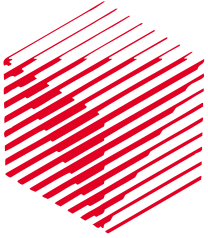


European Research Consortium  
for Informatics and Mathematics

# ERCIM

[www.ercim.org](http://www.ercim.org)



## Annual Report June 1999 - May 2000



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**Gerard van Oortmerssen, Director of CWI and President of ERCIM.**

ERCIM is proud to present to you, for the first time, an annual report on its activities. The last year marked an important milestone: ERCIM existed 10 years and the account of the various activities you can read about in this Annual Report shows that ERCIM has developed into a full-fledged network of excellence in ICT research in Europe. With 15 members, many active Working Groups and co-operative projects, post-doctoral fellowships and internal exchange programs ERCIM contributes significantly to international collaboration and acts as a portal to the ICT research community in Europe.

A major event in 1999 was the celebration of the 10th Anniversary with a Jubilee Event in Amsterdam. Researchers and representatives from industry met and shared their visions of future developments and challenges that we are facing.

ERCIM has gained recognition as a network organization representing ICT research in Europe, as was underlined by the contracts which the European Union entrusted to ERCIM for shaping future collaboration between EU and NSF and Latin America in ICT research. ERCIM will continue to foster co-operation in research, in order to pursue scientific excellence and enhance interaction with industry, thus contributing to a strong European society.

An organization like ERCIM can only prosper thanks to the efforts, commitment and above all enthusiasm of many people. I'd like to thank all the people in the member organizations as well as in the ERCIM office who have contributed to the success of ERCIM.

A handwritten signature in black ink, consisting of several fluid, overlapping strokes that form a stylized representation of the name Gerard van Oortmerssen.

Gerard van Oortmerssen  
President

# About ERCIM

**ERCIM — the European Research Consortium for Informatics and Mathematics — aims to foster collaborative work within the European research community and to increase co-operation with European industry. Leading research establishments from fifteen European countries are members of ERCIM. Representing over 7000 researchers and engineers, ERCIM is able to undertake consultancy, development or educational projects on any subject related to its field of activity. ERCIM was founded in 1989 and is a European Economic Interest Grouping (EEIG).**

ERCIM’s aim is to contribute significantly to innovation in the areas of Information Technology and Applied Mathematics in Europe. In particular:

- to contribute to the development of a strategy for European research in Information Technology
- to make industry aware of strategic research results and ensure these lead to timely European products
- to make advanced research in academia applicable to industrial scale problems
- to foster international activities relevant to European research.

### Technology Transfer

The transfer of research results is one of the ERCIM institutes’ main assignments today in addition to basic and applied research in Computer Science and Mathematics. Over the last years, ERCIM members have played a pioneering role in creating small and medium high-tech companies, an effective way of achieving such transfer. ERCIM members have spawned over 70 companies. In addition, ERCIM members have a long track record of cooperation with European industry in R&D projects, generally within the framework of European programmes. As a network, ERCIM facilitates industrial partners to locate the best scientific teams in Europe for the relevant domains.

### International Co-operation

ERCIM considers it as a high priority to develop co-operation with scientists all over the world, whenever this may be mutually beneficial. To this end, ERCIM participates for example in international consortia like the World Wide Web Consortium, in EU activities with non-European countries (Latin America, USA, etc); ERCIM administers European research projects involving also partners from China and Africa.

**Manager**  
Bernard Larroutourou, INRIA

**Scientific Director**  
Jean-Eric Pin

nominates  
←

**ERCIM office**  
day-to-day business, administration, financial and legal matters, project co-ordination

**Working Groups**  
Databases  
Environmental Modelling  
Constraints  
Control and Systems Theory  
and many others

**Activities**  
Fellowships  
Digital Libraries  
Research  
etc.

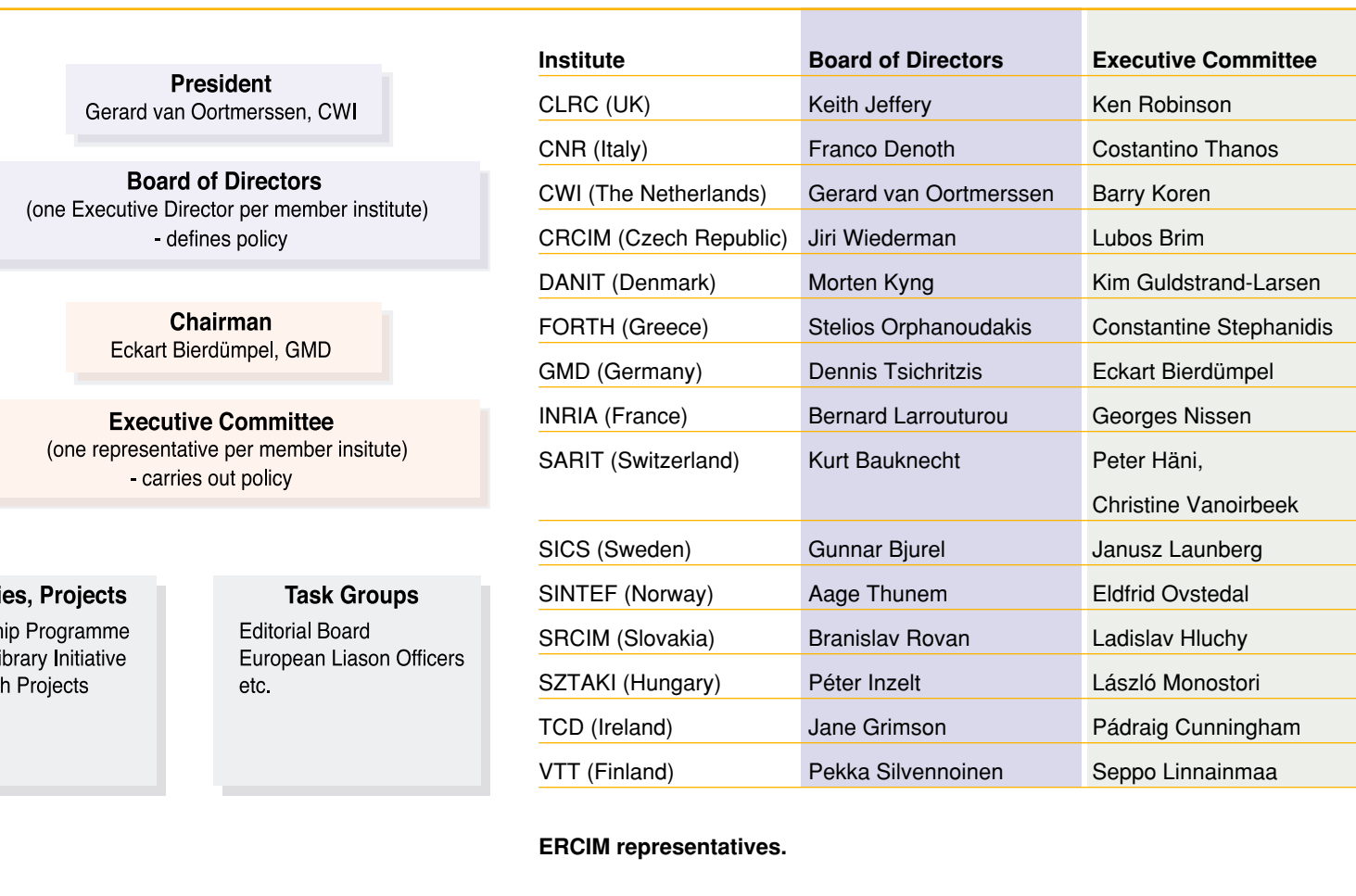
**Organizational structure of ERCIM.**

### Research Projects

In addition to many projects involving a few ERCIM institutes, ERCIM is itself participating in several European Commission related activities and projects as co-ordinator or associated partner. In these projects several member institutes carry out the research while ERCIM limits itself to administrative tasks. A very successful example is the ERCIM Network of Excellence on Digital Libraries, which is responsible for a series of research activities in Digital Library-related areas and for the installation of a Digital Library service between the ERCIM member institutes.

### Consultancy

ERCIM also undertakes studies, evaluations and offers consultancy services. ERCIM has carried out a number of studies for the European Commission, eg on the Internet in the Mediterranean region, on Tunisian research in information technology, on Centres of Excellence in High Performance Computing in southern



Mediterranean countries and on industrial co-operation in High-Performance Computing and Networking between China and the EU. ERCIM is currently organizing 'Info-Days' on the European IST programme in Latin America, evaluating proposals for the World Bank's InfoDev programme, aimed at improving conditions in developing countries with the help of Information Technologies and identifying strategic topics for prospective joint European-American workshops.

### Working Groups

Working Groups are specialist networks that have been set up by researchers, where the ERCIM partners arrange regular workshops with invited external participation to study a specific topic and prepare international research projects. These Working Groups are also the focus of the ERCIM fellowship programme. Working Groups have been created in areas such as Constraints, Control and System Theory, Databases, Distance Learning, Electronic Commerce, Environmental

Modelling, Formal Methods for Industrial Critical Systems, Programming Language Technologies, User Interfaces for All, Health and Information Technology.

### Members

ERCIM has one member institute per country. Currently, 15 countries are represented in ERCIM. A member institute must be a leading research establishment in its country with excellent links to both national and international research community. All ERCIM members are national centres of excellence, independent of specific commercial ties, they have a strong involvement in the research programmes of the European Union and joint projects with both small and medium size enterprises and large industrial companies.

### Publications

ERCIM publishes 'ERCIM News', a quarterly newsletter, workshop proceedings and policy documents. All of these documents are available in electronic form. ■

**ERCIM website:**  
<http://www.ercim.org/>

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# Main Events



**Gerard van Oortmerssen, President of ERCIM, and Stelios Orphanoudakis, Vice-President (right) blowing the candles on the cake.**

Photo: Fred Schuurhof, Fotografie en Vormgeving, YU, Amsterdam

## 10 Years ERCIM

**ERCIM celebrated its 10th anniversary with a two days event in Amsterdam from 4-5 November 1999. Over 400 participants including representatives from ERCIM institutes and invited guests from industry and the political community attended the events.**

The first day, Thursday 4 November, was targeted at researchers from ERCIM member institutes. It saw some 20 presentations by ERCIM researchers and invited speakers about research related issues and state-of-the-art presentations, covering a variety of research areas under the slogan 'ERCIM – a Virtual Laboratory for IT Research in Europe'. One of the highlights was the speech of the former ERCIM President Dennis Tschritzis on the changing art of research.

In conjunction with the presentations on both days, demonstrations of current research at ERCIM institutes were given.

### Symposium

On the second day, Friday 5 November, leaders from industry gave their vision on the future of European R&D at the Symposium 'ERCIM – leveraging World Class R&D for Business and Society':

- Gerard van Oortmerssen, Director of CWI, President of ERCIM: 'ERCIM - The Challenge of the Next Century'
- Heikki Hämmäinen, Vice President Nokia Networks: 'Towards the Mobile Information Society'
- Alexander Rinnooy Kan, Executive Board ING: 'Technology and its Impact on the Financial Services Industry'
- Roger Needham, Director of Microsoft Research Europe: 'Microsoft Research - What and Why'
- Dieter Klumpp, Managing Director of Alcatel/SEL Foundation: 'INITI@TIVE D21'
- Jacques-Louis Lions, Institut de France: 'The Future of Scientific Computation'

The symposium closed with a discussion on the future of the Web and Europe's role following a statement via video by Tim Berners Lee, President of the Web Consortium, recorded at Massachusetts Institute of Technology and moderated by Dick Bulterman, Director of Oratrix Development. ■



**Tim Berners-Lee, Director of the World Wide Web Consortium (W3C) during the video-recorded statement.**

Detailed information about the 10th anniversary events is available at <http://www.ercim.org/10years/>



## ERCIM welcomes Trinity College

**During the ERCIM spring meetings in Pisa from 29-31 May, Trinity College signed a scientific agreement with ERCIM. Trinity College, represented through its Computer Science Department will be ERCIM's gateway to the Irish Information Technology research community.**

Trinity College Dublin (TCD) was founded by Queen Elizabeth I in 1592 as the first and only constituent College of the University of Dublin. The College is situated right in the heart of Dublin. It was not until the 18th century that the university began to acquire the broad shape that it has today with its famous Georgian architecture and cobbled Front Square dominated by the Campanile. The College is famous for its magnificent Library which houses the Book of Kells, an 8th century illuminated manuscript.

Trinity's famous alumni include literary figures such as Jonathan Swift, Oliver Goldsmith, Oscar Wilde and Samuel Beckett, philosopher George Berkeley, historian William Lecky, mathematician William Rowan Hamilton, medical pioneers William Stokes and Denis Burkitt, physicist George Francis FitzGerald and Nobel prize-winner Ernest Walton.

Today the College is divided into 6 Faculties covering virtually all of the arts and sciences. Membership of ERCIM is being led by the Department of Computer Science, which belongs to the Engineering School within the Faculty of Engineering and Systems Sciences. Founded in 1842, Trinity's Engineering School was one of the first in Ireland and the UK. It started by offering degrees in Civil Engineering, followed by Mechanical and then Electrical Engineering. The School acquired its first computer – an IBM1620 – in 1963.

The Department of Computer Science was established in 1969 and has grown and prospered under the leadership of Professor John Byrne since the start. The Department is by far the largest academic department in the College with over 50 academic staff, 100 researchers/ postgraduate students, and 18 technical and support staff. Research income amounts to approximately 2 million Euros per annum, of which approximately 60% currently comes from EU framework programmes.

The Department is deeply committed to research with groups spanning virtually all areas of computing from formal



methods to applied information systems and computer architecture. Members of the Department publish widely in International Journals and Conference Proceedings and have received many awards for their research. The Department also publishes a Technical Report series, which is available on the Web.

The Department has a long record of participation in EU funded research programmes going back to the first framework programme in the early 1980's. Over the years it has developed close links with industry, both nationally and internationally. The Department is strongly committed to technology transfer and commercial exploitation of its research. Over its 31 year history, the Department has spun off a number of companies of which the most well-known is Iona Technologies (<http://www.iona.com>), founded by Chris Horn and Sean Baker, both graduates of and lecturers in the Department, together with Anraí O'Toole, one of their Research Assistants and also a graduate. Iona is one of a growing number of internationally successful Irish software companies. Other spin-offs include Ireland's first Internet Service Provider, IEUnet, now EsatNet (<http://www.esatnet.ie>), X-Communications in multimedia technology (<http://www.xcomms.ie/>), MVT in machine vision (<http://www.mvt.ie/>), and most recently Havok.com which develops software tools for the computer games industry (<http://www.havok.com>).

While Trinity College, through the Department of Computer Science, will be the member of ERCIM from Ireland, it is the intention to involve researchers from other Irish universities in the activities of ERCIM, particularly in the various working groups. TCD will act as a gateway to the computing research community in Ireland. The Department has worked on a number of projects with other members of ERCIM and looks forward to strengthening and extending these collaborations. ■

**Trinity College / ERCIM webpage:**  
<http://www.cs.tcd.ie/ERCIM/>

**Contact: Pádraig Cunningham, TCD representative in the ERCIM Executive Committee**  
**Tel: +353 1 6081765**  
**E-mail: [padraig.cunningham@cs.tcd.ie](mailto:padraig.cunningham@cs.tcd.ie)**

# Working Groups

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

The activities of a working group can be subdivided into three areas:

- workshops
- project proposals
- mobility and fellows.

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 organized by the working group. It is expected that each working group organizes at least one annual workshop.

A major activity of any ERCIM working group is to actively search for project funding. Support is given by the ERCIM office to the chairman of the working group or a person designated by the chairman. The objective of the meeting should be the preparation of a project proposal.

The working groups are also the focus of the ERCIM Fellowship Programme and internal mobility within ERCIM. ■

## Current Working Groups

### ■ Constraints

Co-ordinator: Krzysztof Apt, CWI (krzysztof.apt@ercim.org)

Events: Fourth Constraints Working group workshop, Paphos, Cyprus, 25-27 October 1999, in conjunction with the Constraint Area of the Compulog Network of Excellence.

### ■ Control and System Theory

Co-ordinator: Jan van Schuppen, CWI (jan.van.schuppen@ercim.org)

### ■ Database Research Group

Co-ordinator: Keith Jeffery, CLRC (keith.jeffery@ercim.org)

Events: 12th ERCIM Database workshop, Amsterdam 2-3 November 1999

### ■ Digital Library Initiative

Co-ordinator: Costantino Thanos, CNR (costantino.thanos@ercim.org)

Events: Winner of the 2000 ERCIM WG Award. The Digital Library Initiative became the DELOS Network of Excellence on Digital Libraries funded by the European Commission; starting on January 2000.

### ■ Electronic Commerce

Co-ordinator: Hans-Dieter Zimmermann, SARIT

### ■ Environmental Modelling

Co-ordinator: Achim Sydow, GMD (achim.sydow@ercim.org)

Events: 6th ERCIM Environmental Modelling Group workshop on Applications of Information Systems in Environmental Modelling, Abingdon, England 23-24 March 2000. The Working Group has set up the EC funded joint ERCIM project 'DECAIR'.

### ■ Formal Methods for Industrial Critical Systems

Co-ordinator: Hubert Garavel, INRIA (hubert.garavel@ercim.org)

Events: 5th International ERCIM Workshop on Formal Methods for Industrial Critical Systems, Berlin, 3-4 April 2000

### ■ Health and Information Technology

Co-ordinator: Vesa Pakarinen, VTT (vesa.pakarinen@ercim.org)

### ■ Programming Language Technologies

Co-ordinator: Neil Jones, DANIT (neil.jones@ercim.org)

### ■ Distance Learning

Co-ordinator: Sepideh Chakaveh, GMD (sepideh.chakaveh@ercim.org)

Events: Working Group kick-off meeting, Pisa, 31 May 2000

### ■ User Interfaces for All

Co-ordinator: Constantine Stephanidis, FORTH (constantine.stephanidis@ercim.org)

The 5th Annual ERCIM WG "User Interfaces for All" Workshop held in Dagstuhl, Germany, 28 November - 1 December 1999, special theme "User-Tailored Information Environments"

Workshop on 'Interactive Learning Environments for Children', in the context of the i3 Spring Days 2000, Athens, 3 March 2000

**For more information on ERCIM Working Groups, see <http://www.ercim.org/activity/workgroup.html>**



# The Digital Libraries Initiative

The Digital Libraries Initiative is the winner of the 2000 Working Group Award. This Working Group became a Network of Excellence for Digital Libraries, funded by the European Commission. The Network aims at continuing and extending the activities of the DELOS Working Group on Digital Libraries, and intends to promote European research in the digital library domain by providing a set of services for the digital library community.



The aim of the DELOS Network of Excellence for Digital Libraries (DLs) is to provide an open context in which an international research agenda for future research activities in the digital libraries domain can be developed. The Network will constitute a reference point for all DL projects funded by the 5th Framework Programme, stimulating the exchange of experiences and know-how in this multidisciplinary domain, and will also establish close contacts with relevant application communities. It will make testbeds available, facilitate their interoperability, and provide mechanisms for the evaluation of models, techniques, and approaches, and the exchange of open-source software components. It will also contribute to the definition of relevant standards. Appropriate take-up models will be studied and tested to facilitate the exploitation of new DL technologies in the industrial/commercial environment. A dense network of links with the international DL research community will be created.

The activities of the Network will be organised under Forums and will be open to the European DL research world and the relevant application communities (electronic publishing, libraries, cultural heritage, archives, etc.).

**Digital Library Research Forum.** This activity will be aimed at stimulating the advancement of DL-related research and encouraging scientific collaboration between European teams working in this domain through the organisation of: (i) thematic workshops, (ii) the European Conferences on Digital Libraries (ECDL), (iii) an international research exchange programme.

**Digital Library Evaluation Forum.** DL evaluation implies defining new metrics for components and new combinations of components in order to measure performance aspects related to DL interoperability, metadata and resource discovery, multilingual access, etc. DELOS will promote the building and operation of publicly available reusable evaluation infrastructures: (i) a digital library test suite and (ii) a cross-language system evaluation infrastructure.

**Standardization Forum.** Working Groups will be set up to (i) examine specific clusters of relevant standards; (ii) effect the transfer of research results into implementation; (iii) disseminate the results.

**Training and Technology Transfer Forum.** This forum is aimed at providing training possibilities and demonstrating the effectiveness and benefits of DL technologies within European industrial environments. Summer schools will be organised on key issues in the DL domain.

**International Cooperation Forum.** Collaborations will be established with those countries for which a scientific cooperation agreement is defined under the 5FP. In particular with the US (through the National Science Foundation), Russia (through the Russian Foundation for Basic Research), Mediterranean countries, and Japan.

The Network of Excellence has 28 member organisations: the academic community is represented by leading European research teams working on key topics in the digital library area from eight ERCIM institutions (CNR-IEI, CWI, FORTH, GMD, INRIA, SGFI (ETHZ),

SICS, SZTAKI) and from nine other leading European academic organizations (Universities of Athens, Dortmund, and Mannheim, Norwegian University of Science and Technology, Technical University of Crete, Bavarian Research Centre for Knowledge-Based Systems, Milan Polytechnic, Austrian Academy of Sciences, Social Sciences Information Centre - Bonn. The application community is strongly represented by members from libraries, (National Library of Portugal, Italian National Institute for Union Catalog), electronic publishing (Springer and Elsevier), education (Arts and Humanities Data Service, UK), archives (Italian Ministry of Cultural Heritage), and broadcasting (BBC). There are also two IT industrial members: Eurospider Information Technology, Switzerland, and Intracom, Greece). As one of the guiding principles of the Network will be that of 'openness', delegates from other research groups or interested communities will be invited to participate in activities of the Network as appropriate.

An international advisory board has been set up to approve and evaluate the programme of activities planned by Network. Members of the Board are: Stephen M. Griffin, Chris Rusbridge, Makoto Nagao, Yuri Hohlov, Rudi Schmiede, representing US, UK, Japanese, Russian, and German national DL programmes, respectively. ■

**DELOS website:**  
<http://www.ercim.org/delos/>

**Contact: Costantino Thanos, IEI-CNR, Director of the DELOS Network of Excellence**  
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# The Fellowship Programme

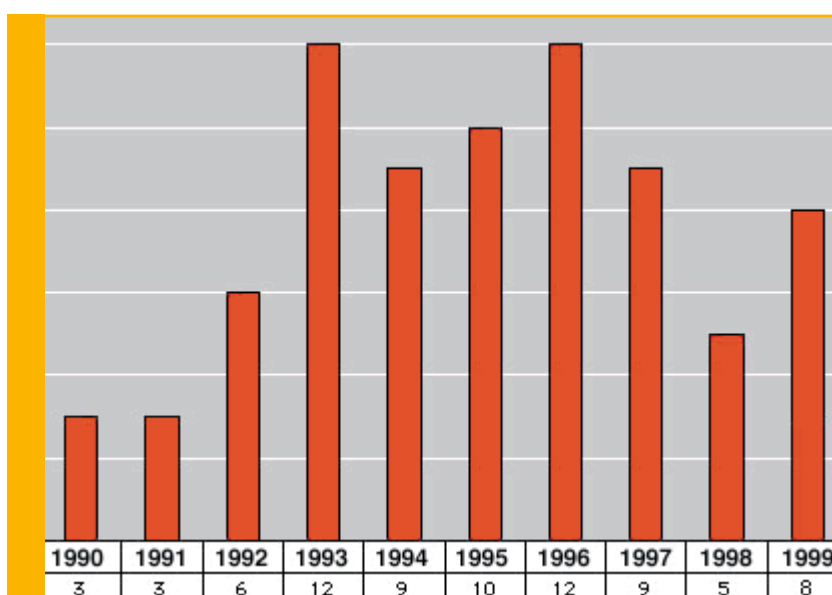
**The ERCIM Fellowship Programme was launched in 1990 to enable young scientists from around the world to perform research at ERCIM institutes. Applications are solicited twice a year with a deadline of 31 October and 31 May.**

The ERCIM Fellowship programme focuses on topics of interest identified by the ERCIM working groups. Ideally, a fellow will work for a total of 18 months 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 co-operation 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 in the working conditions of leading European research institutions. ■

Fellow	Nationality	Visited Institute	
Jean-Hughes Rety	French	CWI	05/01/98-04/07/99
Konstantin Popov	Russian	SICS	20/03/98-19/09/99
Alfons Salden	Dutch	INRIA GMD	01/06/98-28/02/99 01/03/99-30/11/99
Balázs Sallay	Hungarian	CNR	15/04/98-14/10/99
David Tonnesen	American	GMD INRIA	30/11/98-29/08/99 01/09/99-31/05/00
Evangelos Kotsakis	Greek	SGFI VTT	10/06/99-29/02/00 01/03/00-30/11/00
Laurie Ricker	Canadian	INRIA CWI	01/09/99-31/05/00 01/06/00-28/02/01
Jan-Georg Smaus	German	INRIA CWI	01/10/99-30/06/00 01/07/00-30/03/01
Luc Onana Alima	Cameroonian	SICS	24/11/99-23/05/01
Amine Chohra	Algerian	GMD CNR	01/12/99-31/08/00 15/10/00-14/07/01
Fabio Crestani	Italian	CLRC	01/12/99-30/06/00
Nicolas Roussel	French	GMD SARIT	06/12/99-05/09/00 06/09/00-05/06/01
Ercan Kuruoglu	Turk	INRIA CNR	01/11/99-31/07/00 01/08/00-30/04/01
Liliana Dobrica	Romanian	VTT	17/01/00-16/10/00
Hans-Arno Jacobsen	German	INRIA	01/01/00-30/11/00
Stephane Sire	French	SARIT CWI	01/04/00-31/12/00 15/01/01-14/10/01
Conrado Daws	Uruguayan	CNR CWI	12/05/00-11/02/01 12/02/01-11/11/01

Fellows in ERCIM institutes between June 1999 and May 2000.



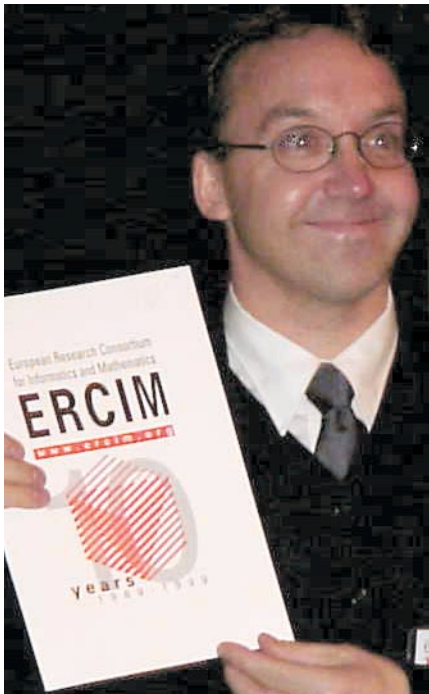
Number of fellows hosted by ERCIM institutes.

The full description of the ERCIM Fellowship Programme including an online application form is available at:  
<http://www.ercim.org/activity/fellows/>

Contact:  
 Aurelie Richard – ERCIM Office  
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# Awards and Sponsorships

## Mikael Degermark Winner of the 1999 Cor Baayen Award



Mikael Degermark.

Mikael Degermark, researcher at Luleå University of Technology and SICS, has been awarded the Cor Baayen Award 1999. The award, consisting of a cheque for 5000 Euro and an award certificate, was presented to Mikael Degermark at a ceremony in Amsterdam on 4th of November, during the ERCIM 10 years anniversary celebrations. It is the fifth time the Cor Baayen prize has been awarded.

The winner of the award, Mikael Degermark, is today conducting research at the Department of Computer Science & Electrical Engineering at Luleå University of Technology, and the Computer and Network Architectures Laboratory at SICS. His research focuses on Internet protocols. He is also one of the founders and a board member of the router and firewall company Effnet AB.

Mikael received his doctoral degree at Luleå University of Technology in 1997. His research provided the basis for a new standard of the Internet Engineering Task Force, for IP Header Compression (IETF RFC 2507). He is also a co-inventor of the Luleå-algorithm underpinning the Effnet's products. Mikael is continuing his work on wireless networks, creating new potential Internet standards in the area of mobile multimedia and ad-hoc networking, and on high-speed packet forwarding. He has also filed a number of patents in this area.

Effnet AB, which in two years gained more than 40 employees, has offices in Luleå (HQ), Stockholm and Boston. Effnet AB went public on the Stockholm stock exchange in April 1999. The main products of Effnet are a series of routers and firewalls which are based on Degermarks published work on high-speed address lookups. The routers and firewalls have excellent price/performance and their algorithms are protected by several patents of which he is a co-inventor. ■

**The Cor Baayen Award for the most promising researcher in computer science and applied mathematics was created in 1995 to honour the first ERCIM President. The Cor Baayen Award, up to 1998 restricted to researchers working in one of the fifteen ERCIM institutes, is now open to any young researcher having completed their PhD-thesis in one of the fifteen 'ERCIM countries': Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Slovakia, Sweden, Switzerland, The Netherlands and the United Kingdom.**

More information about the Cor Baayen Award is available at <http://www.ercim.org/activity/cor-baayen.html>

Contact:  
Lubos Brim – CRCIM  
Co-ordinator for the Cor Baayen Award  
E-mail: [lubos.brim@ercim.org](mailto:lubos.brim@ercim.org)

# Conference and Workshop/ Summer School Sponsorship

ERCIM sponsors up to eleven events per year.

The funding is in the order of 2000 Euro.

## Conferences

Established conferences with international reputation with substantive overlap 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 established international science publisher.

## Workshops/Summer Schools

ERCIM sponsors up to six workshops or summer schools on the following conditions:

- to be organised by an ERCIM institute
- to have some ERCIM partners having named individuals involved in the organisation committee
- participation from at least 2 non-ERCIM institutes on the Organising Committee
- signature from one ERCIM partner. ■



ECDL'99 conference poster.

## Events sponsored by ERCIM in 1999/2000

**Summer School on Extended Database Technology**  
*La Baule, France, 16-21 May 1999*

**CSL'99 - Annual Conference of the European Association for Computer Science Logic**, *Madrid, 20-25 September 1999*

**FSPIPA 99 - Fundamental Structural Properties in Image and Pattern Analysis**, *Budapest 6-7 September 1999*

**Fourth International Workshop on Formal Methods for Industrial Critical Systems**, *Trento, Italy, 11-12 July 1999*

**ICALP'99 - 26th International Colloquium on Automata, Languages, and Programming**, *Prague, 11-15 July 1999*

**IWAN'99 - First International Workshop on Active Networks**  
*Berlin, 30 June-2 July 1999*

**ECDL'99 Third European Conference on Research and Advanced Technology for Digital Libraries**, *Paris, 22-24 September 1999*

**SOFSEM'99 - 26th Annual Conference on Current Trends in Theory and Practice of Informatics**  
*Milovy, Czech Republic, 29 November-4 December 1999*

**9th International World Wide Web Conference**  
*Amsterdam, 15-19 May 2000*

A detailed description including an application form is available at:  
<http://www.ercim.org/activity/sponsored.html>



Booths of ERCIM and CWI at the WWW9 conference in Amsterdam.

# Projects

ERCIM is participating in several research projects as co-ordinator or partner. In these projects ERCIM institutes and their partners carry out the research while the ERCIM office takes care of administrative tasks.



Floods regularly cause life loss and damage like here in France in 1999. The aim of the ANFAS project is to develop a simulation and prevention tool to limit flood damage.

Anfas website:  
<http://www.ercim.org/anfas/>

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## ANFAS: Data Fusion for Flood Analysis and Decision Support

The ANFAS project aims to develop a decision support system for flood prevention and protection, integrating the most advanced techniques in data processing and management.

Large-scale flooding is a serious problem in many parts of the world. In Asia, countries such as China and Bangladesh regularly suffer, while in Europe many countries are at risk. There is danger of loss of life and serious damage to the economies of the areas affected.

For this reason, the ANFAS project has been set up to include partners from both Europe and China. The partners bring together expertise in soil sciences, remote sensing, scientific computing, computer vision, internet technology, geographic information systems, knowledge-based systems and other areas. The ERCIM partners are:

- ERCIM itself in the project management role
- FORTH, with expertise in Geographic Information Systems
- SRCIM: Slovak Academy of Sciences, Institute of Informatics, one of the links with the end-users and also with expertise in geophysical flow modelling and high-performance computing
- CLRC, bringing expertise in knowledge-based assistance and cooperative capabilities for information systems
- INRIA, with expertise in geophysical flow modelling and high-performance computing.

The project team also includes three other European partners (Matra System & Information, the French geological survey and ore exploration - BRGM, Reading University) and three institutes of the Chinese Academy of Sciences (Institute of Automation (IOA), Institute of Atmospheric Physics (IAP), Institute of Remote Sensing Applications (IRSA)).

When there is a risk of flooding, the most appropriate cause of action has to

be worked out: evacuation of the population, reinforcement of dikes, intentional breaking of dikes, etc. The aim of the ANFAS project is to develop a simulation and prevention tool to facilitate the decision making process in the case of emergency.

The functionality of the ANFAS system will be:

- to perform flood simulation, simulating water flow propagation based on scenarios. The user will be able to interact with the scene that models the real site in order to add/remove dikes or other human constructions
- to assess flood damage; flood assessment can be done either using the simulation results or using the remote sensed images of a real flood event
- at a prospective level, to analyse floodplain morphology including changes in riverbed and subsurface properties due to repeated floods at a given site.

The output of the system will be:

- visualisation: consisting of two-dimensional maps of the extent of the flood. If simulation is performed, time sequence maps tracing the propagation of the simulated flood will be provided
- direct impact assessment, evaluation of the total affected area
- regional and statistical analyses of the affected area
- simple socio-economic assessment of damage directly caused by flooding.

The final system will be an immensely valuable tool in planning national and regional reactions to the threat of flooding, and can be adapted to other areas. ■

# DECAIR – Development of an Earth Observation Data Converter with Application to Air Quality Forecast

The objectives of the DECAIR project are to provide air pollution models with good quality input data derived from earth observation (EO) satellites data, and to design a system prototype able to provide models with their required data, under specific quality and freshness constraints.

One of the major objectives of the DECAIR project is to investigate the use of remote sensing data to estimate input data for air quality models. Different kinds of input data are under investigation: data required for documenting the studied area (elevation, land use); meteorological, initialisation and emission data, required on a daily basis; finally parameters required by the models for their internal modules, such as surface uptake, energy balance, turbulence, etc.

The second major objective is the design of a Data Management System. This system has to be able to access, process and integrate data from various remote data sources like satellites, ground stations, etc, in order to maintain high quality input data for various final users like models users (the scientists designing and running models), companies and authorities at different sites, public). The system architecture is designed to fulfill objectives which are specific to the DECAIR project, ie to give the different air pollution models high quality 'EO-processed' input data, and to automatically enforce accuracy and freshness of these data. It is also designed for long term objectives, such as easy adaptation of air quality models to a new application sites.

The architecture is based on modern concepts and techniques already addressed in other projects, for instance in the telematics domain: the mediator technology will be used to process queries over an integrated logical view of all the data sources. A monitor is responsible for controlling the execution of queries, the call of data

processing modules, the loading of the processed data to the DECAIR database and the access to this database by the final users. The design of the DECAIR database will handle the technical constraints related to the large number of image data to be stored and their relation to Graphical Information Systems. Communication between these components as well as dissemination of results to end users and public authorities will base on WWW technologies.

The DECAIR project is carried out with a strong emphasis on compatibility with concepts and standards developed by other projects in environmental information systems and telematics technologies. DECAIR involves research teams specialized in air quality modelling: GMD Institute for Computer Architecture and Software Technology and UPM, Spain; environmental information systems: INRIA, CLRC-RAL, FORTH-ICS; satellite image analysis: INRIA and industrial partners BULL and SICE. The objectives of the project are to demonstrate the ability of satellite data to enhance the air quality simulation, and to facilitate the implementation of an air quality model to new sites. The project will be demonstrated in the cities of Berlin and Madrid. It started 1 June 1999, and its duration is 36 months. ERCIM is the project co-ordinator. ■

**Decair website:**  
<http://www-air.inria.fr/decair/>

**Contact:**  
Bruno Le Dantec – ERCIM Office  
Tel: + 33 4 9238 5010  
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## Ongoing Research Projects

**ANFAS – Data Fusion for Flood Analysis and Decision Support**

January 2000 - December 2002

**CRUCID – Information Technologies for water resources management and modelling in semi-arid areas**

December 1998 - November 2000

**C-Web – Supporting Community-Webs – a feasibility study**

January - December 2000

**DECAIR – Development of an earth observation data converter with application to airquality forecast**

June 1999 - May 2002

**Digital Libraries Thematic Network**

January 2000 - December 2002

**ESIMEAU – Information Technologies for water resources management and modelling in semi-arid areas**

December 1997 - November 2000

**MtoM3D – Made-to-measure garments, 2D/3D approach**

November 1997 - June 2000

**SIMES – Multimedia Information System for the Environment in the Subsaharian Region**

November 1997 - May 2001

**Thetis – A Data Management and Data Visualization System for Supporting Coastal Zone Management for the Mediterranean Sea**

July 1998 - December 2000

ERCIM currently has 15 members. ERCIM institutes are national centres of excellence, strongly involved in European research programmes; they have strong links to the national academic community and are involved in joint projects with both small and medium size enterprises and large industrial companies.



## CLRC – Central Laboratory of the Research Councils

CLRC was formed on 1 April 1995 and is owned and operated by the Council for the Central Laboratory of the Research Councils (CCLRC), an independent non-departmental public body of the Office of Science and Technology which is itself part of the Department of Trade and 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.

### ■ Budget

Budget for IT related areas (1999-2000): 21 Million €

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

### ■ Staff

1,739 total, 195 IT staff (average whole-time equivalent, 1999-2000).

CLRC  
Rutherford Appleton Laboratory  
Chilton, Didcot  
Oxon  
OX11 0QX  
United Kingdom

Tel: + 1235 821900  
Fax: + 1235 445385  
<http://www.cclrc.ac.uk/>



## CNR – The Italian National Research Council

CNR is a governmental organization which carries out its multifaceted institutional activity through more than 300 research institutions and 18 research areas, located throughout Italy.

### ■ Information Technology at CNR

Much of the CNR activity in the IT field is conducted by five Institutes in Pisa which currently represent the CNR partner in ERCIM. In addition, they coordinate the participation in ERCIM of the numerous other CNR Institutes in Italy working in computer science and applied mathematics.

### ■ Budget

An estimated 80 Million € for institutes working in ERCIM related areas

- 60% national funding
- 40% participation in (inter)national research programmes and contracts with industry.

### ■ Staff

Approximately 800 in IT related areas.

ERCIM Secretariat  
IEI-CNR  
Area di Ricerca San Cataldo  
I-56100 PISA  
Italy

Tel: +39 050 315 2878  
Fax: +39 050 315 2810  
<http://www.iei.pi.cnr.it/>



## 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

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

### ■ Budget

Total annual budget: 10 Million €:

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

### ■ Staff

1120 Researchers/Teachers (estimation).

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>



## CWI – Dutch Centre for Mathematics and Computer Science

CWI is the national Dutch research institute for mathematics and computer science. 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.

### ■ Co-operation and Knowledge Transfer

CWI maintains a broad spectrum of contacts with companies and institutions through joint participation in projects. Besides, there are direct commissions from industry and the government. CWI participates in some 25 European projects and is a partner in almost 60 national projects. CWI pursues an active policy of creating spin-off companies.

### ■ Budget

Total annual budget: 11,4 Million €

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

### ■ Staff (in full time equivalents)

- 160 Researchers
- 50 Supporting staff.

CWI  
Kruislaan 413  
NL-1098 SJ Amsterdam  
The Netherlands

Tel: + 31 20 592 9333  
Fax: +31 20 592 4199  
E-mail: [secr@cw.nl](mailto:secr@cw.nl)  
<http://www.cwi.nl>

# DANIT



## The Danish Consortium for Information Technology

DANIT is a Danish Consortium for Information Technology consisting of five research groups/institutions:

- BRICS: Basic Research in Computer Science, University of Aarhus and Aalborg University
- CIT: The Danish National Centre for IT Research
- CODESIGN: Computer Systems Section, Technical University of Denmark
- DART: Design, Analysis and Reasoning concerning Tools
- LCAM: Lindø Centre for Applied Mathematics, Odense University

### ■ Activities

The research of the DANIT partners covers a wide range of issues from multimedia art and Virtual Reality over digital life and robotics to hypermedia, interfaces, distributed systems, programming tools, semantics and logic.

### ■ Budget

20 Million € for work in ERCIM related areas in the member groups/institutions (estimation).

### ■ Staff

The groups/institutions in DANIT cover more than 200 researchers.

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c/o CIT  
Aabogade 34  
DK-8200 Aarhus N  
Denmark

Tel: +45 8942 2440  
Fax: +45 8942 2443  
<http://www.cit.dk/ERCIM>



## Foundation for Research and Technology – Hellas Institute of Computer Science

The Institute of Computer Science (ICS) is one of the six institutes of the Foundation for Research and Technology – Hellas (FORTH). ICS conducts basic and applied research, develops applications and products, and provides services in several areas in the fields of Information Technology and Telecommunications

### ■ Research Activities

- Centre for Medical Informatics and Health Telematics Applications
- Computer Vision and Robotics Laboratory
- Human-Computer Interaction and Assistive Technology Laboratory
- Information Systems Laboratory
- Distributed Systems Laboratory
- Computer Architecture and VLSI Systems Laboratory (CARV)
- Telecoms and Networks Laboratory

### ■ Budget

Annual Budget (1999): 7 Million €.

### ■ Staff

ICS-FORTH has a total staff of 192 people, thereof 28 researchers, 87 technical staff, 71 fellows and students and 6 support staff.

Foundation for Research and Technology - Hellas  
Institute of Computer Science  
Science and Technology Park of Crete  
GR-711 10 Heraklion, Crete,  
Greece

Tel: +30 81 39 16 00  
Fax: +30 81 39 16 01  
<http://www.ics.forth.gr/>





## GMD – the German National Research Center for Information Technology

GMD is a member of the Hermann von Helmholtz Association of National Research Centers and co-founder of ERCIM. The core functions of GMD are: develop innovative ideas in the area of precompetitive or basic research, develop innovative prototypes as a basis for new products, and train talented research scientists to transfer technical know-how to industry and society as a whole.

### ■ Co-operation

Co-operation with industry, universities and other research institutions is an integral part of the GMD research activities. GMD participates in more than 70 research projects, operates a branch in Tokyo and has spun off 18 companies since 1995.

### ■ Budget

Annual budget: 96 million €

- basic national funding: 68%
- research programmes and contracts with industry: 32%.

### ■ Staff

1100 staff members plus 200 MA and 70 PhD students.

GMD  
Schloß Birlinghoven  
D-53754 Sankt Augustin  
Germany  
Tel: +49 2241 14 0  
Fax: +49 2241 14 2889  
E-mail: [info@gmd.de](mailto:info@gmd.de)  
<http://www.gmd.de>



## INRIA — the French National Institute for Research in Computer Science and Control

INRIA is a scientific and technological institute operating under the authority of the Ministry of Research and the Ministry of Industry. INRIA is a co-founder of ERCIM and hosts the ERCIM office. INRIA's strategy is based on three fundamental principles:

- the 'virtuous circle' connecting basic research and applications
- the profound synergies between computer science, applied mathematics and other sciences
- the importance of partnerships and exchanges.

The transfer of research results towards industry is one of INRIA's main assignments. This is achieved through contracts and partnership with industry, development initiatives and the setting up of high-tech companies (some 50 companies since 1984).

### ■ Budget

Total annual budget: 103.78 million €

- 75% basic national funding
- 25% own resources.

### ■ Staff

- 1600 scientific staff including some 550 PhD students
- 400 supporting/administrative staff.

INRIA  
Domaine de Voluceau  
BP 105  
F-78153  
Le Chesnay Cedex  
France  
Tel : +33 1 3963 5511  
Fax : +33 1 3963 5330  
<http://www.inria.fr>



## SARIT – the Swiss Association for Research in Information Technology

SARIT is a national scientific association with the goal to improve national and international relations within the IT research community and to improve the visibility and recognition of IT research within Switzerland. All professors for IT related topics in Swiss universities and Federal Institutes of Technology are individual members of SARIT together with industry based IT research units.

On the international level, SARIT's activities are focussed on two major cooperations:

- SARIT is the Swiss member in ERCIM.
- SARIT maintains contacts with the International Computer Science Institute (ICSI) in Berkeley, USA.

SARIT maintains an office at the Swiss Federal Institute of Technology (ETH) in Zurich and a contact point at the Swiss Federal Institute of Technology (EPFL) in Lausanne.

SARIT Office  
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CH-8092 Zürich  
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Fax: +41 1 632 11 72  
<http://www.sarit.ch/>



## Swedish Institute of Computer Science

The Swedish Institute of Computer Science, SICS, is a non-profit research foundation. SICS's mission is to contribute to the competitive strength of Swedish industry by conducting advanced and focused research in strategic areas of computer science, and actively promoting industrial use of new research ideas and results in industry and society at large.

SICS' research focus is on distributed and networked interactive real-time multimedia systems and applications - spanning from infrastructural issues and software methodologies to human-computer interaction.

SICS participates in collaborative national and international R&D programs, such as IST and ACTS funded by the European Commission, and Real World Computing funded by the Japanese government.

### ■ Budget

Annual turn-over: 8 Million €:

- 40% National funding
- 45% Private funding
- 15% International research programs

### ■ Staff

85 Researchers, thereof 30 PhDs.

SICS  
Isafjordsg. 22  
Box 1263  
S-164 29 Kista, Sweden  
Tel: +46 8 633 1500  
Fax: +46 8 633 7230  
info@sics.se  
http://www.sics.se



## SINTEF Telecom and Informatics

SINTEF Telecom and Informatics is a research institute in the SINTEF Group which performs research and development for industry and the public sector. SINTEF Telecom and Informatics covers key technology areas within information and communication technologies such as computer science, telematics, telecommunication, electronics, and acoustics.

### ■ Co-operation

The institute collaborates closely with the associated scientific departments at the Norwegian University of Science and Technology and University of Oslo. It participates in a number of international R&D programmes and projects, including industrial projects as well as an extensive project portfolio in the framework programs of the European Union. SINTEF Telecom and Informatics has research departments located in Trondheim and Oslo.

### ■ Budget

Annual budget: approximately 12 Million €

### ■ Staff

About 140 persons (120 research scientists and 20 supporting staff).

SINTEF Telecom and Informatics  
7465 Trondheim  
Norway  
Tel: +47 7359 3000  
Fax: +47 7359 4302  
E-mail: info@informatics.sintef.no  
http://www.informatics.sintef.no/



## The Slovak Research Consortium for Informatics and Mathematics

SRCIM consists of five major Slovak R&D institutes active in informatics and mathematics, including three universities and two research institutes of the Academy of Sciences of the Slovak Republic:

- Comenius University, Faculty of Mathematics and Physics, Bratislava
- Slovak University of Technology, Faculty of Electrical Engineering and Information Technology, Bratislava
- Pavol Jozef Safarik University, Faculty of Science, Kosice
- Department of Informatics of the Institute of Mathematics, Slovak Academy of Sciences, Bratislava
- Institute of Informatics, Slovak Academy of Sciences, Bratislava.

### ■ Budget

Annual budget: 3 Million € (estimation for parts of the member institutes relevant for SRCIM)

- Basic national funding: 75%
- Participation in research programmes and from contracts with industry: 25%.

### ■ Staff

250 employees in the member institutes relevant to SRCIM.

SRCIM Office  
MFF UK, Mlynská dolina  
SK-842 48 Bratislava  
Slovak Republik  
Tel: +421 7 6542 6635  
Fax: +421 7 6542 7041  
http://www.srcim.sk/



## SZTAKI – Computer and Automation Research Institute Hungarian Academy of Sciences

SZTAKI is the leading research institute in information technology and networking in Hungary. Its 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. Consultancy and technology transfer to industry are also core activities of SZTAKI. The Institute intensively takes part in graduate and post-graduate education.

### ■ Co-operation

Members of the Institute are represented in international scientific boards and committees as CIRP, ERCIM, IEEE, IFAC, IFIP, W3C. SZTAKI participates in numerous international projects supported by the EU, the US Office of Naval Research, National Science Foundation, US Army Research Office.

### ■ Budget

Total annual budget: 7,56 Million €

- Basic national funding: 30%
- Participation in (inter)national research programmes and from contracts with industry: 70%

### ■ Staff

- 204 researchers, 82 supporting staff

#### Contact:

SZTAKI  
P.O. Box 63  
H-1518 Budapest

Tel: + 36 1 466 5644  
Fax: +36 1 644 7503  
<http://www.sztaki.hu/>



## Trinity College Dublin

Trinity College is the Irish member of ERCIM through its Department of Computer Science. The Department is deeply committed to research with groups spanning virtually all areas of computing from formal methods to applied information systems and computer architecture. It has developed close links with industry, both nationally and internationally. Over its 31 year history, the Department has spun-off a number of companies of which the most well-known is Iona Technologies which is one of a growing number of internationally successful Irish software companies. Other spin-offs include Ireland's first Internet Service Provider, IEUnet, now EsatNet, X-Communications in multimedia technology, MVT in machine vision, and most recently Havok.com which develops software tools for the computer games industry.

### ■ Budget

Research income: 2 million €, of which approximately 60% comes from EU framework programmes.

### ■ Staff

- 50 academic staff
- 100 researchers/postgraduate
- 18 technical and supporting staff.

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Dublin 2  
Ireland  
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Fax: 353 1 677 2204  
<http://www.cs.tcd.ie/ERCIM>



## VTT Information Technology

VTT Information Technology is one of the nine research institutes of VTT, Technical Research Centre of Finland. The institute performs research and development in the fields of information systems, telecommunications and media technologies. Part of the research is performed as large national and international projects, part is done as commissions for industry in order to support their own product development. Expertise for technically new solutions is obtained from VTT financed activities.

### ■ Core Technologies

- Information Management
- Internet: Broadband Technologies Supporting Mobility
- Wireless Communications
- Media-Adaptable Communications

### ■ Budget

Turnover 1998: 17 million €

- Budget funding 33%
- Income from the private sector 29%
- Income from the public sector 21%
- Income from abroad 16%.

### ■ Staff

- 250 researchers
- 23 supporting staff.

VTT INFORMATION TECHNOLOGY  
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Tel: +358 9 4561  
Fax +358 9 456 7024  
<http://www.vtt.fi/tte>

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<http://www.ercim.org/>