

Helmholtz Metadata Collaboration (HMC) – Integrating Large-Infrastructure Data

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About HMC

The Helmholtz Metadata Collaboration is tasked to connect and integrate the Helmholtz Association's data products into the ongoing global activities, like the EOSC and other coordinated programs. HMC is working on a concept to address interoperability and reusability to make Helmholtz' data FAIR.

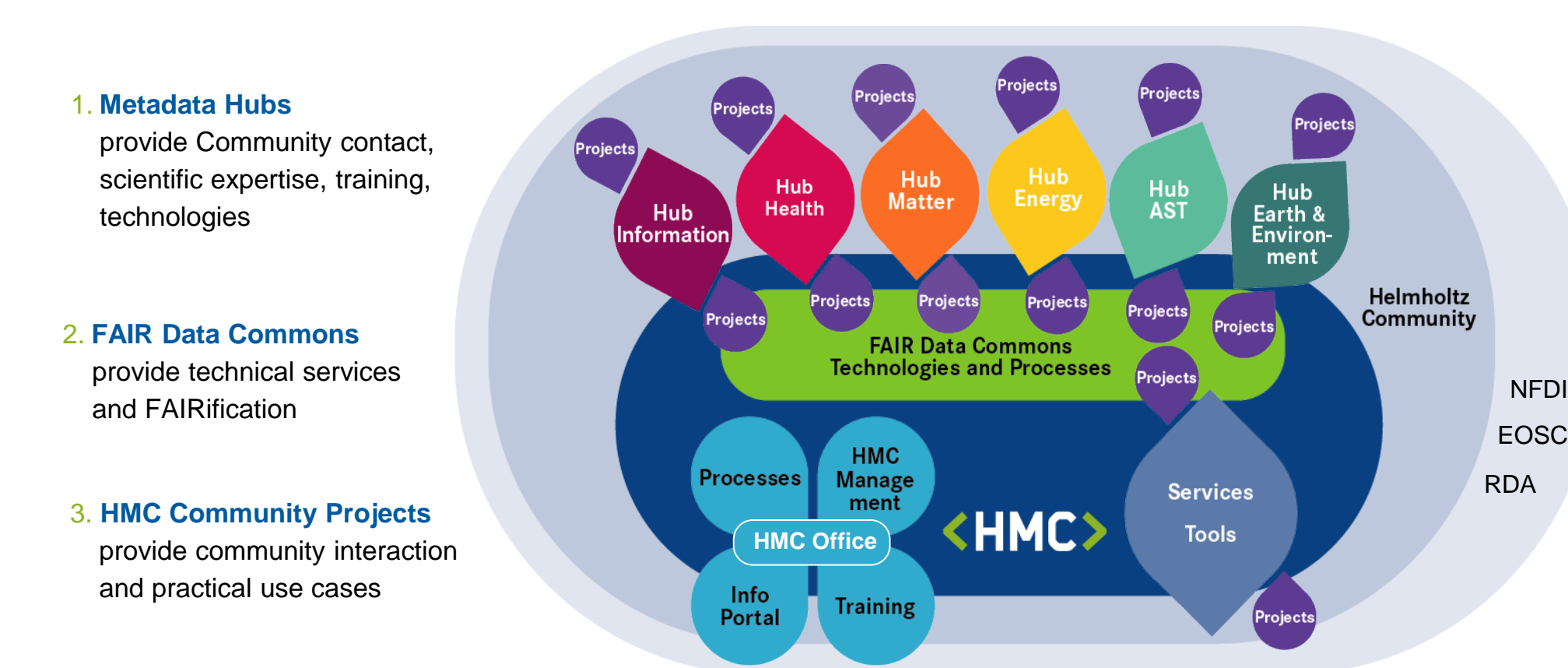
To achieve this HMC develops a Helmholtz wide knowledge framework, upgrades our data infrastructures with consistent semantic concepts and implements technical concepts like FAIR Digital Objects. We thus strive to establish practical use cases **turning "FAIR in to reality"** at Helmholtz.

HMC Facts

- **Budget:** ~5M€/yr
- **Personnel:** 42 permanent FTEs, ~15 project FTEs
- **Scope:** Six research fields (Energy, Earth and Environment, Health, Information, Matter, and Aeronautics, Space, and Transport.)
- **Implementation:** 10 involved Centres
- **Funding:** 5 years set-up phase (2019-2024), permanent funding subject to review

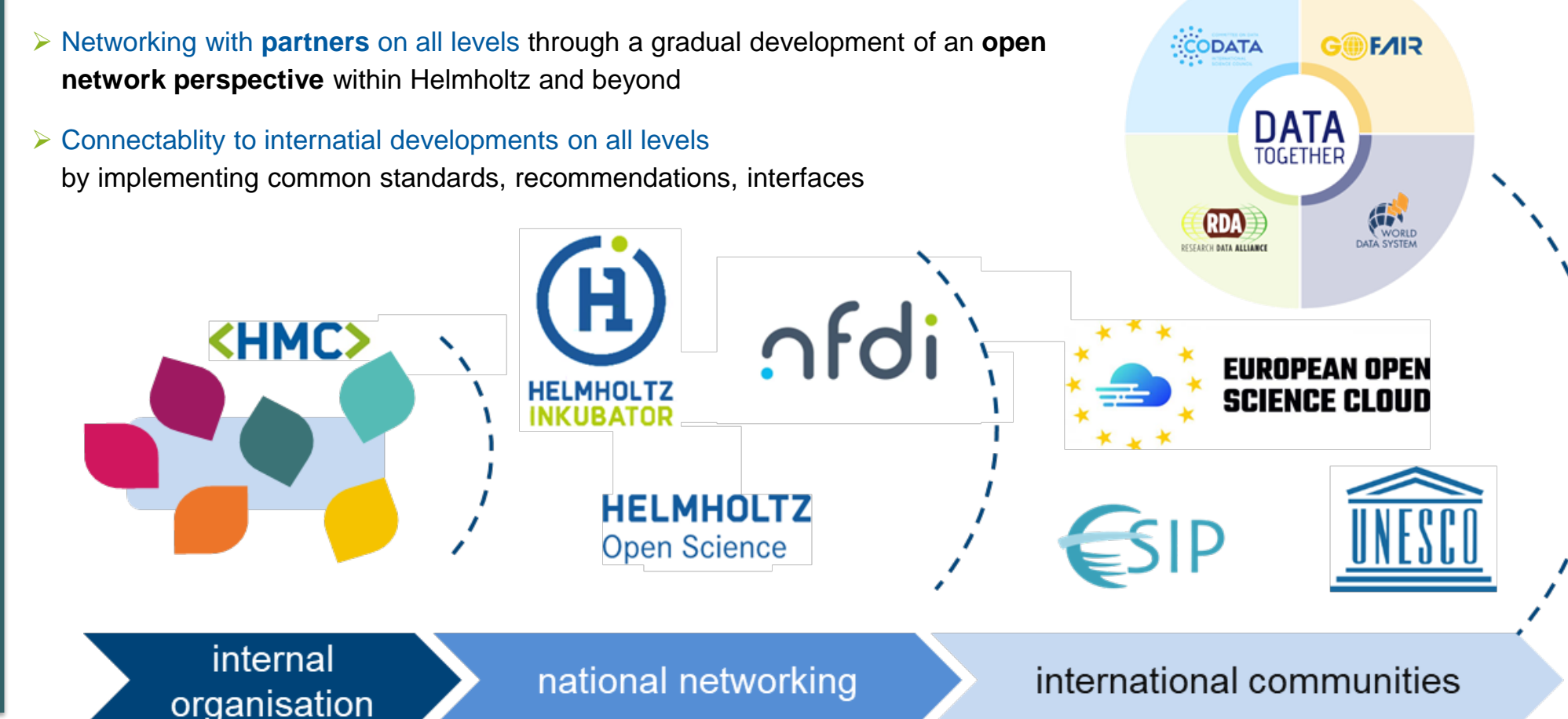
HMC Organization

Bridge tech and practice, i.e. science community demands and current RDM implementation scenarios.



HMC Integration

Define **common practices** with partners.



Current Activities

- Setting up **communication structures**
- **Harmonizing activities** across research areas
- **Determine status** of Helmholtz structures
 - Mapping of „Metadata Landscape“
 - Evaluate infrastructures
 - Assess technical capabilities
- Define **vision**
- Decide on long-term **implementation concept**

Main Challenges

- Strong **community involvement** to speed up implementation
- Rapid development of **example tools and data** methods as proof-of-concepts
- Implementing a transparent provenance track of data products demonstrating their Helmholtz origin to funders

Hub Earth and Environment



Scope of Data Products:

- Wide Range** of data sources and topics
- covers Earth-, Ocean- and Atmospheric Sciences, Biodiversity, Environmental Sciences
 - from expeditions and field campaigns, laboratories, mobile and stationary sensors, time series, modelling

ESIP and the HMC

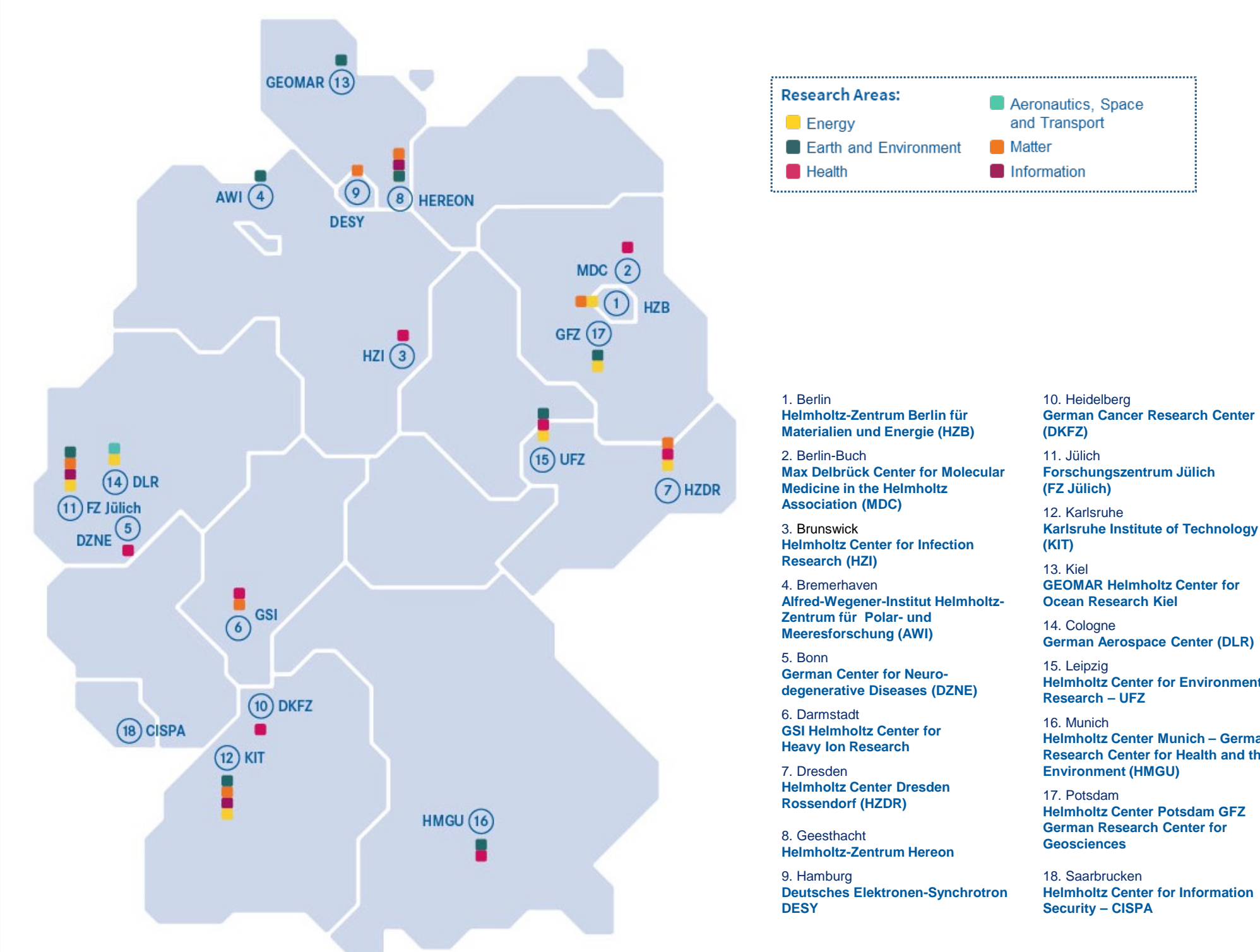
The HMC is happy to support and expand the existing links its personnel have developed with ESIP. Clusters and committees that we are engaged with include the:

- SeREEn Federation
- Semantic Technology Committee
- Semantic Harmonization Cluster
- Science on Schema.org
- Soil Ontology Cluster

We hope to align and synchronise the Helmholtz digital ecosystem to the broader Earth and Environment community by sharing our capacities, experiences, and challenges with ESIP, in service of better data science for the planet!

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Helmholtz Association and Research Centres



The **Helmholtz Association of German Research Centers** is Germany's framework for federal, large-scale infrastructures, like polar programs, traffic and aerospace, energy research, particle accelerators and others.

Helmholtz contributes to solving major challenges facing society, science, and the economy through top-level scientific achievements in six Research Fields: **Energy, Earth and Environment, Health, Information, Matter, and Aeronautics, Space, and Transport.**

Infrastructures and Use-Cases



See more at: <https://helmholtz-metadaten.de/de/erde-und-umwelt/use-cases>



- | | |
|---|--|
| 1. Berlin
Helmholtz-Zentrum Berlin für
Materialien und Energie (HZB) | 10. Heidelberg
German Cancer Research Center
(DKFZ) |
| 2. Berlin-Buch
Max Delbrück Center for Molecular
Medicine in the Helmholtz
Association (MDC) | 11. Jülich
Forschungszentrum Jülich (FZ
Jülich) |
| 3. Brunswick
Helmholtz Center for Infection
Research (HZI) | 12. Karlsruhe
Karlsruhe Institute of Technology
(KIT) |
| 4. Bremerhaven
Alfred-Wegener-Institut Helmholtz-
Zentrum für
Polar- und Meeresforschung (AWI) | 13. Kiel
GEOMAR Helmholtz Center for
Ocean Research Kiel |
| 5. Bonn
German Center for
Neurodegenerative
Diseases (DZNE) | 14. Cologne
German Aerospace Center (DLR) |
| 6. Darmstadt
GSI Helmholtz Center for Heavy Ion
Research | 15. Leipzig
Helmholtz Center for Environmental
Research – UFZ |
| 7. Dresden
Helmholtz Center Dresden
Rossendorf (HZDR) | 16. Munich
Helmholtz Center Munich – German
Research Center for Health and the
Environment (HMGU) |
| 8. Geesthacht
Helmholtz-Zentrum Hereon | 17. Potsdam
Helmholtz Center Potsdam
German Research Center for
Geosciences GFZ |
| 9. Hamburg
Deutsches Elektronen-Synchrotron
DESY | 18. Saarbrücken
Helmholtz Center for Information
Security – CISPA |

