



An ERA-Net initiative for promoting infrastructure funding in the life sciences

Summary of the results of the second year of ERA-Instruments

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After the first project period which was characterized by typical starting activities such as kick-off-events, analyses, etc, the second period of ERA-Instruments had a focus on various joint activities. It was a very productive phase of the project including a workshop on technology development in Europe and associated challenges, two study tours yielding a host of insights into non-European research infrastructure systems, a user meeting on a disruptive methodology, namely next generation sequencing (NGS), the analysis of the first instrumentation survey on magnetic resonance techniques (NMR/MRI), the start of a second survey on NGS, and the completion of an on-line questionnaire on the career perspectives of young researchers running instrumentation. In addition, a recommendation paper on “efficient operation and access” of mid-sized research instrumentation was published, which was received with much positive feedback.

These activities will be described according to the assigned deliverables.

D2.4 Pilot survey on cutting edge instrumentation (NMR and MRI).

A questionnaire based survey of nuclear magnetic resonance (NMR) and magnetic resonance imaging (MRI) instrumentation was conducted in 2009. This data has now been organized in an up-datable database which is accessible via the ERA-Instruments web site resp. www.gacr.cz/era-instruments-database.html. The final version of the NMR/MRI database includes 486 instruments from 195 responses in 22 European countries. The database provides a tool for collaboration, enabling better use of the existing RI and also serves as a source for science funding bodies.

D2.1 Completion of strategy and questionnaire for instrumentation survey

The second survey has been decided to be conducted on an area with different boundary conditions compared to NMR/MRI. After consultation of the Scientific Advisory Board and contacts to other ERA-Nets next generation sequencing has been chosen as topic. Using a similar approach via a web-base questionnaire data has been collected on NGS facilities end of 2009/beginning of 2010. This project is executed in collaboration with the consortia E-RARE, gEUVADIS, and RDPlatform. Data collection has been completed and organization of the data has begun.

D3.1 “Technology development in EU” workshop report

During a workshop organized by Wellcome Trust at the Hinxton research campus, the most effective ways to improve access to new equipment and to engage EU researchers in technology development were explored. Further barriers and potential solutions facilitating collaborative relationships between industry and academia (improving ideas-to-technology transfer & accelerating the development of new and emerging technologies were identified.

The important issue of how to make best use of the immense volumes of data that are being generated by research instruments were discussed.

D3.2 “Emerging RI needs” meeting report

At the same workshop new technologies such as high throughput crystallisation, advanced light microscopy, hyphenation mass spectrometry, multidimensional / multispectral imaging and next generation sequencing were discussed. A common denominator of these techniques is that they produce large amounts of data. However, it was felt that general concepts to respond to the mass production of data are largely missing. Notably it became clear that, from a funding point of view, the surrounding infrastructure around a piece of equipment may become more important and more costly than the instrument(s).

D4.3 Recommendations for promoting young careers

Via an on-line questionnaire it was inquired which problems young researchers operating RI are faced with and which potential solutions there are. The questionnaire received 92 full answers from a strongly skewed basis of countries; hence the analysis does not provide representative results.

A large fraction of the respondents wished for improvements of professional postdoctoral career support, while technical equipment and support is considered less problematic. There may be some indication that responsibility for running instrumentation should not be overloaded with service aspects in order allow young scientists to develop their scientific careers.

D4.5 Reports on study tours

Based on the recommendations of the Scientific Advisory Board a study tour to the countries China/ Japan, featuring more centralised organisation of science and research, and a study tour to Canada with more comparable organisation to the European situation were conducted in autumn 2009.

The study tours provided valuable insights into problems and solutions regarding the organisation of research infrastructures. The lessons learned from these are communicated to the partner organisations for developing their best practice.

D4.6 Reports on user-meetings

The first user-meeting was already held in September 2008 in Bonn, Germany, discussing current and future developments in light microscopy.

Recommendations derived from the user meeting concern centralised facilities, user fees, cutting edge equipment operated by the specialist, technology development, proprietary issues concerning hardware and software.

The second user-meeting focusing on next generation sequencing was held in Tartu, Estonia in June 2009. A panel discussion addressed issues such as instrument choice and the pro and cons of organizing instrumentation in centres, and underlined that bioinformatics as a currently limiting factor.

During the various discussions of the project with partners and the Scientific Advisory Board it became obvious that ERA-Instruments activities have already produced substantial insights and views on how modern research facilities should run life science related instrumentation and how funding organizations should provide appropriate funding schemes. Rather than referring to the numerous reports and deliverables providing this information extensively, it was considered worth the effort to summarize these results in a comprehensive manner. This additional activity has been started in the second project period with already a first publication:

Recommendation paper on **“Efficient Operation and Access”**

Lessons learned concerning best practice and access during period 1 and 2 were distilled in a brief paper and published in form of a brochure. The content aims at describing generally valid boundary conditions serving for a common understanding on research instrumentation and research infrastructure. This has been widely received with favourable comment. A second recommendation paper on “funding” is in preparation.

In 2009, EUROHORCs and ESF have published their Vision on a Globally Competitive ERA and their Road Map for Actions. One of the topics is dedicated to Research Infrastructures. ERA-Instruments stands in close relation to this activity and might be considered as its pilot project since the EUROHORCs/ESF activity aims at dealing with RIs in general and could benefit from projects as ERA-Instruments. This underlines the importance and success in terms of acceptance of the ERA-Instruments project having initiated a networking process amongst national stakeholders of research infrastructures.

All ERA-Instruments publications can be found at:

www.era-instruments.eu/what_we_do/publications.html