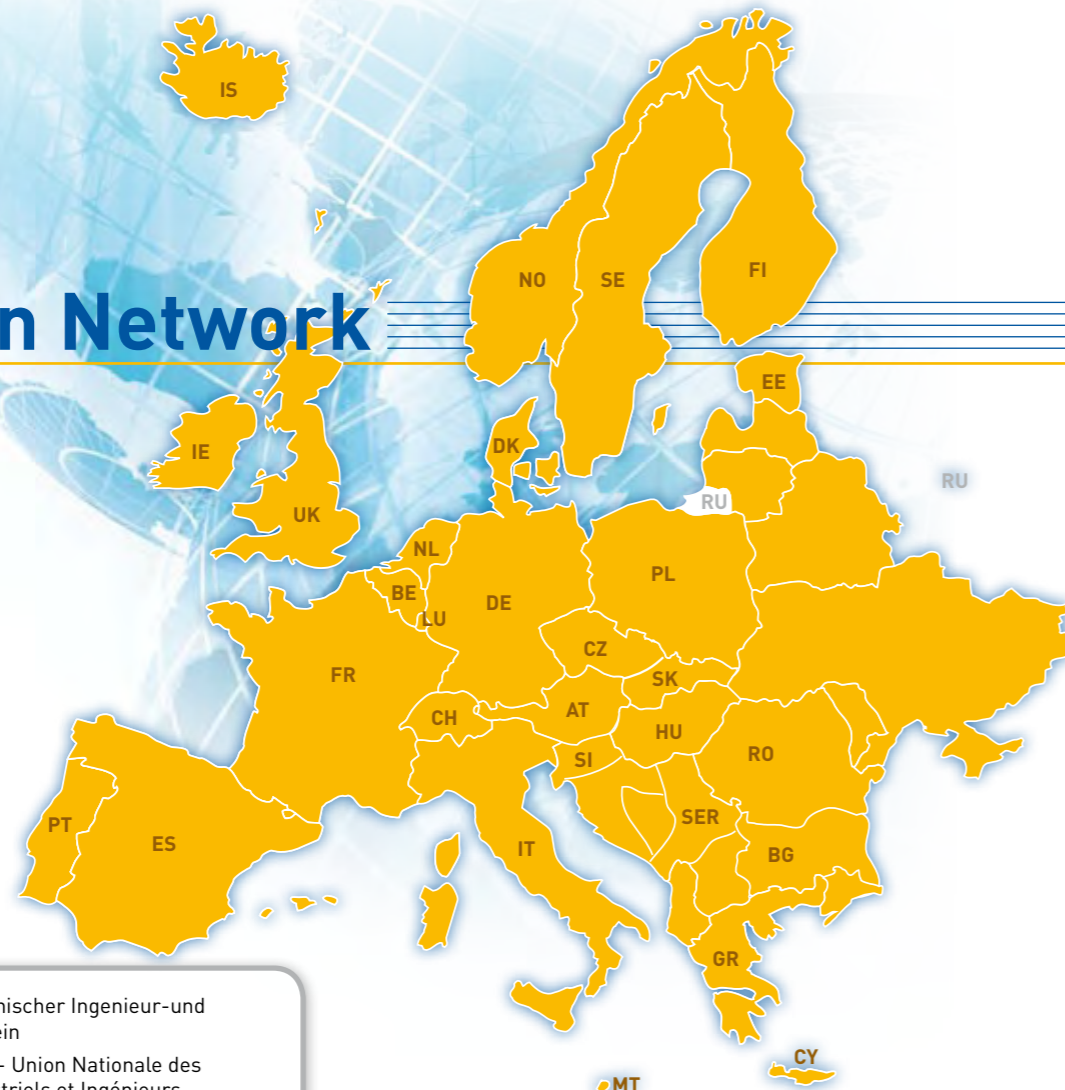


The **EUROPEAN** **Engineers** Publication



FEANI European Network



-  **AT** ÖIAV - Österreichischer Ingenieur- und Architekten-Verein
-  **BE** U.N.I.T / N.U.T.I - Union Nationale des Ingénieurs Industriels et Ingénieurs Techniciens / Nationale Unie van de Industriële Ingenieurs en Technische Ingenieurs
-  **BG** FNTS - Federation of Scientific Technical Unions in Bulgaria
-  **CH** STV - Swiss Engineering STV
SIA - Schweizerischer Ingenieur- und Architekten Verein
-  **CY** CPEA - Cyprus Professional Engineers Association
CEAA - Cyprus Civil Engineers and Architects Association
-  **CZ** CSVTS - Czech Association of Scientific and Technical Societies
CKAIT - Czech Chamber of Certified Engineers and Technicians
CVUT - Czech Association of Mechanical Engineers
-  **DE** DVT - Deutscher Verband Technisch-Wissenschaftlicher Vereine
VDI - Verein Deutscher Ingenieure
VDE - Verband der Elektrotechnik Elektronik Informationstechnik
-  **DK** IDA - Ingeniørforeningen I Danmark
-  **EE** EAE - Estonian Association of Engineers
-  **ES** IIE - Instituto de la Ingeniería de España
INITE - Instituto de Ingenieros Técnicos de España
-  **FI** TEK - The Finnish Association of Graduate Engineers
-  **FR** CNISF - Conseil National des Ingénieurs et des Scientifiques de France
-  **UK** EC^{UK} - The Engineering Council UK
-  **GR** TCG (Technical Chamber of Greece)

-  **HU** MTESZ - federation of technical and scientific societies
-  **IE** IE - Engineers Ireland
-  **IS** VFI - The Association of Chartered Engineers in Iceland
TFI - The Icelandic Society of Engineers
-  **IT** CNI - Consiglio Nazionale Ingegneri
-  **LU** A.L.I.I. - Association Luxembourgeoise des Ingénieurs Industriels
-  **MT** COE - Chamber of Engineers
-  **NL** KIVI-NIRIA - Koninklijk Instituut Van Ingenieurs
-  **NO** NITO - The Norwegian Society of Engineers and Technologists
TEKNA - The Norwegian Society of Chartered Scientific and Academic Professionals
-  **PL** NOT - Polish Federation of Engineering Associations
-  **PT** ORDEM DOS ENGENHEIROS
ANET - Associação Nacional dos Engenheiros Técnicos
-  **RO** AGIR - The General Association of Engineers in Romania
-  **RU** RUSEA - Russian Union of Scientific and Engineering Associations (Provisional Member as of January 2007)
-  **SE** SVERIGES INGENJÖRER - The Swedish Association of Graduate Engineers
-  **SER** SITS - Union of Engineers and Technicians of Serbia
-  **SI** ZDIT - Slovenian Engineers Association
-  **SK** SNKF - Association of Slovak Scientific and Technological Societies

ISSUE N° 03

THIRD QUARTER 2008

www.feani.org



THE EUROPEAN ENGINEERS is the official publication of FEANI, the European Federation of National Engineering Associations.

Edition: Quarterly
Circulation: 5 000 ex

Published by:
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ISSN: 1374-1187

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Conference on EUROPEAN PROFESSIONAL CARDS

Author : Léon Jean Blaffart, ENGCARD project manager



On 1 April 2008, FEANI and its project partner EUROCADRES (The Council of European Professional and Managerial Staff) held a conference to present the results of the feasibility study of ENGCARD - the European Engineering Professional Cards project at the International Association Centre in Brussels.



Mr. Philippe Wauters

The project has been funded by the EU Commission DG Employment, Social Affairs and Equal Opportunities in the framework of the European Year of Workers Mobility 2006 and started in September 2006.

The ENGCARD project's major objective was to investigate whether European professional cards, a new instrument introduced by the Directive on Recognition of Professional Qualifications (DIR 2005/36/EC) in its Whereas 32, would improve and facilitate trans-European mobility of workers and services providers.

The goal of the Conference was to inform about the study results, the initiatives and best practices of other European professional organizations, the related standpoints of the various other stakeholders including the EU Institutions and about conclusions and recommendations arisen from the study.

In his welcome address, the FEANI Secretary General, Mr. Philippe Wauters, expressed the great pleasure for FEANI and EUROCADRES to notice the presence of an exceptionally large audience of 175 representatives of the EU Institutions, of different European and National professional organizations, of EURES, EUROPASS, NARIC network's members and also National administrations in charge of recognition of professional organizations including of course some Members of the project partners.

He particularly highlighted the presence of Commissioner Špidla, which demonstrated the Commission special interest and support for the project, as well as members of the EU Parliament and the EU Commission.

Mr. Wauters then gave a brief overview about the different aspects of the ENGCARD feasibility study.

In this context he emphasized that the success of the card would depend on several factors such as: the credibility of the organisation delivering the card and thus of the quality of the information on it, and also the acceptance of the card by the employers and the public

administrations, particularly those countries where the profession is regulated.

For the success of the card it would also be desirable that the European authorities give their support and that the administrations in those countries regulating the access to certain professions accept to take the card into consideration when the migrating applicant holds one. This would indeed not change the prerogative of the administrations to decide in final if a National permit to exercise the profession can or cannot be delivered to a candidate or only under certain conditions.

Numerous questions raised from the floor but all speakers underlined the usefulness of the card.

Following that introduction, a first panel opened by Commissioner Špidla debated on: **“European Professional Cards – a facilitator to EU integration and its strengths and opportunities as contributor to the Lisbon strategy”**



Mr. Vladimir Špidla, EU Commissioner

Mr. Vladimir Špidla considered the importance and interest of the professional card and the implementation of an ENGCARD system as a concrete example for encouraging mobility in the overall European framework defined by the European Job Mobility Action Plan adopted in December 2007, the European Year of Workers' Mobility 2006 and the Lisbon Strategy.

He emphasized the role of the card in the framework of an integrated approach, i.e. as one tool towards mobility in addition to other European initiatives or legislations, such as coordination of social security and pension systems, the framework of European certification or the revision of the single market.

This being said, he did not neglect the current existence of several mobility obstacles and restraints such as portability of social security, jurisdiction and administration, as well as insufficient mutual recognition of professional qualifications (diplomas, professional experience), and not to forget the psychological blockage, language

and cultural problems; all this would need to be eliminated.

Mr. Špidla finally reiterated his personal support for all professional card promoters and considered that the implementation of an ENGCARD system would go in the right direction to facilitate professional mobility, aspiring that a large range of economic sectors could benefit from the experience of the system conceived for engineers.



Mr. Carlo Parietti

Mr. Carlo Parietti, President of EUROCADRES, considered the European professional cards as a priority and a necessity for the regulated and partially regulated professions. For its elaboration, professional organizations would be essential. However, at the same time, he regarded as important the need for an involvement of the social partners, employers and employees representatives to ensure its overall acceptance.

He concluded by seeking the support from the DG Employment for putting the recognition of professional qualifications in the social dialogue framework and for involving the employers in the ENGCARD as well as in potential professional cards for other professions.



Mr. Jacques Reignault

Mr. Jacques Reignault spoke as a **Member of the European Economic and Social Committee (EESC)** and also for **CEPLIS (The Council of the Liberal Professions)**. He recalled some background information about the position of the EESC referring to their Communication (2002/0061) concerning the recognition of professional qualifications, specifically on the necessity to guarantee to the European citizens the high quality of services, assure their security and protect their health.

For the EU consumers, he expected that the card could provide information necessary to allow for credibility and confidence concerning the national and migrating practitioners.

For the professionals he saw several major advantages. In addition to the symbolic aspect and the belonging to a profession or a group of professions, the card could facilitate authentication, verification and allow for developing all kinds of exchanges between colleagues in the different Member States.

Mr. Reignault finished his intervention with a general statement of positive attitude and conviction towards the card.



Mr. Filippo Abramo

Mr. Filippo Abramo speaking for **EAPM (European Association of Personnel Managers)** concentrated on the view of Human Resources managers towards the ENG CARD as a model for a professional card that could be extended to other professions.

He stated that the Card could provide significant added value to fill the many vacancies for engineering professions in various European countries by opening up the EU labor market.

Indeed, today it is a difficult task for an Human Resources Department to assess the level of professional and academic qualifications of engineers and to benchmark an individual versus a defined/required standard; the ENG CARD could help here providing a common and understandable framework.

He considered that the card could also make the profession more attractive for the engineer and young graduates and open up international mobility.

It was with a strong statement of support to ENG CARD and extended EAPM's readiness to organize meetings on national and European level with employers that Mr. Abramo terminated his presentation.



Mr. Pierangelo Sardi

Mr. Pierangelo Sardi, President of CEPLIS (The Council of the Liberal Professions) started with some explanations concerning the "Common Platform", as mentioned in Article 15 of the Directive on Recognition of Professional Qualifications, introduced to seek the help of professional organizations in trying to facilitate mutual recognition and said that many professional organizations had remained skeptical towards them.

He introduced the notion of change in client behavior mainly as a result of the internet. In this context, he mentioned the problems of advertising in professional services as well as the problems of quality of services and health and security issues.

Overall, Mr. Sardi welcomed the initiative of FEANI and EUROCADRES as a good start in the right direction, to be expanded in the self-employment frame and requiring cooperation of all stakeholders.

After a first panel addressing the policy aspects and added value of introducing European Professional Cards, the second panel was dedicated to present the best practices of other professions already involved or planning to be involved in: "European Professional Cards – a multidimensional concept to contribute to the specific needs of each profession"

Mr. Patrick Fortuit, speaking as the coordinator of the **HPro Card**, informed about the background and development of the European Health Card for doctors, dentists, pharmacists, nurses and midwives. He emphasized the importance of facilitating and promoting the patients' safety and coordination of care and the importance to know that a person has indeed the authorization to practice, also related to sanctions.

Mr. Fortuit then presented the specifications and architecture of the card and noted other possible services associated with electronic signature, including: follow-up of accredited continuing education and validation of credits mandatory for the medical professions, access to scientific databases, secure access to medical files,

Finally, Mr. Fortuit informed that the EU Commission has just given a grant to support HPro Card further developments, thus encouraging professional organizations to make use of that new instrument.



Mr. Patrick Fortuit

Mr. Arve Foyen from **CCBE (Council of Bars and Law Societies of Europe)** presented the European ID card for lawyers and reported of excellent experience with that voluntary card which was introduced in the late 1970s.

The lawyers' card would prove that a person is authorized to practice in his home country. It would however neither include data on complaints records nor on further education; it would be up to the bar association of each profession to have access to any National Register where such information is stored.

He considered European professional cards as a multidimensional concept to contribute to the specific needs of presumably each profession.



Mr. Arve Foyen

Mrs. Evelyne Gebhardt, Member of the European Parliament and Member of the Internal Market Committee launched an ardent appeal for European mobility and recognition as a European citizen's right. She recognized the need for a political support for national implementation, observing too much nationalism from the National governments but also a low pace from the side of the European Commission on European harmonization in general. The professions however would require something that goes beyond.

Mrs. Gebhardt mentioned the importance of quality of services requiring a minimum level of harmonization and that overall the professional card could indeed be an instrument for more harmonization.

She concluded by saying that actions would need to be initiated, for instance in jurisdiction, in view of the proposed professional card instrument.



Mrs. Evelyne Gebhardt

Mr. Mats Pahlman from **EUROCADRES** gave an overview on the portability of the ENG CARD concept to other professions and synergies and also about its potential for initiating new mobility policies. He emphasized the need for involvement of different stakeholders (professional organizations, employers, employee organizations, educational institutions, EC institutions, MS governments) and to have a comprehensive overview of other on-going framework initiatives, activities and tools.

Finishing his intervention, he focused on the concept of "fair mobility" to encounter the fact that mobility is sometimes considered as a threat and that we have to focus on the quality of mobility.



Mr. Mats Pahlman

The conference's afternoon sessions concentrated specifically on: "The ENGCARD – the European Professional Card project for Engineers and on the pre-requisites for its further successful development."



Mr. Léon Jean Blaffart

Mr. Léon Jean Blaffart, ENGCARD project manager at FEANI, firstly highlighted "ENGCARD, the European Professional Card for Engineers – key results of the feasibility study"

ENGCARD aims at increasing and facilitating trans-European mobility by reducing the impact of one of its inhibitors i.e. the recognition of professional qualifications. The specific needs of each stakeholder are considered to create an added value chain with them and also care has been taken during the design to avoid overlaps with missions and activities of IMI, NARIC, EUROPASS and EURES.

The main results of the feasibility study were presented including:

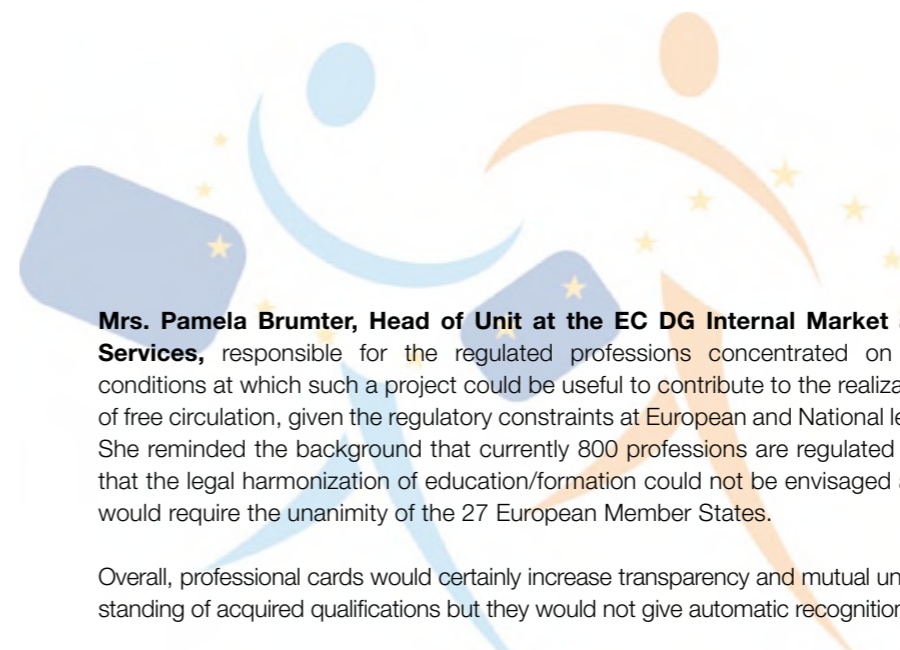
- the design of the ENGCARD concept integrated within the EUROPASS framework and interlinked with EURES or other job search portals,
- the supporting organization,
- the business process and IT workflow,
- the security and data privacy
- Quality assurance and quality control issues,
- the business cases based on a classical own investment as well as on a "Pay per Card" outsourced model,
- the portability of the concept to other professions in order to initiate a new mobility policy and mainly to create synergies and economies of scale.

In summary of the study, Mr. Blaffart stated that:

- European professional cards will undoubtedly facilitate mobility; however, the cards will only marginally increase the percentage of mobility (there are other more important obstacles to mobility than recognition of qualifications),
- The cards would provide a strong quality label in Europe and worldwide for engineers, for competitive procurements and for health and safety issues,
- The cards will generate cost savings if the content of the card is accepted by the National authority in charge of recognition, and anyway during the recruitment process,
- The implementation of the cards is organizationally, technically, and financially feasible.

Regarding the implementation of ENGCARD, the results will be presented and discussed at the General Assembly of the FEANI National Members in autumn 2008 for decision on next steps.

After the presentation of the key results and recommendations of the feasibility study, the last panel of the conference discussed on: "The necessary measures to move forward and make European professional cards a reality and a success."



Mrs. Pamela Brumter, Head of Unit at the EC DG Internal Market and Services, responsible for the regulated professions concentrated on the conditions at which such a project could be useful to contribute to the realization of free circulation, given the regulatory constraints at European and National level. She reminded the background that currently 800 professions are regulated and that the legal harmonization of education/formation could not be envisaged as it would require the unanimity of the 27 European Member States.

Overall, professional cards would certainly increase transparency and mutual understanding of acquired qualifications but they would not give automatic recognition.

Mrs. Brumter stated that the success conditions of a professional card would be different according to the different professions. For very few of them, the conditions seem to be easy to be brought together and would resemble to the card for lawyers. For the regulated professions, a very good illustration would be the European health card where the latter would mainly give information about the lawfulness of exercising the profession and the access to the information being withheld by the professional orders.

For the professions that are not regulated, the card would above all have the potential of informing the consumers or employers, and the conditions for success would lie in the reliability of the information given.

Concluding her speech, Mrs. Brumter summarized that the success conditions for a card would be different depending on the role of the card and the needs of the profession, and that the role of the card related to the temporary free movement of services - where recognition would not need to be asked for - could provide a quality guarantee for the National Authorities.

Mrs. Wallis Goelen, Head of Unit at the EC DG Employment, Social Affairs and Equal Opportunities as new head of Employment Services and Mobility (the EURES unit) generally considered the European professional card as a promising initiative among others in view of recognition and transparency of recognition.

Her presentation concluded with a strong encouragement to continue working on professional cards, and she offered a cooperation with her unit by considering to capitalize on the EURES platform.

Mrs. Ramona Nicole Mănescu, Member of European Parliament and member of the Education and Culture Committee, broadened the debate on recognition of formal qualifications by presenting an interesting initiative embedded in the lifelong learning vision and aiming at recording acquired individuals' non-formal and informal competences. It is called the 'Youthpass' programme of the EU which is conceived as a voluntary recognition document for the training activities and for the competencies obtained within a 'Youth in Action Programme' of the DG Education and Culture. Further information can be obtained at www.youthpass.eu.



Mrs. Pamela Brumter



Mrs. Wallis Goelen



Mrs. Ramona Nicole Mănescu



Mr. Carlo Scatoli

Mr. Carlo Scatoli, Head of the Qualifications Sector (which manages measures to support the mobility of European citizens, in particular the EUROPASS service, the Euroguidance network and the EQF (European Qualifications Framework) at the EC DG Education and Culture reminded that the DG Education is not involved in the formal recognition of qualifications but rather manages complementary instruments to increase the transparency of qualifications and skills and to foster communication between job searchers and job offers.

Commenting to one of the issues raised at the conference, he noted that even if the percentage of mobile people seems to be small, the total number of people concerned would be quite significant.

From Mr. Scatoli's point of view, the ENGCARD concept should be technically and conceptually compatible with the EUROPASS framework. As there is no database for EUROPASS, the envisaged link to the one from EURES was emphasized for the future. It could indeed be envisaged to attach ENGCARD to the EUROPASS CV once it is uploaded to the EURES database.

Presidents of Major European Engineering Organizations meeting at FEANI

Author : Philippe Wauters, Secretary General of FEANI



From left to right: Mr. Coackley, Mr. Van der Putten, Mr. Wauters, Mr. Panagopoulos, Dr. Fuchs, Mr. Oreskovic, Prof. Steinbach

On 22 July, Dr. Willi Fuchs, President of FEANI, invited his homologues from ECEC (European Council of Engineers Chambers), ECCE (European Council of Civil Engineers), EFCA (European Federation of Engineering Consultancy Associations) and SEFI (European Society for Engineering Education) to a first informal meeting which took place at the FEANI Secretariat General premises.

The idea of such a meeting had been proposed by Mr. Oreskovic, President of ECEC, during a discussion between FEANI and ECEC in March 2008 in Vienna. The aim of the meeting was to better know each other's organization, to determine whether the organizations follow some similar objectives and later on to investigate whether common actions could be profitable to each organization and reinforce the voice of the engineers in view of, for instance, the EU and Public Administrations.

In a 2 ½ hours meeting, **Mr. Oreskovic** (President ECEC), **Mr. Coackley** (President ECCE), **Prof. Steinbach** (President SEFI), **Mr. Panagopoulos** (President EFCA) together with **Mr. Van der Putten** (Secretary General EFCA) and **Dr. Fuchs** with **Mr. Wauters** (President & Secretary General FEANI), having presented their organizations, discussed about the objectives of their organizations, the problems encountered and successes.

The general feeling was that a closer cooperation between the organizations was highly desirable. This would increase the visibility of the organizations (as for instance to the EU Institutions) and promote the recognition of the profession of engineer. It was also acknowledged that in the recent years, the organizations already collaborated in projects such as EUR-ACE, where FEANI and SEFI are partners, and the ENGCARD pilot

project proposal submitted by FEANI for approval by the EU Commission, together with ECCE and ECEC. Reinforcing the collaboration on other subjects could thus be seen as a smooth evolution prone to success.

At the end of the meeting, all participants agreed on a list of subjects which could benefit from a closer collaboration, namely:

- Skill Shortage
- Code of Conduct
- Standardization
- Professional Card

It was decided to exchange all information related to activities in the organizations on those subjects. A next meeting is planned for 30 January 2009, hosted by EFCA, where concrete collaboration will be addressed.

CONCLUSIONS

In addition to the speeches at the conference as reported above, FEANI and EUROCADRES specifically appreciated the active participation of the audience in the respective "Questions & Answers" parts after the different sessions.

Points mentioned were related to:

- the context of shortage of engineers in many European countries,
- the hiring process and costs, professional standards, such as the EUR-ACE (European Accreditation of Engineering Education) and ENAEE (European Network for Accreditation of Engineering Education), initiatives where FEANI and EUROCADRES are very active,
- the role and interest from employers,
- the relation of the proposed ENGCARD concept with other EU initiatives,
- the legal framework and acceptance by National authorities as an obstacle for mobility,
- the language issue,
- the pricing and validity of the card and renewals.

All those issues were considered by the project partners as valuable contributions for ENGCARD further development.

Concluding the conference, Mr. Philippe Wauters summarized the key points mentioned by the speakers and thanked the floor for the active participation taken in the Questions & Answers sessions.

Mr. Carlo Parietti, presiding the afternoon sessions, closed the conference by thanking all participants and speakers for their great support and contributions. Their recommendations and advice on how to proceed with ENGCARD and its adaptation to other professions were very much welcomed.

The audience unanimously recognized the level and quality of the conference and its excellent organization.

All information on ENGCARD, its final report and the presentations and pictures of the conference can be downloaded on www.feani.org under ENGCARD

Disclaimer: The content of this document reflects the author's views and the European Commission is not liable for any use that may be made of the information contained herein.

Clôture du **Projet LEPAC**

Author : Philippe Wauters, Secretary General of FEANI



De gauche à droite:
Mr. Patrick Laurent, Ambassadeur de l'Union Européenne au Liban, son Excellence le Ministre de l'Education et de l'Enseignement Supérieur Dr. Khaled Kabbani et Dr. Aref Soufi, Coordinateur de l'Office National Tempus (NTO) au Liban

Ce projet, dont l'objectif est d'aider les responsables de l'Education Nationale au Liban à mettre en place une organisation d'accréditation pour les programmes d'ingénieur, a déjà fait l'objet d'un rapport dans le FEANI News 01/2007.

Ce projet a débuté officiellement le 11 janvier 2007 par une cérémonie d'ouverture sous les auspices du Ministre de l'Education et de l'Education Supérieure, H.E. Khaled Kabbani, et des représentants du Ministère, des Ordres des ingénieurs de Beyrouth et de Tripoli, des partenaires libanais et européens du projet, des universités ainsi que des représentants de EU TEMPUS au LIBAN.

Il a été clôturé officiellement le 8 avril 2008 par une cérémonie présidée par le Ministre de l'Education et de l'Education Supérieure, H.E. Khaled Kabbani, l'Ambassadeur de l'Union Européenne au Liban, M. Patrick Laurent, et le délégué pour les projets TEMPUS.

C'est dire toute l'importance que revêt ce projet pour les responsables de l'Education au Liban. Dans son allocution, le Ministre a fortement insisté sur ce point et a remercié chaleureusement les partenaires européens pour le soutien et les conseils prodigués tout au long du projet.



De gauche à droite:
Dr. Jammal, Dr. Wasser, Prof. Augusti, Mr. Combe, Dr. Kabbani, Mr. Wauters et Mr. Laurent

Le projet a été un réel succès tant par l'excellente collaboration parmi les partenaires que par la grande qualité du rapport final et des recommandations qu'il contient. En ce sens, on peut estimer que la mission confiée aux partenaires de ce projet financé par l'Union Européenne, a été pleinement remplie et nous sommes tout à fait confiants que les responsables de l'Union Européenne, qui analyseront les résultats, seront du même avis.

La prochaine étape procédera de la responsabilité des acteurs libanais, c'est à dire d'implémenter l'organisation proposée. Une fois mise en place, les critères de qualité pour les programmes pourront être calqués sur le système EUR-ACE.

Du côté européen, nous avons donné l'assurance auprès de nos collègues libanais de notre soutien pour les prochaines étapes.

Successful finalization of the **ENGCARD**

Author : Léon Jean Blaffart, ENGCARD project manager



Successful finalization of the ENGCARD feasibility study and draft proposal for ENGCARD-GO, an implementation pilot project planned in 8 European Countries

The results of the ENGCARD feasibility study that started in September 2006 were presented during a conference organized at the International Association Centre in Brussels on 1 April 2008 in the presence of Commissioner Vladimir Špidla, representatives of the EU Commission and Parliament and a large audience of 175 participants.

To obtain good results for the study and to involve the FEANI's National Members in the design of the conceptual framework of the anticipated European engineering professional Card, two Working Groups composed by their delegates were set up.

The first one called **WGCP for 'Working Group on Certification Process'** was in charge of designing

the business process to safely deliver a professional card to an applicant after having checked his/her identity, qualifications and experience.

The second one called **WGQM for 'Working Group on Qualifications Modelling'** was in charge of defining the content of the card to clearly present the qualifications in engineering and of the associated database to manage the information on the professional's qualifications and experience.

The outputs of both working groups contributed significantly to the successful achievement of the project. FEANI takes this opportunity to thank the FEANI WGCP and WGQM experts for their positive work and commitment.

FEANI National Members' experts delegated to WGCP and WGQM

seated from left to right:
Mr. Ken Elvery (UK) - WGCP Chairman, Mrs. Helga Pizutto (MT) - WGCP and Mr. François Tailly (FR) - WGQM

standing from left to right:
Mr. Manuel de Oña Compañ (ES) - WGCP, Mr. Hannu Saarikangas (FI) - WGQM, Mr. Bouke Bosgraaf (NL) - WGCP, Mr. Michel Jaccard (CH) - WGQM, Mr. Philippe Wauters - FEANI Secretary General, Mr. Peter Reichel (AT) - WGQM Chairman, Mr. Sascha Hermann (DE) - WGCP and Mr. Léon Jean Blaffart - FEANI ENGCARD Project Manager (Mr. René Decler (BE) - WGQM was absent for the picture)





Draft Pilot Project: ENGCARD-GO

Author : Léon Jean Blaffart, ENGCARD project manager



Draft proposal for ENGCARD Implementation

For submission by mid of June 2008, the EU Commission has launched a **new Call for Proposals entitled 'Innovative Projects for Worker Mobility in the EU'**.

FEANI has submitted a draft proposal for implementing ENGCARD, called **ENGCARD-GO pilot project**. The evaluation of the submission by the Commission is underway, and a decision is expected at the earliest for end September 2008.

For ENGCARD-GO, FEANI has extended the previous partnership which included **EUROCADRES** only - the Council of European Professional and Managerial Staff - with representatives of employers and of Technical Chambers for regulated engineers. Thus, it includes **EFCA** - the European Federation of Engineering Consultancy Associations - and **ECEC** - the Euro-

pean Council of Engineers Chambers. As services provider, the renowned **PWC (Price Waterhouse Coopers)** will provide the ENGCARD validation platform and the associated design, training and validation services on a "Pay per Card" based model.

The results of the feasibility study have shown that ENGCARD, as new innovative instrument, would facilitate the mobility of professional engineers in the EU thanks to an ACCELERATED, NON-DISCRIMINATORY and TRANSPARENT recognition of their professional qualifications.

The goal of the second step, ENGCARD-GO, aims at launching a pilot deployment for testing this assertion in selected Member States. This pilot will analyse whether recognition is facilitated and whether mobility is increased thanks to that new instrument, which will be linked with EURES (the European Employment Mobility portal) and IMI (Internal Market Information System) and based on the EUROPASS framework and the EQF (European Qualification Framework).

The pilot will have two main components:

- launching intensive awareness campaigns on ENGCARD at national and EU level involving all stakeholders,
- setting up of an organization and an infrastructure integrated in the EUROPASS framework to deliver the ENGCARDs to the applicants.

It is anticipated that 15.000 ENGCARDs will be delivered in 8 countries representing different professional cultures and types of education and regulation. This will provide a critical mass allowing conclusions for the next step.

Seven countries volunteered by FEANI National Members include **FRANCE, GERMANY, THE NETHERLANDS, SLOVENIA, HUNGARY, SPAIN and SWITZERLAND**; **SWEDEN** volunteered through EUROCADRES. The applications for an ENGCARD will be handled following high security and quality assurance procedures for validation of the identity, qualifications and experience of the engineer.

Design of detailed specifications and procedures for the validation platform and its development, awareness of stakeholders, training of users, development of an ENGCARD portal for registration, and cards' personalization and distribution are included in the work packages of the project.

ENGCARD-GO proposal will be explained and discussed during the next FEANI General Assembly in Bucharest on October 2008.



Enabling business performance*

- With our clients
- For our people
- Through Responsible Leadership



“ I truly believe that it is only through sustainable relationships with all of our stakeholders that we can successfully address our clients' issues, enable real improvements in business performance and deliver a distinctive service that sets us apart.”

Roger Heijens
Chairman, PricewaterhouseCoopers
www.pwc.be

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Highlights from the work of the FEANI CPDC

(Continuing Professional Development Committee)

Author : Mr. Claes Trolle, former CPDC Chairman (1999 – 2005)



During the 90's until the new Statutes and Bylaws were re-written FEANI had three standing committees: The European Monitoring Committee (EMC), The European Affaires Committee (EAC) and The Continuing Professional Development Committee (CPDC). These Committees helped to pursue the federation's objectives and assisted the Executive Board in defining its Policy in their respective fields.

The Committee on Continuing Professional Development (CPD) was established in 1993 from the Working Group Continuing Engineering Education created in 1992.

The CPDC has always been based upon "voluntary" membership: there have been no quota for the participation – it has been open to all national members without any restrictions as to the geographical location of the participating national members.

I was invited to join the CPDC in 1995. The Chairman was Professor Mogens Kümmel. A major report had just been concluded, called the **Aquaforce phase 1**. This ambitious project aimed – already in those days – to safeguard and guarantee quality in CPD, developing criteria on which an efficient system could be based for accreditation for CPD courses. A driving force behind the execution of the project was Peter Hector, the secretary. The report was published in 1993/1994. The intention was to proceed with phase 2, but unfortunately lack of funding did not permit the programme to be completed up to the implementation of the accreditation process. The project was stopped after production of the "Project AQUA-FORCE Part I" handbook which defined a list of criteria which are an adaptation of the International ISO 9001 and 9002 Standards to education.

After the Aqua Force project the Committee was working hard on what was later to become the FEANI Policy and Guidelines on CPD. Christine Somers was responsible for this work under the supervision of the Chairman.

Effective communication was identified as one of the top five priorities for the work of the Committee. Dr. Ing. Luciano Fassina, as leader of the Committee's Work Group on Communications, produced a document in September 1996 with some ideas in the development of a strategy for the Committee's communication arrangements. In 1998, Heinz Müller started to develop a concept for the idea of enhancing the efficiency of communication by setting up a website on CPD to deploy and increase dissemination of services and information for engineers who were members of any of the National Member Organisations.

The Communication Project was finalized in 2001 and the site "**Pinboard**" was operational on the FEANI website in March 2003.

The guidelines of FEANI's CPD Policy were approved at the General Assembly in Lillehammer in 1997. FEANI would work towards implementation of the agreed policy to raise awareness of the importance and urgency of CPD to economic competitiveness. Mogens Kümmel was elected Vice-President of FEANI and the new chairperson was Christine Somers. FEANI Headquarters Office moved from Paris to Brussels in 1997 and we got a new CPD secretary, the very competent Anders Hagström. Together with the newly elected Secretary General, Sirka Pöyry, the Secretariat produced the very useful FEANI Handbook, comprising not only the Statutes and Bylaws, policies etc. but also most of what we can find today on the FEANI website – which

did not exist in those days.

The main reason to move to Brussels was to get closer to the European Commission and thus make FEANI the official "Voice of the European Engineers".

During 1998, FEANI submitted two LEONARDO applications:

- the project "**EuroPro Record**", which was based on two previous projects (EuroPro, a Concept for Strategic Competence Development, and EuroRecord) where FEANI had been one of the key partner
- and the project "**EDWIN**" (Education with Industry) aiming at investigating CPD practices and needs with European Industry, to benchmark and analyse them, to develop new concepts, to offer practical recommendations and widely diffuse them.

The extent of the implementation of these projects depended on the success of the applications and on the outside financing. In 1999, Ivan Brikké took over the Chairmanship of the CPD and the Committee worked hard on the EDWIN project. It worked all the way – almost! The application for the project was handed in to the Commission. We had arranged for participating universities and industry and the application was approved by the Commission, but not by the Executive Board of FEANI!

In 1998 - 1999 FEANI had a lot of problems: the Executive Board had been dissolved but not discharged because of certain accusations, the economy was very weak (to say the least) and FEANI was definitely not

a healthy body. The new Executive Board (which also comprised the newly elected chairman of the CPDC, myself, Claes Trolle,) voted against accepting the contract from the Commission. Of course – everybody was not against the Contract: the President Kostas Alexopoulos, the former interim Chairman, the treasurer Bernard Lafitte and myself voted for, but we were a minority. The financial risk was thought too big, so the Contract was not accepted.

However, the CPDC thought the idea of making a survey of CPD in European Industry a worthwhile one. The Chairman of the CPDC managed to get assistance from a big hightech Swedish company. This, in conjunction with hard work from Germany, Finland and some other countries, resulted in carrying out the project anyhow – without funds from neither the Commission, nor from FEANI. The result was presented at a seminar in 2001, which also saw speakers from various countries. This was not the first CPDC seminar. Already in Lillehammer 1997 the CPDC had arranged a

seminar on CPD with participating speakers from Norway, Sweden, UK, Spain and Hungary.

The CPDC is used to work in project form. We aim at starting the project with a brainstorming session to get a quick start – and involving as many as possible of the CPDC members. Just to mention two more projects: **the e-learning project**, aiming at promoting e-learning in Europe (as we are far behind the Americans) and **the Employability toolkit** aiming at assisting the engineers to be continuously employable, presented in 2005.

One of the latest projects, to be presented at the GA 2008, is **the revised FEANI policy on CPD**.

The basics have not changed, but ways and means etc. are subject to technical development. Increasing international mobility is important, the Bologna declaration, the extension of the EU are other factors influencing the way we and our engineers look upon CPD and the possibilities to develop in our daily work.

As Chairman, I approached the National Members asking them to contribute to the work of the CPDC. To get more involvement was not an easy task! Still – the more participants (within reasonable limits), the more exchange of ideas, the better the possibilities to find the Best Practice in various areas. To encourage all countries to participate in our meetings and our work, we have since many years arranged our CPDC meetings in various countries. In this way we get to know more about the current situation for the engineers in most parts of Europe and we increase our network.

Looking ahead: most likely we will get our second female Chairperson at the 2008 General Assembly. The chairmanship has rotated between the member countries and we are lucky to get another inspired and competent chairperson. There is nothing contradicting the suspicion that there will not be less work in the coming years, but it will have to be shared. Participating in the work of the CPDC is in itself – CPD!



Sari Taukojärvi, CPDC Vice-Chairman
Claes Trolle, CPDC member
Marko Jagodic, CPDC Chairman

Do you want to be an engineer for life?

Managing a sustainable career as an engineer requires the help of Continuing Professional Development (CPD). The minimum requirement, in the fast developing world of technology, is to update your competence to maintain the level you are on. If you desire to move forward in your career path, you need to develop your competence further – acquire new skills or knowledge.

FEANI has been working in the field of Continuing Professional Development in various ways e.g. through having a CPD Committee with representation of different FEANI National Organisations. The CPD Committee is cooperating with The General Association of Engineers in Romania – AGIR and the FEANI Secretariat to organise an Academic Session on the occasion of the FEANI ANNUAL BUSINESS MEETINGS - 2008, which will be held in Bucharest (Romania) on 02 October 2008.

The title of the Academic Session is "**Engineer for Life – Continuous Professional Development is the Tool**". Expert speakers will be highlighting various aspects of CPD: what kind of roles do companies, universities and engineering organisations have in promoting and realising CPD.

You are warmly invited to attend the Academic Session and learn what is state-of-the-art in the field of Continuing Professional Development!

Introducing the Academic Session in Bucharest

Author : Sari Taukojärvi, CPDC Vice-Chairman





Finland's tribute to life-enhancing technological innovation



On June 11, the FEANI CPD Committee members and FEANI Secretary General were invited to the Award Ceremony for the Millennium Technology Prize which took place at the Finlandia Hall in Helsinki.



From right to left: Dr. Schanz (DE), Mr. Wauters (FEANI SG), Mrs. Vandenberghe (FEANI CPDC Secretary), Mr. Quaresma (PT), Dr. Zia (IT), Mr. Pekka Pellinen (TEK SG), Ms. Taukojärvi (CPDC Vice-Chairman), Mr. Trolle (SE)

The Millennium Technology Prize is awarded every second year to inspire and recognize technological innovations that provide answers to the challenges of our time, promoting both the quality of human life and sustainable development. It is the World's largest technology Prize and Finland's way to give tribute to life-enhancing technological innovations.

For the 2008 Prize, there have been 99 nominations from 88 organisations in 27 countries. The Laureates and the ultimate Winner of the Millennium Technology Prize are selected by an International Selection Committee appointed by the Board of the Millennium Prize Foundation. A pre-selection group consisting of a network of Finnish and international experts assists the International Selection Committee in its work. Final decisions concerning the Laureates and the ultimate Winner are made by the Board. The prize is awarded by Technology Academy Finland, an independent foundation established by Finish Industry and the Finish State in partnership.



President of the Republic of Finland Tarja Halonen handed Professor Langer the prize of EUR 800,000 and "Peak", the prize trophy.



International Selection Committee

2008 Millennium Technology Prize Awarded to Professor Robert Langer for Intelligent Drug Delivery



Professor Robert Langer



From left to right: Prof. David Payne, Prof. Emmanuel Desurvire, Dr. Andrew J. Viterbi, Dr. Randy Giles, Prof. Robert Langer and Prof. Sir Alec Jeffreys

The 2008 Millennium Technology Prize was presented to **Professor Robert Langer** for developing innovative biomaterials for controlled drug release. He is a pioneer of many new technologies, including transdermal delivery systems, which allow the administration of drugs through the skin without needles or other invasive methods. His work in drug-releasing polymers eventually led to the creation of a novel way to treat brain cancer and has also brought about significant advances in tissue engineering, including synthetic replacement for biological tissues.

Professor Robert Langer's innovations have had a significant impact on fighting cancer, heart disease, and numerous other diseases. Over 100 million people a year are already using advanced drug delivery systems and this number is rising rapidly. In the future, tissue engineering may revolutionize medical treatment that could affect millions of other individuals. Known as the father of controlled drug delivery and tissue engineering, Professor Langer has been cited as "one of history's most prolific inventors in medicine". Professor Langer's research laboratory at MIT is the largest biomedical engineering laboratory in the world.

The other 2008 Laureates were each awarded prizes of EUR 115,000 at the Award Ceremony. The DNA fingerprinting technique developed by **Professor Sir Alec Jeffreys** has revolutionized the field of forensic

science and methods of defining family relationships. No other development in modern genetics has had such a profound impact worldwide on the lives of many millions of people

Dr. Andrew Viterbi's innovation is the Viterbi algorithm, used to avoid errors in wireless communications systems and devices such as mobile phones. the key building element in modern wireless and digital communications systems, touching lives of people everywhere.

The fourth innovation awarded, the erbium-doped fibre amplifier (EDFA) invented by **Professor Emmanuel Desurvire, Dr. Randy Giles** and **Professor David Payne**, has vastly increased the transmission capacity of the global optical fibre networks that carry telephone and Internet communications signals.

"It is sufficient to say that each and every one of today's Laureates has excelled in fulfilling the most important of our requirements: benefit to mankind," said Stig Gustavson, Chairman of Technology Academy Finland.

The prize has now been awarded two times. The recipients, Tim Berners-Lee, in 2004, and Shuji Nakamura, in 2006, are excellent crystallizations of the purpose of the award. Their inventions, the World Wide Web and energy-efficient new light source blue LED, have significant potential for beneficial influence on the lives of billions of people.

For further information: www.millenniumprize.fi

New Trends and Challenges in Continuing Engineering Education at BUTE

Authors: Prof. J. Ginzler, Director, Institute of CEE, BUTE and Mrs. Z. Sárközi-Zágoni, Deputy Director, Institute of CEE, BUTE HU



New trends and challenges in continuing engineering education at the Budapest University of Technology and Economics (BUTE)

The Budapest University of Technology and Economics (BUTE) is one of the largest higher education institutions in Hungary. Its eight faculties offer undergraduate and postgraduate courses for more than 20 thousand students. A great part of the courses are taught in English, German, French and Russian as well.

UNESCO declared the building ensemble of the university, constructed between 1904-1910, to be part of the World Heritage.

Not only engineering education – established in Hungary in 1782 – but also continuing engineering education may well be proud of its traditions.

BUTE started its activities in 1939, and was the first in Europe to be founded as a university institute specialising in continuing education.

It was Győző Mihilich (1877-1966), an outstanding civil engineer and bridge builder, who organized the Institute and became its first director.

The major activity of the institute is to provide continuing engineering education, based on a course system.

In the early 80's – beyond the traditional technical demands – a strong need for interdisciplinary studies appeared. This trend is still apparent.

The major types of courses offered by the Institute are:

- technical courses relating to various fields of engineering,
- courses of economy, management and organisational aspects,
- courses of computer studies at different levels
- language and interdisciplinary courses,
- negotiation technics for engineers.

The gap between engineering and other sciences will decrease in the future, so the interdisciplinary knowledge will be more and more important.

Medical and engineering sciences will be closer and closer to each other, and as a consequence of it, new engineering disciplines will develop - among others – medical and biomedical engineering.

It can be foreseen that the biological engineering will also be important for the future application of advances in biology to solve problems facing humankind.

The majority of our students have B.Sc., M.Sc., or PhD level engineering degrees.



During the last years, taking into account the economy's need and the demand of an innovation driven European future, we introduced special postgraduate courses, such as:

- method for evaluation of the “earth-value”
- method for value-evaluation of ancient and national monuments
- real estate development
- applications of GPS technology
- sustainable energy future
- renewable energy sources
- energy balance of industrial buildings
- facility management
- engineering advisory activity according to the FIDIC system
- economic aspects of environment protection
- methods of recycling and its role in the environment protection
- different aspects of sustainable development
- electromagnetic compatibility
- protection against electrostatic damage and against electromagnetic pulse
- technology of tunnel construction
- method and application of somatoinfra diagnostics
- autodesk mechanical desktop
- application of AutoCad, drawing with AutoCad
- EOQ quality system, TQM model, etc

Our institute founded a so-called “Real Estate Academy”. It is a virtual academy, where we teach more than 15 subjects, which are closely connected with the different aspects of real estates. The participants, who finished successfully the proper examinations, get a special certificate of our institute, which proves that they are expert in the “real estate industry” in the different approaches of real estate affairs.

Continuing engineering education can be effective, if it is based on up-to-date scientific research.

Our institute takes special pride in selecting Hungarian and international lecturers, who are outstanding experts of the given field, whether they are university lecturers, researchers or practising engineers. Strong links are maintained between the institute's staff and experts working in higher education, research or in various fields of the economy.

At a time, when the European Union is assuming increasing importance, the market is expanding; technical research and development are facing great challenges. Our institute is a member of several well-known international organisations. This is an added means of enabling Hungarian engineers to improve their knowledge as well as to gain internationally accepted scientific and technical qualifications.

We are in close connection – among others – with FEANI; the HQ of the Hungarian Monitoring Committee is in our institute.

In our opinion, for the continuing engineering education should also be introduced an internationally supported and accepted credit system, which would promote the evaluation of the different post-graduate courses and through this, would enlighten the every day work of human resource managers in companies of different European countries. The general introduction of a proper, internationally accepted credit system could be a good base for the international mutual recognition of postgraduate engineering degrees, which should help the mobility of engineers in Europe. It is one of the most important tasks of the future directions of the continuing engineering education to be solved in our globalized world.

CNISF position on the “Grenelle for Environment”



FR

“Grenelle for Environment” Phase 1 / Group 1

The National Council of Engineers and Scientists of France (CNISF) presented their proposals to the Working Group 1 of the first phase of “Grenelle for Environment”.

They argued that while approving most of the proposed measures, these measures require the implementation of means in terms of studies, engineering, and erection, which are currently inadequate. Besides, their efficiency will have to be analysed in terms of the importance of the reduction of emissions of greenhouse gases they produce, and of the cost of a tonne of carbon saved. It is also desirable that the proposals be subject to a review with our European partners to achieve a consensus as broad as possible.

Fighting global warming is a clear and ambitious enough objective, sufficiently so that nobody puts in doubt the need to, at one and the same time, deliver maximum energy via non-emitting greenhouse gases on the supply side, and, on the demand side, at least hunt down wasteful habits, maximise energy efficiency, and, in critical areas, probably go beyond, and even perhaps bend our model of development.

The CNISF strongly supports the importance given to research with emphasis on relations with our European neighbours and, at world level, innovation, and proposes efforts to promote change in behaviour both for professionals and for citizens.

Buildings and Urban Development

The CNISF agrees with the assertion that buildings and the city are the main consumers of energy, but also make up a source of energy saving and reduction of GHG emissions all the more exploitable as they lend themselves well to the use of a wide range of renewable or low-emission energies and of innovative, energy efficient technologies.

The CNISF approves the proposals regarding an initial and ambitious work of energy renovation of existing buildings, and those which are aimed at new buildings, to the extent that the objectives will be supported by action plans and by banking, financial and taxation tools. The CNISF stresses the role of innovation and R & D to increase the efficiency of alternative energy sources such as photovoltaic, and on the need to strengthen the engineering competences in this sector.

Transports and Travelling

The CNISF agrees with the goal of returning greenhouse gases emissions to their 1990 levels by 2020 (decrease of 22%), but asked that the actions be consistent with the improvement in the living standards of the French, and especially with the competitiveness of France in the world.

It supports most of the proposals, and in particular the promotion of alternative modes of transport, treatment of air transport like the other modes, a series of actions relating to the development of collective and ‘soft’ modes of transport, management control measures restricting traffic congestion, rational organization of parking, the introduction of urban tolls and the evolution of urban planning regulations.

Regarding the car, the CNISF supports the establishment of an “écopastille” (special ecological tax) based solely on greenhouse gases emissions, those speed limitations showing a true efficiency provided they are enforced. It proposes to generalize on highways and freeways dynamic control of speeds in periods of high traffic volume. It agrees with the objective of limiting GHG emissions from cars to 120g of CO₂ per km and even to go beyond by promoting the dissemination of hybrid vehicles. It calls on the European Union to limit the power of cars at a reasonable level, being aware that these guidelines will involve a considerable effort for research and innovation from

the part of car manufacturers and their component suppliers.

It supports the principle of establishing a kilometre tax for heavy goods vehicles travelling on roads, provided that it is based only on greenhouse gas emissions and that the amount is harmonised at the European level.

The CNISF strongly supports the reorganisation of energy and environmental taxation insisting on the need for consistency of the action within European countries.



Energy

The CNISF supports the will to explore different production channels, and argues

that the various possibilities for combating climate change should be judged first on the basis of their performances in terms of reducing emissions of greenhouse gases, and then on energy savings generated.

As it is not realistic to expect the complete elimination of fossil fuels, particularly for transport, but also, in most countries, for electricity generation, the CNISF would like that the emphasis be put on research, especially on the capture and storage of CO₂ (for large plants), the results of which could completely change the deal, and on the development of nuclear technologies of 4th generation.

In France the introduction of new forms of energy, wind generators or photovoltaic, in the park of electricity production from mainland France can only provide fringe benefits in terms of reduced emissions of greenhouse gases. Therefore, the CNISF insists that France should get away from the rule of 21% renewable energy in electricity, a rule that does not take into account the specific characteristics of the French situation, where a much higher level of energies which do not emit greenhouse gases is already reached into its electricity production, and that the financial benefits granted to wind generators investors and operators find new types of regulation.

Phase 2 of the “Grenelle for environment”

From the start of Phase 2 of the “Grenelle for environment”, devoted to preparing for the future “Grenelle” law, the CNISF conveyed to the leaders of working commissions belonging to Group 1 contributions on topics it deemed underestimated in the final document of the round tables of October 24-26, 2007

The CNISF has thus raised four issues, and has formulated proposals for each one:

- **The report on collective transport or alternative services to mobility: organizing the development of habitat and activities around poles of services ; facilitate, on territories of relevant size corresponding to basins of life (country), the development of proximity services in all their forms**
- **The light commercial vehicles (LCV): negotiate, at European level, a contractual commitment with car manufacturers to set objectives for emissions of CO₂ according to categories of LCV, since no target for reducing emissions of CO₂ has been set up so far in France for LCV**
- **The warming and adaptation to climate change: develop a regional mapping of climatic impacts; adapt the rules and standards of construction to predictable extreme events**
- **The use of aquatic animal resources: promote at the European level a policy including a reduction as swift as possible of fishing capacities, an active policy of research and development in the field of aquaculture, the establishment of marine protected areas.**

All the contributions appear on the website of the CNISF: www.cnisf.org under “Dossier/Grenelle”

Studie: Produktion im Ausland spart deutschen Unternehmen keine Kosten

DE



Professor Bruno O. Braun, Präsident des Vereins Deutscher Ingenieure

Durch Produktionsverlagerungen von Unternehmen gehen jährlich 74.000 Arbeitsplätze in Deutschland verloren. Das belegt eine vom VDI in Auftrag gegebene Studie des Fraunhofer Instituts für System- und Innovationsforschung. „Diese Entwicklung ist bedenklich“, mahnt VDI-Präsident Professor Bruno O. Braun: „Jährlich verlagert jeder elfte Betrieb des Verarbeitenden Gewerbes Teile seiner Produktion ins Ausland. Zwei Prozent der Bruttowertschöpfung des Verarbeitenden Gewerbes gehen so Jahr für Jahr verloren - das sind sieben Milliarden Euro!“ Doch es gibt auch eine positive Entwicklung zu berichten: Seit Mitte 2004 ging die Zahl der Verlagerer in den Kernbranchen des Verarbeitenden Gewerbes von jährlich jedem achten Betrieb auf derzeit jeden elften Betrieb zurück.

Wenn Unternehmen ihre Produktion ins Ausland verlegen, erhoffen Sie sich davon Kosteneinsparungen. Mittlerweile ist der Trend rückläufig, dennoch geht insgesamt jeder elfte deutsche Betrieb ins Ausland. Dabei werden die langfristigen negativen Folgen meist außer Acht gelassen. Das zeigt eine aktuelle vom VDI in Auftrag gegebene Studie des Fraunhofer Instituts für System- und Innovationsforschung.

Umso unverständlicher sei diese Entwicklung, weil nicht jede Verlagerung die erhoffte Kostensenkung bringe. „Unternehmen agieren hier teilweise sehr kurzfristig und unprofessionell“, kritisiert Braun, „da sie schlicht und einfach viele Kosten nicht berücksichtigen.“ Die Folge: Immer mehr Unternehmen machen ihre Entscheidung wieder rückgängig und verlagern die Produktion zurück. Braun: „Was wir erleben, ist eine Renaissance des Standorts Deutschland.“ Hauptmotiv für die Verlagerung sind nach der Untersuchung in erster Linie die Personalkosten. „Genau diese Betrachtungsweise ist problematisch“, erklärt Dr. Steffen Kinkel vom Fraunhofer ISI. „Denn die Lohnkosten machen in vielen Betrieben nur noch 10 Prozent der Gesamtkosten aus, die hier zu erzielende Hebelwirkung ist also begrenzt.“ Er wünscht sich von den Unternehmen eine ehrlichere Vollkostenrechnung, die etwa auch künftige Entwicklungen mitberücksichtigt. „Die Anlaufzeiten am neuen Standort, das Netzwerk vor Ort oder etwa die Kosten für die Betreuung und Kontrolle werden häufig

nicht berücksichtigt“, sagt Kinkel. Im Ergebnis der Studie profitieren Betriebe eher von marktorientierten Produktionsverlagerungen, d.h. wenn dadurch auch neue Märkte erschlossen werden.

Dass Produktion in Deutschland sich lohnt, zeigt der Weltmarktführer Rittal, Systemanbieter für Schaltschränke. 70 Prozent des Umsatzes macht das Unternehmen im Ausland, aber 70 Prozent der Produktion findet in Deutschland statt. „Wir haben uns bewusst für Made in Germany entschieden“, sagt Norbert Müller, der Vorsitzende der Geschäftsführung bei Rittal. „Die breite Wirtschaftsstruktur und die hohe Qualifikation der Mitarbeiter sprechen für Deutschland. Der Standort ist weiterhin hoch attraktiv.“

Unterstützung bei der Standortbewertung bietet das Fraunhofer-Institut an. Eine spezielle Software liefert belastbare Ergebnisse für die Entscheidung zugunsten oder zulasten der Produktion in Deutschland.

Vollständige Studienergebnisse: www.vdi.de/studien

ECUK makes its point on immigration

UK

The phased introduction of the UK's new points-based immigration system is finally underway. One of the main aims of the scheme, which has been four years in the making, is to ensure that those who come to work here from outside the European Economic Area (EEA) have the talents and skills that the country needs. Eager that the engineering profession should have its say in these matters, ECUK has been holding discussions with the government agency that is implementing the system.

The new system will replace more than 80 separate work and study entry routes with a five-tiered framework. Those wishing to work in the UK will now have to amass a certain number of points, awarded on the basis of aptitude, experience, age and demand for their particular skills.

The five tiers are:

- 1) highly skilled individuals who will contribute to growth and productivity;
- 2) skilled workers with a job offer who will fill gaps in the UK labour force;
- 3) low-skilled workers to fill temporary shortages;
- 4) students;
- 5) youth mobility and temporary workers.

Roll-out of the system, which began with tier 1, is scheduled to be completed next spring – though there is no date for the introduction of tier 3, which has been indefinitely suspended.

The type of individuals that engineering companies are normally looking to recruit from overseas – ie, those with degrees and up to five years' experience – are unlikely to accumulate sufficient points to gain entry under tier 1. Thus most engineers will be applying under tier 2 – which is due to go live in the autumn. This will not only require that they have a job offer but also that their prospective employer is licensed as a migrant sponsor by the UK Border Agency. The onus is on employers to apply for inclusion on the sponsor register.

An independent body – the **Migration Advisory Committee (MAC)** – will advise government on shortage occupations, which will be used in the assessment of tier 2 applicants. The committee is due to make its first recommendations in June and there is still time for interested parties to respond to its invitation to submit occupations for possible inclusion on the shortage list. Composed mainly of economists, the MAC will itself be advised by a stakeholders' panel and occasional meetings of a stakeholders' forum.

ECUK will be represented at the first forum, in May, and is currently talking to MAC and the UK Border Agency about appointing a representative from the engineering profession as a member of the stakeholders' panel. In addition, it is pressing for extra points to be allocated to applicants who are ECUK registrants. It has also been looking into the important matter of establishing equivalence between foreign and UK engineering qualifications and has had useful discussions with UK NARIC (the national agency responsible for providing information and expert opinion on international qualifications), its aim being to ensure consistency in this area.



For more on the new points-based immigration system go to: www.ukba.homeoffice.gov.uk/managingborders/managingmigration/apointsbasedsystem/
A form for submissions to the shortage list can be found here: www.bia.homeoffice.gov.uk/sitecontent/documents/aboutus/workingwithus/mac/macreports/

Skills shortage endangers Slovenia's Economic growth and development

Author : Dušan Caf, Managing Director, CAF Consulting LLC

SI



Dušan CAF

Slovenia is facing a lack of highly qualified, skilled workers in the maths, science and technology fields, and the trends are worrying. The fast economic growth in 2006 and 2007 revealed that the skills shortage became one of the most important barriers that might hinder the future economic growth and development. The problem will increase due to negative demographic trends and stagnation of students. Changing values in society have also influenced a smaller interest in maths, science and technology studies.

In the first quarter of 2007, Slovenia's economy, fuelled by flourishing exports, domestic spending and investments, expanded at an annual rate of 7,2%. The fast economic growth, not surprisingly, indicated the structural worker shortage. In the second quarter of 2007, one third of companies in the manufacturing industry claimed they lacked skilled workers. Moreover, it was the highest skilled workforce shortage since the independence in 1991. It was more than 50% higher than at the same time in 2006 and three times higher than at the last economic growth peak in 1999. The worker shortage had increased slowly since mid nineties until 2006 when it grew faster than within the entire decade before. The same happened with the general worker shortage, where 15% of companies in the manufacturing industry reported the shortage. Although the demand was much smaller than for the skilled workforce, it also grew enormously as the shortage in the second quarter of 2007 was three times bigger than in the same period of 2006 (Source: Statistical

Office of the Republic of Slovenia). The skilled worker shortage has become one of the biggest obstacles in sustaining Slovenia's fast economic growth and development. The problem has been well known within the IT sector where companies have tried for years to attract skilled workers from South Eastern and Eastern Europe. As the legal immigration of professionals was not sufficient, some IT companies have been forced to establish branches in the countries of Western Balkans in order to employ local skilled workforce.

Recently, other sectors have also been facing the skilled worker shortage, especially amongst the engineers. As the manufacturing and civil engineering sectors are the main pillars of the current economic growth, the shortage of engineers might have a severe negative impact on their future performance. The number of workers employed in the civil engineering occupations grew 21% in 2006. The growth was also high in other engineering occupations (8% on average) and computer profes-

sionals (13%). As a result of increasing demand, the unemployment amongst engineers (6,4%) was lower than in the total workforce (11,1%), excluding self employed and farmers. Moreover, the lowest unemployment was in electrical engineering (2,8%), civil engineering (3,3%), and electronics and telecommunications (4,9%). (Sources: Statistical Office of the Republic of Slovenia; Employment Service of Slovenia)

Decreasing interest for math, science and technology education

The enrolment of students in the tertiary education reveals the educational structural gap in Slovenia that might endanger the country's future economic development. The number of all students enrolled in the tertiary education in Slovenia in the period between 1998 and 2004 grew 7,4% annually. The annual growth in the maths, science and technology tertiary education was 6,1% and decreased over the period to

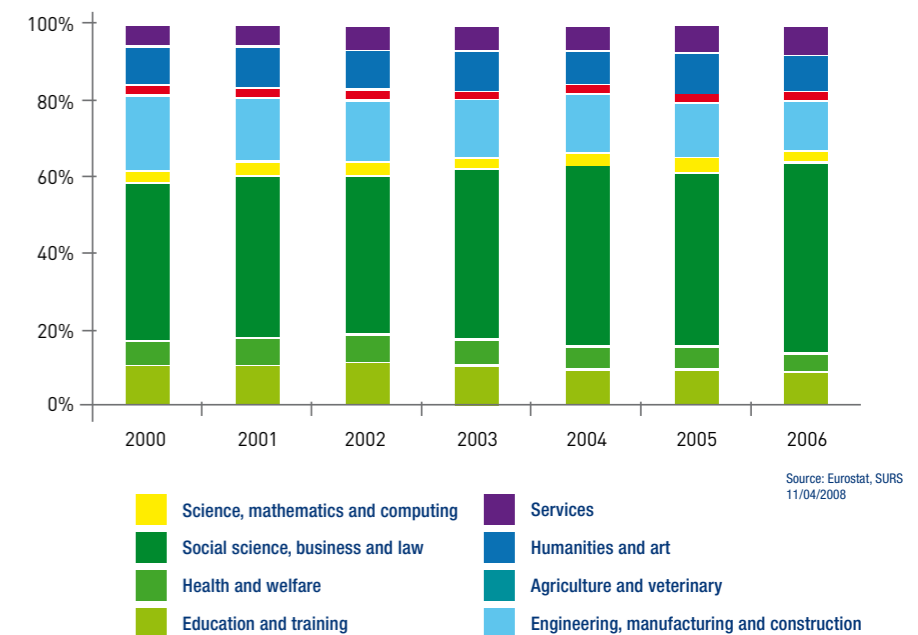
3,7% in 2004. The compound annual growth in the same period was much smaller in the engineering tertiary education (4,7%) and over the period declined from 13,2% to 0,3%. On the other hand, the highest growth was recorded in the computing education, where the number of students grew 10,8% annually and the growth was 16,5% in 2004.

The structural changes are clearly seen from the figures on graduates by the education field in the period between 1998 and 2006 (Figure 1).

The engineering education and professions in Slovenia have become less attractive, although the major contributing sectors to the GDP and economic growth are still those depending on the engineering skills. However, due to the structural changes in the Slovenian economy on the one hand and much deeper changes in values in society on the other hand since independence in 1991, the most preferred studies have become those in the field of social science, business and law. The maths, science and technology studies have been less and less popular. Even more so, as they have a stigma of being difficult studies.

Once highly respected engineering professions have lost their esteem also because of relatively low salaries compared to some other professions in the health and public administration sectors. The unions representing doctors, lawyer and public administration occupations are very strong and have secured high salaries for their members. On the other hand, engineers are not so well organised and do not have any engineering union. Salaries of engineers may therefore vary significantly and depend on the industry sector. However, the average salary is significantly lower than in comparable professions in the public sector. A comparison of data on graduates and employment confirms that maths, science and technology professions are becoming less attractive, as more and more graduates later work in other professions, especially in sales, marketing, management and public administration.

Figure 1: Graduates in Slovenia by Field of Education



Source: Eurostat, SURS 11/04/2008

Lack of active policies to tackle a skills shortage problem

Slovenia opened the labour market by joining the EU. The immigration trends have been positive, yet not sufficient to compensate for the lack of domestic workforce. Unfortunately, only a small share of immigrants represents the skilled workforce. Slovenia does not have any active policy of attracting skilled workforce, although there have been several initiatives, especially within the IT industry. On the other hand, there is relatively high immigration of less qualified workforce, especially in the civil engineering sector and for season jobs.

Lower salaries than in more developed EU member states and high taxes retreat highly skilled workforce from abroad. There have been several initiatives to lower taxes, but the Government has not made any significant changes. The macroeconomic environment remains less attractive than in some other EU member states. The Government is aware that the lack of engineers is becoming a serious barrier for industry to secure its future growth, but has yet to take any decisive action to improve the situation.

Outlook

Both, companies and the public sector will face the engineering skills shortage in the coming years. The supply of new engineers will decrease due to negative demographic trends and stagnation of students. Slovenia has to reconsider its policies to increase the number of highly qualified, skilled workers, especially engineers. It will have to take proactive steps in the education policy and promotion of engineering skills. Policies and actions are also required to provide better training and qualifications for engineers, as well as lifelong learning to keep them employable.

Changes are required in the fiscal policy in order to reduce the taxation of salaries and make the country competitive to attract the best human resources from abroad. The changes are also required in the immigration policy to attract more engineers and other highly qualified, skilled workers as Slovenia cannot secure its future growth on its own resources.

Slovenian engineers will have to be proactive, too. They should follow examples of countries like Denmark or Germany and build strong engineering associations to promote their professions.



Marine Engineering: Beyond our Shores

Author: Ing Helga Pizzuto, President of the Chamber of Engineers

MT

Malta's strategic position at the centre of the Mediterranean has always meant that our long and illustrious history has been inextricably linked to the evolution of the maritime industry, and to those sectors which depended on this industry. Our shores and harbours played a significant role in the economic, military and cultural history of the Mediterranean.



President, Ing Alan Abela, Treasurer CoE & Conference Chairperson and Committee with EU Commissioner Dr Joe Borg.

Although marine engineering is probably one of the oldest established fields of engineering locally, and Malta is considered to be a maritime nation, the Chamber of Engineers felt that the engineering profession could benefit through a sharper focus on the diverse engineering applications that constitute this sector. Our initiative met with strong support and this is reflected in the wide variety of topics presented at the conference.

Malta's history as a maritime nation provides the foundation for today's success stories in a number of areas in the maritime field. Malta is today one of the leading countries for ship registration, our cruise liner terminal is possibly the most spectacular in the Mediterranean, and a berthing place in our marinas is definitely sought after. Our coastline provides a number of natural ports

that have always been one of the main features of our islands. We felt it fitting to commence the conference with a historical background of the Grand Harbour, which is presented by a leading maritime historian, Mr Joseph Muscat.

The Grand Harbour is one of the focal points of our islands' history. Even today, it is still an important hub in the islands' transportation and tourism industries. The Malta Maritime Authority has recently invested in a ports and coastal traffic management information system for state-of-the-art surveillance of our coastal waters. Captain Richard Gabriele presented the features of this system.

An innovative approach to the maximisation of Malta's maritime position is that taken by **MARSEC-XL. This is a Marine Software Engineering Cluster of Excellence for the yachting sector.** MARSEC-XL has been set up locally with international support and the Chief Executive Officer, Mr Geir Fagerhus, updated the conference on the future in the yachting business from this perspective.

Mr Gorka Salsidua Urrueala drew attention to the environmental advantages of the latest technology for energy saving in shipping, by the use of technologically

advanced hull coatings. Although shipping is intrinsically an energy efficient mode of transport, the expanding fleet of the global shipping industry offers an excellent potential for fuel saving.

Dynamic Positioning is the technology used to keep marine vessels in place where conventional methods such as anchors cannot be used. Mr. Daniel Endersby, from the Dynamic Positioning Centre, delivered a presentation on the technical solutions that are used by a Dynamic Positioning system to suit different applications and environment conditions.

Dr. Dominic Hudson from the School of Engineering Sciences at the University of Southampton is a lecturer in Ship Science degree programmes and has research interests in ship propulsion, seakeeping, and manoeuvring of high speed craft. Dramatic improvements in craft performance in recent years have led to the human element becoming the limiting factor for high speed operation. Dr. Hudson highlighted the analysis required when designing high speed craft from a human factors perspective.

It is quite fitting when one considers Malta's maritime status that the first Maltese EU Commissioner Dr. Joe Borg was entrusted with the responsibility for Fisheries and Maritime Affairs. Dr. Borg was appointed EU Commissioner in 2004 shortly after Malta's accession to the EU. He is currently responsible for the implementation

of the new EU integrated maritime policy in Europe's three main maritime regions. Dr. Joe Borg updated the conference on the latest developments on the European Maritime policy.

Another local speaker was Dr. Ing. Duncan Camilleri from the University of Malta. Dr. Camilleri has followed research studies in welding technology and this forms the basis of modern shipbuilding methods. This presentation focused on the latest techniques in the design and manufacturing processes for large thin-plate structures.

Since engineering in Malta and marine engineering in particular, can be traced back several hundred years to the dockyard in the Grand Harbour, it is a common misconception to think that marine engineering in Malta is limited to the traditional ship repair role that is associated with the Malta Drydocks. The Chief Executive Officer of the Malta Shipyards outlined how the developments that have taken place in the local ship repair industry, as well as the diversification achieved in this sector.

Dr. Alistair Greig from the University College London presented a study on perhaps a lesser known environmental effect of marine transportation. The transfer of ballast water on vessels from one port to another takes with it sediment and marine organisms. This is today identified as one of the major contributors to the introduction of Non Indigenous Species. This invasion has been recognised as a major threat to marine ecology and a problem



EU Commissioner Dr Joe Borg

of global importance. Dr. Greig's presentation outlined the technical background to a better understanding of this phenomenon and recommended better flushing practices proven to minimise this hazard.

Another environmentally related presentation was delivered by the Director of REMPEC, Mr Frederic Hebert. REMPEC is the Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea, and appropriately, this is based in Malta. The Mediterranean is often cited as one of the world's seas with the highest risk of marine pollution, and this presentation outlined the international and regional co-operation procedures for prevention, and response to marine pollution.

The conference provided a venue to identify the diverse technologies and developments that form part of the local and international marine engineering sector. The Chamber of Engineers is confident that the conference continued to establish the fact that marine engineering in Malta is a vibrant industry with excellent potential for continued growth.



The Design and Build of World Class Sailing Yachts

Author: Tim Smyth, Naval Architect and Designer- X-Yachts Design UK

The X-Yachts Story



Tim Smyth

In 1979 one of today's most successful quality orientated production yards was established in Haderslev, Denmark. During the 1980's X-Yachts designed and built winning IOR yachts (International Offshore Rule) at world championship level. Their success within this area quickly attracted the attention of the cruising market, looking for fast, high quality and comfortable sailing yachts. Using their engineering experience from the fast racers X-Yachts have now moved on to produce a wide range of boats. These include fast one-design racer-cruisers, performance cruiser-racers and more recently, dedicated offshore cruising yachts.

The purpose of this article is to give the reader some insight into the design work that X-Yachts' in-house engineers take on in developing these boats. There are many interesting areas that could be discussed. This is however an overview of the process so it has been the intention to avoid digressing too far towards any one topic.

Design

X-Yachts design group consists of a team of around 15 Naval Architects, Engineers and Industrial Designers. Leading this team is the original designer; now design director and shareholder of the company, Niels Jeppesen. The team is split between two sites; one close to the main production yard in Denmark and another in Southampton, UK, adjacent to the dealership there. The geographic location of these offices works well. From a production point of view it is important for designers and engineers to be in touch with the day- to-day demands of the builders and feedback

information that might improve quality and efficiency for future designs. The UK site allows the design team to keep a finger on the pulse of the European racing scene as well as getting some first hand reactions from customers, existing and prospective. The UK market is by no means the only relevant area of course; the sales and marketing team also collect information from the worldwide dealer network to monitor the needs of our customers. The focus of the two offices is slightly different, with the UK office more oriented towards the earlier loops of the design spiral. The first layout, hull lines and deck design are mainly done there with input from our experienced

naval architects and engineers in Denmark. The bulk of the engineering and drafting work is shared amongst the office as a whole but the last details and daily support for the yard generally takes place on site in Haderslev where it is easier to control and understand problems.

3D Design and Machined tooling

The female moulds for production are made over a male tool referred to as a plug. Traditionally plugs for hull and deck would be manually built by strip planking over a "jigsaw" of transverse frames and supports. This is then hand faired and finished. Whilst this method is still necessary at times, the build tolerances are relatively large. The majority of our plugs are now computer cut in a **5 axis milling machine**. With much smaller build tolerances, it is possible to really compress the development time for a new model. All the parts can be built individually and easily assembled first time. This not only saves time and cost in development and production but also improves the quality and repeatability of the end product.

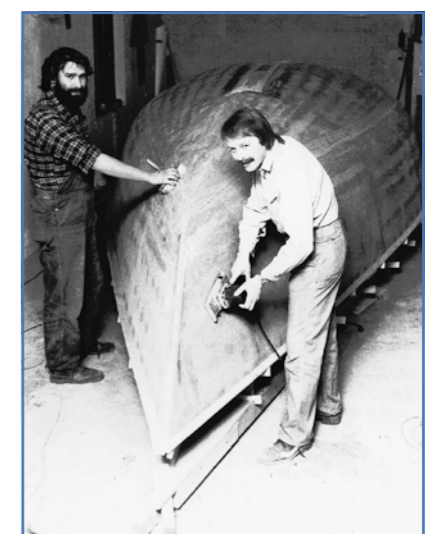
The demand for all parts to be designed to a level required for milling also calls for a change at the design level. In past years, AutoCAD has been the software tool of choice for most yacht design offices. Now we also use **Siemens' product NX, formerly Unigraphics**. NX is a parametric **3D design package widely used in industrial design**. It is possible to work with solid or surface components. These can be grouped into large assemblies of parts with parametric links that update changes from one area to the next. Hull and Appendage design is still carried out in specialised packages that can easily output the relevant design parameters.



5 Axis machining of the X-35 Hull Plug

The advantages of such a 3D model for each boat are huge. Apart from the precision with which we can build moulded parts with complex interactions, there is a big advantage when it comes to packaging. The 3d tool allows our team to get the most out of the space available and minimize the number of unexpected conflicts in production. Detailed 3D models are also great for producing rendered images for marketing and sales material.

This technology is almost at the stage where we can get better interior images from the computer than from photographs of the finished boat. See rendering of the new XC 45 Saloon.



Niels Jeppesen & Birger Hansen in 1979 (Traditional Plug Building)



Xc 45 - Interior Saloon Rendering



Xc 45 - Interior Saloon Rendering



Xc 45 - Photo Interior

Weight control is another primary consideration in yacht design. Component weights and centres can easily be exported from the 3d model into our weight estimate spreadsheets so that we can work with real weights rather than relying on rough scaling methods.

3D design and machining of parts does present its own challenges. Whilst it is great for as much as possible to be modelled and detailed before the build starts, time scales are always limited. With the increased design workload associated and finite resources for milling it becomes increasingly important to keep track of the critical path in the design office. With hand built hulls and decks, the yard can start building before all of the details have been drawn with a progressive flow of information. To machine a deck however, every last plinth, gutter and hinge recess must be frozen before we start to cut the plug.

“Yacht interior design will always be a real challenge, trying to fit as much as possible into a limited irregular shape with high demand for systems, structure and machinery space.”

Considerations for Handicap Racing

Yacht design has always been a real game of compromise. Depending on your priorities, there are a huge number of different design configurations to choose from. **The area of the market at which X-yachts are aimed is a boat that can race competitively whilst maintaining a good level of comfort, quality and longevity.** When talking about competitive racing, there are again different areas to look at. There are ‘one design’ classes where strict rules ensure that all the boats competing are the same. There are ‘box rules’ where different designers build similar boats to a rule that encourages innovation within certain limits. Probably the most common form though is handicap racing where any boat (within reason) can compete in a mixed fleet. One-Design events are organised for a number of X-Yacht classes but the majority of boats regularly compete in handicap racing.

In past years there have been many rules conceived that attempt to rate sailing yacht performance for this purpose. The rules which have emerged have been of varying levels of complexity. As an example, two current rules in use are the **ORC** (Offshore Racing Congress) International Handicap Rule and the IRC Rule. (Interestingly, the letters IRC don’t officially stand for anything. **RORC, the Royal Offshore Racing Club** who administer the rule, say that the letters I and R come from “International Rule”. The C is sometimes referred to as “Club” but this is never published.)

The ORC rule appears to be the more refined of the two. Hull shapes are digitised and entered into a velocity prediction program (VPP) along with other principal dimensions to determine different handicaps in different race conditions. Stability is directly measured by inclining experiment. Here, known weights are moved a set distance and the boat’s response is carefully measured. From this data, it is possible to calculate centre of gravity from which the VPP estimates righting moments at different heel angles.

The IRC rule is not so complex. Instead of detailed hull measurement, the input is limited to basic measurements and parameters. Stability is not directly measured and there is a single handicap factor to cover all conditions and course variations. This is a very brief generalization of these rules but illustrates the main difference; the ORC rule is more refined but the IRC rule is easier and quicker to measure and administer. For its simplicity, the balance of popularity is in favour of the IRC rule in many places today.

How does the handicap rule affect the choices made by the designer?

If these rules perfectly predict a boat’s performance, life would be easy and you could design and build a boat to fit wherever you would like to place it regarding performance, handling and comfort. Unfortunately, with so many parameters to consider, no rule can ever be perfect. Some things will be over or under penalised by the rule due to limitations of the method used. Others will be deliberately over or under penalised to encourage the designer in a particular direction. Increased stability for example could be under penalised to encourage designers to build stable, safe boats.

The effect of this is known as type forming. Obviously the aim of the designer here is not to make a boat that is slower than the rule will predict or it will be uncompetitive. Perhaps the biggest limitation of the IRC rule is that it doesn’t directly measure stability. The exact assumptions that are made by the rule in estimating stability are unknown. They are kept secret from designers and builders to try and avoid unfair gains by those who seek to cheat the rule, but they must be determined from the basic data given and simple observations about the boat’s configuration and materials used.

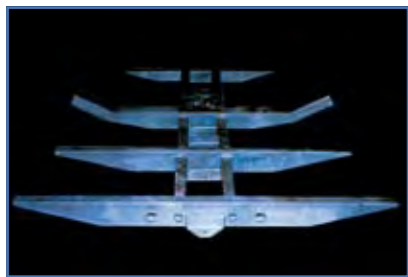
This is where quality production builders are at a disadvantage. Things like steel keel reinforcement, moulded hull and deck linings, and an approach to structural design that will make the boat very reliable are fundamentals for which X-Yachts are well known. Unfortunately it isn’t always apparent that the weight cost associated with these is accounted for when allocating ratings. If an X-41 for example were rebuilt as a one off racing yacht abandoning her trade mark qualities, it would be possible to take a significant amount of weight from the interior and structure which could be added to the bottom of the keel. All measurements supplied for rating would be the same and it is very unlikely that this would be penalised. With a lower centre of gravity however, stability would increase and it would be possible to use more of the power available from

“Steel keel reinforcement, moulded hull and deck linings, and an approach to structural design that will make the boat very reliable are fundamentals for which X-Yachts are well known.”

the sails across the wind range. The boat would undoubtedly be faster in most conditions. This is one of many challenges to be met in the design process where extra care and attention must be taken. X-Yachts have a great reputation for building some of the best performing production boats on the market. This cannot be compromised so the design team must work hard to stay ahead of the game. We have the advantage of a large amount of empirical data from previous boats that can be used to compliment VPP data used in-house. Feedback from racing and testing allows us to validate our design estimations and optimise each models performance so that no well sailed boat will be uncompetitive; even within the production and quality constraints that one off racing yacht builders need to impose.



Race n°6 from the first X-41 World Championship 2008 in Copenhagen



Galvanised Steel Girder System

The continued use of the pioneering "X-Yachts" Galvanised Steel Girder System, laminated into the hull, accepts the loads from the mast, keel and rigging. It also includes the central hoist attachment. In simple terms, it is the "Chassis" of the boat (calculated to accept 2G deceleration, i.e. from 9,5 kts to stop in 60 cm, without structural damage to the boat).



High Ballast / Weight Ratio

X-Yachts achieve a high ballast / weight ratio, where almost 50% of the total yacht displacement is ballast. Thanks to the keel design and construction, together with the use of the steel girder chassis and the sandwich hull construction, this equates to high stability, stiffness and a low centre of gravity.

Materials and Structures

The hull and deck of each of the 12 models currently in production **is female moulded in sandwich FRP** (fibre reinforced plastic). For most areas of these parts, the basic laminate consists of bi-directional e glass fabrics laid over a closed cell PVC foam core. For the majority of models in production, **the laminating process is carried out by hand using polyester and vinylester resin systems**. Work is currently underway to implement epoxy vacuum infusion in production. Epoxy resin is a matrix with better mechanical properties than vinyl ester and polyester but is more expensive and harmful to the work force if not handled carefully. The vacuum infusion process offers a number of benefits over hand lamination. Whilst the process relies on a more highly skilled workforce it provides better consolidation and limits the exposure of the laminators to resin and emissions.

Designing yacht structures is quite challenging. The structure is complex with a composite of many different materials of differing stiffness and strength. There is quite a range of loading conditions to be considered in a very dynamic environment.

At X-Yachts, design pressures and factors of safety for structural analysis are taken from the "American Bureau of Shipping's Guide for Building and Classing Offshore Racing Yachts". The criteria of these classification society rules are universally accepted and widely used in the industry.

Any warranty issues from past boats are also carefully documented. In some areas, extra in house factors of safety are applied from past experience. The supporting structure for hull and deck consists of a number of principal transverse divisions, bulkheads or ring frames. Panels are then further subdivided using floors and stringers. Wherever possible, existing interior items are incorporated into the structure to save excess stiffening weight.

Obviously loads other than dynamic and static water pressure must be considered. The loads from the keel and rig are tied into a steel grillage structure under the saloon sole. Whilst it is possible to build a strong enough structure in FRP, the steel reinforcement allows a stiffer stronger solution with less intrusion into the interior. Keeping the mast and rigging stable is really important to effectively tune the rig to the prevailing conditions. For the same reason, rig design is a really important performance driving factor. Discontinuous rod rigging is used to limit deflections and maximise rig control. Our engineers work closely with the specialist rig suppliers to choose the correct section characteristics and get all the details right.

All aspects of the design and build of the boats must comply with the terms of the Recreational Craft Directive (RCD) for CE marking.

The Build

The build process is divided into several distinct stages each with applicable equipment and skilled personnel.

Moulding - Hull deck and small mouldings are laminated and delivered to the main production facility for fit out. The deck and interior lining mouldings are bonded together in their moulds to ensure correct alignment.

First stage fit out - Keel structure, hull lining and primary bulkheads are bonded in. Precise jigs and mould location details are used to get these fundamental parts correctly placed. Meanwhile, sections of interior are sub assembled and the deck is fitted out as far as possible before mounting. Anything that can be dressed or prepared off the job is made ready so that the final fit out stage can be compressed with as few people on the boat as possible.

Final fit out - Systems, machinery and modular interior units are all fitted and the deck is mounted.

Rigging and launch - The appendages are fitted and the mast is stepped and tuned. All boats and components go through a rigorous quality control procedure before delivery.

There is obviously a lot more than this to the build process that could be discussed. Efficient production is one of the prime considerations of any series boat builder these days and we are always striving to reduce costs in the right places to deliver better value to our clients.



Xc 45

X-Yachts Today

After almost 30 years of boat production, X-Yachts have just held their "2008 Gold Cup" in Copenhagen, Denmark.

With 120 yachts in attendance and more than 1300 participants, this was the largest keelboat regatta ever in Danish waters. The X-41 One Design class had its first international meeting. 32 boats from 16 nations were competing after less than 18 months of production; a great success. The first of the new "Xcruising line", the Xc45 was also debuted at the Gold Cup with fantastic response.

With more new models on the drawing board, across the three lines, we hope to maintain X-Yachts position as one of the leading brands in quality sailing yacht manufacture for years to come.

For more information visit the X-Yachts website: www.x-yachts.com



X-35 Deck Preparation



X-35 OD Production Line

2008 X-Yachts Gold Cup - X-41 One Design class competing



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The Lisbon Treaty and the Job Mobility Action Plan 2007-2010

Author: Dott.ssa Ylenia Cimmarrusti, formerly Assistant at FEANI for the ENGCARD feasibility study project



Ylenia Cimmarrusti

The Lisbon Treaty and the Job Mobility Action Plan 2007-2010: which impact on professional recognition and on European worker's mobility?

The Lisbon Treaty was signed on 13 December 2007 amending the Treaty on the European Union.

The revised Lisbon Treaty aimed to solve the problems caused by the stalemate following the "NO" of France and the Netherlands. It improves the democratic character of the Union by increasing European Parliament's powers and ensuring the transparency of the EU Political Process. It reaffirms the values and the objectives of the European Union.

The Lisbon Treaty establishes the extension of the **Qualified Majority Voting** system to 40 new areas and its democratic reinforcement by the introduction of an upgraded qualified majority called "**Double Majority**".

All decisions concerning freedom of movement of workers, mutual recognition of diplomas, certificates and other evidence of formal qualifications, measures designed to encourage cooperation between Member States and support their action in the field of employment (exchange of information, best practices, comparative analyses and advices) and in the field of vocational training... were governed by the qualified majority set by the Nice Treaty. As of 2014, all these areas will normally be regulated by the "Double Majority".

According to the new "Double Majority" (when entered into force), a decision will be adopted within the Council if it obtains the approval of 55% of Union Member States representing at least 65% of the Union's citizens.

This new voting system is considered more democratic and more effective;

it reflects both the will of the majority of European citizens and also the reality of the weight of different Union Member States. It will facilitate the formation of majorities and the decision making process.

It must be stressed that according to the Lisbon Treaty, Member States keep their exclusive competence in the field of education, professional training, youth and sport. This element could continue to represent an obstacle to

a decisive rapprochement of national education systems.

The Lisbon Treaty furthers the agenda for a better functioning of the single market. It will enable the creation of a European research area - a single market in knowledge to make it easier for researchers to share their talents in other countries and it will allow for an easier recognition of professional qualifications across Europe such that professionals can work more freely across borders.

The Lisbon Treaty attributes a binding legal force to the Freedom to choose an occupation and right to engage in work and to workers' right to information and consultation within the undertaking both included in the Chart of Fundamental Rights. In addition, the EU assumes full employment and social progress as new social objectives. A social clause demands that social requirements are taken into account in the Union's policies. These requirements are linked to the promotion of a high level of employment, the guarantee of adequate social protection, the fight against social exclusion, and a high level of education, training and protection of human health.



As of 2014, EU's actions in the social sphere will be decided by double majority. It supposes that this will promote the improvement of working conditions; favour better information for workers, the integration of those excluded from the labour market; the equality between men and women with regard to their chances of access to the labour market and the way they are treated at work and finally, encourage the fight against social exclusion and the modernisation of social protection systems.

Better social services for workers who move around the European Union are foreseen; as a consequence, migrant workers and their families will have all periods of work taken into account in order to receive the allocations they are entitled to.

The Lisbon Treaty enables the European Council to decide by double majority for the adoption of measures necessary:

- to improve the co-operation between Member States with regard to the protection of workers in the event of termination of a work contract, and
- to enhance the collective representation and defence of the interests of workers and employers.

Since the unanimity rule is maintained with regard to decisions about numerous issues in this domain, this mechanism will allow the Council to attenuate potential blockages in this area.

“The Lisbon Treaty establishes the extension of the Qualified Majority Voting system to 40 new areas and its democratic reinforcement by the introduction of an upgraded qualified majority called “Double Majority”.”

Complementary to the Lisbon Treaty and as part of the integrated guideline for Growth and Jobs n°20 of the Lisbon Strategy, the European Commission has adopted a communication on Mobility, an instrument for more and better jobs: the European Job Mobility Action Plan (2007- 2010)

The lessons learned from the 202 Action Plan and 2006 European Year of Workers' Mobility, have lead to a policy debate which resulted, in December 2007, in the setting up of the new **Job Mobility Action Plan for 2007- 2010 (JMAP)**.

Already in 2002, the European Commission adopted an Action Plan for Skills and Mobility. It was a

contribution to the achievement of the Lisbon objectives of more and better jobs, greater social cohesion and a dynamic knowledge-based society.

The Action Plan's main objectives were:

- to expand occupational mobility by ensuring that education and training systems become more responsive to labour market,
- to facilitate geographical mobility through the removal of administrative and legal barriers, to develop language and cross-cultural skills,
- to promote cross border recognition of qualifications and to create a EU-wide immigration policy.

Finally, both occupational and geographic mobility through the provision of information about existing opportunities for mobility, will be mainly promoted through the setting up of a single mobility information web portal and the improvement of the **EURES** job vacancy system.

At the time of the adoption of the Commission's Action Plan (2002), overall mobility figures, both between sectors and geographically, were low, and the economic slowdown that Europe was experiencing made less likely for mobility to take place.

Reading the Final Report on this Action Plan adopted on 25 January 2007, it is interesting to understand which are the results of all the actions foreseen. Concerning the expansion of occupational mobility and skills, the Council adopted three benchmarks: reduction of early school leavers percentage, improvement of secondary school attendance, reduction of the 15-years olds' illiteracy percentage, to be achieved by 2010. Important steps forward have been noticed in these areas.

In the area of transparency and transferability of qualifications, the single framework for transparency of qualifications and competences, **EUROPASS**, was launched in February 2005. As for the **European Qualification Framework (EQF)** a public consultation was held and a decision on in this area was adopted in February 2008.

In the Information and Communication Technologies (ICT) area, a European ICT skills Meta-Framework has been created to promote a better understanding of the nature and structure of ICT skills.

Concerning the encouragement of life-long learning and continuing training, the European social partners have adopted a common framework of actions for the development of competencies and qualifications in 2002.

One of the most important actions aiming at facilitating mobility has been the introduction of the European Health Insurance Card and the improvement of the coordination of the Social Security Schemes.

Moreover, the recognition of qualification has been facilitated by the adoption of the Directive 2005/36 which introduces a number of important changes including a better cross-border provision of services for regulated professions.

In September 2003, the Commission launched the EURES Job Mobility Information Portal to improve information and increase transparency of job opportunities in Europe.

It is clear that significant progresses have been achieved but obstacles to workers' mobility remain strong (legal and administrative obstacles, housing costs, portability of pensions schemes and barriers to the acceptance of qualifications in other Member States).

The European Union is still characterized by strong inequalities between regions: for instance, some show skill shortages and low unemployment rate, others show, on the contrary, skill surpluses and high unemployment, etc.

Since 2002 mobility has, on average, remained low in both occupational and geographical terms. With regard to job- to-job mobility, the figures indicate that 38% of EU workers have been in the same job for over ten years and less than 2% of EU citizens live and work in another Member State.

These specific initiatives cover four areas:

- **The improvement of existing legislation and administrative practices on social security coordination and on the portability of supplementary pensions**, by strengthening the TRESS (Training and Reporting in European Social Security) framework and through administrative cooperation between national institutions.
- **The provision of policy support from authorities at all levels**, by creating an inventory of existing mobility schemes at national, regional and local level and by developing appropriate mechanisms (based on existing European programs such as Leonardo Da Vinci or Marie Curie) to encourage workers' mobility.
- **The reinforcement of EURES**, by enhancing its analytical potential, the scope and the quality of its services and by increasing its operational coverage and its relations with other providers of similar services.
- Finally, **the increase of awareness on the possibilities and advantages of job mobility among the wider public**, by organising an annual “European Job Days”, by launching the “European Job Mobility Partnership”, by supporting, within the “PROGRESS” Programme, the financing of pilot activities, the exchange of good practice and the dissemination of results on new developments.

The assessment of the previous Action Plan and the realization of these persistent threats suggest that new initiatives need to be undertaken:

- making the European workforce more flexible and adaptable to the European Labour Market,
- removing legal and administrative obstacles and further promoting the cross-border recognition of qualifications,
- providing a more accurate picture of the supply and demand of ITC skills,
- better managing migration,
- improve the mobility information portal system (EURES).

To fulfil these wide but fundamental objectives, the New Job Mobility Action Plan foresees 15 specific actions to help removing barriers to mobility, encouraging the relevant authorities to cope with obstacles at national and local level.

To conclude, the signing of the Lisbon Treaty and the launch of the Job Mobility Action Plan for 2007- 2010 together with the renewed Lisbon Strategy for growth and jobs, offer new important perspectives and new valuable opportunities, but also entail major challenges for the so-debated enhancement of European workers' mobility.

Without doubt, those new initiatives are very ambitious and they will require the support of all Member States, in particular of the new ones regarding the adaptation of their national legislations.

As shown by the implementation of previous mobility initiatives, the consideration of all stakeholders' needs, the mediation between all Member States' positions and the softening of their reluctance towards some very incisive but innovative reforms, are the good ingredients for the achievement of positive and successful results.

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