

newsletter

Electrical Engineering Students' European association

The EESTEC Newsletter is published monthly. It hopes to reach all EESTEC members and keep them informed of EESTEC activities

*October 1999
Volume 13, No. 3*



DELFT

LC OF THE MONTH



OPPORTUNITIES



Take a look at what Ericsson offers!

THE LEADING EDGE



'Digging with Waves' and Scalable Video

Founded in 1986, EESTEC is an organisation that promotes the exchange of ideas, and the development of international contacts, between engineering students and companies throughout Europe. EESTEC now has 28 branches in 18 different countries.

IN PROFILE

The Oversight Committee

INSIGHT

Enrico discusses EESTEC future

IN RETROSPECT

Vienna's Exchange - More highlights

HIGHLIGHTS

SECTIONS	PAGE NO.
EDITORIAL	2
IN PROFILE <i>The Oversight Committee - Gasper Pintaric and Yvonne Breuer</i>	3
THE LEADING EDGE <i>Mines & Technology - 'Digging with Waves'</i> <i>Scalable Video Using Wavelets</i>	4 4 6
OPPORTUNITIES <i>Ericsson</i>	7
LC OF THE MONTH <i>Delft</i>	8
INSIGHT <i>EESTEC Future</i>	10
IN RETROSPECT <i>Es War Toll! - More Highlights in Vienna</i>	11
FEATURES <i>Graduate Study</i>	12
POLITICAL BRIEFS <i>Official EESTEC Presentation in Italy</i> <i>Bored Talk</i>	13 13 14
A FUTURE LOOK <i>Workshop in LC Madrid</i>	15

EDITORIAL

Dear EESTEC members,

How did you find the September issue of the newsletter? Do you like it? Do you have any suggestions for improvement? If you have, do not hesitate to write to me.

A new section *IN PROFILE* which presents the profiles of EESTEC members have been added to the newsletter. In this issue, we get to know The Oversight Committee better. This month, LC Delft is invited to introduce themselves to all of you. Also featured are interesting technical articles that discuss mining technologies and scalable video. For prospective job seekers and graduate students, the articles on Ericsson and Graduate Study might come in handy. On top of that, Enrico has something to say about EESTEC future. On the political front, an official EESTEC presentation was held in Italy.



I assure you that every effort has been made to ensure that the newsletter is error-free. However, keen readers might be able to spot mistakes which have been overlooked. To maintain the quality and accuracy of the newsletter, an *ERRATA* section is added to account for errors in previous issues.

Yours sincerely,



Denise
(Hwee Peng, Ang)
EESTEC Newsletter Editor

THE OVERSIGHT COMMITTEE

Gašper Pintaric



Dear EESTEC members,

My name is Gašper, and I am a member of the Oversight Committee together with Yvonne from Munich. I came from LC Ljubljana, Slovenia. I am a student of Telecommunication department at the Faculty of Electrical Engineering.

Denise asked me if I could write something about myself for the newsletter. So here in the next few sentences I'll try to do my best.

I have been an EESTEC member for three years now and in the far future (hope not so far) I will become an Alumni member. I won't bother you what my job as an OC member is (you can look up in the User guide). Let me explain my view of EESTEC and where I see myself in it. I joined the association as a student who haven't heard from EESTEC before. Some nice girls had invited me to a meeting regarding a travelling across Europe and I couldn't say no to such an "attractive" invitation. Next thing that I remembered I was somewhere in the Swiss mountains surrounded with some smiling and singing people. And I said to myself what a wonderful EESTEC world. But there is a lot more than just travelling around. As an EESTEC member now I have a lot of friends around Europe but I also gain a lot of other experience like communicative and organising skills and language proficiency. And what is most important is that there are more and more workshops where we meet and learn about new technology and industry...

Even if you are not invited in such an "attractive" manner, you are welcome to join EESTEC and believe me you won't regret it.

Always available,

Gašper

Yvonne Breuer

The Girl with a Whip



Yvonne Breuer, the Girl with a whip, is the other member of the OC this year. Her task is to make sure that the board stays in the liege and don't spend all the money EESTEC gets on their personal pleasure. Every time the board issues one of their statements, it's Yvonne's task to decide if it's according to the statutes or not. She's the one who tells in the next Congress if the report of the board is to be accepted. She's the girl who whips the board.

She got involved in EESTEC politics a bit over a year ago when she was asked to be the secretary of the General Meetings in the Congress 1998. After that she started to form the new board with Flavio Ferrari and ended up being the Vice Chairgirl in the board 98-99. There she had the same situation as Alessia has now: to be the only representative of the more beautiful sex in the board. I guess this was one of the reasons why she's not in the board now, or? But anyway, what kind of person is this girl with the whip.

This brunette is a very determined person. She stands behind her thoughts even if everyone else would object. This was seen very well in the board 98-99 where she was found arguing with Flavio every now and then. She's also very enthusiastic about EESTEC and in making the EESTEC bigger and better. She's the founder of EESTEC LC Munich and she had also worked to get many other LCs. I could keep stating many more facts which state how hard she works for EESTEC but just to say she's a great person and if you haven't yet met her, do it now!

Oh and if you have some complaints on the work of the board don't hesitate to mail her or Gašper at <oc@eestec.org>.

This article is written for Yvonne Breuer by Iikka Väkiparta, EESTEC Chairman

MINES & TECHNOLOGY - 'DIGGING WITH WAVES'

by Paul Oudshoorn, EESTEC Treasurer

INTRODUCTION

“Every year an estimated number of 10,000 people are killed by landmines and 15,000 people are mutilated for life. Tens of millions of mines, spread in over 60 countries, prevent the reconstruction of war-stricken areas.

In December 1997, when the treaty of Ottawa was accomplished, the total banishment of anti-personnel mines has come a lot closer. The treaty also provides in the destruction of the giant stores of mines. Nonetheless it is of the utmost importance that the millions of mines under the surface are cleared away quicker than before.

Landmines are perfected ever more since the first use. As a result they continually become tougher to detect. On the contrary the methods and techniques used have not developed much since World War II. The best method available now is a soldier exploring the surface with a pricker. Minesweeping is a dangerous job: according to the international Red Cross a man is killed and two are wounded every 5000 removed mines. In Cambodia, with a population of eight million people and an average income of \$150 per year, removing one mine costs \$1000. There are - estimated - ten million mines.”

This (translated) quotation of the Dutch minister of Defense, Mr. F.H.G. de Grave written to the Dutch parliament, shows very well that landmines are a big problem. The bottleneck in the Treaty of Ottawa still is the detection of mines. Instead of the pricker a better technological solution is needed. Electrical Engineering can contribute to this. In order to do that, knowledge of electromagnetic waves and radar is needed.

In the International Research Center for Telecommunications-transmission and Radar (IRCTR) at Delft University, impressive work is done on this subject. The student guild (ETV) of Electrical Engineering -where LC Delft is part of- organised a symposium on this topic and in this article I will write the most interesting parts of it.

THE PURPOSE OF MINES

A minefield on the fertile grounds near a village is more dangerous than one in the middle of a desert. Especially when the local people are dependent on the qualities of the mined area. To survive they will, despite life threatening dangers, enter the area. And also, mines block important routes so fugitives can't go back to their homes.

A mine is a piece of explosive, with or without a hull. There are two types of mines that should be distinguished: The anti-personnel mine and the anti-tank mine. Both are very

effective weapons in warfare, because they are triggered to explode by the target itself, whether that is a tank or a man. The use of mines is not to kill, but to divert and to delay (a wounded soldier delays also the two carrying him while a dead soldier will be left behind). In civil wars mines are even more effective, for instance when laid around a broken electricity pole, so it cannot be repaired.



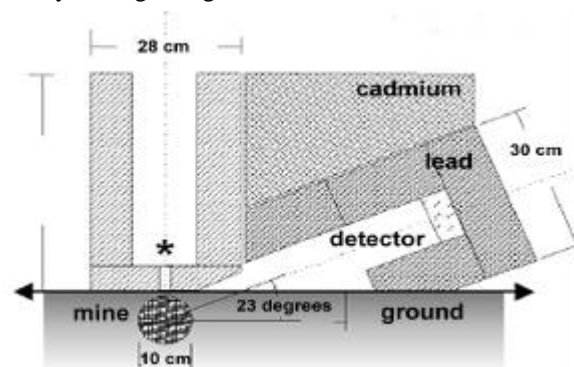
The best available method to clear a mined area from forgotten, lethal mines is pricking into the ground. This is a British soldier searching for mines in Petrovac, Macedonia.

TECHNIQUES TO FIND MINES

The two most used methods are the metal detector and the pricker. Both are very time intensive and have disadvantages. A metal detector doesn't see mines without metal, but it does detect coins and cans. The pricker is stuck into the ground with a 30° angle every 2 centimeter. All mines are detected, but also a root of a tree and it is very hard to do in frozen ground. One man clears an area between 10 and 20 m² every day.

Another way is by driving into the minefield with a tank with a rotating axis in front, smashing chains on the ground that make the mines explode. Destructive methods like this often make fertile ground unusable afterwards.

Of course better methods can be found. Researchers are looking for ways to detect objects underground without actually having to dig.



Geometry used for the simulations with the neutron emitter

NEWSMAKERS

by Sunil Rao, LC London

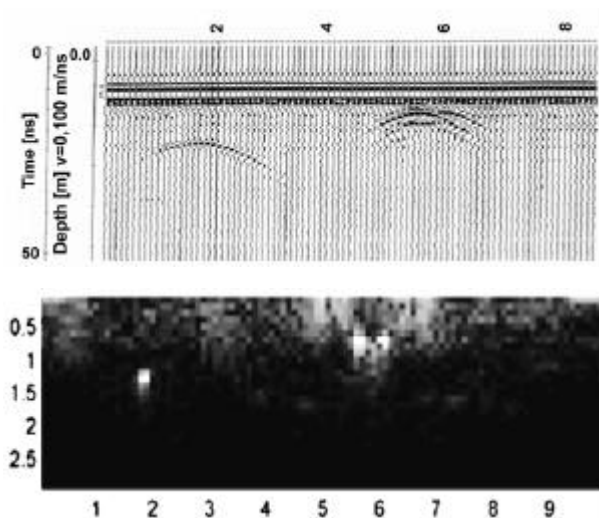
Shooting neutrons into the ground would cause objects that are in the path of the neutrons to emit photons. By detecting these photons, it would become possible to determine the material in the ground. Explosives have a certain proportion of C and O molecules and that way it is possible to detect mines without steel. Disadvantages of this system are that the radiation is dangerous to living beings, and that the system is only capable of penetrating the neutrons deep enough when the emitter is at most 5 cm above the surface.

The second possible technological solution is using groundradar to detect mines. Antennas above the surface send electromagnetic waves into the ground, which are reflected by objects depending on

1. the conductivity
2. the permittivity (dielectric constant)
3. the magnetic permeability

The conductivity of a material determines the factor in which the signal, coming from the transmitter is weakened by the propagation through the material. The dielectric constant determines the contrast of the reflection, and propagation speed of the electromagnetic waves. The magnetic permeability can make clear reflections of iron objects, or for instance routed earth.

When the radar is moving from A to B above the ground, the echos result in the graphics below.



Above: The unprocessed radar image of a laboratory model. Below: After computer processing, objects can easily be seen on the screen.

The scope of the article is of course too big to be put in three columns, so I hope that the text created a view of the problems and the possible solutions. Electrical engineering can contribute to solving this kind of global problems very well perhaps by combining the different methods. Maybe in the near future, mines can be detected out of an airplane flying over a previous warzone.

Early August saw a botched year 2000 upgrade to prepay electricity meters leave over two thousand Londoners without electricity, some for over 24 hours. The problem arose when London Electricity was trying to make its meters millennium compliant before the date change, but ended up cutting off power to over 2,000 of their customers. The original bug the power company was trying to fix was one that would cause meters to continue supplying electricity, but fail to recognise rate changes, and the company was forced to abandon its plans to upgrade the software on meters as customers would recharge them. The rest of the over half-a-million "Powerkey" customers will have to wait until the new bug is fixed.

Microsoft have unveiled their latest server - Windows 2000 - to the Net at large by placing a beta copy on a web server <windows2000test.com>. The company, which has come under fire from security gurus for their complacency, when compared with rival systems such as Linux, in dealing with security threats and alerts leaving their machines vulnerable, has now chosen to openly invite crackers to attack this machine in a bid to crash it. The fact that this server, labelled an unrealistic experiment and a clever marketing ploy, has appeared to have required almost a dozen reboots in barely two weeks does not bode particularly well.

Scientists at Sandia National Labs, MIT and Honeywell have come up with a tiny remote sensor that can reportedly analyse gases at distances of up to two miles. "Polychromator", a variation of conventional correlation spectroscopy, will use optics and microelectromechanical systems (MEMS) that can be controlled by a microprocessor to identify particular gases by means of their distinct characteristic infrared spectra. The coin-sized device consists of thousands of micron-sized MEMS grating elements on a silicon wafer - different gratings can be "constructed" by different series of movements. The actual gratings themselves will be manufactured by Honeywell based on MEMS designs from MIT.

New software created at Carnegie-Mellon University adds lip-reading capabilities to standard voice-recognition software. Alex Waibel, director of the Interactive Systems Labs run jointly by CMU and Universität Karlsruhe, Germany, has led work on the NLips project, using neural networks to improve the recognition rate of automated voice-recognition, particularly when background noise levels are significant. While the system has only been designed for words spelled out letter-by-letter, work is currently under progress to integrate the system into conventional video conferencing software and to further develop the recognition models.

SCALABLE VIDEO USING WAVELETS

by Cathy Dolbear, LC London

Multimedia applications such as video telephony, video transmission over the internet or mobile video communication produce large amounts of data which must be heavily compressed in order to be transmitted in the limited bandwidth available. Furthermore, the bandwidth may not be constant along one connection, or users accessing the same multimedia content may have connections with different bandwidths according to the quality of service they are paying for. The most recent MPEG standard for digital video, MPEG-4 has begun to address this issue of scalability, that is, the need to generate one bitstream that can be decoded at different rates.

Thus far, the primary compression algorithm for low bit rate digital video has been the DCT (Discrete Cosine Transform) a transform similar to the Fourier Transform, but using only cosines functions. However the DCT, upon which the MPEG standards have been based thus far, is a mature technology that may be unable to offer much heavier compression for the desired visual quality, while keeping coding complexity to a minimum. Attention is therefore being directed towards emerging technologies such as the wavelet transform, which can offer better subjective quality for a given bit rate, and also a scalable bitstream, enabling the decoding to be carried out at any desired bit rate.

The Fast Fourier Transform (FFT) and the Discrete Wavelet Transform (DWT) are both linear operations using basis functions that are rescaled and translated to represent data. The basis functions for the FFT are sines and cosines. The wavelet transform uses more complicated basis functions called mother or analysing wavelets. The main advantage of wavelets over Fourier Transforms (or DCTs) is that the sine and cosine bases for Fourier analysis are non-local and stretch out to infinity, so perform poorly in approximating sharp spikes. For example, the Fourier Transform of a delta function or "spike" in the time domain is an infinite line in the frequency domain, corresponding to all possible frequencies. This makes the FFT very bad at approximating data with sharp discontinuities. However, bases for wavelet analysis can be chosen which are localised in space, that is, they are finite, and so wavelets can be used to approximate sharp spikes without needing an infinite representation.

Many of the applications for which MPEG-4 is intended require a scalable codec, that is, one which enables decoding to be carried out at any desired bit rate. Embedded codes are ones which generate a scalable bitstream by ordering the bits according to their importance. The more important bits, containing the low

frequency information, appear first in the bitstream, followed by the less important bits. This enables a decoder to cease decoding at any point in the embedded bitstream and still have a complete representation of the image. The more bits it receives, the better the quality the decoded image will be, but decoders with access to only a limited bit rate are still able to decode the bitstream. The wavelet transform has hierarchical properties that enable such an embedded bitstream to be generated.

The wavelet low pass and high pass filters are applied both horizontally and vertically to the image, dividing the image into four subbands, that is, the subband that has been low pass

LL ₂	HL ₂	HL ₁
LH ₂	HH ₂	
LH ₁		HH ₁

2 scale wavelet decomposition

filtered both horizontally and vertically (LL), the subband that has been low pass filtered horizontally and high pass filtered vertically (LH), the "high-low" (HL) band and the "high-high" (HH) band. The subbands LH₁, HL₁, and HH₁ represent the finest scale wavelet coefficients, while subband LL₁ can be decomposed further by applying the wavelet filters again. The second level of decomposition results in "coarser" versions of the image, that is, containing the lower frequency, more important information. For each coarser scale, each coefficient represents a larger spatial area of the image, but a narrower band of frequencies. At each scale there are three subbands: then the remaining, lowest frequency (LL) subband is a representation of the information at all coarser scales. So the wavelet encoder will send the most important or low frequency information first, before sending the finer details of the image at higher frequency scales, allowing the decoder to choose how much of the bitstream to decode.



Example image decomposed to two scales

So the next time you're waiting for the latest South Park episode to download from the internet, you can look forward to the introduction of scalable wavelet encoding, which'll save you sitting there so long.



Ericsson in Finland - part of the global Ericsson group

Ericsson is the leading supplier for the brave new information world. Ericsson's solutions combine the possibilities of data communication and information technology to give users increasing freedom of movement. In addition to traditional network solutions, Ericsson's products and services cover the new generation of mobile telephone services. In fact, data communication solutions for mobile telephone networks are part of everyday life already now.

Ericsson's staff totals 100,000 employees located in 140 countries. They work to make it easier for the company's customers – net operators, service producers, companies and consumers – to communicate worldwide.

Ericsson in Finland

Ericsson's product development centre in Finland, established in 1971, employs some 700 people. Its core product areas are the development of mobile telephone communications, Internet services, smart network services, and net signalling systems. GPRS and WCDMA development work is also underway. All in all, Oy LM Ericsson Ab in Finland employs about 1,140 people.

Global know-how is utilised in both product development and support services. There is close co-operation with Ericsson's other subsidiaries. This is where global Ericsson's strength lies.

Students in a key position



The majority of our new permanent posts are held by employees who started out as Ericsson trainees. All Ericsson subsidiaries, including Ericsson in Finland, attach great importance to contacts with universities. A successful internship is an important part of a young person's studies. Internships and theses completed in the service of an international company constitute excellent training for business life.

In Finland, the competition for the best experts starts early. Annually, the number of people preparing their theses while employed by Ericsson forms a significant share of the total number of Ericsson employees in Finland. Already for several years now, the Finnish Association of Graduate Engineers TEK has cited us for our attitude.

High-flyers recruited from lecture rooms

Recruitment events, theme days, etc., are among the most important activities in this respect. In the future, closer co-operation with students will play a crucial role as we endeavour to find the best experts. The focus will be on person-to-person contacts.



An international group offers many opportunities for qualified people. In addition to rock-solid professional skills, we underscore the importance of such qualities as a positive outlook, good communication and learning skills and a team spirit.

Why Ericsson?

Ericsson takes good care of its most important resource: people. A personal development plan is tailored to each employee's personal development objectives and qualities. This is supported by a personal training plan.

Every new employee is appointed a personal tutor, or sponsor. The objective is to provide every Ericsson employee with work that appeals to him or her and promotes the company's interests.

A large international group enables job rotation, which is an excellent way for people to supplement their know-how and thereby assume increasingly demanding responsibilities.

Centralised recruiting

Ericsson in Finland has introduced a recruiting process ensuring rapid and confidential handling of applications. All applicants are instructed to fill in their application via the Internet, and submitted applications are stored in a database. The contents of this database are at the disposal of Ericsson's highly experienced superiors. This system ensures that every job seeker receives equal treatment.

The new millennium and Ericsson offer prime work placements for innovative people. You are most welcome!

Johanna Ranta, Recruitment Officer

Ericsson URL: <http://www.ericsson.fi>



DELFT

Where the Local Committee of EESTEC in Delft is concerned, we have a strange situation. In fact, officially there is no LC in Delft. How is it possible then, that Delft is the LC of the month? I want to explain this situation by firstly telling you something about the ETV (our EE guild) and then explain the connection between the ETV and EESTEC.

The Electrotechnische Vereniging, short: ETV, is the association of electrical engineering students at the Delft University of Technology. Founded in 1906, the ETV is older than the Department of Electrical Engineering itself (1919). The statutory goal of the ETV is to promote electrical engineering and to serve the interests of the electrical engineering students at our department. About 700 students are member of the ETV. The ETV is a very active association, with various activities throughout the year.

The board of the ETV consists of six students who stop their studies for one year in order to work for the ETV full time. The last change of the board was on the 14th of September. Some core activities of the board are the sale of books, influence in education and excursions.

Every quarter the ETV sells most books for freshmen and sophomore students. The books are available at reduced prices,

very attractive for our members. During exam periods, collections of old exams are sold too.

One member of the ETV-board is solely active as representative of students in such matters as education, problems with classes and problems with exams. He is a member of several committees and commissions of the department.



Above: First year students try to sing as loud as possible while the ETV banner is raised for the introduction weekend (EOW). Below: Freshman try to stand in three characters EOW.

Every quarter, two or three excursions are organised to companies that excel in electrical engineering. These excursions increase the insight of the participants in the way electrical engineering is applied beyond the walls of our department.

Of course the board can't run the ETV alone. That's why there are lots of committees which organise

special events. The students in those committees don't stop their studies and try to combine the ETV and their exams. This combination is not always a success and that's why there are some students who take six or sometimes even seven years to finish their studies.

An example of some of those committees:

SYMPOSIUM

Every year during the anniversary, a symposium is organised for students, faculty and industrialists. Usually the theme of a symposium is related to a technical subject, like Digital Security (1997), Virtual Reality (1998) or Searching for Landmines with Radar (1999). However, some are not that technical. For example, the focus of the symposium 'Connecting to the Future' (1995) was on the future of electrical engineers.

YEARBOOK

For 40 consecutive years, a yearbook of the association has been published. Besides a review on the past year, a large part of the book is dedicated to the research done and education given at the department.

EOW

One week before the start of a new academic year, a weekend is organised for the new freshmen, during which they get to know their fellow students and the ETV. This EOW is also a first introduction to the department.

MISCELLANEOUS

Several other activities are organised, such as the dies (birthday of the ETV), a filmnight, beer relay race and drinks in the E-kafee in our department.

One of those committees is called the CIC (Committee International Contacts). There are about four students in this committee and they change every year. The task of this committee is to organise one exchange within EESTEC every year.

Now, we also have the Congress organising committee as an official ETV committee. This

committee is now very busy trying to raise funds for the congress which will be on the 19th till the 26th of March 2000. Beside the study-tour committee this is one of the bigger committees of the ETV.



One of the many 'gala' parties the Dutch students tend to organise

As you can see, the LC Delft is

some sort of integrated within the ETV. However, the interests of the ETV and the EESTEC are not the same. The ETV tries to organise events for ALL her members. The EESTEC events we organise within the ETV however are not always open to all members. For example, the congress should not be organised within the ETV because most of the activities in the congress will not be open to all members of the ETV. On the other side, all ETV members can join an exchange (the first who come will go). We're now discussing if we have to separate the EESTEC activities from the rest of the ETV and start a real LC in Delft.

Written by Daniel Vree

EESTEC ANNOUNCEMENT

50TH IAF-ESA CONGRESS

EESTEC will be present at the 50th IAF-ESA Congress with LC Cosenza, Bologna and Reggio Emilia in the Congress Student Stand. We will show and distribute to the 500 participants coming from all over Europe the activation cds, the poster, the newsletter and the flyer of EESTEC International.

This could be a great occasion to gain new member to activate. The congress will be from 4th to 8th of October in Amsterdam. The theme will be "SPACE - An Integral Part of the Information Age", and it will be financed by ESA (European Space Agency). The European Space Agency is committed to its mandate to encourage the youth of Europe to actively prepare for, and participate in, the building of their future through a better knowledge of (space) technology and sciences, with the aim of ensuring an appropriately skilled workforce into the 21st century. The web-site is <http://www.estec.esa.nl/outreach/iaf99/>



EESTEC FUTURE



Hello "PEOPLE"!!

This month the editor gave me the task to substitute Bernie in his monthly column, because he is very busy with his final thesis. I hope to show the same diligence and skill, talking about EESTEC's affairs.

You already know by Alessia's article that in last September me, her and Flavio Ferrari had an introduction meeting on EESTEC in Sassuolo (Italy) for the Rotary Club section of there. After the meeting a national newspaper's journalist, invited by the Rotary for the event, asked me: "What EESTEC needs in future to go on following its targets?" Now, I would like to answer again to this question on these pages:

Creating contacts with the European Union?

It's enough looking at the European Union's web page to see how many possibilities exist for an international association as EESTEC. In the past some LC (Bologna for its workshop and 8 LCs for the Connect Project) tried to apply to the calls for proposals, but at the moment it's really hard obtain funds by the EU, because one of the main requests is that the presenting proposal organisation must be seated in one of the European Union's countries.

EESTEC, for the future electrical engineers, has the same aims and purposes EU looks for in all the European citizens, and moreover EESTEC already has the possibility to spread out the EU message of brotherhood and co-operation towards those countries, above all in the Eastern Europe, that are waiting to come in the EU. I think in future it's important for EESTEC, at least, elect an official relationship responsible who will take care of these contacts.

Opening (quite) totally to possible sponsors?

In this direction the Board already made something, opening our web-page and our newsletter to the advertisers. Although it's "under construction", the official sponsorship-request letter and the offer package for the advertisers will be surely ready after the second Board

Meeting. Of course, this isn't enough, the forums with the recruiting companies, quite completely defined, and the tournament of electrical engineering, that is in the Board's intentions, could be big opportunities to show the value of associations as EESTEC.

Making events more professional (not more? formal!!)

Organise professional events was one of the topics during last EESTEC Congress. My idea about it is that taking part in EESTEC's workshops and congresses has to acquire an official form (depending on the different countries' statute), with certificate of participation released by the event's organisers and sponsors, so that the participation can become, for the EESTECer, a valuable privilege for his future curriculum. This, of course, doesn't mean losing our great spirit of friendship and amusement.

Making the Board closer to EESTEC LCs and to International Events?

During the mentioned meeting in Sassuolo, Flavio caught the opportunity to introduce the workshop his LC is going to organise in Bologna, looking for some local sponsors. In future, I think, it's important that every LC informs the Board members of any introduction (to Universities, sponsors, authorities), and puts someone of them (maybe the closest geographically) in condition to take part in the introduction, so that the events acquires a more official and complete character.

About International events, EESTEC will be present to the 50th IAF-ESA Congress in Amsterdam with a stand in which we will show the first version of the official EESTEC poster and we will distribute copies of newsletter and flyer. This is just an occasional event, instead I think, we must try to enlarge our budget, in order to create the conditions for the Boarders to take part, systematically, to International events.

Ok, I have just a page to fill, so these are a part of my opinions and ideas about the future of our association, if you have further suggestions for me, don't hesitate to mail me at enatalizio@hotmail.com.

Ciao,
Enrico Natalizio
EESTEC Vice-Chairman for internal affairs

ES WAR TOLL !!

MORE HIGHLIGHTS IN VIENNA

LC Cosenza and LC Munich want to tell you about their exchange

Report by LC Cosenza and LC Munich

We're here to talk about the EESTEC exchange in Vienna: This was our first EESTEC event and ES WAR TOLL! Isn't enough? Ok, ok, let's start from the Beginning.

The first thing the Vienna's guys told us to bring was an umbrella, and you can figure out our desperation, being used to the burning Mediterranean sun. Instead the sun was shining also in Vienna and even more than in Italy!!! The second thing was a sleeping bag. 'Why do we have to bring sleeping bags? They want to make us sleep on the ground?' We, not used to EESTEC habits, thought seriously not to go to Vienna anymore.

When everyone assured us about the Vienna's guys hospitality, we decided to take the plane to go, but this was the first time for Manuela D.M. and Giulia, so: First flight, flying's fear, vertical take-off, air's empty, howls, panic scenes and madness actions!! This problem overcome, we landed happily in Vienna, tired and hungry as never before in our life. Furthermore, LC Vienna, for the welcome party, decided to contribute to our total destruction by offering us every kind of alcoholic drinks... In fact we don't remember what happened in the following 6 days...



No, we're joking, how can we forget the city and its perfect and aristocratic architecture? Its most wonderful monuments, such as Stephansdom, Schonbrunn, Princess 'Sissi' or the Prince 'Franz Joseph', Karlsplatz and its museums, Mariahilferstrasse and its crowded shops.

No more doubts, now, about the famous and joyful Vienna's hospitality. Everyone knows how kind and respectful our friends from there are: they brought us through the city with such calm and discretion, that even if one night our hosts forgot about us, we could never be angry with them.



What about the others? We knew there should have been people from Oulu and London, but at the welcome party we also met the Finnish. To our surprise, the people from London were everything but English (except Paul)! There was even an Italian guy, Matteo, and talk with was a "Divertimento di lusso" (luxurious amusement). The others came from Malaysia or Singapore, so it was a DOUBLE exchange, because we could know both their way of living in England and in their original countries. They were so sweet and nice and it was great to know their different culture and point of view. Not so less different was even the culture of the Finnish guys, they were so 'sunny', but not only because in this period they have sun for the whole day, but also because they were always smiling and happy for everything (above all when they had drunk at least 3 beers!!).

ES WAR TOLL!! What we saw and lived during this exchange has, surely, enriched ourselves, increasing our self esteem and inner strength, but also our faith in a future in community and in peace.

This article is written by Manuela Citrigno, Manuela De Maddis, Giulia Piro from LC Cosenza and Tassilo Meindl from LC Munich.

Graduate Study in the United States

by Jennifer Rutan

You want to go to graduate school in the United States but you don't know too much about the U.S. in general, or American graduate schools in particular. That's my job, to share any microscopic amounts of knowledge with you. If you have specific questions about a particular school or its requirements, please contact them.

The American educational system is based on twelve or thirteen years of primary and secondary education, four years as an undergraduate, and various graduate programs with different time requirements. There are many decisions to make when deciding on a graduate program. Do you want to begin graduate school immediately after graduation? Where in the United States would you like to study, and at what kind of school? What field do you want to specialize in and what research interests do you have? Do you want a master's degree or a doctorate? How do you apply for graduate school and what can you expect there?



First, you need to decide if you want to begin graduate school immediately after finishing long years of undergraduate work. Do you want some time to relax? Will you go completely insane if you have to take one more class? Do you want or need experience before going to graduate school? Or are you in the routine of studying and don't want to get a real job yet? If your answers are no, no, no, and yes, then graduate school may be a good choice for you.

That brings us to our next million-dollar question: where in the U.S. would you like to study? America is BIG - and there are graduate schools everywhere. Do some research on different parts of the country - East Coast, West Coast, Midwest, the South. If you like big cities, you don't want to attend a school in Delaware! What kind of school are you looking for - a large school like Ohio State (approximately 55,000 total students) or a small school like Caltech (2000 total students)? Once you decide what kind of environment you like, you can narrow your search.

Okay, now to the interesting part: how do you apply for graduate school and what can you expect when you get there? Most of your preparation for graduate school will take place in the summer before and during your final year

of your undergraduate work. First, you need to make a list of schools that interest you and obtain information, catalogues, and applications and register for standardized tests (GREs and TOEFL). This can be done before the school year starts. In September or October, you should take your tests, request recommendations, investigate financial aid, and draft a personal statement. A personal statement is an essay describing why you want to study at a particular school and what your future plans are - basically, why should the school accept you? In November or December, you should order transcripts, mail your applications, and apply for financial aid. From January until March or April, you can wait for your acceptances, visit the school if possible or talk to students and faculty there. When your acceptances arrive, you need to discuss your options with advisors and make your decisions. If you do not want to attend graduate school immediately, you can sometimes defer your decision for 1-2 years and still attend that school.

What can you expect at graduate school? Well, most graduate students work very hard in classes and do research. They teach their own classes, and research for long hours and earn very little money. It can be frustrating, difficult, and isolating. However, there is a sense of accomplishment and pride. The rewards can be great - more money, a better job, more education, and more contacts and friends. And a chance to experience the United States!

Best U.S. Universities 2000 (Engineering Programs)

1. Massachusetts Inst. of Technology
2. Stanford University
3. University of California - Berkeley
4. California Institute of Technology
5. U. of Illinois - Urbana-Champaign
6. University of Michigan - Ann Arbor
7. Carnegie Mellon University
8. Cornell University
9. Georgia Institute of Technology
10. University of Texas - Austin

OFFICIAL EESTEC PRESENTATION IN ITALY

Enrico Natalizio, Alessia Toni and Flavio Ferrari introduce EESTEC to a branch of the Rotary Club



On the evening of the 14th of September the current internal Vice-chairman, Enrico Natalizio, the external Vice-chairwoman, Alessia Toni and the former Chairman, Flavio Ferrari gave a presentation about EESTEC for the members of the branch of the Rotary Club of Sassuolo. Sassuolo, in the province of Modena, is Alessia's hometown and is a very industrialised town in Northern Italy, well known on a world-wide level for the production of tiles. The branch of the Rotary Club of Sassuolo is an association of industrialists, principally owners of local companies who are also interested in culture and links with universities. The purpose of the presentation was mainly to develop among this type of audience the knowledge of EESTEC, with a view of trying to get some sponsorship both on the international level and for the workshop to be held in Bologna in May 1999.

As for this purpose, the presentation was organised in the following way. Enrico introduced EESTEC using an Italian translation of the official EESTEC presentation. Then Alessia illustrated the relationship between EESTEC and companies giving examples of sponsors that have supported past EESTEC events. Finally Flavio described more in detail the idea of financing universities under an European point of view ending up with an introduction of the workshop in Bologna that next year will be 'The European City of Culture 2000' The presentation went very well and will hopefully fulfill our aim. After the speech, we were kindly offered a dinner from the club and we enjoyed the rest of the evening.

*Alessia Toni
EESTEC Vice-Chairman for External Affairs*

ERRATA

The newsletter was first published on 29 May 1987. Hence, the volume number should be 13 and not 3 in the September issue.

FUSED

The other day I was talking with a venture capitalist. He was not your typical VC as firstly he was in his early twenties and secondly he had only ever made one investment and this was more to help out a friend than to make a profit. The small sum he invested in his friend's idea, just a couple of years ago is now a large minority share in one of Britain's largest and one of Europe's fastest growing Internet Service Providers (ISP) with a market value of over 200 million pounds.

But is making money through the Internet this simple for all of us? Read any newspaper or watch any technology program on television and you are repeatedly bombarded with the thought that 'Making money on the Internet is easy. Anyone can do it!' Well, if it is really that easy why aren't more of us doing it. Maybe, if it really is true that anyone can do it then everyone will do it and the amount of money you will gain will be minimal. However, at the moment even though everyone could do it, hardly anyone is.

Internet shopping in America is a big jump ahead of Europe. This is both because of the greater use of the Internet by all ages in the US but also because when it comes to delivery, there are 250 millions possible customers who only need to pay national postage costs. But slowly, slowly more sites are offering purchase possibilities to European surfers without an additional \$10 shipping charge. And here is where the opportunities lie. Online shopping stores have very little to differentiate themselves from one another. Prices will be similar on every site and anywhere that doesn't have a suitably up-to-date layout will go bust very quickly. So to improve awareness of their brand name and encourage both those who are planning to buy and those who hadn't expected to visit their sites they flood the Internet with hyperlink adverts. What most people do not realise is that if someone sets up a link to say Amazon.com from their web site and someone who uses that link to get to Amazon then buys a book, the owner of the original website will pick up a percentage of the profit! Now these percentages might not be great but your only costs are your time in setting up these links and the effort of encouraging friends, relatives and random web surfers to use these links when buying on line. This is getting about as close to Money for Nothing as I have ever seen.

Please email all opinions to eestec_fused@yahoo.co.uk

BORED TALK

Hi everyone!

It is Alessia here, the External Vice-Chairwoman. This time is my turn to tell you how busy the Board has been (or pretended to) during the month of September.



Well let's start with Paul , our lovely Uncle Scrooge or Ace (for the readers of the previous issues). He got back from a long-lasting holiday at the end of August (hopefully our budget has not been affected by that...), ready to work and making enquiries about moving the Seat of EESTEC. All of us are investigating very hard before the next Board Meeting which will be held in Delft from the 14th to the 17th of October. This is just an investigation (no panic please, not yet!) and first step for a decision that will only be made at the Annual Congress next March.

Val (Iikka) finished with his job at Ericsson, and he is now mysteriously writing short e-mails. I wonder what's happening. There might be several reasons like too much work at university or having the last well-deserved holiday. I just hope he is not planning more work for us, like a 24 hour a day discussion at the BOM. Please be merciful! He has already arranged a meeting with EUREL in Brussels during the BOM. We are also trying to meet FEANI on the same day, since a co-operation with these two association will likely prove to be very valuable for EESTEC.

Zorro (Enrico) is back to work too, studying hard for his exams. He came up to the North for a couple of days to give a presentation with Flavio Ferrari and me for a branch of the Rotary Club. He also keeps mailing LCs in order to complete the Census, which is a survey to find out how many we are (How many EESTECers are there in the world?), how active and how well and wide we spread the Newsletter.

Regarding me, I just got back from the States and having my last rest (if you can call it so) in Italy before returning to London. I have some good news with the activation. Thanks to Tiina from Romania, we have now a new contact over there and a possible new LC. I will send them an activation package by the end of September. I keep trying to reach my aim of finding at least ten promising contacts and possibly observers.

Finally some more general stuff. We also got some good news from Twente about the Yearbook. They seem to be willing to do it. And that's great! Denise, the new Newsletter editor keeps doing an amazing job. Oulu has confirmed they are organising a Workshop for January 2000. Madrid and London are collecting applications for their Workshop. Deadlines for Madrid is October 1st, for London is November 1st. I think that's all and if I forgot something, I guess you will forgive me since I have been boring enough, haven't I?

Alessia Toni
EESTEC Vice-Chairman for External Affairs

FORUM

There was very little discussion on the forum over the past month - maybe everybody is on holiday. The only real issue raised was that of offering advertising on the official EESTEC webpages. The initial thought was that while we want to have all sponsors' details on the web page we do not want to go as far as having flashing banner ads or anything similar even if we would receive money for this. It was felt that this would unnecessarily lower the visual standards of the page. Other people agreed with this as they thought such ads lowered the quality of the pages and took away the 'not-for-profit' feel of the association. If you have any thoughts on this or any other subject related to EESTEC you go make your voice hear on the EESTEC Forum.

The forum can be reached from the main EESTEC Web page URL <<http://www.eestec.org>>. Anyone can post new topics or answer other people's questions or argue against their thoughts.

LETTERS TO THE EDITOR

Dear EESTEC members,

How do you find the previous issue of the newsletter? Do you have any comments or opinions? Please feel free to write to the editor at editor@eestec.org or hwee.ang@ic.ac.uk.

Furthermore, if your LC have organised any events recently, or have taken part in an exchange with another LC, please also contribute an article about it to the newsletter. Last but not least, if your LC is organising an event for the future, do not fail to grab the chance to publicise it. Write to the editor now!

Yours sincerely,
 Denise, EESTEC newsletter editor

Accepted letters may be edited for length and clarity.

CONTACT INFO

Editor

Denise (Hwee Peng, Ang)
denise_hong@hotmail.com
or editor@eestec.org

The Board

Iikka Väkiparta
Enrico Natalizio
Alessia Toni
Paul Oudshoorn
board@eestec.org

Local Committees

Aachen, Bologna, Budapest,
Cosenza, Cottbus, Craiova,
Delft, Eindhoven, Helsinki,
Krakow, Istanbul, Lausanne,
Ljubljana, London, Madrid,
Malta, Munich, Oulu, Paris,
Prague, Reggio Emilia,
Rijeka, Sevastopol, Surrey,
Tampere, Twente, Vienna,
Zurich

<name of LC>@eestec.org

for more information, see
<http://www.eestec.org/
mailguide.html>

EESTEC International

c/o AMIV an der ETH
Universitaetstrasse 19
8092 Zürich
Switzerland
Tel. + 41 1 6324245
Fax + 41 1 2622072
E-mail: info@eestec.org
URL: http://www.eestec.org
FTP: ftp://ftp.eestec.org

EESTEC is represented in its member cities through Local Committees. The association's head office is located in Zurich, Switzerland. Please contact your LC regarding all matters at a regional level. Please contact the board for all international matters.

WORKSHOP IN LC MADRID

COMPUTER NETWORKS

LC Madrid invites you to our Marvelous and Fantastic Workshop on Computer Networks that will take place from 25th till 31st October. We have only room for 23 people, and 2 observers so we have thought to admit the first applications (so you should mail us as fast as you can), and 2 people from each LC as maximum. We will send you the draft of the Planning as soon as possible, but we know that this will be the best EESTEC event ever organized!!!! (No other country has our sun, I hope!!)

Please send the applications to: ws-madrid@eestec.org. You must include: Name, nationality and LC, sex, e-mail, food preferences:(vegetarians, allergies,...) and whether you need an official invitation or other official documents. Well, I think that's all for the moment. Enjoy your holidays and hope to see you in October.

THE PROGRAM

- 25 - Arrival of the participants and go home.
- 26 - Conferences in our University:
David Fernandez: "Internet 2 and Ipv6"
Enrique Pareja: undetermined
Victor Castelo: "Rediris"
- 27 - Visit to "El Escorial" and conferences in the Euroforum:
Claudio Feijoo: "Information Global Society. The Internet Paradigm"
Debate: "Electronic Commerce"
- 28 - Conferences in our University:
Juan Quemada: "Isabel project"
Debate: "Network technologies evolution and the new multimedia applications"
- 29 - Visit to Telefónica (The biggest Telecommunication company in Spain).
- 30 - Free day.
- 31 - Departure of the participants.

The Madrid Organising Committee

CALENDAR

3/10/99 to 14/10/99	15/10/99 to 17/10/99	25/10/99 to 31/10/99
Exchange Delft, Cosenza & Helsinki	Board Meeting to be held in Delft	Computer Networks LC Madrid Workshop
15/12/99 to 22/12/99	Jan to Feb 2000	19/3/00 to 26/3/00
Towards a networked World LC London Workshop	Something of Funny and Cold LC Oulu Workshop	Congress to be held in Delft
May 2000	7/5/00 to 13/5/00	October 2000
Improved Internet LC Cosenza Workshop	Electromagnetic Pollution LC Bologna Workshop	Mechanics LC Munich Workshop



OFFICIAL SPONSOR



Wir

stecken hinter dem Punkt.

**Mika Hakkinen sitzt hinter dem Lenk-
rad. Und alle anderen haben wir hinter uns ge-
lassen. Schnelligkeit, Zuverlässigkeit, Höchstlei-
stung, Sun hat sie. McLaren hat sie. Deshalb passen sie
so gut zusammen. Eine Stärke, mit der man rechnen
muss. Unsere Netzwerk-Technologien arbeiten für McLaren
auf und ausserhalb der Piste und machen sie zum besten
Team der Welt. Von unseren Enterprise-Systemen bis hin zur
Java™ Software-Plattform werden die Technologien von Sun
nicht nur zum Entwurf und zum Test der Rennwagen einge-
setzt, sie überwachen jede ihrer Bewegungen. Damit kann das
Team jederzeit und sofort Entscheidungen treffen und dafür
sorgen, dass sich Mika einmal mehr im Kreis der Gewinner
mit Champagner feiern lassen kann. Wenn Sie heraus-
finden wollen, wo Mika seine letzte Flasche entkorkt
hat, besuchen Sie McLaren.co.uk (übrigens,
auch da steckt Sun dahinter). THE
NETWORK IS THE COMPUTER.**

We're the dot in .com.™



Sun Microsystems (Schweiz) AG, Eschenstrasse 8, Postfach, 8603 Schwerzenbach, Telefon 01 825 71 11, Telefax 01 825 72 99, www.sun.ch

© 2000 Sun Microsystems, Inc. All rights reserved. Sun, Sun Microsystems, the Sun logo, Java, the Java Coffee Cup logo, The Network is The Computer and We're The Dot in .Com are trademarks or registered trademarks of Sun Microsystems, Inc. in the United States and other countries. www.sun.ch