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EXTERNAL  
REVIEW  
OF THE  
«*COMMISSION  
DES TITRES  
D'INGENIEUR*»

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REPORT

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April 2009

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## 1 INTRODUCTION

The French « *Commission des Titres d'Ingénieurs* » (CTI, "Commission for the Title of Engineer") is an independent body which, since 1934, has been charged by law with the responsibility of accrediting all education programmes for the title of qualified engineer<sup>1</sup>, of developing the quality of the programmes, and of promoting the title and profession of engineer in France and abroad. The academic world and the industry are equally represented within CTI.

CTI wishes to comply with the European standards adopted within the framework of the Bologna Process and to respect the *Standards and Guidelines for Quality Assurance in the European Higher Education Area* (ESG)<sup>2</sup>, as well as the eight criteria of ENQA<sup>3</sup>, defined in close relation to ESG, which condition full membership of this European network for quality assurance in higher education.

CTI, a full member of ENQA since 2005, wishes for its full membership to be renewed<sup>4</sup>. In this respect, it must meet ENQA's requirements to undergo an external review at least once every five years. CTI thus decided to undergo an external review and asked NVAO<sup>5</sup> to act as coordinator.

In 2007, a first review was conducted with two objectives: to evaluate the way in which CTI fulfils its missions within the national framework and to assess its compliance with ESG. The external review report, sent to ENQA in December 2007, concluded that CTI did not fully comply with European requirements. In consequence, CTI decided to delay its application in order to take into account the recommendations made by the review panel.

In June 2008, Peter Williams, President of ENQA, informed CTI that a new application could be made before June 2009. This is the framework for the current external review.

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<sup>1</sup> An « *ingénieur diplômé* » is a qualified engineer with a Master's degree in engineering science, as recognized in the European Space of Higher Education.

<sup>2</sup> *Standards and Guidelines for Quality Assurance in the European Higher Education Area, Helsinki, 2005*. These references and guidelines were prepared by ENQA, in collaboration with EUA, EURASHE and ESIB, as requested by the Ministers responsible for higher education in the Bologna signatory states, who adopted them at the Bergen conference in May 2005.

<sup>3</sup> The European Association for Quality Assurance in Higher Education kept the acronym of its original network (European Network for Quality Assurance – ENQA).

<sup>4</sup> Membership Provisions are included in appendix 1 of ENQA's regulations (<http://www.enqa.eu/files/ENQA%20regulations%20version%20260908.pdf>).

<sup>5</sup> NVAO (Nederlands-Vlaamse Accreditatieorganisatie) is the accreditation agency for the Netherlands and the Flemish-speaking part of Belgium.

## 1.1 Terms of Reference for the Review

In initiating this process, CTI has several aims<sup>6</sup> :

- To strengthen its continuous process of improvement through the external review conducted by an international agency;
- To increase the level of stakeholder satisfaction, i.e. the schools of Engineering, the students and graduates, the companies that recruit them, society as a whole;
- To consolidate its position in relation to AERES, with a view to making the two agencies complementary;
- To obtain, with the renewal of its full ENQA membership, an international recognition whose strategic importance has increased with the development of new activities (joint evaluation of joint diplomas, participation in the ECA programme, accreditation of French training programmes abroad as well as in foreign institutions);
- To prepare its admission to the European Quality Assurance Register for Higher Education .

In its October 2007 report, the first external review had concluded that CTI completely fulfilled its national missions, but did not fully comply with ESG requirements. As a consequence, this second review focuses on how CTI practices comply with ESG, with a view to renewing its full ENQA membership.

The two external reviews took place at close intervals, approximately eighteen months apart. Consequently, in order to avoid unnecessary duplication and overload, the second review makes use of certain elements taken from the first and aims mainly at emphasizing recent actions taken by CTI.

The review panel organised by NVAO is composed of five members (the first three of whom were in the original team):

- Ludo Gelders, Professor at University Leuven (Belgium) ; President of the panel;
- Rolph Heusser, Director of OAQ (Switzerland), Board member of INQAAHE;
- Jean-Paul Vautrety, Telecommunications Engineer in Chief, Joint Manager, Hauterive Associés (France);
- François Laurin, Student at IEP Paris, former President of the National Conference of Vice-president Students (France);
- Marie-Odile Ottenwaelter, Associate Expert at CIEP (France), Board member of INQAAHE; Recording Secretary.

French was the language used throughout the review process, for the self-evaluation report and its associated documents, for the interviews conducted during the visit and for the external review report.

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<sup>6</sup> Cf. Appendix 1, Terms of reference for the review

## 1.2 The Review Process

The self-evaluation report was sent to the panel of experts on February, 6th 2009. It was drafted by the President of CTI, with numerous exchanges with CTI Board and special project managers. It was validated by the Board and approved by a vote of the whole Commission.

This 27-page document is quite comprehensive. It consists of:

- The specificities of CTI among quality assurance agencies in Europe;
- The main lessons learned from the 2007 external review, with a chart showing follow-ups on recommendations including the measures adopted in early 2008 and their level of implementation;
- The situation of CTI regarding ESG in 2009, with, for each standard, a statement of facts, a presentation of recent activities, and references to associated documents (provided on a USB flash-drive).

The evaluation visit took place from March 4th to March 6th 2009. The programme was jointly set up by NVAO and CTI, with the participation of the Recording Secretary. All in all, the panel of experts met 31 people, as shown in the table on page 6.

The external evaluation report, in its initial version, was sent on April, 10th 2009 to CTI, who then sent back its remarks on April, 15<sup>th</sup> 2009. The final version of the report was sent to CTI and NVAO on April, 28<sup>th</sup> 2009.

<b>PROGRAMME OF THE VISIT TO CTI</b>			
	<b>Time</b>	<b>Event</b>	<b>Participants (other than Panel members)</b>
<b>th 2009</b>	17:30 – 19:30	Preparatory meeting	Guy AELTERMAN (NVAO)
	20:00 – 22:00	Dinner with CTI Board members	Bernard REMAUD (President), Pierre COMPTE et Maurice PINKUS (Vice-presidents), Jacques BÉRANGER and Alain JENEVEAU (Board members), André MORA (General Delegate) ; Guy AELTERMAN (NVAO)
<b>March 5<sup>th</sup> March 4h 2009</b>	9:00 – 11:15	CTI	Bernard REMAUD (President), Pierre COMPTE (Vice-president), Jacques BÉRANGER et René-Paul MARTIN (Board members), André MORA (General Delegate) ; Florence DUFOUR (special project manager)
	11:30 – 12:30	CDEFI (Conference of the Directors of French Engineering Schools)	Gérard NOYEL (Vice-president), Michel MUDRY (General delegate)
	13:30 – 14:30	AERES (Evaluation Agency for Research and Higher Education)	Jean-François DHAINAUT (President)
	15:00 – 15:45	Technical ministries	Françoise d'EPENOUX (Higher education section for training, Ministry of Agriculture and Fisheries), Geneviève GUINARD (Head of the Graduate Schools Office, Ministry of Ecology, Sustainable Energy Development and Town and Country Planning)
	16:00 – 16:45	BNEI (National Board of Engineering Students)	Noémie AUBRY (General secretary), Pierre-Mathieu BOURLIER (Board member)
	17:00 – 17:45	CGE (Conference of Graduate Schools)	Hervé BIAUSSER (Vice-president), Pierre ALIPHAT (General delegate)
<b>March 6<sup>th</sup> 2009</b>	9:00 – 10:00	CTI	George BEAUME (CTI members), André COLSON , Laurent DECREUSEFOND and Michel TROQUET (experts), Jean LE BOUSSE and Alain MARUANI (members of working groups)
	10:15 – 11:00	Private schools	Michel CIAZYNSKI (Board member of the Federation of Graduate Schools of Engineers and Executives- FESIC), Brigitte ETEVE (General Delegate) et Nesim FINTZ (Vice-president, Union of Independent Graduate Schools – UGEI)
	11:15 – 12:00	CNISF (National Council of Engineers and Scientists in France)	Gérard DUWAT (French Observatory of Engineers), Pierre FLEISCHMANN (CTI Board member)
	14:00 – 15:00	Ministry for Higher Education and Research	Patrick HETZEL (General Director for Higher Education), Catherine MALINIE (Head-Clerk of the Office of Graduate Schools)
	15:30 – 16:30	Panel meeting	
	16:30 – 17:00	Final meeting with CTI	Bernard REMAUD (President), Pierre COMPTE (Vice-president), Jacques BÉRANGER and Geneviève INGLEBERT (Board members), Florence DUFOUR (special project manager)

## 2 ASSESSMENT

Given the self-evaluation report and the documents produced by CTI, and taking into account the information collected during the visit, the review Panel came to the following conclusions on how far CTI meets the ENQA membership criteria, themselves based on the European standards (ESG).

### 2.1 Activities

#### *ENQA Criterion 1- European References 3.1 and 3.3*

*The Agency undertakes external quality assurance activities (at institutional or programme level) on a regular basis. These may involve evaluation, review, audit, assessment, accreditation or other similar activities and should be part of the core functions of the Agency. In undertaking its activities, the Agency should take into account the presence and effectiveness of the external quality assurance processes described in Part 2 of the European Standards and Guidelines (ESG)*

#### *Analysis*

The main activity of CTI consists in the audit and accreditation of engineering programmes, in view of their official accreditation by the Ministry in charge of Higher Education, as well as other relevant ministries, if appropriate. This activity is ongoing: since 1996, accreditation is cyclical, with a maximum term of 6 years. CTI consequently deals with 160 cases per year, two-thirds of which are renewals.

Its principles, criteria and procedures are presented in the document called "References and Orientations" (R&O), which is available on its website. As a whole, CTI complies with European standards regarding external quality assurance:

- During audits, CTI verifies that engineering schools have initiated a genuine quality assurance approach.
- The aims and objectives of the audit and accreditation, as well as the procedure, are clearly defined in the R&O, which is regularly updated (the latest edition is dated February 2009). Engineering schools and the industry work jointly to design this document, through their representative members within CTI and through discussions held during the annual meeting to launching the regional accreditation campaigns, to which all institutions' management teams are invited.
- Decision criteria are stated in the R&O (C.IV and D.II.3).

- In order to contribute to the constant improvement of engineering programmes, CTI regularly revises and updates its policy, methods and criteria, relying on the expertise of its members and experience feedback after their audit visits, its national and international contacts, as well as the results to polls it initiates (cf. R&O, B.II.6 and B.III).
- For instance, CTI encourages graduate schools to adopt a “competence-based approach” (cf. R&O, B.III.4), inspired by methods used in the industrial sector, which has been transcribed in its standards and associated documents. Where appropriate, CTI adapts its procedures to specific situations, for instance by simplifying the application procedure for a new apprenticeship (block-or-day release) course in a specialisation which has already been accredited.
- The accreditation results are published on CTI’s website. From 2009 on, this publication is not only limited to the accreditation decision and to its length of validity, but also includes an analysis of strengths and weaknesses, as well as CTI recommendations and requirements, if any. Moreover, the list of institutions accredited to deliver the title of qualified engineer is published yearly in the « *Journal Officiel de la République française* » (“Official Journal of the French Republic”).
- The follow-up on recommendations is systematically carried out during the re-accreditation process. In approximately 15% of cases, when weaknesses require immediate action, CTI puts forth a certain number of requirements whose implementation should be addressed in an interim report (often half-way through the accreditation period).
- The accreditation is periodical, as seen above. The schedule of campaigns for accreditation renewals has been established until 2015 (cf. R&O, D.1.3).
- The annual conference is the occasion for CTI to point out lessons learned from the previous accreditation campaign to institutions’ management teams, and indeed to present a global view of the French training system for engineers. Moreover, in 2008 CTI took advantage of the annual survey conducted by CNISF to ask 50,000 engineers what skills they thought were necessary in their everyday practice. The 2008 conference and the survey results have been presented in issues 2 and 3 of CTI newsletter (“CTI Info”).

### Conclusion

The review panel concludes that CTI undertakes audit and accreditation activities on a regular basis and that its processes are based on principles, procedures and practices which meet European requirements in terms of external quality assurance.

**Fully compliant with ENQA criterion 1**



## 2.2 Status

### *ENQA Criterion 2 – European reference 3.2*

*The Agency should be formally recognised by competent public authorities in the European Higher Education Area as an Agency with responsibility for external quality assurance and should have an established legal basis. It should comply with any requirements of the legislative jurisdiction within which it operates.*

### *Analysis*

CTI was created by law in 1934, and its competences were then expanded by law in 1984 and by decree in 2001. Its composition and organization have been described in a decree issued in 1985. The complete set of laws and regulations regarding CTI is included in the French « *Code de l'Éducation* » (“Code of Education”).

By law, “the commission is consulted on all questions regarding the titles of qualified engineer”. To be authorized to deliver the title of qualified engineer, an institution has to be assessed and accredited by CTI:

- in the case of public institutions, CTI delivers a judgment (“avis”) on which the Ministry of Higher Education, and if appropriate other relevant ministries, base their decision to grant the accreditation;
- in the case of private institutions, CTI renders a final decision.

The creation of AERES in 2006<sup>7</sup>, without calling into question the existence and the missions of CTI, has introduced a new complexity: higher education institutions with engineering programmes must now be evaluated by two national bodies, each having its own reference standards, procedures and schedule. An initial solution, proposed by AERES in 2008, which consisted in turning CTI into a specialised subsection of AERES, was rejected. The two organizations consequently decided to coordinate their activities, taking into account their specific missions<sup>8</sup> and aiming at reducing the load imposed on education institutions.

A joint working group was set up in January 2009 and, according to both presidents, coordination progresses in a very satisfying manner.

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<sup>7</sup> AERES ensures that higher education and research institutions and bodies are evaluated on research, training and diplomas.

<sup>8</sup> The mission of CTI is to accredit syllabi in their institutional context, the mission of AERES is to evaluate. CTI’s brief concerns the diploma in engineering, AERES’ concerns the Master’s degree, the Doctorate and research; at present, both agencies work on the institutional evaluation.

## Conclusion

The review panel concludes that CTI has a legal status and is formally recognised by a competent European authority as an agency with responsibility for external quality assurance.

**Fully compliant with ENQA criterion 2**

## 2.3 Resources

### *ENQA Criterion 3 – European Reference 3.4*

*Agencies should have adequate and proportional resources, both human and financial, to enable them to organise and run their external quality assurance processes in an effective and efficient manner, with appropriate provision for the development of their processes and procedures.*

### *Analysis*

The previous external review had stressed the limitation of CTI's resources, which constituted its main weakness. Within 18 months, the situation has markedly improved.

The financial resources were diversified and increased:

- in October 2008, CTI adopted a new budget framework which no longer relies solely on ministerial funding, but also on the institutions' contribution; the schools unanimously accepted this in January 2009 during the general meeting of CDEFI (*Conférence des Directeurs des Ecoles Françaises d'Ingénieurs* – Conference of the Directors of French Engineering Schools). From now on, the institutions will pay an annual contribution of 6€ per graduate (180 K€ in 2009) and will support the logistic cost of on-site visits (50 K€);
- the grant from the Ministry of Higher Education doubled in 2009 (from 70 to 140 K€) and, during the visit, the Director of Higher Education gave his assurances that the latter figure would be maintained in the coming years;
- the income generated by undertaking programme accreditations abroad, which is estimated at 30 K€ in 2009, is expected to increase.

Human resources are about to be developed:

- CTI members voted to maintain their status of unpaid volunteers (for themselves and for the auditors), thus confirming a mode of operation which differs from that of most quality assurance agencies, but also contributes to form a united competent community;
- the temporary assignments of members and delegates, for the management and the administration, represent the equivalent of 6 full time positions;
- three recruitments are under way (2 of which are full time), for the position of General Delegate, assistant, and IT officer; a fourth position is planned to be created in 2010 (secretary). The jobs will be subject to project contracts of 3 years. A recruitment committee was formed, consisting of both CTI and external members.

### *Conclusion*

The review panel concludes that CTI has already significantly increased its financial resources and is about to get specific and adequate human resources –

***Substantially compliant with ENQA criteria 3***

## **2.4 Mission Statement**

### *ENQA Criterion 4 – European Reference 3.5*

*The agency should have clear and explicit goals and objectives for its work, contained in a publicly available statement.*

### *Analysis*

The missions of CTI are defined by two laws (promulgated in 1934 and 1984, and reiterated in the French « *Code de l'Éducation* » (“Code of Education”) and related decrees.

The previous review report had recorded two weaknesses: first of all, CTI’s mission statement was not sufficiently updated (it did not include the broader goals of CTI, such as international networking and quality improvement); secondly, the lack of a strategic plan.

These shortcomings have been corrected. During a plenary session in January 2009, CTI adopted two documents which are published in the 2009 edition of R&O (B.II.2):

- a revised mission statement, in which its goals are more clearly stated, particularly in the new context of the European Higher Education Area;
- Strategic directions, grouped along 5 main lines.

### *Conclusion*

The review panel concludes CTI has clear and explicit goals and objectives, publicly available in its methodological documents and on its website.

***Fully compliant with ENQA criterion 4***

## **2.5 Independence**

### *ENQA Criterion 5 – European Reference 3.6*

*The Agency should be independent to the extent both that it has autonomous responsibility for its operations and that the conclusions and recommendations*

*made in its reports cannot be influenced by third parties such as higher education institutions, ministries or other stakeholders.*

### *Analysis*

CTI has autonomous operating responsibility:

- a joint commission, it is composed of 32 members, half of whom come from the academic sector, the other half from the professional world. Nominated by their respective organizations and officially appointed by order of the Minister of Higher Education, these members hold a term of 4 years, renewable once, and from which they cannot be dismissed except in case of a change in their situation or at their request;
- it is in charge of its internal organization. Members elect, in plenary session, the President and two Vice-Presidents (for renewable 2 year terms) and, by voting on proposals from the President, they nominate the Board members, project managers, and external experts;
- it recently gained further practical independence from the Ministry of Higher Education, by diversifying financial sources and by moving into its own premises (rented from *Groupement des Industries Metallurgiques*);
- it defines its own processes, criteria, and procedures. The documents are prepared by working groups, passed in plenary session, and published. For example, CTI introduced criteria concerning the required level of English, internships in businesses, the length of the apprenticeships;
- to avoid any conflicts of interest, it asks experts to make an individual statement and to subscribe to a code of ethics.

For announcing accreditation decisions, new terms were instituted following the previous external review, which had pointed out certain restraints in this area that were affecting the independence of CTI. From now on, CTI announces its judgments (motivation of its decision, accreditation decision, proposed term of accreditation, recommendations) directly to the concerned institutions and their relevant ministry, who then take the final accreditation decision.

### *Conclusion*

The review panel concludes that CTI is an independent agency, has autonomous responsibility for its activities and is in complete charge of the accreditation process from beginning to end.

***Fully compliant with ENQA criteria 5***

## 2.6 External Quality Assurance Criteria and Processes

### *ENQA Criterion 6 – European Reference 3.7*

*The processes, criteria and procedures used by the agency should be predefined and publicly available. These processes will normally be expected to include:*

- *a self-assessment or equivalent procedure by the subject of the quality assurance process;*
- *an external assessment by a group of experts, including, as appropriate, (a) student member(s), and site visits as decided by the Agency;*
- *publication of a report, including any decisions, recommendations or other formal outcomes;*
- *a follow-up procedure to review actions taken by the subject of the quality assurance process in the light of any recommendations contained in the report.*

### *Analysis*

The processes, criteria and procedures used by CTI are predefined and published on its website (cf. p. 7 of this report). In addition, the institutions know precisely, more than a year in advance, the schedule for their evaluations, as well as the name of the head of the mission.

To encourage the institutions to set up a regular self-evaluation process, CTI published in 2006 a "Permanent Guide to Self-Evaluation," which highlights six areas of investigation:

- Goals and Organization (institution/school/ programme)
- Interactions and partnerships (institution/school/ programme)
- Recruitment of engineering students
- Training of engineering students
- Employment of graduates
- Quality-based approach and continuous improvement

For carrying out the audit, CTI appoints a group of experts, composed of 3 to 6 members depending on the size of the evaluated institution. This group always includes at least two members of CTI (one academic and one professional) and a student (after two years of experimentation, this process was systemized in 2009 by an agreement between CTI and BNEI<sup>9</sup>, and the students confirm that they are treated on par with the other experts). Additional experts can reinforce the auditing team, which, according to the representatives of the institutions, allows for a more complete coverage of the specializations (a list of 21 experts, often former members of CTI, is provided on its web site).

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<sup>9</sup> The National Office of Engineering Students is a national association which federates the engineering school associations. The student experts are nominated and trained by BNEI. The members of BNEI also participate in each of CTI's working groups.

After the on-site visit, the experts prepare the audit report, which is then sent to the evaluated institution in order to allow for the correction of factual errors. The director can, if he so wishes, make use of a contradictory procedure by writing a memo which is attached to the report for the accreditation phase. The audit report, to which CTI is not bound, is not published.

The accreditation decision, which comes under CTI's responsibility, is passed by the Commission during a plenary session, based on the institution's record and the audit report. After a debate, the president puts into vote a proposal concerning the term of accreditation, as well as recommendations and sometimes requirements. After validation in the next plenary session, the judgment is written by CTI (motivation of its decision, accreditation decision, term of accreditation, recommendations) and is sent to the institution and to the concerned ministry. This judgment is published within three weeks on CTI's website and is released by AEF (*Agence Education Emploi Formation* – Education Employment Training Agency).

The follow-up given to the recommendations, as stated on page 8, is carried out in a systematic manner during the next evaluation. Furthermore, CTI notes that recommendations that were often made in the 1990s have almost entirely disappeared from recent evaluations, a fact which shows that they were heeded by the institutions (cf. self-evaluation report, p. 18).

### *Conclusion*

The review panel concludes that CTI uses processes, criteria and procedures that are in compliance with the European standards concerning external quality assurance.

***Fully compliant with ENQA criterion 6***

## **2.7 Accountability Procedures**

### *ENQA Criterion 7 – European Reference 3.8*

*The Agency should have procedures in place for its own accountability.*

### *Analysis*

Since the last review, CTI has set out to correct a weakness that had been pointed out by the experts – a lack of a valid internal quality assurance system. In order to implement the policy that it had already developed in this area, CTI formed a working group, which included two special project managers, in order to create the final version of the system: based on an analysis and a formalisation already in existence, it indicates the potential advancement tracks and the necessary means and resources for its implementation. The mapping of the system, based on the 11 existing procedures, is available on CTI's website.

Instead of creating a new database, CTI decided to rely on that of CDEFI, with which it shares data concerning the institutions, while at the same time using its

own module. The test phase should end soon and it is expected to come into use before the summer.

For lack of a complete system, CTI has already set up various internal quality insurance processes, notably several management loops (consultation, analysis, decision making), in order to collect the view point of:

- the schools, by means of a questionnaire sent to all of the audited schools, at the end of each accreditation campaign (which, for example, leads to the transformation of the annual CTI meeting, or to the improvement of the accreditation schedule);
- the students, who at the end of each audit visit, write a report on the practice ;
- all of the stakeholders, through working groups and an annual conference;
- more recently, the graduates, thanks to CNISF's annual survey (cf. p. 8).

To avoid all conflicts of interest, CTI asks its experts to make an individual statement and to subscribe to a code of ethics (as seen on page 12). For their part, the BNEI students have internally adopted a charter of experts.

Regarding appeals, we distinguish two situations:

- private institutions can lodge an appeal against CTI decision before the Supreme Council of Education, in accordance with the French Code of Education;
- Public institutions, to whom CTI gives its recommendations, can lodge an appeal against the enabling decision of the minister or ministers concerned, in accordance with French public law.

CTI is also the subject of regular external evaluations, whose results are then published:

- international evaluation coordinated by NVAO in 2007 ;
- the evaluation, also international, completed in 2008 for the renewal of its EUR ACE accreditation, which was extended until 2013;
- the evaluations by international experts who regularly participate in accreditation processes and whose reports have led to the signing of agreements on the mutual recognition of results with NVAO and OAQ (and with ANECA in the near future).

### *Conclusion*

The panel of experts concludes that CTI has set up procedures that allow it to be accountable for its activity and that, in terms of internal quality assurance, it has defined a policy, already has actual procedures, and is applying itself to developing a real system – which puts it in full compliance with criterion 7 of ENQA.

***Fully compliant with ENQA criterion 7***

## 2.8 Miscellaneous

*The Agency pays careful attention to its declared principles at all times, and ensures both that its requirements and processes are managed professionally and that its judgements and decisions are reached in a consistent manner, even if the judgments are formed by different groups*

*If the Agency makes formal quality assurance decisions, or conclusions which have formal consequences, it should have an appeals procedure. The nature and form of the appeals procedure should be determined in the light of the constitution of the agency.*

*The Agency is willing to contribute actively to the aims of ENQA.*

### *Analysis*

The systematic involvement in the audits of two members of CTI and the fact that the accreditation decisions are made by CTI itself (cf. 2.6, pp.13-14) guarantee the coherence of the decisions made.

The appeal procedure has been dealt with in the above paragraphs (cf. 2.7, pp. 15-16).

CTI has regularly participated in activities promoting European cooperation regarding quality assurance:

Apart from the activities linked to its ENQA membership, CTI proposes conferences during international seminars on Quality (the most recent being IQA, Barcelona April 14<sup>th</sup>-15<sup>th</sup> 2008, and EQA Forum, Rome November 16<sup>th</sup> 2007). It is a founding member of ECA, participates in its activities and signs bilateral agreements. It contributes to European programmes such as EUR ACE and LEPAC (*Tempus*) with Lebanon.

### *Conclusion*

The panel of experts concludes that CTI guarantees the professionalism of its methods and the coherence of its decisions, that CTI has an appeal procedure, and that it actively subscribes to the aims of ENQA - which puts it in full compliance with criterion 8 of ENQA.

***Fully compliant***



### 3 CONCLUSIONS AND RECOMMENDATIONS

Since the previous external review, CTI has taken into great consideration the recommendations expressed by the review panel. In all of the areas where weaknesses had been pointed out, CTI has conducted a study, made decisions and started their implementation.

#### 3.1 Conclusions

The main strengths of CTI, underlined by the interviews held during the panel's visit, are:

- The very strong recognition of the agency, the acceptance of its role and its methods, not only by the institutions that unanimously claim it, but also by all the stakeholders, in particular the students and the professionals. This dimension was already existent during the previous review; however, in the meantime, the support from the Ministry of Higher Education has been distinctly reinforced, as well as AERES' willingness for a partnership.
- The motivation of the Commission and the exceptional commitment of its members (particularly from the Board, but also from the working groups), that have allowed it to correct its weaknesses remarkably, in a short period of time. Among the main areas that were improved are: the adoption of a strategic plan, the internationalization, the opening up to students, the internal quality assurance, the resources, the publication of results, and the shortening of delays in the audit and accreditation processes.

#### 3.2 Recommendations

In order to pursue and strengthen this progress, the review panel recommends that CTI remain vigilant in the following areas:

- The internal quality assurance system, which is based on a very comprehensive mapping, but might prove challenging to manage and use;
- The financial resources, which CTI should continue to try to diversify in order to protect its independence;
- The human resources, by clearly defining the respective roles of the CTI members and staff members that are being recruited and by allowing them to access continuous training, in such a way that the permanent secretariat can provide efficient logistical support (notably for the computer management and the filing of documents) in order to assure the daily and continuous operation;

- The coordination with AERES, in terms of process and schedule;
- The integration of students, not only in audits and in working groups, but also in the Commission itself, which does not depend on CTI, but on a wider national debate that the Commission could initiate;
- International openness and visibility, to be reinforced by more frequent integration of foreign experts and reviewers;
- The publication of results, both at the level of the accredited institutions, with the aim of making judgments more accessible to students, and at the level of a national synthesis, which CTI could produce periodically.

The review panel concludes that CTI is, in its principles, its processes and its activities, compliant with ENQA criteria and European standards, as shown in the following summary table.

### 3.1 Compliance with ENQA membership criteria: summary table of the review panel’s conclusions

ENQA Criteria	ESG	Conclusions of the review panel	
r1	3.1 3.3	CTI has audit and accreditation activities on a regular basis and its methods are based on principles, methods and usage which meet European requirements in terms of external quality assurance	Fully compliant
2	3.2	CTI has a legal status and is formally recognised by a competent European authority as being in charge of external quality assurance	Fully compliant
3	3.4	CTI significantly increased its financial resources and is on its way to providing itself with specific human resources adapted to its needs	Substantially compliant
4	3.5	the goals and objectives of CTI are expressed in a clear and explicit manner and they are accessible to the public in its methodological documents and on its website	Fully compliant
5	3.6	CTI is an independent agency, has autonomous responsibility for its activities and is in complete charge of the accreditation process from beginning to end	Fully compliant
6	3.7	CTI uses methods, criteria and procedures that are in compliance with the European references concerning external quality assurance	Fully compliant
7	3.8	CTI has set up procedures that allow it to be accountable for its activity and, in terms of internal quality assurance, it has defined a policy, already has actual procedures, and is applying itself to developing a real system	Fully compliant
8		CTI guarantees the professionalism of its methods and the coherence of its decisions, has an appeal procedure, and actively subscribes to the aims of ENQA	Fully compliant

## 4 Appendix: Terms of Reference for the Review



December 2009

EXTERNAL REVIEW for ENQA  
Approved by the CTI Board, October 7<sup>th</sup>, 2008

### ***Terms of reference for the review***

#### *1.1.1 - Preliminaries*

CTI is full member of ENQA since 2005. The membership regulations of ENQA require that CTI must undergo an external review at least once every 5 years. Among, the possibilities offered by ENQA, CTI has chosen the organisation of a review coordinated by an international body, NVAO (Accreditation Organisation of the Netherlands and Flanders).

A first review has been organized during the year 2007. The objectives are twofold:

- To assess the fulfilments of its missions in the national context
- To verify its compliance with the European Standards and Guidelines.

The review report was sent to ENQA on December 6, 2007. Initially scheduled in March 2008, the decision of the ENQA Board was postponed to June 2008 in order to gather supplementary information from the review committee president, Ludo Gelders. This information concerned the ESG items (part 3) with which the CTI was considered as not totally compliant.

The CTI decided to work to take fully into consideration the recommendations done by the audit committee and *to postpone its application*. In June 2008, Peter Williams, president of ENQA, informed CTI that it could present a new application before June 2009.

The present terms of reference concern this new application.

### *1.1.2 - Motivations for the review.*

The CTI is engaged in a process of continuing improvement of its procedures and activities. An external review by an international body is one of the tools that CTI uses for its quality management.

CTI expects to improve the satisfaction level of its stakeholders: namely, the Engineering education institutions that it accredits, the students who get engineering degrees in these institutions, the companies that recruit them, and the society as a whole.

In France, the recently created agency AERES has in charge the global evaluation of the higher education and research system. For a long time (1934), CTI has been given by law, the mission to regulate the professional engineer degree ("titre d'ingénieur", master degree which can only be delivered by institutions accredited by CTI).

Then the two bodies (AERES and CTI) have different missions and are complementary; they have to define their ways of collaboration to increase their mutual awareness and lower the burden on the institutions.

In this context, keeping its full membership of ENQA has a strategic importance for CTI. It is a strong incentive to improve its global quality and is an outstanding level of recognition for the higher education community and authorities. It is also very important for its increasing activities at large: joint evaluation of joint diploma, participation to the ECA program (European Consortium for Accreditation), accreditation of off shore implementations of French engineering schools and of other foreign institutions.

At least, CTI has taken full notice that the renewed ENQA membership is the doorway to the European Quality Assurance Register (EQAR).

### *1.1.3 – Review objectives and procedures*

The present external evaluation procedure will take stock of the former one and of its outputs:

- The CTI self-evaluation report dated June 2007( "Self evaluation report – 2007" in the following)
- The external review report dated October 2007 ("External review report – 2007" in the following)

Both reports will be annexed to the new application for ENQA.

The conclusions of the "External review report – 2007" were:

- The CTI completely fulfils its missions in the national context
- The CTI is not fully compliant with the ESG (depending on the standards, its compliance ranges from "fully compliant" for 4 ESG's, to "substantially compliant" and "partially compliant" for the others).

<p><i>The second external review will then concentrate on the compliance of CTI practices and activities with the ESG in view of its ENQA membership renewal.</i></p>
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### The self-evaluation report

The self-evaluation report-2009 will concentrate on the compliance of CTI standards and procedures with the ESG and the ENQA standards.

*Part I – CTI Reference Document.* A self-evaluation report usually includes a presentation of the institution, a description of the national higher education system and of the institution activities. For this purpose, we shall use the new CTI Reference Document ("*Références et orientations*" - *R&O 2009*).

Every two years, CTI updates its Reference Document to take into account evolutions of the higher education environment and to incorporate results of its working groups. The 2008-2009 version is completely renewed and rewritten. It comprises four main parts, respectively i) the professional and academic aspects of the "titre d'ingénieur" in the national and international context, ii) the missions, organization and activities of CTI, iii) the standards of the engineering programs accreditation, and iiiii) the procedures of the engineering programs accreditation.

*Part II – Implementing the ESG by CTI.* This section will include all the actions taken by CTI to take into account the recommendations of the "External review report – 2007", but CTI has worked to implement an internal quality assurance, which covers all the ESG's. Then in this section, we consider all standards, even those with which CTI was already considered as fully compliant.

From a SWOT (Strengths, Weaknesses, Opportunities and Threats) analysis, the CTI compliance to each ESG will be discussed in 5 sub-sections:

- « Facts » : presentation of the orientations and activities of CTI in the light of the ESG's
- An analysis of « weaknesses and opportunities »
- « Recent actions taken » : presentation of the actions that CTI has undergone, in particular from the recommendations of the "External review report – 2007"
- « Near future actions »: since CTI has a plan of continuous improvement, and since the delay was short between the last external review and the present one, we present the actions planned within the 2 next years.
- « list of proofs of evidence » : lists of the all documents which will allow the review team to assess the contents of the preceding sub-sections.

### The review team

The scope of this review is more restricted than the former; its objective is mainly to assess the follow up by CTI of the preceding recommendations. The review team will then comprise a core of 3 members of the preceding one, with 2 new members:

- Prof Ludo Gelders, Professor at Leuven University, chairman of the review team
- Marie-Odile Ottenwaelter, Centre international d'études pédagogiques, secretary of the review team

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- Rolf Heusser, President of OAQ
- Jean-Paul Vautrey, ingénieur, Head of a consulting company
- François Laurin, Student, member of the Bologna Follow Up Group

The review will still be coordinated by NVAO.

### Time table

- July 2008 – Meeting between G.Aelterman (NVAO) and RP Martin (CTI) in Brussels to fix the organization of the review.
- 15 October 2008 - Formal approval by CTI of the terms of reference for its external review. The document is forwarded to the ENQA Board for approval.
- !) December 2008- Letter to inform ENQA on the global procedure of CTI membership renewal;
- 15 January 2009 – Signature of the contract with NVAO
- 4 February 2009 – Approval by CTI of the self-evaluation report-2008. The report is forwarded to the members of the review team, and for information to ENQA.
- End of February- beginning of March 2009 – Visit of the review team in France
- 20 April 2009 – Approval by the review team of its report. The external review report is forwarded to ENQA for decision.

Bernard Remaud, president

