



CRIS SEMINAR SEPTEMBER 2003
PALACE OF THE ACADEMIES BRUSSELS

Driving the ERA Forward by Meeting Tomorrow's Challenges

The Need for Integration over European
Current Research Information Systems

Report September 2003

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Ministry of the Flemish Community
Science and Innovation Administration

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ROYAL FLEMISH ACADEMY OF BELGIUM
FOR SCIENCE AND THE ARTS

EXECUTIVE SUMMARY

A 2-day intensive seminar discussing CRISs (Current Research Information Systems) supporting the ERA (European Research Area) brought together six key pan-European organisations. The initial assertions of the seminar were that :

- (a) the future of Europe - wealth creation and quality of life - is predicated on **R&D** (research and development) ;
- (b) without **R&D information** the research policy decision makers cannot guide, manage and evaluate the R&D and its output;
- (c) at present R&D information is **distributed and heterogeneous**
- (d) it is necessary to **make accessible** the information under a homogeneous user interface
- (e) the homogeneity can be provided by technologies utilising **CERIF** (Common European Research Information Format)

A varied programme covering many topics instigated vigorous discussion over user requirements, technical solutions, legal and ethical issues and ranging from simple project records and researcher CVs through to advanced bibliometrics for research output evaluation and deep linkage of project, person and organisation information to scientific datasets, software and grey literature.

The recommendations are:

1. The EC should work with the partners and the member states to find a way to fund the development and maintenance of CERIF-based CRISs to support the ERA and the ERC (European Research Council);
2. The EC and the partners should foster an integrated approach to these CRISs so as to warrant a user-driven integrated European information service with uniform and unfettered access to R&D data at various aggregation levels;
3. The partners should work together to ensure a pan-European awareness of these CRISs and their importance for supporting the R&D efforts leading to wealth-creation and improved quality of life;
4. EuroCRIS and the partners should work together to assist member states in developing these CRISs to assure the information required for the ERA;
5. the ERC, representing the ERA, should include some representation of CRISs.

1. PURPOSE

Europe has to compete with North America and the Far East / Pacific Rim. The 'ERA (European Research Area) Vision' has been articulated and accepted - a Knowledge-based economy led by R&D - the problem before us is how to implement that vision for wealth creation and improvement in the quality of life.

The assertion of the seminar is that CERIF (Common European Research Information Format) -based European CRISs (Current Research Information Systems):

- for the political decision-maker
- for the funding organisations
- for the entrepreneurs
- for the innovators themselves
- for the media
- for the general public

provide the key to improved European performance.

euroCRIS brought together in a preparatory meeting some of the key organisations with a pan-European reach and an interest in the subject of research information: ESF, EARMA, ALLEA, CODATA, ERCIM, and - of course - the EC, which share this viewpoint. These partner organisations provided (along with euroCRIS) speakers, other attendees, funding and other assistance which has made the seminar possible.

Given the assertion which we all share, the problem is to find, structure and use wisely the R&D information. This involves ensuring that it is relevant and delivered at the right time, the right place, in the right form and legally.

The realisation requires technology to interoperate across different information sources, providing the end-user with a homogeneous view over heterogeneous data which can then be used for basic research, wealth creation and/or improving the quality of life. euroCRIS members were involved in the EC-funded development of CERIF in both its '91 and 2000 versions. The current CERIF version, of which EuroCRIS is the EC-appointed custodian, is a recommendation to member states.

The seminar partners agreed that a report should be produced by euroCRIS, agreed with the partners, published for all the partners and placed on the euroCRIS website together with the presentations.

2. PARTNERS

ESF

The European Science Foundation, ESF, is the association at the European level of 76 Member Organisations (national research funding agencies and academies), devoted to support scientific research in 29 European countries. ESF's core purpose is to promote European science and research in all disciplines, by bringing together scientists and organisations from different countries to cooperate on projects of excellent quality at a pan-European level. The ESF supports such European scientific cooperation on behalf of its Member Organisations and Europe's scientific community. Through its networking expertise and multi-disciplinary scope the Foundation ensures European added value in these initiatives and projects. ESF web site: www.esf.org

EARMA

The European Association of Research Managers and Administrators, EARMA, was founded in Genova, Italy in 1995 to promote the effectiveness of European Research. EARMA is now the leading association of research managers and administrators across Europe, with over 500 members from academia and industry. The aim is to improve the function of research management and administration and thereby the excellence and competitiveness of European research. EARMA encourages new entrants to careers in research management and administration and promotes the interests of the research managers and administrators community in policy-making fora and funding bodies. www.earma.org

ALLEA

All European Academies, ALLEA, founded in 1994, is the Federation of 48 Academies of Sciences and Humanities in 38 European countries, whose Member Academies are self-governing communities of scientists and scholars. ALLEA seeks to promote the exchange of information and experience between Academies, offer European science and society advice from its Member Academies, and strives for excellence in science and scholarship, high ethical standards and independence from political, commercial and ideological interests via its Member Academies. The Steering Committee consists of 9 full Members. The General Assembly (ALLEA's highest legislative body), meets every two years. www.allea.org

CODATA

The Committee on Data for Science and Technology, CODATA, is an interdisciplinary Scientific Committee of the International Council for Science (ICSU). CODATA was established to promote and encourage, on a world-wide basis, the compilation, evaluation and dissemination of reliable numerical data of importance to science and technology. Today 23 countries are members, and 14 International Scientific Unions have

assigned liaison delegates. CODATA is concerned with data resulting from experimental measurements, observations and calculations in science and technology. Particular emphasis is given to data management problems. CODATA fosters and advances science and technology through developing and sharing knowledge about data and activities that work with data. www.codata.org

ERCIM

The European Research Consortium for Informatics and Mathematics, ERCIM, aims to foster collaborative work within the European research community and to increase co-operation with European industry. Leading research institutes from seventeen European countries are members. ERCIM has a Board of Directors, an Executive Committee and an office currently hosted by INRIA. Major activities are through Working Groups. ERCIM is responsible for European activities of W3C. ERCIM provides the EC with strategic reports and staff in EC committees, working groups and evaluation panels. EC R&D projects have member institutes providing the technical resource and the ERCIM Office acting as administrative coordinator. The ERCIM Newsletter reaches a very large readership. www.ercim.org .

EC

The European Commission, EC, is the driving force and executive body of the EU (European Union). The EU aims to ensure Europe is at the forefront of wealth-creation and quality of life. Among its many responsibilities, the EC has the responsibility to drive through the ERA (European Research Area) concept through the Framework VI programme of R&D with associated discussions on ERC (European Research Council) and harmonisation with subsidiarity of the national R&D programmes. The EC is encouraging proposals for actions leading to the realisation of the ERA supported by ERIS (European Research Information System). The seminar is timely in raising discussion among pan-European organisations with an interest in working with the EC on this topic. http://europa.eu.int/index_en.htm

euroCRIS

European Current Research Information Systems, euroCRIS, is the not-for-profit association which aims to be the internationally recognized point of reference for all matters relating to CRIS. euroCRIS is the EC-appointed custodian of the CERIF-format and CRIS Best Practice, and organizes tutorials, courses and a biennial series of conferences as a service to the community. With a history over more than 12 years, euroCRIS has the ambition to play a leading role in the establishment and maintenance of a future Integrated Information system (IIS-ERAWATCH). euroCRIS has members from 19 countries: Belgium, Denmark, Finland, Germany, Greece, Hungary, Ireland, Israel, Italy, the Netherlands, Norway, Portugal, Russia, Slovenia, South Africa, Sweden, Switzerland, United Kingdom, USA. www.eurocris.org

3. TOPICS COVERED IN THE PROGRAMME

The programme was constructed purposely to cover a wide range of issues: technical, administrative, managerial, legal across academic, government and commercial perspectives. It covered the range from simple project recording, through R&D results and their evaluation including bibliometrics, and on to detailed scientific datasets and software linked to traditional CRIS information.

“The Challenge of Sustaining the Research and Innovation Process”

“The challenge of providing the Research Information Systems (RIS) needed in the ERA: Needs of the science community - personal view.” Speaker, invited by ESF: Prof. Helmut Rauch, Vienna.

“The Challenge of Sustaining the Research and Innovation” Speaker invited by euroCRIS: Mike Tansey, Chief Executive Officer, Thomson Scientific/ ISI

“Databases for Knowledge Discovery” Speaker invited by ALLEA: Prof. Van Bommel, Rector Magnificus of the Erasmus University in Rotterdam

“User aspects and needs of the Research Management community” Speaker invited by EARMA: Dr. Frank Heemskerck, President of EARMA

“Research Information and Current Research Information Systems: State of the Art”

Speakers invited by euroCRIS:

“Introduction” Dr. Marga Van Meel, NIWI Dept of Research Information

“State of the Art” Eric Zimmerman, Bar-Ilan University Research Authority

“Technology” Dr. Geert Van Grootel, Ministry of Flanders Science Division

“CERIF” Anne Asserson, University of Bergen

“A Gap Analysis: What are the Requirements for the FRIS (Future Research Information System)?”

“How to deal with heterogeneity when building the CRIS of tomorrow!” Speaker invited by euroCRIS: Dr. Maximilian Stempfhuber, Informationszentrum Sozialwissenschaften

“Requirement for a future CRIS” Speaker invited by euroCRIS: Prof. Keith G. Jeffery, Director IT, CCLRC-Rutherford Appleton Laboratory

“The Interaction of CRISs: Technology & CRIS”

“Semantic Trust. The challenges of e-trust for CRISs” Speaker invited by ERCIM: Dr. Brian Matthews, CCLRC-Rutherford Appleton Laboratory.

“Research Information System for Materials - Database, Simulation and Knowledge” Speaker invited by CODATA: Prof. Toshihiro Ashino, Toyo University, Department of Regional Development Studies

“The Interaction of CRIS: Law, Privacy and Investment”

“Legal and ethical issues” Speaker invited by ERCIM: Heather Weaver, CCLRC-Rutherford Appleton Laboratory

“Using CRISs for commercial purposes” Speaker invited by euroCRIS: Julie Horne, Oakland Consulting, Cambridge

“Driving the ERA Forward by Meeting Tomorrow’s Challenges”

- **Actions to ensure CRISs supporting the evolving ERA**

- **How can each organization contribute to ERA using CRISs?**

Plenary discussion: Chair: Peter Wintlev-Jensen, EC

4. KEY DISCUSSION POINTS ARISING FROM THE SESSIONS

User Requirements

A repeated point was the need for the effort threshold for the end-user to be low, whether inputting, editing or retrieving. The quality of the data, its completeness and consistency across various sources was emphasised. There is a need for sophisticated analysis and reporting with visualisation, especially for decision-makers. The researchers want access from CRISs to both publications and scientific datasets / software. Products and patents are of real interest to entrepreneurs.

Technical

The breathtaking speed of development was noted and the need for CRISs to take advantage of the opportunities offered by the semantic web, GRIDs and ambient computing. For CRISs, advanced techniques of distributed heterogeneous database integration were preferred over web harvesting because of the incompleteness and lack of precision of the latter. However, for open access to publications harvesting - controlled by terms in a CRIS - may be the key.

Legal /Ethical

Particular problems with management of personal data were noted, even if using ‘fingerprints’ as in the Collexis system of I-Research. The copyright and Intellectual property rights issues are also hardly addressed by current CRISs.

Responsibility of Member States

Within the ERA context it is essential that member states develop CRISs that are interoperable using a common data model and interchange format (CERIF) and common ontologies to ensure understanding of terms especially across multilingual frontiers. It was noted that euroCRIS has members in accession states.

5. CONCLUSIONS

The participants concluded that the seminar topic was so critically important to Europe and the ERA that we should cooperate immediately on a pan-European scale to push forward the infrastructure to assure the future of Europe led by R&D supported by CRISs. Specific Actions agreed were as follows:

Conference Co-Participation

The partners will provide capacity for a conference stream, session or workshop as follows:

- CRIS2004 May 2004 Antwerp: euroCRIS
- CODATA Nov 2004 Berlin: CODATA
- EARMA June 2004 Bucharest: 2004: EARMA

It was noted that already at the 2003 EARMA conference euroCRIS presented a successful workshop.

Working Group Interaction

The partner organisations have working groups or committees addressing some of the key issues. Identified during the seminar, but to be supplemented afterwards with further discussions, are the following:

- Intellectual capital (EARMA)
- Legal issues (EARMA)
- Semantic web (ERCIM)
- Digital libraries (ERCIM)

It was agreed that members of the partner organisations should be invited to join the working groups - at least as observers but hopefully becoming active participants - and interact

Projects

The opportunity of working together on technical issues in projects would clearly pull together the complementary strengths of members of the partner organisations. Proposals arising in the seminar were:

- Mobile technology access to scientific databases for researchers, decision-makers etc (CODATA)
- Service architecture for CRIS portal (ERCIM)
- Development of standards for CRISs including ontologies (euroCRIS)
- User requirements (ESF, EARMA)

- Implement CERIF in organisations (EARMA)

The partners agreed to explore ways of initiating these projects and securing funding to proceed with them - possibly under Framework Programme 6 of the EC.

Awareness

The seminar noted the need for increased awareness of R&D information and systems to utilise it among all sectors of European society. In addition to streams / workshops at conferences of each organisation there is a need for:

- Awareness seminars around Europe (euroCRIS, EARMA) - possibly supported as a SSA (Special Support Action of the EC)
- Courses to train people to use CRISs (EARMA)

The seminar concluded that these initiatives should be pursued actively including discussions with the EC on funding.

Additional Initiatives

During the seminar various speakers raised issues where there is a need for further work to take them forward. Some examples are:

- Scientific output measures - quantity and quality - bibliometrics, scientometrics (all)
- Easy access from CRIS to underlying detailed scientific datasets / software (CODATA)
- Cost-benefit of CRISs - comparison with other research infrastructure (ESF)

The first two topics could become project proposals. The last topic requires a study and report to demonstrate the cost-benefit - which all participants believe is there - and thus to secure a niche for development and maintenance of CRISs throughout Europe. It was noted particularly by ESF that right now no-one can answer simple questions like 'how much is Europe spending on research infrastructure for biomedical science research?' The answer to such a question is vitally important for the ERC (European Research Council) operating within the ERA. ALLEA suggested that - given the importance of R&D information - euroCRIS should be represented on the ERC.

Final Word

Above all, the aim is to bring together appropriate advanced technology with People evolving and cooperating (change management) to ensure that the ERA succeeds supported by national, local, institutional and international CRISs interoperating and available for everyone.

6. RECOMMENDATIONS

The recommendations are:

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Postscript

The presentation abstracts, papers if available, powerpoint presentations, rapporteur session reports and list of attendees are available at www.eurocris.org

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