



13 May 2019

Report to EUR-ACE Label Committee

on

Application for Re-Authorisation to award the EUR-ACE Label

from

Name of Agency:

Commission des Titres d'Ingénieur (CTI)

Members of ENAAEE Review Team (ERT)¹

- 1. Prof. Bohdan MACUKOW, Poland, Chair**
- 2. Prof. Jacques BERSIER, Switzerland**
- 3. Prof. Timur DOGU, Turkey**
- 4. Prof. Manfred KRAFCZYK, Germany**

Final Report: 13 May 2019

¹ The ERT consists of a Chair and three members. However, if one member is absent from any of the activities, the process is still valid.

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ACRONYMS (Specific Acronyms used in this Report)

- CTI: Applying Agency (Commission des Titres d'Ingénieur)
- ERT: ENAAEE Review Team for CTI
- EP: University Paris-Sud School of Engineering (Ecole Polytechnique Universitaire de l'Université Paris – XI), Polytech Paris-Sud
- UTC: University of Technology of Compiègne (Université de Technologie de Compiègne)
- ET1: CTI Evaluation Team (Review Team, Audit Team) at the University Paris-Sud School of Engineering (Ecole Polytechnique Universitaire de l'Université Paris – XI)
- ET2: CTI Evaluation Team at the University of Technology of Compiègne (Université de Technologie de Compiègne)

1. GENERAL / DETAILS OF THE RE-ACCREDITATION VISIT

Describe the review process which took place including dates of meetings/ teleconferences of ENAE Review Team (ERT), attendance at accreditation board meetings, observances of accreditation visits, etc. This should include durations and names/positions of those consulted on each occasion. For each occasion the list of ERT members present must be indicated.

This report is based on the information given in the CTI application for re-authorisation to award the EUR-ACE® Master Label and on the observations made and further information collected during:

- (i) informal discussion with CTI representative;
- (ii) a review visit to the University Paris-Sud School of Engineering (Ecole Polytechnique Universitaire de Université de Paris-Sud – XI),
- (iii) a review visit to the University of Technology of Compiègne (Université de Technologie de Compiègne)
- (iv) attendance by the ENAE Review Team Member at the plenary session of CTI Meeting in Paris.

Documents attached to the application or made available before the first and second visit:

- ERT Report (2015).
- CTI Application for re-authorisation to award the EUR-ACE® Label (Master level) (2018).
- CTI_External_Evaluation_Report_Template_2018.
- Self-Assessment of the Study Program of the University Paris-Sud School of Engineering: full text in French and Part C (Training Engineering Students) in English
- EUR-ACE Audit Plan for the visit at the École Polytechnique Universitaire de l'Université de Paris-Sud – XI, 28-30.01.2019.
- Self-Assessment of the Study Program of the University of Technology of Compiègne: full text in French and Part C (Training Engineering Students) in English
- EUR-ACE Audit Plan for the visit at Université de Technologie de Compiègne, 26-28.03.2019.

Document available before the Plenary session of CTI Meeting in Paris

- Rapport de mission d'audit de l'Ecole Polytechnique Universitaire de l'Université Paris XI, March 8, 2019

Motivation of the re-application

CTI's core activity is the national accreditation of all French master-level engineering degrees (*diplôme d'ingénieur*). In addition to this core activity, one of the main goals of CTI's activity is to improve the professional and academic recognition of these French engineering degrees in Europe and abroad. In this context, being part of the EUR-ACE®

system is of strategic importance for CTI. More than 570 engineering programmes were awarded the EUR-ACE® label by CTI since 2008 and are currently in the EUR-ACE® database.

However, the number of programmes accredited by CTI presently contained in the ENAAEE database is only a subset of all the programmes that CTI has pronounced eligible for the EUR-ACE® Master Label over the years.

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

2. HISTORY AND DEVELOPMENT OF THE AGENCY / AGENCY INFORMATION

– Summary (cf. Application)

The Commission des titres d’ingénieur (CTI) was established by law in 1934 (French education code, article L.642-1 and following), with the aim of carrying out three main missions that remain the same today:

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

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

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

In November 2014 and February 2015 ERT members conducted two observatory visits and attended a plenary meeting of CTI in April 2015. In September 2015 authorisation of CTI was finally approved by the ENAAEE AC with validity until 31st of December 2019. In December 2018, CTI submitted the application for re-authorisation.

Schedule of ERT Visits and Meetings:

First observation visit:

29-30/01/2019 at the University Paris-Sud School of Engineering (Ecole Polytechnique Universitaire de l’Université Paris XI) (EPU Paris XI).

Briefing Meeting of ENAAEE Review Team (J. Bersier, T.Dogu, M.Krafczyk and B. Macukow) (28/01/2019), Hotel Campanile Paris Sud - Saclay

Programs evaluated for accreditation in accordance with the new CTI nomenclature – **Electronics** (Electronique), **Informatics** (Informatique), **Material Engineering** (Matériaux) and **Photonics** (Photonique) at the master’s level [Master = 2nd cycle].

Key staff involved

Dean Yves Bernard

Dean of studies Christophe Poulard

Vice-Dean Michel Andrieux

Vice-dean for the relationships with companies Marie-Christine Henriot

Persons in charge of the department of Electronics, Energies, Systems: Samir Bouaziz and Claude Delpha (+ others).

Persons in charge of the department of Informatics: Marc Baboulin and Claude Barras (+ others).

Persons in charge of the department of Materials: Pascale Foury and Anne-Laure Helbert (+ others).

Persons in charge of the department of Photonics and Optronic systems: Fabian Zomer and Guillaume Dupuis (+ others).

Composition of the CTI Evaluation Team (ET1) for EP

Team Chair: Jean-Louis Allard CTI member, (representing academia), Dean of engineering HEI CESI

Members:

- Véronique Raimbault, CTI member (representing industry), IT project and programme manager,
- Marie-Annick Galland, CTI member, (representing academia), dean of studies and full professor in engineering HEI Centrale Lyon,
- Herve Coppier, CTI expert, responsible for relationships with companies and department of control engineering and connected factory in engineering HEI ESIEE Amiens,
- Joao Crespo, CTI international expert, Universidad Nueva de Lisboa – Portugal,
- Christian Lajarige, CTI expert, project manager in several industrial areas,
- Constantin Foreau, engineering student expert,
- Julie Nolland, CTI, permanent staff member.
- 2 interpreters

Diary of the visit is attached in Annex 1.

Second observation visit:

25-27/03/2019 at the University of Technology of Compiègne (Université de Technologie de Compiègne) (UTC).

Briefing Meeting of ENAAEE Review Team (J. Bersier, T.Dogu and B. Macukow) (25/03/2019), Best Western Hôtel Les Beaux-Arts.

Program evaluated for accreditation – **Bioengineering** (*Génie biologique*), **Mechanical engineering** (*Mécanique*), **Technology and human sciences engineering** (*Technologie et sciences de l'homme*), **Computer science engineering** (*Informatique*), **Process engineering** (*Génie des procédés*) and **Urban Engineering** (*Génie urbain*) at the master's level [Master = 2nd cycle].

Key staff involved

Dean: Philippe Courtier

Vice Dean: Olivier Gapenne

Director of studies and pedagogy: Etienne Arnoult

Director of research: Marie Christine Ho Ba Tho

General Director of Services: Nathalie van Schoor

Coordinator of CTI file: Frédéric Huglo

Director of Innovation and Local Development: Pascal Alberti

Director of communication: Odile Wachter

Director of Continued Training: François Velu

Director of Doctorate School: Christine Prelle

Director of International Relations: Cornélia Marin

+ others

Persons in charge of the department of Bioengineering: Jean-François Lerallut and Yolande Perrin (+ others).

Persons in charge of the department of Urban engineering: Gilles Moel and Fabien Lamarque (+ others).

Persons in charge of the department of Mechanical engineering: Salima Bouvier and Nicolas Buiron (+ others).

Persons in charge of the department of Technology and Human Sciences engineering: Nathalie Darene, Frédéric Huet and Mark Kay.

Persons in charge of the department of Computer science engineering: Abdelmadjid Bouabdallah and Philippe Trigano (+ others).

Persons in charge of the department of Process engineering: Khashayar Saleh and Khalil Shakourzadeh (+ others).

Composition of the CTI Evaluation Team (ET2) for UTC

Team Chair: Isabelle Avenas-Payan, CTI member (representing industry), volunteer at IESF (Engineers and Scientific of France) for promoting the engineering profession

Members:

- Bernard Pineaux, CTI member (representing academia), Vice-Dean at engineering HEI Grenoble-INP Pagora,
- Pierre Baylet, CTI expert (representing industry), President of the Council of engineering HEI TELECOM Nancy,
- Jacques Schwartzentruber, CTI expert (representing academia), Dean of studies at engineering HEI IMT Mines Albi
- Radu-Mircea Damian, CTI international expert, Romanian Agency for Quality Assurance in Higher Education,
- Raphaël Perrochat, CTI engineering student expert, final year of studies at engineering HEI INSA Toulouse
- Julie Nolland, CTI permanent staff member.
- 2 interpreters

Diary of the visit is attached in Annex 2

Third observation visit: Attendance by Jacques Bersier, ERT member, at the CTI plenary meeting 16-17/04/2019 in Paris.

Members attending the meeting are:

- Members of the CTI (assemblée plénière) (see Annex 4)
- Representatives of the CTI registry: Marie-Ange Drancourt/David Phalippoux
- Representative of the Ministry (DGESIP): Catherine Malinie
- Permanent staff of CTI : Fany Ea, Marie-Jo Goedert, Julie Nolland

Some members are absent all or part of the meeting, the details will be available in the minutes.

List of CTI members attending the plenary meeting Annex 4

Diary of the plenary meeting attached in Annex 5

3. DETAILS OF AUTHORISATION(S)

Copy the Authorisation Report with prescriptions/suggestions by previous ERT(s) and initiatives for their fulfilment.

The Review Team in the Authorisation Report (May 2015) noted that the following CTI procedures would benefit from the following actions:

1. Put more emphasis in the R&O, the self-evaluation report and the audits on the achievement of CTI programme outcomes. Require from HEIs the provision of additional evidence that a programme and learning outcomes assessment related to the programme objectives and CTI required outcomes in place.
2. Provide more time in the agenda of the audit visit to analyse and assess the programmes and the factual contribution of the different modules to the achievement of programme outcome in more detail, e.g. by reducing the time for presentations.
3. Continue to carefully monitor the programmes in apprenticeship more: require from the HEIs the provision of evidence that with these programmes the same or at least substantially equivalent learning outcomes in content and level are achieved as with the traditional format.

Basing of the documentation sent by CTI:

1. CTI's reference framework and documentation are updated on a regular basis in line with its standards and guidelines, for continuous quality improvement. Following the last ENAE audit for EUR-ACE® re-authorisation, CTI modified and improved the R&O framework, the self-evaluation report for HEIs and the auditing process.

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

The teaching syllabus is available internally and published for external parties, and it is clear and structured. All teaching themes and activities (including projects, work placements and periods in companies for work-linked training) are characterised by expected learning outcomes and assessment methods.

2. The R&O 2016 standards have been updated in order to improve the quality of the site visit and take into account this recommendation.

This model suggests a duration of one hour for the Deans' presentation of the HEI, thereby limiting it to a small proportion of the full visit. It also schedules a dedicated time for reviewers to check the evidence that students acquire the learning outcomes, by reviewing documentation and student work. This model also provides a detailed list of the documents and evidence that may be requested by the review team during the visit, and which includes documents on programmes (*Formation*) and graduates' employment (*Recrutement et emploi*). The main part of the visit is therefore allotted to discussions with HEI management and with various representative panels of the HEI and its stakeholders, during which subjects and priorities are brought up by the review team's questions.

3. In France there are 3 possible learning modes.
 - a. "*Formation Initiale sous Statut Etudiant*" (FISE). Students go through a preparatory cycle for 2 years and subsequently apply for entrance to a CTI-accredited engineering programme which will last 3 years ("*cycle ingénieur*"). Most of the programme outcomes will be achieved within the HEI. It is also possible for students to do both the preparatory cycle in two years and the three years of the engineering programme within the same HEI, depending on its organization and recruitment policy.
 - b. "*Formation initiale sous statut apprenti*" (FISA) is the learning mode, organized by an HEI in partnership with a sponsor, which allows students to alternate periods in the HEI and periods within a company during their engineering programme. Students have sometimes started with this learning mode during their two first years after baccalauréat.
 - c. "*Formation Continue*" (FC) or continued training is the programme learning mode and a lifelong learning possibility for people who are currently employed and have obtained some training time, or are looking for a job after some work experience. They keep their status (as an employee or as a job seeker) as long as they study in the accredited programme. Students admitted via this pathway also study for 2 or 3 years and formally obtain the same engineering degree as FISE and/or FISA students.

4. ACCREDITATION STANDARDS AND PROCEDURE

PUT IN EVIDENCE MODIFICATIONS/VARIATIONS WITH RESPECT TO AUTHORISATION. OTHERWISE INDICATE: SEE AUTHORISATION REPORT

4.1 Programme Outcomes

- *Is the content of the Agency Standards consistent with the Programme Outcomes in Section 2 “Standards and Guidelines for Accreditation of Engineering Programmes” of the EAFSG (EUR-ACE® Framework Standards and Guidelines; 2015)?*

The first volume of R&O 2016 describes the main CTI criteria for evaluation and also includes an appendix setting out EUR-ACE® label requirements and outcomes. Analysis given in the table reveals that the CTI standards cover all EUR-ACE® label standards, although the criteria are organized differently.

Conclusion –Yes. The documents describing the CTI requirements are substantially consistent with the Program Outcomes of the EAFSG. However, some important concepts (like complexity, multidisciplinary concept, critical awareness, forefront of engineering specialization, in-depth knowledge and understanding etc.), which were repeatedly mentioned in the March 2015 version of EAFSG (for Master Degree Programmes) were not sufficiently emphasized in CTI requirements.

- *Do the Agency Standards specify a depth of knowledge and understanding consistent with those of the EAFSG for Bachelor and Master degrees?*

Substantially, yes (for Master degree)

The concept of “in-depth knowledge and understanding” is not sufficiently emphasized.

4.2 Programme Organisation

- *Does the Agency satisfactorily assess how the programmes are organised, managed and maintained in order to ensure that the Programme Outcomes are achieved?*

In the part C of the CTI’s R&O (“References et Orientations”), CTI checks that the programme outcomes are well defined, that the content and teaching methods correspond to the objectives fixed and that they are properly assessed.

Conclusion –Yes, CTI analyses programme organisation and management and outcomes assessment.

- *Does the Agency satisfactorily check the evidence for the actual achievement of the programme outcomes?*

Conclusion – Yes, CTI checks that the Program Outcomes are achieved. But, in the ERT opinion, during the very short time devoted to document analysis it is difficult to check the achievement of programme outcomes (especially, as the syllabi of the courses do not contain enough information).

- *Does the Agency accreditation procedure require course providers to provide adequate resources to deliver programmes?*

Conclusion –Yes, CTI accreditation procedure requires from HEIs adequate resources to deliver programmes. However, the documentation provided by the university should be more complete. Evaluation Teams should also be provided a list of diploma projects for selection instead of those preselected by HEI.

4.3 Accreditation Procedure

- *Are the Agency’s accreditation procedures satisfactory? Are these procedures in full compliance with the procedures for programme assessment and programme accreditation as set out in Section 2 of the “EUR-ACE® Framework Standards and Guidelines (2015)”?*

The accreditation procedure is defined in the R&O 2016 book 3 document and covers perfectly what is required in the EAFSG. The CTI evaluation teams are aware of the process and have all been trained accordingly. It should be noted that, in addition to the known procedure, the evaluation teams structure in a very professional way the analysis of the self-evaluation report, the preparation of questions and the organization of their interventions during the evaluation process.

Conclusion -Yes, the CTI administrative procedures are adequate for to conduct accreditations.

- *Does the Agency documentation provide adequate information for all the participants in the accreditation process?*

Conclusion –Yes, the documents provided by CTI are very complete.

- *Does the Agency documentation provide clear guidance to enable the university to produce a comprehensive self-assessment report and other necessary information?*

Conclusion –Yes, CTI offers very detailed instructions which requirements to fulfil, questions to answer and documents: “Données Certifiées” - 2018 empty form for collecting data certified by French HEIs, the template and recommended structure of the audit team

report (“Rapport de mission d’audit”) which gives a clear picture of what will be considered and assessed.

- *Is the composition of the accreditation team adequate?*

The composition of a review team can vary depending on the programmes to be accredited (engineering branches, the number and size of the programmes, etc.). It is generally made up of three to six people, in accordance with the following criteria: at least two CTI members (one academic one from industry), experts chosen in relation with the field of the programme, one international expert and an engineering student expert.

Conclusion –Yes, but when the visit refers to greater different programs the number of experts from the programs fields is not sufficient.

- *Are the procedures for selection and training of reviewers adequate?*

Conclusion – Yes, CTI regularly organises training sessions for its members and experts. These training sessions are organized twice a year, jointly led by CTI staff and experienced members.

- *Are the timetable and the agenda for the visit acceptable?*

The CTI administrative procedures are adequate to conduct accreditations. The standard duration of a visit is two days. The follow-up visits can last one single day. Some visits, depending on the size of the HEI, the number of programmes to be evaluated etc. can even last for a whole week.

Conclusion – YES, The ERT members concluded that more time should be devoted for analysis of programmes, visiting facilities, achievement of learning outcomes and documents inspection – mainly diploma projects.

- *Is the conduct of the visit acceptable? Are the meetings efficient in obtaining the necessary information?*

Conclusion - Yes. During the preliminary meeting of CTI ET (a day before) CTI ET members prepared a list of questions to clarify the information included in the self-report. The visit programme included discussions with the programme management team, the HEI management, academic management staff, teaching staff, students at various stages in their studies, administration and services staff, alumni, employers’ representatives and representatives of the regional government or with local partners.

- *Is the decision-making process acceptable? Are the decisions communicated properly?*

Conclusion -Yes. The final accreditation visit decision is acceptable.

Once the CTI accreditation has been voted and the EUR-ACE® label approved, the chair informs the school informally and the accreditation is definitively approved at the next plenary session and inserted on the CTI's public website. The school is officially informed at that time. If the school so wishes, it may appeal through the process described on the CTI website and its bylaws and guidelines (R&O).

- *How are the results of the accreditation processes used for continuous improvement?*

Conclusion: The ability of institutions to assure and improve the quality of their programmes is an essential factor for successful CTI accreditation. The Report of the Chair of the Evaluation Team concludes remarks describing the education process, good practices observed and shortcomings.

- *Is there a satisfactory appeals system in place?*

Conclusion – Yes. There are different possible procedures at different levels:

- **Complaint regarding the way the procedure was carried out**
Apart from the satisfaction survey sent to all HEIs after an evaluation procedure, a HEI may address a complaint to CTI's president regarding the quality of the way a procedure was carried out by CTI (behaviour of one or more members of the expert panel, delays for the organisation of the site visit, lack of information, ...).
- **Application for a revision of the evaluation report**
Within ten days of receiving the mission report from CTI), any HEI may apply to the CTI for a revision of the evaluation report. In that case, CTI immediately informs the supervisory ministry in order to suspend the accreditation decision for public owned HEIs and the official notification for private HEIs. After an analysis of the application by an independent Committee, a new vote of the plenary assembly takes place.
- **Appeal against an accreditation decision**

There are also two formal procedures for appeals once the final accreditation decision is communicated:

- A public HEI may submit an appeal to its supervisory ministry within 2 months of receiving the official accreditation notification.
- Both public owned and private institutions have the possibility to file an appeal against the accreditation procedure to the Conseil d'Etat (State Council) which passes judgement exclusively on the regularity of the procedure. .

5. AGENCY MISSION AND STRUCTURE

PUT IN EVIDENCE MODIFICATIONS/VARIATIONS WITH RESPECT TO AUTHORISATION. OTHERWISE INDICATE: SEE AUTHORISATION REPORT

5.1 Official Status

- *What is the legal basis for the Agency's accreditation role?*

Since 1934 CTI is the organization in charge of accreditation of programmes of engineering education at public and private HEIs that award the title of “*ingénieur diplômé*” as it is stipulated in “*Code de l'éducation*” in articles L-642-3 and a decree of State Council of 5th July 1985. The second French accreditation agency involved in the evaluation of the institutional & research aspects of engineering HEIs is Hcéres. The missions of Hcéres include the validation of the evaluation procedures of all quality assurance agencies operating in France, with the exception of CTI. A new agreement between CTI and Hcéres was signed in 2016. Its main aim is to work towards co-ordination in the evaluation of engineering institutions and the accreditation procedures for engineering programmes, in particular to alleviate the workload for HEIs, since some engineering HEIs are accountable to both CTI and Hcéres.

Conclusion – The legal basis of CTI is clear.

- *How is the degree of compliance with “Standards and guidelines for quality assurance in the European Higher Education Area” (ESG) demonstrated? Is there a convincing explanation for the elements in the ESG for which there is not full compliance (if any)?*

ESG standards, Part 1 and 2, are incorporated in the CTI procedures and criteria to the same extent as EAFSG. In addition, in its accreditation procedure, the CTI invites schools, in their projects to develop or create training courses and in the implementation of their internal and external quality assurance processes, to regularly refer to international texts (ESG and EAFSG).

- *Are the Agency's constitution and administrative procedures adequate to conduct accreditations?*

Conclusion – Yes, CTI administrative procedures are adequate for to conduct accreditations.

5.2 Activities

- *Is the undertaking of the accreditation processes at programme level part of the core functions of the Agency?*

The evaluation of engineering degree programmes, and the production of accreditation reports prior to their official accreditation (then published) by the French Ministry, is the first and main mission of CTI, as defined by law.

Since the periodical renewal of all programme accreditations is now compulsory, the majority of CTI's evaluation activities involve the re-accreditation of engineering degree programmes.

In the period Oct 2017- Sept 2018 CTI conducted 52 on-site visits, accredited 551 programmes and 938 curricula. There were 58 programmes for which the EUR-ACE® certificates have been requested.

Conclusion – Yes, accreditation of programmes is the core function of the CTI.

- *Is the agency performing transnational accreditation or considering it? If yes, to what extent and in which countries? Are the accreditation processes abroad similar to those carried out in its own country? If not, what are the differences? Are the decisions consistent?*

In November 2017, CTI published standards and guidelines (in English) for transnational accreditation procedures, called “Accreditation Criteria, Guidelines and Procedures” with the same overall structure as the full French R&O.

On a request from foreign higher education institutions, CTI conducts the accreditation of engineering degree programmes outside France. As of now, CTI has conducted procedures in Europe (Belgium, Bulgaria, Germany, Italy, Spain and Switzerland) and outside Europe (Burkina-Faso, Cameroon, China, Ivory Coast, Lebanon, Morocco, Tunisia and Vietnam). CTI's transnational accreditation activities include 11 programmes which between October 2017 and September 2018 have obtained the EUR-ACE® label.

Conclusion – Yes, transnational accreditation is an important part of CTI activity.

- *Does the Agency provide information for its collaboration with academia, professional bodies, industry and other relevant stakeholders?*

CTI is always in collaboration with all stakeholders concerned. CTI signed an agreement with the “Association Professionnelle pour l'Emploi des Cadres” (APEC) and was consulted for the publication of APEC's “barometer” on the employment of managers and executives. A periodic survey is conducted every three years in collaboration with the IESF, an association of French Engineers and Scientists, in order to analyse the significance and validity of CTI's final programme outcomes.

Conclusion – Yes.

5.3 Resources

- *What resources does the Agency have at its disposal to carry out its accreditation process(es)?*

The total annual budget of CTI's services to engineering degree programmes (accreditation, national and international representation, etc.),

including CTI staff salaries, administrative operator's and experts' fees for management and evaluation, is about €900,000. It is composed from: grant from the ministry, contributions from French HEIs, revenue from accreditation activities abroad.

Permanent CTI staff includes: 4 full-time persons appointed by CTI from its own budget, two 2 part-time persons (50% each) from CTI's registry services provided by the Ministry in charge of Higher Education and the equivalent of 1 full time person from its administrative operator. Temporary CTI staff (specific tasks and responsibilities entrusted to external project managers, counsellors, interns or occasional administrative staff members) is equivalent to 2 full-time positions. The active involvement of CTI members on various missions apart from the evaluation procedures and plenary sessions represent the equivalent of 6 full-time positions.

Conclusion – Yes, both human and financial resources of CTI appears to be sufficient.

- *What provisions have been made for the development and sustainability of the processes and procedures?*

Many working groups are constantly reviewing the activities of the CTI. Every 3 years, a specific working group composed of internal and external members of the CTI is assigned to review the reference and guidance documents (R&O) in order to follow and even anticipate changes in society, the needs of the socio-economic world and to adapt the framework for engineering training. For example, the CTI has just published the 2019 version of these documents. Changes in the regulatory context have been made to Book 1 and a "quality improvement" approach is proposed for the schools' self-evaluation work in Book 2.

Conclusion – Yes, CTI is continuously adapting its standards, documents and procedures to the actual needs.

5.4 Mission Statement

- *Is the Agency's mission statement publicly available? Are its central points acceptable?*

CTI's Mission statement for 2017-2020 is publicly available on CTI's website: https://www.cti-commission.fr/wp-content/uploads/2017/01/CTI_depliant_missions_obj_actions_V14mars2018.pdf.

Conclusion – Yes, the mission statement is publicly available and fully acceptable.

5.5 Independence

- *How is the independence of the Agency ensured?*

CTI's missions and duties are defined by the French law. CTI has the right for constant adaptation of its standards and procedures. CTI's members are appointed according to their own personal competencies and sign a deontology chart. They are appointed by the Minister in charge of Higher

Education. CTI resources come from three main sources: ministry grants, yearly contributions from accredited HEI's, international accreditation procedures that cover all expenses, including overhead costs.

Conclusion – Yes, independence of the CTI is ensured.

5.6 Accountability and Quality Assurance

- *How is the accountability of the Agency secured?*

CTI's internal quality system was formalized in 2008 and adopted by the general assembly in February 2009. Since then, CTI has been committed to deploying its internal quality assurance system and developing specific tools for the tracking and control of its evaluation and accreditation process. As stated in the ESG, this system includes a quality policy, internal and external feedback mechanisms and an internal reflection mechanism.

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

- Periodic survey on the validity of CTI's programme outcomes is conducted every three years
- The steering committees:
 - Quality and communication,
 - Audit,
 - International (EHEA monitoring, international strategy, etc.),
 - Budget,
 - Consistency of the outcomes,
 - CTI Strategic Advisory Boardhave been set up.

Conclusion – Yes, accountability of the CTI is secured.

- *Does the Agency pay careful attention to its declared principles at all times and ensure that both its requirements and processes are managed professionally?*

Conclusion – Yes, the processes are managed very professionally. For example, CTI has established strategic partnerships with other bodies (such as APEC, the French association for the employment of managers) in order to conduct studies of engineering education and the professional sector.

- *Does the Agency satisfactorily ensure that its judgements and decisions are reached in a consistent manner, even if formed by different groups?*

The decision-making process is based above all on a study of the mission report sent two weeks before the plenary session to the Registry and then available to all participants through an intranet. The session is structured as follows: 1) the chair "rapporteur principal (RP)" presents a detailed

summary of the mission report according to points A to E of the standard report (according to R&O book 2) with a SWOT analysis for each point. 2) The co-rapporteur(s) who is/are member(s) of the CTI also express themselves and highlight one point or another in the report. (3) Participants may request clarification from the main rapporteur and co-rapporteurs. 4) The recommendations of previous audit missions are analysed and their compliance assessed. New recommendations or injunctions (mandatory action plan within 6 months) are presented by the main rapporteur and amended by the participants. Compliance with the EUR-ACE criteria is also assessed and recommendations are made. The maximum duration of accreditation is discussed and can reach a maximum of 5 years. 5) Participants vote: a) on CTI accreditation b) on obtaining the EUR-ACE label for the same duration as the CTI accreditation provided that the school has applied for the label. For private schools, the voting session is preceded by an audit by the school director.

Conclusion – Yes. This way of managing decisions and judgments has proved adequately efficient and reliable

- *Are there external assessments of the Agency performed by bodies other than ENAAEE? If yes, which ones and when?*

CTI regularly submits to external evaluations to check if its procedures are in compliance with the Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG) and other references. CTI is a full member of ENQA (European Association for Quality Assurance in Higher Education) and has asked to have this membership renewed. The evaluation process for the renewal has recently started, and the self-evaluation report was submitted and published in July 2018. CTI is registered on EQAR (European Quality Assurance Register). It has re-applied for registration, to be confirmed next year. CTI is also certified by CNEFOP (Conseil National de l'Emploi, de la Formation et de l'Orientation Professionnelles) (decision of December 5th, 2017, which is valid for 3 years).

6. CONCLUSIONS OF THE ERT (ENAAEE REVIEW TEAM)

The ERT concludes that the Label Committee should make the following recommendation(s) to the ENAAEE Administrative Council.

- (a) The authority to award the EUR-ACE Labels is renewed to Commission des Titres d'Ingénieur (CTI) for the following accredited engineering programmes:

Master (2nd cycle) – 1st January 2020 to 31st December 2024

Good practice and/or suggested improvements

The ERT noted the following items of good practice:

1. ET members, including the student members, are very well prepared.

The ERT Team suggests that the procedure could be enhanced by implementing the following aspects:

[List of suggestions for improvements].

1. In ERT opinion, more time should be devoted for analysis of programmes, visiting facilities and achievement of learning outcomes. At the Polytech Paris-Sud the presented examples of syllabi of courses did not contain the course learning outcomes and the methods of the inspection of their achievement.
2. In the ERT opinion, the timetable for visit is too short for document inspection – mainly diploma projects.
3. Documentation provided by the university should be complete. RT should also be provided a list of diploma projects for selection instead of those preselected by HEI.

Annex 1. *Diary of the ENAAEE Review Team first visit to CTI*

Annex 2. *Diary of the ENAAEE Review Team second visit to CTI*

Annex 3. *Statement of the reviewed agency on the Draft ERT Report*

Annex 4. *List of CTI members attending the plenary meeting*

Annex 5. *Diary of the CTI plenary meeting*