



Findings of the ERF Seminar on Future Access to European Research Infrastructures (Lund, 27th of October 2009)

Access to research infrastructures is a corner-stone of the well-known knowledge triangle: innovation, research and training. In this context, RIs are now seen as essential to research activities by the political support. The decision-making process for providing them with a realistic operation budget or for deciding to invest in a new one or in a heavy enhancement programme often leads to a questioning of the RIs' access policy in terms of perimeter relevance, financing party, excellence and transparency of the selection system.

The objective of the ERF seminar was to assess the present access policies of RI and to lay down recommendations for best practices in this area.

The general picture was set by 5 plenary presentations on the global challenges that European RIs are facing. The slides presented during presentations can be found on ERF site. Discussions between the participants and key actors were organised in 3 parallel sessions that were followed, in a plenary session, by reports by the session chairs, a round-table discussion and a general summary by the chair of ESFRI. The main conclusions of the parallel sessions as presented by the chairs and discussed by the participants to the round-table are the following.

Session 1. Users' facility points of view and offering

We should not be afraid to re-state points that are considered obvious by most colleagues, including: access based on merit, no explicit or hidden fees, full transnationality, adequate investments in the facilities, local support. But we should also defend the elements that transform open access from a principle to a practical reality, proactive elements such as the financial support of users and facilities. These factors made it possible for Europe to position itself at the forefront of open access for key areas and key instruments.

➔ The **access program by external users is the core activity of the open Large Scale Facilities (LSF)**. It represents usually 60-70% of the operating time. It is felt by many that at least 30% of users should come from abroad. It has been stressed that the quality of science in the country housing the facility is improved by influx of competition and experience from international users. Access must include the opportunity to conduct an experiment at a major facility with assistance from the facility as needed to be successful. For this reason the added value for the European Research Area must be tirelessly reaffirmed, especially for overseas collaborations. Indeed there is presently a significant addition of new or in construction world-class facilities in Japan, China and Australia and **this represents an important change in the panorama of major facilities**.

Scientific excellence should be maintained as the essential selection criterion despite of the increase of basic research financed by funding agencies on very tight scheduling. The judgement evaluation should be transparent with clear criteria based on scientific merit, technical importance and experience of the demanding group making the proposal. European integration should be looked into.

The access to LSF is vital for countries which do **not own such instruments** (member-states and/or on Europe borders). Special help should be identified – next FP8 Trans National Access ? – for getting travel and subsistence for going abroad and to support facilities that welcome these international users. Easy and free access to RIs is a key issue to prevent brain emigration out of Europe, especially from countries with no facilities.

➔ **Other access modes** should not be neglected:

- by establishing strong collaborative programmes with participating teams (PRT-type instruments);
- for countries with no RIs by exchange detached experienced staff to be valorised in access bonuses (I3-Forum Pan-European Access to RIs)
- regular industrial uses (see below);
- bilateral agreements with non-EU countries (supported by the EU);
- remote access & datagrids should be explored in educational programs (virtual?);

New practices may be also considered in **access processing methods**:

- fully remote evaluation system ?
- to inform users of the real access costs supported by the RI ?
- more flexibility in the call for experiments (open-calls ?)
- deontology code for users (case by case)

➔ Access to the facilities could be made more flexible by **adopting block-type allocation** or open call for proposals. This could also add possibilities for training (set aside time for training).

➔ EU Transnational Access funding has had major impact in FP6 but has been dramatically under-developed during the FP7. It needs to be largely amplified and targeted on new users from new countries. In addition more funding must be devoted to an ambitious accompanying programme in instrumentation developments as a joint effort in overall EU (Eastern countries integration tool?).

Session 2. Open versus private access conditions

The industrial use of large research infrastructures (RIs) is not limited to strategic R&D. Industrial scientists might either be fully involved in the experiments, work in collaboration with academia or use the facilities as an analytical service. But for a large industrial group, it looks difficult to anticipate all the potential of the operational benefits of Research infrastructures.

Thus it is necessary to develop a combined approach that includes:

- monitoring the public strategy of the RI including ESFRI;
- elaborating ways (such as framework agreements) to access the facilities – and their data – for R&D; depending on the need, this can take the form of a partnership, or of a service;
- facilitating the emergence of start-ups that develop on the potential use of the infrastructure data with the perspective to get access to the service that these start-ups might provide.

In general industrial users are willing to pay the full operational cost in relevant cases (research on its own resources) as far as quality is present in the level of services, access, timescales and confidentiality. In return they would not contribute for public investments in the RIs.

It is globally estimated that industrial participation will never be more than 15%. Regarding their participation in academic projects through open access (as far as their interests are satisfied), industrials have concerns regarding the RI management (confidentiality & IPR, risk of losing scientific excellence). They ask for having enough delay before publication (typically 3mths) to investigate IPR issues and consider mandatory non-disclosure agreements as mainly sufficient for collaborating, even if they are ready to get patents and to defend ownership.

More globally, the European RI landscape is still very fragmented and requires more effort between disciplines, scientific communities and industrial sectors on the one hand and from funding agencies and member-countries on the other hand.

The involvement and outreach of all EU regions are still unbalanced ('information gap?'), generating a really poor integration of Eastern European Member States, and an inadequate training schemes and unclear information on research careers. A solution could be to amplify the embedding of pooled RIs (mix of LSF, medium and small ones?) into the growing European landscape of technological clusters (JTI, EIT, etc).

Maintaining an excellent communication at all levels and increasing the visibility of the "scientific offer" to the non-scientists has been proposed: participation to Company Days and consultancy sessions, joint offer of virtual and experimental facilities/resources towards industrial users. Talk & listen to each other is important as long as taking time to understand each other.

As a conclusion, it has been noted that the current RIs are too "problem-looking" oriented, they have to investigate more the needs of the whole fields. A solution resides in **a better organisation (networked?) of the small size RIs** towards a better integration of human capital at the university level and throughout Europe with major RIs. A positive indication is noted through the fact that university partners are willing to act fast upon industrial requests.

Session 3. Access to project funded by research agencies

European nationally-based facilities are receiving proposals of experience supported by funding agencies on a call for proposal basis (DFG, ANR, FNRS, FNR Belgium, European regions, etc). In order to avoid an uncomfortable position between renouncing to the scientific excellence and doubling the evaluation workload, ERF has proposed to investigate possible solutions. Indeed, such proposals already supported by a funded programme might need special attention in order to avoid double or even conflicting evaluation.

Those in favour of double evaluation are defending the equal treatment for all users and underline that both evaluations may have different criteria (including variable standards between facilities) and the necessity to let the quality control in hands of the facility (and finally « *good proposals will always prevail* »).

Those against double evaluation lament on the lost of time and money (overload of reviewers), mention the fact that excellence criteria are considered anyway and underline the difficulty to prepare international projects

A/ A peer reviewing at the European level?

Acting as a single evaluation agency, a "lead agency" could in the end allow funding of RIs and access. It could however place the hosting country in the unfair situation of giving up its sovereignty on access while remaining the party paying the running cost of the facility.

A first step may be to set up a real joint "access portal" for both evaluations. Pretty easy for new communities (= last integrated, best prepared ?) but more difficult for « old big ones ». One advantage would be to limit « parasite » proposals (case of multi-submission).

B/ Transfer the competition from "time to get access" to "better services"?

In this solution one would favour the development of very preliminary contacts in order to facilitate the fundamentals (excellent science and use of the potential of the RI, technical feasibility) in order to combine excellence and profitability and fair accompanying for new users.

Nevertheless a special access must be considered for specific cases such as urgent proposals ("5%" of the RI's director) or with specific requirements (technical developments requiring time for implementation or long term research programmes).

C/ Negotiate with the agencies (when possible)?

An example is the process put in place jointly by GENCI (Large National Equipment for Intensive Calculations, France) and the National Research Agency of France (ANR). It permits to jointly give access to high computing facilities for projects funded by ANR, in the respect of missions of both agencies :

- GENCI is coordinating the access to the major computer centers in France to all scientific communities, academic or industrial, national, European or international
- ANR as a national agency provides potential users with research grants.

The contacts developed by both agencies lead to an adjustment of the call schedules, the selection criteria, the pooling of experts and the contents of the evaluation reports. Despite the reluctance (mainly from the funding agency), this first step is considered as so encouraging by both partners that the first joint call could take place very soon.

This case must be considered as very specific (maybe because the excellence is not the main criterion for both agencies in this particular case), but it seems easy to implement for new structures.

As a conclusion of the session, the participants finally speak in favour of:

- **maintaining the status quo** but be inflexible on scientific excellence based on an external independent evaluation
- **improving the rapprochements** on the one hand between facilities and users when and if required (on-site experience), and on the other hand between facilities and funding agencies (in order to set-up dedicated access programs funded by research agencies?).

Conclusions of the seminar

In conclusion of the seminar the ESFRI Chairman presented the panorama of the access within the future pan-European RIs, underlining how:

- peer reviewing RI based and service in frontier research has EU added value attracting best researchers & technicians, helping to benchmark EU research at the best level;
- service at this level develops cutting-edge technologies, education and management with EU outreach, producing stronger socioeconomic returns on investments;
- this access concept now must be extended to all fields, from Humanities to Physical Sciences, and to the about 300 existing potential Pan-EU RIs;
- pooling of national resources of RIs has been successful in a recent past (EIROforum and ASTRONET).

The speaker noted that for the next steps there are some difficulties that need to be overcome:

- the process of RIs integration by excellence cannot feed only on pooling the existing resources: new challenges require new additional EU resources, and a single ERA voice at a global level;
- this ambition requires long term dedicated EU funding to drive excellence similar in ambition to the ERC and other EU actions such as EIT;
- international attraction & education of human resources with EU circulation need a specific EU status;
- rigidity in budgets and economic crisis can drive protectionism and reverse the process;
- facilitation of open access to distributed and e-Infrastructure may be a chance but in both cases sustainable funding is required;
- the use of structural funds and the role of EIB are to be further optimised in this context.