTI expertise (3 former CTI members) appointed 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 offers conclusions and advice on whether to change or maintain the accreditation report. Another plenary assembly vote is held, and the revised or confirmed accreditation report is sent to the ministry and the HEI. According to the law, the decision is final for private HEIs.

Appeal of publicly-owned HEIs against an accreditation decision to their supervisory ministry

A publicly-owned HEI may submit an appeal to its supervisory ministry within 2 months of receiving official accreditation notification.

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

Appeal against an accreditation procedure

Within 2 months of the official accreditation notification, any HEI, private or publicly-owned, may address an appeal against the accreditation procedure to the *Conseil d'Etat* (State Council) which passes judgement exclusively on whether the procedure has been performed in line with due process.

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.

Applications for re-examination of the accreditation report and appeals are extremely rare.

The full Appeals system is part of CTI's updated bylaws, and published as such on CTI's website. **(E.II.4.5.A)**

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EVIDENCE AND REFERENCES

E.II.4.5.A

CTI_Bylaws_Chapter V.5.
Règlement intérieur. Contestations de la part des écoles
[Bylaws. Appeals from schools]
https://www.cti-commission.fr/la-cti/reglement-interieur

III. INSTITUTIONAL INFORMATION

III.1 Official status

III.1.1 Legal context

CTI was founded by law in 1934. Therefore, its existence as well and duties and responsibilities can only be amended or revoked 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".

The "French Education Code" lists and confirms all the legislative and regulatory provisions concerning CTI and *"titres d'ingénieur"*.

See **Appendix 2:** Selection of the main legal texts concerning CTI's missions and activities.

* 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"* (Article L642-1);

* CTI decides the ability of private technical schools to award *"titres d'ingénieur"*
  (Art. L642-4).

* The *"titre d'ingénieur diplômé"* is a master's degree (Decree No. 99-747, August 1999, as amended by Decree No. 2002-480 of 8 April 2002)

* The ability to award the *"titre d'ingénieur diplômé"* to foreign engineering degree programmes (Law, July 1934)

84 years of existence and all subsequent laws and decrees have confirmed the legal status of CTI. Every year an interministerial order publishes the list of accredited programmes following an evaluation procedure by CTI, with the duration of the accreditation. Foreign-accredited programmes are included in the list. **(E.III.1.1.A)**

The only other French accreditation agency that can be involved, though with a different scope, in the evaluation of the HEIs that are authorized to award engineering degrees is Hcéres.

Hcéres was originally founded in 2006, as the *Agence d'Évaluation de la Recherche et de l'Enseignement Supérieur (AERES)* with the task of evaluating 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.

Under the new law on higher education of 2013, AERES became the *Haut Conseil de l'évaluation de la recherche et de l'enseignement supérieur (Hcéres)* **(E.III.1.1.B),** and CTI and Hcéres 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. The previous law of 1934 states that the responsibility for the evaluation of engineering programmes lies exclusively with CTI (see the joint CTI-Hcéres memo of February 2017 on this point **(E.III.1.1.C).**

A new agreement between CTI and Hcéres was signed in September 2016 for 5 years, and a working committee has been set up to follow it up. Its main aim is to work towards co-ordination in the evaluation of engineering institutions and the accreditation procedures for engineering programmes, in particular to alleviate the workload for HEIs, since some engineering HEIs are accountable to both CTI and Hcéres. See the current CTI-Hcéres co-operation agreement **(E.III.1.1.D).**

EVIDENCE AND REFERENCES

Appendix 2: Selection of the main legal texts concerning CTI's missions and activities.

E.III.1.1.A

Arrêté du 24 janvier 2018 fixant la liste des écoles accréditées à délivrer un titre d'ingénieur diplômé.
[Order dated 24 January 2018 establishing the list of schools accredited to issue a titre d'ingénieur diplômé qualification]
https://www.legifrance.gouv.fr/affichTexte.do?dateTexte=&categorieLien=id&cidTexte=JOR-FTEXT000036590636&fastPos=1&fastReqId=541452732&oldAction=rechExpTexteJorf

E.III.1.1.B

Hcéres missions, as described on the Hcéres website:
https://www.hceres.fr/PRESENTATION/Missions

E.III.1.1.C

Joint CTI-Hcéres memo of February 2017:
https://www.cti-commission.fr/wp-content/uploads/2017/02/CTI_Colloque_2017_Declaration_Commune_HCERES_CTI_20170207.pdf

E.III.1.1.D

Current CTI-Hcéres co-operation agreement
https://www.cti-commission.fr/wp-content/uploads/2018/07/1_NEW_HCERES_CTI_Convention_20160927sign%C3%A9e-3-5.pdf

III.1.2 Compliance with the ESG

All criteria in ESG part 1 are taken into account in CTI's standards and guidelines as shown in the grid below.

ESG 1 – 2015	R&O - 2016
1.1. Policy for quality assurance Standard: Institutions should have a policy for quality assurance that is made public and forms part of their strategic management. Internal stakeholders should develop and implement this policy through appropriate structures and processes, while involving external stakeholders.	**Self-assessment: fully compliant** CTI's criteria F1 to F4 globally cover the different aspects of this standard. Chapters A and B also refer to the involvement of the external stakeholders. R&O could mention more explicitly the ESG guidelines: "Such a policy supports […] - academic integrity and freedom and is vigilant against academic fraud; - guarding against intolerance of any kind or discrimination against the students or staff". *N.B.: The ESG1.1. will be the main theme of CTI's annual conference 2019.*
1.2. Design and approval of programmes Standard: Institutions should have processes for the design and approval of their programmes. The programmes should be designed so that they meet the objectives set for them, including the intended learning outcomes. The qualification resulting from a programme should be clearly specified and communicated, and refer to the correct level of the national qualifications framework for higher education and, consequently, to the Framework for Qualifications of the European Higher Education Area.	**Self-assessment: fully compliant** CTI's main mission consisting in programme accreditation procedures, this standard is well covered by chapter C of R&O, for instance criteria C2 on "design and follow-up of the training project at programme level". Expected general programme outcomes are described by CTI itself in chapter 1.E "programme outcomes framework". A particular attention is put on students' involvement at all levels. CTI goes further than the ESG1 as it is especially keen on verifying that the programme design includes the transition towards the labour market for all graduates. The engineering degree is clearly positioned in the national and European qualifications frameworks.
1.3. Student-centred learning, teaching and assessment Standard: Institutions should ensure that the programmes are awarded in a way that encourages students to take an active role in creating the learning process, and that the assessment of students reflects this approach.	**Self-assessment: fully compliant** All aspects of this standard are well covered by chapters C and F of R&O. CTI puts a particular attention on students' active involvement at all levels (student centred learning, teaching, assessment, student life). Only one particular guideline is not mentioned specifically: "where possible, assessment is carried out by more than one examiner".
1.4. Student admission, progression, recognition and certification Standard: Institutions should consistently apply pre-defined and published regulations covering all phases of the student "life cycle", e.g. student admission, progression, recognition and certification.	**Self-assessment: fully compliant** CTI's R&O has a dedicated chapter D on the admission criteria and process. Chapter C includes an important part on student life and the achievement of learning outcomes, the degree and diploma supplement. CTI's criteria mention the existence of an efficient information system at the HEI, and chapter A.5.2. states that "digital tools guarantee the carrying out of the pedagogical mission under good conditions". The annual certified data survey also includes a dedicated section on student admission, duration of studies and failure rate.

III. INSTITUTIONAL INFORMATION

ESG 1 – 2015	R&O - 2016
1.5. Teaching staff Standard: Institutions should assure themselves of the competence of their teachers. They should apply fair and transparent processes for the recruitment and development of the staff.	**Self-assessment: overall compliant** This topic is mentioned in the standards and guidelines of book 1 of R&O (human resources in chapter A and pedagogical organisation in chapter C). The teaching staff occupies an important part of the annual certified data survey and in the guidelines for self-assessment of book 2 of R&O. CTI puts a particular stress on the teacher-student ratio; qualification, positions and international experience of the teaching staff; pedagogical innovation and the necessary link to research in the teaching. CTI's evaluation reports often mention the workload of the teaching staff. CTI will add in the next version of R&O a specific reference to fair processes for staff recruitment and the professional development of the teaching staff, regarding level, skills, and experiences.
1.6. Learning resources and student support Standard: Institutions should have appropriate funding for learning and teaching activities and ensure that adequate and readily accessible learning resources and student support are provided.	**Self-assessment: fully compliant** CTI's standards and guidelines (R&O book 1, parts A, B, C, F) and guidelines for self-assessment (R&O book 2) and the annual certified data survey all take into account this standard and the guidelines of the ESG1.6.
1.7. Information management Standard: Institutions should ensure that they collect, analyse and use relevant information for the effective management of their programmes and other activities.	**Self-assessment: fully compliant** CTI's criteria in chapters A and F are compliant with standard ESG 1.7. CTI's annual certified data survey requires efficient information management tools by the HEIs. Since 2018, the annual certified data survey includes a follow-up on the HEI's internal quality assurance.
1.8. Public Information Standard: Institutions should publish information about their activities, including programmes, which is clear, accurate, objective, up-to date and readily accessible.	**Self-assessment: fully compliant** Several chapters (A, C, F) of R&O refer to the ESG1.8. The annual certified data for each HEI are published on CTI's website and the qualification framework forms for each programme ("fiches RNCP") are published in the national directory. CTI recommends the publication of these documents also on the HEIs' websites.
1.9. On-going monitoring and periodic review of programmes Standard: Institutions should monitor and periodically review their programmes to ensure that they achieve the objectives set for them and respond to the needs of students and society. These reviews should lead to continuous improvement of the programme. Any action planned or taken as a result should be communicated to all those concerned.	**Self-assessment: fully compliant** Chapters B, C and F of R&O fully comply with this standard. Amongst CTI's major requirements for the HEIs is the existence of an observatory of societal evolutions and expected competencies, job profiles and labour market in the relevant sectors as well as advisory boards with representatives from industry. The link between training and research is a major criteria for CTI. Satisfaction surveys and stakeholders' involvement must lead to continuous programme improvements.

ESG 1 – 2015	R&O - 2016
1.10. Cyclical external quality assurance Standard: Institutions should undergo external quality assurance in line with the ESG on a cyclical basis.	**Self-assessment: fully compliant** The periodical external evaluation of all engineering degree programmes by CTI is compulsory since 1997. Each CTI evaluation report concludes with guidelines for improvement. The implementation of these recommendations is an important part of the following evaluation procedure.

The effectiveness of the HEIs' internal quality assurance processes is indeed taken into consideration by CTI and it is an explicit accreditation criterion. The ability of institutions to assure and improve the quality of their programmes is an essential factor for successful CTI accreditation, as described in CTI's published standards and guidelines (R&O). A dedicated section "F" in volume 1 "Main accreditation criteria" as well as in volume 2 "Guide for the self-evaluation" deals with HEIs' internal quality assurance management systems. **(E.III.1.2.A).**

Quality issues for programmes within HEIs are taken into account throughout CTI's whole accreditation process (self-evaluation, evaluation/site visit, accreditation and follow-up).

Due to its dual (academic and socio economic) composition, CTI pays particular attention to stakeholder involvement in HEI internal quality assurance. As far as CTI is concerned, institutions need to guarantee and improve quality with respect not only to stakeholders inside the institution (students and faculty), but also outside the institution (institutional and industrial partners and alumni). Throughout the various accreditation campaigns, CTI has also focused on the assessment of teaching quality by the students, and has seen clear improvements.

Even in those cases where institutions have undergone external accreditation or certification processes of their internal quality systems (such as ISO9001), a specific time slot during the site visits and a dedicated section of the site visit minutes prepared by CTI's expert team are devoted to this issue.

The 2018 form that HEIs use to fill in and certify their yearly data now includes two open fields (XI.a and XI.b) that allow HEIs to explain the internal quality good practices they particularly want to share, and details the external quality assessments they may have gone through at an institutional level. This becomes a central topic for discussions with the stakeholders' panels met during CTI site visits.

Quality issues, and the effectiveness of what HEIs have implemented, are an important part of discussions and a fundamental factor in the evaluation outcome discussed for each HEI during the plenary assembly.

Another very detailed and recent analysis of CTI Compliance with European Standards and Guidelines, parts 2 and 3, was produced as part of CTI's self-assessment report, which was recently submitted to ENQA very recently. **(E.III.1.2.B)**

For details on ESG 3.4, and the various ways CTI reports on its quality assurance activities (annual conference, activity reports, "Focus" initiative, contribution to partner surveys, communications by CTI representatives, etc) see: **E.III.1.2.B.** An important avenue for CTI to obtain feedback for analysis and reports on CTI accreditation procedures are the surveys that CTI sends to its various stakeholders **(E.III.1.2.C).**

These include the satisfaction survey sent to evaluated HEIs. The results and highlights of this survey, which is very important for the CTI accreditation activities, are presented at the CTI annual conference. **(E.III.1.2.D)** The information gathered helps CTI improve its quality assurance system and amend its procedures.

Feedback from the surveys on the last two campaigns (2015-2016 and 2016-2017) shows that, in general, the satisfaction rate is quite high. HEIs were especially positive about the usefulness of the guide for the self-evaluation report; the quality of exchanges with the expert panel and its objectivity; the importance of the site visit in the process; the accreditation outcomes with the guidelines for improvement as an important tool for their internal quality assurance. Areas where CTI could improve remains the gap between the date when the HEI's self-evaluation report is submitted and the date of the site visit and the publication of the accreditation decision.

The regular cycle of accreditation of CTI by external agencies (see **E.III.1.2.B** and **III.6.4** below), in full compliance with ESG 3.7, is also a pillar of CTI's quality assurance system.

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EVIDENCE AND REFERENCES

E.III.1.2.A

R&O-2016_Volume_1_Section_F
DÉMARCHE QUALITÉ ET AMÉLIORATION CONTINUE
[Main accreditation criteria: Quality approach and continuous improvement]
https://www.cti-commission.fr/fonds-documentaire/document/15/chapitre/298?a=1

R&O-2016_Volume_2_Section_F
DÉMARCHE QUALITÉ ET AMÉLIORATION CONTINUE
[Self-evaluation guide: Quality approach and continuous improvement]
https://www.cti-commission.fr/fonds-documentaire/document/17/chapitre/298?a=1

E.III.1.2.B

CTI's Self-Assessment Report, 2018, 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 on the European Quality Assurance Register
Part 9 and 10: Compliance with European Standards and Guidelines
https://www.cti-commission.fr/en/evaluation-enqa-2018

E.III.1.2.C

List of surveys sent by CTI to its stakeholders:
https://www.cti-commission.fr/en/la-cti/demarche-qualite/systeme-qi/enquetes

E.III.1.2.D

Enquête de satisfaction auprès des écoles auditees
[Annual survey / feedback on CTI procedures from HEIs]:
https://www.cti-commission.fr/wp-content/uploads/2018/02/CTI_Colloque_Champs_sur_Marne_2018_Diaporama_4_Enquete_qualite_communication_2016-2017.pdf

III.2 Activities

III.2.1 Programme accreditation as a core activity

The evaluation of engineering degree programmes, and the production of accreditation reports prior to their official accreditation (then published) by the French Ministry, is the first and main mission of CTI, as defined by law (see part **III.1.1** above and **Appendix 2: Selection of the main legal texts concerning CTI's missions and activities**).

It is also CTI's leading activity in terms of time spent and human resources **(E.III.2.1.A).** CTI also presents general figures from the past campaign every year at its annual conference **(E.III.2.1.B).**

Since the periodical renewal of all programme accreditations is now compulsory, the majority of CTI's evaluation activities involve the re-accreditation of engineering degree programmes. A programme accreditation is given for a limited term, and for a maximum of five years. CTI therefore carefully plans its accreditation campaigns **(E.III.2.1.C),** and helps HEIs begin the evaluation process for all their engineering programmes again in a timely manner, so that a new accreditation can replace the previous one without a gap in time between them.

Programmes presented to CTI for accreditation are not always totally new. Some of them are new specialties from institutions that already have accredited programmes, or new pathways (learning modes) (see **I.4.3** above and **Appendix 1**) for an existing diploma.

EVIDENCE AND REFERENCES

E.III.2.1.A

CTI's accreditation activities in France (Oct 2017- Sept 2018; R2018 campaign):			
Plenary assembly meetings			Remarks
	Number (days)	14	
	Institutions concerned in France	42	**A total of over 200 institutions.**
	Institutions with new programme accreditations	31	**These institutions were also subject to re-accreditation for former programmes**
	Number of accredited programmes	268	**A total of over 551 accredited programmes and 938 curricula.**
	Number of programmes which have obtained the EUR-ACE® label	99 French programmes have been pronounced eligible for the label	**There are 58 programmes for which the EUR-ACE® certificates have been requested. This includes programmes that had been pronounced eligible before October 2017....**
On-site visits	Number of reviews	52	
	Members' contribution (days)	315	**These contributions include coordination and reporting time; there were168 visit days.**
	Experts' contribution (days)	222	

E.III.2.1.B

https://www.cti-commission.fr/wp-content/uploads/2018/02/CTI_Colloque_Champs_sur_Marne_2018_Diaporama_2_Bilan_campagne_2016-2017.pdf
See: Bilan de la campagne d'accréditation 2016-2017
[2016-2017 accreditation campaign report]

E.III.2.1.C

CTI campaigns calendar and organization:
https://www.cti-commission.fr/calendrier-des-campagnes-d-accreditations

E.III.2.1.D

CTI Activity scheduling figures:

Plans for R2020 evaluations, October 2019-September 2020 *(based on formal requests so far)*		
France	70 HEIs	163 programmes
Abroad	10 HEIs	34 programmes

Plans for R2019 evaluations, October 2018-September 2019		
France	83 HEIs	146 programmes + number of programmes for new HEIs to be confirmed
Abroad	16 HEIs + 8 follow-up reports (RI)	53 programmes

CTI Activity R2018, October 2017-September 2018 *(figures produced during the evaluation campaign)*		
France	75 HEIs or regional centres	141 programmes or sites
Abroad	3 HEIs	14 programmes

CTI Activity R2017, October 2016-September 2017 *(figures produced during the evaluation campaign)*		
France	83 HEIs	113 programmes
Abroad	9 HEIs	24 programmes

III.2.2 Transnational accreditation procedures

On receipt of a request from foreign higher education institutions, CTI conducts the accreditation of engineering degree programmes outside France. 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 to institutional evaluation, faculties of engineering are showing growing interest in external quality assurance for their engineering programmes, either through CTI accreditation (for *"Admission par l'Etat"*, i.e., recognition by French State) or the EUR-ACE® label, or both. As of now, CTI has conducted procedures in Europe (Belgium, Bulgaria, Germany, Italy, Spain and

Switzerland) and outside Europe (Burkina-Faso, Cameroon, China, Ivory Coast, Lebanon, Morocco, Tunisia and Vietnam).

The involvement of CTI in international activities is set out in a strategic report. **(E.III.2.2.A).**

The table below gives an idea of CTI's transnational evaluation procedures between October 2017 and September 2018.

CTI's transnational accreditation activities (Oct 2017- Sept 2018)			
Plenary assembly meetings			**Remarks**
	Number (days)	14	
	Institutions concerned outside France	4	**In China, Switzerland, and Tunisia**
	Institutions (HEIs) with new programme accreditations	2	**In Tunisia**
	Number of programme evaluations (requested)	16	
	Number of programmes which have obtained the EUR-ACE® label	11	
On-site visits	Number of reviews	4	
	Members' contribution (days)	34	**22 visit days; 34 including coordination and reporting contributions.**
	Experts' contribution (days)	38	

* The evaluation criteria (R&O_2016) have been developed by CTI in connection with engineering education stakeholders. They are based on CTI's long experience in accreditation, and incorporate recent national and international professional and academic developments, as well as the new needs of engineering students.

....

* These criteria are obviously centred on training (the programme), but also on the elements that contribute to its quality and sustainability. Institutional governance and management are therefore concerned, since they can be involved in the difficulties met in defective programmes.

....

* These criteria are consistent with and complementary to the European quality requirements for higher education (ESG 2015) and to the EUR-ACE® standards for engineering education (EAFSG 2015). See **II.1.1** and **III.1.2** above, and **E.III.2.2.B**

....

* They take into account the specificities of engineering studies, and particularly their pre-professional character.

....

EVIDENCE AND REFERENCES

E.III.2.2.A

Strategic report on CTI's international policy, 2016-2018
https://www.cti-commission.fr/wp-content/uploads/2017/03/CTI_Politique_
Internationale_2016-2018.pdf

E.III.2.2.B

Standards and guidelines used by CTI for transnational accreditation:
CTI_R&O_2016, volumes_1,2,3
https://www.cti-commission.fr/fonds-documentaire
Accreditation Criteria, Guidelines and Procedures
(Reference framework for accreditation procedures abroad, as explained in II.1)
https://www.cti-commission.fr/documents-de-reference/references-internationales/refe-
rences-orientations-pour-linternational
EAFSG (2015): when HEIs ask for the EUR-ACE® label only, as explained in II.1.
https://www.cti-commission.fr/en/documents-de-reference/references-internationales/eafsg

III.2.3. Stakeholders' involvement

Stakeholder representation amongst CTI members, experts, special advisers, etc.

CTI's main stakeholders are represented through its appointed members. As described in part **I.3.3** above on CTI's distinctive features, CTI's 32 members are representative of HEIs and from socio economic groups. But beyond these two categories, they represent different stakeholders: the academic members are from HEIs under different ministries, and half of the socio economic members represent employers, whereas the other half represent trade unions and engineers' associations. When the Commission votes on evaluation outcomes or makes decisions regarding changes to CTI's standards and guidelines, a whole range of approaches are represented during the discussions.

Composition of the Commission:

- professionnals representing employers' organization
- professionnals representing trade unions and engineers' associations
- academic staff from HEIs under the supervision of the Ministry of Higher Education
- academic staff from HEIs iunder the supervision of other ministries
- experts in science and technology
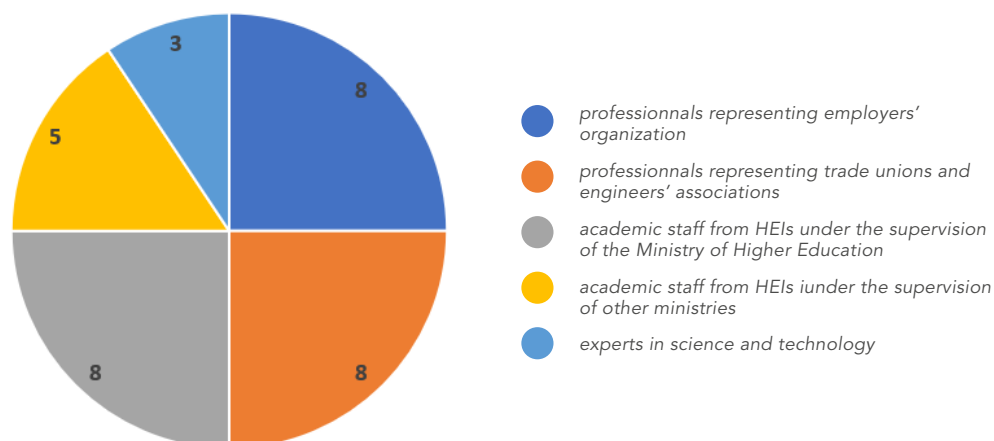
The same representativity applies to the 100 or so experts that provide assistance to CTI: CTI ensures they come from varied professional backgrounds and fields of expertise (engineering, science, education, international affairs, quality assurance, etc.) in order to have the widest possible range of perspectives during accreditation procedures. Student experts participate in all 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.

Exchanges and projects with stakeholders

Depending on the subject, CTI invites external specialists and representatives from stakeholder organisations to specific steering committee or working group meetings.

CTI also organises meetings, on a regular basis, with other stakeholder organisations such as:

* the association of deans of engineering HEIs: *"Conférence des Directeurs des Ecoles Françaises d'Ingénieurs"* (CDEFI),

* the association of engineering and management HEIs: *"Conférence des Grandes Ecoles"* (CGE),

* the engineering students' association: *"Bureau National des Elèves Ingénieurs"* (BNEI),

* the alumni association of engineering and scientists graduates: *"Société des Ingénieurs et Scientifiques de France"* (IESF),

* the centre for international cooperation for education that runs the French ENIC-NARIC centre: *"Centre International d'Etudes Pédagogiques"* (CIEP)

One CTI board member has the specific task of dialoguing on a regular basis with the national commission for professional certification, the *Commission nationale de la certification professionnelle* (CNCP).

The fact that CTI's administrative operator is CDEFI and that both organisations share the same premises greatly facilitates informal exchanges on a daily basis.

CTI's annual conference is attended by most HEIs and representatives from ministries and is another important event for exchanges with stakeholders. Conference workshops provide the opportunity for CTI to listen to stakeholders' opinions and get to know further examples of good practice.

CTI representatives also participate – often as speakers – in conferences, seminars and workshops organized by its stakeholder organisations, to continue dialogue: BNEI general assemblies, the annual conferences of CIEP, CDEFI, and CGE, IESF, workshops by professional organisations, etc. **(E.III.2.3.A)**

There are also partnerships and agreements signed with organizations for specific publications and projects: in the past few years, CTI signed an agreement with the *"Association Professionnelle pour l'Emploi des Cadres"* (APEC) and was consulted for the publication of APEC's "barometer" on the employment of managers and executives. The CTI-IESF partnership and close collaboration also helps produce the yearly "Enquête Nationale sur les Ingénieurs" **(E.III.2.3.B).** Through informal and frequent discussions with CGE and the performance conclusions of its annual "Enquête sur l'insertion des diplômés", CTI also refines its own *"Données Certifiées"* campaign and employment indicators, which are also helped by participation in CDEFI's working group on the use of quantitative indicators by the media.

Dialogue and cooperation with stakeholders on recognition issues

On recognition issues, CTI has regular contacts with the ENIC-NARIC France centre and always recommends that engineering graduates preparing for incoming or outgoing individual mobility apply for a comparability certificate from the relevant ENIC-NARIC centre.

In order to facilitate the international mobility of graduate engineers, CTI's registry can produce (upon request) certificates to graduates and employers that state, for a specific degree holder, that his/her degree is accredited, and gives information on the level and required competencies of a French engineering programme.

CTI's missions include improving academic and professional recognition of French engineering degrees abroad. In this capacity, CTI has signed agreements with various foreign academic and professional stakeholder organisations such as: Engineers Canada (*Ingénieurs Canada*), *Ordre des ingénieurs du Québec* (OIQ), *Ordre des Ingénieurs forestiers* (Québec), *Ordre des Chimistes* (Québec), *Ordre des Agronomes* (Québec), Accreditation Board for Engineering and Technology (ABET, USA), American Association of Collegiate Registrars and Admissions Officers (AACRAO).

CTI participated in a European Commission project coordinated by the European Council of Engineering Chambers (ECEC) with the aim of defining common features of engineering training programmes in Europe.

Partners & stakeholders on quality assurance issues

CTI is involved in a number of networks and associations in order to exchange good practices and continuously improve its own methods and procedures (ECA, ENAEE, FrAQ-Sup, ENQA, etc.). It carries out joint projects with partner quality assurance agencies (AEQES, ASIIN, IEAQA, etc.).

In France, CTI works in close co-operation with its partner, Hcéres (see **III.1.1.1** below). A steering committee of 3 representatives from each organisation meets every month for maintain the relationship. Both agencies work closely together with regard to international relations.

Foreign ministries, quality assurance agencies and HEIs contact CTI on a regular basis for information on its procedures and criteria. In 2017-2018, CTI hosted delegations for study trips and information sessions from China, Senegal and Tunisia.

EVIDENCE AND REFERENCES

E.III.2.3.A

CTI communications and participation in stakeholders' events:
https://www.cti-commission.fr/wp-content/uploads/2018/07/P22_24_45_Interventions_externes_CTI_2016_2018.pdf
https://api.cti-commission.fr/uploads/documents/backend/document_24_fr_refe-rences-et-orientations-livre-4_20-07-2018.pdf

E.III.2.3.B

National IESF annual survey:
https://www.iesf.fr/752_p_50331/une-enquete-de-reference.html

III.3 Resources

CTI ensures that it has the financial and human resources necessary for carrying out its core missions in France: the periodical evaluation of engineering degree programmes, with a view to accreditation. Its resources are set in line with past operations. Although it adopts a rather unconventional approach by comparison with other European agencies, it has allowed CTI to fulfil its goals and missions effectively for several decades.

Human resources

Comparison with most evaluation agencies should take into account the involvement of CTI's members and advisors in CTI's administration and management.

Human resources and their respective duties are as follows:

* Permanent staff: 4 full-time persons, appointed by CTI from its own budget. Their main duties include: administrative and accounting assistance to the Board and to the president, assistance and logistics for accreditation procedures, project management (in particular, internal and external quality management and international relations, representation of CTI in national and international structures). **(E.III.3.A)**

* Temporary staff: In order to handle the workload linked to specific tasks or events (thematic analysis, annual conference, newsletter, etc.), CTI gives specific tasks and

responsibilities to external project managers, advisors, interns or occasional administrative staff members. Over a year, these contributions represent 2 full-time equivalents.

* Administrative operator: CTI outsources its accounting and management of human resources contracts to an administrative operator which is a partner association, the Conference of Deans of French Schools of Engineering (CDEFI). A signed agreement between CTI and CDEFI states the annual fees and ensures the decision-making independence of CTI, and total and mutual transparency with CDEFI. **(E.III.3.B)**

* CTI's registry: 2 part-time persons who are part of the Ministry of Higher Education register the applications from the institutions, verify their eligibility, register CTI deliberations and organize the accreditation process. They are responsible for publishing the annual order in the Official Journal of the French Republic (*"Journal Officiel"*) which lists all the programmes officially authorized to award the *"titre d'ingénieur"* **(E.III.3.C)**

* CTI's members and special advisors: Their involvement goes way beyond simple participation in the monthly general assembly meetings. According to some recent estimates, they fulfil the equivalent of 4 half-time positions, filled respectively by the president and two vice-presidents, 12 one-third time positions filled by the working group leaders, the international representatives and the Board members responsible for specific missions, depending on needs and Board decisions). Other CTI members fill the equivalent of a quarter-time position.

In conclusion, CTI operates with approximately 14 full-time equivalent staff.

This system, which is unique in many ways, is also why CTI's stakeholders are so committed, and why its community is so close and competent, with each member sharing their tasks and experience.

Financial resources

The total annual budget of CTI's services to engineering degree programmes (accreditation, national and international representation, etc.), including CTI staff salaries, administrative operator's and experts' fees for management and evaluation, is about €900,000.

The annual budget includes 4 types of resources:

* €230,000 as a grant from the ministry in recognition of CTI's mission of public service.

* €340,000 contributions from French HEIs in recognition of CTI's work in the promotion of the engineering studies and representing engineering education in national and international organizations (€9/year/graduate).

* Variable revenue from accreditation activities abroad (which are billed to the institutions on a full-cost basis), of about €100,000 to €160,000 in recent years. There

was one exceptionally high amount of €309,000 in 2016, an exceptionally busy year. CTI's Audit Steering Committee and International Steering Committee are now very conscious of overly high workloads, and plan schedules for national and international evaluations a long way in advance.

* About €40,000 are borne by the institutions themselves, as they directly pay the on-site costs of evaluation missions (experts' travel tickets, accommodation and food).

Expenditure

* CTI's highest expenditure line is represented by staff costs (including permanent and temporary staff salaries, administrative operator and experts' fees): about €455,000.

* About €270,000 for rent and operational expenses.

* Between €14,000 and €24,000 are spent each year on training sessions for members and experts.

Thanks to the international accreditation procedures, CTI has had a positive balance for the last two budget periods, and is expected to balance in 2018. (E.III.3.D)

Premises

In September 2016, CTI moved to new premises in the same building as one of its main stakeholders, the Conference of Deans of French Schools of Engineering, CDEFI, which is also CTI's administrative operator. This greatly facilitates and accelerates exchanges between staff members on organisational issues. This proximity also encourages the sharing of news and opinions and the organisation of meetings between CTI and CDEFI members and presidential teams.

CTI has fully-equipped offices and conference rooms that can be adapted for various needs, including ordinary meetings, plenary assembly meetings and seminars.

EVIDENCE AND REFERENCES

E.III.3.A

CTI permanent staff presentation
https://www.cti-commission.fr/en/la-cti/organisation/lequipe-permanente

E.III.3.B

CTI-CDEFI agreement
https://www.cti-commission.fr/wp-content/uploads/2018/07/P31_Convention_CDEFI-CTI.pdf

E.III.3.C

Registry presentation
https://www.cti-commission.fr/en/la-cti/organisation/le-greffe

E.III.3.D

CTI budgets
https://www.cti-commission.fr/wp-content/uploads/2018/07/P28_31_Budget_CTI_2015_2016_2017_previsionnel-2018.pdf

III.4 Mission statement

CTI's latest Mission statement for 2017-2020 is publicly available on CTI's website:

https://www.cti-commission.fr/wp-content/uploads/2017/01/CTI_depliant_missions_obj_actions_V14mars2018.pdf

and on a dedicated page :

https://www.cti-commission.fr/la-cti/rapport-dactivite-et-plan-daction

For a wider audience, CTI also had published a general description of its context and main missions:

https://www.cti-commission.fr/la-cti/histoire-et-missions (in French)
https://www.cti-commission.fr/en/la-cti/histoire-et-missions (in English).

CTI was established by Law in 1934 (French Education Code, Article L.642-2 and following). In France, CTI is the body responsible for carrying out evaluation procedures with a view to accreditation of institutions to award the *"titre d'ingénieur diplômé"* engineering degree.

The various missions of CTI have evolved over the years, but very little since 2015, when it received its most recent ENAEE authorization. They currently include:

1. Periodic **evaluation** of all **engineering programmes** offered by **French higher education institutions** across the country, leading to the **accreditation** of institutions to award the **engineering degree.**
    The evaluation procedure is compulsory for **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, 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 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 "engineer" profile** at master's level and drawing up **criteria and procedures** for awarding the engineering degree and carrying out CTI's missions. CTI thereby 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 French engineering education.** These "historical" missions have been extended with the increasing internationalization of higher education and with the establishment of the European Higher Education Area.

5. **Developing a quality assurance culture** within French engineering schools and 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, 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, 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). 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.** CTI is a founding member of the European Network for Accreditation of Engineering Education (ENAEE) and is authorized to award its European quality label for engineering degree programmes EUR-ACE® (master's level). CTI is also a member of the European Consortium for Accreditation (ECA) and is involved in awarding its Certificate for Quality in Internationalisation (CeQuInt).

III.5 Independence

French law clearly defines CTI's missions and duties. These texts (which were established several decades ago) do not use the more recent notions of quality assurance developed within the European Higher Education Area. However, the responsibilities they give to CTI have made it possible for it to constantly adapt its standards and procedures, in complete independence.

A number of elements enable CTI to operate in an independent manner:

III. INSTITUTIONAL INFORMATION

* The balanced distribution of stakeholders among CTI membership (with equal representation from publicly-owned and private HEIs, employer and employee organizations, and graduate alumni associations) protects it from dominant outside pressure.

* CTI's members are appointed according to their own personal competencies and sign a deontology chart, which ensures their independence and integrity. They are appointed by the Minister in charge of Higher Education, at the proposal of their organization, for a period of four years, renewable once.

* CTI resources come from three main sources: ministry grants, yearly contributions from accredited HEI's, international accreditation procedures that cover all expenses, including overhead costs. They each account for 31%, 47%, and 22% of CTI's resources, respectively, which guarantees CTI financial and decision-making independence from both the ministry and HEIs, and prevents national and local authorities or other organisations being tempted to exert any kind of pressure.

* CTI established and adopted its bylaws in 2011. These set out its independence and internal operating procedures. The bylaws were updated in 2018.

* All CTI members, experts (from academia, industry, students) and external observers (where applicable) must sign a deontology charter before being able to participate in an evaluation procedure. By signing the charter, they commit to avoiding any kind of conflict of interest, to maintaining complete confidentiality and to acting in total independence.

* The president and 2 vice-presidents are elected by CTI's members for a renewable period of two years. Members of the board and steering committees, external experts and external special advisors are appointed by a CTI vote in the plenary assembly meeting. CTI's board and plenary assembly agendas are approved by the president.

* In France, no regulatory texts exist concerning the content and quality criteria of engineering education. Accreditation standards and procedures are defined by CTI independently. They are prepared by working groups including stakeholders and supervised by CTI, and are then adopted in plenary assembly sessions and published under CTI's exclusive responsibility (primarily on its website). Every three to four years, CTI publishes a new version of its standards. The last version of CTI's standards was published in 2016 and is currently being updated, with publication planned in early 2019.

* With regard to decision-making, for private institutions, CTI makes the final decision, whereas in the case of publicly-owned institutions, CTI makes a recommendation on which the relevant ministry bases its decision to grant the accreditation. CTI's technical judgment on quality issues is always respected by the ministry. Nevertheless, as long as public funding is involved, the ministry can include some additional criteria (specifically, on investment opportunities) that could modify the final accreditation decision. Since 2005 (the year in which CTI was granted full ENQA membership for the first time), only one ministerial decision has differed from a CTI recommendation (out of around 1500 accreditation decisions made by CTI during this period of time).

* Finally, within its area of competence, the mutual recognition of accreditation results and assistance for graduate mobility, CTI has signed international agreements with other countries' professional institutions of engineers (most recently, Canada, and then the Province of Quebec).

III.6 Accountability and Quality Assurance

III.6.1. Accountability procedures

CTI's internal quality system was formalized in 2008 and adopted by the general assembly in February 2009. Since then, CTI has been committed to deploying its internal quality assurance system and developing specific tools for the tracking and control of its evaluation and accreditation process **(E.III.6.1.A.).** As stated in the ESG, this system includes a quality policy, internal and external feedback mechanisms and an internal reflection mechanism. The system operates according to a one-year PDCA cycle.

Apart from the procedures implemented by CTI to ensure the quality of its external quality assurance processes (see **III.6.2** below), which are formally integrated into its internal quality system, CTI has also developed other mechanisms and practices in order to demonstrate its accountability to its main stakeholders:

Periodic survey on the validity of CTI's programme outcomes:

A periodic survey is conducted every three years in collaboration with the IESF, an association of French Engineers and Scientists, in order to analyse the significance and validity of CTI's final programme outcomes. This survey is sent to French engineers in work, and normally obtains around 50,000 responses.

Over the years, in the light of the results of this periodic CTI-IESF survey, CTI has decided to include specific guidelines within its reference framework. For example, with regard to foreign language proficiency amongst engineering graduates, or the importance of sustainable development in the context of engineering education. IESF also conducts an annual survey in which CTI includes a few complementary questions.

In addition to this survey, CTI has established strategic partnerships with other bodies (such as APEC, the French association for the employment of managers) in order to conduct studies of engineering education and the professional sector.

Steering committees

Various steering committees have been set up to conduct substantive discussion and/or provide strategic guidance. The different groups are as follows:

* Quality and communication (continuous improvement, surveys, etc.)
....

* Audit (improvement of evaluation procedures, development of tools, good practices, appointment of experts, etc.)
....

* International (EHEA monitoring, international strategy, etc.)
....

* Budget
....

* Consistency of the outcomes (recently created)
....

* CTI Strategic Advisory Board (Conseil d'Orientation Stratégique, COS).
....

Certified HEI datasheets ["données certifiées"].

In collaboration with its stakeholders, CTI has chosen 90 data items, which aim to characterize a specific HEI and its engineering programmes. Every year the figures for these items must be submitted to CTI by the dean of each French Engineering HEI.

The main objective of this initiative is to provide meaningful and reliable information to the general public regarding HEIs and their accredited programmes. This initiative enables CTI to fully comply with the ESG in terms of transparency.

The main areas covered are:

* basic information on the HEI and the programme;
....

* teaching staff;
....

* research;
....

* recruitment;
....

* accessibility and social diversity;
....

* student life;
....

* mobility and internationalization;
....

* employability;
....

* relationships with industry
....

The information is submitted to CTI by the engineering HEIs via an internet platform every year. Since 2012-2013, this information has been published by CTI and the HEIs through CTI's website and accreditation area: https://www.cti-commission.fr/accreditation

With regard to preventing conflicts of interest, CTI has implemented a number of mechanisms. A deontology chart is signed by all CTI members and experts at the beginning of their term (see section **II.4** of this document). According to this chartcode, they are obliged to declare all possible conflicts of interests.

As stipulated in CTI's bylaws, the president of CTI can be appealed to by any member of the CTI or higher education institution if any conflicts of interest are detected. CTI's board is responsible for investigating any problems of this kind (see **E.II.4.5.A**).

CTI's bylaws are regularly revised. The latest version of the document was adopted during the 10 July 2018 plenary assembly.

The bylaws describe:

* the overall operation of the commission

* the role of the different groups (commission, board, steering committees, strategic advisory board)

* the duty of members, experts, staff

* the procedure for evaluations

* the appeals procedure

* the deontology charter.

This document is publicly available via the website. **(E.III.6.1.B)**

EVIDENCE AND REFERENCES

E.III.6.1.A

CTI's Internal Quality Assurance System
https://www.cti-commission.fr/wp-content/uploads/2018/11/CTIs_IQA_system_20181118.pdf
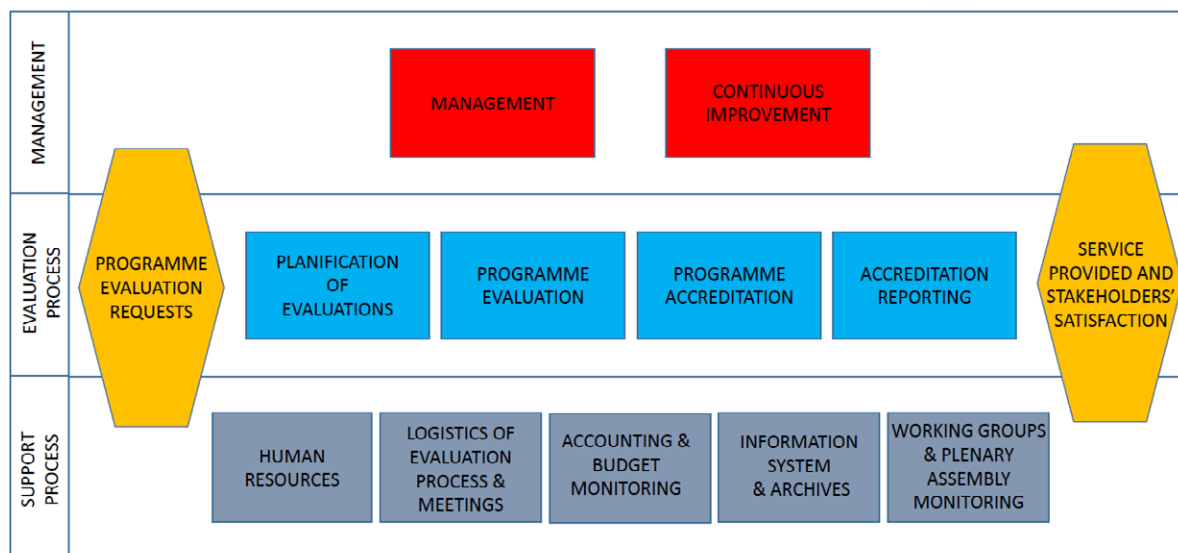
E.III.6.1.B

CTI's bylaws
https://www.cti-commission.fr/en/la-cti/reglement-interieur

III.6.2. Quality Assurance Procedures

CTI's internal quality assurance process mapping was developed in 2008. The mapping includes a general process diagram:

Commission des titres d'ingénieur: Mapping of the internal quality assurance system

The main CTI stakeholders at the different levels were also identified. For each stakeholder, a number of quality objectives and implementation priorities have been defined:

Level / stakeholder	Objectives	Implementation priorities
Internal / CTI	Professionalism Efficiency Consistency, objectivity of decisions	Formalisation and clarity of procedures Periodic self-evaluation
HEI level	Transparency and clarity Credibility and legitimacy Solid external assistance for continuous improvement	Formalisation and updates of standards and procedures Answers and specific information as needed Clarity of decisions, reports, and system indicators
National and international level: **French Higher Education Ministry, HEI associations, Higher education partners, International organisations, etc.**	Credibility and legitimacy Recognition	External evaluations Answers and specific information as needed Shared projects and publications that comply with CTI's missions and objectives
General public, students, families, etc.	Transparency Information	Clear and reliable public information on HEIs and evaluated programmes

Specific parts of the general pattern and processes are described below.

Steering committees and working groups

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 supplemented by subject-related steering committees.

Participants in these steering committees or working groups are CTI members, experts, permanent staff and external advisors. Depending on the subject, external stakeholders are invited to specific meetings. These committees, from 2014 to autumn 2018, meet at least quarterly, some on a monthly basis. Their objective is to discuss core subjects and/ or current issues and submit strategic recommendations to CTI's board.

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 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, etc.) and analyses procedures, past accreditation campaigns, results of surveys, etc.

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

Other existing steering committees and working groups, are the:

* International Steering Committee;

* Commission in charge of updating CTI's standards and guidelines (R&O);

* Financial Commission;

* CTI- Hcéres steering committee;

* Strategy committee.

Steering committees may set up sub-groups to deal with specific subjects as needed, such as the consistency of CTI decisions, the publication of site visit minutes, simplified procedures, joint procedures with Hcéres, etc.

All proposed changes, strategic recommendations and outcomes from the work of these steering committees are submitted to CTI's board and - in the case of new rules or procedures – submitted to a plenary assembly vote by all members.

Periodic self-assessment of CTI

Every year, CTI conducts an evaluation of the results of its procedures and programme accreditation process. In order to conduct this evaluation, CTI has implemented various 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;

* Monthly board meetings and plenary assembly meetings;

* Quarterly meetings between the presidents and vice-presidents and the permanent staff team;

* Feedback and reports about good practice or incidents from review teams sent to the Audit Steering Committee.

External feedback mechanisms:

* Satisfaction survey sent 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 (see above);

* Working groups on specific issues with stakeholder participation (see above);

* Questions and suggestions submitted via the contact form on CTI's website (about 20 to 30 messages per week);

* Annual CTI conference to take stock of the previous accreditation campaign and launch the next campaign;

* Meetings and partnerships with stakeholders on specific subjects;

* Transversal analysis on engineering education or quality assurance by CTI members and experts, partner organisations or other organisations (**E.III.6.2.A**)

* Periodical external evaluation procedures by ENQA, EQAR, ENAEE, CNEFOP, etc. (see **III.6.4** below)

Training of members and experts

In order to ensure compliance with procedures, knowledge of the standards and criteria and the consistency of the outcomes of evaluation procedures, CTI organizes training sessions for its members and experts on a regular basis. **(E.III.6.2.B)**

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, together with a specific training session for student experts. These training sessions always include a specific component on internal quality assurance.

Apart from the members, who all actively participate in 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.

During 2017-2018, the following training sessions were organized:

* June 19th 2017, Paris, training programme for all experts
* September 11th 2017, Paris, seminar for all members
* October 10th 2017, Paris, tutoring session for members on the registry's database
* October 13th 2017, Paris, training programme for new student experts
* February 13th 2018, Champs-sur-Marne (Greater Paris region), for all experts and members, participation in CTI's annual conference
* March 13th 2018, Paris, two tutoring sessions for members on CTI's extranet
* April 10th 2018, Paris, tutoring session for members on simplified procedures
* April 11th 2018, Paris, tutoring session for members on simplified procedures
* May 15th 2018, Paris, tutoring session for members on CTI's extranet
* July 9th 2018, Paris, training programme for new members (module I)
* September 10th 2018, Paris, training programme for new members (module II)
* September 11th 2018, Paris, tutoring session for members on joint Hcéres-CTI procedures
* October 3rd 2018, Brussels, training programme for members and experts participating in joint AEQES-CTI evaluation procedures in Belgium
* October 5th 2018, Paris, training programme for new student experts

* December 10th 2018, Paris, training programme for new members (module III) & for all members and experts

....

* December 11th 2018, Paris, tutoring session for members on EUR-ACE®

....

Communication

CTI's **website** is constantly updated and contains all relevant documentation on quality assurance, CTI activities and the engineering degree.

A FAQ section allows stakeholders and the general public, especially prospective students and their families, to get information on accreditation issues. A "contact" form enables the public to ask specific questions on any issue linked to engineering and/or quality assurance. Questions and feedback from the public also help update and improve the FAQ section.

All accreditation decisions/recommendations are published on the CTI website **(E.III.6.2.C).**

EUR-ACE® labels awarded are also published in the ENAEE database, while CeQuInt label awards are listed in the ECA database.

Since 2014, CTI publishes **a monthly newsletter.** It provides information to CTI members, experts, stakeholders, media and subscribers from the general public on the Commission's ongoing activities and major changes. The newsletter also represents an efficient way to disseminate analytical documents on the engineering profession and training, and on quality assurance issues in higher education. It also includes announcements of events and papers by French and international partners and stakeholders. **(E.III.6.2.D)**

The production and publication of the **CTI activity report** every two years **(E.III.6.2.E),** is an opportunity to reaffirm CTI's missions, check progress on all procedures and objectives, and define new strategic priorities.

In February every year, CTI launches the next evaluation campaign at its **annual conference.** This is not only attended by representatives of the HEIs participating in the campaign, but also by many other HEIs and stakeholders looking for the latest 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.**

Comparison of standards and practices on a national and international scale

CTI representatives participated in the working group responsible for the revision of the *EUR-ACE® Framework standards and guidelines* (EAFSG). CTI also actively contributed to

the **translation of the ESG and the EAFSG** into French, as part of the network of quality assurance agencies from French-speaking countries, FrAQ-Sup. This advanced 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 regularly participate in national and international conferences and workshops, often as speakers and with publications and communications **(E.III.6.2.F).** These events are all opportunities to compare guidelines and practices, make proposals for their continuous improvement, and disseminate reports and thematic analysis documents **(E.III.6.2.A).**

Information system and logistics

In 2010, CTI developed its own **information system,** which is constantly evolving. Internally, it enables CTI members, experts, the registry and permanent staff to access the files and any relevant documents associated with an evaluation procedure. Part of the database also feeds into the public search engine, in CTI's website accreditation area. The current programme accreditations for each HEI, and published CTI documents (accreditation reports and HEI yearly data) can be searched using HEI name or programme title **(E.III.6.2.G).** When CTI launches the annual campaign to collect HEIs' certified data, it triggers a dialogue with some HEIs, which contributes to updating CTI's database of institutional information.

The permanent staff, in coordination with the registry, also maintain the tracking and scheduling system for all CTI evaluation procedures for internal purposes.

EVIDENCE AND REFERENCES

E.III.6.2.A

R&O_Volume_4
Notes d'approfondissement thématique 2016-2018
[2016-2017 thematic reports]
https://api.cti-commission.fr/uploads/documents/backend/document_24_fr_references-et-orientations-livre-4_20-07-2018.pdf

E.III.6.2.B

2016-2018 training sessions organized by CTI
https://www.cti-commission.fr/wp-content/uploads/2018/07/P41_Formations_Membres_Experts_2016-2018.pdf

E.III.6.2.C

Accreditation reports finalized and approved by the Plenary Assembly
https://www.cti-commission.fr/category/site-public/
assemblees-plenieres-releves-de-conclusions-avis-et-decisions-concernant-les-formations

E.III.6.2.D

Access to past CTI Newsletters on CTI's website:
https://www.cti-commission.fr/category/communications-evenements/
lettre-dinformation-mensuelle

E.III.6.2.E

CTI Activity report
https://www.cti-commission.fr/en/la-cti/rapport-dactivite-et-plan-daction

E.III.6.2.F

List of national and international events with CTI participation
https://www.cti-commission.fr/wp-content/uploads/2018/07/P22_24_45_Interventions_
externes_CTI_2016_2018.pdf

E.III.6.2.G

The search engine for accredited programmes and HEIs on CTI's website:
https://www.cti-commission.fr/accreditation

III.6.3 Consistency of procedures and decisions

The consistency of all accreditation decisions is one of the main concerns of CTI and its members. CTI insists that the specifics of each HEI and programme need to be carefully observed and respected, but also that CTI's votes and accreditation decisions can easily be related to the analysis of compliance with R&O criteria, and, as such, "compared" in their overall logic.

After the site visit, the review team jointly produces a draft external evaluation report, with no conclusion (i.e. specific recommendation or accreditation proposal), and shares it with the HEI. The HEI can respond to this draft report. The review team then finalizes the external evaluation report, supplemented by the HEI response if any, and a SWOT analysis, and communicates to all CTI members through an online platform managed by the registry.

In the plenary assembly meeting, the review team, represented by its chair or *"rapporteur principal (RP)"*, who is always a CTI member, presents the evaluated programme(s) through the SWOT analysis included in the external evaluation report.

All members at the plenary assembly meeting are then free to ask questions, comment and debate on both what they have read (external evaluation report) and heard (short presentation of the SWOT analysis), and compare it to other evaluated programmes in other HEIs.

CTI's president, who leads all debates but cannot evaluate programmes (i.e., be part of a review team) as long as he/she is president, then asks the RP to present the review team's proposed recommendations and accreditation decision (duration and quality).

The president then takes into account the plenary assembly debate in amending the proposed recommendations (at programme and/or HEI level) as needed, and proposes two (occasionally three) potential accreditation decisions for the vote.

The group who proposes (review panel) and the group who votes for (the full commission convened) the accreditation decisions are thus different and complementary, in order to allow checks and possible amendments, and guarantee more objectivity.

This way of managing decisions and judgements has proved adequately efficient and reliable over the years. Nevertheless, CTI members looking to continuously improve CTI procedures, identified the consistency of the accreditation decisions and recommendations adopted in plenary assembly as a potential avenue for improvement.

A working group was set up in 2016-2017 and started working on a template listing the main criteria and programmes' compliance with them. It soon became obvious that this template was to be closely linked with the compilation of the external evaluation report by the review panel, and with all steps towards the final accreditation report.

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

In September 2018, the working group drew its conclusions and presented them during the plenary assembly meeting. The new draft template will be used during a pilot phase beginning in 2019 and a decision will be made on its use in spring 2019.

On another subject, with regard to the variety of HEIs and programmes, the workload of CTI members and experts, the mass of HEI documents to be studied for a fair evaluation of programmes, and the brevity of on-site visits, CTI also recently clarified its appeals system and procedure (see **II.4.5** above) This appeals procedure allows HEIs to come back to CTI if they feel some of their actions or programme implementations have not been fairly assessed.

III.6.4. Other external quality assurance procedures

CTI regularly submits to external evaluations to check if its procedures are in compliance with the Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG) and other references.

CTI is a full member of ENQA (European Association for Quality Assurance in Higher Education) and has asked to have this membership renewed. The evaluation process for the renewal has recently started, and the self-evaluation report was submitted and published in July 2018 **(E.III.6.4.A and E.III.6.4.C).**

CTI is registered on EQAR (European Quality Assurance Register). It has re-applied for registration, to be confirmed next year. **(E.III.6.4.B and E.III.6.4.C)**

CTI is also certified by CNEFOP (*Conseil National de l'Emploi, de la Formation et de l'Orientation Professionnelles*) (decision of December 5th, 2017, which is valid for 3 years). **(E.III.6.4.D)**

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EVIDENCE AND REFERENCES

E.III.6.4.A

EXTERNAL REVIEW OF CTI BY ENQA TOWARDS FULL MEMBERSHIP RENEWAL
https://www.cti-commission.fr/en/evaluation-enqa-2018
ENQA's 2014 decision report on CTI:
https://www.cti-commission.fr/wp-content/uploads/2014/09/enqa_review_report_of_cti-final_26jun14.pdf

E.III.6.4.B

CTI 2010 admission to EQAR
https://backend.deqar.eu/reports/EQAR/CTI_External_Review_Report.pdf
EQAR's latest decision report on CTI:
https://www.cti-commission.fr/wp-content/uploads/2017/01/2014_10_CTI_ApprovalDecision.pdf

E.III.6.4.C

History of ENQA and EQAR evaluations:
https://www.cti-commission.fr/la-cti/demarche-qualite/systeme-qe/enqaeqar

E.III.6.4.D

CNEFOP's latest decision report on CTI:
https://www.cti-commission.fr/wp-content/uploads/2018/05/CNEFOP_decision.pdf

Both President and Managing Director of the agency confirm that the agency seeks an authorisation to award the EUR-ACE Label and agrees to abide by the regulations of the ENAEE's EUR-ACE Label Committee.

In furtherance, this application is supported by the enclosed documentation of the applying agency by way of copies of legal statements, mission statement, strategic and business plans and policies etc.

Date: 11. 12. 18

Signed:

Name and position:

Elisabeth Crépon,
President,
Commission des *Titres d'Ingénieur*

Name and position:

Marie-Jo Goedert,
Director of administration & international relations
Commission des *Titres d'Ingénieur*

IV. LIST OF APPENDICES

* **Appendix 1:** Description of the French degree system and contextual overview of the engineering degree / "diplôme d'ingenieur"
(Mentioned in: I.1.3.C, I.1.4.3)

* **Appendix 2:** Selection of the main legal texts concerning CTI's missions and activities
(Mentioned in III.10, III.12)

* **Appendix 3:** ENAEE May 2015 Authorisation Report, (24 pages)
available at: https://cl.ly/4db5c44f35a6
(Mentioned in I.4.)

* **Appendix 4:** ENAEE September 2015 Recommendations (2 pages)
available at: https://cl.ly/44eca0dd0455
(Mentioned in I.4.)

* **Appendix 5:** «Données Certifiées», [certified data], 2018 empty form for collecting data certified by French HEIs (49 pages)
available at: https://cl.ly/a707133af338
(Mentioned in: II.2, II.3)

* **Appendix 6:** Current template of the CTI Rapport de Mission d'Audit (RMA), [External Evaluation Report] (36 pages)
available at : https://cl.ly/0a50c65adc28
(Mentioned in: II.5)

Appendix 1: Description of the French degree system and contextual overview of the engineering degree / "diplôme d'ingénieur"

The higher education system in France

In France, the higher education system (HES) is regulated by the ministry in charge of 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, the economy, industry, telecommunications, defence, ecology and sustainable development) or local authorities 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. 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 vocational programmes for training mainly public-sector and private-sector senior and middle managers).
  But the selective system is particularly used by 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).

Types of HEIs in France

In France, Higher Education Institutions can be created and run by both public and private players.

There are two main categories of HEIs:

* institutions (private or mainly publicly-owned) which are allowed by law to award national degrees, such as *licence*, master's degrees, doctorates, or accredited institutional degrees such as the *Titre d'ingénieur diplômé* engineering degree,

* institutions which can only award their own institutional diplomas.

To award a national or institutional accredited degree, institutions need authorization by the Ministry 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,* etc. Annual tuition fees are usually low in publicly-owned institutions (a few hundred euros) and are more expensive in private schools (ranging from €6000 to €15,000).

The French degree system and the diplôme d'ingénieur
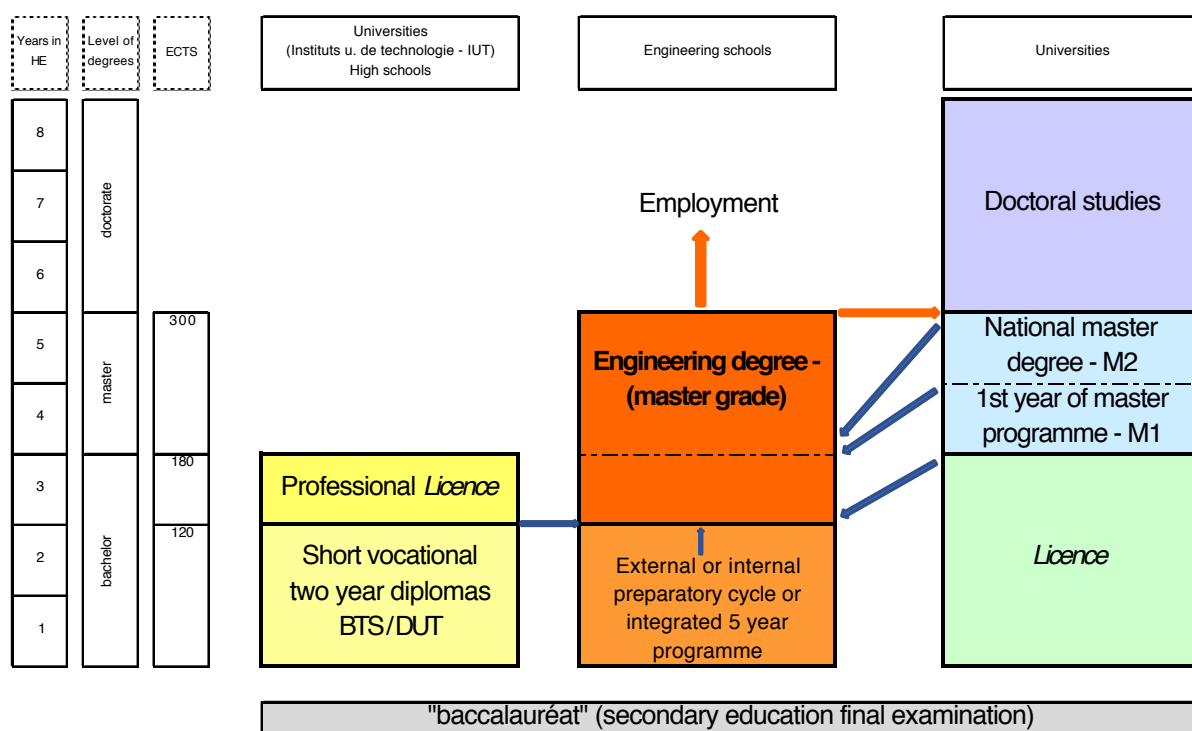
The diplôme d'ingénieur in the French higher education system

The French HE system fully complies with European standards:

* the three-level Bachelor's/Master's/Doctorate degree system (plus short cycle qualifications, see following paragraph)

* the European Credit Transfer System (ECTS),

* an organization of the academic year into semesters and of the subjects into 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"

    ° *Diplôme universitaire de technologie (DUT);*

    ° *Brevet de technicien supérieur (BTS).*

* *Licence* (180 ECTS):

    ° *Licence:* Bachelor's degree with an academic focus that opens the way to the master's programme;

    ° *Licence professionnelle:* vocational Bachelor's degree which aims at professional integration.

* **Master** (120 ECTS):

    ° Master's degree with a professional or academic focus, admission for holders of a Bachelor degree.

* **Integrated master's-level degrees** (300 ECTS) such as:

    ° 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:*

    ° 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 articles D612-33 to D612-36 of the national education code, the French engineering degree confers the academic grade of master and allows graduates to directly access 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 foundational 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* qualification, students may take different pathways to prepare for admission to the engineering cycle of engineering schools:

* admission to the first year of a 5-year integrated programme,

* two years in external preparatory classes and entrance exams (*"concours"*) for the first year of the engineering cycle (3rd 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 (3rd 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 (3rd year in HE),

* scientific bachelor's degree (*licence*) followed by a selective admission procedure to the first year of the engineering cycle (3rd year in HE),

* 1st year or completed master's degree in science followed by a selective admission procedure to the second year of the engineering cycle (4th 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 national level.

However, in order to be accredited to award an engineering degree, an institution must comply with 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 ensure 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 teaching and 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 ensure that 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 start working immediately, 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 (see below, available learning modes)

  ° 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

Programme learning modes for obtaining an engineering degree in France

There are 3 possible learning modes.

The first and standard one is **"Formation Initiale sous Statut Etudiant" (FISE).** Students go through a preparatory cycle for 2 years then apply for entrance to a CTI-accredited engineering programme which will last 3 years (*"cycle ingénieur"*). Most of the programme outcomes will be achieved within the HEI. It is also possible for students to do both the preparatory cycle in two years and the three years of the engineering programme within the same HEI, depending on its organization and recruitment policy.

"Formation initiale sous statut apprenti (FISA)" is the second potential learning mode, organized by an HEI in partnership with a sponsor, which allows students to alternate periods in the HEI and periods within a company during their engineering programme. Apprentice students have often started with this learning mode during their two first years after baccalauréat through a DUT or BTS (see **diagram above:** "The *diplôme d'ingénieur* in the French higher education system") and want to pursue it for their engineering programme. Nowadays, students coming from a standard mode during the preparatory cycle can also be very attracted by a FISA for their engineering programme.

"Formation Continue" (FC) or continued training is the other programme learning mode and a lifelong learning possibility for people who are currently employed and have obtained some training time, or are looking for a job after some work experience. They keep their status (as an employee or as a job seeker) as long as they study in the accredited programme. HEIs that offer this learning mode for an engineering degree have to check candidates' academic and professional levels before admitting them, and sometimes adapt their programmes to their specific needs (distance learning, evening classes, brushing up of specific skills and professional knowledge, etc.). Students admitted via this pathway also study for 3 years and get the same engineering degree as FISE students, and they have significantly increased employability and professional options. This mode is still the least frequent in HEIs and least known by the general public.

Appendix 2. Selection of the main legal texts concerning CTI's missions and activities

Extraits du code de l'éducation relatifs à la Commission des titres d'ingénieur

[Extracts of the French Education Code pertaining to the Commission des *Titres d'Ingénieur*]
https://www.legifrance.gouv.fr/affichCode.do?cidTexte=LEGITEXT000006071191&dateTexte=20181022

Legislative part

* Troisième partie : les enseignements supérieurs

* Livre VI : l'organisation des enseignements supérieurs

* Titre IV : les formations technologiques

* Chapitre II : Les formations technologiques longues

ARTICLE L642-1

La formation des ingénieurs et des gestionnaires est assurée par des écoles, des instituts, des universités et des grands établissements. Elle comporte une activité de recherche fondamentale ou appliquée.

L'habilitation à délivrer le titre d'ingénieur diplômé est accordée par l'autorité administrative compétente après avis de la commission des *titres d'ingénieur* instituée par l'article L.642-3.

ARTICLE L642-2

Les personnes qui s'intitulent « ingénieur diplômé « doivent faire suivre immédiatement cette mention d'un des *titres d'ingénieur* créés par l'Etat ou reconnus par l'Etat, ou d'un des *titres d'ingénieur* légalement déposés conformément aux articles L. 642-4 et L. 642-10.

ARTICLE L642-3

La commission des *titres d'ingénieur*, dont les membres sont nommés par le ministre chargé de l'enseignement supérieur, est consultée sur toutes les questions concernant les *titres d'ingénieur* diplômé.

La composition de cette commission est fixée par décret en Conseil d'Etat ; elle comprend notamment une représentation des universités, des instituts, des écoles et des grands établissements ainsi que des organisations professionnelles.

ARTICLE L642-4

La commission des *titres d'ingénieur*s décide en première instance, et sur leur demande, si des écoles techniques privées légalement ouvertes présentent des programmes et donnent un enseignement suffisant pour délivrer des diplômes d'ingénieur.

Ses décisions ne peuvent être prises que sur un rapport présenté sur ces programmes et cet enseignement par un ou plusieurs inspecteurs ou chargés de mission d'inspection.

ARTICLE L642-5

Les représentants des écoles intéressées reçoivent communication du ou des rapports d'inspection et peuvent demander à être entendus ; ils sont admis à fournir tous les éléments d'information qu'ils jugent utiles. Ils peuvent, ainsi que le ministre chargé de l'enseignement supérieur, interjeter appel dans le délai de deux mois de la décision devant le Conseil supérieur de l'éducation qui statue en dernier ressort.

Le recours est jugé contradictoirement dans le délai de trois mois.

En aucun cas, la délivrance des diplômes d'ingénieur ne peut avoir lieu avant la décision d'appel.

Les décisions de la commission des *titres d'ingénieur*, ainsi que celles du Conseil supérieur de l'éducation, sont motivées.

ARTICLE L642-6

Sur la requête du ministre chargé de l'enseignement supérieur, il peut être procédé au retrait de la faculté de délivrer des diplômes d'ingénieur. La décision du retrait est prise dans les formes et par les organismes prévus par les articles L. 642-4 et L. 642-5. Toutefois, la décision de retrait ne peut intervenir qu'à la suite d'un avertissement donné sur rapport d'un inspecteur spécialement désigné à cet effet par la commission des *titres d'ingénieur* et dont une nouvelle inspection, faite à un an d'intervalle, a constaté l'inefficacité. La commission prend toutes mesures utiles pour sauvegarder le droit des élèves en cours d'études en vue de l'obtention du *diplôme d'ingénieur*.

ARTICLE L642-7

Sur demande des gouvernements intéressés et après avis de la commission des *titres d'ingénieur*, des diplômes et *titres d'ingénieur* peuvent être admis par l'Etat. Ils doivent comporter l'indication du pays d'origine.

ARTICLE L642-8

Les établissements d'enseignement ayant obtenu la faculté de délivrer des diplômes d'ingénieur ou qui délivrent un *diplôme d'ingénieur* conformément à l'article L. 641-5 sont soumis, pour les conditions dans lesquelles est assurée la formation professionnelle de l'ingénieur, à l'inspection d'inspecteurs ou de chargés de mission d'inspection.

La commission des *titres d'ingénieur* dresse la liste des inspecteurs chargés de ces missions ; elle a communication des rapports d'inspection.

ARTICLE L642-9

Les techniciens autodidactes, les auditeurs libres des diverses écoles, les élèves par correspondance, justifiant de cinq ans de pratique industrielle comme techniciens, peuvent, après avoir subi avec succès un examen, obtenir un *diplôme d'ingénieur.*

Les conditions de la délivrance de ces diplômes sont fixées par décret sur avis favorable de la commission des *titres d'ingénieur.*

ARTICLE L642-10

Les titres constitués par le *diplôme d'ingénieur* accompagnés obligatoirement du nom de l'école dont les programmes et l'enseignement ont été reconnus suffisants conformément aux articles L. 642-4 à L. 642-9, les modèles des diplômes constatant leur délivrance, doivent faire l'objet d'un dépôt.

Il ne peut être fait usage de l'un de ces *titres d'ingénieur* s'il n'a été déposé. Les conditions dans lesquelles le dépôt est effectué sont fixées par décret. Il est perçu, au moment du dépôt, un droit au profit du Trésor public.

Les *titres d'ingénieur* créés ou reconnus par l'Etat ne sont pas soumis à la formalité du dépôt.

ARTICLE L642-11

Les groupements d'ingénieurs et les associations d'anciens élèves des écoles techniques formant des ingénieurs peuvent être autorisés, après enquête administrative et sur avis favorable du Conseil supérieur de l'éducation, à déposer les titres de leurs groupements ou associations. Ils peuvent également déposer dans les mêmes conditions les abréviations consacrées par un usage d'au moins dix années, qu'ils ont adoptées pour désigner leurs membres.

ARTICLE L642-12

Les infractions aux dispositions du présent chapitre sont réprimées conformément aux dispositions du code pénal relatives aux faux et à l'usurpation de titres.

Status of institutions

* Partie législative

* Troisième partie : Les enseignements supérieurs

* Livre VII : Les établissements d'enseignement supérieur

* Titre Ier : Les établissements publics à caractère scientifique, culturel et professionnel

ARTICLE L711-3

Les universités de technologie sont des établissements publics à caractère scientifique, culturel et professionnel, créés dans les conditions prévues à l'article L. 711-4, qui ont pour mission principale la formation des ingénieurs, le développement de la recherche et de la technologie. Ces établissements sont soit des instituts et écoles extérieurs aux universités relevant du chapitre V, soit de grands établissements relevant du chapitre VII du présent titre.

Des établissements d'enseignement supérieur peuvent être transformés en universités de technologie, à condition que le flux annuel d'entrées dans leurs filières technologiques soit au moins égal à cinq cents étudiants.

ARTICLE L713-1

* Modifié par ORDONNANCE n°2014-807 du 17 juillet 2014 - art. 3

Les universités regroupent diverses composantes qui sont :

1. Des unités de formation et de recherche, des départements, laboratoires et centres de recherche, et d'autres types de composantes créés par délibération du conseil d'administration de l'université après avis du conseil académique ;

2. Des écoles ou des instituts, créés par arrêté du ministre chargé de l'enseignement supérieur sur proposition ou après avis du conseil d'administration de l'université et du Conseil national de l'enseignement supérieur et de la recherche ;

3. Des regroupements de composantes créés par délibération du conseil d'administration de l'université après avis du conseil académique ou, le cas échéant, pour les regroupements d'écoles ou d'instituts prévus au 2°, par arrêté du ministre chargé de l'enseignement supérieur sur proposition ou après avis du conseil d'administration de l'université et du Conseil national de l'enseignement supérieur et de la recherche. Les statuts de l'université peuvent prévoir que sont déléguées à ces

regroupements de composantes certaines des compétences du conseil d'administration ou du conseil académique, à l'exception des compétences de la section disciplinaire ou de la formation restreinte aux enseignants-chercheurs.

Un conseil des directeurs de composantes est institué par les statuts de l'université, qui définissent ses compétences. Il participe à la préparation et à la mise en œuvre des décisions du conseil d'administration et du conseil académique. Il est présidé par le président de l'université.

Les composantes de l'université déterminent leurs statuts, qui sont approuvés par le conseil d'administration de l'université, et leurs structures internes. Le président associe les composantes de l'université à la préparation et à la mise en oeuvre du contrat pluriannuel d'établissement. La création, la suppression ou le regroupement de composantes sont inscrits dans le contrat pluriannuel d'établissement, le cas échéant, par voie d'avenant.

Le président, selon des modalités fixées par les statuts, conduit un dialogue de gestion avec les composantes, afin que soient arrêtés leurs objectifs et leurs moyens. Ce dialogue de gestion peut prendre la forme d'un contrat d'objectifs et de moyens entre l'université et ses composantes.

En outre, les universités peuvent comporter une école supérieure du professorat et de l'éducation.

ARTICLE L713-2

Des centres polytechniques universitaires ayant pour mission la formation des ingénieurs, le développement de la recherche et de la technologie peuvent être créés.

Ces centres, à caractère pluridisciplinaire, sont soumis aux dispositions de l'article L. 713-9.

La création de ces centres ne peut intervenir que si le flux annuel d'entrées est au moins égal à deux cent cinquante étudiants.

ARTICLE L713-9

* Modifié par Loi n°2005-380 du 23 avril 2005 - art. 44 JORF 24 avril 2005

Les instituts et les écoles faisant partie des universités sont administrés par un conseil élu et dirigés par un directeur choisi dans l'une des catégories de personnels qui ont vocation à enseigner dans l'institut ou l'école, sans condition de nationalité. Les directeurs d'école sont nommés par le ministre chargé de l'enseignement supérieur sur proposition du conseil et les directeurs d'instituts sont élus par le conseil. Leur mandat est de cinq ans renouvelable une fois.

Le conseil, dont l'effectif ne peut dépasser quarante membres, comprend de 30 à 50 % de personnalités extérieures, dont un ou plusieurs représentants des acteurs économiques ; les personnels d'enseignement et assimilés y sont en nombre au moins égal à celui des autres personnels et des étudiants. Le conseil élit pour un mandat de trois ans, au sein des personnalités extérieures celui de ses membres qui est appelé à le présider. Le mandat du président est renouvelable.

Le conseil définit le programme pédagogique et le programme de recherche de l'institut ou de l'école dans le cadre de la politique de l'établissement dont il fait partie et de la réglementation nationale en vigueur. Il donne son avis sur les contrats dont l'exécution le concerne et soumet au conseil d'administration de l'université la répartition des emplois. Il est consulté sur les recrutements.

Le directeur de l'institut ou de l'école prépare les délibérations du conseil et en assure l'exécution. Il est ordonnateur des recettes et des dépenses. Il a autorité sur l'ensemble des personnels. Aucune affectation ne peut être prononcée si le directeur de l'institut ou de l'école émet un avis défavorable motivé.

Les instituts et les écoles disposent, pour tenir compte des exigences de leur développement, de l'autonomie financière. Les ministres compétents peuvent leur affecter directement des crédits et des emplois attribués à l'université.

Regulations

* Livre VI : l'organisation des enseignements supérieurs

* Titre IV : les formations technologiques

* Chapitre II : Les formations technologiques longues

SECTION 1 : Habilitation à délivrer le titre d'ingénieur diplômé

ARTICLE D642-1

L'habilitation à délivrer le titre d'ingénieur diplômé est accordée pour une durée maximale de six ans, par arrêté du ministre chargé de l'enseignement supérieur et, le cas échéant, du ou des ministres concernés, après évaluation des formations assortie d'un avis de la commission des *titres d'ingénieur*.

ARTICLE D642-2

Les formations pour lesquelles une habilitation à délivrer un titre d'ingénieur diplômé a été accordée sans limitation de durée sont évaluées par la commission des *titres d'ingénieur*.

A l'issue de la procédure d'évaluation, l'habilitation à délivrer le titre d'ingénieur diplômé fait l'objet d'une décision dans les conditions fixées à l'article D.642-1.

ARTICLE D642-3

La liste des écoles habilitées à délivrer un titre d'ingénieur diplômé est publiée une fois par an au Journal officiel de la République française.

ARTICLE D642-4

Le titre d'ingénieur diplômé est désigné en entier ou à l'aide d'abréviations officiellement admises.

SECTION 2 : La commission des titres d'ingénieur

ARTICLE R642-5 (REMPLACE LE DÉCRET N° 85-685 DU 5 JUILLET 1985)

La commission des *titres d'ingénieur* est composée de trente-deux membres :

1. Quatre membres choisis dans le personnel des établissements publics à caractère scientifique, culturel et professionnel relevant du ministre chargé de l'enseignement supérieur et dans lesquels est délivré le titre d'ingénieur diplômé, à raison de deux représentants des universités, dont un représentant des instituts nationaux polytechniques, un représentant des instituts et écoles extérieurs aux universités et un représentant des grands établissements ;

2. Quatre membres choisis dans le personnel des écoles et instituts relevant du ministre chargé de l'enseignement supérieur et délivrant le titre d'ingénieur diplômé ;

3. Huit membres choisis en raison de leur compétence scientifique et technique, dont cinq au moins pris dans le personnel des établissements délivrant le titre d'ingénieur diplômé autres que les établissements publics relevant du ministre chargé de l'enseignement supérieur ;

4. Huit membres choisis par les organisations d'employeurs les plus représentatives ;

5. Huit membres choisis par les associations et les organisations professionnelles d'ingénieurs les plus représentatives.

Les membres de la commission mentionnés au 1° sont choisis par le ministre chargé de l'enseignement supérieur sur une liste proposée par la Conférence des chefs d'établissements de l'enseignement supérieur mentionnée à l'article l.233-1, siégeant en formation restreinte aux chefs des établissements qui sont habilités à délivrer le titre d'ingénieur diplômé. Cette liste doit comporter deux fois plus de noms que de membres à désigner pour chacun des types d'établissements publics mentionnés au 1°.

Les membres de la commission mentionnés aux 2° et 3° sont désignés par le ministre chargé de l'enseignement supérieur.

Un arrêté du ministre chargé de l'enseignement supérieur et du ministre chargé du travail fixe le nombre des sièges attribués à chacune des organisations et associations mentionnées aux 4° et 5°.

Le directeur général pour l'enseignement supérieur et l'insertion professionnelle au ministère de l'enseignement supérieur et de la recherche ou son suppléant assiste aux séances de la commission avec voix consultative, sauf dans le cas où il remplit les fonctions qui lui sont attribuées par l'article R.642-10.

ARTICLE R642-6

Les membres de la commission des *titres d'ingénieur* sont nommés par arrêté du ministre chargé de l'enseignement supérieur, pour une durée de quatre années.

Ils sont renouvelables par moitié tous les deux ans.

Nul ne peut être membre de la commission durant plus de huit années consécutives.

ARTICLE R642-7

Tout membre de la commission des *titres d'ingénieur* cesse d'en faire partie s'il perd la qualité en raison de laquelle il y a été appelé.

En cas de vacance d'un siège, pour quelque cause que ce soit, le ministre chargé de l'enseignement supérieur procède, dans un délai de trois mois et selon les modalités prévues à l'article R.642-5, à la nomination d'un membre pour la durée du mandat restant à courir.

ARTICLE R642-8

La commission des *titres d'ingénieur*, réunie sous la présidence du doyen d'âge, élit parmi ses membres un président et deux vice-présidents. *

Le président, en cas d'empêchement, est remplacé par l'un des vice-présidents.

Le président et les vice-présidents sont élus à la majorité absolue aux deux premiers tours, à la majorité relative au troisième tour. Si, au troisième tour, il y a partage égal des voix, le plus âgé des candidats est considéré comme élu. Le vote se fait à bulletins secrets.

Le président et les vice-présidents sont élus pour deux ans. Ils sont rééligibles.

Un secrétaire-greffier auprès de la commission est nommé par le directeur général pour l'enseignement supérieur et l'insertion professionnelle au ministère de l'enseignement supérieur et de la recherche parmi les fonctionnaires de l'administration centrale.

ARTICLE R642-9

Lorsqu'elle exerce une compétence consultative, la commission des *titres d'ingénieur* remplit ses fonctions dans les conditions prévues par le décret n°2006-672 du 8 juin 2006 relatif à la création, à la composition et au fonctionnement des commissions administratives à caractère consultatif et par les deuxième et troisième alinéas du présent article.

Les délibérations sont prises à la majorité absolue des votants. En cas de partage des voix, la voix du président est prépondérante.

Tout membre de la commission empêché d'assister à tout ou partie d'une séance peut donner par écrit procuration à un autre membre. La procuration est remise au secrétaire-greffier de la commission avant le premier des votes pour lesquels elle prend effet. Nul ne peut détenir plus d'une procuration.

ARTICLE R642-10

Lorsque la commission des *titres d'ingénieur* exerce un pouvoir de décision en matière administrative ou juridictionnelle, elle ne peut délibérer que si le nombre des présents dépasse la moitié de ses membres. Les délibérations sont prises à la majorité absolue des votants. Aucun membre ne peut voter par procuration. En cas de partage des voix, la voix du président est prépondérante.

Lorsque la commission exerce les fonctions juridictionnelles qu'elle tient des articles L.642-4 et L.642-6, elle statue sur le rapport de l'un des membres désigné par le président, après avoir entendu les observations du directeur général pour l'enseignement supérieur et l'insertion professionnelle ou de son suppléant et celles des parties ou de leur mandataire. Ce rapport consiste en un exposé objectif des faits et moyens.

La décision de la commission est motivée. Elle est lue en séance publique, transcrite sur le procès-verbal des délibérations et signée par le président, le rapporteur et le secrétaire-greffier. Il est fait mention dans la décision des membres ayant délibéré.

ARTICLE D612-34

Le grade de master est conféré de plein droit aux titulaires :

1. D'un diplôme de master ;
2. D'un diplôme d'études approfondies ou d'un diplôme d'études supérieures spécialisées ;
3. D'un *diplôme d'ingénieur* délivré par un établissement habilité en application de l'article L642.1;
4. Des diplômes délivrés :

IV. LIST OF APPENDICES

a. Par l'Institut d'études politiques de Paris, en application de l'article 2 du décret n°85-497 du 10 mai 1985 relatif à l'Institut d'études politiques de Paris ;

b. Par les instituts d'études politiques, en application de l'article D.719-191

c. Par l'université Paris-Dauphine, en application de l'article 3 du décret n°2004-186 du 26 février 2004 portant création de l'université de technologie en sciences des organisations et de la décision de Paris-Dauphine et figurant sur une liste arrêtée par le ministre chargé de l'enseignement supérieur.

Ces diplômes font l'objet d'une évaluation nationale périodique.

En outre, le grade de master est également conféré de plein droit aux titulaires des diplômes délivrés au nom de l'Etat, de niveau analogue, figurant sur une liste établie après une évaluation nationale périodique de ces diplômes, par arrêté du ministre chargé de l'enseignement supérieur après avis conforme du ou des ministres dont relèvent les établissements concernés et après avis du Conseil national de l'enseignement supérieur et de la recherche.

5. Des diplômes de santé suivants :

a. D'un diplôme de formation approfondie en sciences médicales à l'issue de l'année universitaire 2015-2016 ;

b. D'un diplôme de formation approfondie en sciences pharmaceutiques à l'issue de l'année universitaire 2014-2015 ;

c. D'un diplôme de formation approfondie en sciences odontologiques à l'issue de l'année universitaire 2014-2015 ;

d. D'un diplôme d'Etat de sage-femme à l'issue de l'année universitaire 2014-2015 ;

e. Du certificat de capacité d'orthophoniste à l'issue de l'année universitaire 2017-2018.

Other major texts to which the CTI refers

* **Arrêté** du 25 septembre 2013 relatif aux instituts et écoles internes des EPCSCP relevant du ministère en charge de l'enseignement supérieur (notamment, les instituts et écoles d'ingénieurs sont listés aux articles 6, 7, 8 et 18)

* **Code du travail :** Article L.3142-42 à 45 (salariés désignés pour siéger) et arrêté du 20 mai 1980 mentionnant la Commission des *titres d'ingénieur* parmi les instances chargées de l'emploi et de la formation concernées par l'article L.3142-42.

* **Code des relations entre le public et l'administration :** articles R.133-1 à 15.