UNIVERSITÄT BONN

Summary |

Core Facility Strategy of the University of Bonn

Strategy for further development of the Bonn Technology Campus (BTC) into a university-wide infrastructure of core facilities and technology platforms for experimental research at the University of Bonn

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Preamble

This strategy revolves around the Implementation of inter-faculty *core facilities (CFs)* for the experimental research areas at the University of Bonn. The aim is to enable easy access for researchers to top-flight, cutting-edge equipment infrastructures, technologies and services to promote top-level international research at the University of Bonn.

ⓘ Disclaimer:

The strategy presented here has been developed for the experimental areas at the University of Bonn (primarily in the Faculty of Mathematics and Natural Sciences, the Medical Faculty and the Faculty of Agricultural, Nutritional and Engineering Sciences).

Existing strategies developed specifically for the humanities and social sciences, such as the libraries and collections, as well as digital infrastructures, remain unaffected. An extension of the strategy to the non-experimental areas, as well as a linkage to the digital university services is in preparation.

I Vision

Researchers at the University of Bonn, external collaboration partners and research contractors get easy access to specialized, often high-tech equipment and to technological know-how. This promotes excellence in research, helping the University of Bonn consolidate its position as a leading institution—in Germany and internationally. Research Infrastructures are acquired, operated and maintained as Core Facilities to optimize use of existing resources in terms of both economic efficiency and sustainability. The various faculties coordinate infrastructure projects, technology development plans and organizational structures in consultation with the central 'Core Facilities and Technology Platforms' office.

II Necessity

In many areas, excellence in top-level research is increasingly relying on the development and application of highly complex technologies and equipment infrastructures, such as specialized measuring instruments used in the fields of medicine and physics. As technology continues to advance at an extremely rapid pace, expectations, demands and challenges regarding scientific research work are rising accordingly. Keeping up with this change in top-level international research is no easy feat, requiring concepts for the development, provision and use of research equipment and technologies. Increasingly, such concepts are also needed research proposals (involving major instrumentation, for example), the development of internal and external strategies, and assessments/evaluations (such as the University of Excellence evaluation report).

III Objectives

The objectives are to establish organizational structures that facilitate access to existing and future research infrastructures, and to support professional use of research facilities and major instrumentation, including the associated methods. The overarching goal is to eliminate known organizational and administrative hurdles so as to ensure scientifically and economically optimal operational efficiency. The core elements of a usage and management concept to be implemented are visibility, accessibility, interoperability and sustainability.

Equipment, methods, workflows and the necessary operational expertise are to be organized within core facilities (CFs), corresponding information is communicated on a Bonn Technology Campus (BTC) webpage (https://btc.uni-bonn.de). Core facilities are typically organized at the faculty level. Central or inter-faculty structures may be planned for interdisciplinary-use facilities, accommodating user group and faculty preferences, with support from the central coordination office.

Binding terms of use govern access for internal users and cooperation with external partners from the scientific and business communities and civil society. The expansion of research-friendly IT infrastructure is also being promoted as part of the University of Bonn digitalization

strategy. A uniform, web-based booking and management system and a customized centralized user and project management are to be installed on an inter-faculty basis. Other focuses beyond technical operation include communication and networking between science, technology, administration, donors and the public, and the development of long-term training and continuing education offerings.

A coordinated governance structure ensures that coordination and decision-making processes involving various stakeholder groups are appropriate and transparent. The interoperability of scientific workflows with the involved administrative entities is continuously monitored and coordinated. The associated documentation and reporting processes structure communication, afford decision-making transparency and promote sustainable operational, usage and staffing concepts, thereby optimizing available resources and funding.

Expansion of the BTC poses an unprecedented challenge in terms of inter-faculty organizational and scientific cooperation as well as the implementation and execution of the associated administrative processes. Solutions are to be developed and implemented on the basis of existing structures and past experience, which in future could serve as a model for further similar research infrastructures

IV Definition

In a stricter sense, core facilities (CFs) are defined as scientific technology and service facilities affording researchers access to continuously improved equipment and methods and to necessary resources and expertise. Microscopy equipment and measurement technologies utilized in the natural and life sciences are examples of core facilities. In a broader sense, core facilities can refer to libraries, computing centers and other centralized facilities that house knowledge resources and infrastructure used for research purposes.

Core facilities are organized according to a regulated system involving the following criteria (see also DFG form 55.04 "Guidelines for Instrumentation Usage Costs and Core Facilities"):

- Terms of use and framework regulations are outlined in a publicly accessible, DFG-compliant document titled Terms of Use.
- Usage fees are assessed on the basis of a transparent cost calculations outlining the specific elements of the cost categories (staff, operation, consumption, maintenance, repairs). Pricing differences by user group (internal, external, commercial) are possible. These created price schedules are part of the Terms of Use.
- Information on the technical and scientific contact persons, a listing of the equipment, service and support offerings, terms and conditions and a description of the potential user groups are available on the CF website. The Terms of Use and pricing schedule are also posted on the website, from which the portal and booking system can be accessed.
- Roles, responsibilities, rights (security credentials, acknowledgements, access rights, IP), decision criteria (in case of overbooking, for example) and data processing and security are clearly and transparently regulated (Terms of Use, website). Project-specific core facility usage costs can be included in third-party funding applications (DFG etc.) and billed in accordance with the approved grant terms and conditions.

Core facilities should ideally meet minimum quantity/volume criteria (in terms of staff, instruments, etc.) and be centrally located or organized. Non-central solutions, access to individual instruments and partial usage of equipment within a CF, however, may also be practical options and can be offered.

In addition to housing equipment and systems, core facilities are places for the further development of methods and technologies. Methodologically oriented research projects are also frequently conducted at core facilities, which may be collaborative or non-collaborative in nature. Advice and training are offered at CFs (on experiment planning, data analysis, workshops, teaching), including continuing education and advanced training for scientific and technical CF staff .

V Governance

Core facility governance necessarily takes place on different hierarchical levels, reflecting the roles defined and the associated, clearly delineated responsibilities. Where possible, any developments should be based on the established organizational structures at the faculties (dean's committee, faculty council, etc.). In implementing improvements, new elements should be integrated into existing structures. These should create additional communication channels between the units and clearly define the roles of individuals, committees, dean's offices and the Rectorate in decision-making, evaluation and investment planning processes.

At the University of Bonn, core facilities are generally anchored in the faculties, both organizationally and hierarchically. Operational concepts and decision-making and administrative structures are designed in accordance with the strategies and frameworks in place at the specific faculties.

The inter-faculty Technology and Innovation Committee was formed in 2025 to discuss strategy on the Rectorate level. The Committee members are researchers from the various faculties who have broad technological expertise and are familiar with the operation and organization of equipment and technologies housed at core facilities. The Committee advises the Rectorate on strategic issues and decision-making around technology and research infrastructure—concerning investments in new equipment, support for research proposals and appointment negotiations, among other issues. The Committee also serves as go-to for technology-related matters regarding which the faculties wish to engage with the Rectorate. The Committee plays an advisory role in such interactions, as decision-making responsibility remains with the autonomous faculties.

A general consensus has emerged from the discussions thus far to improve institutional mechanisms, and that mutual challenges the faculties encounter in managing core facilities should be taken on via an inter-faculty approach. The Core Facilities and Technology Platforms office, part of Division 7, coordinates the inter-faculty responsibilities defined.

VI Action areas

Introducing core facilities university-wide entails complex conceptual, organizational and administrative challenges. At this time the following action areas are being addressed:

1) Handling of major research instrumentation grant applications and integrating equipment into CFs
2) Commitment of equipment procurement or usage shares in CFs in appointment negotiations
3) Implementing CF operation and usage concepts
4) Preparing terms of use, cost calculations and contracts
5) Development of sustainable financing models
6) Research Data Management
7) Communication, Networking and Transfer
8) Consulting, Education and Training
9) Reporting and Evaluation

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