

## **SEFI' S POSITION ON ENGINEERING EDUCATION ACCREDITATION IN EUROPE**

### ***Background***

Up to some decades ago the tradition in the academic world has been to let the quality of education and research primarily be under the professional responsibility of teachers and of universities themselves. This has functioned well for many years, especially in a stable situation with a small number of academic institutions. Research results were open for criticism, funding was guaranteed by government budget and the reputation of a university was primarily based on the quality of its research and educational results.

During the last decades higher education has in many countries has been characterised by a tremendous growth in the number of students, often combined with far-going diversification of higher education institutions, but usually not with a corresponding increase of governmental budget funding. As a result of these trends, higher education is moving towards "mass studies", with a strong competition for students and resources and there is an obvious risk of lowered quality of education and research. This phenomenon seems to have come as a surprise to the Academic world.

One way to reduce this risk is to define "standards" for the minimum quality criteria for education. This applies as well to traditional universities with "long cycle" education as to newer "short cycle" educational engineering institutes.

There is also an increasing demand for transparency and for international mobility of students and engineers. A definition of minimum criteria on the European level would therefore be most valuable.

Any such "standardisation" should however not be understood as an attempt towards a total harmonisation of engineering education throughout Europe, but rather as a tool for transparency and comparability. This approach is fully in line with the Bologna declaration.

By accreditation SEFI understands a declaration by a competent body that a certain programme satisfies such minimum criteria.

### ***Recent developments***

There is obviously a growing interest in Europe for accreditation of engineering education programmes and an increasing awareness of the importance of this for the mobility of engineers and to guarantee the quality of European engineering education.

Although accreditation has a long history in Europe, especially, in France and United Kingdom, the recent important events in this context are the reform in Germany and the creation of the German Akkreditierungsverbund and the Akkreditierungsagentur für

Informatik und Ingenieurwissenschaften (ASII). Accreditation has furthermore been recently introduced in other countries such as Portugal and some of the East and Central European countries. Initiatives have been taken e.g. in Italy. A European Standing Observatory for the Engineering Profession and Education (ESOEPE) has been created by the Engineering Council, the ASII, the French Commission des Titres (CTI), the Italian deans of engineering, CLAIU, FEANI. SEFI is an associated member of ESOEPE.

SEFI has been involved in discussions on accreditation, quality and mobility through the work of H3E, the joint venture of SEFI and its two sister organisations CESAER and BEST. These topics were in the centre of interest at the H3E General Congresses in Gent (1998) and Budapest (1999) and the three European Workshops on Accreditation of Engineering Programmes (EWAEP) in 1998, 1999 and 2001. SEFI will also be involved in the work of the newly established thematic network E4.

The Bologna declaration has also put the accreditation issue on the European agenda and it will form an important part of follow-up minister meetings of the Bologna declaration. The issue of accreditation is of vital importance for European Engineering Education and thus for SEFI, which should be involved in some way if and when a European accreditation system for engineering is created.

### ***SEFI' s actions***

At the SEFI's General Assembly in 1998 it was decided that the Society creates a Task force for Accreditation. This group delivered its final report but was never formally dissolved. Later in December 2000 the SEFI's Administrative Council decided to reactivate this group by choosing new members and a new chairman. The task group has also established close contacts with the ESOEPE, of which now SEFI is an Associate Member.

In connection to SEFI's Annual Congress 2001 in Copenhagen a workshop is organised to discuss the European accreditations matters. The results of this discussion will be presented immediately after that in an ASEE-SEFI Conference in Berlin.

### ***Things to be taken into account***

- Accreditation of Engineering Programmes will become increasingly important in Europe and in the world,
- Those European countries not yet having an accreditation system will sooner or later create one,
- American based ABET will continue to be influential also in Europe,
- Some form of a European system for accreditation of Engineering Education Programmes will be created,
- A complete accreditation system sometimes also distinguishes between engineering branches

The usual mission of the "long cycle" engineering education is to develop scientific intellectual thinking at the master-degree or doctorate level, whereas that of the "short cycle" engineering education schools is to offer a more practically oriented education. Both types of higher engineering education are needed, and thus one could not speak of any subordination of one sector to another. In particular, the fact that the "short cycle" engineering education in many countries constitutes a separate sector does not lower its value; on the contrary, it means that they perform functions in the national education system which universities are not able to cope with due to different mission. Possibilities of transfer between the two sectors are provided, which should, among other things, enable young people to continue their higher education at the master-degree level in the "long cycle" engineering education institutes. In some countries this system is already fully operational.

### ***SEFI' s position on European Engineering Accreditation***

- The creation of a European Accreditation Board similar to ABET is neither feasible nor desirable;
- A European Accreditation should respect the cultural rich diversity among European higher engineering universities and other institutes;
- The purpose of engineering education should aim at defining minimum criteria for long and short cycle engineering education. This should lead to better transparency of education.
- A European system for accreditation should work on the basis of cooperation and mutual recognition between existing national accreditation authorities. The Washington Accord as well as the Paris Accord could in this respect serve as one possible model;
- Countries or groups of countries today not having accreditation authorities should be encouraged to create such bodies;
- The discussion on accreditation must not only involve the "long cycle" but also the "short cycle" engineering education;
- SEFI, in close cooperation with professional organisations, universities, national accreditation bodies and public authorities should be involved in some way if and when a European accreditation system or systems for engineering is created.

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