

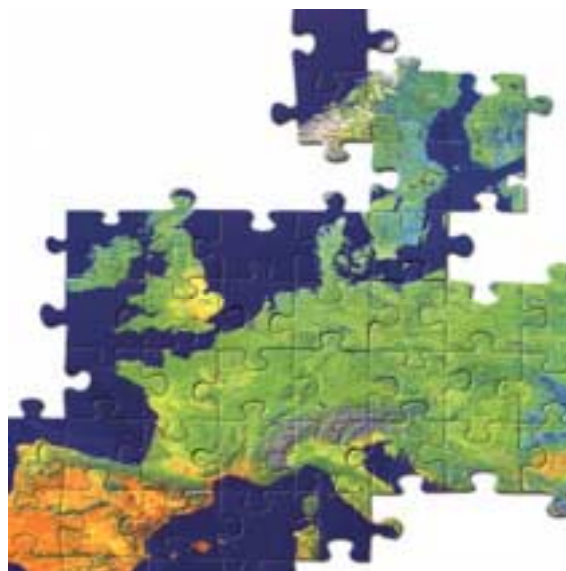
eye-Contact

Issue 2 21 September 2002

The Journal of the European Young Engineers

Content

Insight EYE	2		
EYE The Hague's magic portion	2	European Conference on Waste Management	6
Experience with the new workshop model	2	Rethink the Office & Unlock Potentials	6
EYE Database to be launched until November	3	Nanotechnology – the kingdom of the dwarfs	7
EYE Family	3	“For Women Only” Second Career Workshop with DaimlerChrysler	8
Give the environment a voice – European Federation of Association of Environmental Professionals (EFAEP) founded	3	Opening Conferences for the 6 th Framework Programme	8
The French Association of Women Engineers – L'Association française des femmes ingénieurs	3	EYE Liner	8
Europe EYE	4	Famous Engineering Quotations	8
Directive on environmental liability	4	EYE Forecast	8
EYE Opener	5	Autumn 2003 - EYE Conference in Cologne	8
One Million Erasmus students - A European success story	5	U&EYE	8
		New Task Force member needed	8
		Imprint	8



Insight EYE

EYE The Hague's magic portion

Somewhere in The Netherlands...

Sometime in November...

Someone awakes...

"Whaaaaahhh... What kind of dream was that?!", Whizzy asked himself in a sleepy tone. He stood up, and walked to the window to open the curtains, trying to remember his vision: "They were muggles (read: normal people), and they were having a party and some serious things together. But this was not a normal meeting for muggles at all. It was a whole weekend such as only the wisest wizards in the universe could enchant. So complete, so harmonious, so ... perfect. Definitely some greater powers have been at work there," thought the young wizard wringing out his bright eyes and looking outside the window. Across the street he noticed the neighbour's son, a smart young boy that was always making all sorts of strange machines, although they always appeared to be remarkably useful. Whizzy never understood how muggles could make so many great things without using magic. "But of course!" Whizzy shouted, "it all makes sense now! These muggles in my dream they were not ordinary people, they were engineers! Young Engineers."

Correct indeed, young wizard! Of course, us young engineers could have told you from the first moment that this vision of yours was all about the upcoming EYE Conference. And we assure you, dear friend, that it was not a dream at all. It's real, it's perfect and it's coming closer every day. The 16th EYE Weekend, Engineer in the Knowledge Society, is a truly delicious potion consisting of:

- Two bucketfuls of interesting mini-symposium (the knowledge kind)
- 50 litres of special brewed pub-crawl (goes best with Dutch bars)
- 12 kilograms of company visits (choose whichever is available)
- 15 kilograms of workshops (matching your company visit)
- One big Halloween party (with nice skin for decoration)
- A pinch of sleeping powder (according to preference)
- And of course one or more secret ingredients.

Mix all ingredients in a large cauldron and let simmer for 3 days. Serves at least 100 young engineers (max. of 10 participants each Mother Organisation), and costs only 110 euro's per portion, including accommodation in our lovely hostel. Who said that humans could not do any magic?

KIVI and NIRIA welcome you warmly for this great weekend of wisdom and wonders: a magic mixture of serious and social get together. The organising committee

has been working wisdom into miracles, wonders into magic and wizardry into meaning. Let their enthusiasm and dedication be a source of inspiration to you and EYE! See the best, be pro-active and enjoy endlessly! Simply fill in the registration form at www.kivi.nl/eye, return it to eye@kivi.nl and await further instructions. Young engineers: it is starting!



*Your ultimately wise EYE The Hague conference team
Sharing knowledge, wisdom and a lot of fun.*

Click to www.kivi.nl/eye and you're ready in an eyewink.

Jeroen de Groot and Mariska van Cronenberg

Experience with the new workshop model

The EYE conference in Brugge Belgium was the first place where the new workshop model was used. The new approach is based on subjects not directly related to EYE work but more based on personal and professional skills. This also includes the use of professional lecturers.

This article will reflect on the way this new workshop model can change the way EYE works. So EYE can continue to develop both the organisation and the individual EYE participants.

Earlier workshop model

Before Brugge all the workshops have been related to work within EYE. The reason was that EYE was still in the face of being developed as an organisation, which meant everything from finding a common definition of a young engineer to trying to influence the way decision makers see young engineers in Europe.

But since EYE as an organisation has most of its basic foundation in place by now, the work that can be carried out in the workshop will begin to run out of new subjects to work with.

Therefore it is perhaps time to start to change the contents of further EYE conferences, and this is what has been done in Brugge, Belgium.

Experiences with the new model

So how was the experience with the new model ?

Overall everybody seems to like the new concepts for future workshops, and the next conference in The Hague Nederland seems to follow the same path.

What makes the conference in Brugge different from earlier workshops is that you participate as an individual more directly in the workshops since you can choose now between workshops that relates to something you can use. At the same time you can hear the experience other young engineers from Europe have on the subjects. Since the workshops are carried out by professional lectures, you also get the possibility to learn how companies in other countries do, especially in the country where the conference is held.

All this helps young engineers to understand better the differences in the way young engineers work in different countries in Europe.

How to improve the workshop model

There are several ways to ensure that the success with the new workshop model will continue. Improving the new workshop model by bringing the contents of the workshop into agreement with the values that EYE has decided to implement would be a good idea.

Consider how to make the result of the workshop something that could be used in the various member countries for instance as a introduction to a debate. The result of a local debate from various member countries could then be discussed at the next EYE conference. The problem with the workshops is now that only the individual participant gets a personal experience not the whole member organisation.

The focus should be more on the difference between the culture in the various member countries. For instance in a workshop about project management, it could be discussed what the differences are in the various member countries when discussing the topic. This could be done by contribution from participants in the workshop and the contribution could even be prepared in advance in order to improve the involvement of the participants.

Jesper

EYE Database to be launched until November

One of pressing issues of EYE has always been to question how to link the people and how to make the network of EYE and the people behind. Closely related to that is the aim to make better use of this true European network and to offer additional services for our active members. However large this network is, until now there has been no easy way to use this contacts. This will change in the near future. If for example a graduate engineer wants to work in Stuttgart, he can soon establish easily the necessary contact to those who might help him.

Based on the decision of the council meeting in Brugge the Task Force has now taken the necessary steps to develop and implement a web based database for the students and young engineers of EYE.

The information system is scheduled to be launched until the conference in The Hague. What features does it offer?

- A log-in procedure allows everybody to create an own account for his personal profile.
- Everyone who is interested in joining this platform

can fill in his data, ranging from the personal data (contact data, study), professional data (company, job description) and additional information about working experiences.

- The data can be searched to find e.g. all the chemical engineers in The Netherlands in order to identify potential contacts.

As soon as the information system is online everybody will be notified and asked to fill in his data.

Jörg Niehoff

EYE Family

Give the environment a voice – European Federation of Association of Environmental Professionals (EFAEP) founded

Acting together in environmental questions is the aim of the three largest European association of engineers active in this field. Therefore the *VDI The Association of Enginners*, Germany, the *"Association Française des Ingenieurs et des Techniciens de l'Environnement (AFITE)"*, France, and the *"Vereniging Van Milieukundigen (VVM)"*, The Netherlands, have founded a common institution: the European Federation of Association of Environmental Professionals (EFAEP). Its first president is Dominique Bernard (AIFTE) and its headquarter is the VDI Office Brussels.

The aims of the EFAEP are to support environmental activities and the solution of environmental problems with the help of the new organisational framework. Further EFAEP wants to improve the cooperation of environmental organisations and experts.

The first step to a growing network of member associations will be a regularly newsletter with information from each member. The further steps are the announcement of environmental projects to authorities in Europe and the improvement of the information about current problems with environmental protection.

Mathias Lorenz

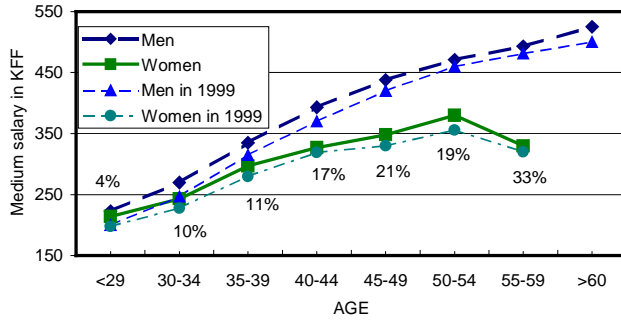
The French Association of Women Engineers – L'Association française des femmes ingénieurs

The French Association of Women Engineers (FI) aims at

- promoting the career of engineers to girls, their parents and teachers (the most efficient way is through discussions between girls, engineers at work and students in engineering schools),
- informing about women engineers in companies (analyse of data on women from the French survey on the situation of engineers and their salary),
- representing the French women engineers to national, European and international authorities and organisations.

The FI was founded in 1982 following a meeting of women engineers members of AFFDU (French Association of the Graduate Women of University): The pioneers were students in the twenties and they had to fight to be accepted in engineering schools.

The FI is affiliated to the National Council of French Engineers and Scientists.



Mind the gap

The FI undertook the analysis of statistical data on women engineers in 2000 from which a small extract is shown above. The whole analysis will be soon finalized, and made available on the new FI site:

www.femmes-ingenieurs.org

Catherine Ballandras

Europe EYE

Directive on environmental liability

The commission has made a proposal for a European framework on environmental liability. This extremely controversial text will be discussed in the legal committee of the European Parliament in autumn 2002

Why a European framework?

The commission justified the necessity of a directive with negative experiences in the past: After a series of disastrous environmental accidents it has become increasingly clear that there is a loophole in the law concerning liability of environmental pollution. One of the first accidents happened on 1st November 1986. About 30 tons of chemicals, including circa 10 tons of toxic pesticides flowed in the upper Rhine after a fire at the watersite of the Swiss chemistry company Sandoz. Fish and microbes at a distance of over 1000 kilometres have been killed.

Yet, especially with these accidents the question of liability is difficult to answer. If a company has not violated the law or behaved wantonly negligent, in some member countries the state and its citizens cannot file a lawsuit.

Nevertheless, catastrophes like the one mentioned above are just one part of the problem. A bigger part causes damage unobtrusively and unnoticed by the public: The commission assesses the number of contaminated or threatened EU-locations at 300.000.

In addition to that the law on environmental liability is individually regulated in the EU member-countries. For example Germany decrees over one of the strictest environmental liability laws in the EU, whereas Portugal or Greek do not have a special law for damage caused to the environment.

What is included in the directive?

The new framework on environmental liability is restricted to damages to biodiversity, ecological condition of watercourses and contamination of soil, which implicates an imminent risk for the human health.

The definition of biodiversity is limited to particularly protected species, for example some but not all bird species that are listed up in the Conservation of the Wild Birds Directive. Damages to persons or property are not included in the directive, they are either regulated by national environmental laws or by the civil law of the member states. The new directive has two purposes: to create a consistent legal foundation and thereby a fair competition and to take account of the damage to the biodiversity, which is not regulated in any country so far.

That means, damages to the biodiversity has been non-enforceable, because nobody owns the fauna and in addition to that damage to the biodiversity is complicated to measure.

Criticism

Since the release of the proposal in February 2002 a lot of criticism has been expressed. In the opinion of environmental organisations the directive is not expansive enough, while industrial organisations mark it as too expansive and blurred.

Criticism of environmental organisations

The European Environmental Bureau, a union of 134 European environmental organisations criticises for example that the directive is not considered to be retrospective.

That means, the originator of a damage is liable only for these damages which will occur after the commencement of the act. Other points of criticism of the EBB are:

- No coverage of damage to persons or property
- Only damages to certain protected animals are covered
- Only damages to international and national environmental protection areas are covered
- Damages caused by oil transport or genetically modified organism are excluded from the directive, although they can originate numerous harm
- Damages caused by an activity with an explicit permission are excluded from the directive

Criticism of the business organisations

The Union of Industrial and Employers' Confederation of Europe (UNICE) represents more than 16 million small, medium and large companies active in Europe. Its members are 34 central industrial and employers federations from 27 countries.

UNICE is concerned that the proposal on environmental liability will create major legal and economic uncertainty

for European companies. They criticise that the damage of biodiversity is difficult to define and not quantifiable and that companies will be exposed to unlimited liability claims against which they may be unable to insure themselves.



In their opinion the legislator should:

- Define clearly what constitutes environmental damage as well as appropriate restorative measures
- Provide concrete measures aimed to avoid disproportionate and ruinous claims
- Provide clear criteria for quantifying damage
- Ascertain insurability

Precursor USA

The proof that an extensive directive on environmental liability is working in a free-market country is provided by the USA, where a similar directive is in force since 1980.

This is only a surprise in first sight. It is often forgotten, that the USA on the one hand have very low requirements for permission for industrial activities, but on the other hand have a far-reaching directive on environmental liability for the industry. The name of this directive is "Comprehensive Environmental Response Compensation and Liability Act" (CERCLA) and it is comparable with the proposed EU-directive.

In addition to that a fund has been established, where companies have to pay in to cover possible upcoming damage to the environment. The fund is also functioning as a financial security in case of a companies insolvency.

Vera Kessler

EYE Opener

One Million Erasmus students - A European success story

In 1987 the European Commission began supporting a mobility programme for European students named after

the cosmopolitan scholar Erasmus. Quickly the programme became very popular amongst the European students. Its core idea was to facilitate university students' mobility amongst European universities. Thanks to the introduction of the new Europe-wide programme, students had increased opportunity to spend a study period abroad at a partner higher education institution in another European country. In 1987 the European Commission granted funds for over 3000 students.

Since 1987 many things have changed. The Erasmus programme has been incorporated under the SOCRATES umbrella. Socrates is Europe's education programme and involves 30 European countries. Its main objective is to build up a Europe of knowledge and thus provide a response to the major challenges of this new century: to promote lifelong learning, encourage access to education for everybody, and help people acquire recognised qualifications and skills. In more specific terms, Socrates seeks to promote language learning, and to encourage mobility and innovation. It now contains eight different actions. All of them are oriented to promote a European dimension of education and to improve its quality by encouraging co-operation between the participating countries. By promoting European student mobility, Erasmus develops an increased awareness of European citizenship among the university population.

The Erasmus programme, together with additional measures such as the European Credit Transfer System and the Diploma Supplement, has made European student mobility a concrete and feasible reality for over a million pioneers. In 1987, only eleven countries (BE, DK, DE, GR, ES, FR, IE, IT, NL, PT, UK) took part in the Erasmus programme. Currently Erasmus students may move within 30 participating countries. Erasmus students are contributing to shaping a common European identity. Their stories tell us that, after fifteen years, "Erasmus" continues to be a major European Union accomplishment.

In October the European Commission DG Education and Culture together with the students associations, the National Agencies and the academic networks will celebrate the unique achievement of a million Erasmus students. On October 18, 2002 the "Erasmus week" will be launched all over the participating countries. While at a national and local level the universities will celebrate the event, 30 former and current Erasmus students will be invited to Brussels to participate in the event there. The students will meet Commissioner Reding and the European Council members. On the occasion of the celebration, the European Commission DG Education and Culture will also present the Erasmus Student Charter, a "mobility card" stating the Erasmus student rights and duties, which will be issued to each student from the academic year 2003/04.

If you are interested in joining the Europe-wide celebration and you would like to celebrate the Erasmus week in your university, please contact the International Relations Office in your university or your National Agency for further information.

David Grincourt

European Conference on Waste Management

European Conference on The Future of Waste Management in Europe, 7th –8th of October 2002, Strasbourg, France



It is a pleasure for us to invite you to the European Conference on Waste Management in Europe to be held in Strasbourg, France. The conference is organized by VDI and DECHEMA. The conference takes place

under the auspices of the German Federal Environmental Agency (Umweltbundesamt) and the French Agency for Environment and Energy Management (ADEME – Agence de l'Environnement et de la Maîtrise de l'Énergie).

The event is acknowledged as an excellent international platform bringing together leading experts from industry, science and administration in the field of waste management. Viewing a sustainable development the aim of the conference desires the promotion of the exchange of scientific and practical expertise within the EU as well as between Europe and other parts of the world. It will stimulate contact between academic institutions, industry and authorities in all areas of concern.

The conference will focus the actual relevant questions of waste treatment technologies and provides a key forum for dissemination of leading edge technologies. Specific differences between European countries and harmonization efforts are presented and discussed. Social and medical aspects are included.

A major objective is also to attract young scientists in this field. Young researchers such as graduate, doctoral and post-doctoral students are invited to present their scientific work to the international audience. The organizers express their special thank to the European Commission for supporting their attendance. Participants fulfilling the necessary conditions can apply for free admission.

www.wastemanagement2002.de

Jörg Niehoff

Rethink the Office & Unlock Potentials

How can we learn from the past? Gary Hamel, the business strategist, put it in this way: "...the real story of Silicon Valley is not "e", but "i", not electronic commerce but innovation and imagination... It is the power of "i," rather than "e," that separates the winners from the losers in the twenty-first-century economy." Although many of these companies failed in the long run, we can agree that these people had one thing in common - they were hungry entrepreneurs willing to stretch their own personal limits.

Companies need to be competitive and create wealth to stay in business. This forces us to identify potentials within our organizations and to unlock them.

Here is one - the corporate office space

If the key to success, as described above, is the "i", we need to accept that the future is all about **us** - us as humans and not us as resources. When employees leave an organization the "i-s" and knowledge and so the wealth of the firm walk out of the door, that is today's challenge.



If you look at corporate office space in general, using the concept of non-linear thinking, you discover there are two areas that directly impact wealth/profit of an organization; (graph above), both of them need to be satisfied equally.

Area One – Hard Facts = Occupancy costs

At most companies, office space is the second biggest expense category after salary and benefits. The potential of reducing these costs up to 30% and more through a process that continuously improves the efficiency of office space is a potential, hardly exhausted.

Occupancy costs can be measured and managed very well, using corporate real estate formulas that benchmark your office space against others.

$\frac{\text{Occupancy Expense}}{\text{Revenue}}$	$\frac{\text{Occupancy Expense}}{\text{Non-interest Expense}}$
$\frac{\text{Total SF}}{\text{Person}}$	$\frac{\text{Occupancy Expense}}{\text{Total leased SF}}$

These are some very powerful tools as they are immediately quantify the financial potential within an organization. If you take as an example 'Expense over Revenue': a change of only 1% would mean that an one billion € firm could increase earnings by 10 million € per year (every Euro occupancy cost savings flows directly to bottom-line earnings). Its worth to get this analysed!

Area Two – Soft Facts

It is obvious, companies need employees who have the "i-s" and are willing to stretch their limits. Where do you get them and even more important how can you keep them?

How many hours a day do we spend with work; 8, 10, 12 or even more? Isn't it logic that the environment, which a company provides, is the key for getting people motivated and inspired to do great things?

There are not only questions but also answers. If you go back to the "i-s" - knowledge is a major element in each organization. Organizational knowledge gets only developed if there is a knowledge sharing culture that is based on a free flow of information. Information again, flows best by interpersonal communication through a complex network of relationships.

By removing barriers that prevent the free flow of information, in this case physical barriers, you can achieve an improvement of two of the major soft facts - communication and knowledge. These two, combined with a measurement of employee satisfaction, provide an excellent method of actively **creating wealth through rethinking the office**.

Having analysed the both areas of potentials, it is now the challenge to combine these into one workspace strategy that turns the work environment into a competitive advantage. If that is achieved, the company was able to unlock a major potential. The "i-s" are secured.

For further information: www.wingerterconsulting.de

Sven Wingerter

Nanotechnology – the kingdom of the dwarfs

With the discovery of manipulation techniques of the individual elements of matter as well as the increasing insights into self organization principles of these elements a world-wide industrial conquest of nanoscale dimensions began.

Purely geometrically the prefix "nano" (greek: dwarf) describes that 1nm corresponds to the millionth part of a mm. This scale has become accessible both by application of new physical instruments and procedures and by further diminution of present microsystems. Also structures of animated and non-animated nature were used as models for self-organizing matter. Only if the mastery of this atomic and molecular dimension succeeds, the prerequisites for the optimisation of product properties within the areas of energy engineering (gas cells, solar cells, etc.), environmental technology (material cycles, disposal, cleaning, etc.) as well as in information technology (high-density memories, efficient processors, etc.), health and aging can be developed. Apart from innovation options the aim is to create jobs in Germany and to protect the existing ones in the global competition. The primary aim of nanotechnology is the utilisation of new functions, which are based either on geometrical size or on material-specific peculiarities of nano-structures. Therefore the properties of nanosystems are being discussed with the focus on technological possibilities rather than putting the stress on special aims.

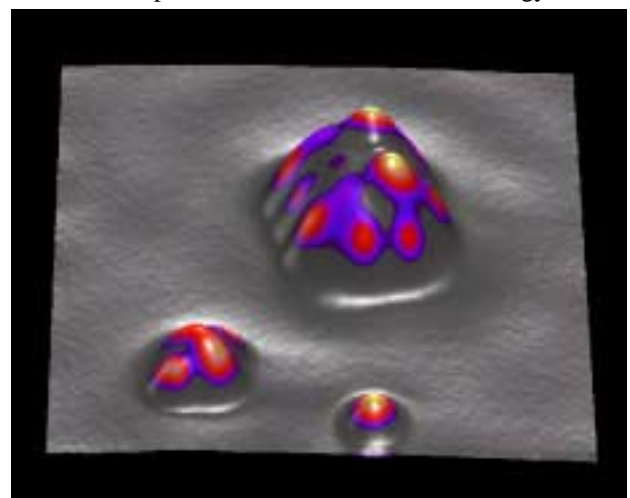
With the conquest of this nanometer dimension the speed of innovation achieved in the meantime led to the situation that physical fundamentals are still being investigated while first product groups are already entering the world markets. Their sales impacts are caused by the implementation of nanoscale architecture with new macroscopic functions.

So far two ways in the generation of nanosystems have

been taken and pursued in research and development within the respective fields:

On the one hand processes running in animated nature were tried to understand and utilised. With the understanding of the principles of self organizing structures and functional units growing, the knowledge was applied particularly within the areas of life-scientific research and for the development of new materials.

On the other hand, the unanimated nature was taking direction into the nanometer dimension by constantly manufacturing smaller structures and basic elements of new materials. Realizations derived by these experiences supplied contributions especially to the fields of electronics, optoelectronics and sensor technology.



Atomic Teeter-Totter, Media : Sodium & Iodine on Copper (111, STM Image Gallery

The industrial challenge is to connect the more artificial with the more evolutionary techniques, in order to secure both, a high output and sufficient reproducibility. Therefore experts expect the most important potential for innovations from the nano-world in the combination of these two approaches. Therefore a new innovation-oriented start-up is necessary, which corresponds to the interdisciplinary character of this technology field. Technologies for the exploration and manipulation of structures of animated and dead matter have thus become principally possible. Internationally recognized experts expect the development of innovative products in the future similarly meaningful as the invention of the transistor and the production of integrated circuits for the information technology. An epochal meaning is being attached to nanotechnology, since an interdisciplinary and industry-spreading methodology can supply crucial contributions not only for the continuous development of microelectronics but also for broader high-tech areas. Both, for manufacturers and customers the ideally complete control of molecular and atomic product properties is fascinating, their control in the world-wide competition, which is already full in motion, is crucial for success. Therefore, an important influence on the goods and labour market of the 21st century can be expected.

www.nanoforum.org, www.nanonet.de

VDI Technology Centre

“For Women Only”

Second Career Workshop with DaimlerChrysler

On November 5th and 6th 2002 DaimlerChrysler will be holding its second recruiting event "for women only" at the "Career Workshop for Top Women Graduates 2002."

50 highly qualified female university graduates and young professionals from the fields of engineering and business from all over the world will gather together in Berlin for a personal encounter with DaimlerChrysler.

On the first day the female participants will assemble prototypes and enter into discussions with high level corporate executives in addition to a tour at the DaimlerChrysler plant in Ludwigsfelde and product presentations. The second day will offer workshops and recruiting interviews.

Of the 47 female participants who attended last year's career workshop, 15 young professionals have already been hired in positions across the corporation.

Applications for this year's workshop can be submitted online from September 3d to October 4th, 2002 under www.daimlerchrysler.com/careerworkshop2002

Christiane Weiser

Opening Conferences for the 6th Framework Programme

The Sixth Framework Programme (see eye-contact issue one) will be opened by two conferences in Copenhagen (Information Society) and Brussels (general launch of FP6). In each case 3000 – 4.000 people are expected to take part. Those interested in participating in the FP6 are strongly encouraged to take part.

<http://europa.eu.int/comm/research/conferences/2002/>

<http://2002.istevent.cec.eu.int/>

Jörg Niehoff

EYE Liner

Famous Engineering Quotations

“Tell me, Mr Hoover, what are your interests?”

“Madam, I am an Engineer”

“Really? I took you for a gentleman.” - *Herbert Hoover*

„Boring - see Civil Engineers.“ - *UK Yellow Pages*

EYE Forecast

Autumn 2003 - EYE Conference in Cologne

The board of the students and young engineers of the VDI decided to confirm the organisation of the autumn 2003 conference. The conference will take place from the

14th to the 15th of November 2003 in Cologne, one of the most interesting and lively towns in Germany. *Susanne Ihnen*

U&EYE

New Task Force member needed

The EYE task force has been established to ensure continuous progress on EYE topics independent from the EYE activities, to prepare proposals for decisions at the council meeting, to carry out focussed work on strategic issues and organisational development and to foster communication to active EYE members. The task force consists of six members meeting at least four times a year.

In The Hague Bart Demol will be replaced by Shahana Mirza and one new member will be elected. Therefore all those interested in contributing more to the development of EYE are strongly encouraged to volunteer.

Applicants are asked to inform the EYE office (eye.office@e-y-e.org) and should be prepared to present themselves at the council meeting in The Hague on Sunday.



The EYE Task Force in Brussels

Imprint

The eye-contact is compiled by the EYE Task Force and puts together articles about EYE activities like the EYE-conferences, the member organizations as well as about EU activities relevant for young engineers. The circulation of eye-contact is strongly encouraged. Any comments or articles may be send to the EYE Office in Brussels:

EYE at the VDI Office Brussels

Jörg Niehoff
 31, rue du Commerce
 B-1000 Bruxelles
 Phone : +32/2/500.89.65
 Fax : +32/2/511.33.67
 E-Mail : eye.office@e-y-e.org
 Internet : www.e-y-e.org