

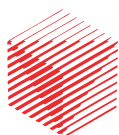
ERCIM

European Research Consortium
for Informatics and Mathematics

Cooperating for Excellence in Research

Activity Report 2016

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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 2016, the members of ERCIM included leading research establishments from 18 European countries. Encompassing over 10 000 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.

What is ERCIM?

ERCIM aims to foster collaboration within the European ICST research community and to increase cooperation with industry. Its members are centres of excellence across Europe. ERCIM is internationally recognized as a major representative organization in its field. ERCIM provides access to all major ICST research groups in Europe and has established an extensive program of working groups, publications, fellowships and prizes. It also hosts the European branch of the World Wide Web Consortium (W3C).

ERCIM, a consortium of leading research institutions, focuses on information and communication science and technology (ICST) and related areas of mathematics. ERCIM has a successful track record of promoting ICST research and cooperation in Europe and beyond. Membership was previously restricted to one member per country, but that limit is now being lifted to allow applications from more top level research institutions (including universities) in ICST from each country.

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 ICST and Applied Mathematics.
- 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 ICST research groups in Europe
- 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. ERCIM participates in EU activities and projects. ERCIM has also established cooperation with Informatics Europe, ETSI, the European Telecommunications Standards Institute and with the European Mathematical Society.

Consultancy

ERCIM experts have been involved in many advisory bodies convened by the European Commission. Additionally, ERCIM senior researchers are participating in several EC-funded roadmapping projects as partners, invited participants or members of advisory boards.

Research Projects

In addition to many projects involving ERCIM member 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.

Members

Member institutes are leading research establishments with excellent links to both the national and international, academic and commercial research communities. All current 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 their country, and joint projects with both small and medium-sized enterprises and large industrial companies.

Benefit of Membership

ERCIM is a European-wide network internationally recognized as a representative organisation in its field. Members can benefit from:

- International recognition as a leading centre for ICT R&D. ERCIM, a European-wide network of centres of excellence in ICT, is internationally recognised as a major representative organisation in its field;
- More influence on European and national government R&D strategy in ICT. ERCIM members team up to speak with a common voice and produce strategic reports to shape the European research agenda;
- Privileged access to standardisation bodies, such as the W3C which is hosted by ERCIM as to other bodies with which ERCIM has also established strategic cooperation. These include ETSI, the European Mathematical Society and Informatics Europe;
- Invitations to join projects of strategic importance;
- Establishing personal contacts among executives of leading European research institutes during the bi-annual ERCIM meetings;
- Invitations to join committees and boards developing ICT strategy nationally and internationally;
- Excellent networking possibilities with more than 10.000 high-quality research colleagues across Europe. ERCIM's mobility activities, such as the fellowship programme, leverages scientific cooperation and excellence;
- Professional development of staff including international recognition;
- Publicity through the ERCIM website and ERCIM News, the widely read quarterly magazine.

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.

Cor Baayen Award

Each year, ERCIM presents a promising young researcher in computer science and applied mathematics with the prestigious Cor Baayen Award.

Publications

ERCIM publishes the quarterly magazine "ERCIM News", white papers, and policy documents.

The ERCIM community is supported by a Consortium of two bodies:

- ERCIM AISBL an international non for profit association under Belgian law, carrying on the activities of ERCIM concerning collaborative research, networking, and support.
- ERCIM EEIG, the European Economic Interest Grouping, responsible for managing the ERCIM Office and hosting the European branch of W3C.

ERCIM Association

The ERCIM association is managed by the Board of the Association. In 2016, the board was composed of:

- Domenico Laforenza, IIT-CNR, Italy: President:
- Chrisos Koulamas, ISI, Greece: Treasurer
- Jerzy Tiuryn, University of Warsaw, Poland: Secretary

and in addition:

- Dimitris Plexousakis, Institute of Computer Science, Foundation for Research and Technology (FORTH) – Hellas, Greece, responsible for scientific aspects (working groups, etc.)
- Claude Kirchner, Inria, France, responsible for human capital
- Andreas Rauber, SBA Research, Austria, responsible for outreach activities.

The majority of these board members lead a task group consisting of ERCIM member representatives or substitutes.

ERCIM EEIG

The ERCIM EEIG is governed by the EEIG Board of Directors. In 2016 the board was composed of:

- Jos Baeten, CWI (Vice-President of the EEIG)
- Antoine Petit, Inria (President of the EEIG)
- Matthias Jarke, Fraunhofer-Gesellschaft
- Domenico Laforenza, CNR
- Constantine Stephanidis, ICS-FORTH

and its activities were carried out by an Executive Committee composed of:

- Alexander Nouak, Fraunhofer Gesellschaft
- Dick Broekhuis, CWI (chair)
- Claude Kirchner, Inria
- Brian Matthews, STFC
- Dimitris Plexousakis, FORTH
- Fausto Rabitti, CNR.



Domenico Laforenza, ERCIM President

Throughout 2016 ERCIM traded as a consortium consisting of ERCIM EEIG and ERCIM AISBL. ERCIM operated with a gross turnover of 8.4 M€.

60% 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.

Receipts

ERCIM Consortium 142,500 €

ERCIM Office

Receipt 760,579 € (including 469,382 € EU contracts)

Total received by the EU 4.263,690 €

Total Office receipt 4.554,887 €

W3C Europe

Receipt 3.269,315 € (including 339,757 € EU contracts)

Total received by the EU 748,764 €

Total W3C Receipt 3.678,322 €

Total turnover 8.375,709 €

Total funds from the EU 5.012,454 € (59%)

*Dick Broekhuis, CWI,
ERCIM EEIG Execom chair*



Science Coordination

A major activity within the scope of the Association's mission is related to the promotion of excellence in research and the maintenance of a strong portfolio of scientific activity, materialized in the form of ERCIM-led and coordinated joint research projects and ERCIM-hosted Working Groups. The Science Task Group aims to enable, encourage, sustain and coordinate scientific activities in the form of collaborative research projects and working groups in areas of ICST and Mathematics within which significant research activity is taking place at Institutions within and beyond ERCIM.

The Science Task Group is therefore divided into subtasks:

- Working Groups for building and maintaining a strong network of ERCIM researchers in the different scientific fields of competence of ERCIM.
- Expert Groups which are established on the initiative of ERCIM board to investigate current topics for a limited period with the aim to produce strategic papers or to coordinate relevant activities of common interest.
- Projects for stimulating the submission of ERCIM-led strategically relevant projects and for helping to define the topics for the yearly ERCIM Conference

The members of the Science Task Group in 2016:

Chair:

- Dimitris Plexousakis, FORTH

Members:

- Manuel Carro, SPARCIM
- João Falcão e Cunha, INESC
- Pierre Guisset, ERCIM office
- Thierry Priol, Inria
- Jean-Jacques Quisquater, FNRS
- Björn Levin, SICS
- Fausto Rabitti, CNR
- Philippe Rohou, ERCIM office
- Julius Stuller, CRCIM

The Science TG can be contacted at tg-science@ercim.eu



*Dimitris Plexousakis, ICS-FORTH
chair of the ERCIM Science Task Group*

Working Groups

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 to assure the appropriate trained human capital. ERCIM provides some financial support to the Working Groups.

A major activity of an ERCIM Working Group is to search actively for project funding that crosses national borders.

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.

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.

Working Groups with activities in 2015

- Computational and Methodological Statistics
- Dependable Software-Intensive Embedded Systems
- Formal Methods for Industrial Critical Systems
- Multimedia Understanding through Semantics Computation and Learning - MUSCLE
- Many-Valued Logics

Computational and Methodological Statistics

The Working Group Computing and Statistics focuses on all computational and methodological aspects of statistics. Of particular interest is research in important statistical applications areas where both computational and/or methodological aspects have a major impact. The aim is threefold: first, to consolidate the research in computational and methodological statistics that is scattered throughout Europe; second to provide researches with a network from which they can obtain unrivalled sources of information about the most recent developments in computational and methodological statistics as well as its applications; third to edit quality publications of high impact and significance in the broad interface of computing, methodological statistics and its applications.

Coordinator:

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

Co-organised event:

- 9th International Conference of the ERCIM WG on Computational and Methodological Statistics (CMStatistics 2016) and 10th International Conference on Computational and Financial Econometrics (CFE 2016), jointly held at the Higher Technical School of Engineering, University of Seville, Spain, 9-12 December 2016. The conference attracted around to 1500 participants.

- 2016 CRoNoS Winter Course on Econometrics and Statistics, Seville, Spain 6-8 December 2016. Approximately 50 PhD students and Early Career Investigators participated.

Joint publications:

- Hadjiantoni, S., Kontoghiorghes, E.J.: "Estimating large-scale general linear and seemingly unrelated regressions models after deleting observations", *Statistics and Computing* 27 (2), 2017, pp. 349-361, 2016.
- Colubi, A., Gatu, C., Kontoghiorghes, E.J. (Editors): "Special issue on computational statistics", *Journal of Computer Mathematics*, 93 (4), 2016, pp. 627-722, 2016.
- Alfons, A., Croux, C., Gelper, S.: "Robust groupwise least angle regression", *Computational Statistics and Data Analysis* 93, pp. 421-435, 2016
- Blanco-Fernandez, A., Winker, P.: "Data generation processes and statistical management of interval data", *ASTA Advances in Statistical Analysis* 100 (4), 2016 pp. 475-494, 2016.
- Durante, F., Fernández-Sánchez, J., Trutschnig, W.: "Baire category results for exchangeable copulas", *Fuzzy Sets and Systems*, 284, 146-151, 2016.
- Ana Colubi, Erricos J. Kontoghiorghes and Herman K. Van Dijk: "CFE-CMStatistics 2016 Book of Abstracts", ISBN 978-9963-2227-1-1 c, 2016 - CFE and CMStatistics networks, <http://www.cmstatistics.org/CMStatistics2016/docs/BoA%20CFE-CMStatistics%202016.pdf>
- Fischer, H., Blanco-Fernández, Á., Winker, P.: "Predicting Stock Return Volatility: Can We Benefit from Regression

Models for Return Intervals?”, *Journal of Forecasting* 35 (2), 113-146, 2016.

- C., Riani, M., Torti, F.: “Robust methods for heteroskedastic regression”, *Computational Statistics & Data Analysis* 104, 209-222, 2016.
- Cosbuc, M.I., Gatu, C., Colubi, A., Kontoghiorghes, E.J.: “A Generalized Singular Value Decomposition Strategy for Estimating the Block Recursive Simultaneous Equations Model”, *Computational Economics*, 2016, 1-13, 2016

<http://www.cmstatistics.org/CMStatistics2015/>

Dependable Software-Intensive Embedded Systems

In 2016 the ERCIM Working Group Dependable Embedded Software (DES) co-organised and co-hosted workshops and special sessions at a number of renowned conferences, including the Cyber-Physical Systems Week in Vienna, the SAFECOMP conference in Trondheim (Norway), and the Euromicro conferences on Digital System Design (DSD) and Software Engineering and Advanced Applications (SEAA) in Limassol, Cyprus. At each of these conferences, ERCIM and the DES Working Group were introduced as one of the key elements in the European landscape of research in embedded systems, cyber-physical systems and systems-of-systems.

Cyber-Physical Systems Week, Vienna, April 11-14, 2016

In April, Vienna hosted an outstanding event; the preeminent embedded systems/cyber-physical systems conference known as Cyber-Physical Systems (CPS) Week. This event combined four top conferences, ‘Hybrid Systems: Computation and Control (HSCC)’, ‘International Conference on Cyber-Physical Systems (ICCPs)’, ‘Information Processing in Sensor Networks (IPSN)’, ‘Real-Time and Embedded Technology and Applications Symposium (RTAS)’, and numerous workshops and side events. Altogether the CPS Week program covers a multitude of complementary aspects of CPS, and brings together leading researchers in this dynamic field.

This multi-conference event was co-organised by Vienna University of Technology, IST Austria, AIT Austrian Institute of Technology, University of Salzburg and TTTech, with Prof. Radu Grosu from Vienna University of Technology and Prof. Thomas Henzinger from IST Austria serving as the event chairs. Apart from the four main conferences, CPS Week hosted 21 workshops, six tutorials, three summits and the localisation competition. In total, it brought together over 1,000 researchers, students and practitioners from all around the world. The event attracted participants from five continents, representing 484 universities, research institutes and companies.

Erwin Schoitsch, as chairperson of the DES WG, organised a one-day event with 17 presentations, a keynote and a poster exhibition,



Erwin Schoitsch giving a talk.

the ‘EMC² Summit’, the name of which was derived from the largest Embedded Systems project of the ARTEMIS initiative (now ECSEL). ERCIM as co-hosting organisation, was highlighted in the introduction. The papers have been collected and will be published in an open access repository as ERCIM. They provide a very good overview of the multitude of issues to be tackled in multi-core mixed criticality CPS. This summit ranked among the top three side events of the CPS-Week.

ERCIM-DES Working Group co-hosting the DECSoS Workshop at SAFECOMP 2016 in Trondheim

Since the establishment of the SAFECOMP conference in 1979, the event has contributed to the progress of the state of the art in dependable application of computers in safety-related and safety-critical systems. SAFECOMP is an annual event covering the state of the art, experience and new trends in the areas of safety, security and reliability of critical computer applications. Amund Skavhaug, co-chair of the ERCIM-DES WG, acted as general chair, program chair (together with Jeremie Guiochet from LAAS) and host of SAFECOMP 2016. For many years, the annual SAFECOMP conferences have been complemented by a series of workshops.

The DECSoS workshop (ERCIM/EWICS/ARTEMIS Workshop on ‘Dependable Embedded and Cyber-physical Systems and Systems-of-Systems’) at SAFECOMP has been an annual tradition since its inception in 2006. In the past, it focussed on conventional ‘embedded systems’, covering all aspects of dependability. To highlight the relationships between physics, mechatronics and the notion of interaction with a somehow unpredictable environment, the terminology was changed to ‘cyber-physical systems’.

In recent years the DECSoS Workshop has served as a dissemination event for safety and security critical projects. It was a full day workshop, co-hosted by several ARTEMIS and ECSEL projects, many of which were represented by a presentation or posters and flyers. The workshop was very well attended (more than 25 participants, additional chairs had to be brought into the room), and good discussions followed the

interesting topics. The Workshop had four sessions, with 14 presentations in total:

- Analysis, Test and Simulation
- Automotive
- Safety and Cyber-security Analysis and Co-Engineering
- Embedded Systems' Industrial Applications.

It is important to note that the main conference SAFECOMP 2016 and the Workshops have separate proceedings as Springer LNCS 9922 (main conference) and LNCS 9923 (SAFECOMP Workshops). Amund Skavhaug and Erwin Schoitsch, chairs of the DES Working Group, served as program chairs for the DECSoS Workshop and managed the Workshop Proceedings.

SAFECOMP 2017 will take place in Trento, Italy, from 12 – 15 September, 2017, with Erwin Schoitsch as co-chair. Once again the EWICS/ERCIM/ARTEMIS DECSoS Workshop is planned for the first day, September 12th, 2017. Save the date!

Euromicro 2016 DSD/SEAA in Limassol, Cyprus

The well-established Euromicro conferences are two joint conferences which form the back bone of the Euromicro activities. These are SEAA (Software Engineering of Advanced Applications) and DSD (Digital Systems Design). The year 2016 saw the 42nd and 19th SEAA and DSD conferences respectively.

In the Euromicro/ARTEMIS/ERCIM Special Session 'Software and Education Ecosystems', which was organised by Erwin Schoitsch, approaches to sustainable innovation eco-systems were presented. Activities like the European workshops on Education, Training and Skills, addressing the interests of the European Electronic Leaders Group, the ARTEMIS E&T WG, and ERCIM were reported in their European context. Erwin Schoitsch and Amund Skavhaug from the ERCIM DES WG chaired this special session.

Links:

EMC² Summit 2016 at CPS Week: <http://kwz.me/WB>
Safecomp 2016: <https://www.ntnu.edu/safecomp2016>
Safecomp 2017: <http://safecomp17.fbk.eu/>
Euromicro 2016: <http://dtd-seaa2016.cs.ucy.ac.cy/>

Coordinators:

Erwin Schoitsch, Austrian Institute of Technology/SBA
and Amund Skavhaug, NTNU

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 specification 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:

Tiziana Margaria, University of Limerick

Joint 21st International Workshop on Formal Methods for Industrial Critical Systems and 16th International Workshop on Automated Verification of Critical Systems

The yearly workshop of the ERCIM Working Group on Formal Methods for Industrial Critical Systems (FMICS) was organized as a joint event together with the workshop on Automated Verification of Critical Systems (AVoCS). The resulting FMICS-AVoCS 2016 workshop took place on 26-28 September in Pisa at the CNR premises.

The aim of the FMICS workshop series is to provide a forum for researchers interested in the development and application of formal methods in industry. It strives to promote research and development for the improvement of formal methods and tools for industrial applications. The aim of the AVoCS workshop series is to contribute to the interaction and exchange of ideas among members of the international research community on tools and techniques for the verification of critical systems.

The workshop was chaired by Maurice ter Beek (ISTI-CNR, Italy), Stefania Gnesi (ISTI-CNR, Italy) and Alexander Knapp (Universität Augsburg, Germany). It attracted over 30 participants from ten countries, including the USA, Thailand and Japan, both from academia and industry.

Twenty-nine papers were submitted, of which eleven were accepted as full papers. Additionally, four short papers and five research ideas were accepted for presentation at the workshop.

The program moreover included three excellent keynote lectures: "Lessons Learned in a Journey Toward Correct-by-Construction Model-Based Development" by Silvia Mazzini (Intecs SpA, Italy), "Model-based Testing Strategies and Their (In)dependence on Syntactic Model Representations" by Jan



The participants of FMICS-AVoCS 2016 at the CNR premises

Peleska (Universität Bremen, Germany) and “Random Testing of Formal Properties for Industrial Critical Systems” by Thomas Arts (QuviQ AB, Sweden). The conference was sponsored by Formal Methods Europe, ERCIM and Springer.

The proceedings of FMICS-AVoCS 2016 have been published by Springer as volume 9933 in their LNCS series.

Links:

AVoCS: <http://fmics-avocs.isti.cnr.it/>

FMICS Working Group: <http://fmics.inria.fr/>

Submission page for the special issue:

<http://sttt.cs.tu-dortmund.de/sttt-FMICS-AVoCS/servlet/Conference>

Joint publication:

M.H. ter Beek, S. Gnesi, and A. Knapp (eds.): “Critical Systems: Formal Methods and Automated Verification - Proceedings of the Joint 21st International Workshop on Formal Methods for Industrial Critical Systems and 16th International Workshop on Automated Verification of Critical Systems (FMICS-AVoCS’16)”, Pisa, Italy, 26-28 September 2016, Lecture Notes in Computer Science 9933, Springer, 2016.

<http://dx.doi.org/10.1007/978-3-319-45943-1>

Multimedia Understanding through Semantics Computation and Learning - MUSCLE

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 and audio processing, and multimedia database management. The group is closely collaborating with ibai-publishing (www.ibai-publishing.org) which provides open-access journals in the fields of Data Mining, Case-Based Reasoning, and Mass Data Analysis of Signals and Images.

Coordinator:

Davide Moroni, ISTI-CNR

International Workshop on Computational Intelligence for Multimedia Understanding

Over 40 researchers from academia and industry attended a workshop on Computational Intelligence for Multimedia Understanding (IWCIM) organized by the ERCIM MUSCLE working group in Reggio Calabria, Italy, 27-28 October 2016.

The workshop was held in close collaboration with the National Research Council of Italy (ISTI & BAM institutes), TEA sas, the University of Calabria and the Mediterranean University of Reggio Calabria, and was supported by the Archaeological Museum of Reggio Calabria, the Italian section of IEEE and ERCIM.

Reggio Calabria is the Italian city that hosts the Riace Bronzes, the two famous full-size Greek bronzes that were rediscovered in 1972 and are now exhibited at the National Museum of Magna Graecia. It was therefore natural to dedicate a special track of IWCIM to the theme “Understanding Cultural Heritage” as multimedia technologies have opened a wealth of possibilities for documentation, access, archiving and dissemination of our artistic patrimony. In addition, multimedia technologies are valuable tools in the diffusion of audiovisual material to the public at large, thus leaving the scholars’ niche and assuming new economic relevance in education and tourism. The key to exploiting the added value provided by the contextual nature of a multimedia object is understanding: besides increasing enormously the potential audience, multimedia can help specialists interpret their data, especially when a multidisciplinary expertise is required before beginning any concrete intervention on an artefact of historical, archaeological or artistic interest.

Two distinguished invited speakers used their expertise to broaden the perspectives of the computer scientist audience.



Franz Fischnaller, invited speaker from Accademia Albertina di Belle Arti di Torino, Italy (left) and workshop attendants visiting the National Museum of Magna Graecia (right).

Marina Bicchieri (ICRCPAL) showed us that books are composite objects, with much information hidden between the pages. Their fascinating history is also revealed by the physical support, the kind of ink/pigment/dye chosen and the pathologies they have suffered during their lifetime. Scholars and scientists could be helped by an interoperable and shared corpus of knowledge on past and current diagnostic technologies and procedures used in restoration.

The second invited talk was delivered by Franz Fischnaller (Accademia Albertina di Belle Arti di Torino, Italy & Museum European Mediterranean Civilizations, France). This talk explored new technologies in computer vision and imaging, immersive virtual reality (VR) and real-time interactive AR systems. These technologies provide interesting contexts, helping the public to engage in our cultural heritage, both inside and outside the museum.

Underwater cultural heritage was also addressed by a dedicated special session. The use of Autonomous Underwater Vehicles (AUVs) to scout, survey and map the seabed was presented. AUVs can document ancient shipwrecks, providing rich multimedia content that can be turned into realistic 3D reconstructions. Multimedia creative technologies can then be used to propose virtual diving experiences, allowing the general public to explore otherwise inaccessible archaeological sites.

A final session on Big and Linked Data addressed aspects of social media analytics, forensic and semantic data stream processing.

20 papers were selected for oral presentation by the programme chairs Emanuele Salerno and Hana Charvatova. All accepted papers will be available through IEEE Xplore, thanks to the publication chairs Maria Trocan and Frédéric Amiel.

The social programme included a trip to the recently renewed National Archaeological Museum of Magna Graecia – thanks to the Director Carmelo Malacrino and to the Deputy Director Giacomo Maria Oliva who accompanied us during the visit. After the museum, Francesca Fatta showed us the facilities at the Lab for Survey and Representation of Mediterranean Architecture, which she directs at the Mediterranean University of Reggio Calabria.

Joint publication:

- Gerace I., Palumba C., Tonazzini, A.: "An inpainting technique based on regularization to remove bleed-through from ancient documents", in Proc. of IWCIM 2016, article no. 07801177, 2016
<http://ieeexplore.ieee.org/document/7801177/>
- Salerno E.: "Watermarking information layers in multispectral images of cultural heritage objects", in Proc. of IWCIM 2016, article no. 7801176, 2016
<http://ieeexplore.ieee.org/document/7801176/>
- Savino P., Bedini L., Tonazzini A.: "Joint non-rigid registration and restoration of recto-verso ancient manuscripts", in Proc. of IWCIM 2016, article no. 7801180, 2016
<http://ieeexplore.ieee.org/document/7801180/>
- Aggarwal U., Trocan M., Coudoux F.X.: "An HVS-inspired video deinterlacer based on visual saliency", Vietnam J. Comput. Sci. 4, 1 (2017) 61-69 (available online september 16, 2016, doi: 10.1007/s40595-016-0081-1
<https://link.springer.com/article/10.1007/s40595-016-0081-1>
- Aggarwal U., Trocan M., Coudoux F.X.: "Spectral saliency-based video deinterlacing", in Proc. of ICCI 2016, Halkidiki, Greece, LNCS 9875 (2016) 590-598, ISBN 978-3-319-45242-5; e-ISBN 978-3-319-45243-2, doi: 10.1007/978-3-319-45243-2
https://link.springer.com/chapter/10.1007/978-3-319-45243-2_54

Many-Valued Logics

Coordinator:

Carles Noguera i Clofent, Institute of Information Theory and Automation, Academy of Sciences of the Czech Republic

Joint projects:

Syntax Meets Semantics: Methods, Interactions, and Connections in Substructural logics, SYSMICS, H2020-MSCA-RISE-2015-689176

Substructural logics are formal reasoning systems that refine classical logic by weakening the structural rules in Gentzen sequent calculus. While classical logic generally formalises the notion of truth, substructural logics allow to handle notions such as resources, vagueness, meaning, and language syntax, motivated by studies in computer science, epistemology, economy, and linguistics. Moreover, from a theoretical point of view, substructural logics provide a refined perspective of classical logic, since the former often exhibit features which are either absent or trivialised in the classical case. Traditionally, substructural logics have been investigated following three main approaches: proof theoretic, algebraic and abstract study. Although some connections among these approaches were observed long ago, in large part these practices developed in independence. As a result, the research directions, tools and motivations for each approach developed in relative isolation.

The main objective of this project is to establish a network of collaborations between the experts of these diverse methods to investigate substructural logics in a cohesive fashion, taking into account these three distinct yet complementary points of view. The main momentum for this endeavour is provided by recent surprising results that confirm how deeply algebraic and proof theoretic methods are linked to one another. The project gathers leading experts in all these three areas, from all around the world, with the aim of reuniting these traditions and their communities and obtain deep results in all three areas. We are confident that this innovative, combined perspective on substructural logics will have a deep impact on the field and that this project will provide a stable basis of cooperation for a large, international community of algebraists, logicians and theoretical computer scientists, giving fresh impetus to these disciplines to flourish and integrate.

Modeling vague quantifiers in mathematical fuzzy logic, MoVaQ, I1897-N25

A project funded by the Austrian Science Fund (FWF) and Czech Science Foundation (GACR)

Duration: January 2015 to December 2017

Predicate graded logics and their applications to computer science, GA17-04630S

A project funded by the Czech Science Foundation

Duration January 2017 to December 2019

Joint publications

- Petr Cintula, Chris Fermüller, Carles Noguera: “Fuzzy Logic”, Stanford Encyclopedia of Philosophy, 2016
<https://plato.stanford.edu/entries/logic-fuzzy/>
- Manuela Busaniche, Leonardo Cabrer, Daniele Mundici: “Polyhedral MV-algebras”, Fuzzy Sets and Systems 292: 150-159, 2016

(Co-)organised Events

- Syntax Meets Semantics Conference, Barcelona, 5-9 September 2016. Lecturers: Manuela Busaniche, Josep Maria Font, Alessandra Palmigiano, James Raftery, Kazushige Terui, Constantine Tsınakis, Yde Venema
<http://sysmics-16.iiia.csic.es/>
- Logic, Algebra and Truth Degrees 2016, Phalaborwa, South Africa, 28- 30 June 2016. Lecturers: Leonardo Cabrer, Mai Gehrke, Peter Jipsen, Norbert Preining, Hykel Hosni
<http://www.latd2016.co.za/>

Towards an Open Access Policy for ERCIM

At its October 2014 meeting, the EEIG ERCIM board installed a task group Boost OpenAccess Mastering (BOM), chaired by us, with the goal of facilitating the sharing of information and the strategies of ERCIM participants in regard to open access. The ensuing report, a plea for author control, which was adopted by the board in October 2015, recommends an Open Access strategy and identified tools shared or to be shared by several ERCIM members.

We need change

The current digital revolution is impacting the way science develops and the way we conduct research. The seminal vision of Jim Gray about big data as the fourth paradigm of science (see <http://kwz.me/VI>) is an excellent entry point to understanding these phenomena, where the initial paradigms of theory building and experimentation are now completed or even replaced by digital simulation and data exploration.

In this profoundly renewed context, the role of scientific data is fundamental. Scientists of all disciplines are completely dependent on the data that allow them to understand, model, experiment, reproduce and communicate.

In the digital world, everything can be seen as source data: a text describing the results of a study, a computer program, a video, a picture, a sound, a MOOC, a lab book, a protocol, a data set captured by an instrument or generated by a computer, and so on. Secondary data or data generated from other data, like discussions, social network information or peer reviews are also crucial sources that may be relevant for further research.

Being in control of data is a matter of scientific sovereignty, and any restriction or hindrance in this respect will be to the detriment of science. Note that control is more than ownership, because ownership is transferable, and if something is sold you can no longer control it. 'Control' is used here in terms of ability to read, re-use, quote, analyse a common good. From this point of view, maintaining the sovereignty of scientific academic research is a crucial issue, which we need to preserve in the short as well as the long run.

The services that allow scientific data to be used are crucial. They include data mining, analysis and synthesis for scientific purposes as well as for societal, economic or industrial purposes. In particular they require access to the full texts of scientists' contributions. Ideally, researchers would be able to make the most of the available data; this is an important goal that either scientists themselves, or public or private entities, could aim towards.

As a consequence, the BOM task group consisting of J. Baeten, L. Candela, I. Fava, C. Kirchner, W. Mettrop, L. Romary, L. Schultze make the following recommendations:

Recommendations

The following recommendations could be adapted to the best practices of each scientific discipline as well as to local legislation, with the goal of making scientific sovereignty an unalterable reality by or before 2020.

Main principles

1. Scientists should maintain control over all their scholarly products (i.e., all the outcomes of their research activities, ranging from their publications – actually the full text – to the datasets they curated/contributed to);

Expert Groups

Expert Groups are established on the initiative of ERCIM board to investigate current topics for a limited period with the aim to produce strategic papers or to coordinate relevant activities of common interest. Expert Groups have been established in the fields of "Big Data", "Security and Privacy" and "Open Access" (BoM - Boost OpenAccess Mastering).

2. The services that value scientific data should be open to competition.

Organisation principles

1. Advise all research institutions to formulate and implement a strategic policy about the proper management of their scholarly outputs. Such policies should mandate scientists to deposit every scholarly product in a suitable open access repository as soon as the product is produced. The policy should also mention the repositories trusted by the institution;
2. Advise all research institutions to support the development of suitable publishing platforms for their research products (including open access repositories and overlay journals). Such publishing platforms should be maintained as public infrastructure;
3. Scientists deserve proper credit for their scholarly products. Research institutions should promote and support the development of a comprehensive, scientific community-recognised and innovative set of scholarly products evaluation/assessment criteria that can accurately quantify and communicate the impact and contribution of each researcher's work.

ERCIM specifics

1. A network of repository and scientific information managers should be set up in order to share experience as well as develop better services related to the various institutions' open access strategies;
2. ERCIM should be able to access reliable output figures from all institutions, which could then be shared between institutions;
3. Setup a joint dashboard for sharing article processing charges (APC) across all ERCIM entities: the model suggested by University of Bielefeld could be used;
4. Address in the name of ERCIM and of each national research institution the recommendations of the BOM Report to the highest political level of the EU and of each country;
5. ERCIM should favour the re-use of publication facilities available among its members, such as repositories or overlay journals.
6. Encourage the involvement of ERCIM members into the emergence of open access publication including overlay journals dedicated to data and software.

ERCIM has adopted these recommendations and is working further towards our goals.

The report is available for download at
<http://oai.cwi.nl/oai/asset/23589/23589B.pdf>

Projects

In 2016, ERCIM participated in 10 research projects funded by the European Commission either as coordinator or as a partner.

A European project can be a richly rewarding tool for pushing your research or innovation activities to the state-of-the-art and beyond. Through ERCIM, our member institutes have participated in more than 80 projects funded by the European Commission in the ICT domain, by carrying out joint research activities while the ERCIM Office successfully manages the complexity of the project administration, finances and outreach.

Horizon 2020: How can you get involved?

The ERCIM Office has recognized expertise in a full range of services, including:

- Identification of funding opportunities
- Recruitment of project partners (within ERCIM and through a strategic partnership with Ideal-IST)
- Proposal writing and project negotiation
- Contractual and consortium management

- Communications and systems support
- Organization of attractive events, from team meetings to large-scale workshops and conferences
- Support for the dissemination of results

How does it work in practice?

Contact the ERCIM Office to present your project idea and a panel of experts within the ERCIM Science Task Group will review your idea and provide recommendations. Based on this feedback, the ERCIM Office will decide whether to commit to help producing your proposal. Note that having at least one ERCIM member involved is mandatory for the ERCIM Office to engage in a project.

If the ERCIM Office expresses its interest to participate, it will assist the project consortium as described above, either as project coordinator or project partner.

For more information, please contact:
 Philippe Rohou, Project Group Manager
 Tel: +33 492 385 010
 E-mail: philippe.rohou@ercim.eu

Project acronym	ERCIM's role	ERCIM members/partners involved
BigDataEurope	partner	Fraunhofer IAIS, ERCIM EEIG/W3C
BlueBridge	administrative support	ISTI-CNR, FORTH
D-CENT	partner	ERCIM EEIG/W3C
Global ITV	partner	ERCIM EEIG/W3C, Fraunhofer FOKUS
MediaScape	partner	ERCIM EEIG/W3C
PaaSage	coordinator	STFC, Inria, FORTH
Share PSI 2.0	coordinator	SZTAKI, LIST (FNR), Fraunhofer
STREWS	coordinator	ERCIM EEIG/W3C, Katholieke Universiteit Leuven (FNRS/FWO)
VRE4EIC	coordinator	CWI, CNR, FORTH
WAI-DEV	coordinator	ERCIM EEIG/W3C



BIG DATA EUROPE

Empowering Communities
with Data Technologies



BigDataEurope

The “BigDataEurope” project aims at developing a Big Data platform based on requirements identified with stakeholders from the seven H2020 societal challenges: Climate, Energy, Health, Transport, Social sciences, Food and Security. The consortium, led by Fraunhofer IAIS will engage with these communities to identify their big data technology needs, to design and realise the required ICT infrastructure and support the use and deployment of the platform.

With this platform, the project will provide companies and institutions with an integrated and ready-to-use palette of Big Data tools that is adapted to their particular needs. Small and medium-sized companies who do often not have the resources for hiring specialized data scientists will especially benefit from the lowered entrance bar into the Big Data world as they are offered the opportunity to easily understand and use state-of-the-art data science techniques for their business.

The project tackles two key aspects. First, BigDataEurope will build up a network between stakeholders of the key European societal sectors. Interest groups modelled after the W3C scheme will then be launched to discuss the particular needs of each sector in a series of workshops that will cover the whole process of data usage; from data collection, processing, storage, and visualization to the development of data services. The second aspect of the project will see that the requirements collected in the workshops are used to guide the technical development and implementation of the open BigDataEurope Platform.

BigDataEurope - Empowering
Communities with Data Technologies

EC funding: € 4,984,238

ERCIM's role:
ERCIM EEIG project partner

ERCIM/W3C contact:
Rigo Wenning, W3C

ERCIM members involved:
Fraunhofer Gesellschaft

Coordinator: Fraunhofer Gesellschaft

Duration:
January 2015 to December 2017

<http://www.big-data-europe.eu/>

BlueBRIDGE



BlueBRIDGE is the new European initiative funded under the H2020 framework to further develop and exploit the iMarine e-Infrastructure data services for an ecosystems approach to fisheries.

BlueBRIDGE's overall objective is to support capacity building in interdisciplinary research communities actively involved in increasing scientific knowledge about resource overexploitation, degraded environment and ecosystem with the aim of providing a more solid ground for informed advice to competent authorities and to enlarge the spectrum of growth opportunities as addressed by the Blue Growth Societal Challenge.

BlueBRIDGE capitalizes on past investments and uses the proven D4Science infrastructure that counts over 1500 users, integrates more than 50 repositories, executes around 13,000 models and algorithms per month and provides access to over a billion records in repositories worldwide, with 99,7% service availability.

BlueBRIDGE aims to develop innovative services in the following areas:

- Blue Assessment - services for stock assessment and for the generation of unique identifiers for global stocks;
- Blue Economy - services supporting the analysis of socio-economic performance in aquaculture;
- Blue Environment - spatial planning services to identify aquaculture and fisheries infrastructures from satellite imagery;
- Blue Skills - on-line training services and capacity building on existing training modules for fisheries scientists and other practitioners.

BlueBRIDGE will develop two new services addressing two relevant problems related to this challenge that build one upon the other:

- Performance evaluation, benchmarking and decision making in aquaculture service: providing capacities for companies to evaluate, benchmark and optimize their performance against best practices and the competition, and to extend the capacity of scientific research communities and policy makers to quantify and comprehend aquafarming industry operation, ensuring sustainability and development of the sector.
- Strategic Investment Analysis and Scientific Planning and Alerting service: supporting investors and scientists in the efficient identification of strategic locations of interest that meet multifactor selection criteria.
- The two new services will be put in practice initially in two domains:
 - a group of aquafarming SMEs, that have been preselected and will be contributing to the benchmarking and evaluation of their production
 - a group of individual stakeholders, not funded by the project, for evaluating potential investment scenarios.

BlueBridge - Building Research environments for fostering Innovation, Decision making, Governance and Education to support Blue growth

EC funding: €5.300,000

ERCIM's role:

ERCIM EEIG provides administrative and financial support

ERCIM members involved:

CNR, FORTH

Scientific coordination:

Donatella Castelli, ISTI-CNR

Duration:

September 2015 - March 2018

<http://www.bluebridge-vres.eu/>



D-CENT

D-CENT creates digital tools for direct democracy and economic empowerment. It helps communities to share data, collaborate and organize their operations. We are creating a social networking platform for large-scale collaboration. We call for citizens, developers, hackers and open source activists around Europe to work with us.

The abbreviation D-CENT refers to Decentralised Citizens ENgagement Technologies. Besides the platform, the project explores how communities might manage common goods and facilitate online exchange with Bitcoin-style digital social currencies. The project started in October 2013 and will run until May 2016. We have a multidisciplinary partnership from seven countries.

The D-CENT platform is built together with citizens. Pilots running in Finland, Iceland and Spain gather use cases and knowledge from people who have already used online tools for direct democracy on an ad hoc basis. Direct Democracy/Political Empowerment – enabling more direct engagement in democratic decision making. D-CENT builds on Europe’s largest experiments in direct democracy, showing how millions of citizens can become engaged in deliberation, and decision-making:

- Spain: 15M citizen movement, one of Europe’s most dynamic social movements
- Iceland: Citizen Foundation, Better Reykjavik, and Better Iceland Participation democracy websites
- Finland: Open ministry Crowdsourced law-making site linked to Parliament

The second cluster of pilots will connect these new approaches to empowerment to economic platforms, to extend, scale and link up community digital social currencies, and creating the building blocks for an economy that links exchange to trust, deliberation and collective awareness.

Open, scalable, modular technology

D-CENT will be an open, modular and decentralized platform to build privacy-aware applications. The code-base will be described by open specifications and released under an open source license. Developers will be able to easily write API-based apps plus add new modules. The modular platform enables to share in real-time open data, democratic decision making tools, and digital social currency for the social good. The D-CENT platforms will go beyond data aggregation to enable deliberation and collective judgment, informed by feedback.

D-CENT - Decentralised Citizens ENgagement Technologies

EC funding: € 1.905,000

ERCIM's role:
ERCIM EEIG project partner

ERCIM/W3C contact:
Jessica Michel Assoumou, ERCIM Office

ERCIM members involved:
W3C (ERCIM EEIG)

Coordinator: Nesta, UK

Duration:
October 2013 to Mai 2016

<http://dcentproject.eu/>



Global ITV

Global ITV is an EU-Brazil Research and Development Cooperation with the goal to develop an interoperability scheme that allows several iDTV and Smart TV systems to work together, exchanging and using the information. The ultimate aim is to lay the foundation for a global interoperable platform.

GLOBAL ITV seeks to harmonise different existing solutions in the domains of interactive, hybrid, connected and web TV on a worldwide level. Key stakeholders from Brazil and Europe have joint forces to define a migration path and a coexistence scenario towards a next-generation hybrid TV platform based on established and open standards in alignment with the developments in the “Web World”. The extensive experience gathered in the past years will be exchanged mutually between the involved partners and their advisors in order to define a viable solution with direct traction on the market and a clear perspective for the future.

The scope of the GLOBAL ITV project is to develop a schema for next generation Hybrid Broadcast-Broadband Systems to define interoperable scenarios and develop reference architectures. Attractive new advanced services and applications will be showcased. The ultimate aim is to create the foundation for a global interoperable platform.

The European partners are: IRT – Institut für Rundfunktechnik GmbH (Germany), Aqua Consult Ingenieros SL (Spain), VESTEL (Turkey), Fraunhofer-FOKUS (Germany), TDF (France), Retevisión SA (Spain), Symelar Innovación (Spain), European Broadcasting Union (Switzerland), and ERCIM/W3C

The Brazilian partners include: Universidade de São Paulo, Universidade Católica de Brasília, Universidade Federal do Pará, Universidade Estadual Paulista “Júlio de Mesquita Filho”, Associação do Laboratório de Sistemas Integráveis Tecnológico, Universidade Estadual de Campinas, Universidade Federal do ABC, BAND TV, HXD Interactive Television.

Global ITV - Interoperability of Interactive and Hybrid TV systems – A new advanced scheme for future services and applications in a global environment

EC funding: € 1.399,998

ERCIM's role:

ERCIM EEIG project partner

ERCIM/W3C contact:

Philipp Hoschka, W3C

ERCIM members involved:

W3C (ERCIM EEIG), Fraunhofer-FOKUS

Duration:

December 2013 to January 2016

<http://www.globalitv.eu/>



MediaScape

In times where TVs, smartphones and tablets are all being connected to the Internet, it is increasingly common for people to watch TV at the same time as interacting with their smartphone or tablet. MediaScape is working on helping broadcasters to provide a socially engaging experience across multiple screens for broadcast and streamed content, and associated applications in order to provide the users more consistent multi-device and multi-user media services. This will build upon the success of HTML5 and the marriage of the TV, PC and Mobile worlds.

MediaScape takes connected service development to a new level and lays the foundations for advanced connected multi-user services via a standardised approach integrated into the HTML5 paradigm. In this approach, the three main involved actors take advantage of MediaScape: a) the users, b) the broadcasters and c) developers and service providers.

Benefits of MediaScape for the users

The users will be able move parts of the functionality smoothly from one device to another in an intuitive manner and the application would adapt itself to the device. A user will also be able to handle with different devices being used simultaneously, interacting with a services seamlessly split to the context. The users will be able to manage personal devices together with shared devices (such as TV or an in-car dashboard device) for synchronised experience sharing in multi-user scenarios.

Benefits of MediaScape for the broadcasters

For the broadcasters, MediaScape facilitates the marriage of the TV, PC and Mobile worlds through a standard solution that includes real-time delivery and synchronisation of media contents and applications across a variety of devices, eliminating them the need for the creation and maintenance of totally different developments to provide this kind of services. With MediaScape, broadcasters will be in charge of creating and providing a single application that reaches all target environments.

Benefits of MediaScape for developers and service providers

From a developer and service provider point of view, aspects of resource discovery and association, synchronisation and adaptation can be partially implemented with different tools (JavaScript libraries, APIs, etc.). However these implementations are non-standard, non-interoperable, and non-transparent for the user and do not work within TV type devices which currently rely on proprietary and vendor specific technologies. MediaScape opens up these features to a new developer community - the large and creative group of developers working on the Web, and particularly the growing group working with HTML5 for video, audio and real-time web applications. MediaScape makes it as easy to create these kinds of services as it is to create an HTML web page, treating the TV set as just one part of the ecosystem and including the broadcast simply as a new type of resource - thereby enabling much broader participation in their creation, and increasing the range and diversity of potential applications.

MediaScape - Dynamic Media Service Creation, Adaptation and Publishing on Every Device

EC funding: €3.110,993

ERCIM's role:
ERCIM EEIG project partner

ERCIM/W3C contact:
Philipp Hoschka, W3C

ERCIM members involved:
W3C (ERCIM EEIG)

Scientific coordination:
Igor G. Olaizola, Vicomtech

Duration:
September 2013 - March 2016

<http://www.i-marine.eu>



PaaSage

PaaSage is a major research initiative with the goal of developing an open and integrated platform to support model based lifecycle management of Cloud applications.

Cloud solutions are currently still insufficient and require a high level of expertise on the part of the developer and the provider to properly exploit the capabilities offered by Cloud technologies. Cloud infrastructures are not standardized and porting an existing application to a Cloud platform is still a very challenging task, leading to a strong interdependence between the client application and the Cloud platform. Developing once and deploying on many Clouds is not a viable proposition as things stand. This is the challenge that the PaaSage consortium will address. PaaSage will deliver an open and integrated platform to support both design and deployment of Cloud applications, together with an accompanying methodology that allows model-based development, configuration, optimisation, and deployment of existing and new applications independently of the existing underlying Cloud infrastructures.

“PaaSage will provide the relevant means to significantly improve programmability, usability and performance of Clouds beyond current state of the art approaches”, says Keith G. Jeffery, scientific coordinator of the project. “We have to admit that European industry is lagging behind in business creation and development on the basis of Cloud computing technologies”, adds Pierre Guisset, dissemination leader, “Our objective with PaaSage is to develop the tools that will enable European small and large businesses to take a leading position in exploiting Clouds. Typically a business will be developing its in-house server cluster to an in-house Cloud to obtain benefits of elasticity and eco-friendliness. However, when elasticity needs to extend beyond the in-house environment to a public cloud there are interoperability problems and provider proprietary solution constraints. These will be overcome by PaaSage”.

PaaSage is a collaborative research project co-funded under the ICT theme of the 7th framework programme of the European Union. In particular, PaaSage addresses the findings highlighted by the Commission’s Cloud Computing Expert Working Group.

PaaSage - Model-based Cloud Platform
Upperware

EC Funding: € 7.100,000

ERCIM's role:
ERCIM EEIG project coordinator

ERCIM members involved:
STFC, Inria, FORTH, University of Cyprus

Scientific coordination:
Keith Jeffery, ERCIM Office

Administrative coordination:
Philippe Rohou, ERCIM Office

Duration:
October 2012 - September 2016

<http://www.paasage.eu/>



Share-PSI 2.0



Share PSI 2.0

Share-PSI 2.0 is the European network for the exchange of experience and ideas around implementing open data policies in the public sector. It brings together government departments, standards bodies, academic institutions, commercial organisations, trade associations and interest groups to identify what does and doesn't work, what is and isn't practical, what can and can't be expected of different stakeholders.

The impetus for the Share PSI 2.0 Thematic Network is the revised European Directive on the Public Sector Information. This revises and increases the obligations on European Union member states to make their publicly funded data available at zero or, at most, marginal cost. Noting the work of the LAPSI project, which is concerned with legal aspects of Public Sector Information, this project focuses on the practical and technical challenges. What data is covered by the Directive? How should it be published? What can be done to maximise the return on investment, whether in terms of internal efficiencies or external commercial development. What are the existing best standards to use, what new standards need to be developed? These and many more questions are being addressed by Share-PSI 2.0.

The main activity of the network is to organise a series of workshops examining different aspects of PSI. In each workshop, the network partners with direct experience will present their case studies. These will be complemented by external speakers who will be invited via the typical route of a call for participation, peer review of submitted papers and selection by a programme committee.

The output of the workshops will be offered as input to the W3C Data on the Web Best Practices Working Group. As the name suggests, that group is compiling a W3C standard that will help guide people and organisations around the world as they build the Web of data.

Towards the end of the Share-PSI 2.0 network's life (the first half of 2016), the partners will incorporate the W3C Best Practice in their own guidelines as relevant to them in their country or sector of interest.

Share-PSI 2.0 - Shared Standards for Open Data and Public Sector Information

EC funding: €917,500

ERCIM's role:

ERCIM EEIG project coordinator

ERCIM members involved:

Fraunhofer FOKUS, Public Research Centre Henri Tudor (FNR), SZTAKI, W3C (ERCIM EEIG)

Scientific coordination:

Phil Archer, W3C

Administrative coordination:

Philippe Rohou, ERCIM Office

Duration:

February 2014 to July 2016

<http://www.w3.org/2013/share-psi/>

VRE4EIC

The VRE4EIC project will enhance Virtual Research Environments (VRE) aimed at empowering multi-disciplinary research communities and accelerate innovation and collaboration.

Together with ERCIM, seven European organisations are joining forces: European research teams (CWI, TU Delft, CNR, FORTH), international organisations (EuroCRIS and W3C) and active e-Research infrastructures (ENVRIplus, represented by University of Amsterdam and EPOS, represented by INGV). Their objective is to build a VRE reference architecture and building blocks of an enhanced VRE (so-called e-VRE, the software outcome of the project).

According to Keith Jeffery (ERCIM), the scientific coordinator of VRE4EIC, “The project envisages eventually VREs interoperating among themselves using e-VRE while accessing e-Research Infrastructures (such as EPOS and 20 other environmental research infrastructures in ENVRIplus) which are themselves dependent on regional and national e-Infrastructures and European e-Infrastructures such as GEANT, EUDAT, EGI”.

VRE4EIC intends to change the life of 70.000 European researchers, by providing them supporting tools for collaborative, multi-disciplinary data-driven science, as needed to tackle critical societal challenges such as climate change and energy sustainability.

The specific objectives of the project are:

- Increase the VRE usability for multi-disciplinary research;
- Increase the quality of VRE user experiences;
- Increase the deployment of VRE on different research infrastructures by abstracting and reusing building blocks and workflows;
- Improve the contextual awareness and interoperability of metadata;
- Promote exploitation and standardisation of e-VRE.
- VRE4EIC project software outcome will be available under an open source software license for maximum uptake and community building.



VRE4EIC - A Europe-wide Interoperable Virtual Research Environment to Empower Multidisciplinary Research Communities and Accelerate Innovation and Collaboration

EC Funding: € 4.400,000

ERCIM's role:
Project coordinator

ERCIM members involved:
CWI, CNR, FORTH

Scientific coordination:
Keith Jeffery, ERCIM Office

Administrative coordination:
Philippe Rohou, ERCIM Office

Duration:
September 2015 - September 2018

<http://www.vre4eic.eu/>



WAI-DEV

WAI-DEV, Web Accessibility Initiative (WAI) Ecosystem for Inclusive Design and Development, will develop strategies to support mainstream production of inclusive components and services; demonstrate the potential value and showcase good practice in inclusive design; and support enhanced policy strategies for consistent adoption and implementation of accessibility by public and private sector organisations.

WAI-DEV will primarily target the Web as the essential technical platform and universal interface for information and communication technology (ICT) through which to address the accessibility of advanced technologies and delivery channels including those for mobile devices, portable computers, digital television, telephony, and more. It will build upon recent technical and policy advancements in accessibility and on the cross-cutting benefits of accessibility for everyone regardless of age, gender, software, hardware, connectivity, language, literacy, digital skills, social and economic situations, and physical and mental abilities. It will thereby facilitate more mainstream market adoption of accessible and inclusive design-for-all practices throughout the production chain, and support implementation of accessibility policies and targets set by the European Commission and EU Member States.

WAI-DEV will result in:

- Support for industrial strategies for the production of inclusive components and services;
- Demonstration of the social and economic value and of good practice in inclusive design;
- Enhanced policy strategies that support the adoption and implementation of accessibility.

WAI-DEV is a coordination and support action project, co-funded by the European Commission as a Specific Support Action under the IST 7th Framework Programme. The project is led by the W3C Web Accessibility Initiative.

WAI-DEV - WAI-DEV : Web Accessibility Initiative (WAI) Ecosystem for Inclusive Design and Development

EC funding: € 499,000

ERCIM's role:
project coordinator

ERCIM members involved:
ERCIM EEIG/W3C,

Scientific coordination:
Shadi Abou-Zahra, W3C

Administrative coordination:
Jessica Michel Assoumou, ERCIM Office

Duration:
February 2014 to March 2016

<http://www.w3.org/WAI/DEV/>

Human Capital

Human Capital (HC) is a central concern within all organizations. In ERCIM its main focus is the European cooperation of different entities with their own HC policies. To this end we are currently building on two key activities. The first is the ERCIM post-doc fellowship programme that has been in existence since 1994. This programme facilitates the participation of young scientists in research teams within ERCIM member institutes by organizing postdoctoral fellowships. In addition to mobility in high quality teams, it helps participants further their understanding of the European research environment and carrier capabilities.

The second key activity is the Cor Baayen Young Researcher Award that acknowledges the achievements of young research scientists from European teams in informatics or mathematics.

There is scope for further development of both of these tools, but we would also like to create new schemes for mobility between ERCIM members. In particular, in addition to post-docs, we would like to foster mobility of all scientists, including PhD students, engineers and management and administration professionals.

ERCIM's Human Capital Task Group is in charge of supervising these actions and proposing new directions. In 2016 the group was composed of:

- Harald Lenschow, NTNU
- Claude Kirchner, Inria (chair)
- Adriana Lazzaroni, CNR
- Emma Lière, ERCIM Office
- Laszlo Monostori, SZTAKI
- Jerzy Tiuryn, University of Warsaw
- Bettina Touré, Fraunhofer
- Edgar Weippl, AARIT

*Claude Kirchner, Inria, chair of the
ERCIM Human Capital Task Group*





“Alain Bensoussan” Fellowship Programme

The PhD Fellowship Programme has been established as one of the premier activities of ERCIM. Since its inception in 1991, over 500 fellows have passed through the programme. In 2016, 23 young scientists commenced an ERCIM PhD Fellowship and 41 fellows have been hosted during the year. This represents 229 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.

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 2016, 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.

The fellowships are of 12 months duration with a possible extension, spent in one of the ERCIM member institute. Fellows can apply for second year in a different institute.

Conditions

Candidates must:

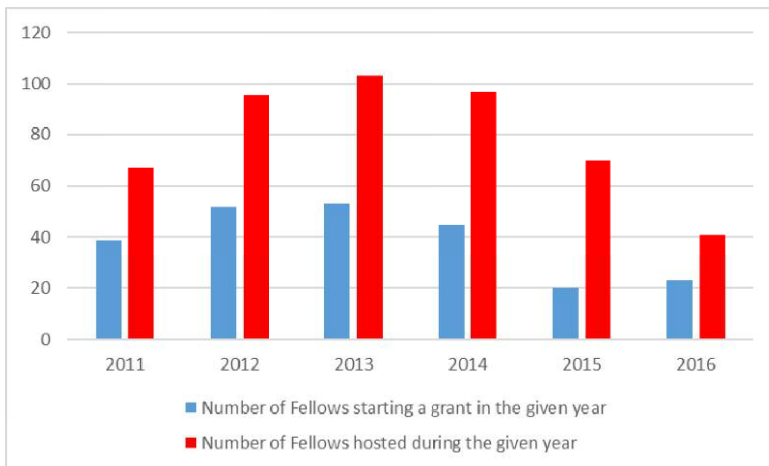
- have obtained a PhD degree during the last eight years (prior to the application deadline) or be in the last year of the thesis work with an outstanding academic record
- be fluent in English
- have no obligations with respect to military service which could impact on the fellowship
- have completed 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.

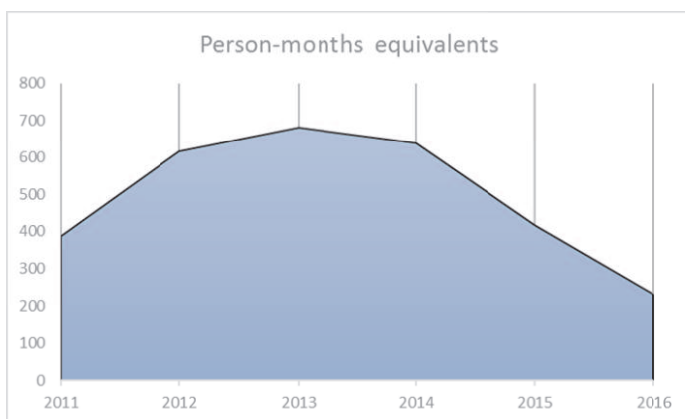
Deadlines for applications are currently 30 April and 30 September each year.

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

<http://fellowship.ercim.eu>



Number of fellows hosted from 2011 to 2015



Person/months equivalents for the fellows hosted from 2011 to 2015

ERCIM Fellows hosted in 2016

- Dhaminda Abeywickrama at VTT
- Basant Agarwal at NTNU
- Konstantin Amelin at NTNU
- Doreid Ammar at NTNU
- Esdras Anzuola at Fraunhofer-Gesellschaft
- Miloud Bagaa at NTNU
- Ali Balador at SICS Swedish ICT AB
- Kaveri Bhuyan at CWI
- Fatoumata Goundo Camara at Fraunhofer-Gesellschaft
- Algo Carè at SZTAKI
- Ali Chelli at NTNU
- Indrakshi Dey at NTNU
- Naveed Ejaz at Fraunhofer-Gesellschaft
- Michal Garlik at University of Warsaw
- Golsa Ghiaasi hafezi at NTNU
- Christian Glacet at CNR
- Gábor györgy Gulyás at INRIA
- Nabiul Islam at NTNU
- Mads sielemann Jakobsen at NTNU
- Rashid Khan at NTNU
- Umair Khan at Fraunhofer-Gesellschaft
- Zeeshan ali Khan at NTNU
- Aurélien Larcher at NTNU
- Jing Lyu at NTNU
- Kamalakshya Mahatab at NTNU
- Monalisa Mandal at NTNU
- Silverio juan Martinez Fernandez at Fraunhofer-Gesellschaft
- Luis alberto Martinez vaquero at CNR
- Anna Mavroudi at NTNU
- Britta Meixner at CWI
- Mario Montagut at CWI
- Loan Nguyen at University of Warsaw
- Ozlem Ozbobek at NTNU
- Ilias Pappas at NTNU
- James Ridgway at INRIA
- Damiano Rotondo at NTNU
- Kiran chandra Sahu at NTNU
- Byung-kuk Seo at Fraunhofer-Gesellschaft
- Ariona Shashaj at SICS Swedish ICT AB
- Younghak Shin at NTNU
- Max Zimmermann at SICS Swedish ICT AB



Michał Pilipczuk Winner of the 2016 Cor Baayen Young Researcher Award

2016 Award

Winner:

- Michał Pilipczuk

Honorary mentions:

- Mickaël Randour
- Indrajit Saha

Finalists:

- Marios Belk
- Daniel Dombek
- Michele Girolami
- Aurore Guillevic
- Aleksandar Ilic
- Achilleas Koutsou
- Ilkka Törmä
- Daniel Weber

Award

The Cor Baayen Award, given 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 Cor Baayen Award is a young researcher prize: The selection panel therefore considers the quality of the PhD thesis and all the achievements done up to the nomination date. The award carries a prize of € 5000.. The winner is invited to the ERCIM autumn meetings.

Michał Pilipczuk from the University of Warsaw is a prominent young researcher in the area of algorithms. He contributed to the breakthrough results which solved fundamental problems in the field of parameterized complexity, some of which have been unsolved since more than 20 years.

Michał contributed to creation of new techniques, which are now used by many researchers, like “Cut-and-Count” and “Randomized Contractions”. Michał contributed to the development of fixed-parameter algorithms for a number of fundamental graph problems, for which parametrized algorithms have been sought-after since long time. This includes the problem of finding disjoint paths in a directed planar graph, minimum bisection, isomorphism test for graphs of bounded tree-width, and many others. Moreover, he has obtained significant results in the field of kernelization - rigorous analysis of preprocessing procedures. Here, his main achievements include the development of the first polynomial kernel for the planar Steiner tree problem, and introducing tools from the theory of sparse graphs to kernelization, in the context of domination problems. Apart from this, he contributed to various related topics, such as moderately exponential-time algorithms, algorithms on special graph classes, structural graph theory, or database theory.

Recently, Michał Pilipczuk, together with Mikołaj Bojańczyk, solved a longstanding conjecture by Courcelle, which establishes a surprising relation between fixed-parameter tractability and logic. The current bibliography of the young researcher comprises over 30 papers in journals and over 50 papers in conference proceedings, including the topmost conferences STOC, FOCS (6 papers), SODA, ICALP, LICS, and PODS. Michał Pilipczuk is also a co-author of a monograph *Parameterized Algorithms* published by Springer in 2015, which subsumes the state-of-the-art in the area.

From 2011 - 2013, Michał carried out his PhD Studies in Theoretical Computer Science under supervision of Prof. Fedor V. Fomin at the University of Bergen, Norway and defended his PhD thesis “Tournaments and Optimality: New Results in Parameterized Complexity” in November 2013. Since October 2015 he is assistant professor at the Institute of Informatics at the Faculty of Mathematics, Informatics, and Mechanics of the University of Warsaw, Poland.

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

Outreach

The ERCIM Outreach Task Group is responsible for the communication between ERCIM and its wide range of stakeholders. They include national and international funding bodies, the research community in informatics and applied mathematics, with a focus on both senior scientists and young researchers, as well as industrial R&D. ERCIM considers its outreach activities as an important tool for community building. These include publications such as the ERCIM News magazine, the ERCIM web site and the support and organisation of scientific events.

The well-established ERCIM News magazine (see next page), under the responsibility of the editorial board, has already successfully contributed to ERCIM's reputation in the scientific community. It is also a good example of the close cooperation between all ERCIM institutes. In addition to ERCIM News, a number of strategic reports have also been published. All this information can also be accessed via twitter and LinkedIn.

People who contributing to the Outreach Task Group policy in 2016:

Silvia Abrahao, SpaRCIM
Andras Benczur, SZTAKI
Marios Dikaiakos, UCY
Marie-Claire Forgue, W3C
Poul Heegard, NTNU
Kersti Hedmann, SICS
Annette Kik, CWI

Peter Kunz, ERCIM office
Benoit Michel, FNRS/FWO
Eleni Orphanoudakis, FORTH
Carol Peters, CNR
Andreas Rauber, SBA Research (chair)
Harry Rudin, SIRA
Erwin Schoitsch, SBA Research



*Andreas Rauber,
SBA Research, chair of the
ERCIM Outreach Task Group*

ERCIM News Editorial Board

(as of December 2016)

Central editor:

- Peter Kunz, ERCIM Office

Local editors:

- Andras Benczur, SZTAKI
- Marie-Claire Forgue, W3C
- Poul Heegard, NTNU, Norway
- Joaquim Jorge, INESC ID / PEG, Portugal
- Kersti Hedman, SICS, Sweden
- Steve Kremer, Inria, France
- Annette Kik, CWI, The Netherlands
- Michael Krapp, Fraunhofer SCAI, Germany
- Silvia Abrahão, Universidad Politécnica de Valencia / SpaRCIM, Spain
- Benoit Michel, Université catholique de Louvain, Belgium
- Eleni Orphanoudakis, ICS-FORTH, Greece
- Maurice ter Beek, ISTI-CNR, Italy
- Harry Rudin, SIRA, Switzerland
- Erwin Schoitsch, AIT Austrian Institute of Technology GmbH/AARIT, Austria
- Nguyen Hung Son, University of Warsaw, Poland
- Thomas Tamsier, Centre de recherche publique Gabriel Lippmann, Luxembourg.

ERCIM News

Since ERCIM's creation in 1989, the quarterly ERCIM News has been reporting on leading edge European research and developments in Information and Communication Science and Technology (ICST) and Applied Mathematics.

When Inria, CWI and former GMD founded ERCIM in 1989, the establishment of an 'in-house magazine' with the aim of reporting on joint activities was one of the first 'joint actions'. ERCIM rapidly evolved from a black-and-white in-house magazine to a full colour publication covering reports and news about scientific projects from all over Europe and even beyond.

By October 1994, the newsletter was published both in printed and electronic format. At that time, ERCIM News was among the first 5,000 Web sites in the world. Surprisingly, the electronic edition did not detract from the success of the printed edition – instead, many new readers who found us on the Web also subscribe to the printed edition, thus increasing its circulation. The peak was reached in 2009 with a circulation of over 10,000 printed copies. Since then, presumably with the spread of smart phones and tablets, the circulation of the printed edition has reduced whilst the online readership has increased. In 2012, for the first time, more people subscribed to the electronic than to the printed edition. ERCIM News currently maintains a circulation of 4,500 printed copies and more than 7,500 people subscribed to the online edition.

From the early issues on, each issue has focused on a special theme identified by the editorial board. The ERCIM News series has thus become a unique collection providing an overview on a wide range of research topics in ICST and Applied Mathematics. All articles in ERCIM News are written by the scientists themselves and professionally edited. The structure of the articles and the limited length also make them comprehensible for non-experts. Thanks to these unique characteristics, ERCIM News has become well-known in the world of scientific publications, and regular positive feedback from our readers has encouraged us to continue in this way. Indeed, our readership comprises not only scientists, but also students, decision makers, professionals within the industry, representatives from the European Commission, and politicians.

More than hundred issues of ERCIM News have been published since its creation, this means more than 2,000 published articles. The popularity of ERCIM News can be credited primarily to our authors to whom the ERCIM editorial board wants to express their warmest thanks on this occasion.

In 2016 ERCIM News covered the following special themes:

- Tackling Big Data in the Life Sciences
- Planning and Logistics
- Cyber-Security
- Machine Learning.

<http://ercim-news.ercim.eu>



Issues published in 2016.

ERCIM Office

ERCIM has an office in Southern France, hosted by Inria and located in the Inria Sophia Antipolis - Méditerranée Research Centre premises, nestled amongst researchers (and surrounded by cicadas). The ERCIM Office manages the day-to-day business of ERCIM as well as the European branch of the World Wide Web Consortium (W3C).

With its team of experts, the ERCIM Office provides assistance to ERCIM members in managing European projects by performing the financial and administrative tasks, either as coordinator or partner. Member institutes can thus fully concentrate on scientific work, unburdened by time-consuming administrative tasks. The office has been involved with more than 80 successful projects. The projects in which the ERCIM Office was involved in 2015 are presented in the section “Projects” in this report (pp. 12-28). They also include projects with participation of the W3C. Some include both W3C and ERCIM members. They provide a nice example of how ERCIM can facilitate cooperation between research institutes and the W3C with its interest in Web standardization.

Hosting and managing the European branch of W3C is another major task of the ERCIM Office. The activities related to W3C represent about the half of ERCIM’s budget. Details are given on the following pages.

The ERCIM Office is under the responsibility of the ERCIM EEIG Board of Directors but also handles ERCIM AISBL financial matters and supports the whole ERCIM community in administrative matters such as the management of the ERCIM Fellowship Programme, as well as in communications, for example by hosting and maintaining web sites and by producing ERCIM News.



The ERCIM office is located in the Inria Sophia Antipolis - Méditerranée Research Centre premises.

People at ERCIM Office in 2016

Manager:

- Jérôme Chailloux (until 30 November 2016)
- Philipp Hoschka (since December 2016)
- Caroline Baron, finance and administration manager
- Pierre Guisset, senior consultant
- Peter Kunz, communications and ERCIM News central editor
- Vivien Lacourba, IT manager
- Alexandra Lacourba, administrative assistant
- Emma Lière, project assistant and Fellowship Programme coordinator
- Jessica Michel Assoumou, project coordinator
- Claire Moreau, administrative assistant
- Linh Nguyen, project coordinator and assistant
- Pascale Peyrol, project assistant
- Catherine Riou, administrative assistant
- Samuel Réthoré, systems engineer
- Philippe Rohou, project group manager
- Jean-Guilhem Rouel, systems engineer



*Philippe Hoschka, ERCIM Manager
and head of the ERCIM Office.*

Philipp Hoschka appointed ERCIM Manager

The ERCIM EEIG board of Directors has appointed Philipp Hoschka as manager of the ERCIM EEIG. Philipp Hoschka took office on 1st of December 2016. He succeeds Jérôme Chailloux who served as manager since May 2005.

Over the last decade, as W3C Deputy Director, Philipp Hoschka has been focusing on launching W3C activities that leverage the advantages of web technologies for new 'vertical' application areas which are of particular interest to European research and industry.

In 2004, he created W3C's Mobile Web Initiative (MWI), an industry co-operation focused on making the web usable on mobile phones. In 2011, he launched W3C's activities on web and television with the goal of enabling the use of HTML5 for video content. In 2012, he created W3C's web and automotive standardisation efforts, focusing on use of HTML5 for in-car infotainment apps. In 2014, he started W3C work on the 'Web of Things' in order to open up the development of 'Internet of Things' applications to Web developers. In the same year, he initiated W3C's activities on payments on the web. All of these efforts were supported through research funding by the European Union.

Philipp Hoschka holds a master's degree from the University of Karlsruhe (Germany) and obtained a PhD from the University of Nice/Sophia-Antipolis (France) while working at Inria. He was visiting scholar at MIT LCS from 1998 until 2002.

The ERCIM EEIG is under the responsibility of the ERCIM EEIG Board of Directors. The EEIG provides assistance to ERCIM members in managing European projects. The EEIG also supports the activities of the whole ERCIM community, for example by managing the ERCIM Ph.D. Fellowship Programm, by producing ERCIM News and by hosting and maintaining web sites.

The EEIG is also hosting and managing the European branch of W3C, an international community where Member organizations, a full-time staff, and the public work together to develop Web standards. Led by Web inventor Tim Berners-Lee W3C's mission is to lead the Web to its full potential.



ERCIM and W3C

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.

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, Web Privacy and Security, Big Data, 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.

W3C is the international forum for the development of technology standards and for stewardship of the Web. The organization creates open standards for technology and best practices so that the Web connects people and serves as a platform for innovation. W3C is building an Open Web Platform to connect humanity in a way that makes access to knowledge more efficient and equitable.

The boundaries of this platform are drawn by the Members and the larger Web community. The platform includes the HTML5 specification, CSS, SVG, WebFonts (WOFF), a growing number of APIs, and many other technologies, all designed to work together on any platform, for any person, anywhere.

ERCIM Membership

How to become an ERCIM Member

- Prospective members must be outstanding research institutions (including universities) within their country;
- Applicants shall address a request accompanied by short description to the ERCIM Office. The description must contain:
 - Name and address of the institute;
 - Short description of the institute's activities;
 - Staff (full time equivalent) relevant to ERCIM's fields of activity;
 - Number of European projects currently involved in;
 - Name of the representative and the alternate.
- Membership applications will be reviewed by an internal board and may include an on-site visit;
- The decision on admission of new members is made by the General Assembly of the Association, in accordance with the procedure defined in the Bylaws (<http://kwz.me/U7>), and notified in writing by the Secretary to the applicant;
- Admission becomes effective upon payment of the appropriate membership fee in each year of membership;
- Membership is renewable as long as the criteria for excellence in research and an active participation in the ERCIM community, cooperating for excellence, are met.

After having successfully grown to become one of the most recognized ICT Societies in Europe, ERCIM has opened membership to multiple member institutes per country. By joining ERCIM, your research institution or university can directly participate in ERCIM's activities and contribute to the ERCIM members' common objectives to play a leading role in Information and Communication Technology in Europe:

- Building a Europe-wide, open network of centres of excellence in ICT and Applied Mathematics;
- Excelling in research and acting as a bridge for ICT 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;
- Liaising with other international organisations in its field;
- Promoting cooperation in research, technology transfer, innovation and training.

Benefit of ERCIM membership

Institutions, as members of ERCIM AISBL, benefit from:

- International recognition as a leading centre for ICT R&D. ERCIM, a European-wide network of centres of excellence in ICT, is internationally recognised as a major representative organisation in its field;
- More influence on European and national government R&D strategy in ICT. ERCIM members team up to speak with a common voice and produce strategic reports to shape the European research agenda;
- Privileged access to standardisation bodies, such as the W3C which is hosted by ERCIM as to other bodies with which ERCIM has also established strategic cooperation. These include ETSI, the European Mathematical Society and Informatics Europe;
- Invitations to join projects of strategic importance;
- Establishing personal contacts among executives of leading European research institutes during the bi-annual ERCIM meetings;
- Invitations to join committees and boards developing ICT strategy nationally and internationally;
- Excellent networking possibilities with more than 10.000 high-quality research colleagues across Europe. ERCIM's mobility activities, such as the fellowship programme, leverages scientific cooperation and excellence;
- Professional development of staff including international recognition;
- Publicity through the ERCIM website and ERCIM News, the widely read quarterly magazine.

For further information about how to join ERCIM AISBL, please contact the ERCIM Office (contact@ercim.eu)

Institutions member of ERCIM in 2016:



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