

Guidelines and Supplementary Instructions

e-Research Technologies



Disclaimer: The English translation of this document is provided for informational purposes. In the event of a discrepancy between the English and the German versions, the German text takes precedence.

Deutsche Forschungsgemeinschaft

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I Programme Information

1 Objectives and Scope of Funding

In the Scientific Library Services and Information Systems area, the DFG funds projects at research institutions and in particular service and information centres in Germany. The aim is to set up nationwide efficient research information systems.

1.1 Background

Research work today is characterised by practices in which many steps of the research process are carried out using digital technologies. These systems are often what makes research possible in the first place, and they further increase the quality of research results. The techniques and procedures underlying this method of working, in particular specialised software, are based on functionalities and mechanisms of digital technologies and support (often collaborative) work on and with scientific information and data. These techniques and procedures will subsequently be referred to as e-research technologies.

1.2 Objective

The e-Research Technologies Programme accepts grant proposals for the establishment and development of nationwide digital information infrastructures serving all or certain fields of research. The programme provides funding for

- the development of technologies, tools, methods and applications to procure, to access and utilise, to process and evaluate, as well as to safeguard scientifically relevant information;
- the further development and advancement of highly mature and widely used research software, virtual research environments or digital research platforms;
- the development and design of organisational structures necessary for the use of e-research technologies, and of funding models able to support their operations over the long term;
- the conception and implementation of measures that familiarise researchers with the proposed e-research technologies, train them in the use of the technologies, and thus help to increase utilisation;
- analytical studies on topics related to technology applications, tools and methods if the results will be used directly for the development, implementation or consolidation of e-research technologies.

1.3 Scope of funding

Any technology development undergoes different phases from needs analysis to regular operations. For this reason, funding can be requested to support the development and expansion of e-research technologies in three different phases. Applicants are asked to assign the project to one of the following three phases: Different requirements apply to each phase. Funding is available for projects focused on

- application-oriented development and testing of e-research technologies (Phase 1);
- the implementation of e-research technologies (Phase 2);
- the consolidation and optimisation of existing e-research technologies (Phase 3).

Phase 1: projects on application-oriented development and testing of e-research technologies

Eligibility extends to all kinds of subject-specific or interdisciplinary or multidisciplinary technical and/or organisational development projects. In Phase 1, projects may be proposed in which specific e-research technologies are tested and their technical implementation is addressed.

Experimental and open-ended projects may also be proposed in Phase 1. For projects of an experimental nature, particular importance is placed on handling project risks, the anticipated opportunities and the relevant criteria for project success. In Phase 1, a plan for the long-term availability of the e-research technology is not required; however, a usage concept is necessary.

Phase 2: projects on the implementation of e-research technologies

Implementation of e-research technologies involves, in particular, testing and development work that leads to regular operations and continuous usage. In this phase, mechanisms or process steps to ensure the long-term usability of the intended e-research technology are relevant to the implementation of the project, so that future operations can be ensured.

Phase 3: projects on the consolidation of e-research technologies

Projects focused on consolidation cover e-research technologies that are already operational in order to adapt, improve, merge or innovatively develop them. The aim is therefore to increase the usability and usage of the e-research technology and also to avoid redundancy of tools or services. Details on sustainability planning and the organisational model for long-term operations are mandatory.

This phase also covers projects aimed at the further development and advancement of mature and widely used research software. Details on version control, quality assurance and software management are mandatory.

Projects ineligible for funding are those whose objective or implementation is considered a basic responsibility of its host institution. This includes, for example, innovations of a purely technical nature, maintenance or usage analysis. Training programmes cannot be funded separately, but only in conjunction with a project that develops or expands an e-research technology in all phases. Projects aimed solely at the development or optimisation of the information infrastructure of individual research projects, institutions or sites are also not eligible for funding.

Excluded from this programme are also projects that can be clearly assigned to another DFG funding opportunity in the area of Scientific Library Services and Information Systems. Note in particular the programmes “Information Infrastructures for Research Data”, “Research Software Infrastructures” and “Infrastructures for Scholarly Publishing”.

2 Proposals

2.1 Eligibility

Members of non-profit research information infrastructure facilities such as libraries, archives, museums, research collections, research data centres or computing and information centres are eligible to submit proposals. Researchers in Germany or those working at a German research institution abroad who have completed their academic training (generally by obtaining a doctorate) are also eligible to apply.

In general, members of institutions that are not non-profit or do not allow immediate publication of project results in a generally accessible form are not eligible to apply.

Funding provided in the Scientific Library Services and Information Systems area is intended to achieve improvements to nationwide information infrastructures, and its results benefit research as a whole. Therefore, researchers working at the institutes and member organisations of the Max Planck Society, the Fraunhofer-Gesellschaft, the Helmholtz Association, the Leibniz Association, and publicly funded research institutions associated with these organisations, and German sections of international information infrastructure facilities are also eligible to apply.

2.2 Funding conditions

The proposal is expected to be supported or co-supported by an institution that is in a position to consolidate the project results and ensure that these are safeguarded in the long term.

2.2.1 Project requirements

The academic need for a project must be plausibly demonstrated based on a needs analysis (e.g. surveys, workshops, round tables, analyses, studies, etc.). Detailed use cases can be provided to support the presentation of the needs analysis. The needs analysis is the key element in terms of the rationale of a proposal.

Applicants are expected to provide an environment analysis of national and international developments and demonstrate that they have taken into consideration any existing methods, technologies or software that might be reused or further developed. The environment analysis should also show which software dependencies exist, which fundamentally similar solutions already exist and why these cannot be used. Reuse of existing modules or components of infrastructure software is to be given priority over new developments. If an in-house technical development is planned as part of the proposed project, the proposal must discuss any existing similar solutions and why they cannot be used.

The projected technologies must be accepted by a particular research community. This requires that these technologies can be used in a way that is appropriate from a subject-specific point of view – particularly when it comes to technologies that support research processes on which researchers at different locations collaborate. The more interaction there is between the needs of the research community, the research processes and the designing of the necessary technology, the stronger the case for joint proposal submission by representatives of infrastructure facilities and the research community.

The technical compatibility of the projected e-research technologies must be ensured and an explanation must be given as to how this will be achieved. It is therefore imperative to note and apply relevant, existing standards and procedures that ensure interoperability even at the international level (e.g. persistent IDs for authors, texts and data; open interfaces; metadata standards for long-term archiving; Creative Commons licences or licences for software reuse). In addition, the proposal must demonstrate compatibility and interplay with existing national and international systems and developments, the appropriateness of the legal framework, as well as the integration into a plausible process chain.

If the proposed project involves the further development of research software, a virtual research environment or a digital research platform, the proposal must include a justification of relevance demonstrating its significance to the research community. Furthermore, the proposal should address the implementation of appropriate version control, as well as measures for

quality assurance or the certification of the research software. The proposal must additionally set out and justify the fundamental decisions made regarding the development process, long-term accessibility and maintenance of the research software.¹

If the proposed project aims to implement an e-research technology, it can only be funded if the financing and maintenance of the project results will be ensured after DFG funding expires. Only for projects with a strong experimental orientation, where the long-term prospects of successful broad-based implementation cannot be fully assessed until the project is completed, can the question of how the project results can be maintained in the long term be initially disregarded.

2.2.2 Project results

All results (publications, data, software, training materials, long-term studies, meta data schemas etc.) generated by a funded project must essentially be openly accessible, remain permanently accessible and comply with the FAIR/FAIR4RS principles; exceptions must be justified and the relevant handling must be described (e.g. anonymisation, rights management, types of use, etc.). Licences are to be granted which are clearly specified and as open as possible, indicating to what extent the reusability of publications or parts thereof is guaranteed.

All content available online that is created using DFG funding must be prepared, indexed and/or disseminated in a manner that guarantees the maximum potential for retrieval, e.g. through appropriate metadata. Metadata must meet relevant standards for it to be integrated into international subject-specific or other cataloguing systems.

The technologies, tools, methods, organisational forms, business models etc. developed during the course of the project should be potentially reusable and transferable to other contexts. Source code and data must be documented in accordance with established standards and published as early on as possible in the development process. Detailed documentation and training materials for the development and use of software must be created. Measures for dissemination and training in the use of the e-research technology are to be offered during the project period.

¹ Handling of Research Software in the DFG's Funding Activities: <https://www.dfg.de/en/basics-topics/basics-and-principles-of-funding/research-software>

2.3 Proposal structure

Proposals for projects in the Scientific Library Services and Information Systems area must be structured in accordance with the relevant proposal preparation instructions.

www.dfg.de/formulare/12_01

Please base your proposal on the outline in this template. Specific explanatory comments regarding this programme are to be found in the supplementary instructions under V. Please use DFG form 53.35, which is available in elan, to describe the project.

2.4 Submission deadline

Proposals can be submitted at any time.

2.5 Further information

Please note that under the funding programme, additional funding opportunities may be announced in the form of time-limited calls for proposals aimed at particular topics. As long as a grant procedure of this kind is not completed, no more proposals concerning the same topic can be submitted after the submission deadline until a decision is reached.

The hosting of roundtable talks may also be funded for the purpose of strategic planning, nationwide collaborations in the sense of self-organisation processes and networking measures for communities, as well as the further development of funding measures. The funding programme “Coordinating Roles and Responsibilities in Information Infrastructures” (VIGO)² is recommended for the development of solutions to tackle specific challenges in the establishment, expansion or long-term safeguarding of research-related information infrastructure. Please contact the responsible DFG programme contact if you have any questions.

3 Duration

Initial funding can be approved for up to three years. If a renewal proposal is submitted, the next phase of infrastructure development should generally be completed. The total funding period should not exceed six years.

² Funding Programme “Coordinating Roles and Responsibilities in Information Infrastructures” (VIGO): www.dfg.de/en/research-funding/funding-opportunities/programmes/infrastructure/lis/funding-opportunities/vigo

II Proposal Modules

Under this funding programme it is possible to apply for the basic module, potentially in conjunction with the “Project-Specific Workshops” module. For more details, please see the respective guidelines for each module.

1. Basic Module

Use the basic module to request funding for direct project costs, project-specific staff and instrumentation necessary to carry out the project.

www.dfg.de/formulare/52_01

2. Module Project-Specific Workshops

If you would like to conduct workshops as part of your project, you may request funding to help you do so. Please note that the “Project-Specific Workshops” module cannot be submitted separately but only in conjunction with the proposed project.

www.dfg.de/formulare/52_06

III Obligations

In submitting a proposal to the DFG, you

1. agree to adhere to the **principles of good research practice**.³

The principles of good research practice include, among others: maintaining professional standards, maintaining strict honesty with regard to one's own contributions and those of third parties, documenting results and rigorously questioning all findings.

2. recognise the **Rules of Procedure for Dealing with Scientific Misconduct (Verfahrensordnung zum Umgang mit wissenschaftlichem Fehlverhalten – VerfOWF)**⁴ as legally binding.

Scientific misconduct is defined as the intentional and grossly negligent statement of falsehoods in a scientific context, the violation of intellectual property rights or impeding another person's research work. The circumstances of each case will be considered on an individual

³ The principles of good research practice can be found in detail in the DFG [Code of Conduct Guidelines for Safeguarding Good Research Practice](#) and in the [Funding Guidelines: General Terms and Conditions of DFG Grants](#) (DFG form 2.00).

⁴ [DFG Rules of Procedure for Dealing with Scientific Misconduct, DFG form 80.01](#)

basis. In cases where scientific misconduct has been established, the DFG may impose one or more of the following sanctions in accordance with its Rules of Procedure, depending on the nature and severity of the scientific misconduct:

- issuing a written reprimand to those involved;
- exclusion from the right to apply for DFG funds for a period of one to eight years, depending on the severity of the scientific misconduct;
- revoking funding decisions (full or partial termination of the grant contract, demanding repayment of funds spent);
- demanding that those concerned either retract the discredited publications or correct the falsified data (in particular by publishing an erratum), or appropriately indicate the DFG's retraction of funding in the discredited publications;
- exclusion from serving as a reviewer for a period of one to eight years, depending on the severity of the scientific misconduct;
- exclusion from membership in DFG bodies and committees for a period of one to eight years, depending on the severity of the scientific misconduct;
- denying voting rights and eligibility in elections for DFG bodies and committees for a period of one to eight years, depending on the severity of the scientific misconduct.

By accepting funding, the recipient agrees to:

3. use the grant exclusively and in a targeted manner to realise the funded project. The use and accounting of funds must conform to the relevant regulations of the DFG.
4. submit progress reports on the research according to the dates specified in the award letter and to present financial accounts to the DFG detailing the use of funds.

The DFG expects that the findings of the projects it funds be made available to the public.

IV Data Protection

Please note the DFG's Data Protection Notice on research funding, which can be viewed and downloaded at www.dfg.de/privacy_policy. If appropriate, please share this information with individuals whose data is processed by the DFG due to the fact that they are involved in your project.

www.dfg.de/privacy_policy

V Supplementary Instructions

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Please base your proposal on the "Proposal Preparation Instructions for Project Proposals in the Area of Scientific Library Services and Information Systems" (LIS)

www.dfg.de/formulare/12_01

In addition, refer to the information in these supplementary instructions on submitting proposals under the e-Research Technologies programme. The section titles below are based on the titles in the proposal preparation instructions. Proposals must be submitted via elan:

elan.dfg.de

Part B: Project Description

4.3 Measures to meet funding requirements and handle project results

Describe in detail measures which will ensure that the information infrastructures developed with DFG funding will continue to be reliable and, especially when it comes to consolidated technologies, sustainable after DFG funding expires.

4.4 Formal assurances

Please confirm by stating the following phrase in the proposal that "publications resulting from the project and any relevant documentation will be available via open access, making them widely accessible for use by third parties" and that "the source code for the software developed under the project will be documented in accordance with the principles of open source and made available for use by third parties".

Section 5.9 Financial contributions

Applicants are expected to make a reasonable financial contribution to the project, e.g. in the form of staff and direct project costs. For projects aimed at the implementation or consolidation of information infrastructures, the contribution is expected to be significantly higher than for experimental projects.

Part C: Attachments

Additional information

The following attachments can be included with a proposal; however, the proposal must also be fully comprehensible without reading the attachments:

- Needs analysis
- Environment analysis
- Concept for permanent safeguarding incl. institutional letter of assurance

- Letters of support and letters of intent

If a proposal is aimed at the further development or advancement of established research software, the following additional attachments can be included; however, the proposal must also be fully comprehensible without reading the attachments:

- Justification of relevance
- Proof of usage rights for third-party code, if applicable

If the proposal is submitted by members of an academic information infrastructure facility, it must be accompanied by a declaration on the part of the management (see DFG form 12.141) stating the following (where applicable, depending on the phase):

- the financial contribution required within the scope of the programme will be made;
- the results of the project will be supported once DFG funding has expired.

www.dfg.de/formulare/12_141

VI Information

For further information, please contact:

- Formal and administrative support
Petra Stötzel (e-mail: Petra.Stoetzel@dfg.de, Tel: +49 228 885-2235)
- Queries on proposal submission
Dr. Philipp Meyer (e-mail: Philipp.Meyer@dfg.de, Tel: +49 228 885-2767)
- Responsible for the programme
Dr. Matthias Katerbow (e-mail: Matthias.Katerbow@dfg.de)