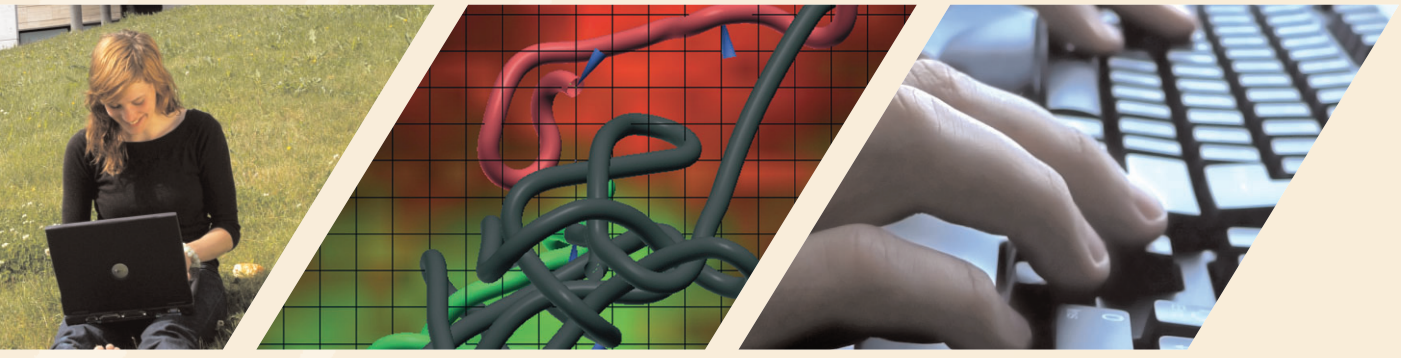
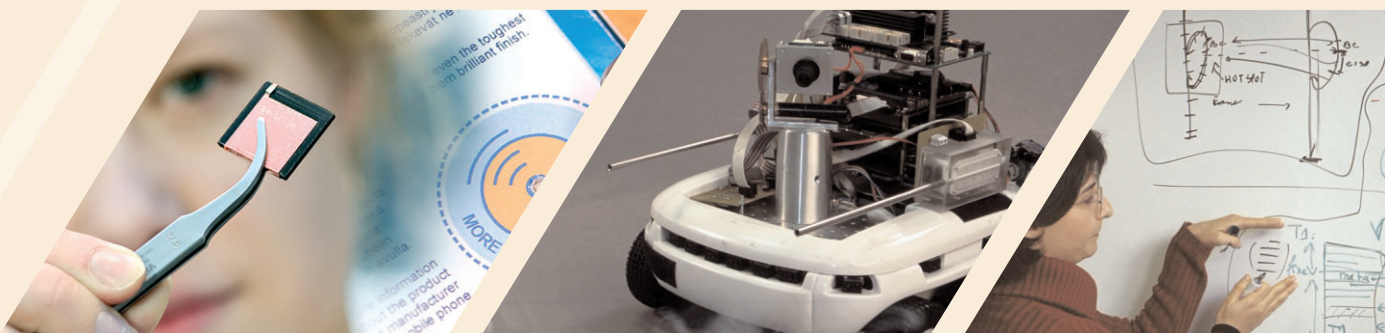
European Research Consortium
for Informatics and Mathematics

ERCIM

www.ercim.org

Activity Report 2005





Foreword from the President

The changes to the internal structure and operations of ERCIM introduced in 2004 have been consolidated into place during 2005. The result has been increased activity on all fronts, and even more interaction with our stakeholders from industry, government and academia in each country where an ERCIM member institution exists, and also with the European Commission. 2005 was a year for developing the internal structure of ERCIM to make it ready for the challenges ahead; in 2006 the emphasis is more on our outward facing activities and their development. One important aspect of the internal development has been the appointment of Jérôme Chailloux as ERCIM Manager; already his management expertise has had a strong positive influence on ERCIM and W3C-Europe operations.

The world around us continues to change rapidly offering new opportunities to researchers in Informatics and Mathematics. The great challenges of our times all require solutions based on advanced information and communication technologies (ICTs): from healthcare to environment, from engineering to edutainment (e-learning and entertainment) and from homeland security to privacy, ethics and governance. In all of these areas, and more, ERCIM researchers have been right at the forefront. ERCIM scientists have also made significant advances in fundamental and applied mathematics, and in many application areas. The achievements are commonly documented in ERCIM News and on the ERCIM website and those of the individual ERCIM Institutions.

During 2005 the European Commission (EC) has been preparing the 7th Framework Programme which has a large IT component. Leading researchers from ERCIM institutions have been involved in developing the work programme through expert groups and invited meetings. ERCIM managed and coordinated the 'Beyond the Horizon' Project for the EC Future Emerging Technologies Unit, providing an authoritative view of important ICT developments and trends, demand-driven from industry, which will emerge in the 15-20 year timeframe. ERCIM has been successful – both as an organisation and through its independent member institutions – in project and network participation in Framework 6.

The World Wide Web Consortium (W3C) Host for Europe, Africa and the Middle East is being embedded into the ERCIM structure, and new management processes are improving governance. Meantime, Jérôme Chailloux has joined formally the management team of W3C so ensuring smooth communication with the other Hosts in North America and the Far East. The strategic location of this W3C activity for Europe within ERCIM provides a range of opportunities for European industry, government, education and research utilising the network of W3C National Offices which are located mainly in ERCIM member institutions.

ERCIM has maintained strategic external relationships with various organisations in Europe and elsewhere and – as indicated above – the plans for 2006 include developing further the outward-facing aspects of ERCIM. ERCIM, itself, is negotiating with another three applicant members as ERCIM intends to represent all European countries.

The ERCIM Fellowship Programme – now named in honour of Alain Bensoussan, a founding father of ERCIM – continues to grow, providing a mobile human resource of post-doctoral researchers developed in a pan-European context. The subject areas of the fellowships are determined by the ERCIM Working Groups providing a beneficial link between the cooperative research agenda and the development of new human resource. Mobility of researchers between ERCIM institutions also develops this resource. ERCIM is meeting the requirement for a mobile skilled ICT workforce to assist in the Lisbon Targets[1] .

ERCIM News, continues to be required reading throughout most European ICT organisations and indeed many other organisations including those funding research. Contributions – coordinated from each country through the ERCIM member institutes – come increasingly from academic, commercial, industrial and governmental communities in each country as well as the ERCIM member institutes. With each issue having a special theme, ERCIM News constitutes a snapshot of European technology at that time, and over the years maps the development of those technologies. Back issues are continually in demand and readership of current issues is increasing continuously.

In the 2003-2004 report I documented the illness of Stelios Orphanoudakis, our past president; I now report his untimely death in 2005. Constantine Stephanidis (who is well-known in ERCIM and the community) is the new FORTH representative on the ERCIM board of directors. Early in 2006 a colloquium in honour of Stelios was organised in Budapest associated with the ERCIM biannual meeting. The event was very moving and – with his widow Ava and one of his daughters, Eleni, present – honoured a great researcher, manager and visionary. At that event past presidents Cor Baayen, Denis Tsichritzis and Gerard van Oortmerssen were also present along with Alain Bensoussan.

ERCIM is a very dynamic and exciting organisation with almost unlimited talent for R&D in our field: Informatics and Applied Mathematics. Informatics and Mathematics R&D is seen as a major contributor towards Europe reaching the Lisbon targets[1]. It is intended that the European Research Area (ERA) will couple national and European R&D programmes. The founding fathers of ERCIM demonstrated wisdom by anticipating this development for ICT: ERCIM has national nodes that focus academic and commercial/industrial expertise on a local scale, and that are also linked together into a unique European organisation of excellence. Consequently, ERCIM is already configured to meet the ERA requirements, and we look forward enthusiastically to addressing future challenges.

Keith Jeffery

[1] *Lisbon European Council 23-24 March 2000*

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ERCIM at a Glance

ERCIM - the European Research Consortium for Informatics and Mathematics - aims to foster collaborative work within the European research community and to increase cooperation with European industry. The members of ERCIM include leading research establishments from seventeen European countries. Encompassing over 12,000 researchers and engineers, ERCIM is able to undertake consultancy, development and educational projects on any subject related to its field of activity. ERCIM was founded in 1989 and is a European Economic Interest Grouping (EEIG).

Objectives

ERCIM's aim is to play a leading role in Information and Communication Technologies in Europe by:

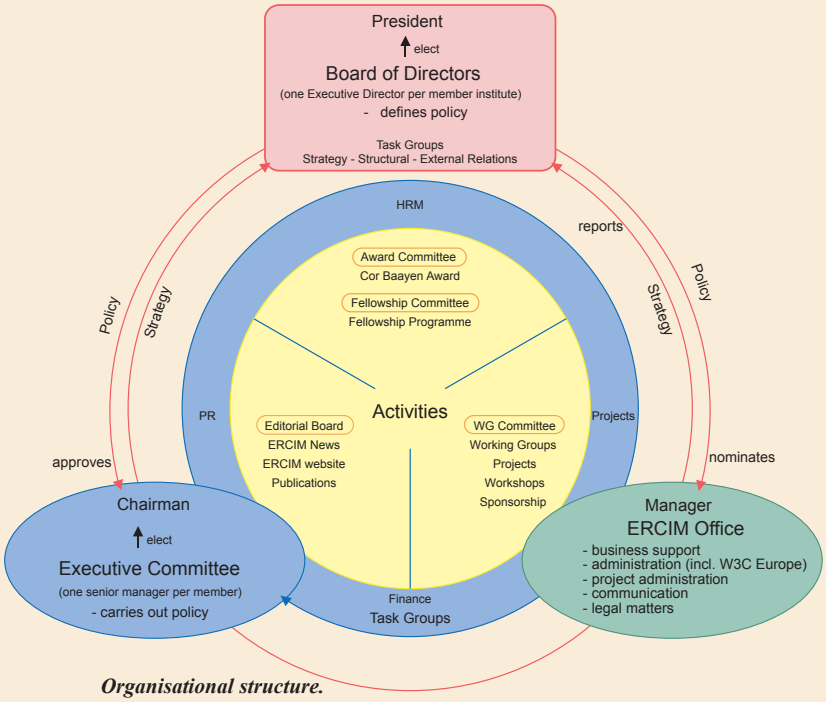
- building a Europe-wide, open network of centres of excellence in Information and Communication Technologies (ICT) and Applied Mathematics. One member institute per European country serves as a node for the research community in its country
- excelling in research and acting as a bridge for applications
- being internationally recognised as a major representative organisation in its field, and a portal giving access to all relevant ICT research groups in Europe
- acting as an interface for the non-EU member institutions within the European Community and other international organisations
- liaising with other international organisations in its field
- promoting cooperation in research, technology transfer, innovation and training.

International Cooperation

ERCIM considers it a high priority to develop cooperation with scientists all over the world. ERCIM hosts the European branch of the World Wide Web Consortium, participates in EU activities, and has established cooperations with both the European Science Foundation and the US National Science Foundation.

Consultancy

ERCIM experts have been involved in many advisory bodies, such as the Next Generation Grid expert group (NGG3) convened by the European Commission or the Information Society Technologies Programme Advisory Group (ISTAG). This group has been set up to advise the Commission on the overall strategy to be followed in carrying out the IST thematic priority and related activities of research as well as on the orientations with respect to the European Research Area. With the EU-funded coordination action "Beyond-The-Horizon", ERCIM has contributed to identify strategic areas and grand science and technology challenges related to ICT.



Organisational structure.

Jérôme Chailloux nominated as ERCIM Manager

ERCIM's board of directors nominated Jérôme Chailloux as manager of ERCIM during their meeting in Helsinki on 29th May 2005. Jérôme Chailloux was proposed by INRIA, the host of the ERCIM office.

The ERCIM manager is the valid representative of ERCIM vis-à-vis third parties. He is responsible for ensuring that the implementation of ERCIM's general policy is within the framework specified by the membership. Jérôme is in charge of managing both W3C and ERCIM office.

Members

A member institute must be a leading research establishment in its country, with excellent links to both the national and international academic and commercial, research communities. ERCIM has one member institute per country. In January 2005 ERCIM had seventeen members. All ERCIM members are national centres of excellence, independent of specific commercial ties. They have a strong involvement in the research programs of the European Union and joint projects with both small and medium size enterprises and large industrial companies.

Research Projects

In addition to many projects involving a few ERCIM institutes, ERCIM is itself

ERCIM office staff *

Céline Bitoune, Assistant
Jérôme Chailloux, Manager
Bruno Le Dantec, Deputy Manager
Emma Lière, Assistant
Catherine Marchand, Communications
Jessica Michel, Project Manager
Peter Kunz, Central Editor
Florence Pesce, Assistant
Pascale Peyrol, Assistant
Samuel Réthoré, System Administrator
Rémi Ronchaud, Project Manager
Philippe Rohou, Project Manager
Nathalie Ruffa, Assistant.

*as of August 2006

participating in several European-Commission-related activities and projects as coordinator or associated partner. In these projects, several member institutes carry out the research while the ERCIM office takes care of administrative and financial tasks. In 2005, ERCIM was involved in six EU-funded projects.

Working Groups

Working Groups are specialist networks set up by researchers, within which the ERCIM partners arrange regular workshops with invited external participation to study a specific topic and prepare international research projects. Working Groups are also the focus of the ERCIM fellowship programme. Working Groups have been created in areas such as Applications of Numerical Mathematics in Science, Biomedical Informatics, Constraints, Control and System Theory, E-Learning, Dependable Software-Intensive Systems, Environmental Modelling, Formal Methods for Industrial Critical Systems, Image and Video Understanding, IT and Mathematics applied to Interventional Medicine, Matrix Computations and Statistics, Rapid Integration of Software Engineering Techniques, Security and Trust Management, Semantic Web, Soft Computing, Software Evolution, and User Interfaces for All.

Technology Transfer

In addition to research in computer science and mathematics, the transfer of research results is one of the ERCIM institutes' current main assignments. In the last years, ERCIM members have played a pioneering role in creating small and medium-sized high-tech companies, an effective way of achieving such a transfer. In addition, ERCIM members have a long track record of cooperation with European industry in R&D projects, generally within the framework of European programs. As a network, ERCIM helps industrial partners to locate the best scientific teams in Europe for a given domain.

ERCIM representatives*

Institute	Board of Directors	Executive Committee
AARIT (Austria)	Günter Koch	Erwin Schoitsch
CCLRC (UK)	Keith Jeffery (President)	Michael Wilson
CNR (Italy)	Piero Maestrini	Costantino Thanos
CWI (The Netherlands)	Jan Karel Lenstra (Vice President)	Dick Broekhuis (Vice Chairman)
CRCIM (Czech Republic)	Jiří Wiederman	Vaclav Matyas
FNR (Luxembourg)	Eric Dubois	Leon van der Torre
FNRS/FWO (Belgium)	Jean-Jacques Quisquater	Daniel De Schreye
FORTH (Greece)	Constantine Stephanidis	Antonis Argyros
FhG (Germany)	Ulrich Trottenberg	Eckart Bierdümpel (Chairman)
INRIA (France)	Michel Cosnard	Jean-Pierre Banâtre
IUA (Ireland)	Simon Dobson	Mark Roantree (Vice Chairman)
NTNU (Norway)	Arne Solvberg (Vice President)	Finn Arve Aagesen
SARIT (Switzerland)	Daniel Thalmann	Patrick Furrer
SICS (Sweden)	Staffan Truvé	Janusz Launberg
SpaRCIM (Spain)	Juan José Moreno	Ernesto Pimentel
SZTAKI (Hungary)	Péter Inzelt	László Monostori
VTT (Finland)	Seppo Linnainmaa	Seppo Valli

Sponsorship and Awards

ERCIM awards a most promising young researcher in computer science and applied mathematics with the yearly €5000 Cor Baayen Award. ERCIM also sponsors up to ten conferences, workshops and summer schools.

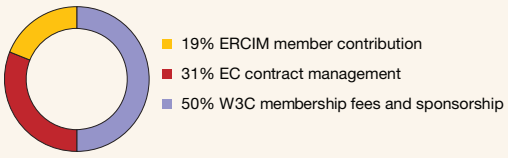
Publications

ERCIM publishes the quarterly newsletter 'ERCIM News', workshop proceedings and policy documents.

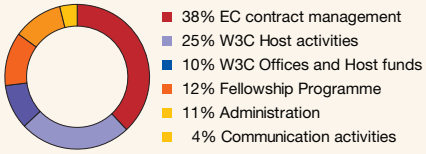
Financial Summary

Throughout 2005 ERCIM traded as ERCIM EEIG with a gross turnover of €17.6 million increased by 7% from €16.3 million in 2004. Three quarters of these funds came from EU funding of projects which was either disbursed to partners in consortia or held over for disbursement in the next year. The remaining sources of income and activities consuming expenditure are shown on the left.

Non-disbursed income 2005



Non-disbursed expenditures 2005



In Memory of Stelios Orphanoudakis

The untimely death of Stelios C. Orphanoudakis, former President of ERCIM, on 18 March 2005 was a great loss for the ERCIM community. Professor Stelios C. Orphanoudakis was Director of the Foundation for Research and Technology Hellas (FORTH) and Chairman of its Board of Directors. He was Director representing FORTH (and Greece) on the ERCIM Board of Directors since 1992, when FORTH joined ERCIM as the seventh member. He was vice-president of ERCIM from 1994 to 2003, and President from January 2004 until October 2004, when he resigned due to illness.

Prof. Orphanoudakis was a fervent advocate of multidisciplinary research approaches and of international research cooperation. He deeply believed in the potential of ERCIM to promote and advance scientific research in Europe, and was actively committed towards the achievement of this objective. We all recall his energy and enthusiasm, his vision for the future of ICT - especially in healthcare - and his professionalism.

*as of August 2006

Projects

ERCIM is involved in several European funded research projects, participating either as Coordinator, or as a partner. Within these projects, ERCIM institutes and their partners carry out joint research activities, while the ERCIM Office carries out the administrative and financial coordination.

The main purpose of ERCIM is to foster cooperative work between its members while individual ERCIM member institutes also have their own R&D projects with international partners.

Ensuring the management of common research projects is a real asset, and this activity has become increasingly important for the ERCIM Office which is now dedicating considerable efforts to ensure the administrative and financial coordination of European projects. Relying on a small (hence reactive) and experienced team, the Office has a full range of expertise from the identification of funding opportunities to the development of project ideas, the finding of project partners, proposal writing, contract negotiation and project management.

ERCIM has been involved in some thirty European projects, including Integrated Projects and Networks of Excellence, either as coordinator or as partner. In these projects, the ERCIM office ensures the financial and administrative coordination and usually carries out the project dissemination activities. This is a key success factor, allowing research teams to focus on the scientific tasks at the core of each project.

Coordinating several projects, ERCIM has witnessed the emergence of a growing number of research initiatives involving strong interdisciplinary activities. If this has been a growing trend over the year, the European research projects now go a step beyond with the integration of advanced Information Communication Technologies to other domains. The use of Grid technologies in Digital Libraries (DILIGENT), health technologies (ACGT), communities of practices (Palette) illustrates this trend.

Interdisciplinarity makes projects more difficult to manage. European projects now involve at least two distinct communities with different backgrounds, and ensuring their close collaboration is not an easy task. The first problem met is to get scientific and non-scientific communities to understand each other. The collaboration of teams is now requiring more time than in past projects. Yet, this multidisciplinary dimension is a key ingredient to avoid empty-nutshell technology and to ensure the European projects have concrete results in the every day life.

The European Commission is now implementing its vision of the Information Society in which ICT are used to address real life scenarios across a wide array of domains. This is also a significant way to ensure that the fall-outs of European research will have a stronger impact towards the European citizens.

http://www.ercim.org/activity/projects/

Grid research in ERCIM

Europe has succeeded in establishing a leading worldwide position in Grids. The consistent portfolio of Sixth Framework Programme Grid research projects contributes to boost European competitiveness in Grid technologies and applications. ERCIM experts have been involved heavily in the strategic work, for example through participation in the Next Generation Grid expert group, an advisory body convened by the European Commission. It is no accident that the ERCIM office is currently coordinating four Grid-related projects supported by the European Commission:

*The **CoreGRID Network of Excellence** is the European research network on foundations, software infrastructures and applications for large scale distributed, Grid and Peer-to-Peer Technologies. CoreGRID aims at strengthening and advancing scientific and technological excellence in the area of Grid and Peer-to-Peer technologies. To achieve this objective, the network brings together a critical mass of well-established researchers (119 permanent researchers and 165 PhD students) from forty-two institutions who have constructed an ambitious joint programme of activities. This joint programme is structured around six complementary research areas that have been selected on the basis of their strategic importance, their research challenges and the recognised European expertise to develop next generation Grid middleware, namely:*

- *knowledge & data management;*
- *programming models;*
- *system architecture;*
- *Grid information, resource and workflow monitoring services;*
- *resource management and scheduling;*
- *Grid systems, tools and environments.*

***DILIGENT** - an "Integrated Project" creating an advanced test-bed that will allow virtual e-Science communities to share knowledge and collaborate in a secure, coordinated, dynamic and cost-effective way. The DILIGENT test-bed is being built by integrating Grid and Digital Library technologies. Merging of these different technologies will lay the foundations for a next generation e-Science knowledge infrastructure with many different research and industrial applications. The test-bed will be demonstrated and validated by two complementary real-life application scenarios: one from the environmental e-science domain and one from the cultural heritage domain. The first user community is composed of representatives from leading organisations that operate in the environmental sector; the second consists of scholars, distributed all over the world, working together in a three-year project to merge the medical, humanity, social science and communication research areas. The DILIGENT infrastructure, which will build upon the efforts of the EGEE project, is funded in part by the European Community's Information Society Technologies priority of the Sixth Framework Programme.*

***Grid@Asia** – a "specific support action" to foster collaboration in Grid research and technologies between the European Union and two Asian countries: China and South Korea;*

***ACGT** – Advanced Clinico-Genomic Trials on Cancer – is a recently started project that brings together internationally recognised experts, with the aim to deliver to the cancer research community an integrated Clinico-Genomic ICT environment enabled by a powerful Grid infrastructure.*

Beyond-The-Horizon

Beyond-The-Horizon is a European coordination action to identify ICT-related research trends and strategic areas that require support. The action is funded by IST-FET, the Future and Emerging Technologies activity of the EU Information Society Technologies programme. The coordination is handled jointly by ERCIM and FORTH - Institute of Computer Science, Greece.

Bits, atoms and genes define the scene of future European research into Information and Communication Technology (ICT). Computers, the physical world and living organisms will increasingly merge, leading to entirely new methods of computing and communication. Large-scale interdisciplinary research efforts in this direction will be crucial for Europe's competitiveness in the long term.

Key speakers at the plenary workshop in Paris in December 2005. From left: Gavriel Salvendy, Purdue University, USA and Tsinghua University, China; Claude Cohen-Tannoudji, Ecole Normale Supérieure, Paris, Winner of the 1997 Nobel Prize in Physics; Keith Jeffery, Director for IT of CCLRC and ERCIM president; and Thierry Van der Pyl, Head of Unit, Future and Emerging Technologies, European Commission.

This picture is the driving force behind the Beyond-the-Horizon action. Coordinated jointly by ERCIM and ICS-FORTH, it has identified six key research areas for developing the ICT of tomorrow's world:

- Pervasive Computing and Communications
- Nano-Electronics and Nanotechnologies
- Security, Dependability and Trust
- Bio-ICT Synergies
- Intelligent and Cognitive Systems
- Software-Intensive Systems.

The action has been funded by IST-FET, the Future and Emerging Technologies activity of the EU Information Society Technologies programme. To define the major challenges and promising research directions that FET could support in the forthcoming 7th Framework Programme in ICT-related strategic basic research areas, several workshops were held across Europe during 2005. They were followed by extensive consultation which consisted of:

- A brainstorming workshops during 2005, in which eminent researchers from both academia and industry drafted agendas for basic research in the six identified areas;
- A plenary workshop in Paris in December 2005, where representatives of the six thematic groups together with prominent invitees like Nobel laureate Claude Cohen-Tannoudji and IST-FET Head of Unit Thierry Van der Pyl, discussed the outcome of the individual workshops, and explored research challenges arising at the intersections of the different areas;
- on-line consultation of research communities in Europe through the B-T-H web site, where the draft documents describing the six areas were available for comment, after which they were finalised during April 2006.

This process has mobilised a wide and multi-disciplinary community providing input at all levels - individual, research groups, institutions as well as funding agencies - to the benefit of the future European Information Society.

Preliminary results were presented at a meeting with members of the European Parliament on 10 May 2006 in Brussels.

ICT has always profited from cross-fertilization with other scientific disciplines, including mathematics, biology, materials science and psychology. This is reflected in the wide range of problems and challenges to be addressed in the identified research areas. For example:

- the miniaturization of components on a chip requires new materials and new designs, as well as a search for alternative computing methods, eg quantum computing
- since future ICT systems need greater 'intelligence' in order to function properly, a promising way to achieve this is to study how living organisms – from a single cell to animal colonies and the human brain – process information
- the rapidly increasing volume and complexity of data and networks, in which humans interact with many small, embedded, mobile devices, requires penetrating studies of complex systems (Nature may teach us here too)
- mechanisms should be devised to ensure security for, and trust in the use of future technologies, which offer dazzling possibilities but also serious threats.

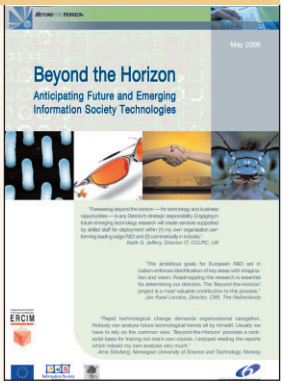
'IST Results', an online news service provided by the European Commission, has recently published a feature article on the Beyond-the-Horizon action citing Dimitris Plexousakis, scientific coordinator of the action from ICS-FORTH: "ICTs provide the glue that binds together multiple themes in European research. The time to address this multiplicity of themes and their interrelationships is now."

http://www.beyond-the-horizon.net

Beyond-The-Horizon Results and Publications

The consolidated final report including recommendations for the Future and Emerging Technologies activity in the 7th Framework Programme and beyond is available at
http://www.beyond-the-horizon.net/

ERCIM has edited a booklet presenting the results of the Beyond-The-Horizon action, available at:
http://www.ercim.org/publication/policy/BTH-booklet.pdf



Grid@Asia

The Grid@Asia project - Advanced Grid Research Workshops through European and Asian Co-operation - is designed to foster collaboration in Grid research and technologies between the European Union and Asian countries with a particular focus on China and South Korea.

Grid@Asia has defined a research agenda to address international Grid priorities relying on a core of leading European Grid research institutes. This initiative is supported by Asian partners to ensure on-site organisation, enhanced visibility and the participation of high-profile industrial and scientific delegations. Grid@Asia is expected to provide Europe with a clear picture of the Grid community in China and South Korea, and to prepare a reliable basis for sustainable and long-term collaboration. The project is implemented through three principle steps:

- identification of Chinese and South Korea key players in Grid research and technologies;
- organisation of focused workshops around EU/Asia research and industrial agendas;
- establishment of sustainable cooperation and dissemination activities.

Grid@Asia supports long-term international cooperation by weaving additional links with leading Asian Grid research communities, in particular through the integration of Asian expertise with leading European Grid initiatives in the 6th Framework Programme of the European Union (such as Networks of Excellence, Integrated Projects, STREPS, etc.) and later on within the forthcoming 7th Framework Programme (FP). This will position the European Grid community as a leading centre of excellence, enrich European expertise in the field and support the adoption of common Grid standards worldwide.

To reach these goals it was decided to organise a series of three workshops in Beijing, Shanghai and Seoul.

The first event took place from 21 to 23 June 2005 in Beijing, hosted by the Beihang University.

The workshop focused on three main scientific themes - Grid Middleware, Grid Applications, Tools and Programming Environments - and provided the European and Asian Grid communities with a forum to discuss and identify their common areas of interest.

Two series of presentations were given. The first on current European projects supported by the Commission, such as AKOGRIMO, NEXTGRID, SIMDAT, DILIGENT, DEISA, CoreGRID and GRIDLAB and similar Chinese projects. The second featured project ideas which could lead to the submission of common proposals. National and multilateral programmes including their funding mechanisms were also presented with the goal to initiate collaborations between promising European and Asian research teams within the 6th and 7th FP.

The second workshop was organised in Shanghai 20-22 February 2006, hosted by the Jiao Tong University. Some 100 participants have been invited from European and Asian research institutes, industry and ministries of research..

The workshop comprised four sessions: the first on applications where Grid technologies play an essential role such as emergency response systems, advanced manufacturing, traffic simulation. The second session was dedicated to joint research centres involving European and Chinese teams, ie the Sino-French Laboratory in Computer Science, Automation and Applied Mathematics (LIAMA), the Sino-German Joint Software Institute (JSI) and the Southampton Regional e-Science Centre. The third session featured presentations of current research projects partially funded by the European Commission and involving Chinese partners. The fourth session was dedicated to future co-operation which could emerge from the IST programme of FP6.

Participants of the first Grid@Asia workshop in Beijing.

At the end of the workshop, an 'Information Day' was organised by the European Commission to promote the IST Call 6 which was closed on 25 April 2006. This call covered the topics 'Ambient Assisted Living (AAL)', 'Advanced Robotics', 'Search Engines for Audio-Visual Content' and 'International Cooperation'.

http://www.gridatasia.net/

Projects with participation of ERCIM in 2005

Beyond-The-Horizon - Anticipating Future and Emerging Information Society Technologies

Beyond-The-Horizon (B-T-H) is a European "Coordination Action" to identify ICT-related research trends and strategic areas that require support. A well-defined consultation of the science and technology communities in Europe, has led to roadmaps for six strategic research areas.
ERCIM's role: administrative coordinator
Scientific coordination: Dimitris Plexousakis (ICS-FORTH)
Budget: €482,000
Supported by: European Commission, FP6 IST-FET
Duration: January 2005 - June 2006
Web site: http://www.beyond-the-horizon.net/

CoreGRID -European Research Network on Foundations, Software Infrastructures and Applications for large scale distributed, GRID and Peer-to-Peer Technologies

The CoreGRID network aims at building a European-wide research laboratory that will achieve scientific and technological excellence in the domain of large scale distributed, GRID and Peer-to-Peer computing.
ERCIM's role: administrative coordinator
ERCIM members involved:
CNR (ISTI), CCLRC, CRCIM (Masarik University of Brno), FNRS/FWO (Université catholique de Louvain à Louvain-la-Neuve), Fraunhofer-Gesellschaft (SCAI), FORTH, INRIA, SARIT (ETH Zurich), SICS, SpaRCIM (Technical University of Catalonia), SZTAKI
Scientific coordination: Thierry Priol (INRIA)
Budget: €8,200,000
Supported by: European Commission, FP6 IST Programme
Duration: September 2004 - August 2008
Web site: http://www.coregrid.net/

DELOS- Network of Excellence on Digital Libraries

The DELOS Network of Excellence for Digital Libraries provides an open context in which an international research agenda for future research activities in the digital libraries domain can be developed.
Scientific coordination: Costantino Thanos (ISTI-CNR)
ERCIM's role: administrative coordinator
ERCIM members involved: AARIT (Vienna University of Technology), CNR (ISTI-CNR), CRCIM (Masarik University of Brno), CWI, Fraunhofer-Gesellschaft (IPSI), FORTH, INRIA, NTNU, SARIT (ETH Zurich), SICS, SZTAKI
Budget: €6,000,000
Supported by: European Commission, FP6 IST Programme
Duration: January 2004 - December 2007
Web site: http://www.delos.info/

DILIGENT - A Digital Library Infrastructure on GRID Enabled Technology

The DILIGENT project is creating an advanced test-bed that will allow virtual e-Science communities to share knowledge and collaborate in a secure, coordinated, dynamic and cost-effective way.
ERCIM's role: administrative coordinator
ERCIM members involved: CNR (ISTI), Fraunhofer Gesellschaft (IPSI), SARIT (ETH Zurich)
Scientific coordination: Donatella Castelli (ISTI-CNR)
Budget: €8,900,000
Supported by: European Commission, FP6 IST Programme
Duration: September 2004 - August 2007
Web site: http://www.diligentproject.org/

ENGAGE

ENGAGE is a "Specific Support Action" with the mission to stimulate and enhance research and technology development cooperation in the field of Information Technologies between the European Union and four countries of Southeast Asia: Malaysia, Indonesia, Thailand and the Philippines.
ERCIM's role: project partner
Scientific coordination: Andrey Girenko (European Research and Project Office GmbH, Germany)
ERCIM members involved: SpaRCIM (Technical University of Catalonia)
Budget: €675,000
Supported by: European Commission, FP6 IST Programme, International Cooperation
Duration: April 2005 - March 2007
Web site: http://www.engage-ist.org/

GRID@Asia

The Grid@Asia project fosters collaboration in Grid research and technologies between the European Union and Asian countries with a particular focus on China and South Korea..
ERCIM's role: coordinator
Budget: €340,000
Supported by: European Commission, FP6 IST Programme
Duration: April 2005 - September 2006
Web site: http://www.gridatasia.net/

MUSCLE - Multimedia Understanding through Semantics, Computation and Learning

MUSCLE is a Network of Excellence that aims at establishing and fostering closer collaboration between research groups in multimedia datamining and machine learning. The Network integrates the expertise of over forty research groups working on image and video processing, speech and text analysis, statistics and machine learning. The goal is to explore the full potential of statistical learning and cross-modal interaction for the (semi-) automatic generation of robust meta-data with high semantic value for multimedia documents. MUSCLE has been established in the frame of the ERCIM Working Group "Image and Video Understanding".
ERCIM members involved: AARIT (Seibersdorf Research, Vienna University of Technology), CNR (ISTI), CWI, FORTH, INRIA, IUA (Trinity College Dublin), SpaRCIM (Technical University of Catalonia), SZTAKI, VTT
Scientific coordination: Eric Pauwels (CWI) until August 2006, Nozha Boujemaa (INRIA) from August 2006
Budget: €6,900,000
Supported by: European Commission, FP6 IST Programme
Duration: March 2004 - February 2008
Web site: http://www.muscle-noe.org/

Palette

The IST European Integrated Project 'PALETTE - Pedagogically sustained Adaptive Learning through the Exploitation of Tacit and Explicit Knowledge' was successfully submitted in 2005 and commenced in February 2006. The project aims to develop a set of innovative, interoperable and standard-based services that enhance learning in communities of practice.

A community of practice is a frequently interacting group of people (the community) who share a concern, a set of problems, or a passion about a topic (the domain of the community), and who deepen their practical knowledge and expertise in that domain (the practice of the community).

Such communities are recognised as effective environments for supporting the learning of professionals, organisations and educational institutions. They have several characteristics that distinguish them from formal organisations. Collaborative learning is a key issue: members learn from each other by making their knowledge and practices explicit, sharing them with their peers, and reflecting on them.

The rapid development of new technology (eg Web-based platforms, wireless communications, mobile devices and multimedia content) means that great potential exists for such applications. However, recent research underlines a lack of adequate scaffolding in the form of technical support, and use of the technology to:

- express, represent and share practices and authentic problems
- debate and reflect on the practices and life of communities
- develop, reify and exploit knowledge inside and outside communities
- aid engagement, participation and learning.

To achieve its objectives, PALETTE will provide communities of practice with a set of services classified into three categories: information, knowledge management and mediation services. These will provide the community's participants with support for:

- data production, exchange and reuse between autonomous and heterogeneous applications
- reification of explicit and tacit knowledge about practices
- advanced communication and collaboration between communities.

Services will be tested using various pedagogical scenarios. In line with new learning practices, these will be designed to encourage the exploitation of diverse mental models, knowledge resources and the skills of individuals both inside and outside communities.

The PALETTE's R&D process relies on a design approach that takes into consideration the underlying processes of social participation, community building and development of identity. It is articulated around negotiation of meaning, which is the basis of any individual and collective learning process.

The open-source services resulting from PALETTE will not only address the needs of communities currently involved in the project, but also provide the conditions for engagement of other communities. The participation of further users is encouraged, as it will enhance the project and contribute to its development.

With a good balance between technological and pedagogical experts, the consortium aims to provide support for a broad range of activities performed by communities of practice. The project must therefore deal with different types of information, make use of various applications and accommodate several environments. An important challenge is to provide users with interoperable tools allowing exchange of data, and to integrate them into different scenarios of use. Interoperability covers several levels, addressing technological considerations (use of XML and related technologies), organisational constraints, and higher-level understanding of manipulated information. This can include agreement on data exchange models and associated semantic information, through ontologies and standards used in the learning domain.

The PALETTE project intends to provide innovative learning models and technical solutions that increase the overall quality of learning in communities of practice. In addition, it will contribute to the development of standards in this area.

http://palette.ercim.org/

Project participants.

Palette

Pedagogically sustained Adaptive Learning through the exploitation of Tacit and Explicit Knowledge.
PALETTE aims at developing a set of innovative, interoperable and standard-based services that enhance learning processes in communities of practice. The project will provide communities of practice with a set of services classified into three categories: information services, knowledge management services and mediation services.
ERCIM members involved:
INRIA, Centre de Recherche Public Henri Tudor (FNR), EPFL (SARIT), Unvesity of Fribourg (SARIT), Université de Liège (FWO & FNRS)
ERCIM's role:
administrative coordinator
Scientific coordination:
Christine Vanoirbeek(EPFL / SARIT)
Budget: €7,709,000
Supported by: European Commission, FP6 IST
Duration:
February 2006 - January 2009.

ACGT

ACGT - Advancing Clinico-Genomic Trials on Cancer - will develop a bio-medical GRID infrastructure supporting seamless mediation services for sharing clinical and genomic expertise. Such interactions will allow joint clinico-genomic trials and help finding quicker and efficient routes to identifying patients' individual characteristics that make one treatment more appropriate than another. The project was prepared in the frame of the ERCIM Working Group "Biomedical Informatics" and successfully submitted in 2005.

The completion of the Human Genome Project sparked the development of many new tools for today's biomedical researcher to use in finding the mechanism behind disease. While the goal is clear, the path to such discoveries has been fraught with roadblocks in terms of technical, scientific, and sociological challenges.

The underlying motivation of ACGT is to provide researchers and patricians with optimal means and resources to fight cancer. Imagine that for selected cancer patients, biopsies are taken before, during and after treatment, made anonymous and the analyses are stored promptly in an accessible fashion. Imagine also that the patient's data can readily be compared with those from other trials. And imagine that one can drill down into clinical and other databases in an intelligent search in hours rather than months. This might lead to the rapid identification of cancer profiles, and of their corresponding optimal therapy.

To realise this vision, ACGT brings together internationally recognised leaders in their respective fields, with the aim to deliver to the cancer research community an integrated clinico-genomic ICT environment enabled by a powerful GRID infrastructure. ACGT has formulated a coherent, integrated workplan for the design, development, integration and validation of all technologically challenging areas of work:

- delivery of a European bio-medical GRID infrastructure offering seamless mediation services for sharing data and data-processing methods and tools, and advanced security
- semantic, ontology based integration of clinical and genomic/proteomic data - taking into account standard clinical and genomic ontologies and metadata
- delivery of data-mining GRID services in order to support and improve complex knowledge discovery processes.

The technological platform will be validated in concrete settings of advanced clinical trials on cancer. Pilot trials have been selected based on the presence of clear research objectives, raising the need to integrate data from all levels of the human being.

ACGT promotes the principle of open source and open access, thus enabling the gradual creation of a European biomedical Grid on cancer. Hence, the project plans to introduce additional clinical trials during its lifecycle. It is in line with the priorities and objectives of the IST programme. It targets at the fulfilment of urgent needs of the cancer research community, a key area of societal importance.

ACGT

Advancing Clinico-Genomic Trials on Cancer

ACGT project is developing an advanced GRID architecture allowing the analysis and comparison of both clinical and genetic results within large scale databases in order to perform a fast diagnosis and to define accurate therapeutic countermeasures.

ERCIM's role:
administrative coordinator

ERCIM members involved:
ICS-FORTH, INRIA, Fraunhofer Gesellschaft

Scientific coordination:
Manolis Tsiknakis (ICS-FORTH)

Budget: €16,747,206

Supported by:
European Commission, FP6 IST

Duration:
February 2006 - January 2010

http://acgt.ercim.org/

ACGT project participants.

Working Groups

The purpose of an ERCIM working group is to build and maintain a network of ERCIM researchers in a particular scientific field. The working groups are open to any researcher in the specific scientific field.

The activities of a Working Group can be divided into several areas: workshops to build the community and maintain its vibrancy, projects to move forward the R&D in the particular area of the working group, and human mobility (internal mobility and fellows) to assure the appropriate trained human capital. A working group receives support in the form of initial seed money, on application to the ERCIM Executive Committee, to set up a first workshop.

Travel support is given to ERCIM researchers by their institutes to participate in the workshops organised by the working group. It is expected that each working group organises at least one annual workshop. A major activity of an ERCIM working group is to search actively for project funding that crosses national borders. ERCIM institutes have reserved resources to stimulate mobility, enabling work on collaborative research projects at other institutes for periods from one to six months. Working Groups are also invited to identify topics of interest to be included in the half-year calls published for the ERCIM Fellowship Programme, and as a consequence can participate in this programme by hosting a fellow. ERCIM working groups contribute many of the articles in ERCIM News and commonly provide scientific coordination for the special theme sections. They also participate actively in producing ERCIM strategic reports.

In 2005 a new Working Group on "Security and Trust Management" has been established.

http://www.ercim.org/activity/work-group.html

Security and Trust Management

The ERCIM Working Group on security and trust management (STM) was established in January 2005 and aims at fostering European research and development in the field of security, trust and privacy in information and communication technologies (ICT).

The pervasive nature of emerging ICT has added new areas of concern to the information security area. Additional problems are posed in terms of new potential attack scenarios, threats, menaces and damage. The increased virtual and physical mobility of users enhances their possibilities for interaction but leads to an increasing demand for the reliable establishment of trust relationships. Privacy is also a main concern in the current ambient intelligence paradigm: wherever there are devices interacting with users it is possible that such devices are also gathering information about the users. These problems and many others are being perceived at different levels of concern by users, technology producers, scientists and governments.

The STM Working Group has been established considering that:

- Most ERCIM partners have acknowledged the importance of 'security and trust' by establishing research groups on this theme. These groups often study similar topics. Cooperation between these groups would strengthen their research capabilities.
- Security and trust management does not play an essential role in the current ERCIM working groups in force. A new working group should achieve maximum synergy among the partners in this area and create a critical mass for research and scientific visibility.
- Current international funding opportunities often require large consortia. A working group could play a pivotal role in establishing consortia in which ERCIM partners play a role.
- Mobility of researchers is essential to bring both individual researchers and research groups to a higher level. A working group would be beneficial in facilitating this.

The STM WG is committed to a series of activities including joint research work, project proposals, event organisation, mobility of researchers and others. In particular, the joint research and dissemination activities will have the following objectives:

Research and Technology

- to investigate the foundations and applications of security and trust in ICT
- to study the deep interplay between trust management and common security issues such as confidentiality, integrity and availability
- to identify and promote new areas of research connected with security management, such as dynamic and mobile coalition management (e.g., P2P, MANETs, Web/GRID services)
- to identify and promote new areas of research connected with trust management, e.g. reputation, recommendation, collaboration etc
- to provide a platform for presenting and discussing emerging ideas and trends.

Education and Dissemination

- to promote the growth of young researchers interested in the field of security
- to support and stimulate the organisation of meetings and events related to research issues in security and trust management
- to provide a forum for the exchange of expertise and information also with industry
- to increase public awareness on issues related to information security.

The research activities of the WG will mainly focus on:

- rigorous semantics and computational models for security and trust
- security and trust management architectures, mechanisms and policies

- networked systems security
- privacy and anonymity
- identity management
- ICT for securing digital as well as physical assets
- cryptography.

Other Activities

One of the main objectives of the STM WG is to provide a means to participate in joint research projects that span national borders. One main source of possible funding will be EU research programmes. In particular, the scope of the WG exactly matches several objectives in FP6 (calls 4/5) and FP7. The great attention paid by EU to 'security' in a broad sense is shown by the specific research funding programmes on security (eg, see http://www.cordis.lu/security/ and the recent Preparatory Action on 'The enhancement of the European industrial potential in the field of Security Research' (PASR 2004)). The STM WG is also strongly committed to stimulate mobility, enabling work on collaborative research projects at other institutes for short periods. Moreover, the STM WG has identified new topics of interest to be included in the ERCIM Fellowship Programme. The STM WG will organise a thematic workshop each year.

Modern society is increasingly reliant on the storage, processing and transmission of information. Ensuring the integrity, security and privacy of information is thus of paramount importance.

The Working Group encourages the active participation of researchers from both ERCIM and non-ERCIM research institutions, and from industry.

http://www.iit.cnr.it/STM-WG

Image and Video Understanding wins the ERCIM Working Group Award 2005

The ERCIM Working Group "Image and Video Understanding" was the winner of the 2005 Working Group Award. The award consists of the right to spend up to €20,000 for its activities.

The ERCIM Working Group 'Image and Video Understanding' is the winner of the 2005 Working Group Award. The award consists of the right to spend up to €20,000 for its activities. It was presented to the Working Group chair Eric Pauwels, CWI, by the ERCIM president Keith Jeffery during the ERCIM meetings in Helsinki on 30 May 2005.

Shortly after it became an official ERCIM Working Group, the Image and Video Understanding group successfully submitted its proposal for the MUSCLE Network of Excellence - Multimedia Understanding through Semantics, Computation and Learning - which covered the same scientific topics. The consortium was enlarged by approximately 20 additional scientific members in the formation of the new network. The high level of collaborative research that arose from this network resulted in the group winning the 2005 ERCIM Working Group Award.

The 2005 award was the last award in the current format. ERCIM is currently developing a new scheme to support the Working Groups in their attempts for create new project proposals.

http://www.muscle-noe.org

Keith Jeffery (left) presents the Working Group Award to Eric Pauwels.

Applications of Numerical Mathematics in Science
Coordinator: Mario Arioli, CCLRC

Biomedical Informatics
Coordinators:
Manolis Tsiknakis and Dimitris Kafetzopoulos, FORTH
Project:
ACGT - Advancing Clinico-Genomic Trials on Cancer (http://www.eu-acgt.org/) This Integrated Project, funded by the EC 6th FP IST Programme, started in February 2006 and is administrated by ERCIM.

Constraints
Coordinator: François Fages, INRIA
Project:
The Working Group successfully submitted the project "Net-WMS - Towards integrating virtual reality and optimisation techniques in a new generation of Numerical Warehouse Management Systems under Constraints". The project is expected to start in August 2006 and is administrated by ERCIM.
Workshops:
CSCLP 2005: Joint Annual Workshop of ERCIM/CoLogNeton Constraint Solving and Constraint Logic Programming, Uppsala, Sweden, 20-22 June 20054.
Fellows*:
Ludovic Langevine hosted by SICS; Pawel Pietrzak hosted by UPM (SpaRCIM).

Control and System Theory
Coordinator:
Laszlo Gerencser, SZTAKI

Dependable Software-Intensive Systems
Coordinator:
Erwin Schoitsch, Austrian Research Centers Seibersdorf/AARIT
Workshops:
ERCIM/DECOS Workshop “Dependable Software-Intensive Embedded Systems” at Euromicro SEAA/DSD, Porto,Portugal 31 August-1 September 2005. The proceedings were published by ERCIM.

E-Learning
Coordinator:
Sepideh Chakaveh, Fraunhofer IMK

Environmental Modelling
Coordinator:
Achim Sydow, Fraunhofer FIRST

Formal Methods for Industrial Critical Systems
Coordinator: Stefania Gnesi, CNR (until Janurary 2006), Pedro Merino, SpaRCIM / Universidad de Málaga (since November 2005)
Workshop:
FMICS 05 - 10th International Workshop on Formal Methods for Industrial Critical Systems, Portugal, 5-6 September 2005 Proceedings published by ACM. ISBN:1-59593-148-1

Image and Video Understanding
Coordinator:
Eric Pauwels, CWI
Project:
MUSCLE Network of Excellence - "Multimedia Understanding through Semantics, Computation and Learning", funded by the EC 6thFP IST Programme and administrated by ERCIM

IT and Mathematics applied to Interventional Medicine
Coordinator: Marc Thiriet, INRIA

Matrix Computations and Statistics
Coordinator:
Bernard Philippe, INRIA and Erricos John Kontoghiorghes,
Workshop:
The seventh Working Group workshop has been organized within the framework of the 3rd world conference of the International Association for Statistical Computing on "Computational Statistics & Data Analysis", Limassol, Cyprus, 28-31 October, 2005
Fellow*:
Petko Yanev at CNR and INRIA

Rapid Integration of Software Engineering Techniques
Coordinator:
Nicolas Guelfi, FNR
Project:
"PLASTIC, Providing dependable and Adaptive Service Technology for pervasive Information and Communication" is funded by the European Commission (STREP)
Workshop:
RISE 2005, 2nd International Workshop Rapid Integration of Software Engineering techniques, Heraklion, Greece 8 September 2005

Security and Trust Management
Coordinator:
Fabio Martinelli, CNR
Workshop:
International Workshop on Security and Trust Management (STM05) co-located with the 10th European Symposium On Research In Computer Security, Milan, Italy, 15 September 2005
Fellow*:
Stefan Dziembowski, CNR and CWI

Semantic Web
Coordinator:
Dimitris Plexousakis, ICS-FORTH

Soft Computing
Coordinator:
Petr Hajek, Institute of Computer Science, Academy of Sciences of the Czech Republic/CRCIM
Workshops:
Fourth workshop of the ERCIM Working Group on Soft Computing in conjunction with the International conference "The Logic of Soft Computing IV", Ostrava, Czech Republic, 5-7 October

Software Evolution
Coordinator:
Tom Mens, Université de Mons-Hainaut/FNRS/FWO
Workshop:
International ERCIM-ESF Workshop on Challenges in Software Evolution (ChaSE), Berne, Switzerland, 12 -13 April 2005
Fellow*:
Maja D’Hondt at INRIA and CWI

User Interfaces for All
Coordinator: Constantine Stephanidis, ICS-FORTH
Workshop/Conference:
3rd International Conference on Universal Access in Human-Computer Interaction (UAHCI), held in the context of the 11th International Conference on Human-Computer Interaction (HCI International 2005), Las Vegas, USA, 22-27 July 2005.

**PhD fellows employed through the ERCIM Fellowship Programme"Alain Bensoussan".*

ERCIM "Alain Bensoussan" Fellowship Programme

The PhD Fellowship Programme has been established as one of the premier activities of ERCIM. Since its inception in 1991, over 180 fellows have passed through the programme. 24 young scientists commenced an ERCIM PhD Fellowship in 2005 and 40 fellows have been employed during the year, representing 191 man-months .

The ERCIM Fellowship Programme is open to young researchers from all over the world. It focuses mainly on topics of interest identified by the ERCIM Working Groups and the research projects administrated by ERCIM. Ideally, a fellow will work in two ERCIM institutes, thus contributing not only to the work done locally, but also to cohesion between ERCIM partners and to the cross-fertilisation and cooperation between research groups working in similar areas in different laboratories.

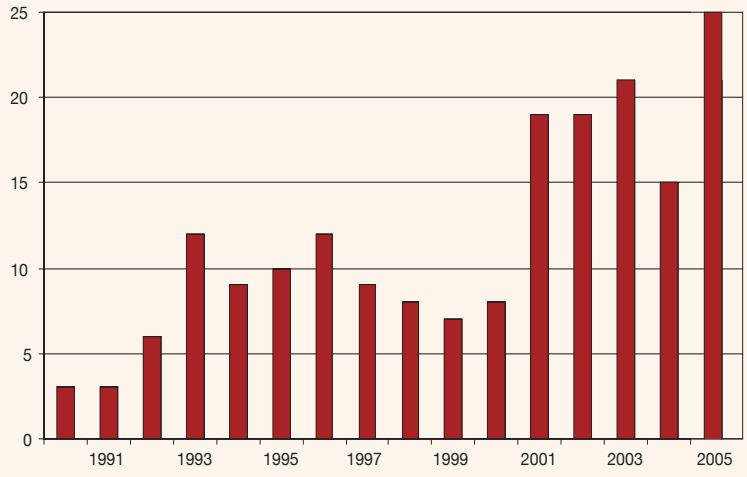
The fellowship scheme also helps young scientists to become involved in one of the ERCIM Working Group initiatives, to improve their knowledge of European research structures and networks and to gain more insight into the working conditions of leading European research institutions.

ERCIM fellows Venkatesh Babu Radhakrishnan (center) and Yuming Jiang (right) hosted by NTNU at the Centre for Quantifiable Quality of Service in Communication Systems with Centre Director Peder J. Emstad.

Fellowship Programme figures for 2005

Fellows employed during 2005 41
Man-months equivalent: 210
Fellows starting a fellowship in 2005: 25
Applications received: 319
Female candidates 19%
Applications from non-EU countries: 40%

Number of fellows starting a grant



In 2005, 25 young scientists commenced an ERCIM PhD Fellowship and 41 fellows have been employed during the year, representing 210 man-months (254 man-months in 2004 and 262 man-months in 2003). About 40 percent of the fellowships have been granted to researchers from countries ouside the European Union. This reflects ERCIM's contribution to make Europe not only the world's biggest 'brain factory' but also a large 'brain magnet' in the field of informatics and applied mathematics.

Fellowships are generally of eighteen months duration, spent in two member institutes. In particular cases a fellowship might be of 9 month duration (12 months from 2006 on) spent in one institute. Fellows receive a monthly allowance which may vary depending on the country. In order to encourage mobility, a member institution is not eligible to host a candidate of the same nationality.

Candidates must:

- have obtained a PhD degree during the last 4 years (prior to the application deadline) or be in the last year of the thesis work with an outstanding academic record
- be fluent in English
- be discharged or get deferment from military service
- have completed their PhD before starting the grant.

Deadlines for applications are currently 30 April and 30 September each year.

Since 2005 the Fellowship Programme is named to honour Alain Bensoussan, former president of INRIA and one of the three ERCIM founding fathers together with Cor Baayen, former president of CWI, and Gerhard Seegmueller, former president of GMD (now merged with Fraunhofer Gesellschaft).

http://www.ercim.org/fellowship/

ERCIM Fellows hosted in 2005

Fellow	Nationality	Hosting Institute
Osman Abul	Turkish	NTNU (F. Drablos) 5 September 05 - 4 June 06
Anwar Al Hamra	Lebanese	NTNU (T. Plagemann) 15 October 05 - 14 July 06
Suzan Andova	Macedonian	NTNU (S. F. Mjølsnes) 1 September 05 - 31 May 06
Alexander Anufriev	Russian	SZTAKI (G. Kovacs) 15 July 04 - 14 April 05
Paris Avgeriou	Greek	Fraunhofer IPSI (M. Wessner) 5 October 04 - 4 July 05
Gabriela Avram	Romanian	FNR (L. Vandenabeele) 1 June 04 - 28 February 05
Urtzi Ayesta	Spaniard	CWI (M. Mandjes) 20 January 05 - 19 October 05
Prasanna Chaporkar	Indian	INRIA (F. Baccelli et E. Altman) 1 December 05 - 31 August 06
Claude Chaudet	French	CNR (M. Conti) 1 November 04 - 31 January 05
Maja D'Hondt	Belgian	INRIA (L. Duchien) 01 October 05 - 30 June 06
Ivan Djordjevic	Serbian	CCLRC (T. Dimitrakos) 15 May 04 - 14 February 05
Stefan Dziembowski	Pole	CNR (F. Martinelli) 1 October 05 - 30 June 06
Lars-Ake Fredlund	Swede	UPM/SpaRCIM (J. J . Moreno) 1 January 05 - 30 September 05
Christian Gagné	Canadian	INRIA (M. Schoenauer) 1 June 05 - 28 February 06
Danilo Gligoroski	Macedonian	NTNU (P. Emstad) 15 June 05 - 14 March 06
Benoit Gaudin	French	FhG FOKUS (I. Schieferdecker) 1 September 05 - 31 May 06
Javier Herranz	Spaniard	INRIA (F. Morin) 1 May 05 - 31 January 06*
Christophe Jelger	French	FhG FOKUS (M Smirnov) 22 August 05 - 21 May 06
Hend Koubaa	Tunisian	NTNU (G. Oien) 8 June 04 - 7 March 05
Ludovic Langevine	French	SICS (M Carlsson) 1 February 05 - 31 October 05
Monika Lanzenberger	Austrian	NTNU (G. Sindre) 1 February 05 - 31 October 05 FNR (Thibaud Latour) 1 November 05 - 31 July 06
Vsevolod Laptev	Russian	FNR (S. Belouettar) 1 September 04 - 31 May 05 NTNU (H. Holden) 20 June 05 - 19 March 06
Henrik Lundqvist	Swede	NTNU (Øyvind Kure) 1 December 05 - 31 August 06
Jani Mäntyjärvi	Finn	CNR (F. Paternò) 18 July 05 - 17 July 06
Corine Marchand	French	NTNU (P. Emstad) 21 February 05 - 1 May 05
Rode McCall	British	FNR (B. Otjacques) 1 October 05 - 30 June 06
Peter Nillius	Swede	FORTH (A. Argyro) 21 November 05 - 20 August 06
Kostas Pentikousis	Greek	VTT (M. Huusko) 17 January 05 - 16 October 05
Renaud Péteri	French	CWI (E. Pauwels) 11 October 04 - 10 July 05
Pawel Pietrzak	Polish	UPM/SpaRCIM (Hermenegildo) 1 September 04 - 30 May 05
Balakrishna Prabhu	Indian	VTT (I. Norros) 1 November 05 - 31 July 06
Sasa Radomirovic	Swiss	NTNU (S. F. Mjølsnes) 1 November 05 - 31 July 06
Bertrand Le Saux	French	Univ. Bern/SARIT (H. Bunke) 1 July 04 - 31 March 05
Ludwig Seitz	German	SICS (B. Sadighi) 1 November 05 - 30 April 07
Giuseppe Scarpa	Italian	CRCIM (M. Haindl) 1 April 05 - 31 December 05
Gupta Shalini	Indian	INRIA (J. Jaffré) 1 July 05 - 31 March 06
Venkatesh Babu Radhakrishnan	Indian	INRIA (P. Bouthemy) 18 June 04 - 17 March 05
Raphael Troncy	French	CNR (U. Straccia) 8 November 04 - 7 August 05 CWI (L. Hardman) 1 September 05 - 31 May06
Gerd Utz Westermann	German	VTT (K. Rautiola) 1 November 04 - 31 July 05
Martins Rico Varela	Uruguayan	SICS (B.Ahlgren) 1 December 05 - 31 August 06
Németh Zsolt	Hungarian	INRIA (T. Priol) 17 May 04 - 16 February 05 FORTH (A. Bilas)14 March 05 - 13 December 05

Cor Baayen Award

Milan Vojnovic from Cambridge, UK has been awarded the 2005 Cor Baayen Award for a most promising young researcher in computer science and applied mathematics by ERCIM.

Milan Vojnovic, originally from Croatia, completed his PhD at Ecole Polytechnique Fédérale de Lausanne (EPFL) in Switzerland and has subsequently worked as an Associate Researcher in the Systems and Networking Group at Microsoft Research in Cambridge.

Milan's work in the area of network modelling impressed the judges with contributions to several topics including congestion control, mobility modelling, queuing performance and filecasting. For a young researcher to work on several topics, come up with novel ideas in each of them, some of which are seen to be valuable contributions, convinced the judges of his merit for the award. The work is a clear example of what ERCIM strives to advance in that it is both theoretical in itself, but motivated by practical problems whose solution will have a significant impact. For example, his work on mobility modelling and simulation uses stochastic modelling based on fundamental probability theory, yet has shown that many simulations commonly used in industry are flawed, with potentially serious implications for the results built on them. He has proposed alternative models that can be simulated justifiably, and released code that can be used by practitioners.

The Cor Baayen award is not the first that Milan has received, since he has previously been given an award during his undergraduate studies at the University of Split, a best fellowship award during his graduate studies at EPFL, the ITC-17 best student paper award in 2001, and most recently, the IEEE INFOCOM 2005 best paper award and the ACM SIGMETRICS 2005 best paper award.

Further information can be obtained from the national contact or from the Cor Baayen Award coordinator Laszlo Monostori, SZTAKI, (laszlo.monostori@ercim.org).

http://www.ercim.org/activity/cor-baayen.html

Milan Vojnovic (right) received the 2005 Cor Baayen Award from the ERCIM president Keith Jeffery at a ceremony during the ERCIM meetings in Louvain-La-Neuve, Belgium on 26 October 2005. Milan Vojnovic, originally from Croatia, completed his PhD at Ecole Polytechnique Fédérale de Lausanne (EPFL) in Switzerland and has subsequently worked as an Associate Researcher in the Systems and Networking Group at Microsoft Research in Cambridge.

Result of the 2005 Cor Baayen Award

Winner:
Milan Vojnovic, Microsoft Research, UK

Finalists:
Urtzi Ayesta, France
Francesco Bonchi, Italy
Santiago Escobar, Spain
Marc Esteva, Spain
Keir Fraser, United Kingdom
Emmanuel Frécon, Sweden
Petr Gebousky, Czech Republic
Claudio Mattiussi, Switzerland
Hervé Rivano, France
Fabrizio Silvestri, Italy
Rene Sitters , The Netherlands
Filip Sroubek, Czech Republic
François-Xavier Standaert, Belgium
Martin Svensson, Sweden
Markku Turunen, Finland
Kuldar Taveter, Finland
Kilian Weniger, Germany
Philipp Woelfel, Germany

Award Rules

The Cor Baayen Award, awarded to a most promising young researcher in computer science and applied mathematics, was created in 1995 to honour the first ERCIM President, and is open to any young researcher having completed their PhD thesis in one of the 'ERCIM countries', currently: Austria, Belgium, Czech Republic, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Luxembourg, Norway, Spain, Sweden, Switzerland, The Netherlands and the United Kingdom.

The award consists of a cheque for €5000 together with an award certificate. The selected fellow will be invited to the ERCIM autumn meetings.

Conditions

- Nominees must have carried out their work in one of the 'ERCIM countries'
- Nominees must have been awarded their PhD (or equivalent) not more than two years prior to the nomination deadline (usually 15 April each year).
- A person can only be nominated once for the Cor Baayen Award.

Submitting a Nomination

- Nominations should be made by a staff member of the university or research institute where the nominee is undertaking research. Self nominations are not accepted.
- Nominations must be submitted online using the nomination form.
- Alternatively proposers can contact the ERCIM Executive Committee member (the national contact point) for the country in which the nominee is undertaking research.

Selection

- Initial selection will be made by each ERCIM institute (the national contact point) which is allowed to put forward up to two candidates from its country.
- Nominees will be informed if they have been selected as one of the two candidates from their country.
- The selection of the Cor Baayen award winner is the responsibility of the ERCIM Executive Committee, who will consult expert opinion in reaching their decision.

Deadlines

Usually 15 April each year.

Sponsorship

ERCIM sponsors up to ten conferences and workshops or summer schools per year.

ERCIM supported eight conferences through its sponsorship programme in 2005. The funding for each conference or workshop was in the order of €2000.

Conferences

ERCIM invites sponsorship proposals from established conferences with an international reputation, where substantive overlap can be shown between the conference topic and ERCIM areas of activity. Typical cases would include annual conferences in computer science with international programme committees, substantial international participation, and proceedings published with an established international science publisher.

Workshops/Summer Schools

ERCIM sponsors workshops or summer schools under the following conditions:

- they must be organised by an ERCIM institute
- named individuals from ERCIM partners must be involved in the organisation committee
- at least 2 non-ERCIM institutes should participate in the organising committee
- signature from one ERCIM partner.

The additional funding provided by ERCIM should be used to enhance the workshop by, for example, increasing the number of external speakers supported.

http://www.ercim.org/activity/sponsored.html

Costantino Thanos, scientific coordinator of the ERCIM-administrated DELOS Network of Excellence (left), is handing over the DELOS Research Exchange Award for the best paper presented by a young author, to Christos Tryfonopoulos for his paper "LibraRing: An Architecture for Distributed Digital Libraries Based on DHTs" during ECDL 2005, the 9th European Conference on Research and Advanced Technology for Digital Libraries, Vienna, Austria, 18-23 September 2005. The conference was one of the eight sponsored by ERCIM.

Participants of ECDL 2005.

Events sponsored in 2005

- **IEEE Virtual Reality 200**5,
  Bonn, Germany, 12-16 March 2005
- **CASSIS'05 - Construction and Analysis of Safe, Secure and Interoperable Smart devices**,
  Sophia Antipolis, France, 7-11 March 2005
- **ECIR-05 - 27th BCS European Annual Conference on Information Retrieval**,
  Santiago de Compostela, Spain, 21-23 March 2005
- **IEEE 6th International Workshop on Policies for Distributed Systems and Networks**,
  Stockholm, 6-8 June 2005
- **CAiSE 2005 - 17th Conference on Advanced Information Systems Engineering**,
  Porto, Portugal, 15-17 June 2005
- **IJCAI-05 - Nineteenth International Joint Conference on Artificial Intelligence**,
  Edinburgh, Scotland, 30 July - 5 August 2005
- **INTERACT 2005**,
  Rome, 12-16 September 2005
- **ECDL 2005 - 9th European Conference on Research and Advanced Technology for Digital Libraries**
  Vienna, 18-23 September 2005.

Publications

ERCIM publishes workshop proceedings, policy documents and ERCIM News, a quarterly newsletter.

ERCIM News

ERCIM News has evolved from an 'in-house magazine' to a publication covering reports and news about scientific projects from all over Europe and even beyond, reflecting ERCIM's growth over the years. ERCIM News is a multi-disciplinary European magazine in the areas of Information and Computer Sciences, Applied Mathematics and Communication Technologies. Published quarterly, the magazine provides regular high quality information concerning the latest European R&D and technology transfer activities in these scientific domains. Through short articles and news items, it provides a forum for the exchange of information between both member institutes and the wider scientific community. With each issue focusing on a special theme, the ERCIM News series has become a unique collection providing an overview of different topics within information technology. The topics covered by the issues published in 2005 are ' Biomedical Informatics', ' Environmental Modelling', ' Multimedia Informatics' and ' Security and Trust Management'. For each issue, ERCIM News invites a personality to write a keynote statement relevant to the European scientific community. Authors have included Rosalie Zobel, Director of Directorate C: Miniaturisation, Embedded Systems, Societal Applications, Information Society Directorate-General, European Commission; Walter R. Erdelen, Assistant Director-General Natural Sciences Sector, UNESCO; Viviane Reding, Member of the European Commission responsible for Information Society and Media; and Michael Waidner, Head of the IBM Privacy Research Institute, IBM Research Division, Zurich Research Lab.

ERCIM News is the result of a close cooperation between all ERCIM institutes. It is published in printed and electronic form. The printed edition has reached a circulation of about 11,000 copies and is distributed in over 100 countries. The on-line edition offers full-text search and the numerous sites and documents quoted can easily be accessed on the Web. ERCIM News has made a significant contribution to the wider recognition of ERCIM.

http://www.ercim.org/publication/Ercim_News/

Strategic reports published in 2005

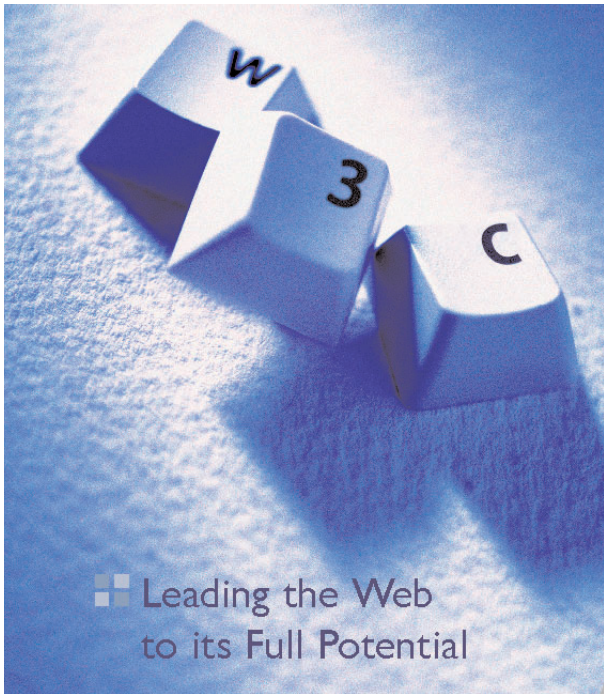
Response to European Commision on the 7th Framework proposals for ICT (June 2005)

Comments on simplification of the 7th Framework Programme (September 2005)

The reports are publicly available at http://www.ercim.org/publication/policy/policy.html

W3C, Europe and ERCIM

The hosting of the W3C European headquarters by ERCIM aims to strengthen research relationships throughout Europe to better support Web technology development. ERCIM and W3C are jointly sharing the results of their collaboration.



As of today, seven of the nine existing European W3C Offices are based at ERCIM institutes, including CWI (Benelux); Fraunhofer IMK (Germany and Austria); FORTH (Greece); SZTAKI (Hungary); CNR (Italy); SICS (Sweden) and CCLRC (UK and Ireland). W3C Offices in Europe work with their regional Web communities to promote W3C technologies in local languages, broaden W3C's geographical base, and encourage international participation in W3C activities. Specifically, the W3C Offices help organize meetings and workshops (on topics such as Semantic Web, Web Services and the Mobile Web).

As a consortium of 17 members from as many European countries, ERCIM creates a balance between European diversity and necessary homogeneity by building bridges between different cultures and stimulating technical ideas to move freely within academia and across borders. W3C is very heavily swayed by its members, several of them having sectoral interests in the Web (such as multimedia, Semantic Web, graphics, Web services, mobile Web, etc.), whereas ERCIM jointly has a very widespread interest in many research fields where the Web standards are seldomly used. ERCIM then helps to gather those Web communities and make them work together.

Moreover, ERCIM members have strong ties with industrials partners and start-up companies. This is an excellent opportunity for W3C to enlarge its cooperation with the European industry which can broaden its participation in the making of standards.

Finally, hosting the W3C is beneficial to ERCIM and its members. It allows ERCIM to benefit from the know-how and expertise of the W3C team, and to increase its visibility based on W3C's worldwide reputation.

The joint efforts of ERCIM and the W3C have started to increase Web research cooperation in Europe. The considerable payoffs perspectives and growing synergies bode well for the future of this fruitful cooperation.

The number of European W3C Members is 162 (out of 417). The W3C Team includes 65 people working from locations across the globe, and 20 are employed by ERCIM (all figures for January 2006).

Main Results and New Initiatives in 2005

- W3C issued a critical Internationalization Recommendation "Character Model for the World Wide Web 1.0: Fundamentals" with a goal of making it easier for all people to use the World Wide Web, regardless of their language, script, writing system, and cultural conventions, in accordance with the W3C mission of universal access.

- W3C lowered Membership fee for organizations in developing countries. In keeping with its international mission to lead the Web to its full potential, W3C has now a new fee structure designed to reduce the barrier of entry for organizations in developing countries. The goal is to make it easier for small companies and not-for-profit organizations to become W3C Members and become engaged in the development

W3C European projects coordinated by ERCIM

WS2 - Web Services and Semantics

WS2 supports the W3C Web services related standard activities, and explores the use of Semantic Web technologies.
Duration:
January 2004 - December 2006
Web site: http://www.w3.org/2004/WS2/

PRIME - Privacy and Identity Management for Europe

PRIME aims to develop a working prototype of a privacy-enhancing Identity Management System. To foster market adoption, novel solutions for managing identities will be demonstrated in challenging real-world scenarios.
Duration: March 2004 - February 2008
Web site: https://www.prime-project.eu/

MWeb - Multimodal Web

MWeb supports the development and adoption of industry standards enabling multimodal Web access using mobile devices.
Duration:
January 2004 - December 2005
Web site:
http://www.w3.org/2004/MWeb/

COPRAS - CO-operation Platform for Research And Standards

COPRAS acts as the interface between IST projects and standardization bodies such as W3C, CEN, CENELEC, ETSI and the Open Group.
Duration:
February 2004 - February 2007
Web site: http://www.copras.org/

AMI - Augmented Multi-party Interaction (AMI)

AMI targets computer enhanced multimodal interaction in the context of meetings, taking into account technologies such as human-human communication modeling, speech recognition, computer vision, multimedia indexing and retrieval.
Duration:
January 2004 - December 2006
Web site:
http://www.amiproject.org/

All projects are supported by the IST programme of the European Commission.

of foundation technologies for the World Wide Web. For small companies and not-for-profit organizations in developing countries, the resulting fees are reduced to between 15 and 60% of former values.

- W3C launched the Mobile Web Initiative (MWI) with the mission of making Web access from a mobile device as simple as Web access from a desktop device. MWI sponsors and participants develop authoring guidelines, checklists and best practices, as well as a database of descriptions that can be used by content authors to adapt their content to the strengths and capabilities of a particular device.

- W3C celebrated ten years leading the Web in Europe, on 3 June 2005 in Sophia Antipolis, France. Tim Berners-Lee, W3C Director and inventor of the Web, reunited with his former CERN colleague Robert Cailliau to share personal reflections and stories about how the Web got started at CERN. Berners-Lee also delivered a keynote that stressed the importance of Web standards and addressed current challenges in the European industry and research communities. As one of the other speakers of this event, the ERCIM President Keith Jeffery spoke about the convergence of the GRIDs and the World Wide Web.

- W3C launched a new interest Group to connect medical industry verticals with Semantic Web experts in an effort to improve collaboration, research and development, and innovation adoption in the health care and life science industries. The first of its kind for W3C, the Semantic Web for Health Care and Life Sciences Interest Group (HCLSIG) deploys standardized Semantic Web specifications into specific services defined by a user community.

Future Activities

W3C continues to expand the reach of the Web to:

- Everyone (regardless of culture, abilities, etc.)
- Everything (applications and data stores, and on devices ranging from power computers with high-definition displays to mobile devices to appliances)
- Everywhere (from high to low bandwidth environments).
- Diverse modes of interaction (touch, pen, mouse, voice, assistive technologies, computer to computer)
- Enable computers to do more useful work (through advanced data searching and sharing).

About the World Wide Web Consortium

The World Wide Web Consortium (W3C) is an international consortium where Member organizations, a full-time staff, and the public work together to develop Web standards. W3C's mission is: "To lead the World Wide Web to its full potential by developing protocols and guidelines that ensure long-term growth for the Web."

W3C Develops Web Standards and Guidelines

W3C primarily pursues its mission through the creation of Web standards and guidelines. In its first ten years, W3C published more than ninety such W3C Recommendations. W3C also engages in education and outreach, develops software, and serves as an open forum for discussion about the Web. In order for the Web to reach its full potential, the most fundamental Web technologies must be compatible with one another and allow any hardware and software used to access the Web to work together. W3C refers to this goal as "Web interoperability." By publishing open (non-proprietary) standards for Web languages and protocols, W3C seeks to avoid market fragmentation and thus Web fragmentation.

W3C Is an International Consortium

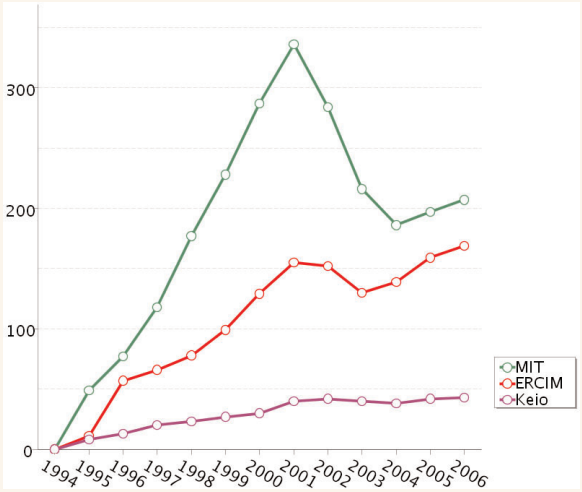
Organizations located all over the world and involved in many different fields join W3C to participate in a vendor-neutral forum for the creation of Web standards. W3C Members and a dedicated full-time staff of technical experts have earned W3C international recognition for their contributions to the Web. W3C Members, staff, and invited experts work together to design technologies to ensure that the Web will continue to thrive in the future, accommodating the growing diversity of people, hardware, and software. W3C's global initiatives also include nurturing liaisons with over forty national, regional and international organizations around the globe. W3C operations are jointly administered by the MIT Computer Science and Artificial Intelligence Laboratory (CSAIL) in the USA, ERCIM and Keio University in Japan.

W3C Members

Organizations join W3C to work and exchange ideas with more than 400 Members, including the world's foremost technology companies, coming from more than 40 countries, with a broad range of interests. In 2005, W3C instituted a number of changes to its fee structure to encourage participation from organizations in developing countries.

W3C Members take a leadership role in the future of the Web, promote their image as innovators participating in a standards body international in mission and impact, and gain early insight into market trends.

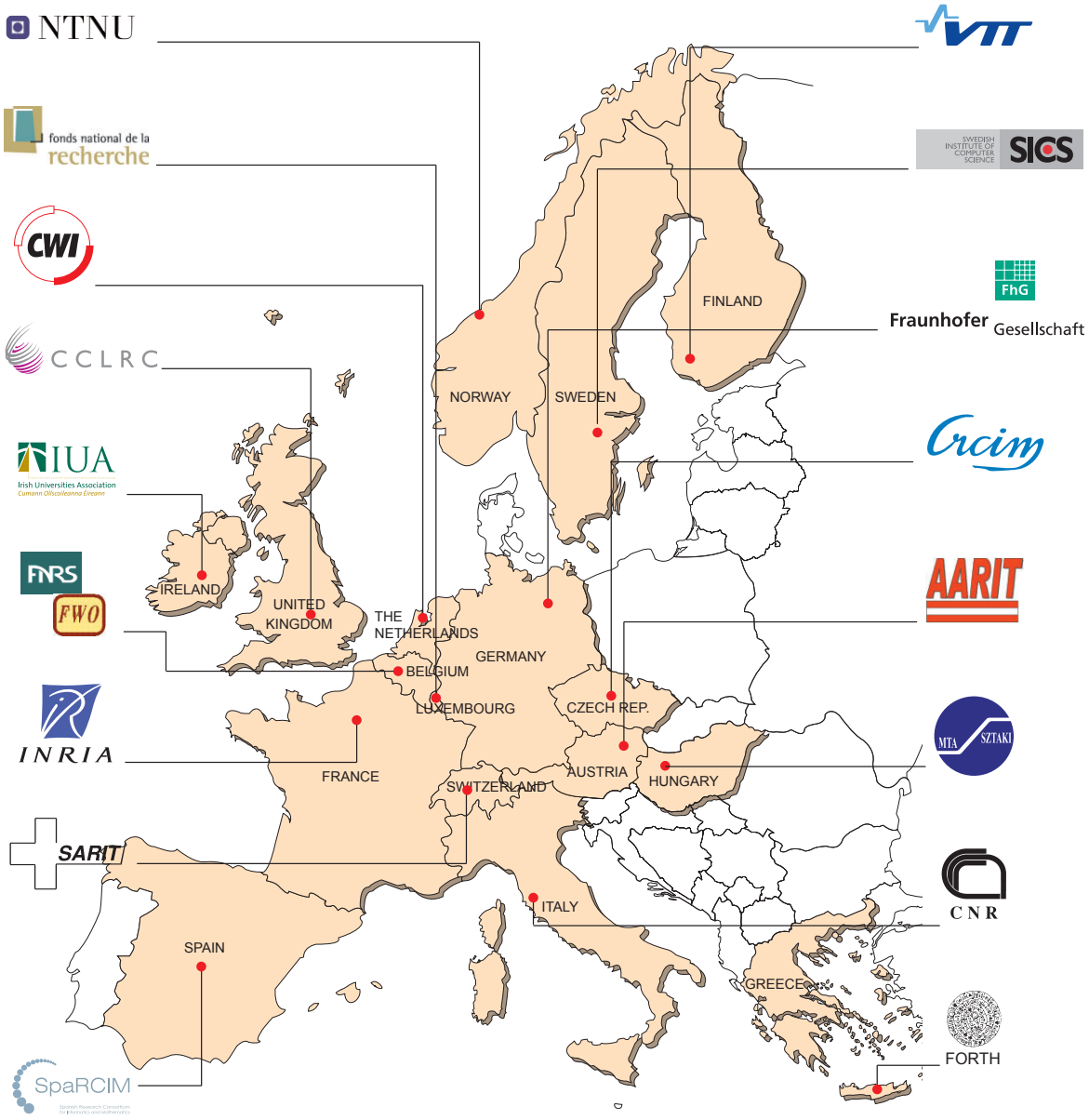
W3C Members include vendors of technology products and services, content providers, corporate users, research laboratories, standards bodies, and governments, all of whom work to reach consensus on a direction for the Web. Adoption of W3C standards and reliance of global commerce and information exchange upon W3C Web standards continue to grow. Members have a unique opportunity to participate directly in the revolution that continues to change the way the world works.



W3C Membership evolution by host.

Members

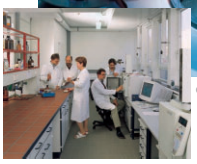
ERCIM has one member institute per country. All ERCIM members are national centres of excellence, independent of specific commercial ties.



The membership and geographical reach of ERCIM has gradually grown to its current seventeen member institutes. These are: AARIT in Austria, CCLRC in the UK, CNR in Italy, CRCIM in the Czech Republic, CWI in the Netherlands, FNR in Luxembourg, FNRS & FWO in Belgium, ICS-FORTH in Greece, Irish Universities Association in Ireland, Fraunhofer-Gesellschaft in Germany, INRIA in France, NTNU in Norway, SARIT in Switzerland, SICS in Sweden, SparCIM in Spain, SZTAKI in Hungary and VTT in Finland.

Austrian Association for Research in Information Technology

AARIT, the Austrian Association for Research in IT (Österreichische Vereinigung für IT-Forschung), was founded in May 2001 as a platform for the Austrian information technology research community. AARIT is a legal entity and an independent non-profit association. AARIT is ERCIM's gateway to the Austrian information technology research community.



© ARC Seibersdorf.

The mission of AARIT is to promote research and development in information technology and related subject areas. To achieve this, AARIT aims to strengthen scientific co-operation among its members on a national level, through international co-operation and through transfer of know-how and knowledge. The activities of AARIT include co-operation with and participation in scientific organisations nationally and internationally. The Association carries out, participates in or commissions research projects, organises meetings and courses, and participates in conferences. Further activities include the granting of fellowships, awards and sponsorships and the collection and exchange of information among members and third parties.

Members

AARIT has both institutional members and individual members. The institutional members of AARIT cover a wide range of research activities. AARIT members participate in research projects such as AGRID (Austrian GRID Consortium), image processing and advanced computer vision, safety and security of software intensive systems, embedded systems, natural language processing, bio-informatics and social aspects of IT. Institutional members include:

Founding members

- Austrian Research Center (ARC)/Seibersdorf Research, the largest application-oriented research enterprise in the country, with about 1000 employees, where of about four hundred information technologists, work at locations across Austria.
- The Austrian Computer Society (OCG - Oesterreichische Computer Gesellschaft) is Austria's umbrella organisation of associations and institutions involved in information processing.
- Austrian Research Institute for Artificial Intelligence (ÖFAI)At ÖFAI basic and applied research is performed in several areas of Artificial Intelligence
- Salzburg Research - The Salzburg Research Forschungsgesellschaft mbH is a state-owned, non-profit research organisation
- VCPC (European Centre for Parallel Computing in Vienna), established at the at the University of Vienna as part of the Institute for Software Science. Its primary objective is to furthering the use of parallel, distributed, and Grid computing.
- RISC (Research Institute for Symbolic Computation) is an institute of the Johannes Kepler University in Linz. RISC focuses on the interaction and integration of mathematics and computer science.
- Department for Information Systems at the Vienna University of Technology.

Since its foundation, AARIT has acquired further seven members (and lost one founding) from universities and close-to-university institutes at Linz (2), Graz (3) and Vienna (2).

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Fax: +43 1 512 02 35-9
aarit@ocg.at
http://www.aarit.at/

Council for the Central Laboratory of the Research Councils

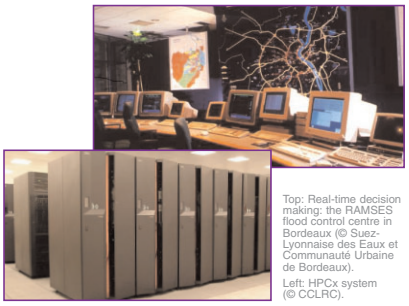
RESEARCH AT THE LEADING EDGE

CCLRC is the largest UK public sector science and engineering R&D laboratory. It is publicly owned - under the UK Office of Science & Technology (Department of Trade & Industry).

The Central Laboratory supports world class research activities by providing leading-edge facilities and extensive expertise, particularly in physical and life sciences and engineering at its three sites in the UK: Rutherford Appleton Laboratory (Oxfordshire), the Daresbury Laboratory (Cheshire), and the Chilbolton Observatory (Hampshire).

Major CCLRC Facilities:

- National Grid service for e-science initiative
- Synchrotron providing radiation from infrared to hard X-rays
- ISIS - the world's most powerful pulsed neutron source
- Vulcan laser - the highest intensity focused laser in the world
- Space science.



Top: Real-time decision making: the RAMSES flood control centre in Bordeaux (© Suez-Lyonnaise des Eaux et Communauté Urbaine de Bordeaux).

Left: HPCx system (© CCLRC).

Computing Facilities

CCLRC's partners in the Universities and in Industry are supported by such facilities such as:

- HPCx a super computer with a processing capability of 11 Teraflops, 18 TByte data store and Gigabit Network
- The EPSRC Superscalar Computing Service - "Columbus" and a Central Simulation Facility
- Various clusters - an NT farm; a Beowulf (Linux) cluster; clusters of DEC Alphas - the OSF Service
- National Academic Mailing List Service (NAMLS)

Recent Initiatives

GRIDs. Building upon its long tradition of IT research, development and support, the CCLRC acts in a pivotal rôle in the new UK initiative to support the development of e-Science. A major component of this is the GRIDs (not just a data repository, but using meta-data and related techniques to utilise knowledge for research and industrial developments).

Recent Applications

Knowledge Management for Public Employees
Development of a customisable platform for helping public employees with key problems of knowledge management. Something that sets experienced staff apart from those less experienced is how well they handle their contacts, documents and critical timing in their work processes. A system based on software agents is being created to assist employees in this areas, providing timely and well focussed advice.

Control of Waste Water Treatment Plants
Helping to safeguard the environment by improving the monitoring and control of anaerobic waste water treatment plants. These plants are commonly used in wineries and distilleries. By using and integrating a variety of advanced techniques, and enabling remote experts to assist with their management, these plants will be run more efficiently and safely.

Partnerships

Can range from a one-off contract to truly integrated partnerships, collaborating with CCLRC staff.

Budget and Staffing

Budget for IT related areas: 22 million €

- 80% research council contracts
- 20% income from government departments, European Commission, universities and industry.

1,745 total staff, 180 IT staff (average whole-time equivalent).

CCLRC
Rutherford Appleton Laboratory
Chilton
Didcot
Oxon
OX11 0QX
United Kingdom
Tel: + 1235 821900
Fax:+ 1235 445385
http://www.cclrc.ac.uk/

CNR – Informatics and Applied Mathematics at the Italian National Research Council

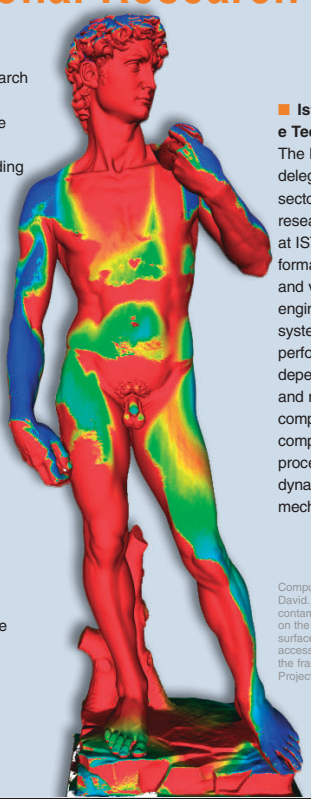
The Italian National Research Council (CNR) is a government funded organization which conducts research in nearly all the main scientific disciplines through a network of research institutes. CNR funding covers the main infrastructures, permanent staff, and some basic research. Individual institutes must find additional funding from national and international contracts.

From 2006, the scientific activities of CNR will be structured in eleven macro research areas, each one coordinated by a Department. The Department for Information and Communication Technologies will be responsible for the coordination and evaluation of the scientific and technical activities of the seven CNR Institutes working in this sector.

Information Technology at CNR

ICT activities at CNR are mainly covered by the following institutes:

- IASI – Istituto di Analisi dei Sistemi e di Informatica, Rome
- ICAR – Istituto di Calcolo e Reti ad Alte Prestazioni, Cosenza
- IEIIT – Istituto di Elettronica e di Ingegneria dell'Informazione e delle Telecomunicazioni, Turin
- IIT – Istituto di Informatica e Telematica, Pisa
- IMATI – Istituto di Matematica Applicata e Tecnologie Informatiche, Pavia
- IREA – Istituto per il Rilevamento Elettromagnetico dell'Ambiente, Naples
- ISTI – Istituto di Scienza e Tecnologie dell'Informazione, Pisa.



Computer simulation of Michelangelo's David. The simulation evaluates the fall of contaminants (eg fall of rain, mist or dust) on the David's surface, which depends on surface slopes, self occlusion and accessibility. Work done by ISTI-CNR in the framework of the David Restoration Project (2002-2003).

Istituto di Scienza e Tecnologie dell'Informazione

The President of CNR has delegated ISTI to represent the IT sector in ERCIM. The strategic research areas currently covered at ISTI are: software engineering, formal methods for specification and verification, information engineering and information systems, data mining, high-performance computing, dependable computing, wireless and mobile networks, human computer interaction, visual computing, image and signal processing, space flight dynamics, materials and structural mechanics.

Budget

An estimated 5 million € per year, excluding cost of permanent staff:

- 38% EC projects
- 24% national research projects
- 15% CNR
- 8% public and local administration
- 15% industry.

Staff

Approximately 145 researchers and technicians plus varying number of graduate students and postdocs.

Contact:

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ISTI-CNR
Area di Ricerca CNR
Via Moruzzi, 1
56124 Pisa
Italy

Tel: +39 050 315 2878
Fax: +39 050 315 2810
http://www.isti.cnr.it/

Dutch centre for mathematics and computer science

Centrum voor Wiskunde en Informatica

FRONTIER RESEARCH FOR PRACTICAL APPLICATIONS

The Centrum voor Wiskunde en Informatica (CWI) is the is the national Dutch research institute for mathematics and computer science. Since its foundation in 1946, the institute has acquired a prominent position in the research world. CWI is a co-founder of ERCIM. The mission of CWI is twofold:

- to perform frontier research in mathematics and computer science
- to transfer new knowledge in these fields to society in general and trade and industry in particular.

Research

In the years to come, CWI research will be inspired by

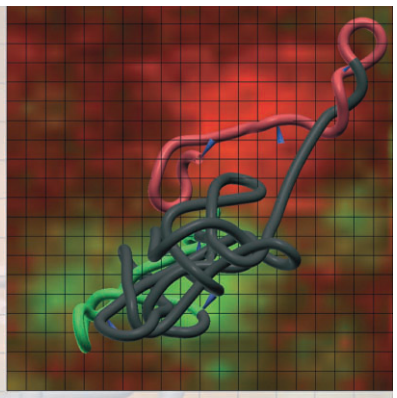
- earth and life sciences
- management of the data explosion
- societal logistics
- service-oriented computing.

Recent Applications

Railroad timetables; Integrated services in advanced communication networks; Semi-automatic recognition of individual whales; Software renovation; Testing embedded software with formal methods; Component-based software; Evolutionary methods for e-commerce and logistics; Distributed Multimedia Languages and Infrastructures; Mathematical models of living cells; Optimal shape of ship hulls, Discrete tomography; Pattern formation in plasmas; Forest fires models; XHTML - a bridge from HTML to XML; Querying large distributed multimedia databases; Multimedia presentations on the Web (SMIL); Interactive visualisation; Quantum cryptography; Machine learning techniques.

Co-operation and Knowledge Transfer

CWI maintains a broad spectrum of contacts with companies and institutions through joint participation in projects. There are also direct commissions from industry and government. CWI participates in 10 European projects and networks and in over 80 national projects. CWI pursues an active policy of creating spin-off companies and licensing.



Visualization of a flexible fiber model

Budget

Total annual budget: 15,7 million €

- 70% basic national funding
- 30% participation in (inter)national research programmes and from contracts with industry.

Staff (in full time equivalents)

- 154 researchers
- 51 supporting staff.

Contact:

CWI
Kruislaan 413
NL-1098 SJ Amsterdam
The Netherlands

Tel: + 31 20 592 9333
Fax: +31 20 592 4199
E-mail: info@cwi.nl
http://www.cwi.nl

Czech Research Consortium for Informatics and Mathematics

CRCIM is a consortium consisting of four major Czech R&D institutes active in informatics and mathematics:

Charles University, Faculty of Mathematics and Physics, Prague

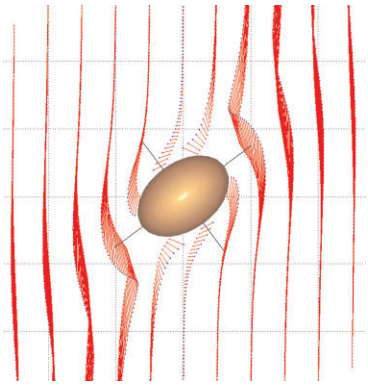
Institute of Information Theory and Automation, Academy of Sciences, Prague

Masaryk University, Faculty of Informatics, Brno

Institute of Computer Science, Academy of Sciences, Prague.

Mission

The mission of CRCIM is to perform frontier research and teaching in mathematics, informatics and computer science and to transfer acquired new knowledge to society.



A two-dimensional cut throuhg a rigid ellipsoidal particle rotating in a viscous flow in a regime of simple shear. Arrows indicate the velocity field in a set of chosen markers (point) of the moving fluid.

Research Topics

- Complexity Theory, Automata, Logic, Combinatorics, Computational Geometry, Parallel and Distributed Algorithms, Neural Networks, Computer Graphics, Formal Linguistic, Databases, Distributed Systems, Operating Systems, Software Engineering;
- Informatics: Control Theory, Econometrics, Pattern Recognition, Image Processing, Statistics and Data Processing;
- Software Engineering and Methodology of Programming, Distributed Systems Design, Computer Networks, Electronic Typesetting, Advanced Man-Machine Interfaces, Data Visualization, Information Systems;
- Theoretical Computer Science: Artificial Neural Networks,Knowledge-based Systems, Nonlinear Modelling, Numerical Nonlinear Analysis and Optimization, Applied Linear Algebra.

Budget

Estimated total annual budget: 12 million

- 70% basic national funding
- 30% participation in (inter)national research programmes and from contracts with industry.

Staff

1120 Researchers / Teachers (estimation).

Contact:
Czech Research Consortium for Informatics and Mathematics
co/ FI MU Botanicka 68a
CZ-602 00 Brno
Czech Republic
Tel: +420 2 6884669
Fax: +420 2 6884903
http://www.utia.cas.cz/CRCIM/home.html

FNR: Fonds National de la Recherche Luxembourg

Luxembourg's National Research Fund is a public establishment with scientific, financial and administrative autonomy, set up by the Law of 31 May 1999 in order to further stimulate research activities in Luxembourg.

To fulfil this mission, the Fund develops multi-annual research programs and ensures their implementation by allocation of the financial means put at its disposal.

Main research program in informatics

Security and efficiency of new practices in e-commerce (SE-COM)

Duration: 2001 - 2006
total budget: 7.500 000 €

To better master the new context of electronic cooperation, the SE-COM program will develop an integrated research on the safety of electronic exchange and on the efficiency of new Organisational models and software for electronic cooperation.

Main participating research institutes in informatics

Centre de recherche public Gabriel Lippmann
http://www.lippmann.lu

Centre de recherche public Henry Tudor
http://www.tudor.lu

Université du Luxembourg
http://www.uni.lu

Centre de recherche public de la santé
http://www.crp-sante.lu

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Phone: +352 26 19 25 1
Fax: +352 26 19 25 35
fnr@fnr.lu; www.fnr.lu

Belgium

FNRS Fonds National de la Recherche Scientifique - Wallonie

FWO Fonds voor Wetenschappelijk Onderzoek – Vlaanderen

The FWO - Vlaanderen (Fonds voor Wetenschappelijk Onderzoek) activities are aimed at a push back of the frontiers of knowledge in all disciplines, stimulating and funding fundamental academic research at the universities in the Flemish Community and at scientific research institutes.

The Fonds National de la Recherche Scientifique has a mission statement to develop scientific research in general through researchers initiatives. It helps knowledge production and development through individual researchers sponsoring and through research programs within laboratories and departments from universities in the Belgian French Community (Communauté française de Belgique).

The FNRS action is thus mainly centered around researchers training and research development.

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Fax +32 2 504 92 92
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Egmontstraat 5
1000 Brussels
Phone +32 2 512 91 10
Fax +32 2 512 58 90
post@fwo.be
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ICS INSTITUTE OF COMPUTER SCIENCE

FORTH FOUNDATION FOR RESEARCH AND TECHNOLOGY - HELLAS

Mission

The mission of ICS is to perform high quality basic and applied research, to promote education and training, and to contribute to the development of the Information Society, at a regional, national, and European level.

Towards achieving these objectives, ICS develops innovative products and services, contributes to the creation, transfer, and diffusion of technical know-how, collaborates with recognized companies, creates spin-off companies, promotes incubators and science and technology parks, and performs studies of regional, national and European interest.

ICS is highly competitive at an international level, and many of its activities are carried out in the context of European collaborative research and development projects, which emphasize the development of Information Society Technologies and infrastructures in a number of domains of national importance and regional interest.

Research Laboratories and Centers

- Biomedical Informatics Laboratory
  - Centre for eHealth Technologies
- Computational Vision and Robotics Laboratory
- Computer Architecture and VLSI Systems Laboratory
- Human - Computer Interaction Laboratory
  - Centre for Universal Access and Assistive Technologies
- Information Systems Laboratory
  - Centre for Cultural Informatics
- Telecommunications and Networks Laboratory

Programmes

- Ambient Intelligence
- Information Security

Other Departments

- Department of Education and Training
- Department of Systems and Networks Administration
- Registry of [.gr] Domain Names Department
- W3C Greek Office

International Links

ERCIM: Member of ERCIM since 1992

W3C: The W3C Office in Greece is hosted by ICS since 1998

Budget

Annual Budget: approx. 8,5 MEuros

Staff

ICS employs a total of 260 people:

- 40 researchers and university faculty
- 100 technical personnel
- 20 administrative personnel & auxiliary personnel
- 100 graduate research assistants and trainees

http://www.ics.forth.gr

The Institute of Computer Science is one of the seven institutes of the Foundation for Research and Technology - Hellas, a major national research centre, supervised by the General Secretariat for Research and Technology of the Hellenic Ministry of Development.

FOUNDATION FOR RESEARCH AND TECHNOLOGY - HELLAS (FORTH)
INSTITUTE OF COMPUTER SCIENCE

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URL: www.ics.forth.gr

Institut National de Recherche en Informatique et en Automatique

INRIA is the French National Institute for Research in Computer Science and Control, operating under the dual authority of the Ministry of Research and the Ministry of Industry. Its decentralized organization in six Research Units

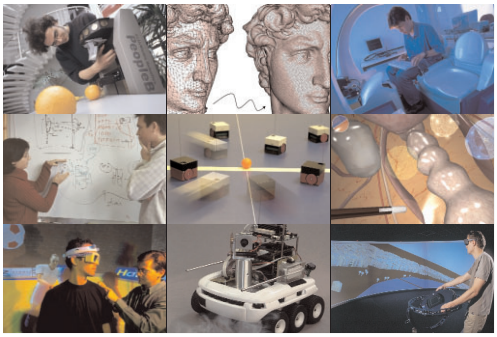
- **Futurs (Bordeaux, Lille, Saclay)**
- **Lorraine**
- **Rennes**
- **Rhône-Alpes**
- **Rocquencourt**
- **Sophia Antipolis**

spread over France enables INRIA to network skills and talents from the fields of ICT.

INRIA headquarters are located in Rocquencourt. INRIA is a co-founder of ERCIM and hosts the ERCIM office.

Mission

- fundamental and applied research in mathematics, computer science and related topics
- designing prototypes and experimental systems
- technology and knowledge transfer
- promoting scientific international co-operation
- provide expertise.



Co-operation and knowledge transfer

The transfer of research results towards industry is one of INRIA's main assignments, in addition to its fundamental and applied research in computer science and control. This industrial transfer takes place at three different levels:

- contracts and partnership with industry (currently some 750 contracts)
- development initiatives
- the setting up of high-tech companies (some 80 companies since 1984).

Research

INRIA focuses its research on seven great research challenges for 2003-2007:

- designing and mastering the future network infrastructures and communication services platforms
- developing multimedia data and multimedia information processing
- guaranteeing the reliability and security of software-intensive systems
- coupling models and data to simulate and control complex systems
- combining simulation, visualization and interaction
- modeling living structures and mechanisms
- fully integrating ICST into medical technology.

Budget

Total annual budget:
135 million €, thereof

- 80% basic national funding
- 20% own resources.

Staff

- 2500 scientific staff including some 950 PhD students
- 650 supporting and administrative staff.

Contact:
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BP 105
F-78153
Le Chesnay Cedex
France
Tel : +33 1 3963 5511
Fax : +33 1 3963 5330
email: info@inria.fr
http://www.inria.fr

Fraunhofer Gruppe Informations- und Kommunikationstechnik

The Fraunhofer ICT Group (Fraunhofer Group Information and Communication Technology) develops joint strategies and visions for application-oriented research on information and communication technology. It combines the core competencies of the 14 member and 2 guest institutes to create comprehensive research programs and offers support in technology transfer activities and research marketing. This makes it the largest research alliance for information and communication technology in Europe, and one of the biggest in the world. The complementing core competencies of member institutes cover the full value chain within the communication and IT sector.

The Fraunhofer ICT Group provides its product portfolio to partners from industry and the public sector. The range of services includes customized IT solutions, specialized technology consulting, and preliminary research for new products and services. Being members within international research programs, the institutes are internetworked worldwide with business and research companies in the communication and IT sector. The business office of the ICT Group in Berlin acts as a "one-stop shop" to find the right partner for your needs.

Information and Communication Technology for

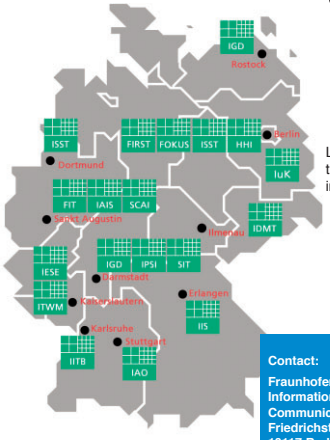
- **Medicine and Life Sciences**
- **Traffic, Transport and Mobility**
- **Production**
- **Digital Media**
- **Culture and Entertainment**
- **Software**
- **Communication Systems and Interdisciplinary Applications**
- **E-Business**
- **E-Government**
- **Security**

Budget

Annual budget:
approx. 176 million €

Staff

Approx. 3000 scientific and administrative staff



Locations of the institutes in Germany

Contact:
Fraunhofer Group Information and Communication Technology
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10117 Berlin
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www.iuk.fraunhofer.de

Irish Universities Association

The Irish Universities Association (IUC) is the representative body for the seven Irish universities. These include the three Dublin-based universities of Dublin City University, Trinity College and University College Dublin, and the four regional universities of University College Cork, National University of Ireland in Galway, University of Limerick, and National University of Ireland in Maynooth. At present, Dublin City University are responsible for administration and coordination activities.

Research Themes

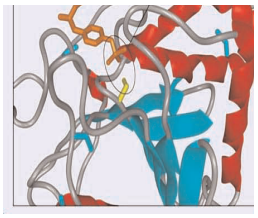
As all seven Irish Universities comprise the IUA, the range of research themes is exhaustive.

Focus on Dublin City University

Dublin City University promotes four broad research themes.

Dependable Systems

The focus of this theme is the development of reliable and secure software. This encompasses a number of different approaches to ensuring the dependability of software from softer approaches through software development methods and software project management, to more formal approaches through refinement, verification and automatic program construction.



Information Management

This theme has two major research areas: Digital Multimedia and Database Engineering and Interoperable Systems. The Centre for Digital Video Processing (CDVP) researches and develops techniques and tools to automatically analyse and index digital video information, and allow content-based operations. The Database Engineering and Interoperable Systems researchers develop formal and informal models for constructing database systems, and building semantic layers between heterogeneous information systems.

Language & Intelligence

This theme is primarily involved in research into and development of applications in two main areas. In the Speech and Language Processing area, the research themes include Machine Translation, Speech Processing, Computational Models of Semantics, Treebanks, Formal Syntax, Digital Signal Processing, Computer-Assisted Language Learning, Probabilistic Natural Language Processing and Parsing. In the area of Artificial Intelligence, the themes include Artificial Minds, Computational Models of Cognition, Knowledge Representation, Human-Computer Interaction, Cognitive Science, The Origins of Intelligence, Neural Networks and Autonomous Agents.

Modelling & Scientific Computing

The group explores models of the natural and artificial world, through computer solutions of problems, which due to their complexity, are intractable by conventional methods. Complex systems arise in a variety of fields, e.g. physics, biology, chemistry, eco-and other hybrid sciences, finance, socio-economic phenomena, and many others. Much of the current focus of the work is in Biocomputation, (e.g. Bioinformatics and Biodiversity).

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Fax: +3531 7005442
http://ercim.computing.dcu.ie/

NTNU

NTNU, the Norwegian University of Science and Technology, represents the Norwegian research community in informatics and mathematics, including associated departments at SINTEF, the University of Oslo, the University of Bergen, the University of Tromsø and the Norwegian Computing Centre in Oslo.

The university's Faculty of Information Technology, Mathematics and Electrical Engineering (http://www.ime.ntnu.no/eng/) has primary responsibility for ERCIM activities, although relevant research is conducted in different university departments and through the university's strategic research agenda in ICT ((http://www.ntnu.no/ikt/)).

Collaborative efforts

NTNU's research staff is engaged in some 2000 R&D projects, while the university itself hosts between 20 and 30 major scientific conferences in an average year. NTNU has bilateral agreements for student exchanges with more than 200 non-Norwegian universities across the globe. NTNU also has a close working relationship with SINTEF, Scandinavia's largest independent research institute, which has about 2000 employees. SINTEF was originally established by NTNU, and those origins are reflected in the SINTEF buildings, located on the university campus. This co-location further promotes the synergies that result from cooperative research.

The Faculty of Information Technology, Mathematics and Electrical Engineering

The faculty has 270 academic staff and doctoral students, and is responsible for approximately 20 percent of the educational activity at NTNU.

- Department of Computer and Information Science
- Department of Electronics and Telecommunications
- Department of Electric Power Engineering
- Department of Mathematical Sciences
- Department of Engineering Cybernetics
- Department of Telematics.

Strategic research

The university's strategic ICT research addresses the following areas:

- Computational Science and Visualization
- Bioinformatics
- Health Informatics
- ICT in the Public Sector (eGovernment)
- Information Security
- Learning with ICT
- Language Technology
- ICT Basics
- ICT and Globalization.

Contact

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Faculty of Information Technology Mathematics and Electrical Engineering
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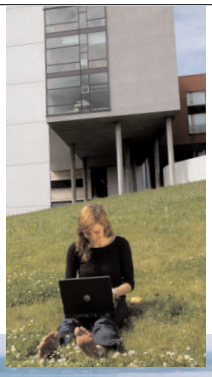
http://www.ime.ntnu.no/

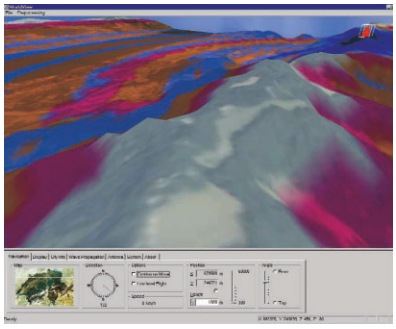


Technology, software and Internet protocols that may work fine in a laboratory setting may fail under real-world pressures of commercial use. Wireless Trondheim, launched in September 2006, makes the inner city of Trondheim available as a working environment in which to test tomorrow's wireless technology. The project is a cooperative among industrial partners, NTNU, the city of Trondheim, the Sør-Trøndelag county council, and the Trondheim Chamber of Commerce.

SARIT – The Swiss Association for Research in Information Technology

SARIT is a nonprofit association with the goals of fostering national and international collaboration within the ICT research community and of promoting the visibility and recognition of ICT research performed in Switzerland.

SARIT was founded in 1989 with the purpose of linking together the mostly small Swiss research groups in computer science and of promoting international collaboration. In 1998, SARIT was completely restructured; all professors in ICT-related topics at Swiss universities and Federal Institutes of Technology became individual members of SARIT together with industry-based ICT research units. Nowadays, after the advent of the Universities of Applied Science, SARIT also has members belonging to these institutions.



Automatic Antenna placement with WorldView.

SARIT runs a WEB site http://www.sarit.ch providing information about ICT-related research activities and events in Switzerland.

SARIT organizes an annual series of conferences. The most recent was held in March of this year and on the topic: “New Ways of CS Education on All Levels”. http://www.sarit.ch/events/sarit06.html

SARIT is the Swiss member of ERCIM. For this cooperation, SARIT plays the role of a "virtual research center" combining the efforts of the distributed Swiss IT research community and being its representative to all other ERCIM partners, eg, for the post-doctoral exchange program.

SARIT maintains offices at the Swiss Federal Institute of Technology (EPFL) in Lausanne.

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EPFL-VR Lab
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http://www.sarit.ch/

SpaRCIM

Spanish Research Consortium for Informatics and Mathematics

SpaRCIM

SpaRCIM was founded under the auspices of the Spanish Ministry of Education and Science. Its main goal is to spread the activities of the ERCIM consortium to the informatics and mathematics research communities within Spain. The consortium is composed of five universities and a research institute dependent on the Spanish Research Council (CSIC):

. Artificial Intelligence Research Institute (IIIA)
. Rey Juan Carlos University (URJC)
. Technical University of Catalonia (UPC)
. Technical University of Madrid (UPM)
. Technical University of Valencia (UPV)
. University of Malaga (UMA)

These Spanish institutions include a number of groups that are considered to be representative of Spanish research in computer science. These groups are working on a great variety of research areas within information technology and applied mathematics.

Research Topics

Complexity Theory
Automata
Logic
Combinatorics
Computational Geometry
Parallel and Distributed Algorithms
Neural Networks
Formal Linguistic
Computer Graphics
Software Engineering
Web Engineering
Databases
Distributed Systems
Operating Systems
Image Processing
Distributed Systems
Advanced Man-Machine Interfaces
Data Visualization
Computer Networks
Knowledge-based Systems
Chaos Theory

Staff

About 450 researchers

Contact

Spanish Research Consortium for Informatics and Mathematics.

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Rey Juan Carlos University
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Madrid. Spain

Pho - Fax: 34-91-664-74-91

contact@sparcim.org www.sparcim.org

The Swedish Institute of Computer Science

The Swedish Institute of Computer Science (SICS) is the leading research institute of Sweden in information and communication technology. 100 highly qualified researchers carry out research in close cooperation with industry and the international research community.

SICS undertakes research assignments for industry and actively participates in R&D programs funded by national and international bodies, such as VINNOVA and the European Commission.

SICS has a well developed collaboration pattern with high-tech SMEs in Sweden.

Main Research Themes

Application areas
- Internet and mobility
- Industrial Information Technology
- Biotechnology.

Technology areas
- Infrastructure
- Network-based and Mobile Software Systems
- Security and Integrity
- Humans, usage and applications.

Examples of Recent Applications

- A scaleable decentralized self-organizing P2P naming service with search capabilities.
- A service to attach virtual notes to real world locations, based on positioning technology.
- Optimization technology for global gene expression analysis
- Solutions to capacity problems in rail yard signalling design
- Competitive benchmarking of advanced e-trading technology
- Lightweight Internet protocol stack for remote control of TV-broadcasting equipment
- Tangible toolbox for managing future connected home services.

Budget

Turnover 9 million €.

Staff

100 researchers, thereof 35 PhDs.

Locations

Stockholm (Kista), Göteborg, Uppsala and Västerås.

Contact:
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Fax: +46 8 633 7230
info@sics.se
http://www.sics.se

SZTAKI – Computer and Automation Research Institute Hungarian Academy of Sciences

SZTAKI is the Hungarian representative of ERCIM. SZTAKI was granted the prestigious title of EU Centre of Excellence in Information Technology, Computer Science and Control in 2001.

A new analogic cellular supercomputer system, a visual microprocessor, performs a trillion operations per second.

Mission

SZTAKI's mission is to carry out basic and application-oriented research in an inter-disciplinary setting in the field of computer science, intelligent systems, process control, wide-area networking and multimedia. The activities cover the C^3I – computing, control, communication and intelligence – quadruple. SZTAKI's mission includes the transfer of up-to-date results and research technology to university students and the Institute runs four external university departments.

Research Programme

- Computer Science and Information Technology
- Applied Mathematics
- Automated Control Systems
- Artificial Intelligence
- Analogical and Neural Computing
- Integrated Design and Control Systems.

Co-operation and Knowledge Transfer

SZTAKI has wide external relationships in its R&D profile. In addition to ERCIM the Institute is a member of the W3 Consortium, of the European Software Institute and of other international organizations. Researchers of SZTAKI contribute extensively to European scientific co-operation projects. Some research programmes are supported by US Agencies, including NSF, ARO and ONR.

Budget

Total annual budget: 14 million €
- Basic national funding: 34%
- Participation in (inter)national research programmes and from contracts with industry: 66%.

Staff

- researchers on payroll: 204
- supporting staff: 82

Contact:
SZTAKI
P.O. Box 63
H-1518 Budapest
Tel: + 36 1 466 5644
Fax: +36 1 644 7503
http://www.sztaki.hu/

Technical Research Centre of Finland

VTT - Technical Research Centre of Finland - is a multidisciplinary research centre. It's R&D activities cover the whole ICT value chain from microelectronics and microsensing, wireless telecommunication networks to media technologies, information sysyems and usability issues. Part of the research is performed as large national and international projects, part is done as commissions for the industry thus creating business from technology. Continuously renewing expertise is attained from self-financed activities.

■ Recent applications

MOBILE PHONE TO FACILITATE CONSUMERS' WHOLESOME FOOD CHOICES

VTT, together with the University of Kuopio and the Helsinki School of Economics, has developed a prototype for a service that can help consumers in their food choices. Consumers will be able to read product-specific information directly from a package's bar-code using a camera phone, or by using the service at home via the Internet. Through the service a consumer can collect nutritional information about food products according to his/her interests, irrespective of time or place. VTT has developed and patented a barcode analysis program that enables a camera phone to act as a barcode reader.

INTELLIGENT PACKAGES ECONOMICALLY ON A CONVENTIONAL PRINTING MACHINE

The technology developed makes it possible to print better-looking images on packages as well as texts displayed to consumers in different languages when viewed from different angles. It is also possible to store large amounts of content information and usage instructions in the optical memory printed on the package. Consumers can then read the product information in their own mother tongues with the aid of a mobile phone camera. Optical and electronic components were manufactured on paper and plastic.

TECHNOLOGY TO PREVENT UNAUTHORIZED USE OF PORTABLE DEVICES

The new technology makes it possible to identify the user based on her or his physical movements such as walking style. The new identification system offers the advantages of increased security. Gait-based identification is based on advanced computation, where the measured signals are first filtered and then certain parameters, the so-called 'gaitcode', are calculated.

QUARTZ TO BE REDUCED WITH SILICON IN TIMING CIRCUIT - MINIATURISED AND WIRELESS ELECTRONICS STEP INTO A NEW AGE.

A new timer circuit is one hundred times smaller than the traditional quartz crystal. The substitution of quartz for silicon opens up totally new possibilities for reducing the size of electronic devices and for improving their performance. The device is especially helpful in the realization of wireless electronics. For example, it is possible to install buttons, biometric detectors and sharp clocks into smart cards that are thinner than anything seen before.

■ VTT hosts Millilab

MilliLab is an external laboratory on millimetre wave technology. The main purpose of MilliLab is to support European space industry to meet the demands of ESA missions. Also non-space companies and organisations capitalize on our expertise.

■ Staff

VTT: 2700 employees.

■ Budget

Turnover: 233 million € (estimation 2006)

Contact:
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Finland

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Fax: +358 20 7227066
http://www.vtt.fi/

Scientific Fields of Competencies

ERCIM member institutes are active in each of the fields listed below.

Informatics

		AARIT	CCLRC	CNR	CRCIM	CWI	FhG	FNR	FNRS & FWO	ICS-FORTH	INRIA	IUA	NTNU	SARIT	SICS	SpaRCIM	SZTAKI	VTT
B. Hardware	B.1 Control structures and microprogramming (D.3.2)						X	X	1			X		X				
	B.2 Arithmetic and logic structures					X	X			X	X	X		X				
	B.3 Memory structures						X		1	X	X	X		X				
	B.4 Input/output and data communications						X		1	X		X	X	X	X			X
	B.5 Register-transfer-level implementation						X		1	X		X		X				
	B.6 Logic design				X		X	X	2	X		X	X	X				
	B.7 Integrated circuits				X		X	X	4	X		X	X	X				X
	B.8 Performance and reliability (C.4)			X			X	X	3	X		X	X	X				
C. Computer Systems Organization	C.1 Processor architectures				X		X		3	X	X	X	X	X				
	C.2 Computer-communication networks	X	X	X	X	X	X	X	5	X	X	X	X	X	X		X	X
	C.3 Special-purpose and application-based systems (J.7)	X		X			X	X		X	X	X		X	X			
	C.4 Performance of systems	X			X	X	X		4	X	X	X	X	X	X			X
	C.5 Computer system implementation	X					X		1	X	X	X	X	X				
D. Software	D.1 Programming techniques (E)	X		X	X	X	X		6	X	X	X	X	X	X	X	X	
	D.2 Software engineering (K.6.3)	X	X	X	X	X	X	X	8	X	X	X	X	X	X	X	X	X
	D.3 Programming languages	X		X	X	X	X		6	X	X	X	X	X	X	X	X	
	D.4 Operating systems (C)	X			X		X	X	2	X	X	X	X	X	X	X	X	
E. Data	E.1 Data structures	X		X	X	X	X	X	5	X	X	X	X	X	X	X		
	E.2 Data storage representations	X		X	X		X		2	X	X	X	X	X	X	X		
	E.3 Data encryption	X		X	X	X	X	X	2	X	X	X	X	X	X	X	X	
	E.4 Coding and information theory (H.1.1)	X		X	X	X	X	X	3		X	X	X	X	X	X	X	
	E.5 Files (D.4.3, F.2.2, H.2)	X		X	X	X			1		X	X		X				
F. Theory of Computation	F.1 Computation by abstract devices	X			X	X			2	X	X	X		X	X			
	F.2 Analysis of algorithms and problem complexity (B.6, B.7, F1.3)	X		X	X	X		X	6	X	X	X	X	X	X		X	
	F.3 Logics and meanings of programs	X		X		X		X	4		X	X	X	X	X	X		
	F.4 Mathematical logic and formal languages	X		X	X	X		X	8	X	X	X	X	X	X	X	X	
G. Mathematics of Computing	G.1 Numerical analysis (MSC 65, 33-35)	X	X	X	X	X	X	X	7		X	X	X	X		X	X	
	G.2 Discrete mathematics (MSC 05, 06)	X	X	X	X	X	X	X	4	X	X	X		X	X	X	X	
	G.3 Probability and statistics (MSC 60, 62)	X		X	X	X	X	X	6	X	X	X		X	X	X	X	X
	G.4 Mathematical software		X		X	X	X	X	5		X	X	X	X	X	X	X	X
H. Information Systems	H.1 Models and principles	X	X	X	X	X		X	4		X	X	X	X	X	X	X	
	H.2 Database management (E.5)	X	X	X	X	X	X	X	5	X	X	X	X	X		X	X	X
	H.3 Information storage and retrieval	X	X	X	X	X	X	X	5	X	X	X	X	X	X	X	X	X
	H.4 Information systems applications	X	X	X	X		X	X	5	X	X	X	X	X	X	X	X	X
	H.5 Information interfaces and presentation (e.g., HCI) (I.7)	X	X	X	X	X	X	X	4	X	X	X	X	X	X	X		X
I. Computing Methodologies	I.1 Symbolic and algebraic manipulation							X	4		X	X		X	X	X	X	
	I.2 Artificial intelligence	X		X	X	X	X	X	6	X	X	X	X	X	X	X	X	X
	I.3 Computer graphics	X	X	X	X	X	X		4	X	X	X	X	X		X	X	X
	I.4 Image processing and computer vision	X		X	X	X	X		8	X	X	X		X		X	X	X
	I.5 Pattern recognition	X			X	X	X	X	6	X	X	X		X	X	X	X	X
	I.6 Simulation and modeling (G.3)	X	X	X	X	X	X	X	5		X	X	X	X	X		X	X
	I.7 Document and text processing (H.4, H.5)	X		X	X	X	X	X	3		X	X		X	X	X		X
J. Computer Applications	J.1 Administrative data processing	X	X				X	X	1					X			X	
	J.2 Physical sciences and engineering	X			X	X	X	X	2	X	X	X		X	X	X		
	J.3 Life and medical sciences	X		X	X	X	X	X	6	X	X	X	X	X	X	X		X
	J.4 Social and behavioral sciences	X				X	X	X		X	X	X		X				
	J.5 Arts and humanities	X		X	X	X	X	X		X				X	X			
	J.6 Computer-aided engineering	X	X	X			X	X		X	X	X		X			X	X
	J.7 Computers in other systems (C.3)	X						X		X	X			X	X			
K. Computing Milieux	K.1 The computer industry									X				X				
	K.2 History of computing	X				X			1		X	X		X				
	K.3 Computers and education	X		X		X		X	3	X	X	X		X		X		
	K.4 Computers and society	X						X	1	X	X	X		X	X			
	K.5 Legal aspects of computing			X					1					X				
	K.6 Management of computing and information systems	X		X				X	2		X	X		X	X	X		
	K.7 The computing profession													X	X			
	K.8 Personal computing	X		X						X				X	X			

Mathematics

	AARIT	CCLRC	CNR	CRCIM	CWI	FhG	FNR	FNRS & FWO	ICS-FORTH	INRIA	IUA	NTNU	SARIT	SICS	SpaRCIM	SZTAKI	VTT
00 General					X	X	X	2					X	X			
01 History and biography					X								X				
03 Mathematical logic and foundations				X	X			5		X	X		X		X		
05 Combinatorics				X	X	X		2	X	X			X	X	X	X	
06 Order, lattices, ordered algebraic structures	X			X				2		X	X		X		X	X	
08 General algebraic systems	X			X				1		X			X		X		
11 Number theory				X	X			2					X			X	
12-22 Algebra				X		X		5		X	X	X	X		X		
26 Real functions						X		1				X	X				
28 Measure and integration								1		X			X				
30 Functions of a complex variable						X		3				X	X				
31 Potential theory												X	X				
32 Several complex variables and analytic spaces								1		X		X	X			X	
33 Special functions					X					X		X	X				
34 Ordinary differential equations				X	X	X		4		X	X	X	X			X	
35 Partial differential equations				X	X	X		5		X	X	X	X			X	
37 Dynamical systems and ergodic theory				X		X		3		X		X	X			X	
39 Difference and functional equations						X		3		X			X				
40 Sequences, series, summability												X	X				
41 Approximations and expansions					X	X		1		X		X	X			X	
42 Fourier analysis						X		4		X	X	X	X			X	
43 Abstract harmonic analysis						X		1				X	X			X	
44 Integral transforms, operational calculus								2					X				
45 Integral equations						X		1		X			X				
46 Functional analysis				X		X		5		X		X	X				
47 Operator theory				X				2				X	X				
49 Calculus of variations and optimal control; optimization				X		X		4		X			X		X	X	
51 Geometry				X			X	2				X	X			X	
52 Convex and discrete geometry					X	X							X			X	
53 Differential geometry				X		X		2				X	X			X	
54 General topology						X				X			X			X	
55 Algebraic topology	X							1		X		X	X		X	X	
57 Manifolds and cell complexes								1				X	X			X	
58 Global analysis, analysis on manifolds								2				X	X				
60 Probability theory and stochastic processes			X	X	X	X	X	5		X	X	X	X		X	X	
62 Statistics			X	X	X	X	X	6		X	X	X	X	X	X	X	
65 Numerical analysis			X	X	X	X		6		X	X	X	X		X	X	
70-86 Mathematical Physics		X			X	X	X	1				X	X				
90 Operations research, mathematical programming			X	X	X	X	X	5		X	X		X	X	X	X	
91 Game theory, economics, social and behavioral sciences			X	X	X	X	X	5		X			X			X	
92 Biology and other natural sciences			X		X	X	X	3	X	X	X	X	X	X		X	
93 Systems theory; control	X	X	X	X	X	X	X	5		X			X			X	
94 Information and communication, circuits						X		3		X		X	X				
97 Mathematics education				X		X		2					X				

The categories used for the informatics part of the ERCIM table of competences are the top two levels of the internationally accepted ACM Computing Classification System [1998 Version]. The ERCIM table subsumes more detailed distinctions available from the full ACM CCS (http://www.acm.org/class/) which includes additional levels of description.

FNRS-FWO: The figures refer to the number of Belgian institutes active in this field.

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