



## Position Paper of Helmholtz Association of German Research Centres on Research Infrastructures in Horizon 2020

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HELMHOLTZ  
| ASSOCIATION

The Helmholtz Association of German Research Centres with its almost 33,000 employees and an annual budget of 3.3 billion euros is Germany's largest research organisation and one of the largest in Europe. The Helmholtz Association participates in many European projects – often in a coordinating role – and benefits considerably from the established instruments of the Framework Programme of the European Union for Research and Technological Development. The instruments and actions of the Framework Programme contribute significantly towards supporting networking and collaboration between the scientists of the Helmholtz Association and researchers throughout Europe. They facilitate as well activities which cannot be realised at the national level or which provide added value in the form of collaborations at the European level.

This paper presents a consensus of the views of the Helmholtz Association and its centres.

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# Research Infrastructures in Horizon 2020

The budget for the future EU Research Infrastructure Programme "Horizon 2020" (2014-2020) will be established in the next few months. The EC proposal from Nov. 30, 2011, envisages for research infrastructures (RI) only 3% of the total budget (€ 2.6 billion), i.e. exactly the same percentage as in FP7. This needs to be increased significantly in order to enable the high impact this programme could and should have for the European Research Area.

1. Why is the European RI programme important?	
<p><u>Existing RI</u></p> <ul style="list-style-type: none"> <li>Without access to RI, <b>world-class research</b> is not possible in many domains. European scientists frequently do not have access to RI beyond their national borders.</li> <li>The opening of RI (which are almost completely financed nationally) for European users is one of the major <b>objectives of the Innovation Union</b>.</li> <li>With the European "Transnational Access" programme, the best European RI receive support to provide access to the best European researchers.</li> <li>Transnational Access was regarded by experts as one of the successes of the European Research Infrastructure Programme in the FP7 Interim Report, and a significant budget increase was recommended.</li> <li><b>European researchers gain access to RI that would otherwise be almost inaccessible to them.</b></li> </ul>	<p>See commitment No. 4 of the Innovation Union Communication (COM (2010)546).</p> <p>Up to 20% of the frequently high operating costs could be funded with given sufficient budget.</p> <p>See report from group of experts on Interim Evaluation of FP7, Para. 3.3.</p>
<p><u>New RI</u></p> <ul style="list-style-type: none"> <li>To maintain Europe's potential to carry out world-class research, new RI must be established. Therefore, the European Strategy Forum for Research Infrastructures (ESFRI) has drawn up a roadmap, identifying RI that Europe will need in the next decades, and the European Council and Commission have agreed <b>to implement 60% of the ESFRI projects by 2015</b>.</li> <li>Horizon 2020 plays a major role here. European support for newly established ESFRI-RI could make it easier to obtain the necessary support by the member states. The RI budget of Horizon 2020 should reflect this facilitating role.</li> <li>For the many "distributed ESFRI Projects", the most critical issue for their implementation is being able to ensure long-term funding for the necessary <b>"central hub"</b> by the member states, even though this mostly represents only a small fraction of the overall investment costs. An initial European funding could speed up the process by several years.</li> <li>In addition, the <b>European Structural Funds</b> must permit <b>more efficient financing of RI</b>, which requires adapting rules on investments across regions as well as on the funding of operating costs.</li> </ul>	<p>See commitment No. 5 of the Innovation Union Communication (COM (2010)546).</p> <p>DG INFSO was able to support the implementation of PRACE with a total € 38 million. PRACE is now years ahead of most ESFRI projects.</p> <p>DG RTD had € 30 million available for supporting the implementation of all other ESFRI projects.</p>
<p><b>The European RI programme allows European researchers to gain access to RI and provides support for the ESFRI process. It has high relevance for the Innovation Union and especially for the European Research Area.</b></p>	

## 2. Why is a budget increase in Horizon 2020 compared with that of FP7 necessary?

- Underfinancing is the only obvious weakness of RI support in FP7. With the programme's growing success, it has been expanded to **more and more categories of RI**.
- However, the **budget for transnational access has remained constant**. As a result, only a limited number of RI networks could be funded because of the tight budget. This resulted in considerably less funding per partner than during FP6, hence fewer access opportunities could be offered per infrastructure.
- In order to do justice to the programme's importance and added value, its **budget** should be at least **quadrupled compared with FP7's € 1.7 billion**. This would allow access to expensive but extremely relevant RI, such as research aircraft, ships and free electron lasers (FEL), to a more significant extent than e.g. just a few hours of ship time. At the same time, a larger proportion of RI categories could be opened to European researchers.
- A significant effect on the implementation of ESFRI projects would be impossible without a budget increase.
- Besides, previous framework programmes have not really taken industry-oriented research and test infrastructures into consideration. A budget increase is absolutely necessary in this regard to justify Horizon 2020's focus on innovation.

See **figure 1**

See **figure 2**  
For instance, consideration could only be given to one-third of the requests for ship time on research ships, and users were only able to conduct short-term missions or expeditions. The Europe-wide access to several RI categories cannot be supported in the coming few years as a result of the budget problems.

For instance, wind tunnels or flying demonstrators

**A significant budget increase in Horizon 2020 is necessary in order to ensure significant access to relevant RI and to advance the implementation of ESFRI projects.**

### 3. Who would profit from an increase of the RI programme?

- Primarily researchers from EU member states which own fewer large RI will profit from an increased access to Europe's best RI financed by the framework programme. These researchers traditionally come from the **smaller and/or "newer" member states**.
- The operators of the best RI would profit, since they would be reimbursed for parts of their costs for operation and upgrades. A significant amount of RI funding in FP7 goes to **countries that traditionally make significant investments in RI** (Germany, France, UK, Italy).
- The **European Research Area** as a whole gains in efficiency and output: Increased European accessibility of RI ensures that the most promising projects enjoy access to the RIs they need. RI are a basic prerequisite for many areas of **cutting-edge research**. They make a significant contribution to mobility, education and networking by attracting excellent junior and senior scientists. Through increased support for RI, these facilities can contribute very effectively to the objectives directly pursued by other programmes like ERC and Marie Curie.
- The RI programme has an exceptionally high added value for European research: While the promotion of cutting-edge research can also be guaranteed successfully through national programmes, **the European level is indispensable** for guaranteeing access to RI across national borders, and the Framework Programme is by far the most effective way to do so.

See figure 4

See figure 3

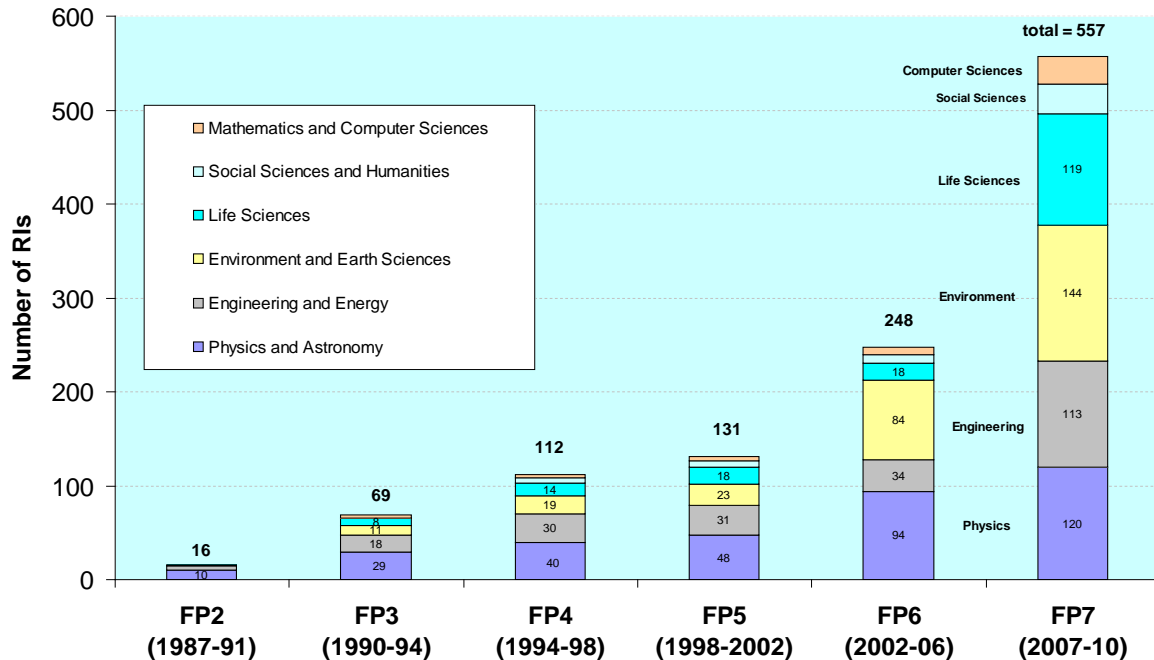
See Poland example  
figure 5

**A budget increase would be advantageous both for the old and new EU member states, since the efficiency of the European Research Area would all in all strengthen and guarantee a high level of European added value for fundamental research and the training of young scientists.**

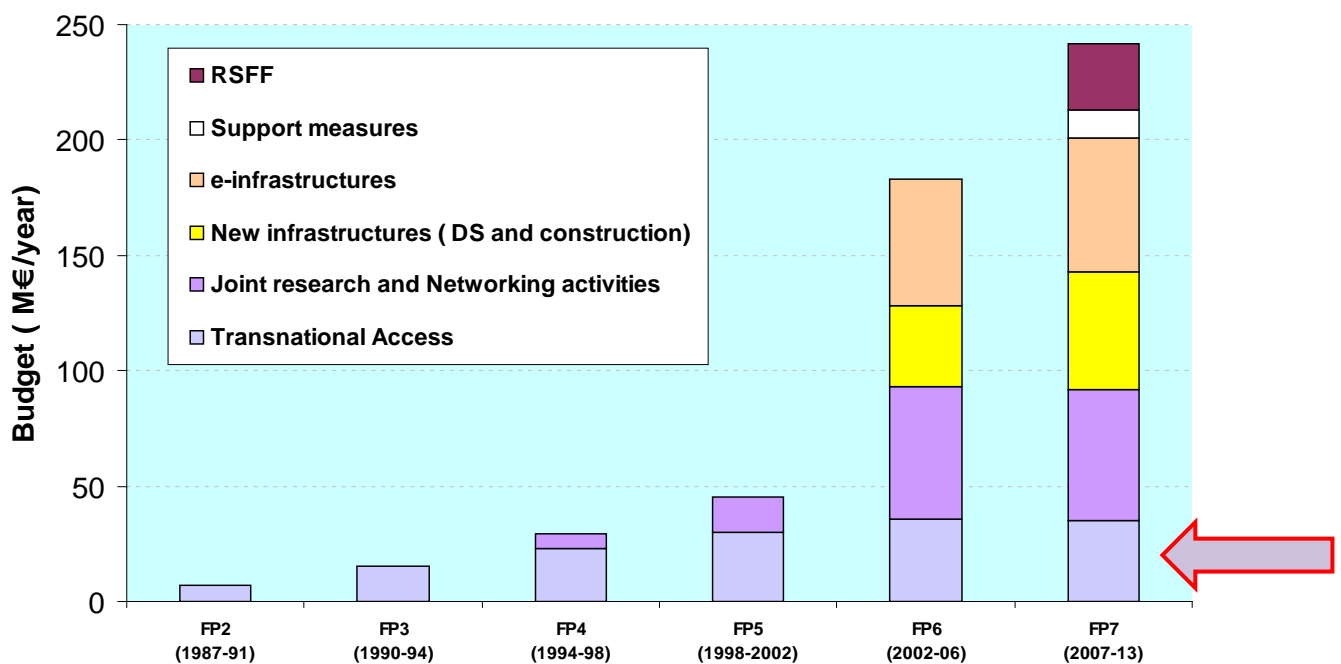


## Annex

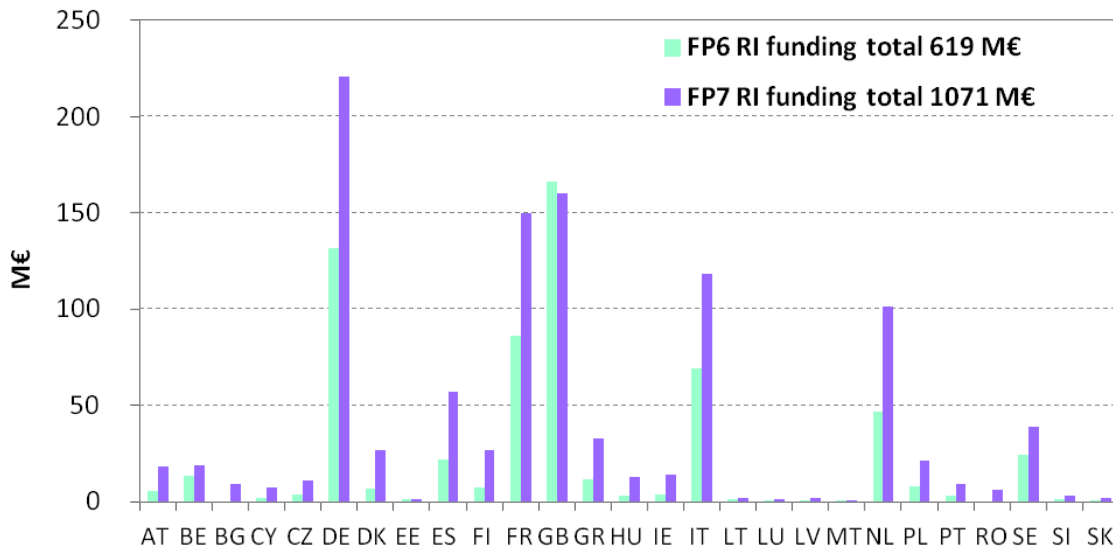
**Figure 1: Development of “Transnational Access” between FP2 and FP7: Access to a rapidly increasing number of infrastructures in an increasing number of scientific domains (Source: European Commission)**



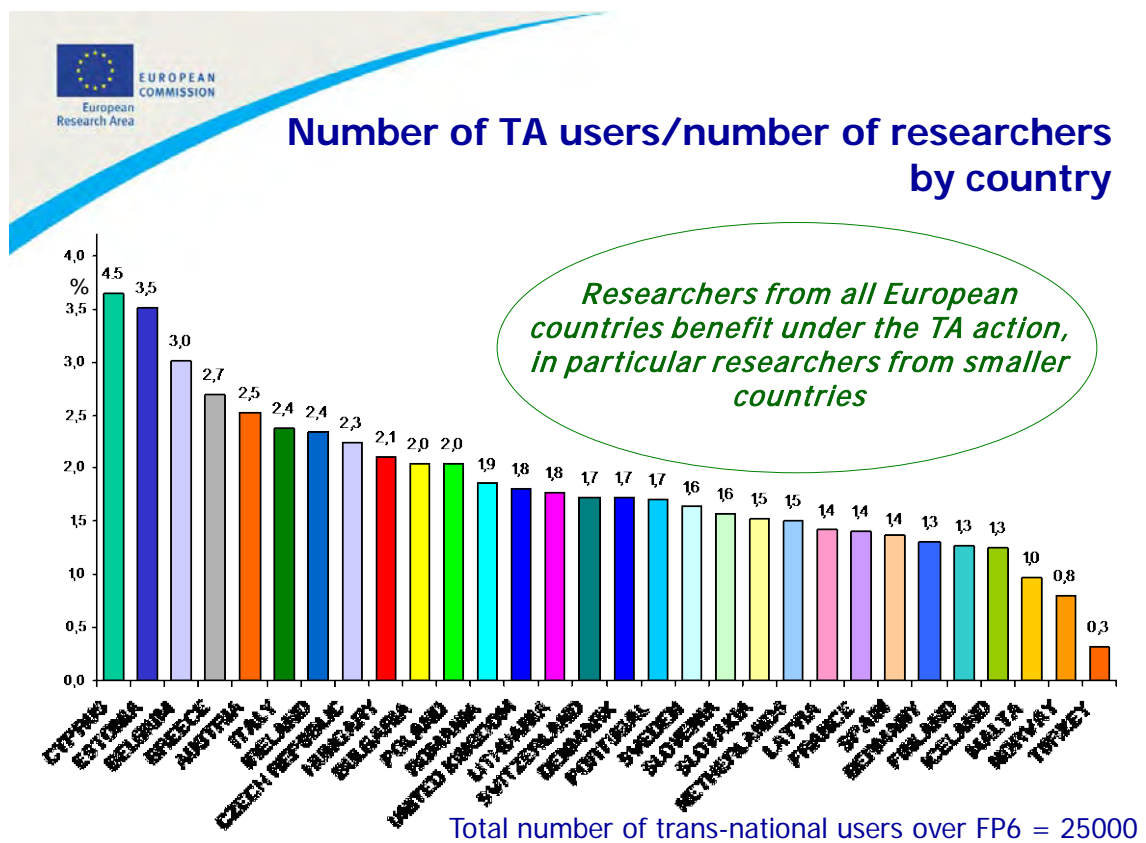
**Figure 2: The development of the budget for RI from FP2 to FP7, showing that the budget for "Transnational Access" has stagnated during the last three programmes [see arrow]. (Source: European Commission)**



**Figure 3: A comparison by member state of the funding for European RI in FP6 and FP7 (as of December 2010) – in million €. (Source: EU Commission)**

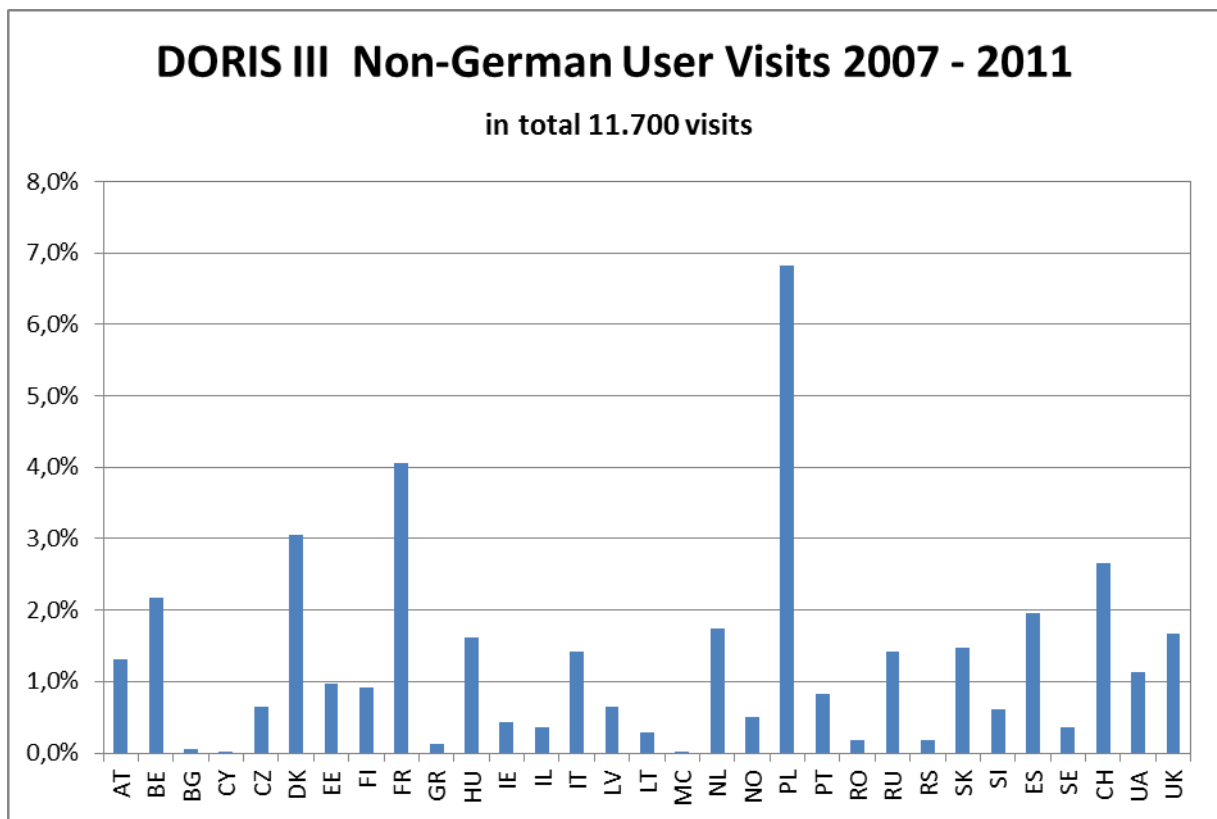


**Figure 4: National scientific communities benefitting from transnational access to RI through the European RI programme. (Source: EU Commission, TA=Transnational Access)**



**Figure 5:** Polish researchers form the largest group of foreign users at the DORIS III Synchrotron (DESY, Hamburg, Germany).

Poland has capitalised on the experience gained by its researchers using the DORIS III Synchrotron and is now building the SOLARIS synchrotron (Jagiellonian University/ Cracow) with 85% financing from the European Regional Development Fund (ERDF).





# BRIEF PORTRAIT OF THE HELMHOLTZ ASSOCIATION

In the Helmholtz Association, 18 German research centres have joined forces to share their resources in strategically oriented programmes to investigate complex questions of societal, scientific and technological relevance.

They concentrate on six major research areas: energy; earth and environment; health; aeronautics, space and transport; key technologies and structure of matter. The scientists work closely together across the centres on these issues.

The Helmholtz Association provides the necessary resources, a framework for long-term planning, a high concentration of scientific competence and an outstanding scientific infrastructure with major projects, some of which are unique worldwide.

The research objectives of the Helmholtz Association are set by the funding bodies after discussions with the Helmholtz centres and the Helmholtz Senate and Assembly of Members. Within this framework, the scientists of the Helmholtz centres determine the themes of their research through strategic programmes in the six research areas across centres.

(Source: "Strategy of the Helmholtz Association," Berlin 2009, updated 2012)

[www.helmholtz.de](http://www.helmholtz.de)

## Helmholtz Centres

- Alfred Wegener Institute for Polar und Marine Research
- Deutsches Elektronen-Synchrotron DESY
- German Cancer Research Center
- Deutsches Zentrum für Luft- und Raumfahrt
- Deutsches Zentrum für Neurodegenerative Erkrankungen
- Forschungszentrum Jülich
- GEOMAR | Helmholtz Centre for Ocean Research Kiel
- GSI Helmholtz Centre for Heavy Ion Research
- Helmholtz Centre Potsdam GFZ, German Research Centre for Geosciences
- Helmholtz Centre for Environmental Research – UFZ
- Helmholtz Centre for Infection Research
- Helmholtz-Zentrum Berlin für Materialien und Energie
- Helmholtz-Zentrum Dresden-Rossendorf (HZDR)
- Helmholtz-Zentrum Geesthacht Centre for Materials and Coastal Research
- Helmholtz Zentrum München, German Research Center for Environmental Health
- Karlsruhe Institute of Technology
- Max Delbrueck Center for Molecular Medicine (MDC) Berlin-Buch
- Max Planck Institute for Plasma Physics (associated member)

