



IFMBE News

Number 50 September 2001



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International Federation for Medical & Biological Engineering

*Encouraging research and the application of knowledge,
disseminating information, and promoting collaboration in the
field of medical, clinical and biological engineering*



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Vienna Resolution: Formation of an Umbrella Organisation for Medical and Biological Engineering in Europe

Where we are today in the establishment of the new European umbrella organisation, what are its aims and objectives thought to be and the process so far.

Vienna Resolution

Delegates of IFMBE affiliated national societies and of ESEM and IEEE-EMBS met in Vienna, 26-27 August 2001 at the invitation of the IFMBE appointed ad-hoc committee charged with analysing the situation of medical and biological engineering in Europe. There were 29 delegates in attendance representing 22 IFMBE affiliated societies and organisations. Additionally six countries replied to the invitation but were not able to send a delegate to the meeting. Considering that there are over 30 IFMBE affiliated national societies in Europe in addition to ESEM and IEEE-EMBS the turnout was very good.

The Vienna meeting was convened with the objective of discussing the establishment of a new umbrella organisation for medical and biological engineering in Europe, specifically its aims and objectives, membership, constitution, structure and financing, and of deciding on the next steps in taking this initiative further. At the end of the meeting the participants agreed unanimously to the resolution below:

We the participants recommend the formation of an IFMBE affiliated European umbrella organisation and ask the IFMBE affiliated European national societies, EMBS, and ESEM to endorse its formation in accordance with the discussions that took place in Vienna on 26-27 August 2001.

The meeting further decided to establish a Protem group to take care of the next steps as described in the minutes. This group is

charged with working in close collaboration with the European societies. The composition of the Protem group is as follows¹:

Joe Barbanel, UK

Marcello Bracale, Italy

Helmut Hutten, Austria

Dov Jaron, IFMBE

Ratko Magjarevic, Croatia

Joachim Nagel, Germany

Christian Roux, IEEE-EMBS

Niilo Saranummi, Finland (chair)

Jos vander Sloten, ESEM

On 13 September 2001 the Protem group sent a letter to all European IFMBE affiliates asking for their endorsement of the resolution if at all possible by the end of the current year.

Conclusions of the Vienna meeting

There are two main reasons why a unified medical and biological engineering community is needed in Europe. First, there are the developments taking place in Europe as exemplified by the EU Framework Programmes in R&D, the European Research Area (ERA) and the Bologna declaration (and lately the European Education Area). All these demonstrate that in addition to the national decision making processes increasingly decisions are taken at the European level. Second, affordable and high quality health and health care are high on the agenda of citizens and nations in Europe. Medical and biological engineering is one important means of satisfying those concerns. Divided we will not be successful in being heard and having some influence.

Title of the organisation

The name of the new organisation was not discussed specifically during the meeting. The current tentative name should therefore be considered as a working title only.



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Aims and objectives

The aims and objectives were generally approved with some adjustments "here and there". The main objective is to promote medical and biological engineering in Europe. Examples of tasks that the organisation may undertake include (this is not a definite final list):

- Assisting in the development/strengthening of medical and biological engineering and medical and biological engineering societies in some countries especially in Eastern Europe.
- Assisting/advising/co-ordinating the preparation of guidelines for education, training, and accreditation programmes and by contributing to the establishment of appropriate programmes thus also improving the quality of European medical and biological engineering and enhancing traditional mobility.
- Liaising with national governments, European governmental agencies and European bodies
- Fostering and co-ordinating the activities of the Member Organisations in the field of medical and biological engineering and collaborating where appropriate with national and international organisations, particularly IFMBE.
- Taking part in the regulation process of medical devices.
- Representing medical and biological engineering at the European level in order to raise the subject's profile.

Membership

The membership should include the entire European medical and biological engineering community, i.e. the new organisation should be *inclusive*. Further consideration must be given to inviting health care provider organisations and user groups e.g. patients to participate into it as members. The process of building up the organisation must be initiated with the support of the IFMBE affiliated European national societies and EMBS and ESEM. The use of a College of Fellows or

similar should also be considered as a way to quickly reach important European players. All European and national societies active in the domain of medical and biological engineering as defined by IFMBE should be approached. Academic institutions, research institutes and industry as well. In addition, the users of health care technology should be approached. There will be no individual members in this organisation.

Constitution, structure, financing

There needs to be short constitution augmented with bylaws giving more detail. The structure of the organisation needs to be such that the European medical and biological engineering community can be represented through its different bodies. Financing will require setting of membership dues. However, it is believed that these will not be enough to enable operations on the necessary scale. Therefore, additional sources for funding must be investigated. A business plan needs to be developed identifying the tasks, the means and the resources (incl. finances).

Activities and milestones leading to the Vienna meeting

As many may remember, at the initiative of Professor Helmut Hutten a discussion forum took place in connection with the 1st EMBEC conference in Vienna in November 1999 as to whether we need a new European medical and biological engineering organisation. Based on the proceedings, IFMBE President Professor Jean-Pierre Morucci appointed an ad-hoc committee to investigate the need for a new European organisation and to propose a solution if a need is identified.



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Time	Milestone
<i>November 99</i>	Vienna, 1st EMBEC meeting
<i>November 99</i>	Appointment of the ad-hoc committee
<i>March 00</i>	London, 1st meeting of the committee, creation of an action plan
<i>March 00, Brussels</i>	Meeting with EU Commission representatives (Morucci and Jaron)
<i>April 00</i>	Consulting on EU's Bio-IT initiative and EU-NSF initiative
<i>June 00</i>	Questionnaire sent out on medical and biological engineering educational programs
<i>June 00</i>	Consulting on EU's Bionics initiative
<i>July 00</i>	Chicago, 1st meeting with the European national societies, second meeting of the ad-hoc committee
<i>October 00, Patras</i>	TEMPERE workshop and 3rd meeting of the committee
<i>January 01, Schiphol</i>	Fourth meeting of the committee
<i>April 01, Brussels</i>	Meeting of the WG and meeting with ESEM representatives and EU officials
<i>June 01, Pula</i>	Workshops on the "one voice" and "accreditation"
<i>June 01</i>	Submission of proposal for COST Action
<i>August 01, Vienna</i>	Meeting with the European national societies

The first meeting of the committee face-to-face took place in London in March 2000 and created a work plan that we have since been working to put into effect. It is based on two action lines:

- Creating a "one voice" mechanism for medical and biological engineering in Europe
- Accreditation of medical and biological engineering educational programs in Europe.

During the World Congress in Chicago, July 2000, we arranged a meeting with the European IFMBE affiliates to discuss our findings and plans and to get feedback from the delegates. Since then the committee met in Patras in October and close to Schiphol airport in late January 2001 with an attendance of nearly 20 committee members.

In Schiphol we agreed unanimously to proceed with the establishment of an European umbrella organisation for medical and biological engineering under the following two conditions:

1. That this new organisation will not be in competition with existing societies in Europe or with IFMBE.
2. That the aims and functions of such a new organisation add value to what national societies are already doing in Europe.



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A small WG was appointed to prepare a meeting with the IFMBE affiliated national societies including ESEM and IEEE-EMBS to discuss and decide on the establishment of the umbrella organisation. This meeting was scheduled to take place in Vienna on 26-27 August 2001. Before Vienna, all societies were contacted to sound out their opinions and to invite them to send a delegate to the meeting. Additionally, two workshops were organised in connection with the 9th Medicon conference in Pula to present and discuss the plans with those present.

It is clear that the setting up and establishment of the umbrella organisation will take time and resources. Therefore, the committee has been looking for possibilities to support the process. The European COST framework² has been identified as such possibility and a *proposal for a four-year COST Action* was submitted to the COST Secretariat in June this year. It was evaluated in September favourably but still needs adjustments before it can go ahead towards formal approval procedures.

Accreditation of medical and biological engineering programs in Europe

Parallel to this process Professor Joachim Nagel has been heading the accreditation activity in the medical and biological engineering area. Europe is moving towards a European Higher Education Area and the universities are at the core of this process.

The process started by the Sorbonne and a year later by the Bologna Declarations (in 1998 and 1999 respectively) aims at a harmonised European Higher Education Area. In May 2001 the European ministers in charge of higher education, representing 32 signatories, met in Prague to review progress made and to set directions and priorities for the coming years.

The main players in this process will be the universities. This is illustrated among others by the meeting convened by the European University Association (EUA) before the Prague meeting in Salamanca in March 2001. The meeting of universities

(<http://www.unige.ch/eua>) identified six important themes in the creation of the European Higher Education Area:

1. Freedom with responsibility: Empowering the universities
2. Employability in the European labour market
3. Mobility in the European higher education area
4. Compatibility: a common but flexible qualifications framework
5. Quality assurance and accreditation
6. Competitiveness at home and in the world

The most urgent issue in this context is to generate a Europe-wide agreement on the accreditation of biomedical engineering educational programs. Luckily, this activity can draw from the experiences of several European wide networks, projects and programs in this area, the most notable of them being the series of activities carried out by the University of Patras in Greece. The fact that today more than 150 colleges and universities in Europe and about three times that number world-wide offer educational programs in biomedical engineering at all academic levels with numerous areas of specialisation underlines the importance of these activities. Given this context and background the work of the ad-hoc committee has focused on the development of recommendations for accreditation criteria of biomedical engineering programs as a means to assure mobility, compatibility and competitiveness within Europe and the world.

Accreditation of biomedical engineering programs also addresses another aim of the Bologna declaration, which seems to point to a future that can best be characterised with the words "freedom with responsibility". This concept applies both to universities and students. The universities have to take care that the academic programs they offer are competitive and recognised by employers in order to attract students. Similarly, the students will have to be well informed in order to select where they want to get their education and



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what that education shall comprise to be employable. Mobility is just one facet of this equation.

Given the wide range of interests that biomedical engineering incorporates, from molecular and cellular engineering to the modelling of systems, diagnosis and therapy of whole physiological systems, from nano- and micro-technology to medical instrumentation, information technology to artificial organs, from basic research to quality assurance in hospitals, it is clear that there cannot be *one* harmonised syllabus for the whole of biomedical engineering. We will need different educational programs also in the future. We also need to continue with the development of our field of science. However, we also need to talk to each other, learn from each other and find ways to participate into the Bologna process. One such occasion is coming up shortly in Eindhoven, the Netherlands where a conference on biomedical engineering education takes place October 31st to November 1st (see www.bmt.tue.nl).

The road ahead

The Vienna meeting set deadlines (see table below) and goals for the process. The first step is to seek endorsement from the IFMBE affiliated European societies of the Vienna resolution. It was anticipated that a majority of the societies would be able to respond by the end of the current year. At the time of writing of this story (September 25th), three endorsements have been received.

<i>End 2001</i>	Resolution is endorsed by majority of societies
<i>March 2002</i>	Draft constitution and bylaws are sent for approval
<i>October 2002</i>	Constitution is accepted by majority
<i>December 2002</i>	The new organisation is officially established and the process of election of board and officers is initiated

The IFMBE appointed ad-hoc committee has been disbanded and its work has been taken over by the Protem group. It is charged with the writing of a draft for a constitution

and bylaws and with the development of a business plan for this organisation. It is also authorised to set up committees and/or working groups according to need.

If everything goes according to plan a year from now we will be in a position to officially establish the organisation and to start the election process for its board members and officers.

Niilo Saranummi
Chairman of Protem Group
Niilo.Saranummi@vtt.fi

Footnotes

¹ Nicolas Pallikarakis (Greece) was appointed on the group but later asked to be withdrawn because of personal reasons. The chair was authorised to add 1-2 persons from the Central and Eastern European countries to the group (which has been done).

² COST (co-operation on science and technology) covers all European countries, not only EU member countries. It funds concertation of research, not direct research. For more information on COST have a look at their home page at www.netmaniacs.com/cost or <http://www.cfm-resources.com/castle>.

MBEC News

The online version of *Medical & Biological Engineering & Computing*, the official journal of the International Federation for Medical & Biological Engineering, can be found by simply following the [Federation Journal](#) link from the IFMBE homepage, which can be found at www.ifmbe.org. In addition to a guide to authors, the site now features a browsable index of all papers published in *Medical & Biological Engineering & Computing* in 2000 and 2001. Visit the site now to discover the range of papers published in the course of the last year as well as details of recently published papers. Details about how to submit and subscribe to the journal can be found on the back page of this issue.



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Invitation to participate in Working Group on Neuroengineering

IFMBE is in the process of developing a Working Group on Neuroengineering. We are developing this working group in order to enhance communication among investigators in this new and emerging field. We are beginning by incorporating current members of IFMBE whose research interests are in the field of neuroengineering.

Since the end of the 'decade of the brain' our understanding of the mechanisms underlying neural and brain function has increased dramatically. This increased understanding provides a foundation for a major investment of new engineering approaches to 1) the study of neuroscience and 2) the development of novel solutions for relief from neurological diseases. These approaches are diverse and include nontraditional methods such as computational neuroscience and neuromorphic and neuromimetic engineering, as well as more traditional engineering approaches such as signal processing and systems analysis. In addition, each of these approaches has been used in a broad range of applications. Nevertheless, enhancing communication among these diverse groups will stimulate research and promote interesting and unique collaboration. Moreover, this working group can be used as a catalyst to involve other engineering disciplines that have yet to be tapped for neuroscience. For example, recent initiatives in nanotechnology have brought together traditional materials engineers and neuroscientists to develop new technologies for the study of neural systems and disease.

We are requesting assistance from the National Secretaries to help in defining and building this working group. The goal is to create a small, international group to promote neuroengineering through 1) specialised meetings or joint sessions during other related meetings, 2) educational courses and exchange

of educational material related to neuroengineering and 3) dissemination of scientific advances in the field.

Please nominate one member from your national society who will be a candidate for the working group. The individual must be an active researcher in this area. Please send your nomination to

Karen.Moxon@drexel.edu

with a copy to Dov Jaron, IFMBE President and Heikki Terio, IFMBE Secretary General at

Dov.Jaron@drexel.edu

Heikki.Terio@mta.hs.sll.se

To be considered for the Working Group the nomination should include a copy of the individual's curriculum vitae.

We are planning an inaugural meeting at this year's EMBS meeting, Istanbul, Turkey, 25-28 October, where we can begin a dialogue about how to pursue these goals and other ideas participants may have. Therefore, your prompt attention is appreciated.

Thank you very much for your help with this matter.

Dov Jaron, President

Email: dov.jaron@drexel.edu

IEE Launches Healthcare Technologies Professional Network

The IEE professional networks are people-to-people networks that allow engineers to interact with each other in their specialist field. The professional networks can be virtual and/or physical, which differentiates them from other online communities.

The Healthcare Technologies network, which was one of the first to be launched, promises to be a valuable resource for biomedical engineers. Details can be found by visiting http://pn.iee.org/preview/pn_healthtech/



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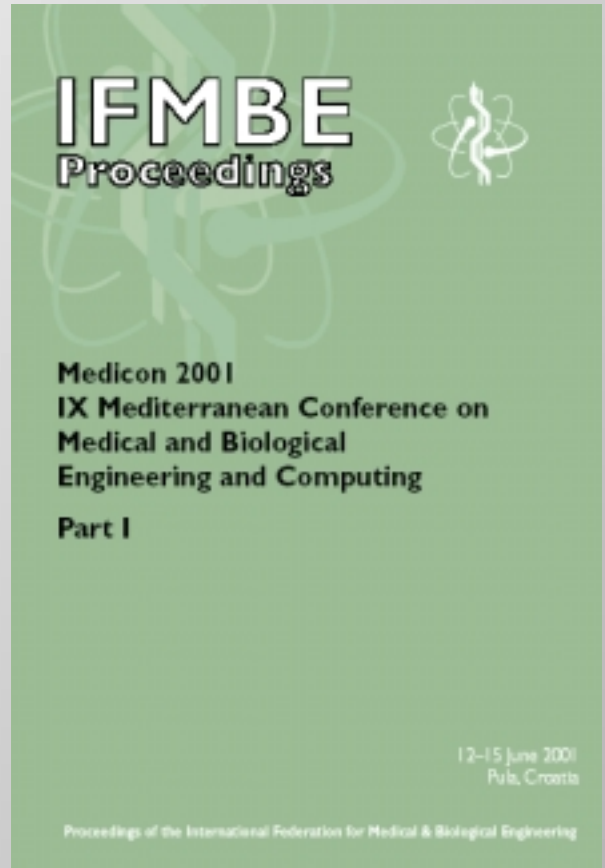
Launch of IFMBE Proceedings Series: MEDICON 2001 Proceedings

The Publishing Committee of the IFMBE has made a decision to make all efforts to increase the visibility of the Proceedings of IFMBE-organised/sponsored conferences. Therefore, the IFMBE Proceedings Series was started with the Proceedings of MEDICON 2001 – IX Mediterranean Conference on Medical and Biological Engineering and Computing. The MEDICON Proceedings (the first volume of the series) got an ISSN number (i.e. a number for periodical publications, referred to the IFMBE) and an ISBN number (a book number, referred to the local publisher –conference organiser).

The MEDICON Proceedings were printed in two parts, containing 306 papers accepted for presentation at the conference and covering 1120 pages.

Please address the inquiries for additional copies of Proceedings to:

Croatian Society for Medical and Biological Engineering
FER - ZESOI
Unska 3, HR-10000, Zagreb, Croatia
Email: crombes@crombes.hr
Website: <http://www.crombes.hr>



IFMBE Seeks Editor of IFMBE News

IFMBE is looking for an editor of its newsletter, IFMBE News. The newsletter is published bi-monthly. Starting from this year it appears only in electronic format both on the web (<http://ifmbe-news.ice.org>) and as a PDF file. The latter is distributed to the members of IFMBE affiliate societies by email through the secretariats of the respective member societies. Peter Peregrinus Ltd publishes the newsletter.

We hope to be able to fill this position starting from the beginning of 2002.

Applications and nominations for this position are invited. These should be sent together with a CV to the chairman of the Federation Journal Committee, Professor Bonfield.

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Open invitation to all interested parties to participate Performance and Sustainability Indicators for Clinical Engineering Services

As part of the focus on improved performance of health systems (WHO World Health Report, 2000) we wish to establish indicators for the performance and sustainability of clinical engineering services¹ as an integral part of cost-effective service delivery. These indicators will form one component of a tool for assessment and comparison of clinical engineering services in different settings, with the overall aim of improving the performance and quality of healthcare delivery. This study follows and complements earlier work by Frize (1990) and Glouhova et al (1999).

The main data gathering instrument is a set of four questionnaires, directed at four key target groups:

- Institutional / health facility management (including nursing management);
- Personnel (both managerial and technical) of clinical engineering services;
- Clinical engineering service clients, i.e. clinical departments providing healthcare services, and
- Representatives of national/provincial ministries of health and international HTM experts (including representatives of multilateral organisations and bilateral agencies, as well as technical consultants).

A description of the background and the questionnaires can be downloaded as Word templates from the IFMBE News website. See <http://ifmbe-news.iee.org/ifmbe-news/sept2001/invitation.html>

This is an open invitation to all interested parties to participate in this study. We look forward to receiving your valued input and insights.

Mladen Poluta and Rutendo Ngara
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Dept. of Human Biology, UCT Faculty of Health Sciences, Anzio Road, Observatory 7925, South Africa

Footnote

¹ Units responsible for providing medical equipment management and maintenance services are known variously as Clinical Engineering Departments, Health Care Technical Services, Medical Physics Departments, Biomedical Technology/Engineering Services, Medical Equipment Workshops, etc., and may be located within a health facility or outside as a shared / regional resource centre.



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Conference Report: MEDICON 2001, Pula, Croatia, 12-15 June 2001

The IX Mediterranean Conference on Medical and Biological Engineering and Computing in Pula has successfully passed. Over 280 participants came from 50 countries from all over the world.



Looking out onto the Adriatic Sea from the terrace of the Hotel Histria

At the Opening Ceremony, held in the Congress Hall of the Hotel Histria, Prof. Stanko Tonkovic, the President of the MEDICON International Program Committee, welcomed the participants and spoke on the significance of international conferences which enable exchange of the newest scientific and professional information. Prof. Jean-Pierre Morucci welcomed the participants on behalf of IUPESM. Prof. Morucci spoke on the importance of IUPESM's full membership in the ICSU. He addressed the need for building the awareness of the impact of biomedical engineering at international and national level. IFMBE-affiliated biomedical engineering societies should play an important role in this matter.

During the opening ceremony, the participants paid tribute to Prof. Lojze Vodovnik, a well-known scientist from Slovenia, who has unfortunately left us forever. In their inspired speeches, Prof. Tonkovic and Prof. Marcello Bracale presented the scientific and professional life

of Prof. Vodovnik. Prof. Vodovnik was present on all Mediterranean conferences from their very beginning in Sorrento in 1977. Generations of biomedical engineers will remember Lojze as a great teacher and a good friend as well.

Prof. Dov Jaron, President of IFMBE, officially opened MEDICON. In his opening speech, he spoke about the future of biomedical engineering. In his opinion, this century will be a century of biology based on biotechnology, in which biomedical engineering will play an important role. Professor Jaron expressed his thanks to the organisers of the conference.



IFMBE President Dov Jaron speaking at the Opening Ceremony

The Proceedings of MEDICON 2001 were presented as the first volume of the *IFMBE Proceedings* series. This is a new approach of the IFMBE Publishing Committee to the publishing of IFMBE-sponsored conference publications, which should enable better recognition of the published papers in libraries and better citation of all authors



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through the unique series ISSN number. The editor of the IFMBE Journal, Prof. Alan Murray, presented the online version of the Journal *Medical and Biological Engineering and Computing* and gave a speech on preparing scientific papers for publication.

Besides plenary, oral and poster sessions, five special sessions were held at MEDICON. The special session *Biomedical Engineering on the International Scene*, organised by Professor Morucci, followed by two workshops: *Accreditation of Biomedical Engineering Programs in Europe* organised by professors Jaron and Nagel as well as *A New Organisation for Medical and Biological Engineering in Europe?* organised by professors Saranummi, Hutten and Barbanel, were an excellent platform in anticipation of the Vienna meeting of European IFMBE-affiliated societies representatives.

On behalf of the Italian biomedical engineering society, professors Marcello Bracale and Paolo Inchingolo organised special sessions: *Health Telematics and Telemedicine and Clinical Engineering towards the New Millennium*. **The Minister of Health of Croatia, Prof. Ana Stavljenic-Rukavina, took part in the discussions during the telematics session.**

The Austrian biomedical engineering society organised a special session entitled *Research, Development and Collaboration in Biomedical Engineering*. Professors Gilly and Windischbauer presented the analysis of the possibilities of organisation of biomedical research in Austria and their invited guests from neighbouring countries their view on the research in their countries.

The special session on *Point-of Care Medical Device Communication* organised by Mr. M. Reynolds gave a very good overlook on practical problems and the state of the art of this part technology.

The winners of the Student Competition Awards were: Federica Vatta, Italy; Thomas Baun, Denmark and Ozren Radenovic, Croatia. The president of the Award Committee, Prof. Vladimir Medved and Dr

Heikki Teriö, Secretary General of the IFMBE, presented the awards to the winners at the closing ceremony.



Presentation of the Student Award to Thomas Baun (Denmark) by Professor Vladimir Medved (Croatia) and Dr Heikki Teriö

The next Mediterranean Conference will be held in 2004 in Ischia, organised by the Italian biomedical engineering society.

Some of the photos taken at MEDICON in Pula can be found in the PDF file of this issue. For more photos and other details, please visit the MEDICON internet site at www.crombes.hr/MEDICON2001.

Ratko Magjarevic
MEDICON 2001 Organizing Committee
Chair
Email: ratko.magjarevic@fer.hr



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12th Nordic Baltic Conference on Biomedical Engineering and Medical Physics, Reykjavik, Iceland, 18-22 June 2002

The Icelandic Society for Biomedical Engineering and Medical Physics in co-operation with IFMBE, EFOMP and the Societies for Biomedical Engineering and Medical Physics in the Nordic and Baltic countries, the Medical and Engineering faculties of University of Iceland and in association with IEEE-EMBS, is organising the 12th Nordic Baltic Conference on Biomedical Engineering and Medical Physics. The conference is dedicated to all aspects of using physical laws and engineering methods to aid the sick and improve people's quality of life. It is a forum for the various professions of science and technology dealing with medical technology or physics to exchange ideas, experience and information on current developments and trends in the field.

This conference is the twelfth of this type, having started in 1970. Initially only the Nordic countries hosted the conference, although in later years the Baltic countries joined the group. The conference has attracted scientists from all over the world.

This time we have added medical physics to the title of the conference to emphasise the fact that it is an integral part of the field. We believe this will strengthen the forum.

Authors world-wide are invited to participate in the conference. Keynote speakers from leading scientific institutions and industry are invited to give state-of-the-art lectures on subjects emphasised at the conference. See list of topics. This will provide communication with leading experts in each field, leading to new ideas for further development of the field as a whole.

Reykjavik is the venue for the conference, the northernmost capital in the world. It takes place in the middle of June year 2002, when the nights are bright and the clear air offers a good view of the unusual landscape of Iceland. The volcano island offers a rich variety of hot springs, waterfalls, mountains, glaciers, birds and whales all to be visited by those with enquiring minds and caring hearts (<http://tourist.reykjavik.is>).

The scientific sessions will be held at the Conference and Cultural Centre of the University of Iceland, "Háskólabíó". This is a unique complex of buildings in the very heart of Reykjavik. Due to its versatile possibilities the centre has been a favourite place for hosting meetings and conferences.

Weather

Thanks to the Gulf Stream, Iceland enjoys a cool, temperate ocean climate: cool in summer and relatively mild in winter. The average temperature in June/July is between 10°C and 15°C. The weather, however, is rather unpredictable and guests should come prepared for the unexpected, i.e. occasional showers or stiff winds. Iceland is on Greenwich Mean Time (GMT) throughout the year and does not switch to "daylight saving time" during summer. Sunset at the end of June/beginning of July is at around midnight, with the sun rising again about 2-3 hours later.

Clothing

When travelling in Iceland good shoes along with a warm sweater and weatherproof coat or jacket are essential. Also bring your swimming costume to try the outdoor swimming pools heated with geothermal water.

Important dates

Submission of papers: February 1st 2002
Notification of paper acceptance: March 1st 2002
Early registration: February 1st 2002

Contact information

Secretary of the 12th NBC 2002
University of Iceland, Dept of Physiology
Vatnsmyrarvegur 16, IS-101 Reykjavik, Iceland
Phone +354 525 4831 / Fax +354 525 4886
Email : stefsig@hi.is
Website: <http://www.nervus.is/nbc02/>



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Conference Announcement: The Bio-Era: New Frontiers, New Challenges 4-7 December 2002 Raffles City Conventions Centre, Singapore

This century has been designated as the “Century of Biology” and it has already started off with a big bang with the successful mapping of the human genome. This post-genomic era brings about endless possibilities in the advancement of biomedical sciences and the development of new diagnostic and therapeutic treatment for health and disease. Coupled with bioinformatics and biomolecular engineering, this can bring about better precise early detection of diseases such as cancer and the personalised prescriptions of appropriate drugs.

Furthermore, with the advances in nanotechnology, the concept of “laboratory on a chip” will soon become a reality. The proliferation of knowledge and technique in isolation and expansion of stem cells will enhance and complement the development of tissue and organ engineering. This field will be exploited further with emerging technology in bioprocessing and new biomaterials. Advances in biomedical imaging and together with robotics and elegant navigation systems allow surgeons to perform operations with procedures that are minimally invasive and with pinpoint accuracy.

New and exciting possibilities in life sciences, in particular the area of biomedicine, are developing. We are standing at the threshold where the new frontiers where new challenges in biological and medical engineering. This Congress allows us to bring together participants in their respective fields of expertise for discussions, interactions and collaborative development of our theme for the Congress. Let us share in the visions and challenges of this new Bio-Era.

On behalf of the organising committee of the International Congress on Biological and Medical Engineering, I extend our warmest welcome to you. This congress is a

joint meeting of the 5th Asia-Pacific Conference on Medical and Biological Engineering and the 11th International Conference on Biomedical Engineering. The Faculties of Medicine and Engineering of the National University of Singapore and the Biomedical Engineering Society (Singapore) jointly organise it.

Asia-Pacific Conferences on Medical and Biological Engineering (APCMBE) are held once every three years under the auspices of the Asia-Pacific Working Group of the International Federation on Medical and Biological Engineering (IFMBE). The previous conferences were held in Tokyo, Beijing, Taipei and Seoul. The APCMBE meetings have provided excellent platforms for interaction and networking among members in the Asia-Pacific region. The coming conference will be held in conjunction with the series of Biennial International Conference in Biomedical Engineering (ICBME) held in Singapore. The ICBME meetings have attracted participants from about 30 countries; the proceedings have been of high quality. As such, it is envisaged that the combined meeting will generate excellent scientific interactions as well as developing friendship across countries and disciplines.

The program will be exciting, with prominent invited speakers each in their field of expertise. The Scientific Program will have plenary lectures and keynote lectures. Our theme for the congress is “The Bio-Era: New Frontiers, New Challenges”. We believe that in this Century of Biology, Bioengineering will face new challenges and it will require the cross-linking of different disciplines in biomedicine, science and engineering to bring the field to new frontiers in medicine and health care.



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Important dates

Deadline for submission of abstracts: 1st June 2002

Notification of acceptance: 1st July 2002

Deadline for submission of full papers: 1st September 2002

Deadline for early of conference registration: 15th October 2002

Deadline for submission of exhibition: 1st October 2002

For more information, please contact:

ICBME 2002 Conference Secretariat
c/o Integrated Meetings Specialist
114 Middle Road #05-02 Lee Kai House
Singapore 188971

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Call for Papers EMBEC'02 Second European Medical and Biological Engineering Conference Vienna, Austria, 4-8 Dec 2002

Advancement of Medicine and Health Care
through Technology – The Challenge to
Biomedical Engineering in Europe

EMBEC'02 in 2002 is following the **First EMBEC'99 in 1999**, the successful first joint meeting of the European constituents of the International Federation for Medical and Biological Engineering (IFMBE) with nearly 1100 participants from 55 countries. Abstracts shall be submitted in accordance with the special Abstract Form that can be requested from the conference secretariat or be downloaded from Internet. Papers will be refereed by the International Scientific Advisory Board and individual Session Organizers. Full papers will be published in a special issue of the new IFMBE book series.

Scientific Program

All topics relevant to biomedical engineering will be considered in the scientific program. The following list is not complete: artificial organs; bioimpedance; bionics; biomaterials; biomechanics; biosignal processing; biotelemetry; cardiovascular mechanics; clinical engineering; computers in medicine; education; electrotherapy; expert systems in medicine; functional electrostimulation; gait and motion analysis; home care technology; image processing; intelligent instrumentation; lasers in medicine; medical imaging; medical informatics; medical robotics; minimally invasive surgery; modelling and simulation; physiological system analysis; rehabilitation technology; telemedicine; tissue engineering

Important dates

Second announcement: 1 November 2001

Submission of abstracts: 15 March 2002

Notification of acceptance: 15 June 2002

Submission of full papers: 15 September 2002

Prof. Dr Helmut Hutten

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BMEEDU 2001



International Conference
on
Biomedical Engineering
Education

The Visegrad Fund has selected the proposal: **Improvement of Biomedical Engineering in V4 countries** for funding and the representatives of the V4 countries, Czech Republic, Hungary, Poland and Slovakia, held the first meeting, BMEEDU 2001, from 19 to 22 September 2001 in Prague (www.feld.cvut.cz/FEE/bmeedu).

The aim of the co-operation is to exchange experiences, propagate “best practice” and to write a book in English for biomedical engineering students. The Visegrad Fund will help students to obtain the book at a massively reduced price. The editorial board took into account that a number of good books are already available and decided to include real-world experiments. These will help students to discover biomedical engineering related phenomena themselves. It is generally accepted that teaching is more effective if students are active and carry out experiments rather than simply listen to lectures. *This is especially true for teaching biomedical engineering.* The book is expected to be ready by September 2002. The editorial board is to meet again early next year in Brno.

The scientific program consisted of three main parts:

1. Biomedical engineering studies – organisation, structure and content: Aims, recommended subjects, syllabi of the courses, recommended co-operation with other

institutions and practice in biomedical engineering education, introduction of new topics into courses.

2. Pedagogy and didactics of biomedical engineering education: Concrete principles, examples, practical instructions, and resources.

3. Student projects: This section was devoted solely to biomedical engineering students and to the presentation of student work in biomedical engineering – diploma works, theses, semester projects, etc.

The conference language was English.

The Organising Committee was as follows:

Karel Roubik, PhD (chairman) Czech Technical University, Prague, CZ

Assoc. Prof. Lenka Lhotska, PhD Czech Technical University, Prague, CZ

Prof. Ewaryst Tkacz, PhD, DSc Silesian University of Technology, Gliwice, PL

Assoc. Prof. Akos Jobbagy, PhD Budapest University of Technology and Economics, Budapest, Hungary

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Assoc. Prof. Jiri Holcik, PhD Brno University of Technology, Brno, CZ

Jakub Hajek, Czech Technical University, Prague, CZ

Jaroslav Dusek, Czech Technical University, Prague, CZ



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Addressing the Future of Healthcare Technology Management

This opinion has been circulated through the Infratech email list. I thought that it might be of interest to a wider circle of biomedical engineers and asked the author for permission to publish it in the IFMBE News. Infratech is a worldwide Internet forum, initiated by WHO and put into action by PAHO in 1999. The forum serves as a discussion and communication platform for professionals who are involved in the management of healthcare technology from the policy to the implementation level. A major objective is to promote systematic healthcare technology management and maintenance systems in health services of developing economies.

What's the point?

Why bother about the future of Healthcare Technology Management (HTM), when there is still a dire need for even basic maintenance services in many settings? Well, it is not in vain; that we have been pushing for success and become an internationally renowned group of experts and thus created a lot of expectations. This is why, involuntarily we will be calling for trouble, if we are not careful. What can be so dangerous about this? We are even using modern Internet technology to maintain contact, exchange information and to discuss important issues. It has brought us a lot of advancement and has, above all, boosted the inclusion of formerly isolated HTM groups. Well done!

The danger lies – as always – in human nature. An increasing number of HTM experts feel quite comfortable now they have become a fairly close-knit community. A cosy ecological niche for us people who are more than often treated with disinterest and disrespect during our daily work. A niche with a common identity that gives us the warm feeling of mutual understanding.

The result can be some sort of secret society suffering from the Mafia effect, by becoming protective and self-centred to the extent that it obstructs our ability to recognise relevant changes and opportunities around us. A broad movement of restructuring health services exists in developing countries – the trend of autonomisation of hospitals in some Asian countries is just one example - calling on our ability to adapt and to be creative. Let us recognise the Mafia effect and take up the challenge. To do this, it might be helpful to briefly review our own history.

The evolution of HTM in developing countries started about 30 years ago with simple ideas about having repair services at hand. About 10 years later the first efforts to encourage Planned Preventive Maintenance systems were undertaken. Parallel to this, WHO started to develop global strategies in promoting and implementing modern maintenance and repair concepts. A broader view on keeping-up healthcare technology led to concepts such as Physical Assets Management and finally to Healthcare Technology Management that also features elements of policy development, the Essential Healthcare Technology Package, etc.

Again, well done! However, is there not a nagging, uncomfortable certitude that the performance of HTM leaves a lot to be desired? In addition, do we not share the same insight with other disciplines in healthcare delivery? So, let us try to leave the snug safety of our niche more often, let us promote closer and sustainable relations to the other managers in health services, even if this requires the qualities of a door-to-door salesperson, selling insurance policies or vacuum cleaners.

From isolation to integration

Like other health workers, we are often confronted with a situation in which we feel surrendered to a quagmire of inefficiency, self-interest and, finally, a general powerlessness in overcoming day-to-day problems. This is partially caused by our technology fixation that was imprinted on most of us during our basic training, but even more by the fragmented way of managing health facilities.



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This practical part of delivering health services has almost been forgotten during recent years while developing the global strategies and policies of health sector reform. Many countries have thus fallen into the trap of decentralising health services, without providing sufficient tools to carry it through.

Among others, WHO recognises this in its widely, and in some aspects controversially discussed World Health Report 2000 by focussing the report on performance improvement of health systems. To attain the objectives formulated in the report, namely to:

- improve the level and distribution of health services

- be responsive to the needs of the population

- achieve fair financial contributions, the following functions must be assured:

- service provision
- resource generation

- financing

- stewardship (e.g. by the ministries).

Where service provision is satisfactory we can observe a number of common factors of success, among others: formal **and** actual commitment of leaders, decentralisation, holistic (integrated) management approach and a good portion of luck, for example having the right personnel at hand at the right time.

Moreover, let us not forget one crucial aspect: law and law enforcement. Without a legal system that defines mandate, liabilities and responsibilities of health organisations and their workers **and which is enforceable**, no country, be it an industrial or a developing one, can sustain an acceptable quality of care.

If assuring service provision represents an essential part of improving performance, performance must be made measurable. What we need is to broaden the evidence base of HTM, in terms of

- operational criteria (e.g. downtime of selected items), or

- criteria relating to quality of care (e.g. number of additional patient visits due to equipment failures), or

- economic criteria (e.g. cost-benefit relation).

This would be the core of a quality management approach that would give us a tool and leverage for optimising processes related to HTM and to all the other management areas in health facilities. These areas include

- personnel management incl. human resources development
- financial management
- logistics
- purchase (material, drugs, food, etc.)
- transport (for material, supervision, patients, etc.)
- communication
- store-keeping
- patient management
- organising procedures
- delivery of services in the various healthcare units or departments
- promotive activities, campaigns
- supervision, monitoring & evaluation, reporting, statistics, action research
- community participation
- interfacing with higher and lower service and administrative levels
- physical assets management
- maintenance (structures, utilities, equipment, transport, etc.)
- energy, waste
- kitchen, laundry, etc.
- hygiene
- crisis management (states of emergency, epidemics, etc.)
- and probably much more.

If we agree that all this is – to varying degrees - connected to HTM then we should take action to make the connections work.



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Developing an integrated HTM

The task is complex and requires in itself an integrated approach. The different players in the game would have different roles at the different levels (policy, planning – mesomanagement at regional and district levels – micromanagement at institutional level).

Who can do what?

WHO

- Guidelines for the development of policies on Integrated HTM, health facility management and the development of pertinent legal regulations together with other relevant disciplines at top level.
- Increased involvement of public health planners, hospital management experts and quality experts of WHO Geneva, WHO regional offices, WHO country offices and internationally renowned organisations such as universities, e.g. as faculty in HTM workshops and as speakers/participants during conferences.
- Development of modules on a broader approach of managing health service delivery and other related subjects for WHO-HTM workshops.

Countries

- Inclusion of HTM as part of hospital/facility management in health sector reform.
- Introduction of relevant legal regulations and their enforcement.
- Adaptation of relevant training contents in the (basic) training of health workers.
- Introduction of Quality Assurance and Quality Management concepts.

Donors/ Agencies

- Integration of HTM components in relevant health projects.
- Assistance in the development of relevant legal regulations.

- Assistance in the development of modules on HTM for training courses in public health, hospital management, health economics, etc. Assistance in the development of modules on hospital/facility management (health service delivery management) for HTM courses.
- Assistance in the development of Quality Assurance and Quality Management systems.
- Assistance in the development of performance indicators for HTM and health facility management in general.
- Performance measurement in relevant ongoing and future projects
- Tapping the know how of industrialised countries on all these aspects.

Individuals

Carry the message!

This list is by no means complete. I suggest putting the issue on-to the agenda of upcoming international meetings. We at GTZ have only recently begun with some groundwork with the objective to develop an innovative approach to Health service Delivery Management. I welcome any contribution to this theme and the issues raised in this paper.

Hans Halbwachs

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BIOSIGNAL 2002: 16th Biennial International EURASIP Conference Brno, Czech Republic 26-28 June 2002

You are invited to participate in the 16th biennial international EURASIP conference BIOSIGNAL 2002 to be held from 26-28 June 2002 in Brno, Czech Republic. The conference is co-sponsored by two large scientific organisations: EURASIP and IEEE-EMBS.

Brno is situated in a picturesque countryside and represents the centre of the province of Moravia. It is a nice historical city to visit and experience. There are many cultural opportunities and close-to-city outdoor activities to discover and enjoy. You might plan to extend your stay in Brno for the following weekend after the conference. (<http://www.brno-city.cz>).

Conference profile

- A. Measurement and interpretation of physiological signals
 - A.1 Detection, measurement and monitoring of signals
 - A.2 Signal analysis and interpretation
 - A.3 Time-frequency analysis
- B. Medical imaging and image analysis
 - B.1 Reconstruction and restoration of 2D images
 - B.2 3D imaging
 - B.3 Image analysis
 - B.4 Image compression and archiving
- C. Signal based modelling and simulation in biomedicine
 - C.1 Cells and cellular networks
 - C.2 Modelling of biological systems
- D. Multimedial data in clinical decision making

- D.1 Medical expert systems and decision support
- D.2 Medical information systems
- E. Education in biomedical engineering/medical informatics

The conference should give a forum for information exchange among theoreticians, engineers, and medical people. Original papers, research results, and contributions concerning interesting technical solutions will be appreciated as well as clinical experiences and survey lectures for presentation in the A, B, C, and D sessions. The development in curricula for graduate and postgraduate students of biomedical and clinical engineering and of medical informatics will be discussed in the E session. There will be also a possibility for poster presentation in all sessions. The conference will be open to contributions from related fields.

Student paper competition

The student paper competition will provide opportunities for graduate and doctoral students to present their work to a panel of experts and to get special recognition from the biomedical engineering community. Experts will evaluate the accepted student paper submissions on the basis of originality, merit, and clarity. Three finalists will receive grants in the form of the conference fee. The winner will receive a diploma and a monetary award. Students should submit their papers in the same way as for regular papers and prove their eligibility. Entry forms and competition rules can be obtained from the web.

Extended abstracts

Prospective authors are requested to follow the instructions on the conference webpage <http://www.fee.vutbr.cz/UBMI/bs2002/submission.html>. Two-page extended



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abstracts should be submitted through web upload not later than 30 November 2001. Information about electronic submission can be found on the same webpage. Please contact the organisers if any problem with the submission arises.

Important dates

Deadline for submission of extended abstracts: 30 November 2001
Notification of acceptance: 15 February 2002
Full-paper deadline: 15 April 2002
Start of conference: 26 June 2002

Conference secretariat

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Conference on eGovernment: “From Policy to Practice” 29-30 November 2001 Charlemagne, Brussels

The Belgian Presidency and the Commission will jointly organise a high-level conference on eGovernment applications 29-30 November in Brussels. The conference aims to show how citizens and businesses can reap concrete benefits from on-line public services. Participants and presentations are expected from around the world.

The conference will also demonstrate where Europe currently stands in this fast moving field, as well as provide a framework to address eGovernment issues beyond the 2002 eEurope Action Plan. Finally, it will see the launch of the European eGovernment Prize contest.

The conference will feature leading examples of currently used interactive eGovernment applications in Europe at all levels of government (central, regional, local). The exhibition in connection with the conference focuses on existing eGovernment services at central, regional or local levels of government. The examples for the exhibition are chosen through the call for applications.

For more information, please go to:

http://europa.eu.int/information_society/europe/egovconf/index_en.htm



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Medical and Biological Engineering the Theme of Innovation Awards and Innovation Forum held on 7-8 December 2001 in Monaco

This year the theme for European Grand Prix for Innovation is Medical and Biological Engineering. Applications should be sent by 15 November. In addition to the prize giving ceremonies, a European Innovation Forum meeting is taking place in Monte Carlo from 7-8, December 2001.

European Grand Prix for Innovation 2001

The theme of the year 2001 is "Medical and Biological Engineering". The research groups of the Grand Prix will identify the best European researches, which will be then examined by the Scientific Committee. It will select six to eight files, which will be considered as the year 2001 finalists. The Final Jury, constituted by recognised experts, will designate the three winners. All finalists will be invited to Monaco to attend the prize giving ceremony, which will be held on Saturday, 8 December 2001. All their expenses, travel and hotel accommodation will be taken care of by the organisers.

Presentation

The project for a European Innovation and New Technologies competition was initiated in 1991. The first edition of the competition took place in 1994. The European Grand Prix for Innovation Awards promotes the European industry and applied research. This pan-European event is open to independent researchers, university researchers and companies from all over Europe. Each year has its own subject. Innovations which are devoted to the theme of the year and which have obtained a patent filed not before 1990 will be taken into consideration. The European Grand Prix for Innovation Awards has become a reference

in the European innovation field, the international press and media considering it as a competition similar to the *Nobel Prize* but for applied research.

The Awards

- The **European Grand Prix** rewards an innovation for the technological progress it represents or its important contribution to the improvement of an already existing technology.
- The **European Prize** rewards an innovation for its impact on consumers.
- The **Jury's Grand Prix** rewards the creativity of a research or the improvement brought by the use of this research's technology in the defined area.

Inscriptions

The Grand Prix is open to any applicant. Participation in the competition is free of charge. The candidates must send their application form to Monaco **by 15 November 2001**, duly completed and signed. This form should be sent together with:

- Copy of the patent in French or English;
- If the patent is not in French or English, a summary or the main claim must be sent in French or English;
- A detailed description of the invention, with photos or drawings if applicable.

The European Grand Prix's themes and winners

2000 "*Energies and their applications*"

- The European Grand Prix was awarded to Prof. Carlo RUBBIA (IT), in collaboration with CERN - The European Prize was awarded to Prof. Bernard SPINNER, CNRS Perpignan (F) - The Jury's Grand Prix was awarded to Prof. Michael GRAETZEL, of the Ecole Polytechnique Fédérale de Lausanne (CH)

1999 "*Materials and their applications*" The European Grand Prix was awarded to RESISTEX (F) - The European Prize was awarded to MAX



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PLANCK GESELLSCHAFT (RFA) - The Jury's Grand Prix was awarded to PIERRE & MARIE CURIE UNIVERSITY (F)

1998 "Robotics" - The European Grand Prix was awarded to Prof. CLAVEL and Dr BREGUET of the Ecole Polytechnique Fédérale de Lausanne (CH) - The European Prize was awarded to the LEGO GROUP (DK) - The Jury's Grand Prix was awarded to FRAUNHOFER IPA (RFA)

1997 "Transportation" - The European Grand Prix was awarded to Christopher Greenwood of TOROTRACK Ltd (GB) - The European Prize was awarded to Sebastien LANGE of DE DIETRICH FERROVIAIRE (F) - The Jury's Grand Prix was awarded to MICRO CAR GmbH (RFA)

1996 "Civil Engineering, Public Works and Construction" - The European Grand Prix was awarded to SIKA AG (CH) - The European Prize was awarded to ORIUS (F) - The Jury's Grand Prix was awarded to ADUCO (NL)

1995 "Safety" - The European Grand Prix was awarded to HUTCHINSON S.A. (Total Group) (F) - The European Prize was awarded to SECURITON (SECURITAS Group) (CH) - The Jury's Grand Prix was awarded to Joseph MICHAEL (GB)

1994 "Environmental Protection" - The European Grand Prix was awarded to Mr. Geert KERSSIES (NL) - The European Prize was awarded to the HENKEL Group (RFA) - The Jury's Grand Prix was awarded to Mirja SALKINOJA-SALONEN of the University of Helsinki (FINLAND)

EUROPEAN INNOVATION FORUM

"Economic Intelligence applied to European Innovation & New Technologies"
7-8 December 2001
Hotel Marriott Cap d'Ail -MONACO

The third edition of the Forum, which is organised in parallel with the European Grand Prix's prize-giving ceremony, will be once more dedicated to economic intelligence applied to innovation and new technologies. The forum will last three half-days. The program will include, alongside the plenary session, several workshops with specific topics, and the possibility for attendees to have discussions with the speakers in private meetings.

The concept's originality resides in its informal and multidisciplinary approach, which allows a global overview of the European situation. The presence of high ranking speakers from different sectors, patent offices, the European Commission, industry, research and development centres, universities and financial institutions, turns this forum into a unique event. The guest speakers will share their experience and vision regarding the promotion of European innovation and the assistance to young enterprises.

For information regarding registration for this Forum, please contact:

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Fax: (+377) 93 30 38 94

Email: forum@emc.mc

<http://www.european-grandprix.com>



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IFMBE News is the newsletter of the International Federation for Medical & Biological Engineering. The newsletter can be accessed at <http://ifmbe-news.iee.org/> or by following the links from the IFMBE homepage at <http://www.ifmbe.org>

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Medical & Biological Engineering & Computing

The official journal of IFMBE is the peer-reviewed *Medical & Biological Engineering & Computing*, published bimonthly by Peter Peregrinus Ltd. Full details, including guide to authors, list of subject-indexed papers and contents of recent issues, can be found on the world wide web by following the [Federation Journal](#) link from the IFMBE homepage.

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