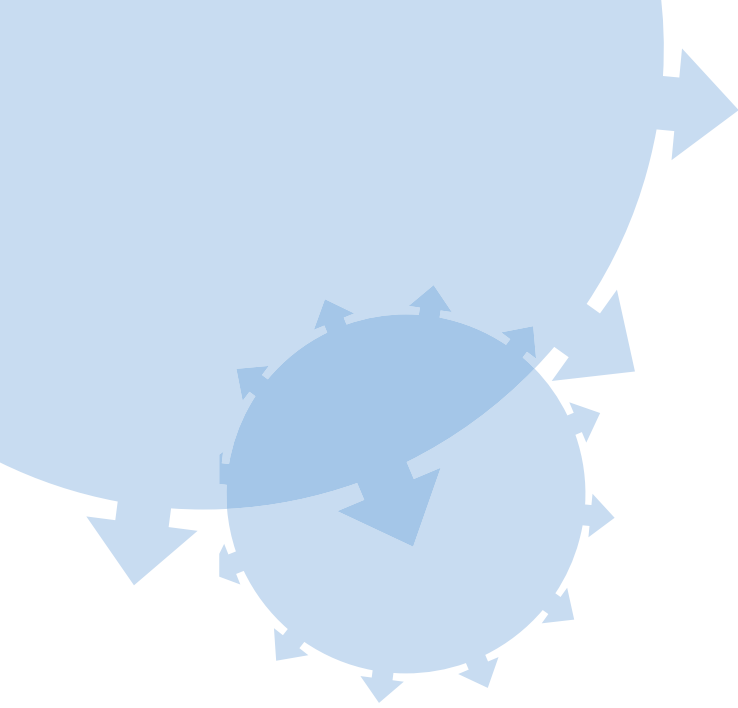


The top half of the cover features a bright yellow background. On the left, there is a stylized sun with several small arrows pointing outwards from its edge. On the right, there are several overlapping, jagged shapes that resemble a map of Europe or a similar geographical outline. The overall design is clean and modern.

## Position Paper on Horizon 2020

The bottom half of the cover has a blue background. It features a large, stylized map of Europe in a lighter shade of blue. There are several arrows pointing outwards from the map, suggesting global reach or international collaboration. The design is consistent with the top half, using simple, bold shapes and colors.

ESFRI Biological and Medical  
Research Infrastructures



## Executive summary

**T**he Biological and Medical Research Infrastructures welcome the European Commission proposal on Horizon 2020, in which the EC recognizes Research Infrastructures as one of four main objectives of the 'Excellent Science' priority.

Never has there been a more timely juncture to realize the benefits of BMS RIs. The ESFRI process began in 2002 and since then these projects have made enormous progress and are taking the first steps towards their implementation. It is now vital that we take advantage of the momentum gained by the BMS RIs and use the opportunity of Horizon 2020 to ensure their successful implementation and operation.

The BMS RIs are poised to make an unprecedented contribution to the excellence of Europe's science base, so vital for the knowledge-based economy and innovation of the Member States. They now require decisive support if the significant investments already made are to be capitalized upon. Given the importance of the BMS RIs as pillars of the European Research Area, we therefore call upon the European Parliament and the Council of the European Union to redouble their constructive role in the implementation of the BMS RIs and further support their implementation by:

- Ensuring that the ESFRI BMS RIs are given appropriate consideration during the realisation of Europe 2020, the implementation of the European Research Area and Horizon 2020
- Increasing the proposed budget allocation for Research Infrastructures in Horizon 2020 from € 2.8 bn to at least € 8 bn
- Creating mechanisms for sustainable funding at the European level of the construction and long-term operation, maintenance and update of BMS RIs
- Ensure funding mechanisms for transnational user access to BMS RIs, as well as for training of infrastructure users, providers and trainers themselves
- Ensure funding mechanisms for the long-term storage and accessibility of data, in conjunction with e-infrastructures

## Sustainable implementation of world-class Research Infrastructures: a foundation for excellence in European research

Research Infrastructures have been recognized as key foundations for building a truly effective **European Research Area**<sup>1</sup> and for reaching the goals of the **Innovation Union**<sup>2,3</sup>. Research Infrastructures are one of four key objectives of the 'Excellent Science' priority within the European Commission's proposal for **Horizon 2020**<sup>4</sup>:

"to endow Europe with world-class research infrastructures which are accessible to all researchers in Europe and beyond and fully exploit their potential for scientific advance and innovation. This part aims to reinforce and extend the excellence of the Union's science base and to consolidate the European Research Area in order to make the Union's research and innovation system more competitive on a global scale. (...) Research infrastructure shall develop European research infrastructure for 2020 and beyond, foster their innovation potential and human capital, and complement this with the related Union policy and international cooperation."

The Research Infrastructures on the ESFRI (European Strategy Forum on Research Infrastructures) roadmap are particularly suited to fostering world-class research in Europe. They are truly European endeavours built upon scientific excellence and with deep roots in the requirements of the European research community. Accordingly, their implementation is one of the priorities of the Innovation Union<sup>3</sup>:

"By 2015, Member States together with the Commission should have completed or launched the construction of 60% of the priority European research infrastructures currently identified by the European Strategy Forum for Research Infrastructures (ESFRI)."

The European Parliament also recognizes ESFRI Research Infrastructures as a key priority for the Innovation Union<sup>5</sup> and calls on the Commission to leverage the resources of Horizon 2020 "to **ensure the sustainable implementation of biological and medical science research infrastructure** as a public R&D service, (...), which is a way to make progress towards a knowledge-based society that can face the societal challenges in Europe" <sup>6</sup>.

## The implementation of world class Research Infrastructures requires appropriate support from Horizon 2020

In the European Commission's proposal for Horizon 2020, the budget proposed for Research Infrastructures (including e-infrastructures) is ~€ 2.8 bn<sup>4</sup>. Although this figure represents an increase on the € 1.7 bn for the programme in FP7, it is, however, only 3.2% of the overall budget of Horizon 2020 and an identical percentage to FP7, which is widely regarded by the community as being insufficient. It would therefore cover only a small fraction of the costs required for the sustainable operation of large-scale pan-European Research Infrastructures. This stagnation does not reflect the significant developments that have been brought to the European Research Infrastructure landscape by the ESFRI process.

The BMS RIs feel that this budget should be increased and that this is absolutely necessary if the goal of implementing 60% of the ESFRI Research Infrastructures is to be realized by 2015<sup>3</sup>. European funding was crucial for facilitating the early stages of the implementation process of the ESFRI projects, and it will continue to play a critical role, throughout their life-cycle. Being truly European endeavours from their outset, the implementation of the ESFRI RIs – and with them of the European Research Area as a whole – will be severely hampered if European support is insufficient. We therefore support the European Commission's Horizon 2020 proposal that allows for funding the implementation and operating costs of Research Infrastructures. The Horizon 2020 proposal recognizes the diverse needs and requirements of the entire Research Infrastructure community. Many of the BMS Research Infrastructures are distributed throughout several Member States, whilst the core costs of implementing these infrastructures will be funded through national commitments, EU funding for the trans-national elements elements will be essential to realize their European added value.

All areas of the Horizon 2020 budget are under pressure. However, given their immense importance for the European Research Area, the proposed budget for Research Infrastructures should be at least € 8 bn. This figure represents approximately 10% of the estimated total operating costs of ESFRI RIs from 2014-2020. It does not yet take into account the costs for supporting the existing research infrastructure networks and other instruments foreseen for the support of research infrastructures in the work programme of Horizon 2020.

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<sup>1</sup> COM(2007) 161

<sup>2</sup> COM (2010) 546: **Innovation Union Commitment 4:** „ ... opening of Member State operated research infrastructures to the full European user community“

<sup>3</sup> COM (2010) 546: **Innovation Union Commitment 5.**

<sup>4</sup> COM(2011) 809 final 2011/0401 (COD): Proposal for a Regulation of the European Parliament and of the Council establishing Horizon 2020 – The Framework Programme for Research and Innovation (2014-2020)

<sup>5</sup> European Parliament resolution of 27 September 2011 on the Green Paper: From challenges to opportunities: towards a common strategic framework for EU research and innovation funding (2011/2107(INI))

<sup>6</sup> European Parliament Report on Innovation Union: transforming Europe for a post-crisis world (2010/2245(INI))

## What are the ESFRI Biological and Medical Sciences Research Infrastructures?

The pan-European BMS RIs comprise complementary and synergistic infrastructure facilities that provide open access to cutting-edge technologies and services, enabling world-leading scientists to conduct ground-breaking research in the life and health sciences. The BMS RIs therefore actively strengthen the European Research Area (ERA), promote openness, allow Europe to capitalise on its creative potential in science and help focus EU funding instruments on Innovation Union priorities.

The BMS Research Infrastructures will play a key role in achieving these objectives, helping to make the European Research Area and the Innovation Union a reality by:

- Providing pan-European open access to cutting-edge technology platforms for academia and industry
- Enabling researchers to find new solutions to meet the major societal challenges they face collectively, including the health of the ageing population
- Promoting interdisciplinary research in Biological and Medical Sciences across Europe, harmonising and standardising the European research landscape and reducing fragmentation
- Rapidly translating findings from basic science to new applications and medicines
- Delivering synergies and highly interoperable research processes, creating seamless value chains
- Generating opportunities to maximize the competitiveness of Europe's knowledge-based industry – e.g. the pharmaceutical and biotechnology industries, as well as development and utilization of intellectual property
- Providing training and education to future professionals in the life sciences
- Attracting and retaining world-leading scientists within the European Research Area
- Helping to co-ordinate national Research Infrastructure budgets and leveraging additional Member State investments in research and innovation through a flexible and jointly organized European approach

## The unique role of BMS RIs

Access to BMS RIs will be provided after the application of criteria to measure quality and indicate priorities. Procedures will be implemented to assure research excellence. Access to the BMS RIs will be both transnational and national. Policies will be put into place to favour transnational access (foster and support EU policies). Mobility of researchers across Europe constitutes a major policy driver of the EC, but its provision will be also a major cost of the RIs. It is therefore crucial that the EU puts instruments in place to fund transnational access to RIs.

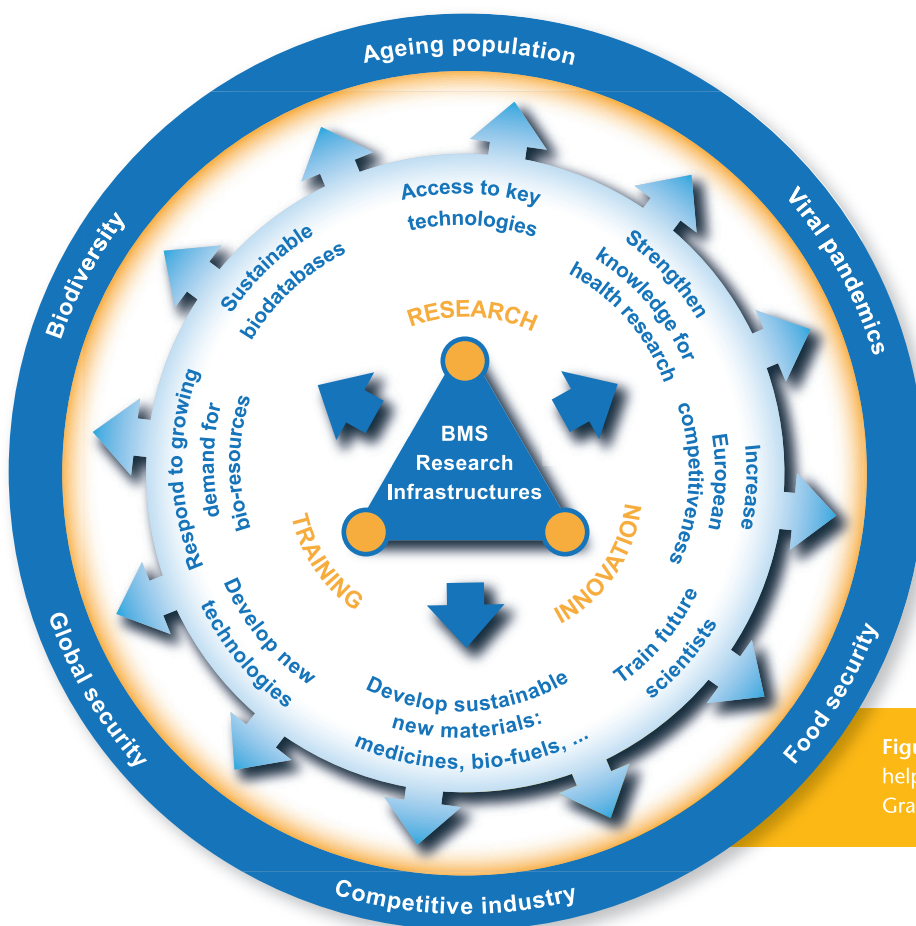


Figure 1: The BMS RIs will help Europe to tackle the Grand Societal Challenges.

To enhance synergies between academia and industry, the BMS RIs will establish core services for the translation of scientific knowledge and technology into innovative new products and services, thus fostering an environment in which high-tech start-ups in areas such as biotech and biomedicine will prosper. The BMS RIs will foster the integration of new member states into pan-European research to the benefit of all involved.

In addition, BMS RIs will foster cooperation across the European scientific landscape, to enhance interoperability and to counter fragmentation and unnecessary duplication. For example, the BMS RIs will strive towards establishing shared high standards for transnational e-infrastructure capable of interconnecting, integrating, processing, storing and providing user-friendly biological and medical information. This e-infrastructure will promote standardisation, calibration of data, and interoperability across RIs so that users experience uniformity of standards across the BMS RI landscape.

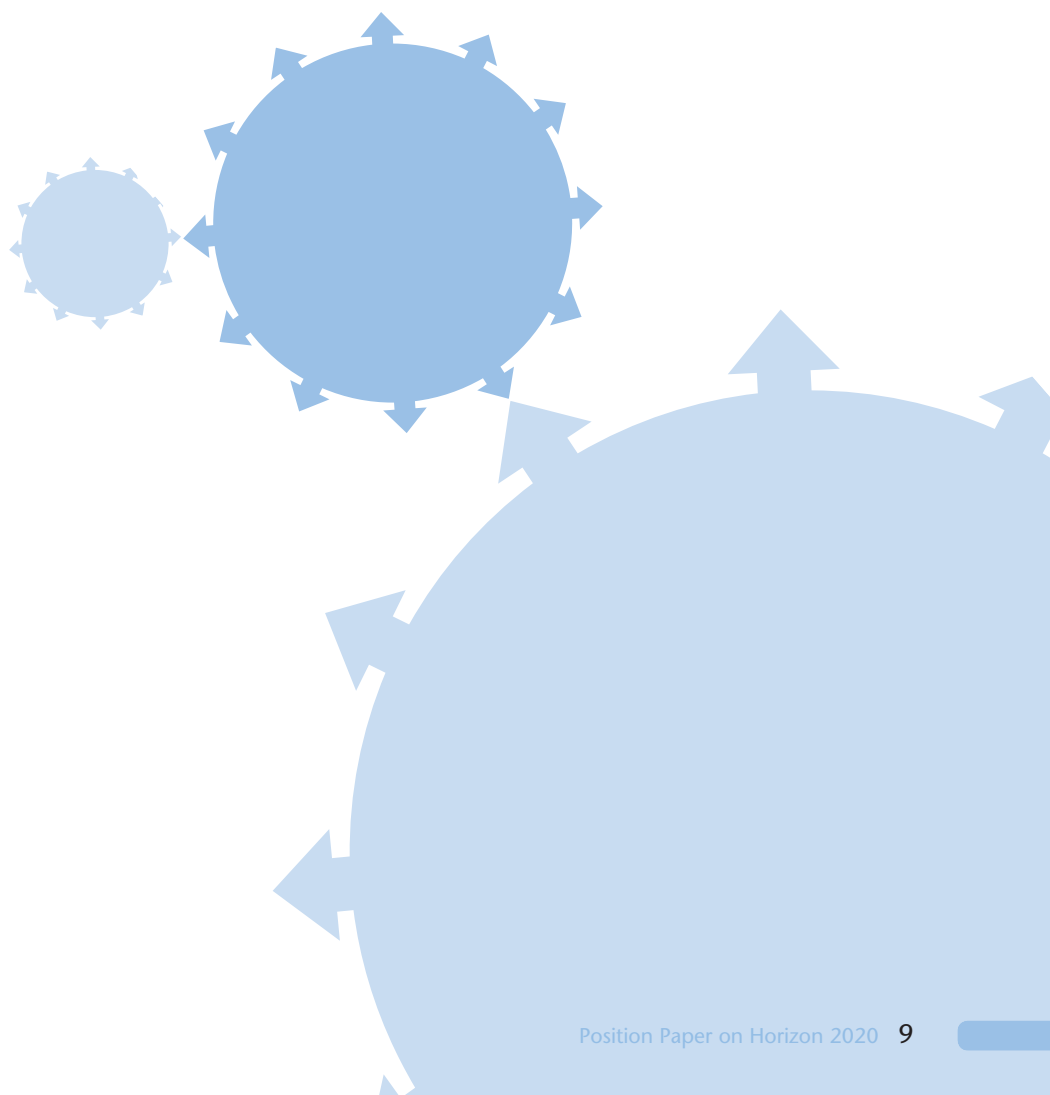
The BMS RIs will be constructed and operated, at least in part, by the taxpayer, and through stakeholder funds. Therefore they will be committed to serving the general public. They will address the present societal Grand Challenges (ageing population, viral pandemics, marine food security, climatic changes and biodiversity-loss) through the generation of knowledge in these areas. They will reinforce their dissemination activities promoting science in society through press releases, open days, public debates and public meetings.

The Biological and Medical Sciences Research Infrastructures will empower world-class research in Europe and create an unprecedented and unique momentum for life sciences in Europe. Taken together, the BMS RIs will provide the roadmap towards realizing the European Research Area and benefit humanity by allowing researchers to find solutions to the “Grand Challenges”.



## Who we are

The Biological and Medical Sciences Research Infrastructures (BMS RIs) on the ESFRI Roadmap are pan-European facilities, resources and related services used by the scientific community, which provide an interdisciplinary, innovative environment where world-leading scientists conduct world class research and employ cutting-edge technologies based on open access across all BMS RIs. Implementation of the BMS RIs acts as a driving force across more than one thousand European research institutions and two million researchers. Further information is available in the second edition of the BMS RI Strategy Paper.



Published by:



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