

# Preliminary Annual Scientific Report 2005-2006 ESC Working Group on Computers in Cardiology (WG15)

## Objectives of the Working Group

The objectives of the Working Group remain also in this period to promote the use of information and communication technology (ICT) as widely as possible within the field of Cardiology. This includes the application of ICT in research and routine clinical practice, both inside and outside the hospital environment. A more expanded version of the scope of the working group activities can be found at [http://www.escardio.org/bodies/WG/wg15/wg15\\_activities.htm](http://www.escardio.org/bodies/WG/wg15/wg15_activities.htm)

## Organization of Sessions at the ESC Annual meeting in Barcelona from September 1<sup>st</sup> to September 5<sup>th</sup> 2006.

The members of the Working Group proposed a number of symposia for consideration for the annual meeting. Finally at the Scientific Program Committee meeting in April two such sessions were accepted, one symposium and one clinical seminar.

The first one organized by the WG will take place on Monday morning. At 8:30 a Clinical Seminar entitled *Integration the Healthcare Enterprise (IHE) – towards the electronic patient record* will start in the Copenhagen room (Zone 3). After the break at 11:00 in the same room a Symposium has been scheduled, focusing on the *Applications of telemedicine for the prehospital management of heart attack*. Finally at Wednesday morning at 8:30 at the Prague room (Zone 3) an abstract session called *Computers in cardiology, from artificial intelligence to mobile echo in Africa* has been planned, illustrating the wide field of interest of our WG. Apart from these three oral sessions 27 poster presentations related to Computers in Cardiology will be on display. Detailed information on these oral sessions and poster presentations can be found using the ESC program planner at the ESC website.

## ESC Business

As in the past, the Chairman of the Working Group has participated in the various review processes that have taken place at the Heart House over the past year both in respect of the organisation of the annual congress and in respect of changes to the structure of the Society. The more open form of election of Council Members as well as members of the nominating committee, announced at the Stockholm meeting, has triggered off a large number of candidates for various positions, including four candidates for presidency. After a written ballot in June two candidates remained, Panos Vardas from Greece and Roberto Ferrari from Italy. The final election will take place during the Barcelona meeting.

Another topic raised during and after the Stockholm meeting was the fusion of some imaging working groups and the Association on Echocardiography, including the position of our WG. The possibilities of forming a counsel were discussed at various meetings. Two months ago, however, the vice-chairmen of both the Echo Association

and of the Working Group on Cardiovascular Magnetic Resonance indicated that they "did not see the utility of yet another bureaucratic organization". They support strengthening of existing collaboration before forming a new council.

WG15 continues to have representation in the ESC Web Advisory Board through its webmaster Enno van der Velde. In this ESC Web Advisory Board Enno van der Velde functions as 'Section Advisor' for all 'Constituent Bodies' sections of the ESC website.

## Computers in Cardiology Annual Conference

This year the annual Computers in Cardiology conference will be held in Valencia from 17<sup>th</sup> to 20<sup>th</sup> September, and will be organized by Dr Jose M Ferrero (Jr), Dr Javier Saiz and an enthusiastic Local Organizing Committee. Working Group 15 has been linked with the Computers in Cardiology organization for many years, and again this year the Chairman of WG15, as an ex-officio member of the CinC Board, has contributed to the selection of abstracts and the organization of the program in Valencia. Because the Chairmanship of WG15 will change at the end of this Barcelona meeting, the new Chairman will become a member of the Computers in Cardiology Board and will attend the annual board meeting in Valencia in September.

Last year the Computers in Cardiology meeting was held in Lyon, France, from 25<sup>th</sup> to 28<sup>th</sup> September 2005. Professor Alan Murray, a member of WG15 who is also editor of the conference proceedings, has kindly prepared the following report on the meeting:

## Computers in Cardiology Annual Conference Lyon, France - September 2005

*Computers in Cardiology* exists to encourage inter-disciplinary communication among cardiologists and other clinicians, engineers, computer scientists and physical scientists, and physiologists. The annual meeting is the most important meeting of the *Computers in Cardiology* Working Group of the European Society of Cardiology. The Chair of this Working Group is Dr Willem Dassen, and he is on the Board of Directors. This Board includes world wide representation to ensure *Computers in Cardiology* is truly international.

In 2005, we met in September in Lyon, France, where the annual conference was ably chaired by Drs Jocelyne Fayn and Paul Rubel from Hopital Cardiologique de Lyon, and assisted by Drs Jean-Pierre Boissel, Phillipe Chevalier, Chirine Ghedira, Jean-Claude Healy, Didier Revel, Paul Touboul and Christine Verdier.

The opening symposium focused on an area of local interest, as well as of much general interest. The organisers chose the topic of "Past, present and future in cardiology and new e-health perspectives". This covered cardiac rhythm disorders, imaging, therapy appraisal, computers in electrocardiography and the WHO e-health strategy. The speakers, Paul Touboul, Didier Revel, Jean-Pierre Boissel, Paul Rubel and Jean-Claude Healy produced a superb symposium.

The main *Computers in Cardiology* conference opened the following day with presentations for the Rosanna Degani Young Investigator Award, which was won by

Gil Zwirn from Tel Aviv University, Tel Aviv, Israel. The winning paper was "Adaptive attenuation correction in contrast echo".

This was followed by 32 sessions over the 3 day period; a half day longer than previous conferences. This might seem a hectic programme, but the meeting is very deliberately designed to give participants time to interact and discuss, especially on the opening day. I can give only a brief outline of the research presented. All aspects of computerised electrocardiography, as would be expected in Lyon, were well featured. Imaging was also strong, with three-dimensional aspects of echocardiography and cardiac MRI continuing to grow. There were also sessions on modelling, myocardial perfusion, LV function, blood pressure, heart rate variability, as well as continuing advances in cardiology information systems and telemedicine.

The *Computers in Cardiology Challenge* which started only five years previously is now seen as an important part of the proceedings. It developed from the first challenge detecting sleep apnoea from the ECG alone, followed by detection of patients at risk of atrial fibrillation, simulations of heart rate variability, detecting ischemic ST changes, and prediction of atrial fibrillation. Entries to this year's challenge were allowed to be based on any of the previous challenges, and this led to a very wide range of entries distributed throughout the programme. As in previous years, the competition raised lots of excitement, along with calls for further challenges. The data for all challenges are still on 'PhysioNet' ([www.physionet.org](http://www.physionet.org)). Help keep these challenges alive.

As always in my reports, I end with reference to the Poster Session. This year of the first time there were actually two sessions. They were the most popular at *Computers in Cardiology*, with almost everyone turning up. As usual, there was so much discussion that delegates had to be encouraged to leave, when it was well past the official end of the session.

With sadness we all noted the passing away of Christoph Zywiez from Hannover, who contributed so much to electrocardiography, including an interpretive ECG program and ECG standards, as well as being a previous Chair of Computers in Cardiology. A full obituary by Peter Macfarlane and Paul Rubel is in the proceedings.

Hopefully you are now interested enough to want to look at the Proceedings. They were published in December 2005, two months after the meeting, and contain 257 manuscripts in 1037 pages. The papers are indexed, so you should be able to find them easily. It is published by IEEE (Computers in Cardiology 2005, Vol 32, Catalogue No. 05CH37712, ISBN 0-7803-9337-6). Everyone who came to the conference also received the proceedings on CD.

I and all other Members of the ESC Working Group hope that we have encouraged you to come to Computers in Cardiology 2006. It is hosted by Universidad Politecnica de Valencia, and will be held in Valencia, Spain from 17-20 September 2006, under the chair of Jose Ferrero and Javier Saiz. We hope to see you there.

Alan Murray  
Editor, Computers in Cardiology

<http://www.cinc.org> Computers in Cardiology Home Page

## Other activities

The Chairman and vice-Chairman of WG15 were heavily involved in the preparation of a position paper on: *The future of cardiovascular imaging and non-invasive diagnosis: A joint statement from the European Association of Echocardiography, the Working Groups on Cardiovascular Magnetic Resonance, Computers in Cardiology, and Nuclear Cardiology, of the European Society of Cardiology, the European Association of Nuclear Medicine, and the Association for European Paediatric Cardiology*. The final paper has been published simultaneously in the *European Heart Journal*, July 2006; 27: 1750 - 1753, the *European Journal of Echocardiography*, vol. 7 no. 4 (August 2006), pp. 268–273 and the *European Journal of Nuclear Medicine and Molecular Imaging* 2006 Aug; 33 (8): 955-9. Finally our nucleus member Alessandro Taddei published in the May 15 issue of the E-Journal of the ESC an interesting contribution entitled : Evaluation of monitoring systems in cardiology.

## Internet Activities

The ESC has always been well organized in respect of the use of the internet for abstract selection and for providing all relevant information about the ESC and on various ESC activities. Enno van der Velde functions as the WG15 webmaster, and is responsible for the content of the WG15 part of the ESC website. The ESC website has been further improved and extended and is now an even more comprehensive site.

## IHE activities

Our nucleus member Tim Becker is representing the ESC in the IHE-Cardiology Technical Committee. The IHE initiative aims for improved interoperability between digital healthcare systems of different vendors. During the Barcelona meeting a demonstration of the underlying concept can be attended at the IHE booth. For those not yet familiar with IHE, he wrote a short introduction:

### IHE-Cardiology 2005/2006

The European Society of Cardiology proceeds its active membership in IHE-Cardiology and IHE-Europe. As an official delegate of the ESC Prof. Rüdiger Simon (Kiel, Germany) is member of the IHE-Cardiology Planning Committee. In addition Dr. Tim Becker (Kiel, Germany) is member of the IHE-Cardiology Technical Committee.

The results of the first year of IHE-Cardiology have been demonstrated during the ESC annual convention in Stockholm 2005. A virtual cardiology department including a catheterization and an echocardiography laboratory has been created on an 80m<sup>2</sup> booth in the exhibition area. During the convention 25 guided tours took place, during that both cardiology and IHE experts explained the goal of IHE to delegates and demonstrated the technical solutions in a very practical environment. During the World Congress in Barcelona there will be the second IHE-Cardiology demonstration for both the enhanced and the new integration profiles. This includes the transfer of measurements between modalities, viewing stations and information systems. In addition the creation, exchange and archival of preformatted reports and

ECG's will be demonstrated. For this demo the number of participants increased and there will be 9 companies presenting 12 systems that communicate following rules of the IHE integration profiles.

A growing number of vendors for Cardiology related products such as imaging modalities, archive systems or Cardiology information systems are participating in IHE – Cardiology. During the two last Connectathons in the US and in Europe over 30 companies could validate their compliance with IHE Cardiology Integration Profiles.

In June 2006, the Technical Committees finalized the extension of the Technical Framework for the third year. These profiles are currently in the trial implementation phase and will be tested and demonstrated in 2007. In year 3 there is a focus on electrophysiology and stress testing. For both fields a large number of new companies - that are not related to the imaging field - joined IHE and participated in newly created subcommittees.

Both Planning and Technical Committee of IHE-Cardiology will start with their work for the 4<sup>th</sup> year very soon. One major issue will be a profile called 'Data Harvesting' that shall allow the extraction and interchange of data from exiting information systems and database in order to use these data in surveys or in national and international databases.

Apart from Cardiology and Radiology IHE is working in the domains IT Infrastructure, Laboratory, Patient Care Coordination, Pathology and Eye Care.

All IHE Technical Frameworks are available in the internet at [www.ihe.net](http://www.ihe.net) or [www.ihe-europe.org](http://www.ihe-europe.org).

For further information, please contact:  
Tim Becker, PhD, at [becker@cardio.uni-kiel.de](mailto:becker@cardio.uni-kiel.de)

## Membership

The membership of the society has grown slowly during the year until 165.

## Financial situation

In the period 2005-2006 the working group finances continue to show a healthy balance.

## Conclusion

The working group on Computers in Cardiology has remained active in the past year and has made a proportionate contribution to the activities of the ESC, in particular the annual ESC meeting, as well as to the annual Computers in Cardiology meeting.

Willem Dassen  
*Chairman*

Martin Höher  
*Vice Chairman*

*August 2006*