Euro-BioImaging ERIC: Procedure for evaluation of upgrades of existing Euro-BioImaging Nodes

Introduction

Euro-BioImaging ERIC[1] is a pan-European distributed imaging infrastructure that provides open access to innovative biological and biomedical imaging technologies for European researchers. It is governed by representatives of those European countries and international organisations which have joined the Euro-BioImaging ERIC, i.e. the Euro-BioImaging ERIC member countries and international organisations. The infrastructure consists of a set of geographically distributed but strongly interlinked imaging facilities, i.e. the so-called Euro-BioImaging Nodes.

Biological and biomedical imaging are fields that for the last decades have been characterized by continuous technological innovation. Technological advances in e.g. photonics, physics or bioorganic chemistry find their way quickly into technological innovation and applications in imaging. This provides exciting opportunities for biomedical advances, but also brings along the continuous need for adaptation of new methods and new technologies. For a technology-driven research infrastructure like Euro-BioImaging ERIC, remaining at the technological forefront of the field while guaranteeing reliable imaging access that leads to high quality research, poses challenges.

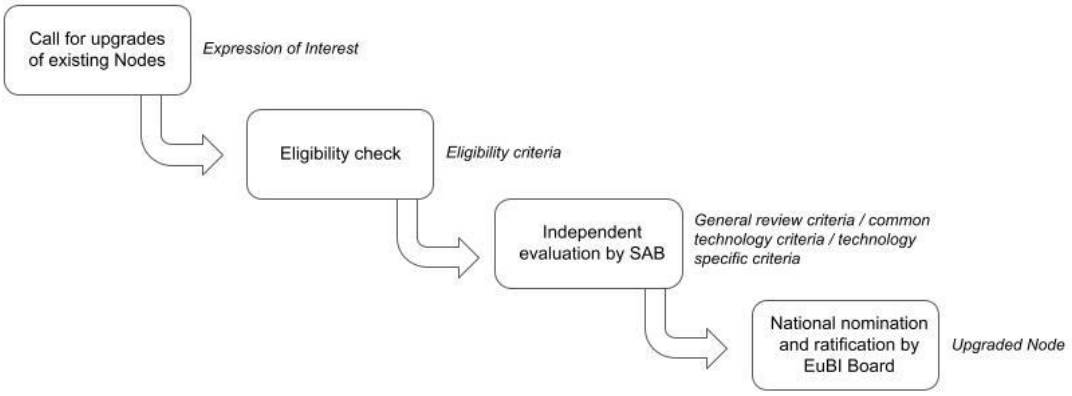
For this, workflows are needed that identify new technologies early on, assess their relevance to the biological and biomedical imaging field as well as the feasibility of access provision and regulate their inclusion into the research infrastructure (for more details please see "Euro-BioImaging ERIC: Procedure for technology identification and evaluation for inclusion into Euro-BioImaging").

For a sustainable development, Euro-BioImaging ERIC implements procedures to:

- Continuously evaluate its services at Hub and Nodes (i.e. quality assessment and management procedures);
- Update existing imaging technologies at its Nodes;
- Identify and evaluate new imaging technologies for open access, and regulate their inclusion into Euro-BioImaging ERIC.

As a possible outcome of these procedures for keeping its service portfolio cutting-edge, the Euro-BioImaging ERIC will regularly assess the need for including new Nodes, and for decommissioning existing Nodes, whose services are no longer requested by the user. If the need for inclusion is confirmed, an open call will be published for inviting applications for new Nodes and/or for upgrade of existing Nodes (e.g. by inclusion of imaging technologies not included in the current Euro-BioImaging technology list).
This document describes the procedure for evaluation of upgrades of existing Nodes. The procedure is based on the principles and criteria that were approved by the Euro-BioImaging Scientific Advisory Board (SAB) and by the Euro-BioImaging Board. The procedure shall be open, transparent and free from conflicts of interest and will be performed by the Euro-BioImaging Scientific Advisory Board.

[1] Euro-BioImaging ERIC: Euro-BioImaging European Research Infrastructure Consortium



Procedure for evaluation of upgrades of Euro-BioImaging Nodes.

Benefits of becoming part of a Euro-BioImaging Node

The Euro-BioImaging Node status will confirm the facility's high significance in the European imaging landscape. Nodes benefit from Euro-BioImaging ERIC's close communication with national and international funding bodies in Europe as Euro-BioImaging ERIC will works to increase awareness for the needs of the imaging community and advocate for the importance of adequate funding for Euro-BioImaging Nodes.

Euro-BioImaging ERIC provides training opportunities for technology providers and facility staff working at the Nodes. Involvement in the Euro-BioImaging ERIC infrastructure facilitates interactions of the facility with the international imaging community, strengthens research and technology development at the hosting institution and increases the international visibility of the facility. Furthermore, by accepting Euro-BioImaging users, Euro-BioImaging Nodes will get exposed to new scientific questions and imaging technology applications, which will result in the boost of their own science and technology development.

Euro-BioImaging Nodes also benefit from the close collaboration of Euro-BioImaging ERIC with the European imaging industry *via* Euro-BioImaging's Industry Board (EBIB), e.g. by having an opportunity to test prototypes and develop new systems together with industry R&D departments.

Node "Expression of Interest" – EoI

To prepare for the regular call for Nodes and Node upgrades, all Euro-BioImaging ERIC members, observers and prospective member countries are timely informed about upcoming calls, so that they can prepare their national strategy together with national imaging communities and existing national Euro-BioImaging Nodes well in advance.

Expression of Interest - Preparation and submission

Existing Euro-BioImaging Nodes interested in an upgrade will be invited to prepare and submit their Expression of Interest for a Node upgrade (EoI) to Euro-BioImaging ERIC.

The "Expression of Interest" will request information on

- Node applicant (contact details)
- Imaging facility(ies) to be included in the Node

- Scientific expertise and academic environment (incl. track record) of the new facilities and complementarity with the existing Node
- Technical expertise of the new facilities
- Imaging technologies and all services, which shall be offered for access to Euro-BioImaging user (incl. available instrumentation) by the new facilities
- Available imaging training courses at of the new facilities
- Evidence how the Upgrade of the Node increases its significance and impact and how the new facilities are complementary to the existing Node and contributing to higher excellence of the expanded Node
- Plan for User access in the expanded Node and new facilities
- Plan for Quality Management and sustainable investment in the new facilities

Applicants will also be asked to provide

- Demonstration of user need (e.g. letters of interest for access from users)
- Letter of Commitment from Hosting Institution
- Letter of Support from national delegation to the Euro-BioImaging Board
- Document demonstrating communication with funders

Templates for the Expression of Interest form and all additional required documents will be provided to applicants in due time.

Independent evaluation of Node EoIs – Criteria and procedure

Eligibility criteria

After submission, the Euro-BioImaging Hub Office will check all submitted Expression of Interest (EoI) forms for formal completeness and eligibility. In order to be eligible:

1. The submission of the Expression of Interest is supported by the respective national delegation on the Euro-BioImaging Board in the form of a 'Letter of Support' signed and submitted by the delegation members. A LoS template will be provided on the Euro-BioImaging Web Portal.

2. The applicant should come from an ESFRI country.

3. The applicant demonstrates the user need for the new facilities to be included in the Node, by submitting together with the EoI form Letters of Intent (LoIs) from at least 5 users. A LoI template will be provided on the Euro-BioImaging Web Portal. Based on all user LoIs, the applicant will summarize the expected impact of the granted open access to the imaging facility e.g. for the addressed research field, the technological progress, industry relationship etc. The applicant is requested to provide a substantiated estimate of the number of Euro-BioImaging users/projects for the first two years of operational phase. It is expected that a significant fraction of those users will be transnational.

4. The applicant guarantees to provide open access for Euro-BioImaging users to at least 50% of the newly created capacity for Euro-BioImaging ERIC.

5. The applicant demonstrates in the Euro-BioImaging Node Expression of Interest form how the new facilities will be integrated into the existing legal entity of a multi-sited Node or how a new multi-sited Node arising from the upgrade will constitute a single legal entity, which in its entirety can become a legal contractual partner of Euro-BioImaging ERIC.

6. The applicant can demonstrate the dialogue with funders for the Node upgrade. This dialogue can be demonstrated with a letter from the funder or any other documentation (e.g. a national research infrastructure roadmap with reference to the Node proposal; recently submitted or granted research infrastructure proposal(s) related to the EoI etc.). The letter should confirm that the applicant and the funder have communicated about the Node proposal regarding e.g. its context in the national infrastructure and potential funding opportunities for the upgraded Node operation. Funders can be any financing body, e.g. international, national or regional funding agency, university board, charity foundation, government etc. Funding should cover upgrades and building of physical facilities, but also the required personnel and other costs for the first 5 years of the Euro-BioImaging Node operation.

EoIs with minor parts missing will be invited for completion within a short deadline. All eligible EoIs will be forwarded to the Chair of the Euro-BioImaging Scientific Advisory Board (SAB) for independent evaluation.

General review criteria for independent evaluation

Eligible EoIs will be evaluated by the SAB against *General Review Criteria* for applications for Euro-BioImaging Nodes as well as against *Technology Specific Review Criteria* (see next paragraph below). The *Euro-BioImaging Node Expression of Interest* template will address all criteria based on which EoIs will be reviewed, and support the interested imaging facilities to prove their excellence and provide all information necessary to facilitate the review process, including a clear plan for the construction, operation, cost and legal model of the future Euro-BioImaging Node.

1. The applicant describes the scientific and technical excellence of the new facility(ies) to be included in the Node. The applicant should submit top 10 relevant publications from the last five years demonstrably resulting from science enabled by the infrastructure of the applicant.

2. The quality and field of the academic environment is described by indicating in which scientific fields the applicant has a proven track record in e.g. structural biology, cell biology, neurobiology, preclinical/animal research, clinical research and clinical studies. The institution hosting this expertise may attach a letter of commitment stating "… if APPLICANT will be selected as Euro-BioImaging Node this institution will provide its expertise in SCIENTIFIC FIELD and related infrastructure (e.g. animal facilities,) for supporting the Euro-BioImaging users of the future Euro-BioImaging Node." A LoC template will be provided on the Euro-BioImaging Web Portal.

3. The geographic coverage of the upgraded Node is described in the national and international context.

4. Maintenance and update. The applicant lays out a sustainable strategy for keeping the new imaging facilities cutting-edge: therefore, the application shall include a brief description of the maintenance and update plans for the first 5 years of operation.

5. The applicant demonstrates national and European significance of the new imaging facility(ies), and describes the complementarity with the existing facilities of the Node, as well as the added value derived from the inclusion of the new facilities.

6. The applicant demonstrates in detail how the upgraded Node will integrate all necessary user access and service aspects into a single package, so the user is served the imaging technologies in the best possible way. The applicant provides a detailed strategy on how the Node will meet Euro-BioImaging user expectations regarding transparent, instant and open access to instruments and services including rapid evaluation of technical feasibility and a single-point of contact at the Node, and how the new facilities will integrate into the established system of the Node. The applicant will describe in detail the foreseen user

access management as well as all relevant aspects of administration and coordination of the upgraded Node operation.

7. For the new facilities, the applicant is requested to provide numbers demonstrating the use of the currently available capacity and the fraction of external users served so far.

8. The new facilities should have established or provide a plan for a system for quality assurance (covering functionality of instrumentation, services and procedures) and quality control (covering monitoring of user satisfaction and project success in terms of published results).

9. The applicant describes and demonstrates the new facility's capacity in user training in imaging technologies (e.g. number of training activities, number of participants, and list of training activities in the last three years, outlook of training activities within the next two years).

10. If investments in the Node have already been made or are anticipated, the applicant is invited to provide respective evidence e.g. Letter of investment from funders. The degree of funding commitment by national funders will be considered in the review for applications.

To summarize, the ***General Review Criteria*** can be defined by the following aspects that should be addressed in each application:

- Scientific and technical excellence of the new facilities
- Quality and field of the academic environment
- Geographic coverage of infrastructure
- National and European significance of the technology provider
- Complementarity and added value of the new facilities to the existing Node
- Plans for maintenance and update of the new facilities
- Plans for user access, training and provision of service
- Systems for quality assurance and quality control
- Availability of already granted investments

Common Technology Review Criteria

The *Technology Specific Review Criteria* refer to the resources that are needed to enable user access to specific imaging technologies in Euro-BioImaging Nodes
For a detailed description of these resources including the ranking per technology type, please see the *Common Technology Review Criteria* for biological and biomedical imaging technologies (see ANNEX).

Technology Specific Review Criteria

In addition to the eligibility, general and common technology criteria, unique additional requirements for individual technologies might be addressed by "Specific Technology Review Criteria", for providing efficient access to these technologies (see ANNEX).

Evaluation procedure by the SAB

Each Expression of Interest shall be evaluated by SAB members based on the criteria described above. Final decision on the evaluation of all submitted EoIs and harmonization of EoI evaluations across technology domains and different European regions shall be done by the whole SAB, facilitated by its Chair, in a meeting. SAB members will jointly discuss the EoIs evaluated by them and agree on the uniform outcome.

This ranking will present the basis for the overall recommendation on the application. The SAB shall propose their final ranking using the following general categories

- Highly recommended EoI
- Recommended EoI
- EoI requires minor improvement
- EoI requires major improvement
- EoI not suitable

Node applicants that are requested to provide minor or major improvements by the SAB, will be provided detailed feedback by the SAB and asked to make the required improvements in a clearly defined timeframe. The updated EoIs will be reviewed by the SAB Chairs, and where needed specialists from the SAB for a specific domain, to assess whether the improvements have been made as required and the EoIs can subsequently be considered (highly) recommended.
Highly recommended and recommended EoIs will be nominated as Node applicants by their national Board delegations and forwarded to the Euro-BioImaging Board for ratification (see next paragraph).

National nomination and Euro-BioImaging ratification of recommended EoIs

Based on the successful recommendation of the SAB, Euro-BioImaging ERIC members will be invited to nominate their national Euro-BioImaging Node applicants to the Euro-BioImaging Board for inclusion into the Euro-BioImaging ERIC. Nominated Node applicants will be ratified by the Euro-BioImaging Board, to become Euro-BioImaging Node Candidates. Finally, the successful Node Candidate will be invited by Euro-BioImaging ERIC to jointly draft and sign the service level agreement with Euro-BioImaging ERIC. After signature, the applicant will be officially recognized as a Euro-BioImaging Node.