Euro-BioImaging
European Research Infrastructure for Imaging Technologies in Biological and Biomedical Sciences

WP 3 Process Plan

Task 3.3
Working plan including how to integrate new partners and future trends in biomedical imaging

Deliverable 3.7
Strategy for integration of new future partners and methodologies

Task leader
MPG

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1 Executive summary

Euro-BioImaging aims to implement a coordinated, harmonized and well-balanced pan-European infrastructure for biological and medical imaging that addresses the needs of the relevant stakeholders. This objective can only be achieved by Euro-BioImaging remaining open and inclusive to accept both new partners and continuously consider improvements to the technologies and methodologies it will offer to best support European scientists. The strategy how to integrate new partners and methodologies in the future will accommodate this essential need by presenting tools and measures already applied at the preparatory phase that will be adjusted and expanded during later stages of the project. The integration strategy will be incorporated into the working plan and the business plan for implementation of the infrastructure.

The current report defines different partnerships with Euro-BioImaging at different stages of the project. Major components of the integration policy for new partners are the Euro-BioImaging Website, the Stakeholder Meetings and particularly the open call for nodes launched firstly during the preparatory phase and repeated at regular intervals thereafter.

The basis for including new technologies has been developed during the preparatory phase by identifying - through the completion of a broad survey, proof-of-concept studies and close consultation with the national imaging communities - the unmet user needs for imaging technologies. By continuous exchange of information with the national imaging communities and with stakeholders at relevant meetings and conferences, by offering a permanently open mini-survey on the Euro-BioImaging website and by continuously evaluating the technologies offered, it will be ensured that Euro-BioImaging remains able to adjust to new trends and developments in imaging technology and also to changes in user needs in the biological and medical imaging communities.

2 Introduction

Based on firstly the close consultation with the European biological and medical imaging communities, secondly the survey of existing biological and medical imaging infrastructure and thirdly the proof-of-concept studies to test user access, Euro-BioImaging is developing a working plan to outline the path towards the implementation phase (starting in 2014).

The working plan will be integrated within the business plan (Deliverable 3.12 “Final business plan”, due November 2013). The business plan will present the case for a harmonized approach towards a European infrastructure for biological and medical imaging as well as provide financial, legal and access models for existing infrastructure to be opened for pan-European access as well as for the new infrastructures needed to fill gaps in the existing landscape. The strategy for the integration of new future partners and methodologies will be part of the working plan and incorporated accordingly into the business plan.

3 About the deliverable and the Work Package task

3.1 Objective

While developing the working plan and business plan for the implementation of the biological and medical imaging infrastructure, it must be ensured that Euro-BioImaging keeps its inclusive nature and is able to offer an easily accessible way for new partners to join while the project evolves. Another objective is to keep Euro-BioImaging able to adjust to and incorporate new developments in imaging technology both in the biological and the medical community to keep pace with the rapid developments in biological and medical imaging as well as to grant every scientist in Europe access to the latest and most innovative imaging technologies. Therefore, the main objective of Deliverable 3.7 is to provide a strategy to ensure interested parties arising or identified in the future are supported to become partners of Euro-BioImaging.

3.2 Approach

The strategy to integrate future partners and methodologies will consist of the measurements that have been taken in the preparatory phase (2010 to 2013) as well as adjusting and expanding the necessary and most successful measures in the construction phase (2014 to 2017) and the operational phase (2017 onwards). This way, Euro-BioImaging will make sure it keeps its inclusive character throughout all stages of the project.

Partnerships with Euro-BioImaging differ as the program evolves from preparatory to implementation and operation phase. The integration strategy will accommodate adding new participants at each stage of the programs maturation and the strategy for inclusion must take this into account (e.g. the conditions for joining Euro-BioImaging may change to take into account contributions from existing partners made at earlier points during the program). The basis for including new partners will be laid out in the first Open Call for nodes, which will be announced and run during the preparatory phase. It will be followed by additional calls at regular intervals thereafter.

Integrating new technologies and methodologies will also be guided and based on the results of the preparatory phase surveys in which the key technologies that are needed by European scientists have been identified. The strategy will embrace the results of the surveys and will then further attempt to keep pace with future developments in imaging technologies and adapting to them accordingly to ensure Euro-Bio-Imaging reflects the latest state-of-the-art.

3.3 Results

3.3.1 Integrating new partners

A) Preparatory Phase

At the current state of the preparatory phase the Euro-BioImaging consortium consists of the following groups:

- Beneficiaries
- Associated Partners
- Stakeholders
- National Imaging Communities.

Beneficiaries
Beneficiaries are members of the Euro-BioImaging Preparatory Phase project consortium. They comprise the Scientific Coordinators, all Work Package chairs, and further key partners such as national funding bodies and research councils. At the moment, there are 39 legal partner organizations (Beneficiaries) from 15 European Member States and Associated Countries.

Associated Partners
Associated Partners have expressed their interest to actively participate in Euro-BioImaging by sending a Letter of Intent and contribute to the Preparatory Phase objectives of Euro-BioImaging. More than 200 Associated Partners from 26 European Member States and Associated Countries have done so until now. New Associated Partners can continuously join the consortium during the Preparatory Phase by submitting a Letter of Intent (LoI) at any time.

Stakeholders
Stakeholders of Euro-BioImaging include scientists, representatives of European and national biological and medical imaging communities, universities, governmental and non-governmental research institutes, hospitals, as well as the health care and bio-optics industries. Further stakeholders include the service industry sector, local, regional and national authorities including those ministries in the member states responsible for education and research as well as the dedicated research associations, societies and national organizations.

National Imaging communities
Since early 2010 self-organization of biological and medical imaging communities at the national level started in most European Member States particularly with the goal of supporting Euro-BioImaging and to achieve the pan-European integration of national imaging communities.

The following national networks of existing imaging facilities and major infrastructure providers have already formed and in several cases, this has already led to significant

national investments (e.g. FR, SE, IT) or application for national investments (CH, DE, FR, NL – see Deliverable D4.1 *Report on funding sources for the construction and operation of Euro-BioImaging*):

BioImaging UK
Czech BioImaging
EuroBioImaging-NL
Finnish National Imaging Infrastructure Network
France-BioImaging
German Bioimaging
Greece-BioImaging
Imaging Platform Ireland NBIP
Italian Bioimaging
(N)Euro-BioImaging Poland
NorBioImaging (Norway)
Spanish BioImaging
Swedish BioImaging
Swiss-BioImaging

For countries where the self-organization process is still ongoing at the national level, Euro-BioImaging has outlined a process to ensure inclusiveness and legitimation of the national coordinating persons by the community. In a constituent meeting, the national imaging communities have appointed a national coordinating person who is responsible for communication between their respective community and Euro-BioImaging.

The following tools and measures are applied at the current stage to integrate the partners mentioned above. All of them have their origin during the preparatory phase but will be continuously applied in all later stages of the project.

I) The Euro-BioImaging Website

The website http://eurobioimaging.eu/ gives a broad range of information about Euro-BioImaging and also provides detailed information on how to become an Associated Partner and stakeholder of Euro-BioImaging and how to get involved in the national Euro-BioImaging communities.

II) Stakeholder Meetings

All stakeholders are being invited to attend the Annual Stakeholder Meetings. To date, two such meetings have taken place – the first one in September 2009 in Heidelberg, the second one in October 2010 in Vienna. The third Stakeholder meeting will be held in January 2012 in Heidelberg. The first two meetings each welcomed about 250 attendees representing policy makers, funders, EC representatives, scientists, infrastructure providers, journalists and industry.

III) Open Call for Nodes

At the end of 2012 or beginning of 2013 an open call for nodes will be launched, which will be broadly advertised in the biological and medical imaging communities. It is expected that all groups involved in the Euro-BioImaging preparatory phase will submit an 'Expression of Interest' to become a node. In addition, it is expected that other organisations, institutions and facilities that are not yet involved will submit proposals. As progress in different technology areas may occur asynchronously, several calls may become necessary to address the full range of imaging technologies needed by scientists.

Later in the process open calls will be performed more frequently so that interested parties can become partners of Euro-BioImaging at any time.

The proposals received will be evaluated on the basis of eligibility criteria such as scientific and technical excellence, open access, stability of funding and staffing, highest quality of service, facility management and user training. A board of independent international imaging infrastructure experts will evaluate the applications based on how well the facility addresses the aforementioned eligibility criteria.

The open calls launched at regular intervals form the main tool to guarantee that Euro-BioImaging keeps its inclusive character from Preparatory Phase through all subsequent future stages of the project including the implementation and operation phase. Under discussion is whether the periodic open calls may be complemented by unsolicited applications that can be submitted at any time.

B) Implementation Phase

After the preparatory phase, all stakeholders and the National Imaging Communities continue to be inclusively integrated as described above. In addition, the European Member States and Associated Countries, and the national ministries representing them, will start to play the major role in the project continuing from the Implementation Phase on. They will finance the distributed infrastructure consisting of a hub and nodes in the biological and medical imaging community in their respective member state.

The relation between the member states, Euro-BioImaging and its hub and nodes will have a committing, legally binding character, which needs to be regulated accordingly.

The legal and financial aspects of these partnerships are addressed by Work Packages 2 and 4 in separate reports. Work Package 2 will develop suitable legal structures *(D2.1 "Evaluation of suitable legal structures")* and define a legal and governance model *(D2.3 "Report on governance and legal issues including ethical issues and IPR")*.
Work Package 4 will address the challenge of supplying sustainable funding models and will help determining the budget that is needed to establish Euro-BioImaging (*D.4.4 "Recommendation for the long term funding strategy and model"* and *D4.5 "Report on financial requirements of Euro-BioImaging hub and nodes").*

At the current stage it is envisaged that the hub forms the legal entity representing the new Research Infrastructure and that the nodes act as separate legal entities. Hub and nodes will be connected by bi-lateral agreements.

Although the governance model has not yet been developed in every detail it will most likely comprise some of the following framework features. Representatives of the member states

will be part of a Decision Making Body, which oversees the strategic and scientific development of the Euro-BioImaging infrastructure. The Decision Making Body will be guided by a Scientific Advisory Board in scientific matters and in the selection of nodes. There will also be an Executive Body with an oversight function similar to the currently existing Project Management Team and Steering Committee, which will execute the decisions of the Decision Making Body.

3.3.2 Integrating new methodologies

I) Surveys

A key role for stakeholders to provide input on their unmet imaging technology needs is by participating in the surveys Euro-BioImaging has already and will continue to conduct.

The first "Euro-BioImaging Survey" was broadly advertised and openly accessible on the Euro-BioImaging website from June 1st, 2011 to July 15th, 2011. The response rate to the European-wide survey was much higher than anticipated and the final data set comprises complete data from 660 individual participants.

The survey results will be published as a strategic review of the unmet user needs on the Euro-BioImaging website and summarized in reports by the technical WPs (6, 7, 8, 9, 10, 11, 12 and 13) for the European Commission.

A condensed version of the Euro-BioImaging Survey will be published on the Euro-BioImaging website and will remain open throughout all stages of the project. This mini-survey will focus on the need for (new) technologies, their applications and configurations and will allow users and providers at any time to provide their judgements regarding current unmet imaging technology needs. Based on the imaging technologies that have been identified to be the most needed by European scientists in the preparatory phase, the mini-survey will enable Euro-BioImaging to identify changes and new trends in the field and react accordingly by adding such 'improvements' to the portfolio of the hubs and nodes.

II) Euro-BioImaging Proof-of-Concept Studies (PCS)

From January to July 2012, Euro-BioImaging will conduct a series of PCS offering free access for users to 63 European advanced biological and medical imaging facilities in 16 countries. The participating imaging facilities have all committed to contribute free user access in kind to support the Euro-BioImaging Preparatory Phase. The unique opportunity of free access to a broad portfolio of the most advanced imaging methods had been broadly advertised and applicants from the PhD student level up to senior researchers were invited to submit their project proposals from October 1st to November 30th, 2011. In this short time frame, already more than 230 proposals coming from European as well as international users were submitted, again surpassing all expectations and demonstrating the strong need for open access to biological and medical imaging infrastructure in Europe.
Proposals are evaluated for scientific merit by a panel of reviewers composed of experts from the Euro-BioImaging consortium and heads of the participating imaging facilities in each technology area. After this first evaluation, they are assigned to PCS sites by expression of preferred facility by the user and feasbility. Finally, each facility selects from its assigned applications the user applications which will be invited for conducting the proof-of-concept study.

The PCS are considered a test-run of the Euro-BioImaging concept and its results - besides insights into other project-relevant topics – will show which imaging technologies are actually

requested and used by scientists at the moment. In addition to the results of the survey the PCS will allow to further specify user needs for access to different technologies.

III) Consultation with national imaging communities

Besides facilitating contact to the national contact points, Euro-BioImaging actively supports national imaging communities by continuous participation of Project Management Team members at meetings and inviting their national coordinating persons to Euro-BioImaging Work Package meetings. This way it is ensured that developments and trends in imaging technologies and methodologies are detected and directly communicated between the national imaging communities and Euro-BioImaging at any time. When a national imaging community has identified an imaging technology need that is not being met by the existing Euro-BioImaging nodes at the current time, the national coordinating persons will report the unmet need to Euro-BioImaging.

IV) Identification of new technologies/methodologies at conferences and meetings

Euro-BioImaging has already organised special sessions in relevant conferences (e.g. European Congress on Radiology, March 2011, Vienna, International ELMI meeting on Advanced Light Microscopy June 2011, Alexandroupolis). Wherever possible, Euro-BioImaging partners will continue to participate in relevant national meetings and conferences to identify and follow up on new developments in biological and biomedical imaging technologies.

V) Continuous evaluation

Besides the challenge of keeping pace with developments and trends in biological and medical imaging technologies, Euro-BioImaging will also continuously evaluate the existing nodes and the technologies they offer. The technical work packages 6, 7, 8, 9 and 10 will form a network of experts in their respective fields *(M24, MS29, MS30, MS32, MS34).* Those expert boards will monitor the existing technologies with regard to actual demand. If a particular technology is no longer in demand, the evaluation will identify such leading to a “turn-over” of the latest technology replacing dated technologies in Euro-BioImaging hubs and nodes. This way, Euro-BioImaging will make sure that the technologies provided by Euro-BioImaging infrastructures are maintained at the cutting-edge and that they are needed and in demand by European scientists.

4 Conclusion

The effective choice of tools and measures for integrating new partners and methodologies in the future will ensure Euro-BioImaging keeps its inclusive nature at all times and offers an easily accessible way for new partners to join during the project and while it evolves.

In addition, these tools and measures will enable Euro-BioImaging to keep pace with future developments in imaging technologies and to adapt to them accordingly to ensure Euro-Bio-Imaging reflects the latest state-of-the-art and that the technologies provided by Euro-BioImaging infrastructures are needed and in demand by European scientists.