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The EFMI council is actively engaged in the selection of the contributions.

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Supported by



BVMI Berufsverband Medizinischer Informatiker

EUROREC Institute

BMGS German Federal Ministry of Health and Social Security

PROREC-DE German Prorec Centre

EFMI



European Federation for Medical Informatics
<http://www.EFMI.org>

Working Groups

MCMS MDBS, CASE MIX AND SEVERITY OF CASES
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PCI PRIMARY CARE INFORMATICS
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OIMI ORGANISATIONAL IMPACT OF MEDICAL INFORMATICS
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MICIT MEDICAL INFORMATICS IN COUNTRIES IN TRANSITION
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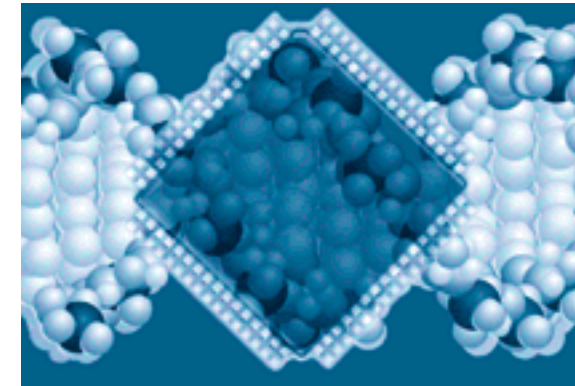
MIP MEDICAL IMAGE PROCESSING
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EVAL ASSESSMENT OF HEALTH INFORMATION SYSTEMS
Elske AMMENWERTH, Innsbruck; Jytte BRENDER, Aalborg
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CARDS CARDS IN HEALTH CARE, SOCIAL SECURITY AND WELFARE
Tomas TRPISOVSKY, Prague; Claudia HILDEBRAND, Munich-Neuherberg
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NLU NATURAL LANGUAGE UNDERSTANDING
Robert BAUD, Patrick RUCH, Geneva
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Medical Informatics Europe
MIE2004
Special Topic Conference



MIE 2004 Special Topic Conference
13-16 June, Munich Germany

Contribution of Medical Informatics to Health

Integrated Clinical Data and Knowledge to Support Primary, Secondary, Tertiary, and Home Care

Joint Working Conference of

EFMI

European Federation for Medical Informatics

GMDS

Deutsche Gesellschaft für Medizinische Informatik, Biometrie und Epidemiologie

Hosted by

GSF

National Research Centre for Environment and Health

supported by

EVAL

EFMI working group Evaluation and Assessment of Health Information Systems

CARDS

EFMI working group Cards in Health and Social Care

MIP

EFMI working group Medical Image Processing

Aims and Scope



The aim of the MIE special topic conferences (STC) is to provide a forum to discuss achievements and actual experiences on specific topics in Medical Informatics focussing on innovative methods and approaches. The conferences enhance the communication among the professional communities of health informatics.

MIE 2004 – carrying on the traditional series of MIE STC conferences – is one of the most important international and national events in the common sphere of medicine and informatics. Its major goal is to increase interaction and collaboration among professionals from both health and IT.

The conference presents selected talks, tutorials and contributions reviewed and selected by an international program committee.

A panel of leading experts discusses future challenges of medical informatics. English is the official language of the conference.

This year's conference focuses on the contribution of medical informatics / health telematics to health, health care and health research. Different methodologies and technologies developed in an interdisciplinary environment are presented. They concern modelling as well as the development of future-proof solutions, but also evaluation methods such as user acceptance, technology assessment and cost-benefit analysis.

Success stories but also failures which provide a base for further improvement of health information systems' applications are presented.

Conference venue



The conference will be held at the Auditorium of the GSF-National Research Centre for Environment and Health, Ingolstaedter Landstr. 1, D-85764 Neuherberg/Munich <http://www.gsf.de>

Agenda



June 13

Tutorial 14:00-17:00h:
Evaluation and assessment of health information systems
Elske Ammenwerth, Jytte Brender, Pirkko Nykänen

June 14-15

Plenary sessions
Each plenary session will be introduced by an internationally reputed keynote speaker

June 16

Workshops
An invitational workshop organised for the industry.

Specific workshops by
EFMI working group MIP (Medical Image Processing) and by
EFMI working group CARDS (Cards in Health and Social Care)

Registration fees



Registration fees include participation in the scientific programme, the refreshments and lunch during the conference, the welcome reception and the Bavarian evening. Members of EFMI and its societies (e.g. GMDS) will be admitted at a reduced fee. Please state your membership on the registration.

EFMI-

	Full	members
Registration fee	150 Euro	110 Euro
Student registration	60 Euro	40 Euro
Tutorials (cost/tutorial)	40 Euro	30 Euro

Undergraduate students are welcomed to the conference at special rates. Student fees do not include evening events. To obtain a student fee it is necessary to provide adequate documentation.

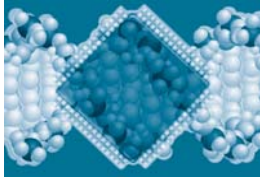
EFMI and other organisations can provide a certain number of bursaries covering the registration fees and some travel support. Please send an application as early as possible indicating your contribution to this special topic conference.

Information and Registration



Additional information about the Conference and registration form will be available at <http://www.MIE2004STC.de>

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**Tutorial
Evaluation
Sunday, 13 June 2004, 14 – 17 h
Munich**



Tutorial Evaluation and assessment of health information systems

EFMI WG EVAL Assessment of Health Information Systems

<http://www.umit.at/efmi>

Elske Ammenwerth, Chair

Pirkko Nykanen, Tampere, Co-Chair

Jytte Brender, Denmark, Co-Chair

Jan Talmon, Maastricht, Chair IMIA WG

The tutorial consists of two parts:

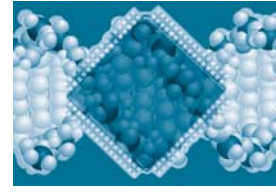
In part one, the introduction to evaluation, basic concepts and issues of IT evaluation in health care will be presented, e.g. necessity of evaluation studies, evaluation as part of IT life cycle, domains and approaches to evaluation, and typical misconceptions and problems with regard to evaluation. Available resources to support evaluation studies will also be presented which should support the participants to conduct own evaluation studies.

In part two, ongoing work with regard to IT evaluation in health care on the European level will be presented and discussed, such has the recently published recommendations on IT evaluation ("Declaration of Innsbruck"). Initiatives to develop good evaluation practice guidelines and standards for reporting eval studies will also be presented, and it will be shown how these approaches may support high-quality evaluation studies. At the end, future topics for the working groups can be discussed.

The tutorial "Introduction to the evaluation of health information systems" is jointly co-organized with the IMIA WG on Technology Assessment and quality Development in Health Informatics.



Contribution of Medical Informatics to Health - Integrated Clinical Data and Knowledge to Support Primary, Secondary, Tertiary and Home Care -



PROGRAMME Plenary Session

Monday 14 June 2004

9:00 CONFERENCE OPENING



Chair: Niels Rossing, Odense, Denmark

Welcome addresses

Rolf Engelbrecht, Conference chair

Ernst-Guenter Afting, Scientific Manager, GSF National Research Centre for Environment and Health

Robert Baud, President EFMI

H.-Erich Wichmann, President GMDS (Deutsche Gesellschaft für Medizinische Informatik, Biometrie und Epidemiologie)

Gottfried Dietzel, German Federal Ministry for Health and Social Security

What is special in a Special Topic Conference?

Bernd Blobel, Günther Gell, Chairs Scientific Programme Committee

To err is human, can medical informatics and computerised tools help?

Assa Reichert, Netanay, Israel

Keynote

Evaluation of health information applications in a life-cycle perspective

Jytte Brender, Aalborg, Denmark

11:15 Health Telematics in Practice



Chair: Jan Talmon, Maastricht, The Netherlands,
Tomas Trpisovsky, Prague, Czech Republic

Understanding implementation: A model approach to assess the outcomes of the implementation of computerized physician order entry in two Dutch hospitals.

Jos Aarts, Marc Berg, Rotterdam, The Netherlands

Experience with healthcare telematic applications in Cyprus

Costas Pattichis, Efthymoulos Kyriakou, Andreas Pitsillides, George Samaras, Christos N. Schizas, Marios Neophytou, Costas Antoniadis, Andreas Kouppis, Vasilis Tanos, Antonis Jossif, Nicosia, Cyprus

Can results from a performed evaluation study help to develop better regional health information systems?

Pirkko Nykänen, Tampere, Finland

The role of terminology in European HIS

Daniel Diekmann, C. Peters, Fritz Diekmann, Berlin, Germany

Keynote

The real outcome of EU health telematics projects

Ilias Iakovidis, EU, Brussels, Belgium

14:00 National Strategies, Regional Activities and Health Networks



Chair: Bernd Blobel, Magdeburg, Germany,
Pirkko Nykänen, Tampere, Finland

Keynote

The Giessen Tumor Documentation System (GTDS) – Review and perspectives

Joachim Dudeck, Giessen, Germany

The health card and bIT4health – Key elements for the German health telematics strategy

Gottfried T.W. Dietzel, Bonn, Germany

Regional standard-based health networks in Austria

Karl-Peter Pfeiffer, Innsbruck, Austria

Implementation of health information systems in Romania

George I. Mihalas, Mariana.Bazavan, D. Farcas, Timisoara, Romania

e-Health programs in Hungary: Past and present. A way of success measurement

György Súrján, Budapest

Status of telemedicine in Croatia

Josipa Kern, Zagreb, Croatia

Solutions to upgrade a GP national network

Lacrimioara Stoicu-Tivadar, Vasile Stoicu-Tivadar, Catalin Kormos, Sergiu Oprean, Timisoara, Romania

16:20 Special Projects and Home Care



Chair: Jytte Brender, Aalborg, Denmark,
Peter Waegemann, Boston, USA

The Boario Home Care Project: A successful telemedicine experience

Simonetta Scalvini, Brescia, Italy

ByMedCard HCPP– Hurdle race in telemedicine

Christine Birkmann, Hans Demski, Claudia Hildebrand, Rolf Engelbrecht, Neuherberg, Germany

Philosophy of an intelligent cardiovascular monitoring system for telecare

Gábor Balázs, Vezprem, Hungary

Embedding medical informatics into strategy

Martin D. Denz, Bern, Switzerland

Efficacy, a predictor for effectiveness?

Jan L. Talmon, Rianne Bindels, Arie Hasman, The Netherlands

On the [re]definition of user(s) and requirements in extended biomedical frameworks: Approaches for collaborative implementation and re-engineering

Esat N. Eryilmaz, Ankara, Turkey

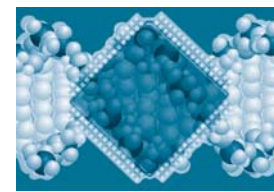
Keynote

Lest formalisms impede insight and success: Evaluation in health informatics: A case study.

Jochen R. Moehr, Chris Anglin, Victoria, Canada



Contribution of Medical Informatics to Health - Integrated Clinical Data and Knowledge to Support Primary, Secondary, Tertiary and Home Care -



PROGRAMME Plenary Session
Tuesday 15 June 2004

9:00 EHR the Core of a Health Information System



Chair: *Günther Gell, Graz, Austria*
Vytenis Punys, Kaunas, Lithuania

Keynote

Advanced EHR architectures – Promises or reality

Bernd Blobel, Magdeburg, Germany

EMInet: EMR sharing system in urban wide scale in Japan

Katsuhito Takabayashi, S. Yamazaki, H. Okamura, Chiba, Japan

EHR implementation in Denmark – an ongoing process

Stig Kjær Andersen, Aalborg, Denmark

Dynamic data modelling: Tailoring an EHR-system at runtime

Mona Holm, Aarhus, Denmark

Natural language processing in the EHR context

Robert Baud, Geneva, Switzerland

Electronic Health Record vs. Continuity of Care Record

Claudia Tessier, Washington, USA

What is the present status of the electronic patient's record in Germany – A user's personal experience.

Frieder Klein, Traunstein, Germany

11:15 Images, Biosignals and Special Services



Chair: *Alexander Horsch, Munich,*
Thomas Wittenberg, Erlangen, Germany

PACS development in Austria

Günther Gell, Graz, Austria

Three dimensional biomechanical analysis of the knee joint with MR image data

Markus Siebert, Neuherberg, Germany

Computerized ECG analysis identifies adverse health effects of air pollution

Siegfried Perz, A Peters, Angelika Döring, J Gehring, Roswitha Küfner, Karl-Hans Englmeier, Neuherberg, Germany

NHS direct – New paradigms in supporting the knowledgeable citizen in the UK

Nicholas Robinson, London, UK

Medical and hygienic aspects of aging and rehabilitation of information technologies utilization in health care

Oleg Mayorov, E. Budyanskaj, L. Zubanova, Kharkiv, Ukraine

Clinical evaluation of a multi-access service for the management of Diabetes mellitus patients (M²DM project): the experience of two Italian clinical sites

Cristiana Larizza, Ricardo Bellazzi, Pavia, Italy

14:00 Secondary care/institutionally related projects/HIS



Chair: *Elske Ammenwerth, Innsbruck,*
Claudia Hildebrand, Neuherberg

Keynote

40 years of Electronic Health Records: Is it time to rethink the concept?

Peter Waegemann, Boston, USA

Introduction of a HIS in Tyrolean hospitals - Success criteria for the implementation of clinical information systems

Christian Stark, Innsbruck, Austria

County hospital information system

Mariana Moga, George I. Mihalas, Victor Moga, Timisoara, Romania

Why a system awarded as "MIE '99 best paper" failed to be used and hence to affect patient's health?

M. Cristina Mazzoleni, Pavia, Italy

Implementing an EPR in a hospital: General lessons learned

Michael Shifrin, Moscow, Russia

Measuring the user acceptance of a web-based nursing documentation system

Joseph Liaskos, John Mantas, Athens, Greece

Health informatics: Web, hack, and security gap

Sammy Sou, Hongkong

17:00 Round Table and Panel Discussion



Chair: *Rolf Engelbrecht*

All Session Chairs starting with short structured reports

uLessons learned on criteria for success and failure in health informatics applications

Elske Ammenwerth, Jytte Brender, Pirkko Nykanen, Jan Talmon, EFMI WG EVAL (Assessment and evaluation of health information systems)

Panel Discussion

Summary of sessions and remarks

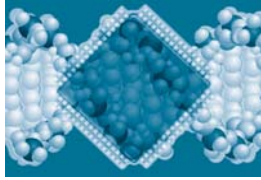
Günther Gell, Bernd Blobel, SPC Chairs

Wednesday, 9:00 Workshop Cards in Health Care



Wednesday, 14:00 Workshop Image Processing





**Workshop
Health Cards
Wednesday, 16 June 2004, 9-12h
GSF-MEDIS, Room 160**



Health Cards – from the idea to European solutions, challenges and obstacles

Tomas Trpisovsky, Prague, Czech Republic, Co-Chair
Claudia Hildebrand, Munich-Neuherberg, Germany, Co-Chair
EFMI WG Cards (http://medis.gsf.de/aktuell/EFMI_WG_CARDS/efmi.php)

9:00 – 9:10 Welcome and Introduction

Tomas Trpisovsky, Institute of Microelectronic Applications, Prague, Czech Republic

9:10 – 9:20 A short history on Medical Card projects

Jürgen Sembritzki, Zentrum für Telematik im Gesundheitswesen GmbH, Krefeld, Germany

9:20 – 9:30 Why are the standards not yet in place?

Pekka Routsalainen, OSKE, Helsinki, Finland

9:30 – 9:40 DIABCARD: the portable patient record – pursuing routine use

Hans Demski, GSF, Neuherberg, Germany

9:40 – 10:00 Discussion on Part I

10:00 – 10:10 Can the Slovenian solution be transferred to other countries?

Marjan Suselji, ZZZS, Ljubljana, Slovenija

10:10 – 10:20 The e-card-Project: Status and further Milestones

Heinz Otter, SV Chipkarten Betriebs- und Errichtungsges.m.b.H., Wien, Austria

10:20 – 10:30 Card technology: HPC, PDC and interworking

Christoph F. Goetz, KVB, Munich, Germany

10:30 – 10:50 Discussion on Part II

10:50 – 11:10 Coffee Break

11:10 – 11:20 Understanding and addressing needs and concerns of health card users

Paul Cheshire, Atos Origin; UK Healthcare, London, UK

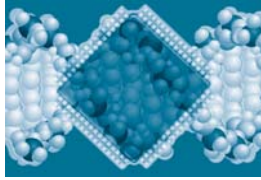
11:20 – 11:30 PKI Infrastructures for secure health card solutions

Thorbjørn Christiansen, ErgoSolutions, Oslo, Norway

11:30 – 11:40 Can a European working Group promote the European introduction of Health Cards?

Tomáš Trpišovský, IMA Ltd. Institute of Microelectronic Applications, Prague, Czech Republic

11:40 – 12:00 Discussion on Part III



**Workshop
Health Cards
Wednesday, 16 June 2004, 9-12h
GSF-MEDIS, Room 160**



Topic summary

Mid 1990s the discussion on health cards and their potential started. Various projects were initiated, piloted and ...forgotten. Advances have been made, but -many believe- not enough and not fast enough. However, Europe is leading in smart card technology; the European Commission decided last year that countries have to substitute the E110/E111 by the European Health Insurance Card (EHIC); several EC countries have started to develop a complex health card for patients and a health professional card; different projects are executed or proposed on a European level.

Even though there are major advances, some big obstacles still have to be met. These range from the differing health systems all over Europe to the acceptance by the users. The workshop will pinpoint some of these problems and show different ways to solve them.

1 Goal of the workshop

During the workshop, invited speeches on the topic will give an overview on the 'history' of medical cards and the 'state-of-art'. It will point out the obstacles that had to be met and the challenges that are still ahead.

The audience is invited to take part in an open discussion to gather ideas and to exchange experiences. The results will be documented and published on the WG's website.

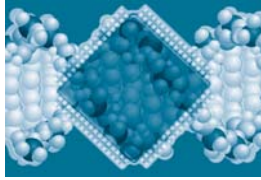
2 Intended audience

The workshop hopes to raise the interest of colleagues working in the field but also of "users". As health cards concern virtually everybody, we hope for a wide audience ranging from health professionals to patients, and from informatics students to health authorities.

3 Expected outcome

A documentation of the presentations and the discussion will be published on the WG's website.

Anybody interested in joining the work group and participating in the WG's activities is welcome.



**Workshop
Medical Image Processing
Wednesday, 16 June 2004, 13-16:30
GSF-MEDIS, Room 160**



**Medical Image Processing for Health –
State of the Art, Challenges and Obstacles**

EFMI WG Medical Image Processing

www.efmi-wg-mip.net

Alexander Horsch, Munich, Chair

Thomas Wittenberg, Erlangen, Germany, Co-Chair

Vytenis Punys, Kaunas, Lithuania, Co-Chair

[20 minutes presentation + 10 minutes discussion]

13:00 Alexander Horsch

Munich University of Technology, Germany

The Potential of Medical Image Processing and the Need for Reference Data and Software to Accelerate its Exploitation for Patients' Health

13:30 Vytenis Punys

Kaunas University of Technology, Lithuania

An Initiative to build a European Network of Excellence for Medical Image Processing

14:00 Larry Clarke

National Cancer Institute, Rockville, MD, USA

Development of Image Databases as an International Resource to Standardize Software Validation for Cancer

14:30 Thomas Wittenberg

Fraunhofer Institute for Integrated Circuits, Erlangen, Germany

The Basic Principles of the Reference Image Database Concept of EFMI WG MIP

15:00 Markus Mohr

University of Regensburg, Germany

General Requirements for Reference Image Databases from the Medical Expert's point of view / The Role of Medical Advisory Board in the WG MIP Initiative

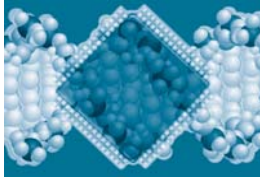
15:30 Karl-Heinz Englmeier

GSF - Forschungszentrum für Umwelt und Gesundheit, Germany

Virtual Reality – A Critical Overview.

16:00 Life Demonstration of VR Applications

17:30 END



Workshop
Medical Image Processing
Wednesday, 16 June 2004, 13-16:30
GSF-MEDIS, Room 160



Topic summary

Medical Image Processing has become an essential component of modern healthcare in manifold way. Highly sophisticated applications such as Computer Assisted Diagnoses (CAD) and therapy (e.g. Computer Assisted Surgery – CAS) are just obvious and prominent examples. New imaging techniques, 3D reconstruction and visualization, quantitative image analyses, image-guided intra-interventional navigation, virtual and augmented reality, and other applications have significantly influenced clinical procedures and helped to increase the quality of interventions. These application have helped to reduce the stress for the patient, e.g. by enabling reduction of radiation through better analysis methods, or by reducing the invasiveness of surgery through accurate image-guided procedures.

Despite these successful contributions to healthcare, there are big challenges that have to be tackled. For example, the central processing step of segmenting regions of interest (e.g. a tumor or an anatomically relevant structure such as an organ or a blood vessel) in an image or volume is for many practically important situations still not solved in a fully automated way, not to speak about robustness and accuracy. Another challenge is the establishment of big reference image databases for the development and the standardized evaluation of methods and application performance.

1 Goal of the workshop

During the workshop, invited speeches on the topic will be presented. The goal is to give an overview of the state of the art of medical image processing, and to through some light on selected challenges and obstacles within this field. A discussion with the audience shall give the opportunity to gather ideas and to exchange experiences. The result will be documented and published on the WG Website. Last not least, interested colleagues can get into contact and also join the efforts of EFMI WG MIP.

2 Professional interests of the intended audience

The intended audience is colleagues working in the medical image processing field with an emphasis on clinical applications, as well as colleagues who are involved in evaluation of image-based applications. Possible motivations for to join the workshop can be:

- to get up-to-date information about the subject
- to participate in the discussion
- to identify possible own contributions to the work of EFMI WG MIP

3 Expected outcome

A documentation of the presentations and the discussion published on the WG Website.
New contacts between the WG and colleagues interested in the WG work.