



European Strategy Forum
on Research Infrastructures



ESFRI

EUROPEAN STRATEGY FORUM
ON RESEARCH INFRASTRUCTURES

ANNUAL REPORT
2008



>Foreword

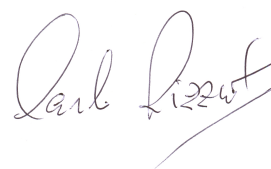
The European Commission's "Green Paper on the European Research Area" has raised awareness of the importance of research infrastructures as a critical component for scientific competitiveness in Europe. The clear need for a comprehensive strategy at European level was underlined by Commissioner Potocnik during his participation at the 24th meeting of ESFRI on 6 March. In this respect the work of ESFRI was widely acknowledged. ECRI 2008 in Versailles was also an opportunity to highlight the importance of research infrastructures as a vital element of a European recovery package for the world economy.



During 2008, considerable effort was devoted to the implementation of the ESFRI Roadmap and the preparation of the Update. The momentum in bringing the projects of the ESFRI Roadmap 2006 fruition is advancing at a remarkable pace. To achieve such progress in such a relatively short period of time gives testament to the energy and devotion of the key players involved across Europe. In the updated Roadmap, ESFRI is confident that the new facilities proposed in the Environment, Energy and Health domains shall enhance the European scientific landscape. Moreover, in the present difficult situation, selected investments in new and upgraded research infrastructures can be an important high quality support to European industry.

Notwithstanding this encouraging progress, I and my colleagues in ESFRI recognise the challenges to come. In line with our incubator role, we plan to devote considerable energy to nurturing the projects further along the road to construction. To achieve this, many aspects will be vital, such as the continued formulation of national roadmaps (including the earmarking of national funds); the mobilization of scientific communities; the development of legal instruments to underpin and support these infrastructures and the development of funding instruments at EU level. ESFRI's standing on the global stage is advancing positively, and is giving Europe an important position in the development of policy and initiatives to increase its attractiveness for world level research.

I took over the ESFRI Chair from John Wood in March of 2008. I would like to thank John for his devotion, energy, vision and leadership during his tenure. It is a privilege for me to take over the reins of ESFRI during such an exciting period for European research and I look forward to the challenging times ahead.

A handwritten signature in black ink, reading "Carlo Rizzuto".

Carlo Rizzuto
ESFRI Chair



Overview

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Introduction

1 | The first meeting of 2008 fell during the Slovenian Presidency to the EU and coincided with a Presidency Conference Research Infrastructures and their Structuring Dimension within the European Research Area. The last meeting of the year took place in Paris under the auspices of the French Presidency and coincided with ECRI 2008. These events were a great success and once more, highlighted the readiness of the scientific community and policy makers to work together towards a Europe excelling in all scientific domains. Both conferences emphasised the challenges and, moreover, the opportunities for cooperation at regional, national and inter-regional levels. The potential for research infrastructures to contribute to the Lisbon objectives through their impact on industry, sustainable development and employment was at the forefront. The conferences also underlined the need to improve the financial engineering of research infrastructures for their construction and sustainable operation.

In early 2008, ESFRI was pleased to note the association of the Western Balkan States to the EU's Seventh Framework Programme. Accordingly, invitations were extended to Albania, Croatia, Macedonia, Montenegro and Serbia to nominate delegates to join ESFRI. Since then, we have welcomed delegates from these states to ESFRI meetings. This now brings the number of countries represented in the Forum to 37. ESFRI is certainly growing in dynamism and cooperation. To bring all these countries together to the same table is testament to the motivation of all European countries to work together.

In March 2008, ESFRI said farewell to John Wood, who led the Forum through a critical and work-intensive period. All delegates expressed their thanks to John for his dedication and leadership, whilst at the same time expressed their confidence in Carlo Rizzuto to lead the Forum. Beatrix Vierkorn-Rudolph (Germany) was chosen as Vice-Chair.

As the activities of the Forum evolve, the role of the ESFRI Executive Board is of continuing importance in planning and organisation. The tenure of Jacek Gierlinski on the Executive Board came to an end in March 2008. Following due process, Lars Börjesson (Sweden) was elected to take over. At the same time, Ionel Andrei (Romania) joined the Board as an observer. Therefore, the current membership of the Executive Board is as follows: Carlo Rizzuto (Chair), Beatrix Vierkorn-Rudolph (Germany, Vice-Chair), Jean Moulin (Belgium), Lars Börjesson (Sweden), Robert-Jan Smits (EC) and Ionel Andrei (Romania).

OVERVIEW OF ESFRI MEETINGS

24th Meeting, Brdo, 7 March 2008

The Slovenian Delegation to ESFRI extended an invitation to the Forum to hold its 24th meeting in Brdo, Slovenia. This meeting took place on 6 and 7 March, following the Presidency Conference on Research Infrastructures. The Delegates were delighted to welcome Commissioner Potocnik to this meeting, as well as Prof. Norbert Kroo, Chair of the ERA Expert Group and Prof. Helga Novotny, Vice-President of the European Research Council. The Forum extends its warm thanks to Jure Marn and Miran Ceh and their colleagues in Slovenia for the excellent hospitality shown.

25th Meeting, Brussels, 13 June 2008

The 25th meeting of ESFRI took place in Brussels. During this meeting, the Chairs of the Roadmap Working Groups gave a detailed update to the Delegates on progress towards the ESFRI Roadmap Update 2008. In addition, the continued excellent cooperation ESFRI enjoys with organisations such as the ESF, EIROForum and the EIB was reinforced through presentations their representatives made at this meeting.

26th Meeting, Brussels, 26 September 2008

The 26th meeting of ESFRI took place in Brussels and was devoted almost entirely to the Update of the ESFRI Roadmap 2008. The Chairs of the Roadmap Working Groups presented their final recommendations to the Forum and, following consensus, the draft ESFRI Roadmap Update 2008 was approved.

27th Meeting, CEA, Paris, 11 December 2008

The final meeting of 2008 was held under the French presidency of the EU, during which ESFRI were honored to be hosted by CEA in Paris. During this meeting, our hosts kindly gave delegates a tour of NEUROSPIN (Intense Field Neuro Imaging Centre). During this meeting, an in-depth informal discussion focused on the issues to be addressed by the Forum during 2009

In addition, several ESFRI Executive Board meetings took place during 2008 to prepare the above-mentioned meetings.



ESFRI Executive Board,
Bled, Slovenia, March 2008

ESFRI WORKING GROUPS IN 2008

Regional Issues

During the reporting period ESFRI continued to explore Research Infrastructures in, and for, the regions; their role within ERA and cooperation between states. Through a Working Group set up to address this theme (led till March by Jure Marn and since March by Nad'a Witzanyova) recommendations for the next 5 years were put forward.

Europe needs to use the talents of all its researchers and share its resources in order to be efficient and competitive. The development of a successful EU policy capable of competing on a global level can only be enhanced by making full use of the opportunities given by the intrinsic diversity of EU Regions, and of their rich cultural and historical backgrounds. This approach is perfectly in line with the "Lisbon" and "Ljubljana" processes. The ESFRI Regional Issues Working group made a number of recommendations that will provide valuable input to the Czech Presidency in 2009. A full copy of the Report will be available on the ESFRI website in early 2009.

Connecting European regions



Siting Issues

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Although it is not within the Forum's remit to make decisions on where research infrastructures will be built, ESFRI nevertheless considers the issue of site characterization, to assist in the developing informed decisions by the interested countries. This issue became prevalent during 2008 when three sites competed to host the ESS neutron source. In cooperation with the bidding countries, a working group was set up by ESFRI, led by Paul Zinsli (Switzerland), to develop recommendations to facilitate the decision-making process. A Working Group on general siting issues is foreseen in 2009.

Distributed Facilities

A working group (led by Carmen Andrade) studied this issue during spring and summer 2008. They proposed a clear definition to differentiate between distributed facilities and networks of existing research infrastructures. This definition highlights in particular that a European distributed infrastructure is a singular research infrastructure, having a unique Name and legal status, Director or board of directors, Management Structure, Strategy and Development Plan, Access point for users, Annual Report and Fiscal address although its research facilities have multiple sites. A European distributed infrastructure has to have a pan-European interest, i.e. unique laboratories or facilities rendering services for the efficient execution, with critical mass, of top-level Community research, ensuring open access to all interested, creating a substantial added value with respect to facilities with a more limited scope.

Research Infrastructure Roadmaps

ESFRI Roadmap – Implementation and Update

Implementation of the ESFRI 2006 Roadmap – Preparatory Phase

34 of the 35 projects on the ESFRI 2006 Roadmap have signed Preparatory Phase contracts with the European Commission. Following a review from ESFRI, about 45% of the 2006 projects (15) are in good progress towards their construction (see highlighted projects in the two next pages). The rest of the 34 projects are nevertheless providing signals for future positive development within the next months. For the projects currently under their Preparatory Phase, a lot of efforts are being made to integrate different sources of funding, at European level (FP, SFs, EIB-RSFF) as well as at national and regional level.

One of the critical issues is linked with the decision making process about the national financial support. The fact that a project is mentioned in a national roadmap is already a good sign, but not yet sufficient. It should be noted that more than 50% of the Member States have not yet elaborated their national roadmap. Another possible critical (and related) issue is linked with the decision making process about the site for the seat and/or operation. Nevertheless, it should be noted that on the 44 ESFRI projects now in the roadmap, 28 are of distributed nature, while 16 are single-sited (but most of them with already an identified site). For only few of them, it seems that such a decision making process should take place at high political level.

National Roadmaps

The incorporation of national resources into a common pan-European effort is the foremost principle behind truly European projects. During 2008, many countries prepared their own national Roadmaps, setting out priorities. These are vital policy documents.

More information is available on the ESFRI website.

Overview of National Roadmaps

Austria		Hungary		Slovenia	
Belgium		Ireland		Spain	
Bulgaria		Italy		Sweden	
Cyprus		Latvia		Netherlands	
Czech Rep		Lithuania		UK	
Denmark		Luxembourg		Iceland	
Estonia		Malta		Israel	
Finland		Poland		Liechtenstein	
France		Portugal		Norway	
Germany		Romania		Switzerland	
Greece		Slovak Republic		Turkey	
National Roadmap in Place					
National Roadmap under Preparation					

2008 Update of the ESFRI Roadmap

ESFRI finalized its update in September 2008. In the report, each group of research infrastructures is preceded by a short introduction outlining the context of the projects in the roadmap, including some emerging fields. A specific effort has been made to identify new research infrastructures of pan-European relevance for Energy (in particular extending to non nuclear) Biological and Medical Sciences and Environmental Sciences. Considering that e-Infrastructures are critical to all projects in this roadmap, ESFRI took care to deal with this aspect in much greater detail than before. The 10 new projects identified are likely to be supported in a Preparatory Phase by FP7 in 2010.

>Environmental Sciences



EISCAT_3D – The next generation European scatter radar system

EPOS – European Plate Observing System

SIAEOS – the Svalbard Integrated Arctic Earth Observing System

>Biological and Medical Sciences



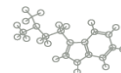
EMBRC - European Marine Biological Resource Centre

EU-OPENSREEN - European Infrastructure of Open Screening Platforms for Chemical Biology

Euro-Biolmaging

EUROPEAN HIGH SECURITY BSL4 LABORATORIES

>Materials and Analytical Facilities



EMFL - European Magnetic Field Laboratory

>Physical Sciences and Engineering



CTA – Cherenkov Telescope Array

>Energy



ECCSEL – European Carbon Dioxide Capture and Storage Laboratory Infrastructure



Carlo Rizzuto presenting the ESFRI Roadmap Update to Commissioner Potocnik

"... the ESFRI 2008 update of the European roadmap was presented and its contribution to the balanced and integrated development of ERA was recognised as a key aspect."



Management of Research Infrastructures

The creation of an ERIC

In 2008, ESFRI supported a process whereby a Proposal for a Regulation on a Community legal framework for a European Research Infrastructure (ERIC) was put forward as one of five policy initiatives constituting the follow-up to the 2007 review of the European Research Area. This proposal intends to put in place a framework to facilitate the joint establishment and operation of research facilities of European interest between different countries.

The proposed legal framework states that an ERIC would be a legal entity:

- With legal personality and full legal capacity recognized in all member states
- Based on membership with very flexible internal structure
- Ruled by Community law, the law of the state of the statutory seat or the State of operation; and
- Exempt from VAT and excise duties.

The political process in respect of an adoption of this regulation seems to be more complex. Therefore, a final decision was postponed to the year 2009, when the Czech Republic will take over the Presidency of the EU (see also Competitiveness Council of 2 December 2008).

Socio-Economic Impacts

ESFRI continued reflecting on the socio-economic impacts of Research Infrastructures. In particular the ESFRI Chair as well as some ESFRI delegates participated in the final meeting of ERID-Watch (15 October) on the exchanges between Research Infrastructures and Industry. The findings of this two-year project highlight (a) a huge procurement market ~8-9 B€ per year, (b) which has increased about 5.5% per year over the last 10 year, and (c) the huge potential role of RIs in developing knowledge for industrial development. The potential market impacts deriving from RI activities are indeed on four main fields: (1) knowledge-based products (e.g. Medical drugs), (2) leading edge technologies (e.g. instrumentation), (3) secondary industrial products (e.g. DNA sensors), (4) policy orientation (e.g. environmental information, industrial strategies). A further analysis may add two more impacts: (5) the impact on Human Resources and citizens and (6) the marketing image for companies working with RIs. The analysis of the ERID Watch findings also shows the need to better highlight the "services" (direct and indirect) to final users.

ESFRI and Contacts with other organisations

During the reporting period, ESFRI continued to nurture its relationships with other organisations, vital for the research infrastructure community.

European Research Council

During ESFRI's 24th meeting, ESFRI was pleased to welcome Prof. H. Nowotny, Vice President of the ERC. In addition to highlighting the importance of research infrastructures for all scientific domains, Prof. Nowotny echoed ESFRI's view that in order to make Europe more attractive in the long term; a more favourable environment should be nurtured, in particular with respect to legal and regulatory issues.



European Investment Bank

The EIB continues to support the work of ESFRI through its financial backing. Whilst acknowledging the challenges to implement the Roadmap projects, the EIB has expressed its willingness to be used as an "icebreaker" in this respect.



EIROForum

The experience of the existing international research infrastructures represented in EIROForum is unique and is the basis of an ongoing dialogue with ESFRI. The Chair of EIROForum, Robert Aymar, attended the 25th meeting of ESFRI and presented the status of the 9 EIRO projects listed in the 2006 Roadmap.



European Parliament

On 7 October 2008, the ESFRI Chair was invited to give a presentation to the European Parliament Committee on Industry, Research and Energy (ITRE). Following a detailed presentation on the role and activities of the Forum, the Chair stressed the crucial role that the European Parliament plays in defining the budget to support sustainability aspects of research infrastructures.





EU Policy related to Research Infrastructures

Energy Council of February 28, 2008

The Council in its meeting highlighted the need to improve and enlarge the Community's world class knowledge base in particular by asking ESFRI to identify the need for European Research Infrastructures, in line with the European Strategic Energy Technology Plan (the SET Plan) put forward by the Commission.

Competitiveness Council of 29 -30 May, 2008

The Council recognized that regions are important drivers leading to the development of a knowledge based society; hence, that efforts must be continued in a coordinated manner, involving the Commission and Member States, to increase the capacity of regions across Europe to access, use, construct and operate modern research infrastructures. The Council also called upon all stakeholders to discuss the report of the ERA expert group on research infrastructures, highlighting the vision for the future and a possible increased role of the Community.

Competitiveness Council of 26 September, 2008

During the Competitiveness Council of 26 September 2008, the Commission presented the draft Regulation on the Community Legal framework for a European Research Infrastructure (ERI). Drawn up in response to requests from the Member States and the scientific community, this proposed framework is designed to facilitate the joint establishment and operation of research facilities of European interest between several Member States and countries associated to the EU Framework Programme.

Competitiveness Council of 2 December, 2008

The Council held an exchange of views on a draft Regulation on a Community legal framework for a European Research Infrastructure (ERIC)¹. It decided to return to the draft during the next Presidency. The exchange of views focused mainly on the legal status which ERICs should have and on the possibility of applying tax exemption schemes to them.

At the working lunch, Ministers discussed the major research infrastructures and, more particularly, the implementation of the European Strategy Forum for Research Infrastructures (ESFRI) list, regarding which they acknowledged the added value contributed by ESFRI.

¹ The draft Regulation aims to create a legal framework to facilitate the establishment and shared use by a number of Member States and associated countries of facilities for research of European interest. Its purpose is to provide a uniform procedure in place of the current system, which is based on individual decisions for each research infrastructure. It is a part of the realisation of the common European Research Area. At its meeting on 30 May 2008 the Council referred to the need to develop research infrastructures at European level based, inter alia, on effective coordination and an appropriate legal framework. The Commission presented the proposal for a Regulation on 25 July 2008 (12259/08).

Conference on Research Infrastructures and their Structuring Dimension within the ERA



Slovenian Presidency of the EU 2008

On 5 and 6 March 2008 the Slovenian Presidency to the EU hosted a Conference on Research Infrastructures and their structuring dimension within the ERA. The main objectives of this conference were to clarify the challenges and opportunities at regional, national or inter-regional levels related to the development of research infrastructures of pan-European character, to highlight their contribution to the Lisbon objectives (eg impact on industry, sustainable development, employment) and to review the recommendations for improving the financial engineering of research infrastructures for their construction and sustainable operation. The conference addressed the question of how Europe can make better use of its scientific potential to strengthen the European Research Area, and thus achieve the Lisbon objectives through systematic regional, national and European coordination.



"Research Infrastructures and the ESFRI Roadmap should be seen as an integral aspect of the development and structuring of the European Research Area"

Janez Potocnik
European Commissioner for Research

"The economy of knowledge is based on talents (which) are attracted by technology; therefore we need an excellent research structure to prevent brain drain to the United States"

Danata Hübner
European Commissioner for Regional Policy

ECRI 2008 – Fifth Conference on European Research Infrastructures, Paris, 9 -10 December 2008



In the framework of the French Presidency of the European Council, the conference was jointly organised by the French Ministry of Higher Education and Research and the European Commission, in cooperation with ESFRI.

World-class Research Infrastructures are one of the pillars of an ambitious European Research Area. Access to leading research infrastructures plays a key part in maintaining Europe's competitiveness in both basic and applied research. Research infrastructures play an increasingly important role in the advancement of knowledge and technology, offering a unique research service to users from different countries and attracting young talents to science.

In this context, the Versailles Conference focused on:

the impact of Research Infrastructures;
economical challenges in conjunction with the Lisbon objectives;
problems of society, such as environmental concerns or expertise;
training in human resources and attracting high level scientists.

Summary Conclusions of ECRI 2008

The fifth European conference on Research Infrastructures organised under the French Presidency of the European Union:

- Recognised the importance of Research Infrastructures (RIs) to extend the frontiers of knowledge, carry out top quality research, train the next generation of researchers and support industrial innovation; highlighted the importance of RIs in the frame of the current socio-economic situation, as an engine for economic recovery.
- Highlighted the increasing importance of e-infrastructures as well as the long term preservation of and access to scientific data; noted that education and human networking are key success factors for the efficient use of these infrastructures.
- Acknowledged the work of ESFRI, as well as the very positive and continuing developments in this field since the first conference took place in Strasbourg in 2000, in Trieste in 2003, in Nottingham in 2005 and Hamburg in 2007; recognised the importance of the ESFRI roadmap as well as national roadmaps in developing joint medium to long term visions, to support prioritisation of actions, and to contribute the balanced and integrated development of ERA.
- Reiterated that Member States - as well as the European Organisations acting as catalysers - are key actors today for the emergence and strengthening of strategic pan-European research infrastructures. Apart from long term commitment of Member States and sound management, favourable fiscal and legal conditions were considered to be key sustainability factors.
- Noted the need to communicate the importance of Research Infrastructures and to develop links between RIs and high-tech industries, RIs and competitive clusters, or RIs and society, as well as the needs for improving these links.
- Recalled the need to overcome the difficulties in the implementation of the ESFRI Roadmap through the development of a "win-win" approach between the different stakeholders (following the "broader" approach used for ITER).



ECRI Delegates, Versailles, Paris 9-10 December 2008



FUTURE OUTLOOK AND ACTIVITIES

Roadmap Implementation

Top priority for the next few years will be the implementation of the projects presented in the ESFRI roadmap. ESFRI will also adopt a more proactive role especially with fields not yet covered by the roadmap but connected to major ongoing challenges, like Energy, Environment and Food supply. In order to further strengthen the description of the landscapes, ESFRI will encourage the scientific communities to carry out foresight studies in the different fields of science. Additionally, ESFRI will try to identify specific needs for new research infrastructures and integrate different types of infrastructures in a multidisciplinary effort.

Management of Research Infrastructures

The management of research infrastructures is increasingly becoming complex. It is therefore crucial that managers and decision-makers are trained to cope with the demands of these facilities at all levels. In answer to these increasing needs, training activities related to the management of research infrastructures should be initiated. A future task of ESFRI would also be to assess the appropriateness of granting the new European legal label (ERIC) and to monitor its implementation.

International Cooperation

At international level, the roadmap process has raised strong awareness and expectations. Following the first meeting of the G8 Science Ministers in June 2008, an ad-hoc group of senior officials has been formed to discuss the state of play of national roadmaps and priority setting; an overview of existing global projects and their technical, financial and legal issues; identification of possible new areas of cooperation. ESFRI will follow the process with great interest and assist where needed. During 2008, ESFRI continued to nurture its cooperation with the Global Science Forum.

Industry

The issue of better interaction with industry will be given continued attention by ESFRI in the years to come. In this context, dialogue with industry-related EC programs, e.g. the Joint Technology Initiatives, is ongoing. ESFRI has paid specific attention to this and adopted a proactive role by asking to the coordinators of the Joint Technology Initiatives and Technology Platforms to send proposals directly to ESFRI for insertion in the roadmap.

Regional Dimension

The regional dimension will continue to be a focus of ESFRI activities. Since policy makers increasingly want to know the socio-economic returns in the regions hosting a research infrastructure, and since knowledge of these aspects is still very rudimentary, ESFRI will act to understand and improve them.

Data Storage and Management

One of the real challenges for research, and especially for research infrastructures, is the explosion of data to be stored, maintained and accessed. Researchers will face the need to deal with the production and use of unprecedented quantities of scientific data, from those coming directly from facilities to those contained in scientific publications. ESFRI intends to prepare a long term strategy and those specific actions needed to support the most efficient use of the e-infrastructures. The availability and use of data will then turn into an overall knowledge infrastructure.



ESFRI, Brussels, September 2008



Contact

ESFRI Secretariat

Postal Address

European Commission

SDME 01/66

B-1049 Brussels, Belgium

ESFRI@ec.europa.eu

Tel: 00 32 2 299 25 39

Fax: 00 32 2 299 21 02