Guidelines and Supplementary Instructions

Information Infrastructures for Research Data

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.

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I Programme Information

1 Objectives and Scope of Funding

1.1 Background

Research data that is documented, processed and made accessible is an essential component of quality-oriented, transparent and compatible research. The characteristics of this data reflect the diversity of academic disciplines, scientific interests and research methods. Data management requires powerful information infrastructures that are tailored to the specific needs of the scientific communities. Information infrastructures are designed for long-term use while at the same time allowing for adaptations to technical and organisational changes without losing their reliability, security or stability.

1.2 Objectives

Funding aims to support academics and information infrastructure institutions in enabling, improving and further developing research data management (RDM). The central objectives of the funding are as follows:

- Prototypical development of information infrastructures for RDM
- Implementation of information infrastructures for RDM as reliable services
- Functional further development of existing information infrastructures for RDM
- Conception and establishment of organisational, advisory and networking structures for RDM
- Conception and establishment of data policies and rules for the (community-specific) RDM
- Design and establishment of financing and operating models for research data infrastructures
- Conception and establishment of training and education measures for the use of research data infrastructures for RDM
- Gaining expertise for the establishment or further development of research data infrastructures based on studies

Projects must be designed for the benefit of one or more research communities. By contrast, projects that benefit only one site or exclusively concern local research data management are not eligible for funding; likewise, costs for the permanent operation of research data infrastructures are not eligible for funding.

1.3 Scope

The funding programme can be used to support projects dedicated to one or more of the above-mentioned objectives. Projects can have one or more focus areas:

Focus area 1: If the primary goal of a project is to establish or further develop a research data infrastructure, this can be realised in one or more of the following three development phases, always preceded by a user-oriented needs analysis:

1. Development and testing of a prototype for fundamental testing and demonstration of the intended functionality of an information infrastructure, including testing by representative users;
2. Once the prototype has been successfully set up, implementation of a stable, secure, scalable and expandable information infrastructure can take place, also involving the organisation of its sustainable operation;
3. Functional further development of an existing information infrastructure can take place after an initial phase of regular operation. This mainly concerns the expansion of the scope of services and functions and not a technical renewal.

The services and functions of research data infrastructures can be developed in each of the three phases. These can be guided by principles such as FAIR or CARE, and can include one or more of the following aspects:

- Information and planning for the management of research data before, during and as a follow-up to research projects
- Organisation and preparation of research data
- Description and documentation of research data including structured information
- Storage and compatibility of research data for analysis
- Publication and archiving of research data
- Findability and re-use of research data

It is also possible to receive funding for measures relating to legal and ethical requirements in order to be able to implement the services and functions provided by research data infrastructures.

In each development phase, measures for the horizontal and vertical integration of the project in existing RDM structures have to be examined and – especially in phases 2 and 3 – implemented. The integration of a research data infrastructure includes interoperable integration in existing, often subject-specific structures, facilities, reference systems and other types of information provision. Vertical integration means the user-oriented and technical integration of an information infrastructure in local structures and processes,

starting at the researchers' workplace and going on to include the regional (e.g. RDM state initiatives) and national (e.g. NFDI) to the international level (e.g. EOSC). Horizontal integration means cross-linking between information infrastructures that primarily exist alongside each other, e.g. between subject-oriented repositories, between NFDI consortia or between entirely distinct systems such as research data repositories, publication organs, research software repositories, library-based or governmental information systems.

Focus area 2: Projects can conceive and establish organisational and responsibility structures for research data infrastructures. The social structures that surround research data infrastructures include interaction between institutional operators as well as developers and academic users. Together they bear the responsibility for an information infrastructure, organise their joint collaboration and negotiate the scope of services, functions and strategies for the further development and financing of an information infrastructure. The (long-term) operation of research data infrastructures lies in the responsibility of the supporting institution or organisation. Although operating costs are excluded from funding, the conception and establishment of operating models are eligible for funding, as are user-oriented feedback structures that can lead to further functional development. In addition, funding can be provided for projects that design and establish training measures for research data infrastructures.

Focus area 3: Funding can be provided for studies analysing research data management, providing the expected gain in knowledge contributes to the establishment or further development of research data infrastructures. In the course of the digital transformation, research practices are changing, new legal, social and ethical issues are emerging and the development of good research practice is advancing. At the same time, questions also arise as to how RDM measures impact on science and the humanities. The analysis of these and other aspects is eligible for funding in connection with studies. The preliminary work that is expected to have been completed when submitting a proposal under this funding programme such as a needs or environment analysis is not eligible for funding.

2 Proposals

2.1 Eligibility

In general, 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, you are not eligible to submit a proposal if you work at an institution that is not non-profit or one that does not allow immediate publication of research findings in a generally accessible form.

Since funding provided in the area of scientific library services and information systems is intended to achieve improvements to nationwide and international information infrastructures, and its results benefit research as a whole, 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 institutions are also eligible to apply.

2.2 Funding conditions

A project must be designed to benefit one or more research communities, so its success can be measured based on acceptance among academic users. The closer the interaction between the requirements of academic users, research processes and the design of the information infrastructure, even before the proposal is submitted, but in particular during a project, the greater are the chances of a project achieving long-term success. For this reason, it is recommended that researchers and information infrastructure providers submit joint proposals.

If a project aims to set up an information infrastructure for long-term use, it is expected that the proposal is submitted and supported by or together with an institution that is able to maintain the research data infrastructure and ensure its sustainability. For this reason, the institution is expected to make an appropriate financial contribution of its own during the project period.

2.2.1 Eligibility 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.

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 re-used or further developed. This is particularly relevant to projects where in-house technical development is intended; here, the environment analysis must show which essentially similar solutions already exist and why these cannot be re-used.

Horizontal and vertical integration of a planned information infrastructure should be outlined in the proposal and interfaces with existing systems should be established wherever possible. For this reason, the consideration, description and usage of existing, often internationally established standards and technologies is essential (e.g. persistent identifiers, open, interoperable formats, open interfaces, open licences, metadata standards, etc.).

Existing and to some extent subject-specific rights and obligations as well as ethical aspects should also be taken into account; these should be clarified before the proposal is submitted where relevant, presented in the proposal and if necessary addressed by the project.

Projects dedicated to the implementation or functional further development of an information infrastructure can only be funded if the financing and maintenance of the project results is ensured after the DFG grant expires. For this purpose, a sustainability concept must be attached to the proposal that shows the longer-term financing of the information infrastructure. By contrast, experimentally oriented projects that focus on the development and testing of a prototype do not require a sustainability concept for potential longer-term operation.

2.2.2 Project results

All results (publications, data and software) generated by a funded project should essentially be open access, remain permanently accessible and comply with the FAIR principles; exceptions must be justified and the relevant handling must be described (e.g. anonymisation, rights management, types of use, etc.). Source code and data are to be

documented according to established standards. Detailed developer and user information is to be drawn up for software developments. 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 – including software developments – must be prepared, indexed and promoted in a manner that guarantees the maximum potential for retrieval. Appropriate metadata must meet library standards and must be suitable for integration in international subject-specific indexes or other cataloguing systems.

The technologies, software, methods, organisational forms and financing models developed during the course of the project should be potentially reusable and transferable to other contexts.

2.3 Proposal structure

Proposals for projects in the area of scientific library services and information systems 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 can be found in the supplementary guidelines under V.

2.4 Deadline

A proposal may be submitted at any time.

3 Duration

Initial funding can be approved for up to three years. The total funding period should not exceed six years.

II Proposal Modules

Under this funding programme, you may submit one or more of the following modules. 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 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 this module cannot be submitted separately but only in conjunction with the proposed project.

www.dfg.de/formulare/52_06

The hosting of round-table talks may also be funded for the purpose of strategic planning, nationwide collaborations conceived of as self-organisation processes and networking measures for communities and infrastructure facilities, as well as the further development of funding arrangements. Please get in touch with DFG programme contact responsible if you have any questions.

III Obligations

In submitting a proposal to the DFG, you

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

   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.

[1] 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).

2. recognise the **Rules of Procedure for Dealing with Scientific Misconduct (Verfahrensordnung zum Umgang mit wissenschaftlichem Fehlverhalten - VefOwF)** as legally binding.[2]

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 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.

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

IV Data Protection

Please note the DFG's Data Protection Notice for Research Funding, which you can access at www.dfg.de/privacy_policy. Where appropriate, please also forward this information to those persons whose data will be processed by the DFG because of their involvement in your project.

www.dfg.de/privacy_policy

V Supplementary Instructions

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 for the Information Infrastructures for Research Data Programme. The section titles below are drawn from the proposal preparation instructions. Proposals must be submitted via elan:

elan.dfg.de

With regard to Part B Project Description:

When describing the project, please explicitly address the following aspects in particular:

B 1. Starting point and preliminary work

- Outline the results of the needs assessment carried out. The complete needs assessment can be attached to the proposal.
- Present the results of the environment analysis in compact form. The complete environment analysis can be attached to the proposal.
- Locate the planned project in the context of horizontal and vertical integration. Explain how you will ensure the interoperability of your project.
- If the project aims towards the implementation of infrastructure software as a reliable service or towards the functional further development of an existing information infrastructure, please describe its qualitative and quantitative use to date.

B 2.2 Objectives

- Formulate clear objectives for the project with reference to the objectives of the funding programme.
- Define milestones and justify them in terms of the objective of the project.
- Define success criteria for the project, e.g. quantitative and qualitative use parameters, etc. Based on these criteria, the success of the project can be measured at the end and presented in the final report.
- If a project aims for the development and testing of a prototype, please define criteria that can be used at the end of the project to assess whether subsequent implementation would be useful.

B 2.3 Work programme and proposed research methods

- Define and describe work packages, indicating the necessary person-months in full-time equivalents. If several applicants are involved in a project, assign the work packages to the applicants.
- Specify how and at what times user feedback is planned during the project.
- Prepare a risk analysis for project implementation as well as a presentation of significant project risks and appropriate measures to deal with these. Please describe how (partial) results can be substantiated if the project does not have the desired success. The complete risk analysis can be attached to the proposal.

B 4.3 Measures to meet funding requirements and handle project results

If the project is dedicated to the implementation or further development of an information infrastructure, please describe in detail the measures and concrete assurances that will ensure the sustainable operation and long-term maintenance of the information infrastructure. The complete sustainability concept including institutional letters of assurance can be attached to the proposal.

B 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 established standards, licensed with an open-source license, and made available for use by third parties free of charge”.

B 5.9 Financial contributions

Applicants are expected to make a reasonable financial contribution to the project, e.g. in the form of personnel and direct project costs.

With regard to Part C Appendices:

Additional information and data sheets

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

- Needs analysis
- Environment analysis
- Risk analysis
- Sustainability concept including institutional assurance letter
- Letters of support and letters of intent

One offer must be enclosed with the proposal if you want to obtain funding for services carried out by third parties as part of a DFG-funded project.

VI Information

For further information, please contact:

Formal and administrative support

- Susann Jäker (e-mail: susann.jaeker@dfg.de, Tel. 0228/885-2847)

Queries on proposal submission

- Dr. Lukas Henning (e-mail: lukas.henning@dfg.de, Tel. 0228/885-2201)

Responsible for the programme

- Dr. Lina Wedrich (e-mail: lina.wedrich@dfg.de, Tel. 0228/885-2036)