ENQA AGENCY REVIEW: COMMISSION DES TITRES D'INGÉNIEUR (CTI)

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Contents

EXECUTIVE SUMMARY

The *Commission des titres d'ingénieur* (CTI) was established by Law in 1934 (*French Education Code*, Article L.642-2 and following). The CTI is the French relevant body in charge of carrying out periodical evaluation procedures that lead to the accreditation of the French institutions to award the engineering degree "titre d'ingénieur diplômé" in France and abroad. On request of the institutions and relevant governments, CTI may also carry out evaluation procedures of engineering programmes run by foreign higher education institutions. The positive outcome of such a CTI procedure leads to the recognition of these degrees within France (''Admission par l'Etat'').

CTI has been an ENQA member since 2005 and been registered on EQAR since 2010. With this review, CTI is applying for renewal of membership in ENQA and registration in EQAR.

The purpose of the review was to evaluate the way in which and to what extent CTI fulfils the *Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG)*.

The following activities of CTI had to be addressed in the external review:

- Initial accreditation of study programmes in engineering of French institutions, in France and abroad;
- Accreditation of existing programmes in engineering of French and foreign institutions, in France and abroad;
- Evaluation of French and foreign engineering programmes in order to award quality labels.

Based on documentary and oral evidence, the review panel made the following commendations, recommendations and suggestions for further improvement.

Commendations
- CTI is a professional organisation that is highly respected and appreciated by stakeholders and authorities.
- Active participation of industry representatives in CTI governance has helped to increase the reliability of CTI in the engineering environment and enhanced the quality of engineering education in France.
- The panel was impressed by the large number and high quality of thematic analyses, given the relatively small scale of the agency, and their dissemination through several different kinds of activities, such as conferences, newsletters and other information sharing for promoting QA in higher education nationally and internationally.
- Annual conferences are much appreciated by stakeholders (especially deans of HEIs).
- Both the staff members and CTI members from industry and academia are highly committed which supports the integration between industry and higher education.
- CTI has developed a comprehensive and user-friendly information management system.
- CTI can be commended for its active collaboration with stakeholders to periodically update the criteria for engineering programmes.
- The panel commends CTI for the involvement of international experts in the panels and encourages CTI to apply this practice to all reviews.

Recommendations (in view of ESG standards)

- The panel recommends that CTI develops follow-up procedures in the case of full accreditation. In order to limit administrative burden, CTI and HEIs might consider taking use of existing publication tools (e.g., conferences, certified data). The methods for follow-up should be implemented so that quality culture at the institutions will be further developed. (ESG 2.3)
- For improved consistency of decisions, the panel recommends that CTI develop explicit criteria for conducting deliberations and decision-making. They do not need to be mathematical but should still give a clear indication for the different types of decisions. (ESG 2.5)
- The panel recommends CTI to intensify efforts regarding the new template for panel reports in order to increase redactional uniformity and coherence. Full reports based on this new template should be publishable in a short period, given the fact that this recommendation has existed since the previous ENQA review. (ESG 2.6)

Suggestions for further improvement
- Set clear timelines for the current action plan 2017-2020 and stick to these timelines (especially implementation of the assessment report template). (ESG 3.1, ESG 3.6)
- Update the English-language website and make it coherent with the French-language website. (ESG 3.1, ESG 3.4)
- Continue supporting HE institutions to promote quality culture and put even more efforts to analyse, together with HE institutions and other stakeholders, what global changes are needed in engineering education for the future.
- Consider, in dialogue with all stakeholders, especially student organisations, incorporating students in the governance of CTI. As the composition of CTI is regulated by law, this should perhaps be in the form of advice to the minister. (ESG 3.1)
- Given the growing number of international assessments, CTI could also consider including international representatives in its governance, on proposition of both academic and industrial stakeholders. (ESG 3.1)
- Work towards linking the information management systems of CTI and the Ministry of Higher Education. (ESG 3.5)

The panel's judgements are provided below.

ESG 3.1 ACTIVITIES, POLICY AND PROCESSES FOR QUALITY ASSURANCE	Fully compliant
ESG 3.2 OFFICIAL STATUS	Fully compliant
ESG 3.3 INDEPENDENCE	Fully compliant
ESG 3.4 THEMATIC ANALYSIS	Fully compliant
ESG 3.5 RESOURCES	Fully compliant
ESG 3.6 INTERNAL QUALITY ASSURANCE AND PROFESSIONAL CONDUCT	Fully compliant
ESG 3.7 CYCLICAL EXTERNAL REVIEW OF AGENCIES	Fully compliant
ESG 2.1 CONSIDERATION OF INTERNAL QUALITY ASSURANCE	Fully compliant
ESG 2.2 DESIGNING METHODOLOGIES FIT FOR PURPOSE	Fully compliant
ESG 2.3 IMPLEMENTING PROCESSES	Substantially compliant
ESG 2.4 PEER-REVIEW EXPERTS	Fully compliant
ESG 2.5 CRITERIA FOR OUTCOMES	Partially compliant

ESG 2.6 REPORTING	Partially compliant
ESG 2.7 COMPLAINTS AND APPEALS	Fully compliant

INTRODUCTION

This report analyses the compliance of *Commission des titres d'ingénieur* (CTI) with the *Standards and Guidelines for Quality Assurance in the European Higher Education Area* (ESG). It is based on an external review conducted in September 2018 (submission of the self-evaluation report (SAR) to the review panel) until April 2019 (submission of the review panel's report to ENQA).

BACKGROUND OF THE REVIEW AND OUTLINE OF THE REVIEW PROCESS

BACKGROUND OF THE REVIEW

ENQA's regulations require all member agencies to undergo an external cyclical review, at least once every five years, in order to verify that they act in substantial compliance with the ESG as adopted at the Yerevan ministerial conference of the Bologna Process in 2015.

As this is CTI's third review (the previous ones were conducted in 2009 by NVAO, and in 2014 by ENQA), the panel is expected to provide clear evidence of results in all areas and to acknowledge progress from the previous review. The panel has adopted a developmental approach, as the *Guidelines for ENQA Agency Reviews* aim at constant enhancement of the agencies.

MAIN FINDINGS OF THE 2014 REVIEW

CTI passed successfully the ENQA review in 2014 and CTI's full membership in ENQA was reconfirmed on 15 September 2014. In the confirmation letter from 26 September 2014, the President of ENQA requested from CTI a follow-up report on the recommendations in the panel report within two years of its decision, i.e. by September 2016[1]. On 25 November 2016, CTI sent the requested report to ENQA[2].

The judgements and recommendations of the review from 2014 (based on ESG 2005) are provided below.

Standard	Judgement	Recommendations
ESG 2.1 Use of Internal Quality Assurance Procedures	fully compliant	The panel encourages CTI to improve its members and experts' awareness on internal quality assurance in order to reach a higher level of understanding of the importance of IQA through mechanisms to train them on that specific matter.
ESG 2.2 Development of external quality assurance processes	fully compliant	None
ESG 2.3 Criteria for decisions	fully compliant	None
ESG 2.4 Processes fit for purpose	substantially compliant	- The panel recommends that CTI increase the number of international experts in its evaluation committees, not only at national but also at international level. - It is also recommended to publish the composition of the committees for each review on the website indicating their profile and role in the accreditation process.

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[1] https://enqa.eu/wp-content/uploads/2014/09/Letter-ENQA-to-CTI_260914.pdf
[2] https://enqa.eu/wp-content/uploads/2017/03/CTI_Follow_up_report.pdf

		- The panel considers that the procedure for the selection and nomination of experts could be improved by clarifying the process of selection of the expert members of the evaluation committees as well as the policy for selection. - Finally, the panel recommends that student participation in the evaluation committees be increased and also to consider the possibility to involve them at the members' level.
ESG 2.5 Reporting	fully compliant	Even if the published information is satisfactory for the different stakeholders, it could be of use to publish the full evaluation reports on the Agency's website.
ESG 2.6 Follow up-procedures	substantially compliant	The panel considers that it would be useful to include a follow-up procedure for the newly created programmes or the programmes with no major problems detected.
ESG 2.7 Periodic reviews	fully compliant	None
ESG 2.8 System-wide analysis	fully compliant	None
ESG 3.1 Use of external quality assurance procedures for higher education	fully compliant	None
ESG 3.2 Official status	fully compliant	- The panel recommends that CTI develops the agreement with AERES in order to find a way to better align their evaluation calendars and to minimize the workload these evaluations represent for the Institutions. - It is also recommended to have a mechanism for assuring the continuity of the agreement between both Agencies taking into account the change from AERES to HCERES in the near future.
ESG 3.3 Activities	fully compliant	The panel recommends that CTI puts in place a mechanism to protect the Agency from the possible risk due to a shift in workload balance between the main mission and the international requests which are more and more numerous and could have an impact on the main activity.
ESG 3.4 Resources	fully compliant	The panel recommends that CTI takes into account the risk of a higher workload for the staff in the light of increasing its activities (EURACE label, international accreditation, etc.) in the near future as well as with regards to the accreditation period which is due to be changed from 6 to 5 years.
ESG 3.5 Mission statement	fully compliant	- The panel recommends that CTI develop the strategic aims of the Agency to strengthen its vision and goals. - The panel also recommends the CTI to continue publishing the biannual activity reports given that the 2010-2012 report has yet to be published.

ESG 3.6 Independence	fully compliant	The panel recommends that CTI develops the strategic aims of the Agency so as to reinforce the way the Agency wants to follow its activities and make it public.
ESG 3.7 External quality assurance criteria and processes used by the agencies	substantially compliant	As mentioned previously, under criterion 2.4, the panel considers that the procedure for the selection and nomination of experts could be improved by clarifying the process of selection of expert member selection for the evaluation committees as well as the policy for selection. And, under criterion 2.6, the panel considers that it would be useful to include a follow-up procedure for the programmes with no major problems detected.
ESG 3.8 Accountability procedures	fully compliant	None

REVIEW PROCESS

The 2018 external review of CTI was conducted in line with the process described in the *Guidelines for ENQA Agency Reviews* and in accordance with the timeline set out in the Terms of Reference. The panel for the external review of CTI was appointed by ENQA and composed of the following members:

- **Rudy Derdelinckx** *(Chair)* **-** Professor, University of Antwerp, Faculty of Applied Engineering, (formerly, Managing Director NVAO), Belgium, *quality assurance professional/academic (ENQA nominee)*
- **Maiki Udam** *(Secretary)* **-** Director of Development and International Cooperation, Estonian Higher Education Quality Agency (EKKA), Estonia, *quality assurance professional (ENQA nominee)*
- **Hannele Niemi -** Professor, Research Director, UNESCO Chair in education, University of Helsinki, Finland, *academic (EUA nominee)*
- **Matthew Kitching -** Masters' student, Heriot-Watt University, Scotland, *Student (ESU nominee)*

During the review panel's preparatory skype-meeting, which has been arranged by the ENQA review coordinator, each panel member was encouraged to use the ESG, in identifying evidence provided in the SAR and supporting the conduct of the site visit. The review panel members submitted their comments and questions regarding the SAR's alignment with the ESG to the Secretary in time before the site visit. Based on the feedback, the Chair and Secretary aligned the individual findings to the areas of inquiry. In consequence, they were linked to specific interview sessions.

During the review panel's initial session on-site, each panel member was designated to lead a specific interview session. During briefing sessions, the review panel checked repeatedly whether enough evidence had been collected for each standard of the ESG. All panel members took notes during the interviews and shared them with the Secretary afterwards. During the final private meeting among panel members, all judgements, recommendations and suggestions on each standard were agreed collectively based on gathered evidence. After the site visit, the Secretary collated an initial draft reflecting the agreements reached on-site. The draft was circulated among panel members and finalized based on their written comments.

The report therefore reflects information gained from the SAR, interviews during the site visit, and additional documentation provided on site. CTI had the opportunity to comment on the factual accuracy of the draft report.

Self-assessment report

CTI produced a 58-page SAR, which provided the review panel with the first source of evidence it used to draw its conclusions. In the development of the SAR all relevant stakeholders of CTI have been involved. The review panel received the SAR from the ENQA review coordinator in September 2018. Overall, the report addressed the relevant components following the report template as provided by ENQA. The SWOT analysis was clear and useful. The panel found the report to be well structured, although mostly descriptive. The report could have been more self-analytical. Moreover, lots of evidence was provided, including original documents in French, via links to CTI's website, in particular where issues were not sufficiently explained in the SAR itself – e.g., concerning internal quality assurance (IQA) of CTI (ESG 3.6) and consideration of IQA at educational institutions (lack of a mapping grid) (ESG 2.1) and concerning thematic analysis (ESG 3.4), the activity report 2014-2016 and the internal regulations. As only one panel member was fluent in French, the full comprehension of the SAR was therefore somewhat hindered for the other panel members. This issue was communicated to CTI's contact person and CTI provided English translation to all requested documents in an efficient manner. In general, the SAR in combination with the additional material provided a sound starting point for discussions to what extent CTI adheres to the ESG.

Site visit

The agenda for the site visit was prepared jointly by the Chair, the Secretary and CTI's contact persons. The programme of the visit, provided as Annex 2 to this report, identifies all interview partners, who actually participated in the meetings.

The site visit took place at CTI's office premises between November 27 to 29, 2018. The work of the review panel started with an intensive internal meeting in the afternoon of November 27. Before the first meeting with the presidential team and the Director of Administration and International Relations on the same evening, the review panel had a short meeting with the contact person of CTI regarding practicalities.

On November 28 and 29, the review panel met with the presidency and management, the SAR preparation team, members of the general assembly, representatives of steering committees, staff including registry, and the partner quality agency HCERES as well as representatives of higher education institutions (HEIs), students, experts, supervisory ministries and other socio-cultural stakeholders. The review panel appreciated the openness of the interviewees and benefited a lot from all discussions.

The review panel would like to thank CTI's contact person and CEO Mme Marie-Jo Goedert and all other staff members for the time and effort they invested in this review, for providing the panel with everything they needed for their work and for making them feel cared for and welcome.

HIGHER EDUCATION AND QUALITY ASSURANCE SYSTEM OF THE AGENCY

HIGHER EDUCATION SYSTEM[3]

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 (e.g., the ministries of food and agriculture; economy; industry; telecommunications; defense; ecology and sustainable development) or a local authority supervise institutions in their technical domain.

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

The selective system is especially representative of the *Grandes écoles* (top graduate schools), such as the *Ecole Nationale d'Administration* (French Senior Civil Service School), *Ecole Normale Supérieure* (national post-graduate school), the *Ecoles de gestion* (top business schools), the *Ecoles d'architecture* (graduate schools in architecture) and the *Ecoles d'ingénieurs* (graduate schools in engineering).

Higher Education Institutions can be created and run by both public and private actors.
There are two main categories of HEIs:
- institutions (private or mainly publicly owned) which are allowed by law to award national degrees, such as *licence*, master, doctorate, or accredited institutional degrees such as the engineering degree *Titre d'ingénieur diplômé*,
- institutions which can only award their own institutional diplomas.

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

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

The French HE system complies with the European standards:
- the three-level bachelor/master/doctorate degree system (plus short cycle qualifications, see following paragraph)
- the European Credit Transfer System (ECTS),
- an organization of the academic year in semesters and of the subjects in teaching units (modules),
- the definition of learning outcomes per module/course unit,
- the Diploma Supplement handed out to the graduates.

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[3] SAR pp. 3-6

The main higher education degrees currently awarded in France are:

- Short vocational 2-year diplomas (120 ECTS):
    - Diplôme universitaire de technologie (DUT);
    - Brevet de technicien supérieur (BTS).
- Licence (180 ECTS):
    - Licence: Bachelor's degree with an academic orientation that opens the way to the master's programme;
    - Licence professionnelle: vocational Bachelor's degree which aims at a professional integration.
- Master (120 ECTS):
    - Master's degree with a professional or an academic orientation, admission for holders of a Bachelor's degree.
- Integrated master-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.

As CTI is an accrediting body for engineering schools and programmes, the information below is particularly reflecting the degree system and institutions in this field.
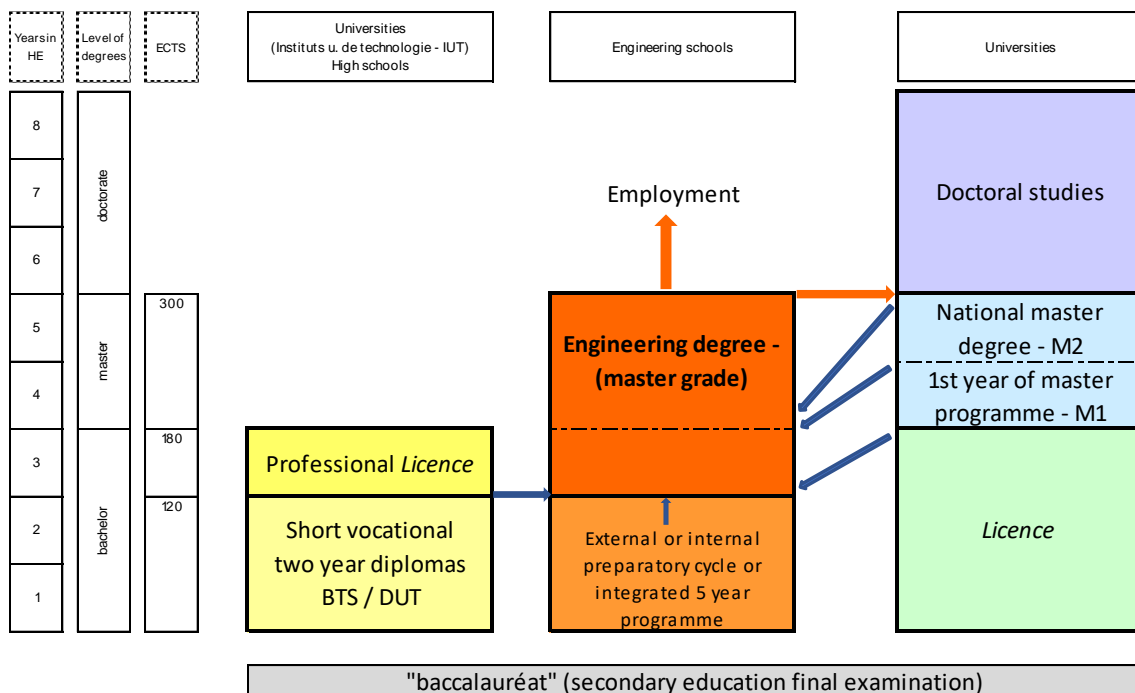

Figure 1. The diplôme d'ingénieur in the French higher education system

The engineering degree *diplôme d'ingénieur*

The engineering profession is not regulated in France (there is no professional organization 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*, thus it confers the academic grade of master and enables the graduates' direct access to doctoral studies.

Figure 1 above shows the place of the *diplôme d'ingénieur* within the French higher education system. Most engineering degrees are organized according to an initial founding two-year cycle (preparatory classes, *classes préparatoires aux grandes écoles - CPGE*) followed by a subsequent three-year engineering cycle. There are also engineering programmes offered as an integrated 5-year syllabus.

After the *baccalauréat* degree, students may take different pathways to prepare for admission in the engineering cycle of the engineering schools:
- admission to the first year of a 5-year integrated programme,
- two years in external preparatory classes and entrance exams ("concours") to the first year of the engineering cycle (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 the national level. In order to be accredited to award an engineering degree, an institution must comply with the CTI's standards and guidelines (*Références et Orientations*).

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; defense; 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

- o   35% beneficiaries of income based scholarships
- 38,000 graduates per year
  - o   28% women
  - o   14% foreign nationals
  - o   15% through an apprenticeship track
  - o   3% via continuing education
  - o   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

QUALITY ASSURANCE[4]

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

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

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

Finally, in 2006, the government founded the *Agence d'Évaluation de la Recherche et de l'Enseignement Supérieur* (**AERES**) with the mission to evaluate the HE institutions, research centres and bachelor-master-doctoral programmes. After some years of working together in order to clarify their respective missions, a framework co-operation agreement between AERES and CTI was established in 2012.

As a consequence of the new law for higher education of 2013, the AERES was transformed into the *Haut Conseil de l'évaluation de la recherche et de l'enseignement supérieur* (**Hcéres**) and CTI and Hcéres redefined their respective positions and co-operation. Hcéres became responsible for the accreditation of institutes and of research units. Hcéres also accredits programmes, except some, one of these are engineering programmes. The accreditation of engineering programmes remained the responsibility of CTI. The missions of Hcéres also 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 communication* of February 2017 on this point).

A new agreement between CTI and Hcéres was signed in September 2016 for 5 years and a working committee has been set up for its follow-up. Its major aim is to work towards a co-ordination in the evaluation of engineering institutions by Hcéres and the accreditation procedures of engineering programmes by CTI, in particular to alleviate the workload for the HEIs, since some engineering HEIs are accountable to both CTI and Hcéres. One of the outcomes of this collaboration has been the reduction of the CTI accreditation period from 6 to 5 years, in order to have equal periods for CTI-accreditations and Hcéres accreditations. See the CTI-Hcéres cooperation agreement.

In November 2017, in the framework of the pre-event of the ENQA general assembly that was hosted by CIEP[5], CTI and Hcéres in Sèvres, the three organizing agencies signed a **joint declaration** that expressed their willingness to co-operate at national and international level. The signatories wish to

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[4] SAR p. 7
[5] Centre international d'études pédagogiques

create a shared space for the cross-fertilization of the agencies and for the furthering of the quality assurance in French higher education.

CTI was established by law in 1934 (French education code, article L.642-2 and following) with the aim to carry out three main missions that are still valid today:
- evaluation of new engineering programmes of private HEIs,
- evaluation of engineering programmes abroad leading to their recognition in France,
- advice on all issues regarding engineering education.

Initially the external quality assurance procedures were compulsory only for new programmes of private HEIs. In 1984, the evaluation by CTI of new programmes of French public HEIs became mandatory by law, and since 1997, all existing engineering programmes (by private and public HEIs) have to undergo a periodical evaluation procedure by CTI.
Every year an inter-ministerial order publishes the list of accredited programmes upon an evaluation procedure by CTI, with the duration of the accreditation. Foreign accredited programmes are included in the list.

CTI'S ORGANIZATION/STRUCTURE[7]

The Commission
CTI is a commission of 32 members from academia and industry who are appointed by the Minister in charge of Higher Education for a four-year term that is renewable once. Its membership consists of an equal number of representatives from academia (16 members) and from industry (16 members). They are officially appointed by the Minister in charge of Higher Education upon proposal by various organizations. Every two years a partial renewal of nominations for CTI membership occurs.
The commission is composed in detail as follows: eight professionals representing employers' organizations; eight professionals representing trade unions and engineers' associations; eight academic staff from HEIs under the ministry of HE; five academic staff from HEIs under other ministries; and three experts in science and technology. CTI members act on a voluntary basis and are involved in all areas of the organization's life, such as participating in and chairing the expert panels; discussing and voting on the outcomes of the accreditation procedures; drawing up reference documents for engineering programmes; performing transversal analysis; sitting on advisory boards, steering committees and working groups; representing the CTI to other stakeholders. The involvement of these members in CTI represents a significant (voluntary and unpaid) part of their professional duties (from about 50 working days per year for the ordinary members, to a half-part time for the members of the Executive Committee and a two thirds time for the president).

The Presidency and Vice-presidency
The CTI Commission elects in a plenary meeting among its members a president and two vice-presidents. In line with the composition of the CTI Commission, the team comprising the president and vice-presidents should be as representative as possible of the original diversity of the Commission, including members from academia, members from business appointed by the employers' representatives and members from business appointed by the engineer representatives. The president and vice-presidents are elected for a two-year term and may be re-elected as long as they are members of the CTI.
The president oversees the internal organization of CTI and its relationship with other bodies, chairs the Executive Committee and the plenary assembly of the members and represents the Commission

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[6] SAR p. 8
[7] SAR p. 9

in all its actions. The vice-presidents assist the president and are members of the Executive Committee as of right.

The Executive Committee
The president of CTI, two vice-presidents and a maximum of nine CTI members form the Executive Committee. The list of CTI members is approved in a plenary meeting of CTI, following a proposal by the president. The term of the Executive Committee coincides with the election of the presidential team.
Members of the Executive Committee assist the presidential team in its everyday management of CTI, in particular coordinating working groups and steering committees, monitoring the budget, monitoring projects scheduled in the action plan, providing external representation, examining documents from steering or working groups. The Executive Committee prepares and organizes the plenary meetings of CTI.
The Executive Committee meets two weeks before every plenary meeting of CTI.

Steering committees and working groups
CTI has formed steering committees and working groups to study recurring or occasional subjects, particularly in the fields of the budget, the audit processes, the frameworks (R&O), quality and communication and international activities. Each working group or steering committee is led by a member of the Executive Board. All CTI members may participate in a working group or steering committee. The Executive Board defines the work of these groups. The composition of steering committees and permanent working groups is approved by the CTI in a plenary meeting. CTI's main steering committees are the Quality and Communication Steering Committee, the Audit Steering Committee and the International Steering Committee. More details on the work of steering groups and working groups is presented in the paragraph on ESG 3.6 Internal quality assurance and professional conduct.

Strategic Orientation Committee
CTI may call on a strategic orientation committee (COS) for strategic analysis and discussion of its role, missions, quality processes and evaluation criteria. The COS is formed for a limited time and is composed of representatives of national and international partner institutions and individuals recognized for their specific skills in the field of education, quality assurance, internationalization, economy or industry, science and technology. Individuals are appointed in a plenary meeting of CTI.

Appeal Committee
CTI has formed an independent appeal committee of three external and knowledgeable personalities dealing with appeals. See therefore paragraph 2.7 on Complaints and Appeals.

The experts
Around 100 experts from academia and industry provide assistance in areas of their proficiency, such as engineering, science, education, international affairs and quality assurance. These experts - as well as student experts - take an active part in the accreditation procedures.
CTI has also appointed special advisors from academia and industry to manage or participate in certain projects that require specific expertise.

The staff of CTI
A permanent staff team of 4 FTE is responsible for day-to-day management and for supporting CTI's governance. Temporary staff (2FTE) work on specific tasks and events. Registry services (1 FTE) are provided by the *General Directorate for Higher Education* within the Ministry of Higher Education.

CTI is an independent body, responsible for managing its own finances. Its administrative operator (1 FTE) is a partner association, the association of the deans of engineering schools, the *Conférence des directeurs des écoles françaises d'ingénieurs* (CDEFI).

Particular to the CTI is the substantial involvement of the presidency and the members of the Executive Committee in its activities. Their activity goes much beyond their mere participation in evaluation procedures and the monthly general assembly meetings. They fulfil the equivalent of 6 FTE, representing the strong commitment of CTI's stakeholders.

Altogether, CTI operates with the equivalent of 14 FTE.

CTI'S FUNCTIONS, ACTIVITIES, PROCEDURES

CTI's mission statement defines **the following functions** of the agency[8]:

- Periodic evaluation of all engineering programmes offered by French higher education institutions across the country, that leads to the accreditation of the institutions to award the engineering degree. The evaluation procedure is compulsory for the existing programmes and prior to the opening of a new programme, study track or branch campus.
- On request and subject to the support of the relevant authorities in the host countries, carrying out evaluation procedures of engineering programmes provided by French institutions abroad.
- On request of the institutions and relevant governments, evaluation of existing engineering programmes run by foreign higher education institutions. The positive outcome of a CTI procedure may lead to the recognition of these degrees within France (''Admission par l'Etat''). This recognition is granted by the French Ministry of Higher Education.
- Contributing to the continuing development of engineering education while defining the generic profile of the engineer at master's level and drawing up criteria and procedures for awarding the engineering degree.
- Issuing opinions on all topics regarding the French engineering education.
- Developing a quality assurance culture within French engineering schools and the CTI itself, in line with the ESG. In this context, the CTI cooperates with other French and international quality assurance agencies, either under bilateral agreements (for example with ABET, AEQES, AAQ, Hcéres, IEAQA and others) or in networks such as FrAQ-Sup, ECA and ENAEE.
- Promoting the academic and professional recognition of the French engineering degree. Since the engineering profession is not regulated in France and there is no institution of chartered engineers, the CTI is the natural point of contact for foreign engineering bodies (often in coordination with the alumni association of graduate engineers IESF, *Ingénieurs et Scientifiques de France*).
- Evaluation of French and foreign engineering programmes in order to award quality labels. The CTI is a founding member of the *European Network for Accreditation of Engineering Education* (ENAEE) and is authorized to award its European quality label for engineering degree programmes EUR-ACE® (master's level). The CTI is also a member of the *European Consortium for Accreditation* (ECA) and is involved in awarding its *Certificate for Quality in Internationalisation* (CeQuInt).

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[8] SAR p. 8

The following activities are performed within the scope of ESG[9]:

- Initial accreditation of study programmes in engineering of French institutions, in France and abroad
- Accreditation of existing programmes in engineering of French and foreign institutions, in France and abroad
- Evaluation of French and foreign engineering programmes in order to award quality labels:
  - The EUR-ACE® label
  - The CeQuInt label

The methodology of all above-mentioned reviews covers the usual main stages of external quality assurance processes, as indicated in the ESG 2.3 Implementing processes[10].

The assessment process for a CTI accreditation (both new and existing programmes, in France and abroad) as well as for the EUR-ACE® label consists of five phases:
- Evaluation phase
- Accreditation phase
- Communication of results
- Appeals procedure
- The follow-up phase

The CeQuInt label (Certificate for Quality in Internationalisation) is a label of the European Association of Accreditation Agencies (ECA). It aims at evaluating and enhancing the quality of internationalization activities in institutes and programmes. ECA has defined a specific framework with criteria and procedures. CTI operates within ECA as the agency that assesses the quality of internationalization of engineering programmes according to the CeQuInt framework. The CeQuInt procedure is very similar to other CTI procedures and may be launched independently at any chosen time or in the framework of a periodical CTI review. In the latter case, the part of the CTI self-evaluation report that deals with the internationalization of the programme is replaced by the CeQuInt standards and criteria. During the site visit, the session dealing with internationalization is replaced by a supplementary day in order to comply with the CeQuInt procedure.
As the CeQuInt label review has still a slightly different approach at some phases, it is described separately where applicable.

The evaluation phase starts with the selection of experts. All CTI members, except the president, participate in evaluations. The profile of the external experts is to be complementary to those of the CTI members, in order to enlarge the field of expertise of panels. The mandate of a CTI expert has a duration of two years, renewable for two terms. Each of the experts should be involved in at least one evaluation procedure per year.

The composition of the teams will vary depending on the characteristics of the programmes to be accredited (engineering fields, the number and size of the programmes, etc.). An expert panel is generally made up of 4 to 6 people, in accordance with the following criteria:
- at least two CTI members, representing academia and industry, one of them acting as the panel chair,
- one or more experts (specialists in a field related to the evaluation),
- one student expert, selected by the national union of engineering students BNEI
- in the case of the periodical reviews, an international expert is part of the panel.

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[9] SAR pp. 10-14
[10] SAR pp. 14-20

The composition of the expert panel should be approved by the HEI prior the evaluation. In case of accreditations outside of France, observers from the country of the institution requesting the accreditation may be appointed. In France, the permanent staff members may participate to site visits as observers. All experts participate in the writing of the minutes of the site visit which constitutes the basis for the evaluation report.

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

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

The CTI site visit includes meetings with all the relevant internal and external stakeholders and partners concerned with the programme, which are:
- management team of the programme and senior management of the institution;
- faculty;
- administration and services staff;
- students at various stages of the programme;
- employers and external stakeholders;
- alumni.

After a site visit, the CTI expert panel writes down the minutes of the site visit with elements from the self-evaluation report and prepares a standard presentation of the evaluation for the plenary meeting of CTI. Up to then these "minutes" are considered to be an internal working document that is sent to the institution (without the conclusions) that may amend fact-based information before it is presented at CTI's plenary meeting. The chair of the panel acts as rapporteur and presents the results of the assessment at the plenary meeting. Other members of the panel may add comments.

An evaluation report is written by the president after the outcome of the plenary meeting and voted on at the following plenary meeting. It includes an analysis of the programme and its institutional context; it identifies its main strengths and weaknesses; it includes a judgement on the compliance of the programme with CTI's standards and criteria and concludes with a programme accreditation decision for privately owned institutions or a recommendation to the relevant ministry for state owned institutions and guidelines for the improvement of the programme(s).

At a CeQuInt assessment, the panel presents (objective) findings and (subjective) considerations for each criterion. The panel is also expected to explicitly identify shortcomings and exemplary or good practice. Identified good practice will be published on ECA's *Internationalisation Platform*. For each standard, the assessment panel presents an overall conclusion. Here the panel substantiates its assessment on the basis of the criteria by which the standard is defined. This overall conclusion finishes with a judgement. A programme or an institution is proposed to receive the *Certificate for Quality in Internationalisation* when at least three standards are assessed as good or excellent and no standard is assessed as unsatisfactory.

The accreditation phase is the decision-making process by the CTI in the plenary meeting. CTI takes accreditation decisions for private institutions and those run by Chambers of Commerce and it issues

recommendations on accreditation to the relevant ministries for public higher education institutions. For public HEIs, the ministry in charge of higher education takes the formal accreditation decision, if applicable together with the supervisory ministry of the HEI, based on the recommendation of CTI. Since 2005, there is only one case (out of 1500) where the ministry(ies) did not follow CTI's recommendation regarding the accreditation of the programme of a public HEI.

In the case of the EUR-ACE® label, CTI is the decision-making body, although the decision has to be confirmed by the board of the European Network for Accreditation of Engineering Education (ENAEE) before being made public.

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

In case of new programmes accreditation is restricted to maximum 3 years.

For CeQuInt assessments, CTI takes a decision based on the report of the expert panel. CTI has formed a specific internal *CTI CeQuInt committee* under the responsibility of the *International Steering Committee* to verify the report and the methodology used by the panel. It checks the conformity of the methodology applied by the expert panel with the CeQuInt procedure and ensures the harmonization of the required level of internationalization and of the evaluation of each criterion. If the analysis of the committee diverges from that of the expert panel, it may propose a change of the assessment of one or more criteria and the decision. The *CTI CeQuInt committee* forwards its conclusions and recommendation for a formal decision in CTI's plenary meeting. In the case of CTI, the label is normally awarded for a duration of 5 years; in some cases it is awarded for a shorter period in order to be aligned with the accreditation period of the programme by CTI.

The communication of the accreditation result starts with sending the evaluation report with the decision/recommendation to the higher education institution and to the management team of the programme as well as to the ministry in charge of higher education which (after decision making for public HEIs) sends an official notification of the outcomes of the procedure to the HEIs (private and public, and those supervised by other ministries). All evaluation reports are published on the [CTI's website.](#) The information on awarded EUR-ACE® labels is registered in the [ENAEE public data base](#). CTI has provided a link on its website to the ENAEE public database.

The assessment report with the CeQuInt decision by CTI is sent to the ECA. After due process by ECA, the relevant information and the assessment report is published on ECA's *Internationalisation Platform*. Due process includes a check by a committee within the ECA, called the Certification Group, whether the assessment report falls within the scope of ECA's Terms of Reference and, where this was not part of the due process of the ECA member agency, a methodological evaluation and formal decision. The award of the certificate is formalized once the assessment report is published by ECA. CTI has provided a link on its website to the ECA public database.

A follow-up procedure of a periodical CTI evaluation may take different forms which are described under ESG 2.3 in this report.

The complaint and appeal procedures are similar to all reviews, including EUR-ACE® and CeQuInt labels. They are described under ESG 2.7 in this report.

The international activities of CTI[11]

For the period 2016-2018, CTI's international activities have been defined according to four strategic issues:
-   Contribution of the French engineering HE to the EHEA
-   Internationalisation of engineering HEIs
-   Promote the French engineering degree as a model
-   Furthering the recognition of the French engineering degree with the aim to facilitate the academic and professional mobility of the graduates

In recent years CTI has been involved in the following international activities and projects:
-   Evaluation procedures leading to the accreditation of French engineering programmes offered on campuses in other countries.
-   Evaluation procedures regarding the award of the EUR-ACE® label to French engineering programmes at master's level.
-   Accreditation procedures regarding foreign engineering programmes at master's level, either for an official recognition of the degree in France (*admission par l'Etat*) or for the EUR-ACE® label or both. Procedures have been carried out in Europe (Belgium, Bulgaria, Germany, Italy, Spain, Switzerland) and outside Europe (Burkina-Faso, Cameroun, China, Ivory Coast, Lebanon, Morocco, Tunisia, Vietnam).
-   Joint or coordinated accreditation procedures with other EQAR registered agencies (in 2018-2019 with AEQES for Belgian engineering degrees and with ASIIN for a joint French-German degree and previously with AAQ).
-   Evaluation procedures regarding the award of the CeQuInt label to French or foreign engineering programmes at master's level.
-   During the academic year 2016-2017, CTI worked with its French and Chinese counterparts Hcéres and CEAIE to the project of a Chinese-French quality label for Chinese-French Institutes. Due to a lack of funding, the project was put on hold before the beginning of the pilot phase that should have been started in 2017-2018.
-   Constant dialogue, joint projects and reciprocal representation in the field of international relations with French partner agency Hcéres.
-   Bilateral co-operation agreements with other QAAs, for exchange of good practice and experts, joint procedures (AEQES, UNIBASQ, …) or support in the case of developing countries as is currently the case with IEAQA in Tunisia.
-   Participation in working groups and projects of European and international associations and networks such as ENQA, ENAEE, ECA:
    o   ENQA working group and occasional paper: *Current practices on external quality assurance of academic recognition among QA agencies*,
    o   ENAEE working group on the revision of the standards and guidelines for the *EUR-ACE® Framework standards and guidelines* (EAFSG),
    o   ECA coordinated European project that led to the implementation of the *Certificate of Quality in Internationalisation* (CeQuInt),
    o   ECA working group and publication of a document: *State of the arts in Learning outcomes*
    o   ECA working group 2 on *Innovation in QA and accreditation*
    o   ECA working group 3 on *Information strategies*

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[11] SAR pp. 24-26

- o ECA's QROSSROADS initiative (European database of accredited programmes)
- Participation in European projects in 2017 and 2018:
  - o European Commission mandated study coordinated by the *Council of Engineers' Chambers* (ECEC) on Common training principles for engineers
  - o LIREQA: *Linking academic recognition and quality assurance*
  - o MEDACCR: *On-line Quality Assurance and EUR-ACE Accreditation of Engineering Programmes in Mediterranean Area*
- Founding of the network of francophone quality assurance agencies FrAQ-Sup, with partner agencies Hcéres, AAQ and AEQES (2014); exchange of good practice, translation of the ESG and EAFSG; organization of three conferences (last in June 2018 in Paris); co-operation with the francophone university association, *Association Universitaire de la Francophonie* (AUF), in the framework of a co-operation agreement; …
- Active contribution to the exchanges and/or recognition agreements with academic associations, accreditation agencies and professional engineering organizations (Canada, USA, Australia, Pakistan, …)
- Organization of several international events, some of them in cooperation with CDEFI, Hcéres and *Agence française de développement* (AFD).

CTI representatives participate on a regular basis in international conferences and meetings, often as speakers and with publications and communications.

CTI's FUNDING[12]

The total annual budget of CTI's services to engineering degree programmes (accreditation, national and international representation, etc.), including CTI's 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 as a counterpart for CTI's mission of public service.
- 340,000€ contributions of the French HEIs as a counterpart for the CTI action in the promotion of the engineering studies, in the representation of the engineering education in national and international organizations (9€/year/graduate).
- Variable revenues 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.
- The billed expertise fees (134.000€), used to pay the experts.

The institutions under review are responsible for the direct costs of the site visits (experts' travel, accommodation and food).

CTI's most important expense line is represented by staff costs (including permanent and temporary staff salaries, administrative operator and expert fees): about 455,000€.

About 270,000€ represent the rent and operational expenses. Between 14,000€ and 24,000€ are spent each year on training sessions of members and experts.

Thanks to the international accreditation procedures, CTI's balance has been positive for the last two budget periods and is expected to be balanced in 2018.

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[12] SAR p. 33

FINDINGS: COMPLIANCE OF CTI WITH THE STANDARDS AND GUIDELINES FOR QUALITY ASSURANCE IN THE EUROPEAN HIGHER EDUCATION AREA (ESG)

ESG PART 3: QUALITY ASSURANCE AGENCIES

ESG 3.1 ACTIVITIES, POLICY, AND PROCESSES FOR QUALITY ASSURANCE

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

2014 review recommendation

The present ESG 2015 Standard 3.1 contains elements of the former ESG 2005 Standards 3.1 ('Use of external quality assurance procedures for higher education'), 3.3 ('Activities') and 3.5. ('Mission Statement').

Standard 3.1 was fully compliant and had no recommendations.

Standard 3.3 was also fully compliant and had no recommendation related to standard 3.1 of ESG 2015.

Standard 3.5 was fully compliant and had one recommendation, relevant to this particular standard:

> *"The panel recommends that CTI develop the strategic aims of the Agency to strengthen its vision and goals."*

Evidence

CTI is a field specific agency dealing exclusively with engineering programmes at master's level. CTI was founded by law in 1934; since 1997 all existing engineering programmes have to undergo a periodical evaluation procedure by CTI. CTI's main mission, to carry out accreditation procedures for all French engineering programmes, is published in the legal texts by the government and CTI itself[13].

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

CTI's complementary missions are in line with the main ones:
- Developing a quality assurance culture within French engineering schools and the CTI itself, in line with the Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG).
- Any actions to promote the academic and professional recognition of the French engineering degree.

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

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

In addition, for its international activities, CTI has developed an International Strategy[14].

In this review, the following activities of CTI are under consideration:
- Initial accreditation of study programmes in engineering of French institutions, in France and on branch campuses abroad
- Accreditation of existing programmes in engineering of French and foreign institutions, in France and abroad
- Evaluation of French and foreign engineering programmes in order to award quality labels (EUR-ACE®, CeQuInt)

The accreditation of existing programmes is undertaken on a regular basis at least every 5 years; initial accreditation and evaluation for quality labels occur according to the request from the institutions. As the panel heard during the visit and found confirmed by the outcomes of satisfaction surveys, all stakeholder groups were fully satisfied with the work of CTI; its accreditation results are trusted by both students, parents, employers and various stakeholders and organisations (CDEFI, IESF etc.).

According to the SAR and additionally provided references[15], CTI is representative of both the academic and the professional field. Its members consist of an equal number of representatives from academia (16 members) and from industry (16 members). They are officially appointed by the Minister in charge of higher education upon proposal by various organisations. The commission is composed as follows:

8 professionals representing employers' organizations
8 professionals representing trade unions and engineers' associations
8 academic staff from HEIs under the ministry of HE
5 academic staff from HEIs under other ministries
3 experts in science and technology

There are neither students nor international members in the governance of CTI. The involvement of students is restricted by the law, and during the interviews some participants questioned if students would be able to add sufficient value to the governance and organisation of CTI because of the large workload expected from the CTI members – on average, the contribution to CTI by each member is 50 days per year, which in case of academic and industry representatives has been counted into their regular workload while students cannot take this amount of days off from their study year. Both students and international members are involved in review panels, though, and thus contribute to the primary activities of CTI.

Analysis
CTI with its long experience as a professional agency for engineering programmes enjoys full trust from the engineering schools, students, employers and other related organizations.

CTI has developed and published a sound document with its mission, objectives and action plan for 2017-2020. It also has a strategy for international activities. Thus, the recommendation made in 2014, has been fully taken into account. However, the action plan would benefit from the inclusion of more exact timelines, for example concerning the implementation of a planned revised assessment report template to be used in future evaluations. This activity is in the planning phase following a recommendation from the previous ENQA review and is still not finished. The panel also noticed that

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[14] https://www.cti-commission.fr/la-politique-internationale-1262
[15] https://www.cti-commission.fr/la-cti/organisation/lassemblee-pleniere

the information on the English section of the website is not always up-to-date and therefore not entirely aligned with the French language website.

In the meetings with among others the presidency, the representatives from the Commission, the external stakeholders and the Ministry the panel discussed the role of CTI in future evolutions of French engineering education, its quality culture and the engineering profession. In recent years institutes have put more effort into quality enhancement and quality culture, although CTI members noticed large differences between the institutes. In order to promote quality culture, CTI has therefore organized seminars, workshops and training sessions, and also provided knowledge management systems. The panel encourages CTI to continue these activities in order to enhance quality culture in all institutes, and thereby to make optimal use of existing tools, such as certified data sheets. These certified data are indicators for the programmes, that are yearly provided and certified by the institutes in a uniform format and published on CTI's website. Indicators are a.o. the number and characteristics of students, staff data, budgets, general information on the programmes, including learning outcomes, contact hours and internships, data on graduates, research and valorization activities of the programmes and contacts with industry. A paragraph on IQA is part of the certified data sheet but could be in the view of the panel more elaborated, f.e. regarding follow-up procedures. The quality of engineering education in the society and its contribution to sustainable development are primary focus points for CTI. The panel fully appreciates that in order to encourage institutes to incorporate future trends, CTI has close connections with professional organizations and alumni associations, has launched working groups, has focused on new IT trends, e.g. big data and regularly updates its frameworks in collaboration with its stakeholders to take into account these evolutions.

The CTI Commission consists of 16 members from academia and 16 members from industry, including employers, trade unions and engineers' associations. The contribution from both parties is impressive, and especially active participation in the development of accreditation standards and learning outcomes by industry representatives can be seen as a good practice, which has certainly helped to increase the reliability of CTI in the engineering environment and enhanced the quality of engineering education in France. Given the international social and technological evolutions, the panel encourages CTI to continue its efforts in updating in collaboration with the stakeholders the engineering profile and the learning outcomes of engineering education.

Students and international experts are not part of CTI governance because of the legislative restrictions. Given the increasing international activities of CTI and the central role of students as stakeholders, both students and international experts could add value to the governance of CTI, even though their expected overall workload for CTI could be more limited.

Panel commendations
- CTI is a professional organisation that is highly respected and appreciated by stakeholders and authorities.
- Active participation of industry representatives in CTI governance has helped to increase the reliability of CTI in the engineering environment and enhanced the quality of engineering education in France.

Panel suggestions for further improvement
- Set clear timelines for the current action plan 2017-2020 and try to stick to these timelines (especially implementation of assessment report template).
- Update the English language website and make it coherent with the French language website.
- Continue supporting HE institutions to promote quality culture and put even more efforts to analyse together with HE institutions and other stakeholders what are global changes needed in engineering education for the future.

- Consider – in dialogue with all stakeholders, especially student organisations – to incorporate students in the governance of CTI. As the composition of CTI is regulated by law, this should be seen as an advice to the minister.
- Given the growing number of international assessments, CTI could also consider including international representatives in its governance, on proposition of both academic and industrial stakeholders.

Panel conclusion: fully compliant

ESG 3.2 OFFICIAL STATUS

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

2014 review recommendation
Standard 3.2 was fully compliant and had two recommendations:
> *"The panel recommends that CTI develops the agreement with AERES in order to find a way to better align their evaluation calendars and to minimize the workload these evaluations represent for the Institutions.*
> *It is also recommended to have a mechanism for assuring the continuity of the agreement between both Agencies taking into account the change from AERES to HCERES in the near future."*

Evidence
According to the SAR and respective references[16], CTI was founded by a 1934 law. Since 1934, all regulatory and legislative texts on higher education in France have reinforced CTI's official status.

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

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

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

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[16] Extract from the French *Education code* regarding CTI: Bylaws, annex 1 page 20

According to the CTI follow-up report to ENQA after the 2014 review[17], a cooperation agreement has been signed between Hcéres and CTI in September 2016 for five years and a working committee has been established for its follow-up. This working committee is composed of three members from each agency and meets twice a month. During the site visit the representatives of both CTI and Hcéres confirmed to have started joint accreditations, although these still include separate standards, as well as separate self-assessment reports and final reports. The visit is organized jointly, though, and both agencies appreciated the mutual learning experience. So far there have been three joint reviews (1 in 2017 and 2 in 2018). The plan is to make it compulsory for all engineering schools from 2020 and work towards a single self-assessment report and merged final reports.

Analysis
As the sole statutory accreditation body for the engineering programmes in France, CTI is a mature organization functioning on a solid legal basis. The outcomes of CTI's activities, including accreditation and quality labels, are accepted by the higher education institutions, professionals in the field and other stakeholders. The ministry accredits programmes of public institutes, based on the recommendations of CTI. The recommendations of the previous ENQA-review from 2014 regarding the cooperation with Hcéres have been fully taken into account.

Panel conclusion: fully compliant

ESG 3.3 INDEPENDENCE

Standard:
Agencies should be independent and act autonomously. They should have full responsibility for their operations and the outcomes of those operations without third party influence.

2014 review recommendation
The respective standard in ESG 2005 was 3.6 (Independence) and CTI complied fully with this.
There was one recommendation:

> "The panel recommends that CTI develops the strategic aims of the Agency so as to reinforce the way the Agency wants to follow its activities and make it public."

The recommendation from 2014 is covered under standard 3.1 above.

Evidence
According to the SAR and oral evidence during the visit, there are a number of elements confirming that CTI acts in an independent manner:
- The balanced distribution of stakeholders among CTI membership (with equal representation from public and private HEIs, employer and employee organizations, and graduate alumni associations) protects it from outside dominant interventions.
- CTI's members are appointed according to their own personal competencies. They are appointed by the Minister in charge of higher education, on the proposal of their organization, for a period of four years, renewable once. Once appointed, CTI's members may resign for personal reasons, but cannot be dismissed by public authorities. In the event of repeated absence or in the event of a proven breach of ethics of a member, the president may inform the minister and the body that proposed said member, in view of his or her replacement. During the interviews, the CTI members confirmed that they have never been influenced by their organizations in any way when it comes to decision making.
- The CTI resources come from three main sources: ministry grants, yearly contributions of the accredited HEI's, and international accreditation procedures that cover all expenses, including overhead costs. These three sources together account for more than 80% of CTI's resources,

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[17] https://enqa.eu/wp-content/uploads/2017/03/CTI_Follow_up_report.pdf

which guarantees CTI financial and decisional independence from both the ministry and the HEIs and avoids the temptation of national and local authorities or other organizations to exert any kind of pressure.
- CTI has established and has adopted its bylaws in 2011 which establish its internal operating procedures. The bylaws were last updated in July 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 avoid any kind of conflict of interest, to maintain complete confidentiality and to act in total independence.
- The president and two vice-presidents are elected by CTI's members for a renewable period of two years. The members of the Executive Committee and the steering committees, the external experts and the external special advisors are appointed by a CTI vote in the plenary meeting. The agendas of CTI's plenary meetings and meetings of the Executive Committee are validated by the president.
- In France, no regulatory texts exist concerning the content and quality criteria of engineering education. The accreditation standards and procedures are defined solely by CTI. They are prepared by working groups including stakeholders, supervised by CTI, and finally are adopted in the CTI plenary 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 latest version of CTI's standards was released in 2016 and is currently being updated with a planned publication at the beginning of 2019.
- Regarding decision making, in the case of private institutions, CTI takes the final decision, whereas in the case of public institutions, CTI makes a recommendation on which the relevant ministry (in co-ordination with the ministry of HE) bases its decision to grant accreditation. Since 2005 (the year in which CTI was granted full ENQA membership for the first time), only one ministerial decision has been different from the CTI recommendation (out of the around 1500 accreditation recommendations made by CTI during this period of time).

Analysis
CTI enjoys both organizational and operational independence, as well as vast independence concerning formal outcomes. The ministries can legally change the decisions, but they have done it only once during 84 years. In that particular case, the ministry decided to keep the specific programme running under the condition that it took immediate improvement measures. Thus, there is a theoretical risk of some influence concerning the decisions but it is extremely low. Quality processes themselves are not influenced at all.

Panel conclusion: fully compliant

ESG 3.4 THEMATIC ANALYSIS

> Standard:
> Agencies should regularly publish reports that describe and analyse the general findings of their external quality assurance activities.

2014 review recommendation
The respective standard 2.8 (System-wide analysis) was fully compliant and had no recommendations.

Evidence
According to the SAR, as CTI is in charge of the definition of the expected generic profile of the engineer and of defining the criteria and procedures for awarding the engineering degree, it must continuously analyse scientific, technological and societal evolutions, in France, Europe and

worldwide. Consequently, it is expected to consider the needs of industry and provide opinions on all topics regarding the engineering education and its quality assurance.

CTI conducts thematic analyses on the engineering profession, on engineering programmes, on their quality assurance and on CTI's own assessment procedures.
These analyses and prospective reflexions are carried out by CTI itself or done on the basis of data gathered by CTI during the assessments, gathered through the working groups of CTI, or are the results of investigations by third parties, which are often partners in the quality assurance of engineering programmes. These results are disseminated by CTI, e.g. during the annual conferences.

CTI provided the panel an extensive list of thematic analyses[18], including, among others, analysis of accreditation procedures, quality assurance, educational concepts, competences and engineering profiles, etc., for example:

- Coordinated assessments CTI-Hcéres: conclusions, June 2018 (CTI-letter)
- Assessments 2015-2016 and 2016-2017: conclusions
- Comparative analysis of strength and weaknesses and recommendations coming out of the assessments 2014-2017
- Analysis of recommendation coming out of the assessments 2015-2016
- Overview of certified data on engineering education
- Overview of satisfaction reviews in institutes
- Evolution of the reviews in institutes 2015-2016 vs 2016-2017
- Presentation and analysis of the investigation IESF-CTI-INRS: vision of graduates on the engineering competences and how education deals with it
- Key factors in recruitment of engineering graduates
- Lessons learned from assessments carried out in Canada, August 2017 (CTI-letter)

In 2016-2017, CTI launched **the "Focus" initiative** in order to collect and analyse the HEIs' practice in specific aspects of the engineering education. The initiative was renewed for 2018-2019. HEIs which participate in the review campaign have to submit a short presentation (3-4 pages) on their practice in the proposed topic. For the 2018-2019 campaign three focus points have been determined: innovation and entrepreneurship, sustainable development and social responsibility and health and security at work.

The alumni association of graduate engineers IESF carries out **periodical analysis of the situation of engineering graduates** from 175 engineering HEIs. The response rate is representative, as about 55.000 engineers participate every year. Apart from the recurrent subjects such as training, employment, innovation, payment, and motivation, specific optional questions may be asked. CTI contributes actively on a regular basis to the survey. In 2017, IESF and CTI decided to work together on a yearly basis and CTI will be able to suggest a few complementary questions on relevant issues every year and draw conclusions from the analysis for its own work.

CTI uses several means for dissemination of the outcomes of the thematic analyses among the stakeholders and wider public.

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[18] Translated by the panel chair from https://api.cti-commission.fr/uploads/documents/backend/document__fr_references-et-orientations-livre-4_19-07-2018.pdf

CTI uses its **annual conference** to take stock of the outcomes of the evaluations of the previous year, to analyse the major shortcomings and recurrent difficulties of engineering programmes and to define recommended general action lines for improvement.

Apart from the analysis of the previous year and the presentation of major issues for the upcoming year, the conference is also an opportunity to deal with general topics regarding the engineering profession or training and quality assurance. The proceedings of the most recent annual conferences are published on CTI's website[19]. As the panel heard during the interviews, the annual conferences are highly appreciated by the stakeholders and, for example, the deans of HEIs expressed their wish to have such events even more often.

In 2018, CTI replaced its annual international workshop with a **European conference** co-organized with its stakeholder organisation CDEFI (association of the deans of engineering HEIs). The first conference took place in Paris on 5-6 April 2018 and focused on the *Role of engineering Higher education institutions in the inclusive processes of the European Higher Education Area*. The proceedings were published under the form of a joint *CDEFI-CTI Contribution to the ministerial conference of the EHEA, Paris 2018*. The document lists suggestions for the evolution of the Bologna process and was sent to the French Minister of higher education, research and innovation; to the French media; and is published on the websites of both organisations.

The day before the annual 2018 conference, CTI organized a **joint conference with Hcéres** on the evolution of the evaluation procedures for engineering HEIs and the co-ordinated Hcéres-CTI procedures. This conference served both as an information space and as a feedback opportunity for stakeholders' analysis on the possible evolutions.

CTI's **biannual activity reports** normally include a contribution by external experts or stakeholders. The 2014-2016 activity report includes three such articles:
- *Travaux conjoints AEQES- CTI*, A. Jeneveau and L. Courard
- *Partenariat avec l'Institut national de recherche et de sécurité au travail (INRS)*, JP. Leroux
- *Partenariat avec le réseau Ingénium*, N. Gartiser

CTI also publishes in its periodic **newsletter**[20] reports, articles and analysis from its partner or stakeholder organisations.

Analysis
CTI has done impressive work in collecting, analyzing and disseminating information about accreditation procedures, quality assurance, educational concepts, competences and engineering profiles, etc. The analyses cover both institutional, national and international contexts and developments. It results in a large number of publications.

The stakeholders are regularly informed of major outcomes of analyses and appreciate especially the annual conferences of CTI.

During the preparatory work for the review visit, the panel faced some difficulties, though, to find relevant information in English on the CTI website. Considering CTI's international ambitions, it is an area to be improved.

Panel commendations
- The panel was impressed by the large number and high quality of thematic analyses, given the relatively small scale of the agency, and their dissemination through several different

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[19] https://www.cti-commission.fr/colloque-de-la-cti-13-fevrier-2018
[20] https://www.cti-commission.fr/?s=Lettre

kinds of activities, such as conferences, newsletters and other information sharing for promoting QA in higher education nationally and internationally.
- Annual conferences are much appreciated by the stakeholders (especially deans of HEIs).

Panel suggestions for further improvement
- For international perspectives, the English website should be regularly updated.

Panel conclusion: fully compliant

ESG 3.5 RESOURCES

> Standard:
> Agencies should have adequate and appropriate resources, both human and financial, to carry out their work.

2014 review recommendation
The respective standard 3.4 was fully compliant with the following recommendation:
> *"The panel recommends that CTI takes into account the risk of a higher workload for the staff in the light of increasing its activities (EURACE label, international accreditation, etc.) in the near future as well as with regards to the accreditation period which is due to be changed from 6 to 5 years."*

Evidence
According to the SAR, CTI's permanent staff team is responsible for the day-to-day management and supporting CTI's governance. Four persons (2 in 2013) fulfil the following duties: organization and follow-up of the accreditation procedures; quality and communication management; administrative and financial management: international relations; representation; logistics of CTI events such as the annual conference and international workshop, and the training sessions.

In order to face the workload linked to specific tasks or events (thematic analyses, annual conference, newsletter, …), CTI entrusts specific tasks and responsibilities on its own resources to external project managers, counsellors, interns or occasional administrative staff members. Over a year, these contributions represent the equivalent of 2 full-time positions.

CTI outsources its accounting and management of human resources contracts to an administrative operator which is a partner association, the association of the deans of engineering HEIs (CDEFI). A signed agreement between CTI and CDEFI indicates the annual fees and ensures the decision-making independence of CTI and total and mutual transparency with CDEFI. The CDEFI staff working for CTI is equivalent to 1 full-time person.

CTI's registry services are provided by two part-time persons (50% each) who are civil servants from the *General Directorate for Higher Education* within the Ministry of Higher Education. They establish the calendar of the accreditation campaigns; register the applications, self-evaluation reports and follow-up reports from the institutions as well as the evaluation reports of CTI; propose the agenda and write the minutes of the plenary meetings; they prepare the annual decree in the *Journal Officiel* of the French Republic listing all the officially accredited programmes.

The involvement of CTI members goes beyond their mere participation in evaluation procedures and the monthly plenary meetings of CTI. According to some recent estimates, they fulfil the equivalent of four half-time positions filled respectively by the chairman and two vice-chairs, twelve 1/3-time positions filled by the steering group and working group leaders, the international representatives and the members of the Executive Committee in charge of specific missions (qualification framework

forms (*fiches RNCP*), annual *certified data*, international working groups, …). The rest of CTI members and special advisors fill the equivalent of a 1/4 position.

This means that altogether CTI operates with the equivalent of 14 full-time equivalent staff.

The yearly budget of CTI is stable and solid, at around € 900.000. Due to a high number of international accreditations, the budget peaked in 2016[21].

In September 2016, CTI moved to new premises in the same building as one of its main stakeholders, the association of the deans of engineering HEIs, CDEFI, which is also CTI's administrative operator. CTI has fully-equipped offices and conference rooms that can be adapted to meet different needs, including ordinary meetings, plenary meetings, seminars and video-conferences.

During the visit, CTI presented its information management system to the review panel. The comprehensive and user-friendly system is developed by CTI itself. The current disadvantage is that the Ministry of Education (Registry) has a separate information system and some information needs to be updated in both systems simultaneously by staff and Registry services.

Analysis

CTI has sufficient number of staff to carry out its activities. CTI is aware of possible risks of higher workload because of the shortened period of accreditation (from 6 yrs. to 5 yrs.). To face the changing situation, CTI has decreased its international review activities and increased the number of staff since 2013. In the near future, CTI is aiming to add one more position in the permanent staff. Thus, the recommendation from 2014 has been clearly taken into account.

Staff members have indicated to have sufficient opportunities for individual and collective training, within and outside of the organization.

CTI can rely on highly committed members from academia and industry. During the visit, the panel witnessed also an impressive commitment of organizations sending and supporting these members. On the other hand, it demands a lot of effort from permanent staff to keep new members updated.

The budget seems relatively small compared to the activities of CTI but it is solid and sufficient for high-quality work of the agency, given also the voluntary basis at which the CTI members work for CTI. The financial balance is positive.

The office of CTI has modern working conditions and is located conveniently in the city center of Paris. The advantage is also that CTI shares the building with one of its main stakeholders - the association of the deans of engineering HEIs, CDEFI, which is also CTI's administrative operator.

CTI's information management system is very well developed and user-friendly. The next step should be to integrate the systems of CTI and the Ministry of Education.

Panel commendations
- Both the staff members and CTI members from industry and academia are highly committed which supports the integration between industry and higher education.
- CTI has developed a comprehensive and user-friendly information management system.

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[21] https://www.cti-commission.fr/wp-content/uploads/2018/07/P28_31_Budget_CTI_2015_2016_2017_previsionnel-2018.pdf

Panel suggestions for further improvement
- The panel suggests working towards linking the information management systems of CTI and the Ministry of Education.

Panel conclusion: fully compliant

ESG 3.6 INTERNAL QUALITY ASSURANCE AND PROFESSIONAL CONDUCT

> Standard:
> Agencies should have in place processes for internal quality assurance related to defining, assuring and enhancing the quality and integrity of their activities.

2014 review recommendation
The respective standard ESG 3.8 (Accountability procedures) was fully compliant and had no recommendations.

Evidence
According to the SAR, CTI put into place an internal quality system (IQA) in 2008.

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

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

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

The steering committees may set up sub-groups to deal with specific issues, for example, currently some sub-groups work on issues such as consistency of decisions; publication of the minutes of the site visit; simplified procedures; joint procedures with Hcéres.

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

The working and steering committees are currently under evaluation by the CTI Executive Committee. The outcomes of this evaluation will be used to further improve the internal quality assurance of CTI.

CTI's internal organisation is defined through its bylaws[22] which were last updated in July 2018. The bylaws include the procedure for the renewal of the experts and the duration of their mandate.

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

In order to guarantee the respect of the procedures, the knowledge of the standards and criteria and the consistency of the outcome of the evaluation procedures, CTI organizes training sessions[23] for its members and experts on a regular basis. There are two training sessions for new CTI members before they sit on their first expert panel and at least one training session per year for all members and experts and one dedicated to the student experts. CTI members and experts participate in the training sessions of student experts. All these training sessions include a specific part on internal quality assurance. Apart from the members who all actively participate to CTI's annual conference, all experts and advisors are invited to attend this event, which is part of their training on internal and external quality assurance in CTI procedures.

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

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

External feedback mechanisms
- Satisfaction survey addressed to the deans of the HEIs at the end of the accreditation procedure and presentation of the results at CTI's annual conference;
- Steering committees and specialised commissions which deal with strategic issues and come up with suggestions for improvement;
- Working groups with stakeholder participation which work on specific issues;
- Questions and suggestions submitted via the contact form on CTI's internet site (about 20 messages per week);
- Annual CTI conference taking stock of the outcomes of the evaluations of the previous year and launching the upcoming year;
- Meetings with stakeholders on specific subjects;
- Transversal analysis on engineering education or quality assurance by CTI members and experts, partner organisation or other organisations[24];
- Periodical external evaluation procedures by ENQA, EQAR, ENAEE, CNEFOP.

CTI's information and communication has been developed under the lead of the **Quality and Communication Steering Committee** (see also ESG 3.4 Thematic analysis).

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[22] https://www.cti-commission.fr/la-cti/demarche-qualite/systeme-qi/reglement-interieur-et-chartes-de-deontologie
[23] https://www.cti-commission.fr/wp-content/uploads/2018/07/P41_Formations_Membres_Experts_2016-2018.pdf
[24] see *Références et Orientations, Livre 4*

Concerning the international reviews, the CEO clarified to the panel that the French position is never to go out of the country without host country approval or without at least informing them about the upcoming review. For example, the information goes through the French Embassy in the respective country concerning EUR-ACE® label. With CTI accreditation, the institutions need to address their respective ministry and when the ministry approves, the French ministry accepts it as well and sends CTI to "the mission". If there is a quality agency in the host country, CTI will inform it and may also request some additional explanation on the context. Often observers from the host country are included in the panel.

Analysis

CTI has not developed an overall document for IQA (e.g. quality manual) but all processes are in place and adequately described in different bylaws and charters. A number of working and steering groups are specifically dealing with internal quality assurance of the organization and adequate internal and external feedback mechanisms are in place. The outcomes of the feedback are used to improve the processes and to periodically update the assessment frameworks. Some activities have taken a lot of time and are still not finished, though, e.g. the development of templates for panel review reports. (see also 2.6 Reporting)

Panel suggestions for further improvement
- The panel suggests setting clear timelines for improvement plans (e.g., for the development of the review report templates) and sticking to them. (see ESG 3.1)

Panel conclusion: fully compliant

ESG 3.7 CYCLICAL EXTERNAL REVIEW OF AGENCIES

> Standard:
> Agencies should undergo an external review at least once every five years in order to demonstrate their compliance with the ESG.

2014 review recommendation

ESG 2015 Standard 3.7 was formerly part of ESG 2005 Standard 3.8 (Accountability procedures). It was fully compliant and had no recommendations.

Evidence[25]

CTI has been a full member of **ENQA** since 2005. The renewal of CTI's full membership was periodically confirmed following an external review process in 2009 and in 2014.

CTI was included into the **EQAR** in November 2010 and confirmed in 2014, following the external evaluation by ENQA, and EQAR's own analysis of CTI's compliance with the ESG.

CTI is a founding member of the *European Network for Accreditation of Engineering Education* (**ENAEE**) since its foundation in 2006. CTI belongs to the 15 quality assurance agencies that are currently habilitated by ENAEE to award the EUR-ACE® label. In order to be able to carry out the evaluation procedures and to award the label, CTI has to undergo a periodical external evaluation procedure by ENAEE. The external review aims to check the agencies' compliance with ENAEE's *EUR-ACE® Framework Standards and Guidelines* (EAFSG), updated in 2015. The agencies' reviews check the effectiveness of the agency accreditation procedures in the evaluation of the learning process of the degree programme being accredited and its compliance with the student workload requirements, programme outcomes and programme management specified in the EAFSG, for bachelor's and

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[25] SAR

master's degree programmes respectively. In the case of CTI, the authorization applies exclusively to the masters' level.

During the period 2018-2019, CTI will undergo a new external review by a panel of ENAEE experts in order to renew its authorisation to award the EUR-ACE® label during the period 2020-2025.

The *Conseil National de l'Emploi, de la Formation et de l'Orientation Professionnelles* (**CNEFOP**) is the national council for employment, training and professional orientation which regroups representatives from 12 ministries, regional authorities, social and professional organisations, chambers of commerce and operators in the relevant field. According to the recent French *Labour Code* (article L. 6316-1), continuing education may only be financed for quality assured programmes. CNEFOP is in charge of certifying that the procedures of accreditation and label awarding organisations are compliant with the expected national and European standards for continuing education. This means that continuing education programmes accredited by these organisations may be financed. Since many engineering HEIs offer a pathway of continuing education for their engineering degree programmes, CTI applied for its *Standards and guidelines* (R&O) to be registered on the CNEFOP list of certifications. CTI underwent an external evaluation review in 2017 that checked the consistency of its reference document with CNEFOP expectations. In December 2017, CNEFOP confirmed the certification of CTI's *Standards and guidelines* (R&O) for a duration of 3 years. This means that engineering programmes accredited by CTI are automatically qualified for public funding.

Analysis

CTI has periodically participated in the reviews of ENQA and EQAR. In addition, in 2017 CTI underwent an external review of CNEFOP and will undergo a review of ENAEE during the period of 2018-2019.

Panel conclusion: fully compliant

ESG 2.1 CONSIDERATION OF INTERNAL QUALITY ASSURANCE

> Standard:
> External quality assurance should address the effectiveness of the internal quality assurance processes described in Part 1 of the ESG.

2014 review recommendation

Standard 2.1 was fully compliant with the following recommendation:

> *"The panel encourages CTI to improve its members and experts' awareness on internal quality assurance in order to reach a higher level of understanding of the importance of IQA through mechanisms to train them on that specific matter."*

Evidence

Since the comparison of the CTI criteria and the ESG standards and guidelines was only available in French, CTI provided to the panel in addition a mapping grid of how the 2016 version of CTI's standards and guidelines (R&O) for initial accreditation of study programmes and accreditation of existing programmes takes into account the ESG Part 1 2015.

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 delivered 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.
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 section for 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	**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

planned or taken as a result should be communicated to all those concerned.	and research is a major criterion for CTI. Satisfaction surveys and stakeholders' involvement must lead to continuous programme improvements.
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.

A new version of the R&O is currently under preparation. It will be published in February 2019 and will take into account some minor shortcomings in the compliance with the ESG Part 1, which are mentioned in the analysis below.

Assessment of quality labels addresses most standards of ESG part 1: EUR-ACE® covers all standards. The CeQuInt label, which is meant to assess exclusively the international activities of an institution, does not cover 1.1 and 1.7. These criteria are dealt within the regular assessment procedures of programmes.

Concerning reviews outside France, CTI addresses all standards of ESG 1 but it also takes into account the local legal context, for example, CTI has not assessed internships in countries where it is not obligatory, although in that case, CTI evaluates other forms of students' contact with industry which is mandatory.

Analysis

In its accreditation framework of 2016, CTI explicitly addresses the ESG and indicates that institutes should apply the national and international (ESG Part 1) criteria regarding internal quality assurance. Moreover, CTI has compared in detail the criteria of its framework with the ESG standards Part 1 and comes to the conclusion that 6 out of 10 standards are completely covered, while for 4 of the ESG standards some minor improvements could be made. The comparison has been the subject of different CTI newsletters in 2018 and is published on CTI's website (in French).

The panel looked at the CTI standards and guidelines of all types of assessment (initial and programme accreditation as well as quality labels) and compared them with the ESG standards and guidelines.

Regarding the accreditation framework for existing and new programmes, ESG 1.1 (Policy for Quality Assurance) is covered by the CTI standards F1 (Internal Quality Assurance Policy), F2-F3 (Internal Quality Assurance Implementation), F4 (Internal Quality Management), in combination with the chapters A (Mission and Organization) and B (Internal and External Links). Internal and external stakeholders have to be involved in program quality assurance. ESG 1.2 (Design and Approval of Programmes) is covered by Chapter C of the CTI framework, more specifically the standard C2 (Design and Follow Up of Programmes). Programmes have to be in line with the EHEA standards (level 7). ESG 1.3 (Student-centered Learning, Teaching and Assessment) and ESG 1.4 (Student Admission, Progression, Recognition and Certification) are reflected in the CTI standards C1 (General Structure of the Programme), with particular attention to industrial experience, C3 (Program Content and Outcomes), with attention to disabled students, C4 (Programme Implementation), with focus on Work based learning and Research, C5 (Programme Delivery), with specific attention to innovative educational methods, workload and student life, C6 (Career Guidance), including student follow-up and tutoring, student assessment and engineering qualification certification. Chapter D of the CTI framework is entirely dedicated to student admission and selection, with specific focus on diversity. Students are to be involved in the quality assurance of the programmes. As indicated in the

comparison CTI made between its framework and the ESG only following guidelines are not explicitly incorporated in its framework: 'promotion of the mutual respect in the teacher-student relationship', 'examination by more than one examiner' and 'monitoring of students progression'. CTI will take into account these aspects in the update of its framework. ESG 1.5 (Teaching Staff) is covered in Chapter A, more specifically in Standard A5.1 (Human resources), including the capacity of the staff to work in an international environment, and its academic and research capabilities. The assessment of teaching staff by students is part of the internal quality assurance. The CTI framework could be more explicit on the recruitment process and the working conditions of the teaching staff. ESG 1.6 (Learning Resources and Student Support) is largely covered in different chapters of CTI's framework. CTI acknowledges that it could identify more explicitly the guidelines on ESG 1.6 in its framework. An important tool regarding ESG 1.7 (Information Management) is the so called Certified Data Sheet, which is yearly updated by institutes and published on the website of CTI (see also ESG 3.1). ESG 1.7 is additionally covered in standards A3 (Organizational Management and Structure) and A4 (Reputation and Communication). Information management is also dealt with in specific topics of Chapters C and D. CTI acknowledges that it could address more explicitly 'key performance indicators'. The mapping grid as provided by CTI clearly demonstrates the compliance of the CTI framework with the ESG 1.8 (Public Information), ESG 1.9 (Ongoing monitoring and periodic review of programmes) and ESG 1.10 (Cyclical External Quality Assurance).

The CTI framework of 2016 puts large emphasis on the internal and external quality assurance in institutes and programmes.

The panel has also read several panel reports. These reports clearly cover the CTI framework, indicating the level of compliance of programmes with internal quality assurance standards. Students and external stakeholders are involved in the monitoring and assessment of the quality of the programmes.

IQA gets substantially more attention in the last years in HEIs, but there is still room for further improvement in some institutes, according to CTI and institutes' and student representatives that the panel has spoken with. In general, they consider the IQA processes adequate, as is also demonstrated in the reports the panel has seen. In the analysis CTI made of the reports of the assessment campaign 2016-2017, internal quality assurance was ranked at seventh position of good practices in engineering institutes. However, in other assessments IQA was considered as a topic that could be further developed in HEIs, ranking at fourth position of topics to be improved. This showed that quality management was unequally implemented among higher education engineering programmes. The aspects of IQA are therefore further discussed during, for example, the annual conference as well as in CTI newsletters. In the new framework, that is scheduled to be published in 2019, additional guidelines will be introduced regarding internal quality assurance and quality culture. The annual conference of 2019 will be focusing on the implementation of IQA in institutes and programmes.

The panel acknowledges the efforts of CTI to stress the importance of internal quality assurance and encourages CTI to continue these efforts. In comparison to the previous ENQA review, IQA has substantially improved in institutes, thus the recommendation from the previous review has been adequately responded.

The quality label assessment of CeQuInt covers all ESG standards of Part 1 but does not explicitly covers ESG standards 1.1 (policy for quality assurance) and 1.7 (information management). Since this assessment is usually combined with or following other evaluations (institutional and/or programme accreditation) then the panel found no concern in this area.

Panel conclusion: fully compliant

ESG 2.2 DESIGNING METHODOLOGIES FIT FOR PURPOSE

> Standard:
> External quality assurance should be defined and designed specifically to ensure its fitness to achieve the aims and objectives set for it, while taking into account relevant regulations. Stakeholders should be involved in its design and continuous improvement.

2014 review recommendation

ESG 2005 Standard 2.2 (Development of external quality assurance processes) was fully compliant and had no recommendations.

Evidence

According to the SAR and oral evidence collected during the site visit, CTI's activities include the defining of the generic profile of the engineer at master's level and drawing up criteria and procedures for awarding the engineering degree and for carrying out CTI's missions. CTI focuses on the continuous improvement of the programmes.

CTI's standards and guidelines for external quality assurance (*Références et Orientations – R&O*) are updated on a regular basis every 3 or 4 years, with the active involvement of its stakeholders. These evolutions can result in changes in the accreditation criteria or in the expected learning outcomes for a graduate engineer established by CTI; some significant recent examples of these developments are:

- the annual certified data survey filled in by all HEIs has become part of the compulsory follow-up of all engineering HEIs,
- introduction of new accreditation criteria regarding the level in foreign languages of engineering graduates with the increase of the recommended proficiency level from CEFR level B2 in English to C1 and a CEFR level B2 in French as a foreign language for international students,
- strong incentive for implementing an international mobility programme of at least one semester for all engineering students.

The draft version is submitted for comments to several stakeholder groups (the association of the deans of engineering schools, the supervisory ministries, the association of engineering students, the association of graduate engineers) before the validation by the CTI Executive Committee and the vote at the plenary meeting of CTI.

The quality loop closes with a survey filled in by deans and experts every year which includes a specific section on CTI's accreditation processes and criteria.

The *Standards and guidelines* as well as all evaluation decisions/recommendations are published on CTI's website (see more at standards 2.3 and 2.6).

The objective of CTI's accreditation process is two-fold:
- to make sure that the intended learning outcomes of the programme are consistent with the general profile defined by CTI for all engineering programmes, as well as the efficiency of the programme in order to achieve these learning outcomes,
- to make sure that the institutional environment of the programme is appropriate, so as to ensure the necessary level of internal quality (governance, organization, external links and partnership, quality assurance system, resources, information systems, etc.)

In order to achieve this double objective, CTI pays a great attention to institutional aspects. In the latest evolution of its *Standards and guidelines* (R&O), CTI tries to be less prescriptive and to leave

more space to the HEI's' initiatives for the implementation of certain criteria, for example the internationalisation of the programmes, the taking into account of distance learning, etc.

CTI's accreditation processes and criteria are applied with different intensity according to the maturity of the programme and the institution under accreditation. CTI has defined six types of accreditation applications, which tend to assure the efficient and adapted treatment of the different cases. CTI wishes to go still further in alleviating the procedures for programmes without any major problem and will implement pilot simplified procedures in the 2018-2019 campaign.

CTI operates according to a principle of institutional clustering. This means that all engineering programmes offered by an institution are accredited at the same time which means less workload for the HEIs. As another important step to alleviate the workload for HEIs, CTI adapted its calendar and the regional division of the French territory in order to align with the ministry's five-year contracts with the institutions and the related Hcéres evaluation. Both agencies together started a pilot project in 2017-2018 that continues in 2018-2019 of joint CTI-Hcéres procedures. The participation of the HEIs is presently on a voluntary basis, but the intention is to make the joint procedure compulsory from 2020 on for all engineering programmes.

In order to structure the workload of foreign HEIs and CTI itself, CTI has put into place a new procedure for international applications: prior to a new accreditation procedure, the foreign applicant has to fill in a simplified document, the *preliminary admissibility file,* including the *indicators survey*. The writing and the analysis of this short file is not very time consuming and serves to identify whether the concerned programme is an engineering programme at master's level and consistent with CTI's missions. In case the outcome is positive, an accreditation procedure is planned according to CTI's availability and national priorities.

Analysis
CTI operates within clearly defined frameworks and purposes to assure the quality of engineering education. The accreditation standards and methodologies are fit for this purpose and are systematically revised by the main stakeholders – industry and academia. The representatives of both groups, whom the panel met, were very satisfied with the responsiveness of CTI. Fit-for-purpose approach concerns both the "regular accreditations" as well as the quality labels.

CTI continuously takes measures to lower the workload of the institutions by, for example, clustering the programmes, having joint accreditations with HCERES, implementing simplified procedures etc.

The information about the evaluation outcomes is presented on CTI's webpage.

Panel commendations
-   CTI can be commended for its active collaboration with stakeholders to periodically update the criteria for engineering programmes.

Panel conclusion: fully compliant

ESG 2.3 IMPLEMENTING PROCESSES

Standard:
External quality assurance processes should be reliable, useful, pre-defined, implemented consistently and published. They include:
-   a self-assessment or equivalent
-   an external assessment normally including a site visit
-   a report resulting from the external assessment

- a consistent follow-up

2014 review recommendation
In ESG 2005, the respective standard was 3.7 (External quality assurance criteria and processes used by the agencies). The standard was substantially compliant with the following recommendations:
> *"… the procedure for the selection and nomination of experts could be improved by clarifying the process of selection of expert member selection for the evaluation committees as well as the policy for selection. And, under criterion 2.6, the panel considers that it would be useful to include a follow-up procedure for the programmes with no major problems detected."*

Evidence
The accreditation procedures are described in volume 3 of R&O[26] and CTI bylaws[27]. CTI has conceived a standard accreditation process that consists of five phases (see also Introduction):
- *Evaluation phase*, including a self-evaluation report by the HEI with evidence material and a site visit by an expert panel which includes meetings with the HEIs main stakeholders and examination of relevant documents.
- *Accreditation phase*, including the evaluation report with decisions for the programmes of private HEIs and recommendations for the programmes of public owned HEIs and with guidelines for improvement for each evaluated programme.
- *Communication of results*, by formal letters to the HEIs, and publication of the results on CTI's website and in an annual inter-ministerial decree. The awarded quality labels are also published on the ENAEE or ECA websites.
- *Appeals and complaints procedure*.
- *Follow-up procedure*, which may take on various forms, according to the evaluation's outcome, but in all cases takes stock of the compliance with the guidelines for improvement.

The findings from a review are summarized in the compilation called 'working document' or 'minutes', written by the review panel. The final decision along with the summary report, including recommendations etc., is prepared by the CTI members and are published on CTI webpage (see ESG 2.5).

A periodical CTI evaluation procedure may result in a follow-up procedure that can take the following forms (ref. SAR):
- In the case of new programmes, CTI systematically recommends a short accreditation of maximum three years and thus assures a follow-up after a short period of time.
- In the case of existing programmes with a certain number of short-comings, CTI recommends a short accreditation of two or three years only and organizes a new review of the whole programme after a short period of time (22,5% of programmes in 2016-2017).
- In the case of programmes with major problems identified, CTI has recently put into place a new procedure with compulsory "urgent action lines". In that case the institution has six months to forward a plan of actions to CTI; in the case of non-compliance or if the plan of action is not considered satisfactory, the HEI is requested to make a new proposal in a very short period of time.
- As for programmes with no major problems detected, there has been a significant increase in the number of guidelines for improvement in the final reports (from 120 guidelines in 2014-2015 to 505 in 2016-2017) as well as in the number of follow-up reports to be submitted after two or three years: the figures went up from four follow-up reports in 2013 to 18 follow-up reports in 2017 (38% of the applications).

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[26] https://www.cti-commission.fr/fonds-documentaire/document/16/chapitre/1098
[27] https://www.cti-commission.fr/wp-content/uploads/2017/01/CTI_Reglement_interieur_AVEC_annexes_VF_20180710.pdf

- Apart from the outcomes of an evaluation procedure, CTI has put into place an annual "indicator survey" that must be filled in by the institutions. These "certified data" are certified by the head of the HEI and cover all essential aspects of a programme, from information on admission to feedback on employment.

Analysis

For all evaluations under consideration, the institutions prepare a self-assessment report and have a site-visit by a group of experts, including a student. The outcomes of a review are compiled in a detailed report, called 'minutes' and sent to the institution for factual corrections. Based on these 'minutes' and a SWOT analysis made by the panel, the CTI members and the President prepare the final document with the decision and recommendations (a summary report) that are published on the CTI webpage.

The follow-up procedures are used mainly where shorter accreditation decisions are made, although according to the SAR and the interviews with CTI staff members, even the full accreditation decisions have an increasing number of recommendations that need to be followed by a formal response/report by the institution. As indicated above, about 60% of all applications resulted in a recommendation for a follow-up procedure. However, this practice still appears unsystematic and the deans of HEIs the panel has spoken with did not confirm any follow-up for full accreditations. In the panel's view, as confirmed by the deans of HEI, the annual indicator survey on certified data cannot actually be seen as a tool for follow-up because it is not yet directly connected to the recommendations from the accreditation. The certified data now contain a chapter (XI) on internal quality assurance, which could be used in the future for demonstrating follow-up actions.

As the development of a more solid follow-up system was already recommended at the previous review in 2014, the panel sees an urgent need to deal with this issue as quickly as possible.

Panel recommendations
- Panel recommends that CTI develops follow-up procedures also in the case of full accreditation. In order to limit the administrative burden, CTI and HEIs might consider making use of existing publication tools (e.g., conferences, certified data). The methods for follow-up should be implemented so that quality culture at the institutions will be further developed.

Panel conclusion: substantially compliant

ESG 2.4 PEER-REVIEW EXPERTS

Standard:
External quality assurance should be carried out by groups of external experts that include (a) student member(s).

2014 review recommendation

ESG 2005 respective standard 2.4 (Processes fit for purpose) and 3.7 (External quality assurance criteria and processes used by the agencies) were both substantially compliant and had the following recommendations:

> "The panel recommends that CTI increase the number of international experts in its evaluation committees, not only at national but also at international level.
> It is also recommended to publish the composition of the committees for each review on the website indicating their profile and role in the accreditation process.

The panel considers that the procedure for the selection and nomination of experts could be improved by clarifying the process of selection of the expert members of the evaluation committees as well as the policy for selection.
Finally, the panel recommends that student participation in the evaluation committees be increased and also to consider the possibility to involve them at the members' level." (2.4)

"As mentioned previously, under criterion 2.4, the panel considers that the procedure for the selection and nomination of experts could be improved by clarifying the process of selection of expert member selection for the evaluation committees as well as the policy for selection." (3.7)

Evidence

According to the SAR and oral evidence during the site visit, two CTI members participate in every evaluation procedure (one from industry and one from academia). Apart from CTI members, the external reviews are carried out using an extensive network of national and international experts. The CVs of potential experts are analysed by the *Audit Steering Committee* and validated by the CTI Executive Committee and then in the plenary meeting. The mandate of a CTI expert has a duration of two years, renewable for two terms. Each appointed expert should be involved in at least one evaluation procedure per year. The profile of the experts has to be complementary to the profile of the members, in order to enlarge the field of expertise of the panels. All experts need to participate in a training session[28]. CTI has produced a set of support documents for members and experts describing the procedures associated with the evaluation and accreditation process. These documents constitute an "expert's toolkit" describing the chronology of the evaluation process, the organization and logistics of the site visit, the preparation of the minutes of the site visit, the presentation of the panel's analysis in the plenary meeting and the role of the different members of the panel. The CTI information system provides the panel members with information on the previous evaluations and accreditations, as well as other contextual elements regarding the institutions under evaluation. CTI's bylaws define the internal rules and regulations and apply to members, experts, and staff[29]. Before being able to participate in an evaluation procedure, all members and experts have to sign a deontology chart that defines the rules of discretion and behaviour during an evaluation procedure[30].

In 2010, CTI established a co-operation agreement with the French engineering students' association, *Bureau national des élèves ingénieurs* (BNEI). Since then, CTI systematically nominates student experts in all its evaluations. The list of student experts is built on the basis of propositions made by the BNEI, validated in CTI's plenary meeting after proposition by the CTI's Executive Committee, and is renewed annually. In 2017-2018 it was composed of 41 student experts from various institutions, covering a large range of expertise and academic tracks. According to the interview with BNEI, the main motivation to become an expert is willingness to see how the systems work in other schools. BNEI together with CTI tries to find the most appropriate candidates for panels – open-minded, having international experience etc. Every year there are about 80-90 applications, CTI selects ca. 20 of them. A specific training session for student experts is organized every year. The training session is co-organized by CTI and the BNEI; participation in this session is a mandatory condition for being nominated as a student expert.

An expert panel is generally made up of four to six people, in accordance with the following criteria:
- at least two CTI members, representing academia and industry,

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[28] https://www.cti-commission.fr/wp-content/uploads/2018/07/P41_Formations_Membres_Experts_2016-2018.pdf
[29] https://www.cti-commission.fr/la-cti/reglement-interieur
[30] https://www.cti-commission.fr/chartes-deontologie

- one or more experts (specialist in a field related to the evaluation or in transversal subjects such as human and social sciences, quality, education, etc.),
- one student expert,
- in the case of the periodical reviews, an international expert is also part of the panel.

The composition of the expert panel is sent to the HEI for approval. In case of any known (real or perceived) conflict of interest, the concerned expert is replaced. The composition of expert panels[31] and the CVs of all CTI members and experts[32] are published on CTI's website.

One of the CTI members of the panel acts as the chair. He/she is responsible for coordinating the team activities and for presenting the panel's conclusions to CTI's general assembly during the accreditation phase. All experts participate in the writing of the minutes of the site visit which constitute the basis for the evaluation report.

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

Analysis
CTI has an extensive network of well-trained experts. At every review, there is at least one academic and one industry representative, as well as a student. International experts are involved in periodic reviews. Although two CTI-members are part of the panel and one of them acts as a chair, other panel members fully contribute to the panel as well. Student experts and external experts that the panel has spoken to, were very satisfied with their role in the panels and the collaboration between panel members and CTI. They were also satisfied with the training. They felt well prepared for the reviews.

The selection of experts is done by the *Audit Steering Committee* based on the CVs of the candidates. Student experts are proposed by BNEI. When selecting experts to a particular panel, the field of expertise, gender balance etc. is taken into account. All experts need to attend a training and are provided with a comprehensive package of documents related to the quality assurance and accreditation process.

The panel concluded that the recommendations from the previous review have been taken into account.

Panel commendations
- The panel commends CTI for involvement of international experts in the panels and encourages to apply this practice to all reviews.

Panel conclusion: fully compliant

ESG 2.5 CRITERIA FOR OUTCOMES

Standard:
Any outcomes or judgements made as the result of external quality assurance should be based on explicit and published criteria that are applied consistently, irrespective of whether the process leads to a formal decision.

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[31] https://www.cti-commission.fr/wp-content/uploads/2018/07/P41_Equipes_audits_plenieres-2017.pdf
[32] https://www.cti-commission.fr/la-cti/organisation/les-experts-par-categorie/experts

2014 review recommendation
The respective standard 2.3 (Criteria for decisions) was fully compliant and had no recommendations.

Evidence
CTI accreditation standards and criteria are explicit and published for all types of evaluations[33].

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

For CeQuInt assessment, a specific internal *CTI CeQuInt committee* under the responsibility of the *International Steering Committee* checks the conformity of the applied methodology with the CeQuInt procedure and ensures the harmonization of the required level and of the evaluation of each criterion. If the analysis of the committee diverges from that of the expert panel, it may propose a change of the assessment of one or more criteria and the decision. The *CTI CeQuInt committee* forwards its conclusions and recommendation for a formal decision in CTI's plenary meeting. In the case of CTI, the label is normally awarded for a duration of 5 years; in some cases for a shorter period in order to join the periodical accreditation period of the programme by CTI.

There are no explicit deliberation rules described in the framework articulating the basis upon which a decision concerning the accreditation for a shorter period of time (1-3 years) should be made. The panel learned from the interviews that the Executive Committee takes into account the urgency of actions recommended and makes its decision on the accreditation period based on that. The panel looked also at the final reports and 'minutes' of some accreditations to understand the logic behind the different decisions.

According to the interview with CTI members, the consistency of decision-making is assured by the mixture of "old" and "new" members. The members have also access to the records of previous evaluations.

Analysis
Although the standards and criteria for accreditations are explicit and published, there are no clear deliberation rules in the frameworks detailing the basis upon which a specific decision should be made. Decision-making is based on voting and interpretation of strengths and weaknesses of a programme by each individual member. Although the representatives of HEIs did not see any confusion regarding the outcomes, the analysis of different reports supported the panel's conclusion that the consistency of decisions may not always be assured.

For CeQuInt procedures deliberation rules are explicit and present in the CeQuInt framework.

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[33] https://www.cti-commission.fr/fonds-documentaire/document/15/chapitre/1083

Panel recommendations
- For improved consistency of decisions, CTI is recommended to develop the deliberation rules and criteria for decision-making explicitly. They do not need to be mathematical but should still give a clear indication for the different types of decisions.

Panel conclusion: partially compliant

ESG 2.6 REPORTING

> Standard:
> Full reports by the experts should be published, clear and accessible to the academic community, external partners and other interested individuals. If the agency takes any formal decision based on the reports, the decision should be published together with the report.

2014 review recommendation
In ESG 2005 the respective standard was 2.5 (Reporting). The standard was fully compliant with the following recommendation:

> *"Even if the published information is satisfactory for the different stakeholders, it could be of use to publish the full evaluation reports on the Agency's website."*

Evidence
According to the SAR and oral evidence during the site visit, after a CTI site visit, the CTI expert panel writes down the minutes of the site visit which contain elements from the self-evaluation report, evidence and analysis by the panel for each standard. Based on the minutes, it prepares a standard presentation of the evaluation for the CTI plenary meeting. These "minutes" are considered by CTI to be an internal working document that is sent to the institution that may change fact-based information before it is presented at CTI's plenary meeting. Following discussions and the vote at the plenary meeting, the conclusions proposed by the expert panel may be changed. The form and contents of the minutes may vary according to the expert panel and the evaluated programmes. At CTI there is no person in charge of the rewriting of the site visit minutes (guaranteeing the consistency of style and length). The panel heard during the visit that in case the minutes should become public, it needs a different approach to the writing, and may lose its open and critical tone.

The actual evaluation report is written by the president after the outcome of the plenary meeting, on the basis of the minutes, the SWOT analysis and the comments in the plenary meeting. It is conceived to respond to the needs of the main CTI stakeholders (higher education institutions and their relevant ministries, as well as the general public).

The approximate length of the final evaluation report is three pages per engineering programme structured as follows:
- presentation of the type of procedure and list of the expert panel,
- brief introduction on the characteristics and history of the institution and of the results of past CTI's accreditations,
- brief description of the engineering programme and its evolution,
- follow up of CTI's previous guidelines for improvement,
- programmes' strength, weaknesses, opportunities and threats,
- examples of good practice,
- guidelines for improvement,
- result of the accreditation: decision for private HEIs or recommendation for public owned HEIs.

All CTI evaluation reports are forwarded to the concerned institutions and published on CTI's webpage together with the minutes of the plenary meetings. The reports are accessible through CTI's website search engine. Apart from CTI's webpage, a number of additional publication mechanisms are in place:
- the HEIs' annual *certified data* are published on CTI's website with the evaluation report[34],
- the official list of accredited programmes is published every year through an inter-ministerial decree,
- CTI participates in ECA's QROSSROADS initiative, a European data base containing information on accreditation programmes and institutions,
- CTI contributes to the update of the EUR-ACE® data base[35] (data base containing the information on all EUR-ACE® accredited programmes),
- the awarded CeQuInt labels are published in ECA's CeQuInt database[36].

A sub-group of the *Audit steering committee* is currently working on a draft template for a new global evaluation report, that could be used from the analysis of the written self-assessment report by the HEI and preparation of the on-site visit, to the minutes of the on-site visit, the presentation during the plenary meeting and the final report. According to the interview with the CEO of CTI, 10 reports will be piloted in 2019 with the new template.

Analysis

CTI publishes summary evaluation reports – prepared by the CTI members, which contain decisions, main findings and recommendations of a review. The evaluation reports are based on the panel reports that are called "minutes" and are used as working documents in the communication between CTI and the HEIs. All stakeholders who the panel met during the visit, appreciated the summary evaluation reports with the final conclusions. Deans of the institutes considered the minutes very useful for the internal quality assurance of the programme. They did however express their hesitation about the value of publishing the "minutes" on the CTI website. All other stakeholders also questioned the benefit of publishing the minutes in their present form. There were several arguments cited against publishing the panel reports including that: reports risked becoming superficial as they could not be critical enough and personal while public, and therefore would have less value for the quality improvement of HEIs; no one reads the full reports; the present lack of consistency of style and length of the panel reports.

Although the panel found some of the arguments sound, the particular standard of ESG explicitly requires publishing <u>expert</u> reports and this has been the foundation for the judgement below. The panel urges CTI to finalize the report template. The panel considers the draft version of this template to be a good basis for combining the "minutes" and the current summary report, and it can also support the consistency of decisions, referred to under standard 2.5. A similar recommendation was already made in 2014 and regrettably too little progress has been made since then.

In case of CeQuInt procedures, the panel report is published.

Panel recommendations
- The panel recommends CTI to intensify efforts regarding the new template for panel reports in order to increase redactional uniformity and coherence. Full reports should be publishable in a short period, given the fact that this recommendation already exists since the previous ENQA review.

Panel conclusion: partially compliant

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[34] https://www.cti-commission.fr/category/site-public/assemblees-plenieres-releves-de-conclusions-avis-et-decisions-concernant-les-formations
[35] http://eurace.enaee.eu/node/163
[36] http://ecahe.eu/home/internationalisation-platform/

ESG 2.7 COMPLAINTS AND APPEALS

> Standard:
> Complaints and appeals processes should be clearly defined as part of the design of external quality assurance processes and communicated to the institutions.

2014 review recommendation

In ESG 2005 this standard was part of 3.7. The standard was substantially compliant but had no recommendation concerning the complaints and appeals procedures.

Evidence

The complaint and appeal procedures are common to all reviews, including EUR-ACE® and CeQuInt labels.

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 (behavior of one or more members of the expert panel, delays for the organization of the site visit, 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 Executive Committee and the plenary meetings. According to the issue raised, the outcome may differ, e.g., an evolution of CTI's bylaws, a new focus during training sessions, a warning given to a CTI member or expert, dismissal of an expert etc. A feedback is given in any case to the HEI by CTI's president.

Within two weeks of receiving the final decision and evaluation report by CTI, a HEI may apply to CTI for a change of the evaluation report (internal appeal). This may happen when the HEI shows proof that important evidence has not been taken into account, that a factual error persists in the final report, etc. In that case, CTI immediately informs the supervisory ministry in order to suspend the accreditation notification for public owned HEIs and the official notification for private HEIs. An independent committee of external and knowledgeable personalities (3 former CTI members) nominated by CTI analyses the internal appeal application and submitted evidence and forwards its conclusions to CTI's plenary meeting through the Executive Committee within one month. The committee provides its conclusions with an advice to change or to maintain the evaluation report. A new vote in the plenary meeting takes place and the revised or confirmed evaluation report is sent to the ministry and to the HEI. According to the law, the decision is final for private HEIs.

A public HEI may submit an external appeal to its supervisory ministry within two months after receiving the official accreditation notification. If the supervisory ministry is different from the ministry in charge of HE, both ministries confer and take the decision together, whether to revise or not the accreditation decision.

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

The complaints and appeals procedures are published in CTI's *Standards and guidelines* (R&O) and in the bylaws which are public on the internet site[37]. According to the SAR and the discussion with the participants, applications for re-examination of the evaluation reports and appeals are extremely rare.

Analysis

CTI has in place well-developed and transparent complaints and appeals procedures, that are published on its website.

Panel conclusion: fully compliant

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[37] https://www.cti-commission.fr/wp-content/uploads/2017/01/CTI_Reglement_interieur_AVEC_annexes_VF_20180710.pdf

CONCLUSION

SUMMARY OF COMMENDATIONS

ESG 3.1
- CTI is a professional organisation that is highly respected and appreciated by stakeholders and authorities.
- Active participation of industry representatives in CTI governance has helped to increase the reliability of CTI in the engineering environment and enhanced the quality of engineering education in France.

ESG 3.4
- The panel was impressed by the large number and high quality of thematic analyses, given the relatively small scale of the agency, and their dissemination through several different kinds of activities, such as conferences, newsletters and other information sharing for promoting QA in higher education nationally and internationally.
- Annual conferences are much appreciated by stakeholders (especially deans of HEIs).

ESG 3.5
- Both the staff members and CTI members from industry and academia are highly committed which supports the integration between industry and higher education.
- CTI has developed a comprehensive and user-friendly information management system.

ESG 2.2
- CTI can be commended for its active collaboration with stakeholders to update the criteria for engineering programmes.

ESG 2.4
- The panel commends CTI for involvement of international experts in the panels and encourages to apply this practice to all reviews.

OVERVIEW OF JUDGEMENTS AND RECOMMENDATIONS

ESG 3.1 Fully compliant

ESG 3.2 Fully compliant

ESG 3.3 Fully compliant

ESG 3.4 Fully compliant

ESG 3.5 Fully compliant

ESG 3.6 Fully compliant

ESG 3.7 Fully compliant

ESG 2.1 Fully compliant

ESG 2.2 Fully compliant

ESG 2.3 Substantially compliant

Panel recommendation:
- Panel recommends that CTI develops follow-up procedures also in case of full accreditation. In order to limit administrative burden, CTI and HEIs might consider taking use of existing publication tools (e.g., conferences, certified data). The methods for follow-up should be implemented so that quality culture at the institutions will be further developed.

ESG 2.4 Fully compliant

ESG 2.5 Partially compliant

Panel recommendation:
- For improved consistency of decisions, CTI is recommended to develop the deliberation rules and criteria for decision-making explicitly. They do not need to be mathematical but should still give a clear indication for the different types of decisions.

ESG 2.6 Partially compliant

Panel recommendation:
- The panel recommends CTI to intensify efforts regarding the new template for panel reports in order to increase redactional uniformity and coherence. Full reports should be publishable in a short period, given the fact that this recommendation already exists since the previous ENQA review.

ESG 2.7 Fully compliant

In light of the documentary and oral evidence considered by it, the review panel is satisfied that, in the performance of its functions, CTI is in compliance with the ESG.

SUGGESTIONS FOR FURTHER DEVELOPMENT

CTI may wish to consider the following suggestions when reflecting on its further development:

- Set clear timelines for current action plan 2016-2020 and try to stick to these timelines (especially., implementation of assessment report template). (ESG 3.1, ESG 3.6)
- Update the English language website and make it coherent with the French language website. (ESG 3.1, ESG 3.4)
- Continue supporting HE institutions to promote quality culture and put even more efforts to analyse together with HE institutions and other stakeholders what are global changes needed in engineering education for the future.
- Consider – in dialogue with all stakeholders, especially student organisations – to incorporate students in governance of CTI. As the composition of CTI is regulated by law, this should be seen as an advice to the minister. (ESG 3.1)
- Given the growing number of international assessments, CTI could also consider including international representatives in its governance, on proposition of both academic and industrial stakeholders. (ESG 3.1)

- Work towards linking the information management systems of CTI and the Ministry of Higher Education. (ESG 3.5)

ANNEXES

ANNEX 1: 2014 AND 2018 EXTERNAL REVIEWS: A COMPARATIVE OVERVIEW OF THE FINDINGS

F = Fully compliant; S = Substantially compliant, P = Partially compliant, N = Non-compliant

ESG	2014 review		2018 review	
	Level of compliance	Recommendations	Level of compliance	Recommendations
ESG 2.1 CONSIDERATION OF INTERNAL QUALITY ASSURANCE (FORMERLY ESG 2.1)	F	The panel encourages CTI to improve its members and experts' awareness on internal quality assurance in order to reach a higher level of understanding of the importance of IQA through mechanisms to train them on that specific matter.	F	None
ESG 2.2 DESIGNING METHODOLOGIES FIT FOR PURPOSE (FORMERLY ESG 2.2 AND ESG 2.4)	F, S	None	F	None
ESG 2.3 IMPLEMENTING PROCESSES (FORMERLY ESG 2.6 AND 3.7)	S, S	…the procedure for the selection and nomination of experts could be improved by clarifying the process of selection of expert member selection for the evaluation committees as well as the policy for selection. And, under criterion 2.6, the panel considers that it would be useful to include a follow-up procedure for the programmes with no major problems detected.	S	Panel recommends that CTI develops follow-up procedures also in case of full accreditation. In order to limit administrative burden, CTI and HEIs might consider taking use of existing publication tools (e.g., conferences, certified data). The methods for follow-up should be implemented so that quality culture at the institutions will be further developed.
ESG 2.4 PEER-REVIEW EXPERTS (FORMERLY ESG 2.4 AND 3.7)	S	The panel recommends that CTI increase the number of international experts in its evaluation committees, not only at national but also at international level. It is also recommended to publish the composition of the committees for each review	F	None

		on the website indicating their profile and role in the accreditation process. The panel considers that the procedure for the selection and nomination of experts could be improved by clarifying the process of selection of the expert members of the evaluation committees as well as the policy for selection. Finally, the panel recommends that student participation in the evaluation committees be increased and also to consider the possibility to involve them at the members' level." (2.4) "As mentioned previously, under criterion 2.4, the panel considers that the procedure for the selection and nomination of experts could be improved by clarifying the process of selection of expert member selection for the evaluation committees as well as the policy for selection." (3.7)		
ESG 2.5 CRITERIA FOR OUTCOMES (FORMERLY ESG 2.3 AND 3.7)	F, S	None	P	For improved consistency of decisions, CTI is recommended to develop the deliberation rules and criteria for decision-making explicitly. They do not need to be mathematical but should still give a clear indication for the different types of decisions.
ESG 2.6 REPORTING (FORMERLY ESG 2.5)	F	Even if the published information is satisfactory for the different stakeholders, it could be of use to publish the full evaluation reports on the Agency's website.	P	The panel recommends CTI to intensify efforts regarding the new template for panel reports in order to increase redactional uniformity and coherence. Full reports should be publishable in a short period, given the fact that this recommendation already exists since the previous ENQA review.
ESG 2.7 COMPLAINTS AND APPEALS (FORMERLY ESG 2.7 AND 3.7)	F, S	None	F	None
ESG 3.1 ACTIVITIES, POLICY AND PROCESSES FOR QUALITY ASSURANCE (FORMERLY ESG 3.1, 3.3, AND 3.5)	F, F, F	The panel recommends that CTI develop the strategic aims of the Agency to strengthen its vision and goals. (ESG 3.5)	F	None

ESG 3.2 OFFICIAL STATUS (FORMERLY ESG 3.2)	F	The panel recommends that CTI develops the agreement with AERES in order to find a way to better align their evaluation calendars and to minimize the workload these evaluations represent for the Institutions. It is also recommended to have a mechanism for assuring the continuity of the agreement between both Agencies taking into account the change from AERES to HCERES in the near future.	F	None
ESG 3.3 INDEPENDENCE (FORMERLY ESG 3.6)	F	The panel recommends that CTI develops the strategic aims of the Agency so as to reinforce the way the Agency wants to follow its activities and make it public.	F	None
ESG 3.4 THEMATIC ANALYSIS (FORMERLY ESG 2.8)	F	None	F	None
ESG 3.5 RESOURCES (FORMERLY ESG 3.4)	F	The panel recommends that CTI takes into account the risk of a higher workload for the staff in the light of increasing its activities (EURACE label, international accreditation, etc.) in the near future as well as with regards to the accreditation period which is due to be changed from 6 to 5 years.	F	None
ESG 3.6 INTERNAL QUALITY ASSURANCE AND PROFESSIONAL CONDUCT (FORMERLY ESG 3.8)	F	None	F	None
ESG 3.7 CYCLICAL EXTERNAL REVIEW OF AGENCIES (FORMERLY ESG 3.8)	F	None	F	None

ANNEX 2: PROGRAMME OF THE SITE VISIT

TUESDAY 27 NOV 2018		
TIMING	**TOPIC**	**PERSONS FOR INTERVIEW**
16.00 – 17.30	*Review panel's kick-off meeting and preparation for the visit*	
17.30 – 17.45	Introductory meeting with contact person regarding practicalities	- Marie-Jo Goedert
17.45 – 18.45	Meeting with CTI-management/Executive Committee	- Elisabeth Crépon, President - Elisabeth Lavigne, Vice-President - Jean-Marc Théret, Vice-President - Marie-Jo Goedert, Director of administration and international relations
WEDNESDAY 28 NOV 2018		
8.30 – 9.00	Review panel's private discussion	
9.00 – 9.30	Meeting with the team responsible for preparation of the self-assessment report	- Laurent Mahieu, former president - Noël Bouffard, Board member - Bernard Pineaux, member
9.30 – 9.45	Review panel's private discussion	
9.45 – 10.30	Meeting with CTI-members (general assembly; collèges), except President and Vice-Presidents Members of general assembly, representing two collèges (max. 6 pers)	- Isabelle Avenas Payan (industry) - Hervé Devred (industry) - Didier Erasme (academia) - Hélène Grimault-Duc (industry) - William Lis (industry) - Claire Peyratout (academia) - Georges Santini (academia)
10.30 –10.45	Review panel's private discussion	

10.45 – 11.30	Meeting with CTI-steering committees	Members of Steering Groups that have contributed to the SAR : - Anne-Marie Jolly, member (Audit) - Eugenia LLamas, special adviser (International) - Florence Dufour, former member (Quality & Communication)
11.30 – 11.45	Review panel's private discussion	
11.45 – 12.45	Meeting with staff and registry	- Christine Freyermuth, Audit Process Manager - Gwénaëlle Le Godec, Team assistant - Julie Nolland, Quality Manager & International Project Manager - Laure Vicq, Project Manager - Marie-Ange Drancourt, Registrar - David Phalippoux, Registrar
12.45 – 13.45	Lunch (panel only)	
13.45 – 14.15	Meeting with Hcéres	- Michel Cosnard, President - François Pernot, Director Europe and International Department - Solange Pisarz, Head of Project, Europe and International Department - Michel-Julien Robert, Director institutional evaluation
14.15 – 14.30	Review panel's private discussion	
14.30 – 15.15	Meeting with deans HE-institutions (CDEFI), including at least 3 representatives of recently reviewed HEIs	- Marc Renner, CDEFI President - Isabelle Schöninger, CDEFI Executive director - Louis Joseph Brossollet, dean of studies ISEP (private HEI) - Laurent Champaney, director general ENSAM - François Cansell, former director INP Bordeaux - Christian Lerminiaux, director Chimie Paristech
15.15 – 15.30	Review panel's private discussion	
15.30 – 16.00	Meeting with student representatives	Representatives from BNEI and from institutes reviewed: BNEI, Brice Pugenc, President BNEI, Grégory Barrère, Public relations Ecam Lyon FISE (contact HGD, en cours) Centrale Marseille FISA (contact WL, en cours) EIVP FISE (via E. Llamas, en cours)
16.00 – 16.15	Review panel's private discussion	
16.15 – 16.45	Other supervisory ministries	**Ministry of defence** Direction générale de l'armement, Contact : PLESSIX Florence Ministry of ecology and sustainable devleopment (via Denis Priou) **Ministry of finance (and industry)**

		- Emmanuel CAQUOT, Head of supervising division of relevant engineering schools **Ministry of Food and Agriculture** Contacts : Marie-Aude STOFER <marie-aude.stofer@agriculture.gouv.fr>, Martine DUMORTIER martine.dumortier@agriculture.gouv.fr
16.45 – 17.00	Review panel's private discussion	
17.00 – 17.15	Meeting with contact person	- Marie-Jo Goedert
17.15 – 18.30	Review panel's private discussion	
THURSDAY 29 NOV 2018		
8.30 – 9.00	Review panel's private discussion	
9.00 – 9.45	Meeting with experts, including students	- Maxime de Simone, student expert - Louise TAUPIN, student expert - Raphaëlle Colas des Francs, student expert - Bertrand Bonte, expert - Suzanne Mathieu, expert
9.45 – 10.00	Review panel's private discussion	
10.00 – 10.30	Meeting with representatives from socio-cultural stakeholders Including the organisation of engineering graduates IESF	**IESF :** Jean DAMBREVILLE, delegate general **Employers organisation MEDEF:** MEDEF : via NB FNTP : via HGD Syntec Ingénierie : attente, via NB **Trade unions :** **UGI CGT :** Sylviane Lejeune CFDT : via L Mahieu
10.30 – 10.45	Review panel's private discussion	
10.45 – 11.15	Meeting with Ministry of Higher Education, Research and Innovation	- Brigitte Plateau, Director general of higher education and occupational integration - Rachel Marie Pradeilles Duval, Head, Strategy for training and student life - Franck Jarno, Associate head, Training and occupational integration - Catherine Malinie, Department of schools and private Higher Education
11.15 – 11.30	Review panel's private discussion	
11.30 – 12.00	Meeting with CNCP	- Brigitte Bouquet, Rapporteur general CNCP
12.00 – 12.30	Meeting among panel members to agree on final issues to clarify	
12.30 – 13.30	Lunch (panel only)	

13.30 – 14.00	Meeting with CTI-management to clarify any pending issues	- Elisabeth Crépon, President - Marie-Jo Goedert, Director of administration & international relations
14.00 – 16.00	Private meeting among panel members to agree on the main findings	
16.00 – 16.30	Final de-briefing meeting with CTI staff and Council/Board members to inform about preliminary findings	- Elisabeth Crépon, President - Jean-Marc Théret, Vice-President - Christine Freyermuth - Marie-Jo Goedert - Gwénaëlle Le Godec - Julie Nolland - Laure Vicq

ANNEX 3: TERMS OF REFERENCE OF THE REVIEW

External review of the Commission des Titres d'Ingénieur (CTI) by the European Association for Quality Assurance in Higher Education (ENQA)

Annex I: TERMS OF REFERENCE
May 2018

1. Background and Context

The *Commission des titres d'ingénieur* (CTI) was established by Law in 1934 (*French Education Code*, Article L.642-2 and following). The CTI is the French relevant body in charge of carrying out periodical evaluation procedures that lead to the accreditation of the French institutions to award the engineering degree "titre d'ingénieur diplômé" in France and abroad.
On request of the institutions and relevant governments, CTI may carry out evaluation procedures of engineering programmes run by foreign higher education institutions. The positive outcome of such a CTI procedure leads to the recognition of these degrees within France (''Admission par l'Etat'').

CTI has been an ENQA member since 2005 and is applying for renewal of its membership.

CTI has been registered on EQAR since 2010 and is applying for renewal of registration.

2. Purpose and Scope of the Evaluation

This review, will evaluate the way in which and to what extent CTI fulfils the *Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG)*. Consequently, the review will provide information to the ENQA Board to aid its consideration of whether membership of CTI should be reconfirmed and to EQAR to support CTI application to the register.

The review panel is not expected, however, to make any judgements as regards granting membership.

2.1 Activities of CTI within the scope of the ESG

In order for CTI to apply for ENQA membership and for registration in EQAR, this review will analyse all CTI activities that are within the scope of the ESG, i.e. reviews, audits, evaluations or accreditation of higher education institutions or programmes that relate to teaching and learning (and their relevant links to research and innovation). This is regardless of whether these activities are carried out within or outside the EHEA, and whether they are obligatory or voluntary.

The following activities of CTI have to be addressed in the external review:

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

3. The Review Process

The process is designed in the light of the *Guidelines for ENQA Agency Reviews* and in line with the requirements of the *EQAR Procedures for Applications*.

The evaluation procedure consists of the following steps:

- Formulation of the Terms of Reference and protocol for the review;
- Nomination and appointment of the review panel;
- Self-assessment by CTI including the preparation of a self-assessment report;
- A site visit by the review panel to CTI;
- Preparation and completion of the final evaluation report by the review panel;
- Scrutiny of the final evaluation report by the ENQA Review Committee;
- Analysis of the scrutiny by the ENQA Board and their decision regarding ENQA membership;
- Follow-up of the panel's and/or ENQA Board's recommendations by the agency, including a voluntary follow-up visit.

3.1 Nomination and appointment of the review team members

The review panel consists of four members: one or two quality assurance experts, an academic employed by a higher education institution, student member, and eventually a labour market representative (if requested). One of the members will serve as the chair of the review panel, and another member as a review secretary. For ENQA Agency Reviews at least one of the reviewers is an ENQA nominee (most often the QA professional[s]). At least one of the reviewers is appointed from the nominees of either the European University Association (EUA) or the European Association of Institutions in Higher Education (EURASHE), and the student member is always selected from among the ESU-nominated reviewers. If requested, the labour market representative may come from the Business Europe nominees or from ENQA. An additional panel member may be included in the panel at the request of the agency under review. In this case an additional fee to cover the reviewer's fee and travel expenses is applied.

In addition to the four members, the panel will be supported by the ENQA Secretariat review coordinator who will monitor the integrity of the process and ensure that ENQA expectations are met throughout the process. The ENQA staff member will not be the Secretary of the review and will not participate in the discussions during the site visit interviews.

Current members of the ENQA Board are not eligible to serve as reviewers.

ENQA will provide CTI with the list of suggested experts with their respective curriculum vitae to establish that there are no known conflicts of interest. The experts will have to sign a non-conflict of interest statement as regards CTI review.

3.2 Self-assessment by CTI, including the preparation of a self-assessment report

CTI is responsible for the execution and organisation of its own self-assessment process and shall take into account the following guidance:

- Self-assessment is organised as a project with a clearly defined schedule and includes all relevant internal and external stakeholders;
- The self-assessment report is broken down by the topics of the evaluation and is expected to contain, among others: a brief description of the national HE and QA system; background description of the current situation of the Agency; an analysis and appraisal of the current situation; proposals for improvement and measures already planned; a SWOT analysis; each criterion (ESG part II and III) addressed individually. All agency's QA activities (whether within

their national jurisdiction or outside of it, and whether obligatory or voluntary) will be described and their compliance with the ESG analysed.

- The report is well-structured, concise and comprehensively prepared. It clearly demonstrates the extent to which CTI fulfils its tasks of external quality assurance and meets the ESG and thus the requirements of ENQA membership.

- The self-assessment report is submitted to the ENQA Secretariat who has 4 weeks to pre-scrutinise it before forwarding the report to the panel of experts. The purpose of the pre-scrutiny is to ensure that the self-assessment report is satisfactory for the consideration of the panel. The Secretariat will not judge the content of information itself but whether the necessary information, as stated in the Guidelines for ENQA Agency Reviews, is present. For the second and subsequent reviews, the agency is expected to enlist the recommendations provided in the previous review and to outline actions taken to meet these recommendations. In case the self-assessment report does not contain the necessary information and fails to respect the requested form and content, the ENQA Secretariat reserves the right to reject the report and ask for a revised version within 4 weeks. In such cases, an additional fee of 1000 € will be charged to the agency.

- The report is submitted to the review panel a minimum of six weeks prior to the site visit.

3.3 A Site Visit by the Review Panel

CTI will draw up a draft proposal of the schedule for the site visit to be submitted to the review panel at least two months before the planned dates of the visit. The schedule includes an indicative timetable of the meetings and other exercises to be undertaken by the review panel during the site visit, the duration of which is 2,5 days. The approved schedule shall be given to CTI at least one month before the site visit, in order to properly organise the requested interviews.

The review panel will be assisted by CTI in arriving in Paris, France.

The site visit will close with a final de-briefing meeting outlining the panel's overall impressions but not its judgement on compliance or granting of ENQA membership.

3.4 Preparation and completion of the final evaluation report

On the basis of the review panel's findings, the review secretary will draft the report in consultation with the review panel. The report will take into account the purpose and scope of the evaluation as defined under articles 2 and 2.1. It will also provide a clear rationale for its findings with regards to each ESG. A draft will be first submitted to the ENQA review coordinator who will check the report for consistency, clarity and language and it will be then submitted to CTI within 11 weeks of the site visit for comment on factual accuracy. If CTI chooses to provide a statement in reference to the draft report it will be submitted to the chair of the review panel within two weeks after the receipt of the draft report. Thereafter the review panel will take into account the statement by CTI, finalise the document and submit it to ENQA.

The report is to be finalised within three months of the site visit and will not exceed 40 pages in length.

When preparing the report, the review panel should also bear in mind the *EQAR Policy on the Use and Interpretation of the ESG*, so as to ensure that the report will contain sufficient information for the Register Committee for application to EQAR.

CTI is also requested to provide a letter addressed to the ENQA Board outlining its motivation applying for membership and the ways in which CTI expects to contribute to the work and objectives of ENQA during its membership. This letter will be discussed along with the final evaluation report.

4. Follow-up Process and Publication of the Report

CTI will consider the expert panel's report and will publish it on its website once the ENQA Board has made its decision. The report will also be published on the ENQA website, regardless of the review outcome and decision by the ENQA Board. CTI commits to preparing a follow-up plan in which it addresses the recommendations of the review panel and to submitting a follow-up report to the ENQA Board. The follow-up report will be published on the ENQA website, in addition to the full review report and the Board's decision.

The follow-up report will be complemented by a small-scale visit to the agency performed by two members of the original panel (whenever possible). This visit will be used to discuss issues, based on the ESG, considered as of particular importance or challenge by CTI. Its purpose is entirely developmental and has no impact on the judgement of membership and/or compliance of the agency with the ESG. Should the agency not wish to take advantage of this opportunity, it may opt out by informing the ENQA Review Coordinator about this.

5. Use of the report

ENQA shall retain ownership of the report. The intellectual property of all works created by the expert panel in connection with the review contract, including specifically any written reports, shall be vested in ENQA.

The review report is used by the Board of ENQA for the purpose of reaching a conclusion on whether CTI has met the ESG and can be thus admitted/reconfirmed as a member of ENQA. The report will also be used for registration on EQAR, and is designed so as to serve these two purposes. However, the review report is to be considered final only after being approved by the ENQA Board. Once submitted to CTI and ENQA and until it is approved by the Board the report may not be used or relied upon by CTI, the panel and any third party and may not be disclosed without the prior written consent of ENQA. CTI may use the report at its discretion only after the Board has approved of the report. The approval of the report is independent of the decision on membership.

The Chair of the panel shall remain available to respond to questions of clarification or further information from the EQAR Register Committee provided that the ENQA Secretariat is copied in all such requests.

6. Budget

CTI shall pay the following review related fees:

Fee of the Chair	4,500 EUR
Fee of the Secretary	4,500 EUR
Fee of the 2 other panel members	4,000 EUR (2,000 EUR each)
Fee of 2 panel members for follow-up visit	1,000 EUR (500 EUR each)
Administrative overhead for ENQA Secretariat	7,000 EUR
Experts Training fund	1,400 EUR
Approximate travel and subsistence expenses	6,000 EUR
Travel and subsistence expenses follow-up visit	1,600 EUR

This gives a total indicative cost of 30,000.00 EUR VAT excl. for a review team of 4 members. In the case that the allowance for travel and subsistence expenses is exceeded, CTI will cover any additional costs after the completion of the review. However, the ENQA Secretariat will endeavour to keep the travel and subsistence expenses in the limits of the planned budget, and will refund the difference to CTI if the travel and subsistence expenses go under budget.

The fee of the follow-up visit is included in the overall cost of the review and will not be reimbursed in case the agency does not wish to benefit from it.

In the event of a second site visit required by the Board and aiming at completing the assessment of compliance, and should the agency accept a second visit, an additional fee of 500 EUR per expert, as well as travel and subsistence costs are recoverable from the agency.

7. Indicative Schedule of the Review

Agreement on terms of reference	March 2018
Appointment of review panel members	May 2018
Self-assessment completed	By end August 2018
Pre-screening of SAR by ENQA coordinator	Early September 2018
Preparation of site visit schedule and indicative timetable	September/October 2018
Briefing of review panel members	November 2018
Review panel site visit	Late November/ Early December 2018
Draft of evaluation report and submitting it to ENQA coordinator for pre-screening	Early February 2019
Draft of evaluation report to CTI	March 2019
Statement of CTI to review panel if necessary	March 2019
Submission of final report to ENQA	April 2019
Consideration of the report by ENQA Board and response of CTI	June 2019
Publication of the report	June 2019

ANNEX 4: GLOSSARY

AAQ	Swiss agency of accreditation and quality assurance
ABET	Accreditation Board for Engineering and Technology (USA)
AEQES	Agence pour l'Evaluation de la Qualité de l'Enseignement Supérieur (Belgium)
AERES	Agence pour l'Evaluation de la Recherche et de l'Enseignement Supérieur (French quality assurance agency replaced by Hcéres)
AFD	Agence Française de développement
ASIIN	Akkreditierungsagentur für Studiengänge der Ingenieurwissenschaften, der Informatik, der Naturwissenschaften und der Mathematik (Germany)
AUF	Agence Universitaire de la Francophonie
BNEI	Bureau national des Elèves Ingénieurs (France), national engineering students' organization
CCN-IUT	*Commission consultative nationale des instituts universitaires de technologie*
CDEFI	Conférence des Directeurs des Ecoles Françaises d'Ingénieurs (France)
CEAIE	China Education Association for International Exchange
CEFDG	Commission d'Evaluation des Formations et Diplômes de Gestion (France), accreditation agency for management programmes
CeQuInt	Certificate for Quality in Internationalisation, ECA quality label
CNEFOP	Conseil National de l'Emploi, de la Formation et de l'Orientation Professionnelle (France), national council for employment, training and professional orientation
CPGE	Classes Préparatoires aux Grandes Ecoles
CTI	Commission des titres d'ingénieur
EAFSG	EUR-ACE® framework standards and guidelines
ECA	European Consortium for Accreditation (Europe)
EHEA	European Higher Education Area
ENAEE	European Network for the Accreditation of Engineering Education ; this association is responsible for the EUR-ACE® label (Europe)
ENQA	European Association for Quality Assurance in Higher Education (Europe)

ESG	Guidelines for Quality Assurance in the European Higher Education Area (Europe)
EUR-ACE®	A quality label for engineering programmes developed by ENAEE (Europe)
EQA	External quality assurance
EQAR	European Quality Assurance Register for Higher Education (Europe)
Fraq-SUP	Réseau francophone des agences qualité pour l'enseignement supérieur
Hcéres	Haut conseil de l'évaluation de la recherche et de l'enseignement supérieur (France), quality assurance agency in charge of the evaluation of HEIs, bachelor, master and doctorate programmes and research
HEI	Higher Education Institution
HE	Higher Education
IEAQA	Instance Nationale de l'Evaluation, de l'Assurance Qualité et de l'Accréditation (Tunisia)
IESF	Ingénieurs et scientifiques de France (France), alumni association of graduate engineers
IUT	Institut Universitaire de Technologie, awards degrees up to the Bachelor grade (France)
IQA	Internal quality assurance
MEDEF	Mouvement des Entreprises de France
NVAO	Accreditation Organization of the Netherlands and Flanders (The Netherlands and Flanders)
QROSSROADS	ECA's European programmes database (Europe)
R&O	Références et Orientations, CTI's standards and guidelines
RNCP	Répertoire national des certifications professionnelles (France)
SAR	Self-assessment report
UNIBASQ	Agencia de Calidad del Sistema Universitario Vasco (Spain)
VAE	Validation des Acquis de l'Expérience (France)

ANNEX 5. DOCUMENTS TO SUPPORT THE REVIEW

DOCUMENTS PROVIDED BY CTI

CTI

1. CTI's missions, objectives and action plan, 2017-2020

2. Bylaws with annexes (main legal texts; deontology charters for members, experts, advisors, observers; role of the panel chair; role of the experts; procedure regarding mission orders and coverage of expenses)

3. CTI's activity report, 2014-2016

Standards and guidelines for external quality assurance

4. CTI's Standards and guidelines, *Références et Orientations* (R&O), volume 1 Main criteria

5. CTI's Standards and guidelines, *Références et Orientations* (R&O), volume 2 Guide for the HEIs self-assessment

6. CTI's Standards and guidelines, *Références et Orientations* (R&O), volume 3 Procedures

7. CTI's Standards and guideline, *Références et Orientations (R&O)*, Volume 4 In-depth thematic notes

8. CTI's *Accreditation Criteria, Guidelines and Procedures*, English version for accreditation procedures of foreign programmes

9. *EUR-ACE® framework standards and guidelines,* English version

10. CeQuInt: *Frameworks for the assessment of quality in internationalisation*

ENQA & EQAR

11. ENQA review report, 2014

12. EQAR's renewal decision of CTI's inclusion on the Register, 2014

13. CTI's follow-up report addressed to ENQA, 2016

14. Terms of reference for the ENQA review of CTI, 2018

In addition, the panel requested the additional documents/summaries from CTI:

15. Mapping grid ESG 2.1

16. Bylaws in English

17. State of work of ad hoc committees

18. IQA system in English

19. Working plan regarding the future strategic document

20. Samples of report

THIS REPORT presents findings of the ENQA Agency Review of the Commission des Titres d'Ingénieur undertaken in 2018.

ENQA

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2019 ENQA AGENCY REVIEW