



# INTERNATIONAL FEDERATION FOR MEDICAL AND BIOLOGICAL ENGINEERING

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Tampere, 26.09.1991

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Prof. J.L. Willems  
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Ref: Joint IFMBE-IMIA conference on medical signal processing

Dear Jos,

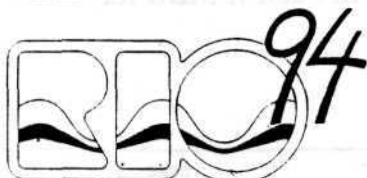
Enclosed please find the draft which I promised to write in Göttingen. I have not yet been in contact with any of the persons mentioned in it. I will send it for comments to the IFMBE officers and a few other persons within IFMBE.

Setting up of this conference can be done either so that IMIA and IFMBE jointly assume the full financial responsibility or that we locate some local organization which takes this responsibility. In the past IFMBE has not itself set up any conferences. This has been done by a local organizing committee which normally has been established by the national MBE society. To set up the conference one or two meetings of the program committee are necessary and this involves travel costs. In the past IFMBE has not paid such costs. Instead we can provide (on request) an interest free loan for the organizers which is to be paid back from the conference income. A third question is sharing of profit (and/or loss) between IMIA and IFMBE and the local organizer. What is the IMIA practice in these?

As discussed in Göttingen the formal next step should be from your side to take it up in your council in Washington. I will do the same in our Officers meeting (which is also in Washington during the same weekend). Before that, however, I would appreciate getting your comments and suggestions to the enclosed proposal and to the financial side as outlined above. Based on that and other feedback from our side I will write the final proposal.

Best regards,

Niilo Saranummi



WORLD CONGRESS ON MEDICAL PHYSICS AND BIOMEDICAL ENGINEERING  
RIO DE JANEIRO, BRAZIL 22 - 26 AUGUST 1994  
XVII International Conference on Medical and Biological Engineering  
X International Conference on Medical Physics

Conference Secretariat: Rua do Ouvidor, 60/414 Rio De Janeiro, Brazil CEP20040 Phone: 55-21-224.6080 \* Fax: 55-21-231.1492 \* Telex: 55-21-32891

Affiliated with the International Union for Physical and Engineering Sciences in Medicine

Draft  
*Joint IFMBE-IMIA special topics conference*  
**Medical Signal Processing**  
Europe, Fall 1993

## Introduction

The traditional way of processing physiological signals is quickly changing. Digital signal processing algorithms combined with physiological and pathophysiological modelling and knowledge-based techniques provide us with new tools for analysing and interpreting physiologic and pathophysiological phenomena. To implement these solutions new and efficient hardware platforms are also emerging making it possible to do the actual system design with a high level of abstraction and then downloading the solution into an DSP IC chip.

In certain fields of medicine although signal processing has greatly helped problems still exist for which this new technology can be the solution. Examples are easy to find in the multiparameter measurement situations which are common in operating rooms, intensive care, cardiology, clinical neurophysiology, ambulatory monitoring etc. Parameters of interest range from the bioelectric (ECG, EEG, EMG, EOG etc) to respiratory and to cardiovascular signals. In these environments signal quality is often a problem resulting in false alarms and actions. Multisignal fusion is a way to clean the signals from disturbances and thereby to provide the analysis and interpretation stages with a reliable signal set. Similarly signal processing algorithms combined with knowledge-based techniques and modelling can help us in understanding and interpreting the physiologic phenomena more accurately and in new innovative ways.

## Objective

There is considerable interest globally in this area. Bringing the groups together to discuss these technologies and their solutions has not been done so far. Several conferences have been organized on smaller topics, but none which tries to bring the field together. There is also a large commercial market which seeks to exploit these new innovations in their products.

In addition to discussing the technologies and their applications there is also the need to discuss the need and ways of setting up reference signal databases which can be used to validate and evaluate systems. Such signal databases have already been done to a certain degree eg. for ECGs.

## Participants

For this to be successful the participants must represent both clinicians and technical people.

## Next steps

A local organizer needs to be identified who will undertake the practical arrangements. A program committee needs to be set up to assist the local organizer and to prepare the technical program. These should work out a proposal with a budget which can be submitted to both IMIA and IFMBE for approval.

The program committee should have appr. 10 persons representing the medical signal processing community and the clinicians worldwide. Possible persons to engage are

- Prof. Jan van Bommel, Erasmus University, the Netherlands
- Prof. Richard Kitney, Imperial College, UK
- Prof. Annelise Rosenfalck, Aalborg University, Denmark
- Dr. Ivan Krekule, Czechoslovakia
- Dr. Jean-Louis Coatrieux, University of Rennes, France
- xx, Far-East / Japan
- xx, USA / Canada
- xx, Latin-America

INTERNATIONAL MEDICAL INFORMATICS ASSOCIATION

Special Interest Group of the International Federation for Information Processing

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Leuven, October 3rd 1991.

Dear Niilo,

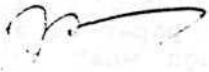
I have well received your fax and your letter dated 26.09.91.

Your draft exactly reflects the discussions we had in Goettingen and before that in Kyoto.

I will submit your proposal and our correspondence to the Board of IMIA, which I am sure will approve the steps we have taken and will encourage us to go ahead.

I look forward seeing you in Washington at SCAMC.

Sincerely Yours,

  
Jos L. WILLEMS  
President, IMIA

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