Cooperating for Excellence in Research

Activity Report

2010

European Research Consortium for Informatics and Mathematics
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It is an honour to write the foreword for the ERCIM Annual Report for 2010, a report that provides the opportunity to review activities, celebrate successes, enthuse about new initiatives and look confidently to the future. I hope you enjoy reading it and obtain from it some insight, ideas or stimulation. You are welcome to participate in ERCIM’s activities!

During my presidency I initiated discussions on a new structure for ERCIM. The structure set up in the 1980s with one member per country was, at the time, a necessary and efficient structure for forming networks of researchers in Europe. Each country’s member acted as a node, reaching out to academia and industry in that country and connecting them with partners in other countries mediated by the ERCIM members in those countries. However, improved internet connections and increasing participation in joint research by many organizations have changed the situation and increasingly ERCIM member institutions have been cooperating with partners outside ERCIM as well as within.

In order to be better aligned with this reality, it was proposed that we should remove the ‘one member per country’ restriction. In parallel, the ERCIM activity as the European Host of W3C was recognised as external to our core mission of cooperating for excellence in research, but nonetheless relevant and associated with ERCIM research activities in WWW. Thus during 2010 we laid plans to leave the management of the W3C and related contractual activities to ERCIM-EEIG (European Economic Interest Grouping) members and to establish a new not-for-profit international association, ERCIM-AISBL (Association International Sans But Lucratif : International not-for-profit association), to cover our core mission activities. This association will include both EEIG and Associate members from the previous ERCIM structure. In November 2010 the first step towards the new structure was taken; the process will be completed during 2011 under the presidency of Michel Cosnard.

Throughout 2010 ERCIM has continued to develop, with applications from potential new members (indicating that ERCIM is attractive), acquisition of new EC-funded joint research projects (supporting our core mission of cooperating for excellence in research) and continuing research activity in the Working Groups. The ‘Alain Bensoussan’ Fellowship Programme continues to prosper and provide a high standard of education to the future postdoctorate researchers in ICT for Europe, and indeed internationally. In 2010 we acquired EC funding to support the programme.

The 2010 CBA winner – among a very strong field of candidates – maintained the excellent standards of young researchers typically nominated for this award. Andrea Esuli from ISTI-CNR had previously worked on high performance information retrieval with lexical and indexing aspects. His more recent work on sentiment and opinion mining, in addition to being academically outstanding, is also utilized commercially.

As in previous years, ERCIM maintains a high profile. ERCIM News continues as a flagship representative of ERCIM with the 2010 issues featuring special topics including Digital Preservation, Modelling and Simulation for Research and Industry, Computational Biology and Cloud Computing. These are all important areas of research and, as usual, ERCIM News is commonly used as a reference source for them. For 2011, the first two special topics are Cognitive Systems and Robotics and – to coincide with the FET-11 conference in Budapest under the Hungarian EU Presidency – Unconventional Computing Paradigms.

During 2010, discussions which had started in 2008 on ‘A professional ICT society for Europe’, continued with various meetings and an EC-funded study. The latter found that ERCIM was identified by most respondents as the potential leader and that ERCIM was the most recognised European ICT professional society.

At the end of my presidency of ERCIM, which has spanned six years, let me acknowledge all those who make ERCIM what it is. The External Advisory Committee – with its outstanding membership – provides excellent advice and oversight. My three vice-presidents - each with an area of strategic responsibility and each assisted by a task group of Directors – ensured strategic direction. The members of the BoD each ensure the ERCIM mission in their country. The Executive Committee – of which each member performs a valuable duty – led by its experienced chairman has continued to ensure strategy is executed. The task groups of this committee ensure the smooth running of ERCIM activities and interact closely with the ERCIM Office where, led by our ERCIM Manager, our staff members work tirelessly. Led by our Chief Editor, the Editorial Board continues to ensure the excellence, relevance and outreach of ERCIM News. However it is the Working Groups and the researchers from ERCIM member institutions and associated academic and industrial partners participating therein, that are the ‘engine room’ of ERCIM. It has been an honour to lead this organization and, as the new structure is established, ERCIM will surely make even greater improvements to its effectiveness.
For more than 20 years, ERCIM has been recognized as a leader in facilitating cooperation for excellence in research and as an expert organization in information and communication technologies and applied mathematics.

Information and communication technologies drive innovation and productivity growth in the global economy. The impact of these technologies on society is tremendous and the number of key players has increased exponentially. ERCIM’s goals are to maintain its position as Europe’s main recognized expert organization and to increase its impact on European strategy and policy. To meet these objectives, ERCIM must evolve with the rapidly changing environment thus in 2010 a major organizational restructuring was initiated. ERCIM is now dropping its limitation of one member per country, which will enable the development of an even stronger community of excellent research organizations and the even more effective promotion of science, research and innovation within Europe.

There will be two organizations supporting the ERCIM community: An ERCIM association and ERCIM EEIG.

ERCIM association
The ERCIM association will be carrying out and supervising all scientific activities of ERCIM such as the Working Groups, the post-doctoral fellowship programme, awards, prizes, publications and outreach activities.

ERCIM EEIG
The ERCIM European Economic Interest Group is composed of members from the association and is running the ERCIM office and hosting the European branch of the World Wide Web Consortium (W3C). The ERCIM office, located at Sophia Antipolis in France, is managing ERCIM activities and joint research projects. By hosting the European branch of W3C, ERCIM is committed to the development of open standards to ensure the long-term growth of the Web.

I’m convinced that this new structure will not only strengthen the already successful activities but also provide a framework within which to develop new initiatives to promote research and cooperation in informatics and applied mathematics Europe and beyond.

I cordially invite scientists and researchers to join the ERCIM community by participating in ERCIM’s activities and to contribute to the advancement of research and innovation in Europe with your ideas.
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. In 2010, the members of ERCIM include leading research establishments from twenty 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). In 2011 ERCIM will establish an international association carrying over all research, networking, and support activities of ERCIM.

Objectives

ERCIM’s aim is to play a leading role in Information and Communication Technology in Europe by:
- building a Europe-wide, open network of centres of excellence in Information and Communication Technology (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 both as a major representative organisation in its field and as 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 (W3C), the unique international standardization body which sets the Web standards and protocols (HTML, HTTP, XML, etc.) since 1994. W3C is led by Sir Tim Berners-Lee, inventor of the Web. ERCIM participates in EU activities and projects, for example in an initiative to foster cooperation between the EU and India. ERCIM has also established cooperation with ETSI, the European Telecommunications Standards Institute and with the European Mathematical Society.

Consultancy

ERCIM experts have been involved in many advisory bodies, such as the “Next Generation Grid expert group” (NGG3) and the Cloud Computing Expert Group convened by the European Commission, an expert group on “Software Evolution and Maintenance”, and 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. Additionally, ERCIM senior researchers are participating in several EC-funded roadmapping projects as partners, invited participants or members of advisory boards.

Members

Member institutes must be a leading research establishment in its country, with excellent links to both the national and international, academic and commercial research communities. 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-sized enterprises and large industrial companies. With the creation of an ERCIM association planned in 2011, ERCIM will be open to multiple members per country.

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 coordinator or partner. In these projects, several member institutes carry out the research while the ERCIM Office takes care of administrative and financial tasks.
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.

Innovation

In addition to research in computer science and mathematics, innovation and transfer of research results is one of the ERCIM institutes’ current main assignments. ERCIM members play 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 programmes. As a network, ERCIM can help industrial partners to locate the best scientific teams in Europe for a given domain.

Sponsorship and Awards

Each year, ERCIM presents a promising young researcher in computer science and applied mathematics with the €5000 Cor Baayen Award. ERCIM also supported conferences and workshops.

Publications

ERCIM publishes the quarterly magazine ‘ERCIM News’ and policy documents.

Structure and Organisation

ERCIM has the legal form of a European Economic Interest Grouping (EEIG).

Board of Directors

In the Board of Directors, each member of ERCIM is represented by one of its executive directors or a nominee of its choice. The board represents the interests of the members within ERCIM and defines the general policy. The board elects the President and Vice Presidents for chosen strategic areas, currently Structure, External Relations, Innovation, and appoints the Manager and the Executive Committee Chairman.

Advisory Committee

An external Advisory Committee, formed in 2008, advises the President and hence the Board of Directors on strategic directions but also evaluates the ERCIM Working Groups and gives recommendations for selecting the Cor Baayen Award winner.

Executive Committee

The Executive Committee is composed of one representative per member institution. The committee implements and monitors ERCIM’s objectives and activities. It acts as the principal forum in which the members liaise through their representatives with the ERCIM President, the ERCIM Manager and each other.

ERCIM Office

ERCIM has an office in Sophia Antipolis, France, co-located with the European branch of the World Wide Web Consortium (W3C), headed by the ERCIM Manager Jérôme Chailloux. ERCIM has also been running an office in Bruxelles. The ERCIM office is managing the day-to-day business of ERCIM. 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. ERCIM also had an office in Bruxelles headed by our representative Pierre Guisset.
Throughout 2010 ERCIM traded as ERCIM EEIG with a gross turnover of €27 million. Half 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 outlined below.
ERCIM hosts the European headquarters of the World Wide Web Consortium (W3C). ERCIM and W3C aim to strengthen research relationships throughout Europe to better support the development of Web technology and to jointly share the results of their collaboration.

Five of the European W3C Offices are based at ERCIM institutes, namely at CWI (Benelux); FORTH (Greece); SZTAKI (Hungary); CNR (Italy) and SICS (Sweden).

W3C Offices in Europe work with their regional Web communities to promote W3C technology 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 Web privacy, Semantic Web, multilingual Web, Web&TV, and the mobile Web).

As a consortium of members from many European countries, ERCIM creates a balance between European diversity and necessary homogeneity by building bridges between different cultures and facilitating the movement of technical ideas within academia and across borders. W3C is very heavily swayed by its members, several of them having interests in the Web (such as HTML5, mobile Web, social Web, eGovernement, etc.) whereas ERCIM jointly has widespread interest in many research fields where Web standards are rarely used. ERCIM then helps to gather those Web communities and make them work together.

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

Finally, hosting the W3C allows ERCIM members 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 Members is of 146 from a total of 329 (as of November 2010). The W3C Team includes 63 people working from locations across the globe, with 19 being employed by ERCIM (all figures for 31 December 2010).

2010 Highlights

January 2010: Kickoff of the Open Media Web (OMWeb) EU project which aims to strengthen Europe’s expertise in multimedia technology and content, thanks to the use of Web standard technologies. W3C’s Open Web platform, HTML5, CSS3, SVG and the Web&TV work will be promoted via OMWeb training and outreach activities.

http://openmediaweb.eu/
About the World Wide Web Consortium

The World Wide Web Consortium (W3C) is an international consortium within which member organisations, 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 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

Organisations 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

Organisations join W3C to work and exchange ideas with more than 350 Members, including the world’s foremost technology companies, who come from more than forty countries and have a broad range of interests. W3C recently instituted a number of changes to its fee structure to encourage participation from organisations in developing countries as well as from EU-funded projects.

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 the 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 is changing the way the world works and people live.

http://www.w3.org

March 2010: W3C named Dr. Jeffrey Jaffe as its new Chief Executive Officer. Dr. Jaffe brings to the role extensive global leadership experience in the Information Technology industry, including as President of Bell Labs Research and Advanced Technologies at Lucent Technologies; as Vice President of Technology for IBM; and most recently as Executive Vice President, products, and Chief Technology Officer at Novell. In these positions he has combined business leadership and vision with technical expertise, and demonstrated strong support for open standards and open source.

April 2010: W3C organized an HTML5 tour in Paris in order to reach out to both the developers (HTML5 meetup), the press (HTML5 press breakfast) and French industries. The Multilingual Web Thematic Network was launched by the W3C’s Internationalization Activity.

May 2010: As part of its efforts to ensure that core Web standards meet global needs, the World Wide Web Consortium (W3C) opened a new Office in India. The Office is hosted in New Delhi by the Technology Development for Indian Languages (TDIL) Programme, part of the India government’s Department of Information Technology.

August 2010: W3C opens typography on the Web with the publication of the Web Open Format (WOFF 1.0) as Web standard. WOFF expands the typographic palette available to Web designers, improving readability, accessibility, internationalization, branding, and search optimization. WOFF represents a pivotal agreement among browser vendors, foundries and font service providers who have convened at W3C to address the long-standing goal of advancing Web typography.

September 2010: Kickoff of the MobiWebApp (Mobile Web Applications) EU project which supports the use of Web technology for developing mobile Internet services, bringing the advantages of Web applications from the desktop to the mobile world.

October 2010: W3C Integrates Math on the Web with MathML 3 as a new Web standard for making mathematics on the Web more accessible and international, especially for early mathematics education. MathML 3 is the third version of a standard supported in a wide variety of applications including Web pages, e-books, equation editors, publishing systems, screen readers (that read aloud the information on a page) and braille displays, ink input devices, e-learning and computational software.

December 2010: W3C announced a new standard that will make it easier for developers and content providers to create dynamic mobile Web applications. The Mobile Web Application Best Practices, published as a W3C Recommendation, offers practical advice from many mobile Web stakeholders for the easy development and the deployment of mobile Web applications that work across many platforms.
ERCIM has been participating either as coordinator or as a partner in eighteen research projects funded by the European Commission in 2010. 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 effort to the administrative and financial coordination of European projects. Relying on an 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, project dissemination and project management. 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 further with the integration of advanced information and communication technology (ICT) to other domains.

The European Commission is now implementing its vision of the Information Society in which ICT is used to address real-life scenarios across a wide array of domains. This is also a significant way to ensure that European research will have a stronger impact on European citizens.
The “ERCIM Alain Bensoussan Fellowship Programme” is now supported by the FP7 Marie Curie Actions - People, Co-funding of Regional, National and International Programmes (COFUND) of the European Commission. This support is for an initial period of four years. With the support from the European Commission, ERCIM plans to co-fund more than 150 fellows in a four year period which started in September 2010. With the “COFUND” action, the Commission recognizes ERCIM’s successful and long-lasting fellowship programme.

The Marie Curie co-funding action is a new way of implementing individual fellowships. It aims to increase the trans-national mobility for training and career development of experienced researchers, in line with the objectives set out in the activity heading “Life-long training and career development” of the “People” Work Programme. The co-funding is expected to result in a considerable increase in the number of ERCIM fellows, with the current average of 20 ERCIM fellowships per year almost doubling. Also, the fellowship’s duration has been extended and applicants can now benefit from one or two periods of twelve months spent in one or two ERCIM member institutes.

Additionally, employment conditions are now more flexible, with the option of signing a working contract instead of a stipend agreement (an agreement for a research training programme) in some of our institutions. Another novelty is the yearly “ABCDE seminar” where fellows will have the opportunity to benefit from specific training on a range of non-scientific skills. The first seminar is planned in November 2011.

**ABCDE - Alain Bensoussan” Career Development Enhancer funded by the Marie Curie Co-funding of Regional, National and International Programmes (COFUND) of the European Commission**

**EC funding:** €3 500 000

**ERCIM’s role:**
administrative coordinator

**ERCIM members involved:**
all ERCIM members

**Duration:**
September 2010 to August 2014

[http://fellowship.ercim.eu](http://fellowship.ercim.eu)
During the last four and one-half years, the ACGT project (Advancing Clinico-Genomic Trials on Cancer: Open Grid Services for improving Medical Knowledge Discovery) has been developing methods and systems for improved medical knowledge discovery and understanding through the integration of biomedical information.

The ACGT project vision has been rooted in the realization that information arising from post-genomics research and genetic and clinical trials is rapidly providing the medical and scientific community with new insights, answers and capabilities when combined with advances in high-performance computing and informatics. The objective of the ACGT project has thus been the provision of a unified technological infrastructure which facilitates the seamless and secure access and analysis of multi-level clinico-genomic data enriched with high-performing knowledge discovery operations and services. Biomedical data and information that have been considered include clinical information relating to tissues, organs or personal health-related information, but also information at the level of molecules and cells, as acquired from genomics and proteomics research.

During the course of its life, the project has defined a detailed architectural blueprint and has developed, tested and validated a range of technologies including new, domain-specific ontologies, innovative and powerful data exploitation tools for example multi-scale modelling and simulation, a biomedical grid infrastructure, advanced security tools. The technological infrastructure has been validated in a concrete setting of advanced clinical trials on cancer targeting two major cancer diseases: breast cancer (BRCA) and paediatric nephroblastoma (PN).

The excellent research partnerships developed during the project will continue. The vision of becoming a pan-European voluntary network connecting individuals and institutions while enabling the sharing of data and tools and thus creating a European-wide web of cancer clinical research has been well advanced. The project has developed long lasting partnerships with some of the major stakeholders in the European Cancer Research arena, including ECCO (European Cancer Organisation), BIG (Breast International Group), SIOPE Europe (The European Society for Paediatric Oncology) and the European Clinical Research Infrastructures Network (ECRIN). Research Centre’ that will exploit clinically relevant aspects of ACGT. The concept behind StaRC has received significant recognition and support from patient organisations and patient support groups as well as from some regional governments. The activities for its official initiation are almost complete.

ACGT was an Integrated Project (IP) funded in the 6th Framework Programme of the European Union under the Action Line “Integrated biomedical information for better health”. The project has been carried out by 26 organisations and institutes from academia and industry including the ERCIM members ICS-FORTH (scientific coordinator), INRIA, Computer Architecture Department at the University of Malaga and Technical University of Madrid (both members of SpaRCIM), and Fraunhofer Gesellschaft.
D4Science-II (Data infrastructure ecosystem for science) is an European e-Infrastructure project, co-funded by the European Commission's Seventh Framework Programme for Research and Technological Development. It constitutes a continuation of the DILIGENT and D4Science projects.

D4Science-II aims to provide mechanism for facilitating interoperation of the D4Science e-Infrastructure with diverse other data e-Infrastructures that are running autonomously thus creating the core of an e-Infrastructure Ecosystem. These e-Infrastructure Ecosystems will serve a significantly expanded set of communities dealing with multidisciplinary, scientific and societal challenges. To set up a prototypical instance of such an ecosystem, D4Science-II will bring together several scientific e-Infrastructures established in areas such as biodiversity, fishery resources management and high energy physics. This will support several critical scientific scenarios - initially, this core will include: AQUAMAPS, DRIVER, GENESI-DR and INSPIRE- that are distinct but also feed into and enrich each other. In collaboration with appropriate international bodies and initiatives, D4Science-II will take steps to ensure sustainability of the Knowledge Ecosystem.

The Knowledge Ecosystem envisioned is composed of interoperable data e-Infrastructures, repositories, and scientific communities exploiting the services provided. The D4Science e-Infrastructure also plays a dual role: it will be a virtual aggregator of resources available in interoperable e-Infrastructures, and provider of these resources back to the participating e-Infrastructures and, through those, to complex VREs serving cross-domain scientific communities.

The D4Science-II enabling technology is gCube, an innovative service-based, autonomic, Virtual Research Environment (VRE) management system. It supports the declarative and interactive creation of transient VREs that aggregate and deploy on-demand content resources and application services by exploiting computational and storage resources of a grid infrastructure.
Much expertise, many guidelines and tools exist on e-accessibility but they are of a highly fragmented nature. As announced in the Communication of December 2008 on eAccessibility, the Thematic Network eAccess+ will create a platform for collecting and providing guidance on how to use in practice this body of knowledge. eAccess+ is a best-practice network too that will facilitate co-operation between the community of practitioners (found in research institutions and consultancies) and all the other stakeholders (policy makers, administrators in the public sector, technical staff in the private sector...).

The purpose is to accelerate the take-up of e-accessibility specifications and technical solutions, and to contribute to a common approach at European level.

The network will support the development of common guidelines and standards, and, where needed, will provide rationale for harmonised political and legal measures.

eAccess+ will address the following areas:

- web accessibility, as a main focus, in order to ensure accessibility of public web sites in the Member States, in particular through the migration from national web accessibility guidelines and methodologies to the new W3C/WCAG2.0 guidelines,
- accessible convergent communications and in particular accessibility of interactive digital television,
- self-service terminals, in particular in the banking/financial sector, in public transports, in tourism / cultural heritage, and in e-government.

Work will be organised in four methodological steps: consultation (introduction, information, advice, feedback), analysis (problems, ideas, incentives, proposals), support (examples, best practice, guidelines), and dissemination. Those four steps will be implemented in three waves, work will start with a first group of already more advanced Member States and then will extend to include more Member States, while expanding activities in the first group.

**eAccess+ - the eAccessibility Network**, funded under the EU Information and Communication Technologies Policy Support Programme

**EC funding:** € 740,000

**ERCIM’s role:**
project partner

**ERCIM members involved:**
ERCIM/W3C, CNR, Fraunhofer-Gesellschaft

**Scientific coordination:**
Klaus Miesenberger, Linz Univ., Austria

**Duration:**
September 2010 to August 2013

Euro-India SPIRIT (Euro-India Synchronization of Policy Initiatives & Research and Innovation Trajectory) is a two-year support action that addresses the objectives of the call “ICT-2009.9.1: International co-operation support to Information Society policy dialogues and strengthening of international cooperation”. The project contributes towards structuring and strengthening the European Union-India policy dialogue on the Information Society by researching and presenting areas of potential research cooperation and by bringing stakeholder contribution into this process.

Euro-India SPIRIT builds on the foundations and achievements of successful past projects – BASIC - EuroIndia2004 IS Forum, MONSOON - Euro-India ICT Cooperation Initiative (2005-08) and EUROINDIA (2008-09). EUROINDIA, which had the objective of identifying medium to long term Indian research and innovation perspectives, as well as elucidating the role of policy in fostering ICT innovations in India, laid the groundwork for Euro-India SPIRIT which aims to engage in actions and provide research and recommendations to sustain ICT research cooperation between the EU and India. The key objective of the project is the alignment of Indian ICT research policies, programmes and priorities with those of the EU in the context of Framework Programme Seven and more broadly with the goals of the Europe 2020 strategy.

The consortium is composed of three European and three Indian organisations, European Research Consortium for Informatics and Mathematics (ERCIM - co-ordinator), INFRA TECHNOLOGIES, TRUST-IT Services, the Federation of Indian Chambers of Commerce and Industry (FICCI), the Centre for Science Development and Media Studies (CSDMS) and the Administrative Staff College of India.

Euro-India SPIRIT is supported by domain and policy Experts organised in working groups and an online community of stakeholders in order to identify and validate long-term common research perspectives where the Indian ICT research policies and programmes can be synchronised with the EU priorities. Three Working Groups, composed jointly of Indians and Europeans, addressing societal, technological, and policy issues have been working together to develop research thematic and recommend enabling policy instruments to achieve sustainable joint EU-Indian ICT research programmes and projects. These working groups leverage the knowledge gained from the EUROINDIA project while focusing on broad research objectives of India in ICT domains as well as the specific ICT research goals of the European Union articulated in FP7 across three thematic research families:
- ICT Addressing Societal challenges, (e.g. eGovernment, eHealth, eLearning)
- AudioVisual, Media & Internet
- Emerging Technologies and eInfrastructures (e.g. Geant, distributed computing)

Over the course of 2010 the project made significant progress in terms of putting the structure in place to obtain the full benefit from the experts’ knowledge and in outlining initial recommendations. These were showcased at a joint networking session which was held in New Delhi in November 2010 in conjunction with the closely-aligned SYNCHRONISER project. In 2011 the project aims to present its consolidated findings and recommendations to a joint EU-India Policy Dialogue event scheduled to take place in India in the second half of the year as well as disseminating its results at targeted EU-based events.
FET11 - The European Future Technologies Conference and Exhibition 2011, held in Budapest 4-6 May 2011 was the second edition of a new forum dedicated to frontier research in information and communication technologies. It was unique conference on visionary, high-risk and long-term research in information science and technology. Featuring an exceptionally broad range of scientific fields, the event seeded new ideas across disciplines that will reshape the future. The FET11 coordination action managed by ERCIM and carried out together with SZTAKI and the Future and Emerging Technologies (FET) Units (Open and Proactive) of the European Commission, has as strategic objective to coordinate the efficient and effective organisation and related communications of the European Future and Emerging Technologies Conference and Exhibition 2011, and of promoting the development of a Future and Emerging Technologies (FET) community across diverse stakeholders.

The European Future Technologies (FET) Conference and Exhibition is the top European forum for facilitating international cross-disciplinary dialogue and discussion on visions and challenges for frontier research in future and emerging information technologies. Following the first FET conference held in 2009 in Prague, FET11 was designed to be highly interactive and engaging a broad and multi-disciplinary community.

The conference exceeded all expectations. It attracted more than 1000 participants and received huge media coverage. It involved key policy makers, and featured a mix of seven keynotes, a panel discussion, 30 scientific sessions, 100 poster presentations and a science cafe with energy-packed ignite-style presentations. Hands-on exhibitions with 30 booths ran throughout, in parallel to the conference, showcasing the latest research developments in future and emerging information technologies. FET11 also marked the official launch of the FET Flagship Pilots (see http://cordis.europa.eu/fp7/ict/programme/fet/flagship/home_en.html) by Neelie Kroes, Vice President of the European Commission and Commissioner for the European Digital Agenda.

More than a traditional scientific conference, the FET Conference was a unique intellectual event which created an atmosphere of excitement for the opportunities presented by FET-type research in Europe.

Impressions from FET11. Left: Neelie Kroes opens the exhibition; right: ERCIM President Michel Cosnard awards the best exhibit 2nd prize winner.

fet11 - The Future and Emerging Technologies Conference and Exhibition 2011

EC funding: €625 000

ERCIM's role: project manager

ERCIM members involved: GEIE ERCIM, SZTAKI

Duration: June 2010 - November 2011

http://www.fet11.eu/
GEO-RECAP “Re-creation and building of capacities in Georgian ICT Research Institutes” was launched with a kick-off meeting in Tbilisi on 23 November 2010. GEO-RECAP is designed to support Georgia in enhancing the cooperative capacity of its ICT research centres and facilitate scientific cooperation between these centres and the European research area (ERA).

Georgia is currently in a period of reform. Analysis shows that the current weaknesses in the country’s research system are:

- a high diversification and division of research institutes
- a weak focus on research commercialization and links to industry
- a weak impact on the socio-economic conditions.

In this respect it is very important to improve the structure and profile of scientific research institutions, to develop strategies to reorganize the research institutes into “European style organizations” and to elaborate new funding models in particular with regard to international programmes and projects.

Two Georgian ICT research centres, N. Muskhelishvili Institute of Computational Mathematics (MICM) and Institute of Cybernetics (IC), members of the GEO-RECAP consortium, possess strong potential in ICT and applied mathematics.

The main objectives of GEO-RECAP will be achieved through two networking and training events: The first networking event will be held in Budapest on 4-6 May 2011, and will coincide with the FET11, the European Future Technologies Conference and Exhibition. A second event will be organized in Tbilisi in 2012. Two training events will be held in Tbilisi in 2011 and 2012.

GEO-RECAP Expectations
The expected outcome of the project is the following:

- RTD capacity building in Georgia
- enhanced participation of the country in the 7th Framework Programme
- increased scope of MICM and IC with increased linkage with the economic and social environment
- increased job opportunities in the country for young scientists
- increased scientific cooperation between the ERA and Georgian ICT centres.

GEO-RECAP is supported by the EU FP7 Capacities Work programme 2010; Activity 7.6. Integrating Europe’s neighbours into the ERA; Area INCO.2010-6.1: Eastern Europe and South Caucasus. ERCIM is a partner in the project.
The MobiWebApp project supports the use of Web technology for developing mobile Internet services, bringing the advantages of Web applications from the desktop to the mobile world. Web applications are easy to deploy, they allow simple incremental updates and they can be developed quickly and at low cost due to a sizable existing developer base.

Started in September 2010, MobiWebApp includes support for European outreach, training, the development of test suites and standardization in the area of mobile Web applications.

The last four months of 2010 were used to get the project started, with already promising outcomes. The participation to four large conferences of MobiWebApp speakers made it possible to present the advantages of using the Web as mobile application platform.

The release of the Mobile Web Application Best Practices as a W3C Recommendation in December 2010 was the opportunity to get the content of that important document better known via a set of handy summary cards that were distributed in the numerous events in which the MobiWebApp staff was present, including the ICT 2010 conference in Brussels.

The MobiWebApp project also supported the standardization work in the W3C Device APIs and Policy Working Group, a group that is looking at bringing more integration of Web technologies with on-device features such as cameras, microphones, address book, etc.

Early work on setting up a common testing infrastructure for relevant W3C working groups was also started.

**Projects**

**MobiWebApp**

**MobiWebApp - Mobile Web Applications for Future Internet Services**

**EC funding:** €700 000

**ERCIM’s role:** project co-ordinator

**ERCIM members involved:** W3C/ERCIM

**Scientific coordination:** Philipp Hoschka (W3C)

**Duration:** September 2010-August 2012


*MobiWebApp Best Practices cards.*
Given the importance of the World Wide Web to communication in all walks of life, and as the share of English web pages decreases and that of languages spoken in the European Union and around the world increases, the importance of ensuring the multilingual viability of the World Wide Web is of paramount importance.

In order to build on current internationalization of the Web and move it forward, it is important to raise awareness of existing best practices and standards related to managing content on the multilingual Web, and look forward to what remains to be done.

This thematic network includes 22 partners from 15 European countries representing a wide range of stakeholders.

At the core of the project are 4 public workshops held over a two year period. The workshops are intended to survey and share information about currently available best practices and standards that can help content creators and localizers address the needs of the multilingual Web, including the Semantic Web. They also provide an important opportunity to identify gaps that need to be addressed. The workshop is also designed as an opportunity for participants to network and share information between and across the various different communities involved in enabling the multilingual Web.

On 26-27 October 2010 the W3C ran the first workshop in Madrid, entitled "The Multilingual Web: Where Are We?". The Madrid workshop was hosted by the Universidad Politécnica de Madrid. One of the unique features of the workshop was the variety of backgrounds of the slightly more than 100 workshop participants. The program and attendees reflected an unusually wide range of topics and, judging from attendee feedback received, the participants appreciated not only the breadth of insights, but also the interesting and useful networking opportunities.
The popularity of Internet-based access to networked media such as television content, user-generated videos or music is growing very rapidly. With technologies such as HTML5 video, Web technology is currently undergoing a sea-change which makes it a strong contender for becoming an open, royalty-free, standards-based platform for networked media that levels the playing field and enables new market participants, including European players. With this in mind, the OMWeb project has the following main aims:

- **Standardisation**: Increase the open Web’s networked media capabilities to the level of proprietary technologies, with increased European participation in the standardisation effort.
- **Training**: Increase number of developers capable of developing web-based networked media content.
- **Outreach**: Increase awareness of W3C’s networked media work in Europe.

**2010 Results**

The OMWeb project organised a W3C workshop on Augmented Reality (AR) on the Web, attracting over 40 attendees and 22 papers. The discussions which took place over the course of the workshop then resulted in the setting up of the W3C Points of Interest Working Group to address a particular area of AR in which standardisation work would be of immediate benefit.

The OMWeb project team has also produced a standardisation roadmap with the goal of facilitating contributions by ICT projects to W3C standardisation. Using this roadmap, the contributing organisations and projects can easily determine which standardisation activities are relevant to them or even suggest new standardisation activities should there be important omissions in W3C’s work.

OMWeb has organised an online training course in Scalable Vector Graphics (SVG), explaining the use of this W3C standard for developing rich networked media websites. As SVG is now supported in all major browsers it is becoming an important and powerful technology in the “toolbox” of the networked media Web designer.

**Impact**

Ultimately, the project aims to build on Europe’s strength in multimedia technology and content to enable European research and industry to strengthen its position in Web technology. In order for this to happen, the “convergence gap” between the rapidly expanding Web community and the traditional actors in the networked media community will have to be bridged. This is a particular focus of the OMWeb project – it is expected that through outreach on Web standards, workshops which allow collaboration between all relevant community members and training events which will enable the European networked media community to become more familiar with the relevant standards, the OMWeb project will be able to bring the Web community and traditional actors in the networked media community into closer alignment.
In their daily interaction over the Internet, individuals contribute throughout their life leaving a life-long trail of personal data. Technological advances facilitate extensive data collection, unlimited storage and reuse of the individual’s digital interactions. Today, individuals cannot protect their autonomy and cannot retain control over personal information, irrespective of their activities, as present information technologies hardly consider these requirements. This raises substantial new privacy challenges: how to protect privacy in emerging Internet applications such as collaborative scenarios and virtual communities; and how to maintain life-long privacy.

The PrimeLife project addresses the core privacy and trust issues pertaining to the aforementioned challenges. Its long-term vision is to counter the trend to life-long personal data trails without compromising on functionality. It will build upon and expand the FP6 project Prime that has shown how privacy technologies can enable citizens to execute their legal rights to control personal information in on-line transactions. The main objective of the project is to bring sustainable privacy and identity management to future networks and services:

- Fundamentally understand privacy-enhancing identity management ‘for life’ (practical life, throughout life & beyond)
- Bring Privacy to the Web and its Applications
- Develop and make tools for privacy friendly identity management widely available -privacy live!

Resolving these issues requires substantial progress in many underlying technologies. PrimeLife will substantially advance the state of the art in the areas of human computer interfaces, configurable policy languages, web service federations, infrastructures and privacy-enhancing cryptography. It will also ensure that the community at large adopts the results of the project by working with the relevant Open Source communities, standardisation bodies and relevant partner’s projects. It will further organise workshops to transfer technologies and concepts.
PrivacyOS was a thematic network for privacy protection infrastructure within the European Commission’s ICT Policy Support Programme. The project brought together industry, SMEs, Government, Academia and Civil Society to foster development and deployment of privacy infrastructures for Europe, serving as a marketplace for those offering solutions to those facing new challenges. The general objectives of PrivacyOS were to create a long-term collaboration in the thematic network and establish collective interfaces with other EU projects. In a series of PrivacyOS conferences participants exchanged research and best practices, as well as develop strategies and joint projects following four core policy goals:

- awareness-raising,
- enabling privacy on the Web
- fostering privacy-friendly Identity Management,
- stipulating research.

Coordination of ongoing activities and sharing of information and experience are a key component of the network. Conferences have been held on Location based Services, Electronic ID-Cards, Participation, Privacy Seals, and cryptographic mechanisms to name a few.

Over a two-year lifetime of the project four Open Space conferences have been held in Strasbourg, Berlin, Vienna and Oxford. The reports including the presentations are available for download from the project Web site.

PrivacyOS - European Privacy Open Space

EC funding: € 328.000

ERCIM’s role:
W3C is project partner

ERCIM members involved:
KU Leuven (FNRS/FWO)

Duration:
June 2008 - May 2010

https://www.privacyos.eu/
The vision of the RACE networkRFID, supported by the European ICT Policy Support Programme is to provide a RFID network of excellence that creates opportunities and increases the competitiveness of European Member States in the area of RFID through innovation, development and implementation. At the same time it positions RFID technology within the mainstream of information and communications technology.

The network draws upon the expertise of Member States and the evolving RFID community to create a dynamic, change-responsive capability that not only aligns with the initial Information and Communications Technologies Support Programme objectives, but extends that capability to accommodate emergent and future needs.

RACE networkRFID meets the pressing need to generate greater awareness and uptake and the exploitation of user-facing opportunities for innovation and enterprise. It capitalises on work done by European projects and national initiatives to confirm Europe’s position as a leading force in RFID.

After two years of activity, RACE networkRFID has taken a more commercial turn, focusing on the needs of and opportunities for SME’s in the area of Radio Frequency IDentification. To this end, RACE has decided to brand itself under the new name RFIDinEurope. It has transformed its institutional web site into a more appealing format, addressing the need for practical information and services expressed by the SME’s taking part in the project. As an illustration of this drive towards industry, the database of RFID use cases is now populated with 26 examples of successful applications of the RFID technology. Driven by its 25 core members, the network has now reached an associate membership of 200+ partners representing the 27 member states. In doing so, RFIDinEurope is now able to reach the vast majority of the European RFID community.

In the last year of its EC-funded period, RFIDinEurope is giving its full attention to sustainability. All members are keen to maintain a structure that will enable them to continue ripping the benefits they got as a result of this project. The initial point of the project’s sustainability programme was the organisation of the RFIDinEurope conference which successfully took place in Prague at the end of March 2011. Members firmly intend to make this gathering of the European RFID community an annual event for the years to come.
Serenoa is aimed at developing a novel, open platform for enabling the creation of context-sensitive service front-ends (SFEs). A context-sensitive SFE provides a user interface (UI) that exhibits some capability to be aware of the context and to react to changes of this context in a continuous way. As a result such a UI will be adapted to a person’s devices, tasks, preferences, and abilities, thus improving people’s satisfaction and performance compared to traditional SFEs based on manually designed UIs.

Serenoa will perform automatic adaptation of UIs involving the end user in two major ways: users can intervene in the adaptation (e.g. by controlling, suggesting, accepting/rejecting adaptations, requesting better adaptations) and the system can learn from users (e.g., by observation, by sensing, by machine learning). The final aim is to support humans in a more effective, personalized and consistent way, thus improving the quality of life for European citizens. In this scenario, we envisage Serenoa as the open source reference implementation of a SFE adaptation platform for the Future Internet.

The expected outcome of Serenoa is:
- a computational framework for multi-dimensional adaptations
- reference models, languages and a methodology which will enable the rapid prototyping and engineering of context-sensitive SFEs
- an open source adaptation engine covering the whole adaptation lifecycle
- an authoring tool to facilitate the engineering, designing and development processes.

During the experimentation and evaluation phases of the project, the Serenoa technology will be instantiated, integrated and parameterized to satisfy the demands imposed by domain-specific scenarios (already identified) of context-aware adaptation of SFEs. Such instantiations (in the form of application prototypes) will serve to assess the soundness of our ideas, their acceptance by end-users as well as their viability from a pure technological point of view.
VITALAS is an integrated project addressing the issue of digital archiving. The main strategic objective is to enable cross-media indexing and retrieval, as well as to design and develop new methods that will allow for content aggregation through the automatic annotation of content. Another important topic is scalability— the ability of such engines to cope with large amounts of multi-media content. The project is also looking at the question of how to present search results to the user, how to provide interactive and economical search interfaces, and also how to develop interactive search mechanisms.

The VITALAS system is based on a Web services oriented architecture that allows a step by step integration of both software and graphical user interface components. During the first semester of 2008, the first version (V1) of the VITALAS system was implemented enabling cross-media search (combining semantic search, textual and visual concepts search, visual similarity search) on a corpus of 10,000 annotated images provided by the Belgian News Agency Belga. In addition, advanced visualisation functionality offers the possibility to the user to navigate in the corpus using a cluster view interface.

The VITALAS system integrates text, video and audio modules. The final version enables audio queries and visual queries, analyse of non-textual content in such a manner that textual annotation from audio and visual content analysis can be automatically predicted and generated. Moreover, considering the large number and different nature of the modules envisaged to be integrated into one single system, the VITALAS Graphical User Interface will offer a professional brand-new user interface design, profiles and preferences facilities, visualisation tools, as well as audio and video support, light boxes and relevance feedback.

During the second year of the project, the scientific research topics were:
- Enabling technologies: specification and development of the V2 SoA modules: content media indexing and new visual local features
- Cross-media indexing (fusion) with the implementation of a state-of-the-art cross-media indexing tool
- Cross-media retrieval
- Implementation of the second version of the required baseline system to allow integration of audio and video components.
- Specification of success criteria, which include evaluation criteria for both the end-user system and for the academic evaluation of technical modules.

The final version V3 of the system will enhance and strengthen the V2 with a distributed processing framework and will include the final versions of VITALAS components. The major activities to come will therefore be to extend integration and collaboration between partners in the VITALAS system in order to make it more stable and scale up the developed technology.
The Virtual Physiological Human Network of Excellence (VPH NoE) is a methodological and technological framework that will enable collaborative investigation of the human body as a single complex system.

The collective framework will make it possible to share resources and observations formed by institutions and organizations creating disparate, but integrated computer models of the mechanical, physical and biochemical functions of a living human body.

This system will enable scientists, clinicians and researchers to improve their understanding of human physiology and pathology, to derive predictive hypotheses and simulations, develop and test new therapies, with the eventual outcome of better disease prevention tools in healthcare.

The VPH NoE was launched in June 2008, under the coordination of University College London. The networks aims to provide the necessary infrastructure including computational methodologies, tools and databases that will enable scientists, clinicians and researchers to communicate, and to exchange data and technologies in a standardised way. To achieve this, the VPH NoE has several key objectives:

- support for inter-institution and interdisciplinary research projects;
- development of a VPH ToolKit - shared and mutually accessible computational resources and infrastructure;
- progression in horizontal and vertical model/data integration;
- development of interdisciplinary training activities and VPH careers;
- creation of Industrial, Clinical and Scientific Advisory Boards for consultation.

The VPH NoE will connect the diverse VPH projects, from those funded as part of the VPH initiative (VPH-I) to encompass related projects funded under previous EC frameworks and national funding schemes, industry, healthcare providers and international organisations.

The VPH NoE will play a part in strengthening and supporting increased interdisciplinarity and integration of European biomedical research. This is to be achieved by fostering cooperation between disciplines and institutions. The following aims will be addressed:

- creation of a more cohesive VPH research community, within and beyond the EU;
- enhanced recognition at a national level of the importance of modelling and simulation in biomedicine;
- increased emphasis on interdisciplinary training in both biological and biomedical-engineering physics curricula.

Main achievements in 2010 included the excellent progress in the community building, the first VPH conference, held in Brussels from 30 September to 1 October 2010 with some 230 participants, and the first workshop on the VPH ToolKit, 4-8 September, followed by the 2nd VPH Industry Day 8-9 September in Barcelona.
The Web Accessibility Initiative (WAI) worked with organizations around the world to develop strategies, guidelines, and resources to help make the Web accessible to people with disabilities.

A priority for eInclusion under Call FP6-2005-IST-5 was the development and constitution of adequate technology platforms to meet the challenges posed by the ageing population. One key technology needed by the ageing population is the World Wide Web.

Activities under “Web Accessibility Initiative: Ageing Education and Harmonisation” (WAI-AGE) included activities to enable better understanding of the needs of the ageing community in the context of existing Web accessibility guidelines; activities to work with the ageing community to obtain more direct contribution into W3C/WAI work, to revise existing and develop new educational materials to better reflect the needs of the ageing community, and to pursue standards coordination to promote adoption and implementation of a common set of guidelines.

The first objective of the Web Accessibility Initiative: Ageing Education and Harmonisation (WAI-AGE) was to inform the development of extensions on WAI guidelines and supplemental educational materials which can better promote and meet the needs of people who have accessibility needs related to ageing, with particular relevance to the needs of the elderly in Europe.

A second objective was to better inform the ongoing work of W3C/WAI with regard to the needs of the elderly, and to create an ongoing dialogue between ageing communities and disability communities and other stakeholder groups on the needs of older Web users with accessibility needs.

A key objective of this project was to provide educational resources focused towards industry implementers, including developers of mainstream technologies, assistive technologies, and Web designers and developers.

A parallel objective was to provide educational resources focused towards organisations representing and serving ageing communities, and towards individuals with accessibility needs related to ageing.

A final yet crucial objective was to promote increased harmonisation of Web accessibility standards so as to further build a unified market for technology developers and expedite the production of Web accessibility solutions.

The WAI-AGE project produced a number of educational and outreach deliverables to extend the findings of the project both to industry and to users. Up-to-date information about these resources are available through the W3C/WAI website and the WAI-AGE project page:

- http://www.w3.org/WAI/older-users/
- http://www.w3.org/WAI/WAI-AGE/
The Webinos project will define and deliver an Open Source Platform and specific components for the Future Internet, which will enable web applications and services to be used and shared consistently and securely over a broad spectrum of converged and connected devices, including mobile, PC, home media (TV) and in-car units. Promoting a "single service for every device" vision, Webinos will move the existing baseline from installed applications to services, running consistently across a wide range of connected devices, ensuring that the technologies for describing, negotiating, securing, utilizing device functionalities and adapting to context are fit for purpose. Innovations in contextual description will be broad covering but not limited to device capabilities, network access, user identity and preferences, location, behaviourally induced properties and finally the more complex issue of the users’ social network context.

Webinos will directly address security and privacy issues as part of Quality of Service that users of web services expect. The addressed challenges comprise: how to provision and adapt security across a range of devices, services, networks as well as how individuals can gain control over the privacy aspects of their web presence regardless of the service that is being used. Context and privacy are intimately intertwined: rich context is valuable but without user controlled privacy it becomes a liability.

Webinos will boost the industry migration towards web-based services. Webinos can back this by providing inter-operable, standardised, open source technology utilizable across domains with direct commercially exploitable value. Webinos will also act as an industry catalyst to encourage collaboration and discourage fragmentation in this space.

There are strong industry moves towards Internet friendly and Internet integrated offerings, and there exists a window of opportunity to place this WebOS technology on a robust open foundation that will remove economic barriers to engagement, embody policy on data privacy in concrete technology (protecting consumers and enterprise) and creating a centre of web centric expertise (benefiting technical competitiveness).
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 designed to advance research and innovation in the particular area of the group, and human mobility (internal mobility and fellows) to assure the appropriate trained human capital. ERCIM supports financially the Working Groups.

A major activity of an ERCIM Working Group is to search actively for project funding that crosses national borders. NetWMS for example, was initiated by the ERCIM Working Group “Constraints”.

ERCIM institutes have reserved resources to stimulate mobility, enabling work on collaborative research projects at other institutes for periods from one to six months. ERCIM Working Groups contribute many of the articles in ERCIM News and commonly provide scientific coordination for the special theme sections. They also participate in the production of ERCIM strategic reports.

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*Working Groups in 2010.*
Computing and Statistics

The working group Computing and Statistics focuses on all computational aspects of statistics. Of particular interest is research in important statistical applications areas where both computing techniques and numerical methods have a major impact. The working group gathers over 300 members and is organised in eleven specialized tracks. The aim is twofold: first, to consolidate the research in computational statistics that is scattered throughout Europe; second to provide researches with a network from which they can obtain an unrivalled sources of information about the most recent developments in computational statistics and applications. Emphasis is put on computational methods with computational statisticians being the primary target of the WG.

Coordinator: Erricos Kontoghiorghes, School of Computer Science and Information Systems, Birkbeck, University of London

Organised event:
• 3rd International Conference on Computing & Statistics, held at University of London, 10-12 December 2010. The annual meeting of the Working Group attracted over 800 participants and a number of them joined the group. A new track on Quantitative Finance has been created. The Working Group organised many exchange research visits among its members.

http://www.cfe-csda.org/ercim

Data and Information Spaces

The objective of the ERCIM Working Group on Data and Information Spaces is to build a strong network of researchers in the fields of information repositories and digital libraries. Of special importance is the development of methods and tools to make digital, cultural and scientific content available, searchable and accessible for all kinds of users. Interoperability should be achieved on schema levels, repository levels as well as on system levels.

Coordinator: Ingeborg Torvik Sølvberg, NTNU

Organised event:
Second ERCIM DIS Workshop, held at CWI, Amsterdam, 20 May 2010.
http://wiki.ercim.eu/wg/DIS

E-mobility

The ERCIM eMobility working group aims to develop strategic basic research agenda and project proposals in the area of eMobility. To complement the activities of the former eMobility European Technology Platform (now called Net/Works EF), the working group focuses on more (theoretical) basic research issues. The goal is long-term research projects with a more academic background, without having any commercial constraints.

Coordinator: Torsten Braun, University of Bern, Switzerland/SARIT

Organised events:
• ERCIM WG eMobility Meeting held at SAP Research in Zurich, Switzerland, 16 February 2010
• Fourth ERCIM eMobility Workshop held in Luleå, Sweden, 31 May 2010 in conjunction with WWIC 2010, the International Conference on Wired/Wireless Internet Communications
• Two colloquia on the topic “An Adaptive and Energy-efficient MAC Protocol for Wireless Sensor Networks” at the University of Coimbra on 14 June 2010 and at the University of Twente on 24 November 2010.
• Colloquium on the topic “Multi-hop communication: yesterday, today and tomorrow?” in Bern, Switzerland, 21 May 2010

Fellows hosted from the ERCIM Alain Bensoussan Fellowship Programme: Kirsten Terfloth at University of Bern (SARIT) from 1 July 2009 to 31 March 2010
http://wiki.ercim.eu/wg/eMobility/

Formal Methods for Industrial Critical Systems

Formal methods have been advocated as a means of increasing the reliability of systems, especially those which are safety or business critical, but the industrial uptake of such methods has been slow. This is due to the perceived difficulty of mathematical nature of these methods, the lack of tool support, and the lack of precedents where formal methods have been proven to be effective. It is even more difficult to develop automatic specifications and verification tools due to limitations like state explosion, undecidability, etc. The FMICS Working Group brings together researchers of the ERCIM consortium and beyond in order to promote the use of formal methods within industry.

Coordinator:
Alessandro Fantechi, University of Florence and ISTI-CNR

Organised event:
• 15th International Workshop on Formal Methods for Industrial Critical Systems (FMICS 2010), Antwerp, Belgium, 20-21 September 2010. The proceedings were published by Springer in the Lecture Notes in Computer Science vol. 6371 (http://www.springerlink.com/content/n60g12216p17/)
http://www.inrialpes.fr/vasy/fmics/

IT and Mathematics applied to Interventional Medicine

The ERCIM Working Group IM2IM focuses on modeling and simulations for minimal invasive, safe and cheap procedures, especially those used to treat diseases of the cardiovascular and respiratory apparatus (e.g., stenting, coiling, and nanoaerosols). Patient-specific computer-aided diagnosis, treatment planning, and prognosis rely on image processing with 3D reconstruction of the organ of interest, modeling of events at various time and length scales (from molecules to organs), and simulations of multiphysics phenomena (e.g., air and blood flow in deformable conduits, heat and mass transfer, etc.).

Coordinator: Marc Thiriet, INRIA
http://wiki.ercim.eu/wg/IM2IM/

Models and Logics for Quantitative Analysis

Models and Logics for Quantitative Analysis are seen as comprising process models analysed using logics for quantitative properties. More specifically, the Working Group (i) considers process models formally described by transition systems, automata or process calculi, (ii) considers logics for expressing stochastic and continuous properties as well as discrete ones, (iii) focuses on algorithms, theory and tools, and (iv) studies applications with particular emphasis on embedded systems and service oriented systems but will aim at treating also IT guided workflow systems and biological systems.

Organised event:
The second annual meeting of the working group on Models and Logics for Quantitative Analysis (MLQA) held on 9 July 2010 as part of the Federated Logic Conference (FLoC) organized by the School of Informatics at the University of Edinburgh in Scotland.

Coordinator: Flemming Nielson, Technical University of Denmark, Department of Informatics and Mathematical Modelling
http://wiki.ercim.eu/wg/MLQA/

Multimedia Understanding through Semantics Computation and Learning

MUSCLE (formerly Image and Vision Understanding) is the ERCIM Working Group on multimedia understanding through semantics, computation and learning. It gathers teams from both ERCIM and non-ERCIM institutions whose expertise ranges from machine learning and artificial intelligence to image/video/audio processing and multimedia database management.

Coordinator: Emanuele Salerno, ISTI-CNR

Fellow hosted from the ERCIM Alain Bensoussan Fellowship Programme: Koray Kayabol, hosted in the Ariana team at INRIA Sophia Antipolis, from 1 November 2010 to 31 July 2011
http://wiki.ercim.eu/wg/MUSCLE

Security and Trust Management

The ERCIM Working Group Security and Trust Management aims at focussing the research of the ERCIM institutions on a series of activities, for example projects and workshops, to foster the European research and development on security, trust and privacy in ICT.

Coordinator: Javier Lopez, University of Malaga, SparCIM
Organised event:
The 6th International Workshop on Security and Trust Management (STM’11), held in Athens on 23-24 September 2010 in conjunction with EUROPKI’10 and CRITIS’10, and just after ESORICS’10.
http://www.iit.cnr.it/STM-WG

Sensor Web

The objective of the Sensor Web working group is to bring together research groups that are actively involved in ubiquitous sensing and the infrastructure demanded to underpin this vision. Specifically the group is interested in sensing in the physical world, cyber sensing and the seamless consideration of diverse sensors from both arenas. The Working Group members cover a wide range of ICT skills (software engineers, information management and databases including information retrieval, wireless applications, networks, security and e-mobility, ambient and ubiquitous computing), and through their collaborators have a broad multidisciplinary base. Areas of interest to the group include both applied and basic research. Examples of deployment areas include personal health, environmental analysis, ambient intelligence, locomotive and large vehicle monitoring, military applications, deployment of personnel in toxic environments and traffic analysis.


Social Network Analysis

The objective of the ERCIM Working Group on Social Network Analysis is to build a strong network of researchers with expertise on algorithmic aspects of network data analysis.

Software Engineering for Resilient Systems

The Software Engineering for Resilient Systems (SERENE) Working Group considers resilient systems as open and distributed systems that can dynamically adapt in a predictable way to unexpected events. Engineering such systems is a challenging issue still not solved. Achieving this objective is a complex task since it implies reasoning explicitly and in a combined way, on system’s functional and non-functional characteristics.

The SERENE working group focuses on formal, semi-formal modeling of resilience properties; frameworks and design patterns for resilience; error handling and fault handling in the software life-cycle; re-engineering for resilience; component-based development and resilience; software development processes for resilience; resilience through exception handling in the software life-cycle; atomic actions; fault-tolerance; dynamic resilience mechanisms; resilience prediction; resilience metadata; reasoning and adaptation services for improving and ensuring resilience; intelligent and adaptive approaches to engineering resilient systems; engineering of self-healing autonomic systems; dynamic reconfiguration for resilience; run-time management of resilience requirements; verification and validation of resilient systems; CASE tools; Model Driven Engineering; software architectures for resilience.

Coordinator: Pádraig Cunningham, University College Dublin/IUA http://wiki.ercim.eu/wg/SNA/

Organised event:
SERENE 2010, the second International Workshop on Software Engineering for Resilient Systems and two-day spring school for students and early-career researchers, held at Birkbeck College in London, 13-16 April 2010
http://rise.uni.lu/tiki/tiki-index.php

Software Evolution

The main goal of the ERCIM Working Group Software Evolution is to understand the phenomenon of software evolution, and to develop well-founded and disciplined tools and techniques to support software developers with the common problems they encounter when evolving large and complex software systems. With this initiative, the group plans to become a Virtual European Research and Training Centre on Software Evolution.

Coordinator: Tom Mens, Université de Mons / FNRS/FNR

Organised events:

Fellows hosted from the ERCIM Alain Bensoussan Fellowship Programme: Anthony Cleve at INRIA, Lille, France from 1 December 2009 to 30 November 2010
http://wiki.ercim.eu/wg/SoftwareEvolution
The PhD Fellowship Programme has been established as one of the premier activities of ERCIM. Since its inception in 1991, over 250 fellows have passed through the programme. In 2010, 28 young scientists commenced an ERCIM PhD Fellowship and 71 fellows had been hosted during the year. This represents 440 person-months, a slight increase in effort compared to 2009 (419 person/months).

The ERCIM Fellowship Programme is open to young researchers from all over the world. It focuses on a broad range of fields in Computer Science and Applied Mathematics. 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 improve their knowledge of European research structures and networks and to gain more insight into the working conditions of leading European research institutions. In 2010, many of the hosted fellows were native of countries outside 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.

With the co-funding by the European Commission, the fellowships are now of 24 months duration, spent in two of the ERCIM institutes, or 12 months duration spent in one institute. Candidates must:

- have obtained a PhD degree during the last eight 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.

The fellows are appointed either by a stipend (an agreement for a research training programme) or a working contract. The type of contract and the monthly allowance/salary depends on the hosting institute.

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

Since 2005 the Fellowship Programme has been named in honour of Alain Bensoussan, former president of INRIA and one of the three ERCIM founding fathers.

http://www.ercim.eu/activity/fellows
ERCIM fellows hosted in 2010

- Saiful Akbar at NTNU
- Márcio Basgalupp at NTNU
- Antonis Bikakis at FNR
- Filippo Bonchi at INRIA
- Carles Bosch at INRIA
- Ana Capatana at NTNU
- Alex Cartagena Gordillo at NTNU
- Ioannis Chatzigeorgiou at NTNU
- Yanling Chen at FhG-IESE
- Anthony Cleve at INRIA
- Henriette Cramer at SICS
- Jos Danado at NTNU
- Olawande Daramola at NTNU
- Elisabetta De Maria at INRIA
- Ding Ding Jianguo at FNR
- Christos Doukeridis at NTNU
- Fabien Duchateau at CWI and NTNU
- Simon Duquennoy at SICS
- Lhoussain El Fadil at NTNU
- Georgios Evangelidis at FhG IAIS
- Sara Felloni at NTNU
- Jorge Alberto Fox Lozano at NTNU
- Raffaele Gaetano at SZTAKE
- Marek Gayer at VTT
- Sarunas Girdzijauskas at SICS
- Anthony Harrington at PLERCIM
- Audrius Jurgelionis at NTNU
- Georgios Karopoulos at CNR
- Koray Kayabol at INRIA
- Dzmitry Kliazovich at FNR
- Shashidhar Kodamballi at FhG-IESE
- Margarita Kotti at CNR
- Kyriakos Kritikos at CNR
- Vincenzo Lagani at FORTH
- Jérôme Lapuyade-Lahorgue at VTT
- Frédéric Larue at FHG and CNR
- Sergueï Lenglet at PLERCIM
- Yan Liu at FhG-IESE
- Ioanna Lykourentzou at FNR
- Valeria Manna at VTT
- Helena Mentis at SICS
- Allahyar Montazeri at FhG-IDMT
- Luca Mottola at SICS
- Marja Naya Piasencia at SARIT
- Thanh-Duong Nguyen at NTNU
- Shahaf Nitzan-Hahamov at NTNU
- Inah Omoronyia at NTNU
- Ján Perhác at NTNU
- Giuseppe Pirrò at INRIA
- Georgios Pitsilos at NTNU and FNR
- Eugen Costin Popovici at FhG-IDMT
- Rajendra Prasath at NTNU
- Chiara Rossito at NTNU
- Christian Schellewald at NTNU
- Elena Sendroiu at NTNU
- Valerio Senni at INRIA
- Annette Stahl at NTNU
- Özgür Tamer at NTNU
- Orestis Telelis at CWI and INRIA
- Kirsten Terfloth at SARIT
- Radha Thanga Raj at FNR
- Alessandra Toninelli at INRIA
- Despoina Triantafyllidou at VTT
- Dimitrios Ververidis at VTT and FHG
- Akrivi Vlachou at NTNU
- Qinhua Wang at NTNU
- Wei Wang at NTNU
- Wei Wang Wei (2) at FNR
- Xinhui Wang at CNR
- Xiangliang Zhang at NTNU
- Sergiy Zhuk at INRIA

![Graph showing number of fellows hosted and starting grants from 2006 to 2010.](image)
Andrea Esuli from ISTI-CNR has been chosen by ERCIM as the winner of the 2010 Cor Baayen Award for a promising young researcher in computer science and applied mathematics.

Andrea Esuli: During the course of his PhD work and his postdoctoral research, Andrea Esuli has obtained outstanding results by combining cutting-edge speculative reasoning with top-quality technical solutions, and has produced results of unquestionable societal and commercial value.

One of Esuli’s distinctive characteristics as a researcher is his broad range of capabilities. He is neither a purely theoretical thinker, nor a mere experimenter, but a mature researcher with the ability to conceive innovative solutions and immediately test them. This is so thanks to a strong theoretical background and to excellent technological abilities. Esuli’s activities and results range from academic research to the development of industrial-strength innovative applications. Concerning the former aspect, he must be credited (among others) with being one of the early researchers in the field of sentiment analysis and opinion mining. This field, that is so popular nowadays, was still a tiny niche in 2005 when Andrea published his first paper on the subject, at a highly selective ACM conference. Nowadays, Andrea is recognized as a top player in the field; he was invited to speak on this topic as a panelist at the GWC 2008 conferece, even before getting his PhD, which is a rare feat.

One of the results of his PhD research on lexical resources for opinion mining is SentiWordNet, a lexical resource licensed to more than 400 research labs/companies worldwide, and widely considered the reference lexical resource for opinion mining applications. The systems developed in the course of his research on supervised machine learning algorithms, training data cleaning, and active learning for automatic text classification, are now part of the Verbatim Coding System (VCS), a highly successful software system for the analysis of textual answers returned by respondents to questions issued in the context of opinion surveys. VCS, the recipient of one international and one national award, has been licensed to corporate end users whose Customer Relationship Management departments use it in their daily operations, and is now an integral part of the Ascribe(TM) platform marketed by Language Logic (http://www.languagelogic.info/), the world leader in the provision of survey management software services. A more recent thread of Esuli’s research is on highly efficient similarity search, for which he has developed a novel algorithm based on prefix-permutation indexing. In addition to generating scientific publications, Andrea has turned this algorithm into a working search engine for images (http://mipai.esuli.it/) that currently allows image similarity search on CoPhIR, the largest image dataset available for research purposes. Esuli’s algorithm allows similarity searches to be conducted on CoPhIR in sub-second response times, a feat currently neither attained nor approached by competing systems. This algorithm has resulted in a patent submission currently under review by the US Patent and Trademark Office.

Andrea Esuli holds an MSc in Computer Science (2001), an MSc in Computer Science Technologies (2003), and a PhD in Information Engineering (2008), all from the University of Pisa, and all with full marks and “cum laude”. From 2002 to 2004 he was a research associate at the Department of Computer Science of the University of Pisa, where he worked in the area of high-performance information retrieval, with particular emphasis on algorithms and data structures for large-scale collaborative text indexing and “query search” processes. Since 2005, he is with the Istituto di Scienza e Tecnologie dell’Informazione, Consiglio Nazionale delle Ricerche, Pisa, where he has carried out research in the areas of text classification, information extraction, and opinion mining. He has a great research record for this stage of his career and has authored some truly influential papers.

http://www.ercim.eu/activity/cor-baayen-award

2010 Finalists
According to the award rules, each institute is allowed to select up to two finalists from its country. For the 2010 Cor Baayen Award, The ERCIM Executive Committee has accepted 12 finalists (in alphabetical order):
The winner, Andrea Esuli, was selected by the ERCIM Executive Committee on advice from the ERCIM Advisory Committee.

- Maxime Descoteaux
- Andrea Esuli
- Jose M. Juarez
- Arti Klami
- Pushmeet Kohli
- Claudio Lucchese
- Michael Mavroforakis
- Soren Sonnenburg
- Sven Schewe
- Paschalis Tsiaflakis
- Jeroen Wackers
- Olaf Zimmermann

Award Rules
The Cor Baayen Award, awarded to a promising young researcher in computer science and applied mathematics, was created in 1995 to honour the first ERCIM President and is open to young researchers having completed their PhD thesis in one of the “ERCIM countries”. The award consists of a cheque for €5000 together with an award certificate. The successful fellow invited to the ERCIM autumn meetings.
ERCIM was present with information booths on several conferences in 2010. In addition to outreach activities carried out by the ERCIM Working Groups and projects with ERCIM involvement, ERCIM has itself selected four conferences for sponsorship that are relevant to the ERCIM community and of excellent scientific quality, and participated in the ICT2010 conference, organised by the European Commission and hosted by the Belgian Presidency of the European Union.

Events sponsored in 2010

- SofSem 2010 - 36th International Conference on Current Trends in Theory and Practice of Computer Science, Špindlerův Mlýn, Czech Republic, 23-29 January 2010
- 11th European Conference on Computer Vision (ECCV 2010), Crete, Greece, 5-11 September 2010

ERCIM at ICT 2010

ERCIM took part in ICT 2010, the bi-annual event organised by the European Commission on 27-29 September in Bruxelles. With a joint information stand entitled “Boosting Innovation through R&D and Standardisation”, ERCIM and ETSI demonstrated that standardisation should be considered early in the R&D cycle in order to optimise the markets for European industry.

Furthermore, together with ACM Europe, ERCIM arranged the networking session "ICT Professional Societies: Which Opportunities for Europe?".

European projects managed by ERCIM were also present at ICT 2010:
- D4Science-II with a booth and networking session “Joining efforts in building an e-Infrastructure Ecosystem for Environmental Science”
- Euro-IndiaSpirit with a booth and networking session: “EU-India: Euro-India ICT Cooperation Gateway - Enhancing EU-India Collaborative Research”
- RACE network RFID at the stand of the project "ASPIRE: Added-Value RFID Enabled Logistics for SMEs".
Since its creation, ERCIM News has evolved from ERCIM’s ‘in-house newsletter’ into a European quarterly magazine in the domains of Information and Computer Sciences, Applied Mathematics and Communication Technologies, published in both printed and online editions.

ERCIM News mainly consists of articles written by scientists and edited according to guidelines designed to make the articles accessible to all target groups. It also includes invited articles by European policy-makers and decision-makers in relevant areas. ERCIM News’ objective is to provide regular and continually updated high-quality and authoritative information concerning European research and innovation activities in the scientific domains of interest. The information is reported in an easily accessible fashion, with references and links being provided so that the interested reader can find more in-depth information on specific topics as needed. The intended target audience is thus international and national scientific policy- and decision-makers, European and national funding agencies, the global scientific community and relevant industrial organisations, with a special focus on the European area. Through the 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. In 2010 ERCIM covered the following special themes:

- Data Preservation
- Computational Science/Scientific Computing - Simulation & Modelling for Research and Industry
- Computational Biology
- Cloud Computing.

For each issue, ERCIM News invites a personality to write a keynote statement relevant to the European scientific community. Authors have included

- Pat Manson, European Commission
- Kostas Ginios, European Commission
- Keith Jeffery, Burkhard Neidecker-Lutz, Lutz Schubert and Maria Tzakali
- Hans-Georg Stork, European Commission

ERCIM News is the result of close cooperation between all ERCIM institutes. It is published in both printed and electronic form. The printed edition has a circulation of about 9,000 copies and is distributed in over 100 countries. The online edition offers full-text searching 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://ercim-news.ercim.eu/
A member institute must be a leading research establishment in its country with excellent links to both its national and the international research communities. All ERCIM members are national centres of excellence and are 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-sized enterprises and large industrial companies.

Map of ERCIM members in 2010.
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.

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 accepts institutional members only, according to ERCIM rules for membership (European/international research and projects in IT). The institutional members of AARIT cover a wide range of research activities. AARIT members participate in national and European research projects such as AGRO (Austrian GRID Consortium), in Framework Programme and ARTENS projects, in the areas of image processing and advanced computer vision, safety and security of software intensive systems, embedded systems, natural language processing, telematics, digital libraries, social aspects of IT etc. Institutional members currently are:

- AT - Austrian Institute of Technology GmbH (Vienna, founding member)
- CETF - Central European Institute of Technology (Schwechat)
- CDSY - Dept. of Computer Science (Salzburg)
- IFRe - Information Retrieval Facility (Vienna)
- FH-CAMPUS Wien - Competence Center IT Security (Vienna, associated member)
- OCG - Austrian Computer Society (Vienna, founding member)
- ÖfNi - Austrian Research Institute for Artificial Intelligence (Vienna, founding member)
- SBA-RESEARCH - SBA Research (Vienna)
- SWFG - Salzburg Research Forschungsgesellschaft (Salzburg, founding member)
- TU Graz - Faculty of Computer Science (Graz)
- TU Wien
  - Institute of Information Systems: Distributed Systems, Database and Artificial Intelligence and Knowledge Based Systems
  - Institute for Software Technology and Interactive Systems: Information and Software Engineering Institute, interactive media systems and Business Informatics
- VCPC - European Centre for Parallel Computing (Vienna, founding member)
- WPI - Wolfgang Pauli Institute (Vienna)

Several new members are in the stage of joining AARIT.

**CIT**

The President of CIT has delegated the ICT Department to represent CIT in ERCIM. ERCIM related activities at CIT are mainly covered by the following two CIT institutes, located in Pisa:

- Istituto di Scienze e Tecnologie dell’Informazione
  - The strategic research areas currently covered at ISTI are: software engineering, formal methods for specification and verification, information engineering and information systems, data mining, digital libraries, 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.
- Istituto di Informatica e Telematica
  - ITI carries out research activities, technological transfer and training in the field of information and communication technology (ubiquitous internet, information security, wireless networks) and computational sciences (efficient algorithms for complex problems). ITI also represents the Italian Registry in charge of domain names within the country code-top level domain “it” (ISO 3166).

**Combined Budget**

Total funding is £17.8 million per year, of which €5.2 million is from projects:

- 49% EC projects
- 31% national projects
- 20% contract research from industry.

**Staff**

Approximately 190 scientific staff and 82 support staff plus varying number of graduate students.
CRCM 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 CRCM is to perform frontier research and teaching in mathematics, informatics and computer science and to transfer acquired new knowledge to society.

**Research Topics**
- 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;

**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).

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**Czech Research Consortium for Informatics and Mathematics**

**A FUNDAMENTAL DIFFERENCE**

**Strategy**
We concentrate our research on four societally-relevant themes:
- Earth and Life Sciences
- The Data Explosion
- Societal Logistics
- Software as Service

to provide a deeper understanding of problems across the health care, climate, communication, congestion, security and service domains.

**International Network**
CRCM closely cooperates with companies, universities and large technology institutes in the Netherlands and abroad. Together with our partners, we help provide a firm foundation for national and European innovation. CWI is also an incubator for senior academic researchers.

**CWI Today**
CWI concentrates on fundamental questions that are inspired by practical problems. Some applications are: transport logistics, dynamic pricing for parking lots, querying large distributed databases, interactive television research, wind farm aerodynamics, cryptology, semi-automatic recognition of individual turtles, semantic tools for cultural web databases, coalgebra research, advanced statistics, software renovation, computational finance, simulations of living cells, models for lightning, performance analysis of communication networks, and energy research.

**Contact**
Czech Research Consortium for Informatics and Mathematics
P. O. Box 407, 1800 AC Stokkum
Czech Republic
Tel.: +420 2 86645503
Fax: +420 2 86844003
http://staff.utia.cas.cz/ Index.CRCM.Home.html

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**Dutch centre for mathematics and computer science**

**Strategy**
We concentrate our research on four societally-relevant themes:
- Earth and Life Sciences
- The Data Explosion
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**Budget**
Total annual budget: 17.6 million € (2010). Nearly 70 percent of our annual budget is covered by the Netherlands balance coming from national and international research programmes and assignments from industry.

**Staff**
- 154 Researchers
- 49 Supporting Staff

**Contact**
Centrum Wiskunde & Informatica
Science Park, 123
NL - 1098 XG Amsterdam
The Netherlands
Tel.: +31 20 592 9333
E-mail: info@cwi.nl
www.cwi.nl
Danish Research Association or Informatics and Mathematics

DANAIM (Danish Research Association for Informatics and Mathematics) is a research consortium established by seven major Danish universities and university collaborations.

- DANAIM Represents almost all Danish Universities
  - DANAIM is a consortium of seven universities:
    - University of Southern Denmark
    - University of Aarhus
    - Roskilde University
    - Technical University of Denmark
    - IT Vest – networking Universities
    - University of Copenhagen
    - Aalborg University.

In Denmark there is a long tradition of international collaboration with other universities and collaboration with industry. DANAIM will strengthen the cooperation between Danish and other European researchers and industry.

- Figures
  - DANAIM represents 440 researchers within the field of computer science and related fields and an annual turnover of more than €30 million. More than 75% of the students enrolled for computer science or related areas are enrolled at the institutions represented by DANAIM.

- Contact
  - DANAIM
    - At: Henriette Frahm
    - c/o Aalborg Universitet, Institut for Datalogi
    - Selma Lagerlöfs Vej 300; 9220 Aalborg Ø, Denmark
    - E-mail: frahm@cs.aau.dk
    - http://www.danaim.dk/

The Fraunhofer ICT Group (Fraunhofer Information and Communication Technology Group) develops joint strategies and visions for application-oriented research on information and communication technology. Employing more than 4,000 people at its 18 institutes and with an annual budget of approximately 200 million euros, the ICT Group is Europe’s largest research association for applied research in IT.

It combines the core competencies of the 18 member institutes to create comprehensive IT solutions and offers support in technology transfer activities and research marketing. The complementing core competencies of member institutes cover the full spectrum within the communication technology and IT sector.

The Fraunhofer ICT Group provides its portfolio to partners from all industries 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 internationally connected with companies and research organizations in the communication technology and IT sector. The business office of the ICT Group in Berlin acts as a "onestop shop" to find the right partner for your need.
Main research programmes in Informatics:
CORE Programme (started in 2008)
The CORE programme is designed to feature regular annual calls based on the FNR’s priority research domains.
The call is open to project proposals in 15 areas, among which:
• Information Security and Trust Management
• Business Service Design
• Telecommunication and Multimedia
• Performance & DVL of the Financial Systems

Contact:
National Research Fund
6, rue Antoine de Saint-Exupéry
P.O. Box 1777
L-1017 Luxembourg
Phone: +352 26 19 25 1
Fax: +352 26 19 25 35
E-mail: info@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.
Mission

The mission of the Institute of Computer Science of the Foundation for Research and Technology – Hellas (FORTH-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. FORTH-ICS develops innovative products and services, contributes to the creation, transfer, and diffusion of technical know-how, collaborates with recognised companies, creates spin-off companies, promotes incubators and science and technology parks, and performs studies of regional, national and European interest. FORTH-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 emphasise the development of Information Society Technologies and infrastructures in a number of domains of national importance and regional interest.

Research Laboratories

- Bi-informatics
- Computational Medicine
- Computer Architecture and VLSI Systems
- Computational Vision and Robotics
- Distributed Computing Systems
- Human Computer Interaction
  - Centre for Universal Access and Assistive Technologies
  - Information Systems
  - Centre for Cultural Informatics
- Telecommunications and Networks

Personnel

ICS employs a total of 285 people:
- 45 researchers and university faculty
- 110 technical staff members
- 10 administrative and auxiliary staff members
- 120 graduate research assistants & trainees

Programmes

- Ambient Intelligence
- Information Security

Departments

- Center for eHealth Applications and Services
- Education and Training
- FIRSTcenter (Computer Emergency Response Team)
- Library
- Registry of [.gr] Domain Names
- Systems and Networks
- W3C Greece Office

Annual Budget

Approx 8.15 MEuros

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 eight Research Centres:
- INRIA Bordeaux - Sud-Ouest
- INRIA Grenoble - Rhône-Alpes
- INRIA Lille - Nord Europe
- INRIA Nancy - Grand Est
- INRIA Paris - Rocquencourt
- INRIA Rennes - Bretagne Atlantique
- INRIA Saclay - Île-de-France
- INRIA Sophia Antipolis - Méditerranée

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 800 contracts)
- development initiatives
- the setting up of high-tech companies (some 100 companies since 1984).

Research

INRIA’s major goal for 2008-2012 is to achieve scientific and technological breakthroughs in seven priority domains:
- Modelling, simulation and optimisation of complex dynamic systems
- Programming: security and reliability of computing systems
- Communication, information, and ubiquitous computing
- Interaction with real and virtual worlds
- Computational engineering
- Computational sciences
- Computational medicine.

Budget

Total annual budget: €251 million, thereof:
- 74% basic national funding
- 26% own resources.

Staff

- 4400 persons, including 2700 paid by INRIA
- 3450 scientists including 1300 doctoral candidates, 250 post-docs and 500 engineers.
Irish Universities Association

Irish Universities
The Irish University Association represents all 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.

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

At present, Dublin City University is responsible for ERCIM-related administration and coordination activities.

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 safer 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 Semantic 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 Bioinformatics, (e.g. Bioinformatics and Biodiversity).

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 to test tomorrow’s wireless technology and services. Trondheim is also a test site for Intelligent Transport Systems. The projects are a cooperative effort among industrial partners, NTNU, the city of Trondheim, the Sør-Trøndelag county council, and the Trondheim Chamber of Commerce.
ERCIM

European Research Consortium for Informatics and Mathematics

"TO WIN WE NEED THREE THINGS WE CAN DEFINE: TO KNOW HOW TO WORK, TO FOLLOW OPPORTUNITIES AND TO CREATE RELATIONSHIPS. WE ALSO NEED SOMETHING ELSE, THAT WE FIND DIFFICULT TO DEFINE AND, LACKING A BETTER NAME, WE CALL LUCK."

FERNANDO PESSOA

[PORTUGUESE WRITER AND POET]

Polish Research Consortium for Informatics and Mathematics

Two major Polish universities - the University of Warsaw and the University of Wroclaw - established together a new research consortium, 'PLERCIM' in January 2007, which represents Poland in ERCIM. PLERCIM will initiate and coordinate future cooperation between Polish and European researchers in applied mathematics and informatics within ERCIM activities.

- The University of Warsaw
  The University of Warsaw (Universitas Varsoviensis, est. 1817), is the largest university in Poland. It teaches over 56 000 undergraduate students and around 2100 PhD students in nineteen faculties. About 13 000 students graduate from the University every year. It offers a broad range of courses taught in Polish and English in 76 areas of study. The Faculty of Mathematics, Informatics and Mechanics, with almost 170 faculty members and researchers, is engaged in a wide spectrum of research areas, ranging from pure mathematics and theoretical computer science, to applied mathematics and applied areas of informatics. The Faculty consists of three Institutes: Mathematics (with over ninety faculty members), Informatics (almost fifty faculty members), and Applied Mathematics and Mechanics (with over thirty faculty members).

- The University of Wroclaw
  The University of Wroclaw (Universitas Wratislavensis, est. 1702) is the largest university in the south-western part of Poland called Lower Silesia. It teaches over 40 000 undergraduate students and about 1300 PhD students in ten faculties. About 9000 students graduate from the University every year. The University offers a broad range of courses taught in Polish and English in over seventy areas of study. The Faculty of Mathematics and Computer Science consists of two parts: the Mathematical Institute and the Institute of Computer Science. It teaches 870 undergraduate students in mathematics, 520 undergraduate students in computer science and 50 students in PhD programmes in both disciplines.

- Budget
  Total annual budget: €10.5 million, thereof
  • 90% basic national funding
  • 10% national and international programmes.

- Staff
  • 400 scientific staff
  • 100 supporting and administrative staff.

- Contact
  PLERCIM Office
  Faculty of Mathematics, Informatics, and Mechanics
  Warsaw University, Banacha 2
  02-097 Warszawa, Poland
  http://www.plercim.pl/
SARIT – The Swiss Association for Research in Information Technology

SARIT is a non-profit 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.

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

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 ERCIM AB Fellowship programme.

Swedish Institute of Computer Science (SICS) is the leading research institute of Sweden within the area of ICT. Highly qualified researchers conduct application-oriented and fundamental research in strategic areas of computer and communication technologies, 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 promotes exploitation of research results by cooperating with industry and society, encouraging start-up companies, providing open source software, and by participating in standardization programs, clusters, and media and public events.

MAIN RESEARCH AREAS
- Design and IT
  - The future ecosystem of truly mobile services
  - User oriented services and products
- Future Internet Technologies and Services
  - The future reliable Internet
  - Internet of Things
  - Sensor Networks
- Industrial Systems and Solutions
  - Monitoring, diagnosing, and optimizing industrial production
- Software and Systems
  - Cloud computing
  - Multicore computing

ORGANISATION
- Staff
  - 100 researchers (48 PhDs)
- Location
  - Stockholm (Kista)
  - Uppsala
  - Västerås
  - Lund
- Turnover
  - € 12 million
Spanish Research Consortium for Informatics and Mathematics

**Mission**

The mission of SparCIM is the promotion and coordination of Spanish research groups in order to face the challenges raised by current and future problems in computer science and applied mathematics.

**Research**

The main research areas of SparCIM are centered in:

- Formal methods and programming languages, design and analysis of critical systems, quality and security of computing systems, rule-based programming, optimization, parallel and concurrent systems, program verification.
- Artificial intelligence: machine learning, multi-agent systems, constraint-based reasoning, ontologies, semantic web services, image processing and recognition.
- Information systems: data mining, databases, data warehouses, modeling, decision support systems.

**Staff**

Around 500 scientists including over 200 doctoral candidates and 40 postdocs and engineers.

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**Science & Technology Facilities Council**

**Research at the Leading Edge**

The Science and Technology Facilities Council is one of Europe’s largest multidisciplinary research organisations supporting scientists and engineers worldwide. The Council operates world-class, large scale research facilities and provides strategic advice to the UK government on their development. It also manages international research projects in support of a broad cross-section of the UK research community. The Council also directs, coordinates and funds research, education and training.

The Council has responsibility to ensure that the UK scientific community has access to the large facilities that will enable it to perform high quality, world leading research in the future:

- Central Laser Facility (CLF)
- ISIS pulsed neutron and muon source
- Isaac Newton Group of Telescopes (ING)
- Joint Astronomy Centre (JAC)
- United Kingdom Infra-Red Telescope (UKIRT)
- James Clerk Maxwell Telescope (JCMT)
- Diamond Synchrotron (DLS)
- Synchrotron Radiation Source (SRS).

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**Computing Facilities**

STFC hosts a range of national computing facilities to support the data, computing and networking needs of UK researchers. These include:

- The UK National Grid Service (NGS)
- The UK e-science certification authority (CA)
- The UK role in the European Computing Grid (EGI)
- The UK Grid for Particle Physics (PPGrid)
- The computing cluster for the EPSRC National Service for Computational Chemistry Software
- The Scientific Computing Application Resource for Facilities
- The 20 Petabyte Atlas Data Store
- National Academic Mailing List Service (NAMLS)
- The STFC e-publications archive (e-pubs).

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**Recent Applications**

ENSURE: STFC stores vast volumes of scientific data which are expected to increase with the next generation of international scientific facilities. In order to increase the return on the investment in this data STFC encourages the re-use of data for verification of results, but also for meta-studies and to produce new scientific results in ways not intended when the original data was collected. To do this STFC is developing data preservation technologies which go beyond data storage to include the long term management of the data to preserve its usability and to enable the discovery and understanding of archived data for new purposes.

DL-FIND – a library for optimising geometries in atomic and molecular simulations. The DL-FIND software library is used by researchers who investigate the structures of chemicals and the detailed processes of chemical reactions. DL-FIND can be combined with the ChemShell computational chemistry environment, which provides facilities for combined quantum mechanical and molecular mechanical calculations. DL-FIND offers a variety of optimisation algorithms for common tasks, such as finding minimum energy structures or identifying transition states on a reaction path.

**Partnerships**

Can range from a one-off contract to truly integrated partnerships, collaborating with the Council’s 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.

Around 1900 total staff, 120 IT staff (average whole-time equivalent).
VTT Group in brief


Customer sectors
- Biotechnology, pharmaceutical and food industries
- Electronics
- Energy
- ICT
- Real estate and construction
- Machines and vehicles
- Services and logistics
- Forest industry
- Process industry and environment

Focus areas of research
- Applied materials
- Bio- and chemical processes
- Energy
- Information and communication technologies
- Industrial systems management
- Microtechnologies and electronics
- Services and the built environment
- Business research

VTT’s operations
Research and Development  Strategic Research  Business Solutions  IP Business  Group Services

VTT’s companies
VTT Expert Services Ltd (incl. Labtium Ltd, Enas Ltd)  VTT Ventures Ltd  VTT International Ltd  VTT Memsfab Ltd
The scientific fields of competency of the ERCIM member institutes are categorised according to the classification of the American Mathematical Society (AMS) for the mathematics part and Association for Computing Machinery (ACM) for the informatics part.

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<td>49 Calculus of variations and optimal control; optimisation</td>
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The Web version of this table provides links to the research institutes and teams active in these fields.

http://www.ercim.eu/activity/expertise
The categories used for the informatics part of the ERCIM table of competencies 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.

| Category | 0.1 Control Structures and Microprogramming (0.3.2) | 0.2 Algorithmic and Logical Structures | 0.3 Memory Structures | 0.4 Input/Output and Data Communications | 0.5 Register Transfer-Level Implementation | 0.6 Logic Design | 0.7 Integrated Circuit | 0.8 Performance and Reliability (C.4) | 0.9 Microelectronics (0.1.1) | 0.10 Computer Communication Networks | 0.11 Special-Purpose and Application-Based Systems (0.1.1) | 0.12 Performance of Systems | 0.13 Computer System Implementation | 0.1 Programming Techniques (0.2.1) | 0.2 Software Engineering (0.2.2) | 0.3 Programming Languages | 0.4 Operating Systems (0.4.1) | 0.5 Data Structures | 0.6 Data Storage Representations | 0.7 Data Encryption | 0.8 Coding and Information Theory (H.1.1) | 0.9 Finite-Field Systems (H.1.2) | 0.10 Computation by Abstract Devices | 0.11 Analysis of Algorithms and Problem Complexity (H.1, F.1.3) | 0.12 Logics and Meaning of Programs | 0.13 Mathematical Logic and Formal Languages | 0.14 Numerical Analysis (M.4.3-35) | 0.15 Discrete Mathematics (M.4.4, 4.5) | 0.16 Probability and Statistics (M.4.5, 4.6) | 0.17 Mathematical Software | 0.1 Models and Principles | 0.2 Database Management (I.3) | 0.3 Information Storage and Retrieval | 0.4 Information Systems Applications | 0.5 Information Interfaces and Presentation (e.g., HCI) (I.7) | 0.6 Symbolic and Algebraic Manipulation | 0.7 Artificial Intelligence | 0.8 Computer Graphics | 0.9 Image Processing and Computer Vision | 0.10 Pattern Recognition | 0.11 Knowledge Representation and Reasoning | 0.12 Logical Reasoning (K.3) | 0.13 Document and Text Processing (K.4, K.5) | 0.14 Data Processing (L.1) | 0.15 Physical Sciences and Engineering | 0.16 Life and Medical Science | 0.17 Social and Behavioral Science | 0.18 Arts and Humanities | 0.19 Computer-aided Engineering | 0.20 Computers in other Systems (L.3) | 0.1 Computer Industry | 0.2 History of Computing | 0.3 Computers and Education | 0.4 Computers and Society | 0.5 Legal Aspects of Computing | 0.6 Management of Computing and Information Systems | 0.7 The Computing Profession | 0.8 Personal Computing |