

# Concept for Setting up a Working Group in the NFDI Section “Common Infrastructures”

## **Name of the working group**

Data management planning

## **Acronym**

infra-dmp

## **Contact persons**

RWTH Aachen University, NFDI4Chem  
Daniela Hausen, hausen@ub.rwth-aachen.de

TU Darmstadt, NFDI4Ing  
Jürgen Windeck, juergen.windeck@tu-darmstadt.de

## **Authors**

Daniela Hausen, Christin Henzen, Gerald Jagusch, Celia Krause, Lukas Weimer, Jürgen Windeck

Version 1.0

January 2023

# Abstract

Nowadays, it is fairly common that scientific communities are collaborating at distributed locations, and there can be seen a tendency to have data collections subject to a rigorous research data management (RDM). For example, researchers face the upcoming requirements of the funding agencies regarding data management. Here, a data management plan (DMP) is an opportunity to accompany the generation and processing of data, as well as generating specified data management plans, reports, etc. As has been shown in many cases, it is of particular importance for communication and early RDM awareness in projects, institutions, etc. In addition, previous surveys have shown that some of the NFDI consortia see the importance of DMP tools to manage information efficiently and therefore have adapted the RDMO software for this purpose.

It also became clear that the topic of DMP should be considered on an implementation and on a conceptual level, i.e. including templates and (disciplinary) guidelines. The working group promotes the corresponding coordination processes between the consortia (content and technical aspects), conducts needs analyses in the area of DMPs and develops both conceptual and software-related development paths and a sustainable operating model.

## Motivation and Objectives

Data management plans are internationally identified and established as a crucial element of custom-fit project planning and data management workflows in general. They could also be a tool or an instrument for the establishment of services to measure the quality of research data, such as FAIR etc. This working group has identified the needs to address the content of data management plans, but also the technical perspectives of DMP software development. Past experience has shown that aligning both perspectives is of high importance to provide an efficient service to researchers and data-keeping facilities.

All changing aspects in terms of content may have an impact on the technical design of a DMP tool. Therefore, the objectives of the working group are the following:

- Targeted coordination, alignment and exchange between consortia on relevant DMP topics
- Agreement on content, technical standards and exchange formats for DMPs
- Identification and collection of generic aspects in DMP templates. These, for example, result in
  - Selecting, collaborating on and further developing content as a basis for the various disciplinary requirements within the NFDI
  - Guidance for generic aspects from different discipline-specific perspectives
  - Best practices for generic aspects from different discipline-specific use cases
- Implementation strategy of DMPs into the research workflow, which include

- The opportunity of DMP discovery and publication (planning phase, reusability)
- Seamless integration of DMP tools into research data infrastructures and courses of business
- Bidirectional linking between DMPs and other research tools
- Identification of discipline-specific documentation types
- Develop a concept for DMP tool integration into the Research Data Commons (RDC<sup>1</sup>) infrastructure, implement it with the DMP tool RDMO<sup>2</sup> as a testcase

## Work Plan

### WP1 Evaluating state of the art and collecting needs, activities, and resources

Data management planning plays a role in all NFDI consortia. Still, there is a need to query all 2nd and 3rd round consortia and consortium applicants regarding DMP needs and tools to get a complete overview. We will conduct a consortium-wide survey and evaluate common aims and resources for collaboration. After this, a selection of top priority tasks can be derived from the mentioned evaluation and collection phase. To achieve this, the following working steps are considered initially:

- 1.1 Collect existing (discipline-specific) templates and funding requirements taking into account target groups and needs.
- 1.2 Collect, map, and harmonise descriptions of existing practical approaches and best practices
- 1.3 Collect and evaluate existing guidelines
- 1.4 Identify and collect target groups and needs of researchers and RDM staff for better DMP support

Deliverables: Report, User Stories

### WP2 Comparing and developing DMP templates

The aim of this WP is to evaluate existing practical methods, tools and issues for data management planning, whereby the focus will be on quality management. Here, the preoccupation with special features of templates is a crucial point: on one hand, it should be determined which parts of a DMP template are generic, i.e. apply to many disciplines at once. In order to identify differences, similarities and best practice examples, comparison of DMP

<sup>1</sup> <https://doi.org/10.5281/zenodo.5607490>

<sup>2</sup> <https://rdmorganiser.github.io/en/>

templates to identify commonalities is useful. The aim of this WP is to achieve comparability and comprehensibility of DMPs across different scientific fields and templates. As a basis for this, we use the discipline-specific extensions of DMP templates developed by the NFDI consortia, the results of the RDA WG “Discipline-specific Guidance for DMPs”<sup>3,4</sup>, and the DMP guidance pattern concept of the RDMO WG<sup>5</sup>. In doing so, we are building on both existing results and outcomes that are expected soon.

Where generic content in DMPs will be identified (e.g. recurring elements like basic project details such as project titles, names, but also which methods and data types are used during the research project) automation concepts can be used to provide assistance for filling in templates. To avoid free text fields, either selection options can be generated or the standard of machine-readable DMPs can be extended. In the end, machine-readable DMPs foster the reuse of records (for the metadata generation of datasets).

This working package will concentrate on the following tasks:

2.1 Compare DMP templates to detect overlaps

2.2 Develop a generic template for DMP Guidance including criteria to select a template

2.3 Apply the generic template to discipline-specific use cases (based on the expertise of NFDI consortia)

2.4 Implement the developed guidance template in RDMO as proof of concept

Deliverables: Guidance draft incl. criteria, NFDI DMP template (technical product)

## WP3 Integration of DMPs into project and research workflows

Although DMPs support the management of research data, DMP tools are often not yet integrated into researchers’ project workflows and services, but are an additional component next to project management software, electronic lab notebooks, metadata tools, repositories, etc.

In order to reduce the administrative workload for researchers and enhance the acceptance of DMP tools, the working group will pursue the identification of documentation types and interfaces as a prerequisite for a seamless integration of DMP tools into the project workflow.

---

<sup>3</sup> <https://www.rd-alliance.org/groups/discipline-specific-guidance-data-management-plans-wg>

<sup>4</sup> Wham, Briana, Hausen, Daniela, Andres, Ivonne, Sheridan, Shannon, Ilamparuthi, Santosh, & Turkyilmaz-van der Velden, Yasemin. (2022). Data Set from RDA WG Discipline-Specific Guidance on DMP - Online Survey [Data set]. Zenodo. <https://doi.org/10.5281/zenodo.7391669>

<sup>5</sup> Henzen, Christin, Rohrwild, Jürgen, Hausen, Daniela, Peters-von Gehlen, Karsten, Anders, Ivonne, & Schönau, Sabine. (2022). A Community-driven Collection and Template for DMP Guidance facilitating Data Management across Disciplines and Funding. Zenodo. <https://doi.org/10.5281/zenodo.6966878>

3.1 Compile existing workflows for information exchange and bidirectional linking

3.2 Identify common requirements for interoperable interfaces

3.3 Prioritise requirements and linkage aspects, e.g. in RDMO, and develop an implementation plan

3.4 Provide a “recommendation paper” which describes best practices for the integration of RDMO in research data infrastructures

Deliverables: Implementation plan, recommendation paper

## WP4 Coordination of DMP tools within NFDI

DMP tools support researchers in data management planning and offer different templates or guidance, e.g. for funding applications. Internationally, different tools (dmptool<sup>6</sup>, Argos tool<sup>7</sup>, RDMO<sup>8</sup>, etc.), support and hosting strategies were developed. In Germany, the tool RDMO, developed in a DFG funded project, is hosted at many universities, research centres and universities of applied sciences with local support structures. In a recent survey, two out of three NFDI consortia are using or planning to use RDMO. Still some consortia cannot cover their needs with it (so far) or use other or even several tools for historical reasons.

We will closely work together with the RDMO WG and established research networks/groups, e.g. relevant RDA WGs to establish RDMO as an element of the NFDI service portfolio and to support further development. We will create offerings so that all consortia can use RDMO adapted to their specific needs, ranging from consulting and training of the consortia to coordination of the content design of DMP templates to the technical provision of RDMO in different consortia.

4.1 Develop a concept for an NFDI-wide DMP service

4.2 Develop a concept for the integration of DMP tools in the Research Data Commons infrastructure

Deliverables: Concept papers

---

<sup>6</sup> <https://dmptool.org/>

<sup>7</sup> <https://argos.openaire.eu/splash/>

<sup>8</sup> <https://rdmorganiser.github.io/>

## WP5 Fostering support structures for data management planning

Experiences from the infrastructure perspective<sup>9</sup> show that consultancy and personal support for researchers is necessary in many cases and that a DMP template or even an example DMP is of great importance in this respect. Therefore, it is considered in almost all NFDI consortia to support researchers individually in planning their data management via a helpdesk, review service or similar. As a result, a DMP service should offer the individual support for researchers from all disciplines. The DMP service of GFBio is seen as a blueprint here.

Various approaches are possible as a support model. Again, it is important to consider established groups, both from DMP and local infrastructure. Potential challenges could relate to the scalability of helpdesks by increased use and how institutions that are not affiliated with a consortium could be involved.

- 5.1 Develop a user support network concept along existing structures
- 5.2 Develop a communication strategy (i.e. workshops, meetings, crowdsourcing etc.)
- 5.3 Share and discuss concepts with relevant section groups, e.g. cookbooks, guidance, and best practices, or research software engineering

Deliverables: Support network concept paper, communication strategy paper

## Collaboration Plan

The working group infra-DMP succeeds the NFDI task force tools subgroup „DMPs in der NFDI“. Collaboration with section “(Meta)data, Terminologies, Provenance” and section “Training & Education” is intended to support the integration of DMP and research workflows.

Members of consortia and of this working group are also leaders or part of national or international groups on data management planning:

- The DINI/nestor-AG Forschungsdaten UAG DMP is a long existing nationwide collaboration ([https://www.forschungsdaten.org/index.php/UAG\\_Datenmanagementpl%C3%A4ne](https://www.forschungsdaten.org/index.php/UAG_Datenmanagementpl%C3%A4ne)).

---

<sup>9</sup> Helbig, Kerstin, Ivonne Anders, Petra Buchholz, Gianpiero Favella, Daniela Hausen, Sonja Hendriks, Jochen Klar, Evamaria Krause, Thilo Paul-Stüve, Karsten Peters, Torsten Rathmann, Stephanie Rehwald, Jessica Rex, Volker Soßna, Johannes Sperling, Annette Strauch und Pia Voigt. 2020. „Erfahrungen und Empfehlungen aus der Beratung bei Datenmanagementplänen“. *Bausteine Forschungsdatenmanagement*, Nr. 2 (Oktober). German:29-40. <https://doi.org/10.17192/bfdm.2020.2.8283>.

- RDMO Consortium, considerable personal and institutional overlap to NFDI consortia, particularly in the steering group of the RDMO AG ([https://rdmorganiser.github.io/rdmo\\_arge/](https://rdmorganiser.github.io/rdmo_arge/))
- The RDA working group *Discipline-specific Guidance for Data Management Plans* is co-chaired by Daniela Hausen (NFDI4Chem) (<https://rd-alliance.org/groups/discipline-specific-guidance-data-management-plans-wg>).

## Initial Membership List

Name	Institution	NFDI consortia	Email
Bergmann, Katharina	Universität Paderborn	NFDI4Culture	<a href="mailto:katharina.bergmann@uni-paderborn.de">katharina.bergmann@uni-paderborn.de</a>
Buck, Nina	HLRS	NFDI4Cat	<a href="mailto:nina.buck@hlrs.de">nina.buck@hlrs.de</a>
Enke, Harry	AIP	PUNCH4NFDI	<a href="mailto:henke@aip.de">henke@aip.de</a>
Gerstner, Eva-Maria	Max-Weber-Stiftung	Text+	<a href="mailto:gerstner@maxweberstiftung.de">gerstner@maxweberstiftung.de</a>
Hausen, Daniela	RWTH Aachen University	NFDI4Chem, NFDI4Ing	<a href="mailto:hausen@ub.rwth-aachen.de">hausen@ub.rwth-aachen.de</a>
Henzen, Christin	TU Dresden	NFDI4Earth	<a href="mailto:christin.henzen@tu-dresden.de">christin.henzen@tu-dresden.de</a>
Horsch, Martin	Inprodat e.V.	n/a	<a href="mailto:horsch@inprodat.de">horsch@inprodat.de</a>
Jagus, Gerald	TU Darmstadt	NFDI4Ing	<a href="mailto:gerald.jagus@tu-darmstadt.de">gerald.jagus@tu-darmstadt.de</a>
Kostadinov, Ivaylo	GFBio e.V.	NFDI4Biodiversity	<a href="mailto:ikostadi@gfbio.org">ikostadi@gfbio.org</a>
Krause, Celia	Universität Marburg, Bildarchiv Foto Marburg	NFDI4Culture	<a href="mailto:celia.krause@fotomarb.org">celia.krause@fotomarb.org</a>
Krieger, Ulrich	Universität Mannheim	BERD@NFDI	<a href="mailto:ulrich.krieger@uni-mannheim.de">ulrich.krieger@uni-mannheim.de</a>
Linares, Jimena	GFBio e.V.	NFDI4Biodiversity	<a href="mailto:jlinares@gfbio.org">jlinares@gfbio.org</a>

Lindstädt, Birte	ZB MED	NFDI4Health, NFDI4Microbiota, FAIRagro	<a href="mailto:lindstaedt@zbmed.de">lindstaedt@zbmed.de</a>
Schönau, Sabine	RWTH Aachen University	NFDI4Ing	<a href="mailto:schoenau@ub.rwth-aachen.de">schoenau@ub.rwth-aachen.de</a>
Weimer, Lukas	SUB Göttingen	Text+	<a href="mailto:weimer@sub.uni-goettingen.de">weimer@sub.uni-goettingen.de</a>
Windeck, Jürgen	TU Darmstadt	NFDI4Ing	<a href="mailto:juergen.windeck@tu-darmstadt.de">juergen.windeck@tu-darmstadt.de</a>

## Mailing list

List: [section-infra-wg-dmp@lists.nfdi.de](mailto:section-infra-wg-dmp@lists.nfdi.de)

Please subscribe via <https://lists.nfdi.de/postorius/lists/section-infra-wg-dmp.lists.nfdi.de/>