



Euro-BioImaging

European Research Infrastructure for Imaging Technologies in Biological and Biomedical Sciences

WP4 Finance Planning

Task 4.2

Develop a funding model for Euro-BioImaging taking its legal governance structure and scientific and technical needs into consideration

Deliverable 4.4

Recommendations for the long term funding strategy and model

Task leader

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1. Background

Based on the recommendations from task 4.1 as well as input from WP2 Legal, Governance, and Ethical Issues and WP3 Process Plan and the scientific and technical Work packages (WP6-13), this report contains the Euro-Biolmaging Preparatory Phase recommendation for a long term funding strategy and model. The recommendation will be forwarded to the Interim Board for discussion and approval by the future Euro-Biolmaging Member States.

2. Introduction

Euro-Biolmaging will become a newly established international organization based on a distributed “Hub-and-Nodes” structure. The physical user access will take place at the Nodes with administrative support and coordination from the Hub. The Hub will be the heart of the infrastructure, which will be established and operated by an international consortium of Member States and intergovernmental organisations. The Hub will have its own governance structure comprising decision-making, executive and advisory bodies.

Imaging facilities in European countries will enter into collaboration agreements with the Hub and thereby acquire the official status of Euro-Biolmaging Node. The collaboration agreements will define the relationship between the Hub and the respective Node, in particular the respective obligations such as the services that a Node will deliver as part of Euro-Biolmaging. The national institutes hosting the Euro-Biolmaging Node will keep their own legal identity and only that part of the imaging facility which provides the services to the Euro-Biolmaging users will be accountable for these services to the pan-European research infrastructure Euro-Biolmaging.

The costs for construction and operation for Euro-Biolmaging Hub and Nodes will be financed by the Euro-Biolmaging Member States as well as European-level infrastructure and research funding mechanisms such as European Union Structural Funds and Horizon 2020. The cost structure needs to consider construction and operation costs, which occur on the following levels:

- a) Construction and upgrading of Euro-Biolmaging Nodes (*funding at national level*)
- b) Operation and maintenance of Euro-Biolmaging Nodes including usage and related costs, Node management and administration (*funding at national and European level*)
- c) Construction and upgrading of Euro-Biolmaging Hub (*funding by Hub-hosting country*)
- d) Operation and maintenance of Euro-Biolmaging Hub (*funding by common Euro-Biolmaging Member States Budget*)

The Euro-Biolmaging cost structure is transparent and clearly distinguishes construction and operation costs necessary for its European Hub, as well as the national Nodes (see Figure 1):

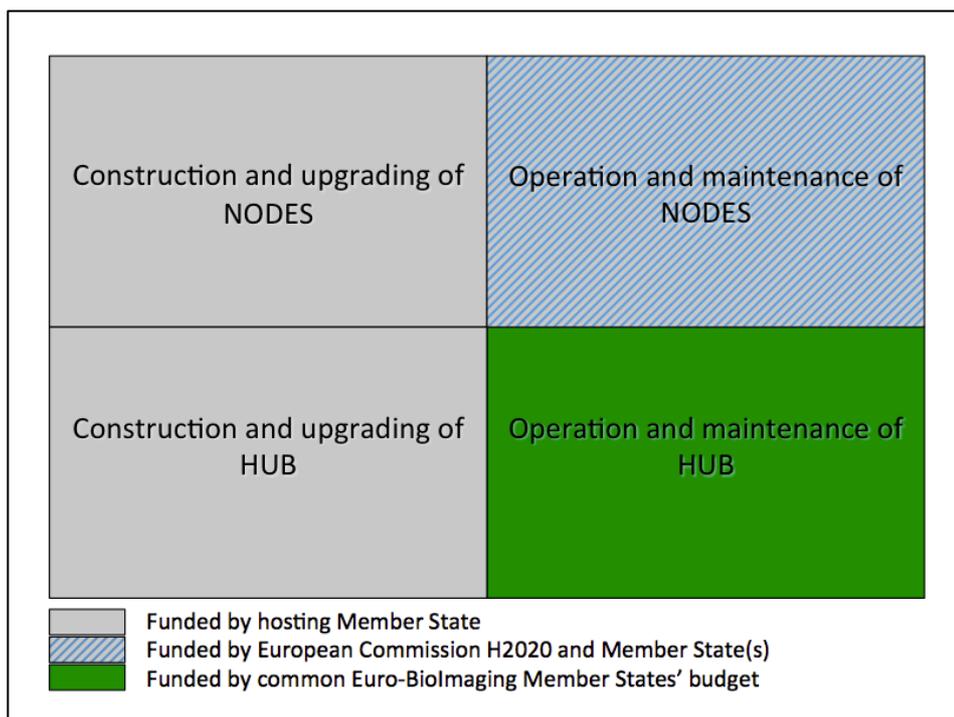


Figure 1: Member States will fund their Nodes' construction, operation and maintenance. Node operation will be partly supported by H2020 instruments for transnational user access. Hub operation and maintenance will be commonly funded by all Euro-Biolmaging Member States.

3. Long-term funding strategy and model

Already during its preparatory phase, Euro-Biolmaging has had a major impact on research infrastructure spending on imaging technologies in its future member states. Imaging technologies have formally been incorporated onto the national infrastructure roadmaps of 8 European countries and in another six countries imaging infrastructure is evaluated in their current national roadmap processes. In addition, in 23 countries national Euro-Biolmaging chapters have been formed and national coordinators have been elected to promote the process of national roadmap incorporation and infrastructure funding.

In the 1st open call for Euro-Biolmaging Nodes, each of the 71 Node applicants in 19 different countries has provided their own financial planning, considering necessary upgrades and building of physical facilities (construction), but also required personnel and other costs for the first five years of Euro-Biolmaging operation. For more details, please see deliverable D4.5 Report on financial requirements of Euro-Biolmaging Hub and Nodes.

After the independent evaluation of all Node proposals, applicants and their national funders are now in the process to identify the required upgrade for participation in Euro-Biolmaging and commonly work on national funding mechanisms for it.

3.1 Funding strategies for Nodes construction at national level

In most countries participating in Euro-Biolmaging, the construction of Euro-Biolmaging Nodes builds on and makes use of already existing imaging facilities, therefore part of the investment will be carried by the participating organizations and institutions which host the Euro-Biolmaging Nodes. This is supplemented by funds from national governmental partners for creating the required new capacity for enabling open access for Euro-Biolmaging users. However, these two funding sources may not be sufficient to cover all construction costs for some Nodes. Additional potential funders will be considered by the Node hosting institutions, such as EU Structural Funds, foundations, charities, industry, banks, VC, EIB, etc. leveraging the synergies between the national and European research infrastructure in each country.

In many European countries a large fraction of national investments, i.e. 202 million Euros have already been made into the potential future Euro-Biolmaging Nodes' construction, that have formally expressed their interest to contribute their capacity to the pan-European infrastructure (see Table 1 and Figure 2). Another 142 Million Euros has additionally been applied for by such potential future Nodes in the framework of national infrastructure funding instruments. Because of Euro-Biolmaging, these funding commitments are now coupled to open user access in many countries, which adds significant value to the investment by impacting many more scientists than comparable investments in the past. In addition, coordinating the procurements for the whole country by the national Biolmaging chapters has led to large cost savings.

Table 1: Made and planned investments in potential Euro-Biolmaging Nodes at national level (information provided by National Coordinating Persons of national Biolmaging Chapters by Oct 24th, 2013).

	<i>EuBI on National Roadmap (with Priority)</i>	<i>Investment (in €) MADE in Euro-Biolmaging Node Applicants</i>	<i>Investment (in €) allocated for Euro-Biolmaging Node Applicants</i>	<i>Investment (in €) applied for in ongoing calls (e.g. national roadmap) by Euro-Biolmaging Node Applicants</i>	<i>Investment (in €) missing for EuBI Node construction (applicant* participated in 1st Open Call)</i>
Finland	Provisionary statement given by signed MOU	€ 14,0 Mill	No decisions made yet	Light microscopy imaging 11,3 M€ In vivo multimodal imaging 9,9 M€	Light microscopy imaging 4,0 M€ In vivo multimodal imaging 1,5 M€
Sweden	Yes	€ 3.5 Mill	Decision expected in November from the Swedish Research Council	The amount applied for by different node applicants are not official numbers.	Difficult to answer since the answer relates to the two previous columns.
Norway		€ 17 Mill	€ 0 Mill	€ 12 Mill	€ 12 Mill
United Kingdom	Yes	€ 10.5 Mill	€ 0 M	€ 10 Mill	€ 15 Mill
Ireland	No roadmap, but imaging is prioritized				

Poland	Yes.	€ 5 Mill	€ 1 Mill	€ 2.5 Mill	€ 3 Mill
Denmark	No.	No	No	No	No
Germany	No.				
The Netherlands	Yes	€ 24.0 Mill (2012+2013)	€ 17.0 Mill (2014-2021)	€ 17 Mill (2015-2019)	€ 1 Mill (OIC Rotterdam)
Belgium	Ongoing				
France	Yes	€ 26.62 Mill	€ 16.29 Mill	€ 24 Mill	YES
Spain	Ongoing				
Portugal	National Infrastructures roadmap call in evaluation phase	0	0	11M	1M
Italy	Yes	€ 17.2 Mill	€ 17.2 Mill	€ 13 Mill	€ 7 Mill
Greece	National Roadmap not completed yet	Greece did not participate in the first call of EuroBiolmaging Nodes		€ 28,3 Mill (Greece - national roadmap)	
Austria	Under negotiation	€ 19 Mill	Under negotiation	Under negotiation	€ 21 Mill
Bulgaria	Under consideration	€ 0.47 Mill Sofia Eurobioimaging Node	-	€ 1.4 Mill Sofia Eurobioimaging Node	€ 2.1 Mill Sofia Eurobioimaging Node
Czech Republic	Yes (high priority project)	€ 23.32 Mill			
Hungary	Prioritization under way – EuBI considered important	€ 3 Mill Cellular Bioimaging Hungary		€ 1.5 Mill	€ 1.5 Mill
Slovakia		€ 4.04 Mill CELIM, Pavol Jozef Safarik University in Kosice, Functional Imaging Node			€ 1.77 Mill
Croatia	NO roadmap yet				
SUM		€ 167.65 Mill	€ 34.29 Mill	€ 141.90 Mill	€ 70.87 Mill

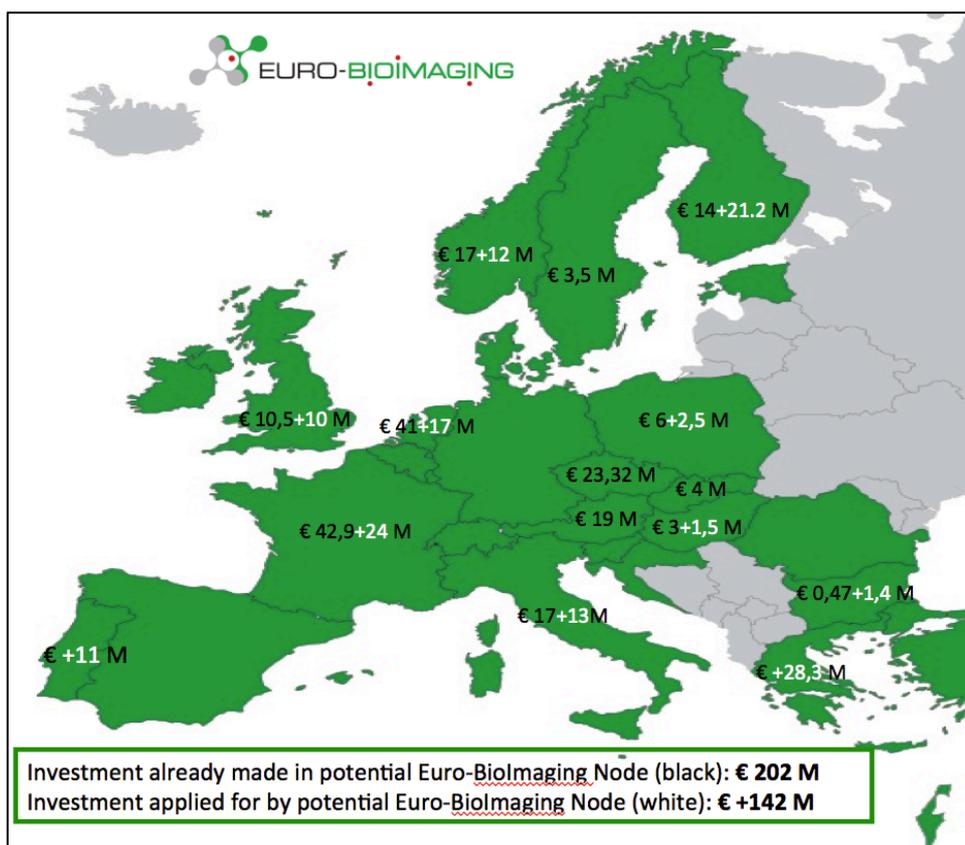


Figure 2: National investments made for potential Euro-Biolmaging Nodes during the preparatory phase. Investments made in potential Nodes are highlighted in black, current applications for additional investments are highlighted in white (status October 2013).

3.2 Funding for Nodes operation at national and European level

Generally, Nodes' activities will focus on the individual user access at their facility and the related training and data management activities. For these activities, the Node operation will include costs for Node management and operation of user access (staff, instrument time, upgrade and maintenance, running costs e.g. electricity, heating and cooling, building maintenance, training materials, consumables, supporting facilities such as wet labs, animal facilities, etc.). As an estimate it is expected that the annual operational costs for running Nodes in imaging technologies, are about 20% of the Node construction costs, which means that 5 years of Node operation equal the costs for Node construction.

Since Euro-Biolmaging Nodes will continue to be part of the national research infrastructure system, Euro-Biolmaging services will typically only constitute part of the overall imaging facility budget. Cost to provide internal and national user access would continue to be shared by the Member State and institution hosting the Node. Cost to provide new access for Euro-Biolmaging users including especially transnational access will be shared by the Euro-Biolmaging Member States and existing European funding mechanisms, e.g. transnational and infrastructure access instruments in Horizon 2020.

Costs for Node operation and maintenance are envisioned to be covered by

- i) Member State/institution hosting the Node - to provide internal and national user access.
- ii) A common Euro-Biolmaging budget paid for by the Euro-Biolmaging Member States - to support national and transnational user access from Euro-Biolmaging Member States.
- iii) Other European funding mechanisms e.g. Horizon 2020 – to provide transnational user access.

The open access to Euro-Biolmaging aims to be free at the point of service for academic users and should be based exclusively on the scientific excellence of the research project proposed by the user.

For Euro-Biolmaging user access, Euro-Biolmaging strongly advocates a “fund the user” concept, which would recover operational costs through the actual usage of a Node. This will guarantee that the services remain of the cutting edge quality that scientists need and provides the incentive for a national institution to host a Euro-Biolmaging Node. To establish this system, Euro-Biolmaging plans a start-up funding mechanism that underwrites the initially required up-front investment into the Node capacity until the steady state level of users has been reached. After this initial phase, Node operational funding should be user access driven.

3.3 Funding for Hub construction

The construction costs for the Hub (office rooms, training capacities, common image data centre) will be funded by the Hub-hosting country. Currently, the Intergovernmental Working Group has invited all countries to express their interest in hosting the Euro-Biolmaging Hub.

3.4 Funding for Hub operation

The Hub will become a newly created international organization that will carry out coordinating and supporting activities for Euro-Biolmaging at European level such as supporting user access, training, and data management. Furthermore, the Hub responsibilities at the Euro-Biolmaging Director’s office include the overall coordination and administration of Euro-Biolmaging including administrative support of the Executive Management and the Scientific Advisory Body as well as the external representation of Euro-Biolmaging, as described in the definition of Hub tasks in the governance.

The Euro-Biolmaging Hub plans to administer a common Euro-Biolmaging budget set up by the Euro-Biolmaging Member States for Hub operation. The shares in the common Euro-Biolmaging budget and the conditions for contribution will be discussed and decided with the future Euro-Biolmaging Member States as represented in the Interim Board and laid down in the statutes of the Euro-Biolmaging legal framework.

4. Conclusion

To create the European level of the Euro-BiImaging infrastructure funding will build on a solid foundation of existing national investments in imaging infrastructure in many European countries. The relatively small additional investment needed, will dramatically add value to the existing investments by opening the access to the infrastructure based on scientific merit. This will massively increase the usage efficiency and procurement costs and will lead to a much more harmonized infrastructure deployment and coordination of European open user access to these capacities. Most interested Member States have already invested significantly in their potential future Nodes for participation in Euro-BiImaging (in total € 202 Million). Once formally implemented, Euro-BiImaging will therefore dramatically increase the return of investment in imaging technologies for funders in Europe.