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Accreditation of engineering programmes: European perspectives and challenges in a global context

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The EUR-ACE Socrates-Tempus project (September 2004/March 2006) proposed a decentralized European system for accreditation of engineering programmes in the "Bologna process" area (European Higher Education Area) at the First and Second Cycle (FC and SC) level (but including "Integrated Programmes", i.e. programmes leading directly to a SC degree). In this system, "national" engineering accreditation agencies would continue to award their accreditation certificates and give them an added European value by the EUR-ACE quality label, recognized by all participating agencies: this rather novel way of international accreditation will create a consistent accreditation system of engineering education at the continental scale.

A non-profit Association (ENAEE) has been established for support and supervision of the EUR-ACE system, and is now working, thanks also to two new EC-supported projects, in order to make the EUR-ACE proposals operational and award the EUR-ACE labels.

The background, present status and perspectives of the EUR-ACE system is presented in detail in this paper.

Keywords: Accreditation; Quality assurance; Trans-national recognition; Engineering qualifications

1. Introduction

The need for "accreditation" of higher education (HE) programmes and its relation with "quality assurance" (QA) are at present a subject of many discussions and activities in Europe.

Accreditation of an engineering educational programme has been defined (EUR-ACE 2005a, 2005c) as "the primary result of a process used to ensure the suitability of that programme as the entry route to the engineering profession". This definition, accepted in the present paper, on the one side underlines the concept of "programme accreditation" vs. the "institutional accreditation" preferred in some academic circles, and on the other stresses the "aim" of "accreditation": the difference with QA, which should be regarded as a prerequisite of accreditation, thus appears more clearly than in other definitions (e.g. Council for Higher Education Accreditation 2006); moreover, it is also evident that "accreditation" cannot be a process closed within academic circles, but needs the participation of other stakeholders.

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An overview of the current situation, a proposed new approach and some open problems are presented here. In order to make this paper exhaustive and self-contained, some repetitions with previously published material have been unavoidable.

2. European higher education: the need for transparency and consistency

While the variety of approaches and degrees within European HE is to be considered a great asset of the European multi-cultural background, in practice it may become a liability and a hindrance to mobility and trans-national recognition of professionals, within and outside Europe (Augusti 2005, 2006). This is one of the basic motivations of the so-called "Bologna Process", started in 1998/99 with the Sorbonne and Bologna Declarations and aimed at setting up throughout Europe "a system of easily readable and comparable degrees" and establishing by 2010 the "European Higher Education Area" (EHEA) (European Ministers of Education 1999).

The "Bologna Process", originated as an intergovernmental initiative of National Ministers, is steadily being implemented: it now involves 45 countries, many more than the original four of the Sorbonne declaration, and even more than the present member and "candidate member" States of the European Union. Biannual Conferences of the National Education Ministers (Prague 2001, Berlin 2003, Bergen 2005, London 2007) regularly take place to verify the progress and update the objectives. The European Union has become an essential promoter of the process, through Commission, Parliament and Council. As summarized in '*From Berlin to Bergen: the EU Contribution*' (European Commission 2004), from an EU perspective the Bologna process fits into a broader agenda defined in Lisbon in March 2000, when EU Heads of State and Government decided on an objective and a strategy to make Europe by 2010 "the most competitive and dynamic knowledge-based economy in the world, capable of sustainable economic growth with more and better jobs and greater social cohesion". In Barcelona, in March 2002, they added that the European education and training systems should become a "world quality reference". EU Education Ministers have translated this far-reaching ambition into a series of shared objectives for the different education and training systems in Europe. Progress in reaching these objectives will be evaluated against "Reference Levels of European Average Performance" or "European Benchmarks".

Within this context, the 2005 Bergen Conference of Education Ministers approved two documents that had been prepared following the indications of the 2003 Berlin Conference: a European framework for defining the basic "qualifications" attached to each degree (Bologna Working Group on Qualifications Frameworks 2005) and a set of "Standards and Guidelines" for Quality Assurance (European Association for Quality Assurance in Higher Education 2005). Thus, thanks to "readability" of degrees, comparability of qualifications and shared QA standards, the "Bologna Process" should lead to a *de facto* recognition of HE degrees for academic purposes. (It remains in any case to be seen how long it will take to implement these indications at the national level!)

On the other hand, the strict relation between recognition for academic and professional purposes had been underlined by the European Commission since quite a few years (European Commission 1994, 1996): therefore, procedures for trans-national accreditation of educational programmes should have been developed in parallel to procedures for academic recognition. However, much smaller progress has been achieved in this respect.

Recognition of professional qualifications as such is the object of ad-hoc "European Directives": in particular, the engineering profession has been covered from 1989 to 2005 by the "General Directive" 89/48/EEC, that in principle assured to professionals with a HE

background of at least 3 years, the possibility of keeping their professional qualification when moving from one European Community country to the other. The difficulties in the application of this Directive, and the evolution of the legislative and social context, have suggested the elaboration of a new "Directive on the recognition of professional qualifications", that after a few years of discussion was finally approved and published in 2005 (Directive 2005/36/EC) and is at present being implemented.

In this context, "quality assurance" and "accreditation" have rapidly become catchwords in HE, sometimes – as already hinted – with some confusion between each other. In any case, no Directive could tackle or solve the problem of "accreditation" of educational programmes, in engineering and in other fields, while the different practices for professional recognition of qualifications in the European countries (cf. section 3 below) create confusion and obstacles to the international recognition of degrees.

Thus, trans-national "accreditation" of education is increasingly needed especially in fields with strong international characteristics like engineering, for several reasons: the increased physical and virtual mobility, the growth of new degrees (whose objectives are not always understandable) and of new Educational Institutions (sometimes of unproved quality). This need is now strongly felt throughout Europe: as the writer has repeatedly stated (Augusti 2006b,c), it is urgent to fulfil it.

3. Present situation and historical background

At present, procedures for accrediting engineering programmes are very different from one European country to another. Three typical examples, all relevant to EU "founder" countries, are often quoted:

- in Great Britain and Ireland, accreditation standards and procedures are the responsibility of Professional Institutes (often endowed of a "Charter"),[†] and Higher Education Institutions are only involved through the assessment of education programmes, although sometimes they have to adapt the curricula in order that their programmes be accredited;
- in France, since as early as 1934, "habilitation" is granted to engineering programmes and relevant HE Institutions (often "Grandes Ecoles") by the "Commission des Titres d'Ingénieur" (CTI), in which the academic world, the profession and the employers are represented on a parity basis;
- in Italy, like in some other "continental" countries, it is traditionally maintained that the conformity of an academic programme to rules set by the Ministry of Education (or another national authority) makes that programme automatically accredited (but fortunately this approach appears on the verge of a radical evolution).

Several other countries still do not have yet any formal accreditation system, or do not have a specific system for engineering,

In conclusion, no shared European accreditation or recognition system exists: on the contrary, quoting again from European Commission (2004), while throughout the world several recognition agreements are active, in Europe "most evaluation and accreditation is [still] carried out on a national or regional basis".

Indeed, an analogous variety of historical developments is behind the quoted differences: speaking very roughly, it can be said that in "Continental" Europe (and in France in particular)

[†]Since 1981, the accreditation procedures of the Engineering Institutions are coordinated by the Engineering Council UK.

engineering grew with the essential contribution of universities and other centres of advanced learning, while in the Anglo-Saxon world it developed directly from the "shop floor".

In the first case, modern engineering still maintains a strong theoretical background, and teaching of engineering starts from general principles followed by applications: this is the approach still followed by the French "Grandes Ecoles" and by the traditional German "Technische Hochschulen" (now "Technische Universitäten"). In these schools, there has always been a strong link between research and teaching: indeed, the great German philosopher and educator Karl Wilhelm von Humboldt maintained that an institution without research cannot be defined as a university.

On the contrary, in the Anglo-Saxon world practice comes first, theories afterwards. Indeed, the first learned societies in UK engineering were the professional institutions. This attitude is still reflected in much of the teaching approach: examples and applications first, general principles and theories are taught later.

In the twentieth century, the two approaches have met and interacted with each other. Of course, the US "melting pot" is the first and foremost example: there, "Teaching Universities" have been conceived and grown besides world-renowned "Research Universities".

Within Europe, in the post WWII years, Germany became the obvious meeting point: "Fachhochschulen", essentially based on the Anglo-Saxon approach, were born and proliferated, *vis-à-vis* the "Technische Hochschulen". Consequently, Germany at present participates of both teaching systems, which reflects in the accreditation structure as well: it is Humboldt's home country, but also the first European country where "Teaching Universities" were *de facto* established (indeed, the official English translation of "Fachhochschule" is now "University of Applied Sciences").

Is it then possible to establish the coherent European system envisaged by the EHEA without renouncing to the great asset of the European multi-cultural background, i.e. the variety of approaches and degrees within European Higher Education?

This dilemma is inherent in the "Bologna process": the "Tuning" problem is felt in all the HE systems of Europe: engineering is no exception (Maffioli and Augusti 2003). In my view, a positive answer can only come gradually from natural evolution of the national systems.

But, although it may appear surprising, engineers of different backgrounds never appeared to have many difficulties in working together and forming teams, at least less than other professionals. A significant contribution in this direction has certainly been given by the strict contacts and exchanges of experiences that have always existed within the European engineering world: not to go too much back in the history, let me recall that the European Society for Engineering Education (SEFI) was founded in 1973 and every year since then has held a well-attended conference, published a renowned research journal (*European Journal of Engineering Education*), and developed several activities. It has been always recognized that all different types of Engineering Schools that exist in Europe (from "Fachhochschulen" to "Grandes Ecoles" and "Technische Universitäten"), and indeed represent the panorama of European engineering education, could and should be present in SEFI: this has been the source of many lively debates and sometimes of contrasts, but never a hindrance to SEFI's development.

4. First steps and difficulties for accrediting engineering education on the European scale

Nevertheless, there is no doubt that in a global job market, notwithstanding the prestige of the national educational systems and of (some of) the academic titles, the lack of an accreditation

system recognized on the continental scale puts the European engineer in an objectively weak position.

A first step towards filling this lack was moved in September 2000, when five among the main actors of engineering accreditation in Europe[†] plus the EU Thematic Network E4 (Enhancing Engineering Education in Europe) recognized that "in a discipline which must change constantly to satisfy the demands of our technology-based society, the diversity of engineering degree programmes within Europe is a source of great strength. Nevertheless, as professional engineers become more mobile, society seeks greater assurance of the quality and relevance of provision of engineering programmes: hence, some form of 'accreditation' becomes a must." (ESOEPE nd).

They therefore signed an agreement "intended to build confidence in systems of accreditation of engineering degree programmes within Europe", however, "not intended to harmonise engineering programmes nor accreditation procedures, but simply to assist national agencies and other bodies in planning and developing such systems. It would also facilitate systematic exchange of know-how in accreditation and permanent monitoring of the educational requirements in engineering formation."

The prudence of these statements of 2000 appears in strong contrast with the already quoted developments of the Bologna process just few years later. In 2000, only an "standing observatory" could be established, with the purpose of "build[ing] confidence in systems of accreditation of engineering degree programmes within Europe", and facilitating "exchange of information", "voluntary agreements on accreditation of engineering educational programmes and recognition of engineering qualifications" and "the development of standards on the competence requirements of graduate engineers". In 2004, the European Commission financed the EUR-ACE (EURopean Accredited Engineer) project, aimed at "propos[ing] a framework for setting up a European system for accreditation of Engineering Education".

Within EUR-ACE it was clear from the very beginning that the variety in engineering education and professional organization cannot be disregarded by any proposal aimed at a European accreditation system of engineering education in the general framework of the "Bologna Process". Nor it can be ignored that many of the oldest and most renowned continental engineering schools (including "Grandes Ecoles" and "Technische Universitäten") find great difficulties in adopting the basic model of the "Bologna Process" (i.e. the "two-tier" system of a "first cycle" (FC) degree and a "second cycle" (SC) degree in series), especially in the schematic way in which it has been implemented in some countries (the "3 + 2" scheme). Some schools are altogether against the concept of degrees "in series" and maintain that a university engineering degree cannot be obtained in 3 years. This is still one of the most controversial points in the European engineering academic community (and a great merit of SEFI has been to be open to both sides), but anyway it cannot be ignored that a great part of the higher engineering education in Europe is still based on a "long" cycle degree (5 nominal years). Although in most, if not all, European countries there are now two types (or "levels") of Engineering degrees, they often are "in parallel", rather than "in series" (Maffioli and Augusti 2003).

Thus EUR-ACE recognized that, as always in the process of building up the European Union, the establishment of an engineering accreditation system must start from existing realities: in this case, from the existing national procedures summarized in section 3, that originate from actual legal and cultural differences and should not be "substituted" or "homogenized", but made compatible and integrated. The approach and the accreditation system proposed by

[†]Engineering Council UK, Commission des Titres d' Ingénieur (FR), Ordem dos Engenheiros (PT), Collegio [now Conferenza] dei Presidi di Ingegneria (IT), A.S.I.I. [now A.S.I.I.N.] (DE).

EUR-ACE are described in the section 5 (and anticipated in previous papers (Augusti 2005, 2006a,b, McGrath 2006)).

Accrediting bodies from eight European countries (UK, France, Germany, Ireland, Italy, Portugal, Romania and Russia) and European-wide networks participated in the EUR-ACE project. All documents were widely circulated in draft versions, discussed among relevant stakeholders, revised several times, and finally published (EUR-ACE 2005a,b,c).

5. The EUR-ACE framework standards

The EUR-ACE project first compared existing standards for accreditation of engineering programmes, finding striking similarities behind different façades, then elaborated its "Framework Standards" (EUR-ACE 2005a,c). As most of the more recent accreditation standards, these are outcome-based: i.e. the learning outcomes to be reached are stated, but it is not indicated how they should be achieved.

Indeed, a comparison of the EUR-ACE standards and other recent accreditation standards throughout the world (see e.g. Patil and Codner in press), shows rather little difference in the contents: they are all outcome-based, and all lists of the programme outcomes are very similar to the EUR-ACE list (EUR-ACE 2005a):

- Knowledge and Understanding;
- Engineering Analysis;
- Engineering Design;
- Investigations;
- Engineering Practice;
- Transferable Skills.

The specific peculiarity of the EUR-ACE Framework Standards is the provision for accreditation at the FC and SC level, consistent with the "Bologna Process" approach. Thus, while other standards specify only one set of outcomes to be met, for each outcome the EUR-ACE Standards differentiate between the requirements for FC and SC graduates. For example, the requirements for "Knowledge and Understanding" are first defined in general terms: "The underpinning knowledge and understanding of science, mathematics and engineering fundamentals are essential to satisfying the other programme outcomes. Graduates should demonstrate their knowledge and understanding of their engineering specialisation, and also of the wider context of engineering." It is then specified that: "First Cycle graduates should have:

- knowledge and understanding of the scientific and mathematical principles underlying their branch of engineering;
- a systematic understanding of the key aspects and concepts of their branch of engineering;
- coherent knowledge of their branch of engineering including some at the forefront of the branch;
- awareness of the wider multidisciplinary context of engineering.

Second Cycle graduates should have:

- an in-depth knowledge and understanding of the principles of their branch of engineering;
- a critical awareness of the forefront of their branch."

In the EUR-ACE Standards documents there are also "Guidelines" and "Procedures for Programme Assessment and Programme Accreditation" (that include the assessment, among

other requirements, of the human resources and facilities available for the programme) and finally a "Template for Publication of Accredited Programmes".

The EUR-ACE Standards have been defined (not by chance) "Framework Standards": in fact, as stated in the Introduction to EUR-ACE (2005c), they intend only to "provide a common reference framework which will add a European dimension to existing national accreditation procedures" by the award of a common EUR-ACE quality label.

Note that, in addition to the distinction between FC and SC degrees, in a few European countries the "accreditation" of engineering programmes refers to a "profile",[†] in some other countries it distinguishes between engineering branches (disciplines), and in some other there is no differentiation at all.

Therefore, in order to be as flexible and comprehensive as possible, and not to exclude any "compatible" accreditation system, the EUR-ACE Framework Standards do not distinguish between different profiles, but only between FC and SC Degrees, as defined in the European Qualification Framework (Bologna Working Group on Qualifications Frameworks 2005) (although, as explicitly stated, "the Standards [are] applicable also to the accreditation of programmes leading directly to a degree equivalent to a Second Cycle Degree (conventionally termed 'Integrated Programmes')". Indeed, "integrated programmes" are fundamental in engineering education: not only in the "old" Continental Schools as noted in section 4, but also in UK, Ireland and other countries.

Anyway (EUR-ACE 2005c), "the EUR-ACE Framework Standards will thus apply indiscriminately to all different types or profiles of engineering study programmes, and these programmes will be judged based on whether they provide graduates with the academic qualifications necessary to enter the engineering profession."

Consequently, the Framework Standards must be interpreted (and if necessary completed) to reflect the specific demands of different branches, cycles and profiles, while HEIs retain the freedom to formulate programmes with an individual emphasis and character, including new and innovative programmes, and to prescribe conditions for entry into each programme.

6. The proposed EUR-ACE accreditation system

However, the most significant and novel contribution of the EUR-ACE proposals, essential for the correct application of the Framework Standards, is the operational system, illustrated in EUR-ACE (2005b): "EUR-ACE advocates a bottom-up approach which involves the active participation of present and future national accreditation agencies and which should embrace a multilateral mutual recognition agreement based on agreed Standards and procedures. No supra-national Accreditation Board should be formed: accreditation should always be awarded by a national (or regional) agency which may already be in existence or may be created in the future." In other words, a multi-lateral bottom-up agreement would add a common European label to the accreditation certificates of the National (or Regional) Agencies, either existing or to be created: this "decentralized" approach appears a novel approach in the world-wide panorama of systems for accreditation of engineering programmes (Patil and Codner in press).

In this decentralized system for international accreditation elaborated by the EUR-ACE project, the rich experiences accumulated in decades by national bodies like the French "Commission des Titres d' Ingénieur" and the British Chartered Engineering Institutes will

[†]From Communiqué of the Conference of European Ministers Responsible for Higher Education (2005): Within such frameworks, degrees should have different defined outcomes. First and second cycle degrees should have different orientations and various profiles in order to accommodate a diversity of individual, academic and labour market needs.

not be wasted, but on the contrary exploited to create a consistent accreditation system of engineering education at the continental scale.

While developing the EUR-ACE proposals, the need for a permanent organization to coordinate and supervise and the system became evident: EUR-ACE (2005b) suggested that a structure promoted by the participating national agencies "verifies the consistency between the standards, rules and practices in force in each Agency and the EUR-ACE Framework Standards; if this requirement is satisfied, [it] authorizes the Agency to add the EUR-ACE (FC or SC) label to its accreditations".

With this necessity in mind, ESOEPE decided to transform into ENAEE, the "European Network for Accreditation of Engineering Education", formally founded as an international non-profit association in February 2006 by 14 associations concerned with engineering education throughout Europe (ENAEE 2006).[†] Thus, when EUR-ACE was concluded by a public event on 31 March 2006, ENAEE was also presented, and could be identified with the "structure" indicated by EUR-ACE (2005b).

Since then, ENAEE has recognized that six Accreditation Agencies[‡] already fulfil the requirements of the EUR-ACE Framework Standards and has consequently authorized them to award the EUR-ACE label. These six Agencies will constitute the initial core of the EUR-ACE system: it is expected that the first EUR-ACE labels will be granted within the current year 2007.

In the meantime, the basis will also be set for appropriate procedures able to enlarge, in due time, the EUR-ACE system beyond the initial core of six agencies and countries. Three possible alternatives are at present envisaged:

1. Include other Agencies in the system, as soon as they fulfil the Framework Standards and associated requirements: this can be soon the case of a couple of organizations that are already members of ENAEE.
2. In countries without any accreditation system, create a new Engineering Accreditation Agency. In the meantime, programmes may be accredited by an Agency already active in the system.
3. In countries with established "general" accreditation agencies, they could require the fulfilment of specific Standards (in our case, the EUR-ACE Framework Standards) for their accreditation when this implies (or preludes to) a professional recognition. In this case, they could be authorized to add the EUR-ACE label. Contacts have already been taken, with the help of the European Consortium on Accreditation (ECA), towards agreements to apply this procedure.

7. Open questions

Accreditation as defined in section 1, i.e. as the recognition that an educational programme is a suitable entry route to a profession, needs to be professionally specific. However, not all "general accreditation" agencies agree on this point, and they may not accept alternative 3 of section 6: how to include in the EUR-ACE system the countries where such Agencies operate is therefore still an open question.

It is also difficult, especially in some disciplines and in some countries, to define and distinguish clearly between FC and SC degrees, and consequently formalize their equivalence throughout Europe: indeed some definitions overlap even in the European Qualification

[†]Two more organizations have later joined ENAEE.

[‡]Namely, EC^{UK}; Engineers, Ireland; OE, Portugal; RAEE, Russia; CTI, France; ASIIN, Germany.

Framework (Bologna Working Group on Qualifications Frameworks 2005). The EUR-ACE Framework Standard should allow tackling this problem correctly, at least as far as engineering is concerned.

As for any "national" accreditation, any European accreditation system must prove its "quality": in order to ensure this, the European Commission (DG EaC) is considering defining a number of "European quality labels". Two (including EUR-ACE) were launched in March 2006; seven new labels are expected to be tested in 2006/2007 and launched in 2007/2008. These "quality labels will have to prove their added value for universities, students, employers and public authorities. They are expected to apply for the European Register [of Quality Assurance Agencies that should be set up by the 2007 London Ministerial Conference], in order to be assessed against the same rigorous criteria as any other applying quality assurance agency, be it national or international, public or private." (P. van der Hijden, private communication.) Whether and how this definition of "quality labels" will help to improve the quality and/or the transparency of the accreditations will have to be seen. It is also worth underlining that none of these "quality labels", except EUR-ACE, will be awarded via a decentralized approach.

Another open question regards accreditation of Doctoral Programmes. Indeed, the Bergen (2005) Ministerial Conference "adopt[ed] the overarching framework for qualifications in the EHEA, comprising three cycles" and stated that "doctoral level qualifications need to be fully aligned with the EHEA overarching framework for qualifications using the outcomes-based approach. The core component of doctoral training is the advancement of knowledge through original research. Considering the need for structured doctoral programmes and the need for transparent supervision and assessment, we [the Ministers] note that the normal workload of the third cycle in most countries would correspond to 3–4 years full time. We urge universities to ensure that their doctoral programmes promote interdisciplinary training and the development of transferable skills, thus meeting the needs of the wider employment market." (Communiqué of the Conference of European Ministers Responsible for Higher Education 2005.) Notwithstanding these overtures, it is generally felt premature to think of formulating accreditation standards of "Third Cycle Engineering Graduates", since no shared models exist.

8. Conclusions

The approach to a European Accreditation system of FC and SC Engineering degrees described in this paper appears able to provide European engineering education with a viable accreditation system on the continental scale, comparable with the system of "substantial equivalences" granted by the American ABET and with the Washington Accord. Collaboration and confrontation will then be possible on a parity basis.

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Append: Acronyms and abbreviations used in this paper

ABET: Accreditation Board for Engineering and Technology, an American body

ASIIN: Accreditation Agency (“Akkreditierungsagentur”) for Engineering, Informatics and Natural Sciences, a German Agency recognized by the “Akkreditierungsrat” (Accreditation Council)

CTI: “Commission des Titres d’ Ingénieur”, established by a French law of 1934

DG EaC: EC Directorate General “Education and Culture”

EC: European Commission

ECA: European Consortium on Accreditation, a network of National Accreditation Agencies

EC-UK: Engineering Council (United Kingdom): a sort of federation of British Professional Institutes, established in 1981 to coordinate their accreditation procedures

ENAEE: European Network for Accreditation of Engineering Education, a non-profit Association

EHEA: European Higher Education Area

EU: European Union

EUR-ACE (EURopean ACcedited Engineer): an EC-supported project and the proposed accreditation system

FC: First cycle (of higher education) defined within the “Bologna Process”

HE: Higher Education
IFEES: International Federation of Engineering Education Societies
OE: Order of Engineers, Portugal
QA: Quality Assurance
SC: Second cycle (of higher education) defined within the "Bologna Process"
SEFI: Société Européenne pour la Formation des Ingénieurs; European Society for Engineering Education
WFEO: World Federation of Engineering Organizations

About the author

Prof. Giuliano Augusti, President of ENAEE and Coordinator of the EUR-ACE IMPLEMENTATION Project, is a Full Professor of Solid and Structural Mechanics in the Università "La Sapienza", Roma, and has a long experience in the field of recognition and accreditation of engineering education at the national and European level: he has published and edited a number of papers and reports on the subject. He was a member of the SEFI Administrative Council for many years and President in 1987/88; he sits also since several years in the Editorial Board of EJEE. In 1994 Prof. Augusti chaired an EC Task Force in charge of investigating possible synergies between recognition of qualifications for academic and professional purposes: the report of this Task Force lead to an EC Recommendation issued in December 1994. Since 1997, Prof. Augusti has been active with continuity in European Thematic Networks on Engineering Education (H3E; 1997–99; E4; 2000–04; TREE; 2004–2007). He has been the coordinator of the EC-supported "EUR-ACE" (EURopean ACcredited Engineer) project (2004–2006) and at present (2007) is active in three follow-up projects: "EUR-ACE Implementation", "PRO-EAST: promotion and implementation of the EUR-ACE Standards in Russia" and "LEPAC: Creation of a Lebanese Engineering Accreditation Commission".

In September 2004, Prof. Augusti was awarded the SEFI "Leonardo da Vinci" Medal for "his outstanding contributions to European Higher Engineering Education and Research".