

bwFDM – The Federal State Initiative for Research Data Management in Baden-Württemberg*

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Abstract

This paper provides an overview of the federal state initiative for research data management in Baden-Württemberg (bwFDM) and its multi-faceted approach to addressing the challenges and opportunities presented by research data. bwFDM's activities include the establishment of networks and collaborations, the dissemination of information and knowledge, the expansion of information services, the provision of training and consultation opportunities, and the organisation of the conference series E-Science-Tage. Overall, bwFDM's activities emphasise the importance of collaboration, information dissemination, and training in shaping the present and future of research data management within and beyond Baden-Württemberg.

1 Introduction

In the contemporary research landscape, the exponential growth of data presents both opportunities and challenges. Effectively managing, preserving and sharing research data is essential to ensuring the verifiability, reproducibility and impact of academic research. Hence Research Data Management (RDM) has emerged to address these challenges. RDM encompasses a multitude of strategies, policies, and practices designed to ensure the findability, accessibility, interoperability and (re)usability of research data throughout its lifecycle. From the moment data is generated to its eventual archival and beyond, RDM seeks to provide a framework for organizing, storing, and disseminating data in ways that facilitate collaboration, reproducibility, and reusability.

Recognising the importance of RDM, the Ministry of Science, Research and Arts Baden-Württemberg has been funding state-wide projects to coordinate RDM activities since 2014. In 2023, bwFDM – the federal state initiative for research data management in Baden-Württemberg [1] – has received funding for four years to further promote practices and foster cooperation in RDM within the region of Baden-Württemberg. bwFDM is organised at three universities (Karlsruhe Institute of Technology, University of Konstanz, Heidelberg University).

This paper aims to provide a comprehensive overview of bwFDM's activities and their profound impact on research data management in Baden-Württemberg and beyond. From establishing networks and partnerships to providing information and disseminating knowledge, from expanding information services to offering training opportunities, bwFDM's multi-faceted approach to RDM aims to shape the research landscape and to empower stakeholders in their RDM activities. Several of the services offered by bwFDM are relevant to research groups, bwHPC service providers and HPC support centres. A central aim is to connect these stakeholders with RDM consultants and other stakeholders from the research data infrastructure in Baden-Württemberg.

2 Establishing Networks and Collaborations

At the core of bwFDM's mission lies the recognition that effective research data management (RDM) is not a solitary endeavour but a collaborative effort that thrives on synergies and partnerships.

*Proceedings of the 9th bwHPC-Symposium 2023. Mannheim Conference Series (MaConf). 2025. [CC BY 4.0]

To achieve this mission, bwFDM is committed to fostering networks among stakeholders involved in RDM. By bringing together researchers, high-performance computing (HPC) experts, support centres, and RDM consultants, bwFDM creates a platform for exchange and collaboration. Through strategic alliances and ongoing dialogue with key projects such as bwHPC-S5, bwFDM seeks to identify common challenges, share best practices, and foster a culture of collaboration focused on advancing RDM practices across diverse domains and disciplines.

Moreover, bwFDM recognises the importance of ongoing dialogue and knowledge exchange to drive continuous improvement in RDM practices. Through training activities, working groups, the information platform forschungsdaten.info [2], and the conference series E-Science-Tage [3], bwFDM provides opportunities for stakeholders to share their experiences, learn from each other, and collectively chart the course for the future of RDM in Baden-Württemberg and beyond. Of these offerings, mainly forschungsdaten.info and the conference series E-Science-Tage have a significant impact on the national and international RDM landscape. By fostering a culture of collaboration and knowledge sharing, bwFDM aims not only to address immediate RDM challenges, but also to lay the groundwork for sustainability in data management practices.

3 Providing Information and Knowledge Dissemination

One of the central bwFDM activities to promote RDM practices is forschungsdaten.info, a prestigious information platform, which is an extensive collection of knowledge, resources, and tools meticulously curated to cater to the diverse needs of the German-speaking RDM community. bwFDM is editor-in-chief of forschungsdaten.info, which brings together a board of 70 editors from 30 institutions. Thus, the platform fosters a culture of knowledge sharing and collaboration across the German-speaking countries.

With its user-friendly interface and large database, forschungsdaten.info offers RDM beginners and RDM experts a wealth of insights into RDM topics, services, and tools, tailored to specific academic fields and research disciplines. forschungsdaten.info serves as more than just a registry; it is a dynamic hub of information, constantly evolving to keep pace with the latest developments in the RDM landscape. Through curated articles, forschungsdaten.info equips stakeholders with the knowledge and tools they need to navigate the complexities of RDM effectively. Whether it is guidance on data management planning, insights into metadata standards, or tips for data publication, forschungsdaten.info provides invaluable resources to support stakeholders at every stage of the data lifecycle. Through regular newsletters [4], webinars (forschungsdaten.info live [5]), news [6] and event announcements [7], forschungsdaten.info ensures that stakeholders remain informed and engaged in shaping the present and the future of RDM.

4 Expanding Information Services

As the landscape of research data management (RDM) continues to evolve, bwFDM remains committed to anticipating emerging trends and evolving needs within Baden-Württemberg's research community. bwFDM is actively developing its information services to better serve its stakeholders and to foster collaboration across institutions and disciplines.

At the centre of this expansion effort is a comprehensive mapping initiative aimed at charting the RDM landscape in Baden-Württemberg. This involves identifying and cataloguing RDM stakeholders (all research and higher education institutions), services, and tools across the region, providing stakeholders with a detailed overview of the resources available to them. By creating a centralized registry of RDM resources, bwFDM aims to streamline access to essential tools and services, facilitating collaboration and knowledge exchange among researchers and support staff.

Through ongoing engagement with stakeholders and feedback mechanisms, bwFDM will ensure that the mapping results remain relevant and up to date, reflecting the latest developments in RDM services. This iterative approach allows bwFDM to identify gaps, address challenges, and tailor its information services to meet the diverse needs of the research community effectively.

Central to bwFDM's information services expansion is its website bwfdm.de [1]. This website will provide stakeholders with easy access to a number of different resources, including an interactive map of consulting

teams and RDM services [8], a helpdesk and information about our training offerings [9] designed to support their RDM activities.

5 Training and Consultation

Recognising the critical importance of equipping support personnel and researchers with the necessary skills and knowledge to effectively manage research data, bwFDM has developed the RDM training program Certificate of Advanced Studies Forschungsdatenmanagement (CAS FDM) [10], starting in October 2025. This program addresses the growing demand for structured RDM training and empowers individuals with the necessary expertise to navigate the complexities of data management within higher education and research institutions.

The CAS FDM primarily targets present or future infrastructure employees, including data stewards and RDM consultants. Its structure is intended to enable connectivity with existing qualification formats and opportunities already available.

The CAS FDM involves a comprehensive curriculum covering a diverse range of topics essential to proficient data management practices. Participants will delve into fundamental concepts such as data management planning, metadata standards, and data sharing protocols, gaining a thorough understanding of the principles underpinning effective data stewardship. In addition, the course explores ethical considerations surrounding data collection, storage, and dissemination, instilling a strong sense of responsibility and integrity in data management practices.

Furthermore, bwFDM provides consultation on research data management issues via its helpdesk [11]. The helpdesk's aim is to offer a first, easily accessible point of contact for questions relating to RDM in Baden-Württemberg and also to cover the consulting needs of researchers and support staff whose institutions do not yet have a dedicated RDM service team. In addition to answering questions directly, the helpdesk also serves as a mediator by directing enquirers to discipline-specific or service-specific helpdesks.

6 The E-Science-Tage Conference Series

A highlight of bwFDM's outreach efforts is the biennial conference series E-Science-Tage in Heidelberg, renowned for its interdisciplinary focus on RDM and Open Science. The conference series serves as an important platform for professional exchange, bringing together researchers, support staff and policymakers from across Baden-Württemberg and beyond. Through its engaging programme of keynote speeches, panel discussions and workshops, E-Science-Tage provides participants with a unique opportunity to explore emerging trends, share best practices, and showcase innovative solutions in RDM and Open Science.

By providing a forum for stakeholders to engage in dialogue, exchange ideas between academia and technology, and forge partnerships, E-Science-Tage facilitates the co-creation of strategies and initiatives aimed at advancing RDM practices and promoting Open Science principles. Submissions on topics related to HPC are most welcome, in particular those fostering collaborations between RDM and HPC initiatives.

Conference materials, including videos of keynote talks, presentation slides and posters are made available after each conference to facilitate the sharing, evaluation and preservation of information and research findings [12]. Furthermore, E-Science-Tage invites authors to submit their contributions for publication in a conference proceedings [13]. The submission and review process takes place after the conference, allowing authors to incorporate feedback received during the conference sessions. The submissions are reviewed by at least two reviewers from the field of RDM, which helps ensure a high quality standard. Altogether, the different formats of presentation, discussion, and publication provide an outstanding outreach for the contributions accepted to the conference.

7 Conclusions

In conclusion, the contemporary research landscape is characterized by the exponential growth of data, presenting both opportunities and challenges for research. Research data management has emerged as a critical discipline aimed at addressing these challenges and ensuring the integrity, accessibility, and impact of research data.

The Ministry of Science, Research and Arts Baden-Württemberg recognises the significance of RDM and has been funding state-wide RDM projects since 2014. bwFDM, the federal state initiative for research data management in Baden-Württemberg has received funding for four more years (2023-2027) to promote practices and foster collaboration in RDM within the region and beyond.

This paper has provided a comprehensive overview of bwFDM's activities, highlighting its role in establishing networks and collaborations, providing information and knowledge dissemination, expanding information services, offering training and education opportunities, and organizing the conference series E-Science-Tage. These endeavours are also meant to facilitate the advancement of collaboration between projects and stakeholders related to RDM and HPC.

8 Acknowledgements

The federal state initiative for research data management bwFDM is funded by the Ministry of Science, Research and Arts Baden-Württemberg.

References

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- [10] <https://afww.uni-konstanz.de/de/fdm/certificate-advanced-studies-fdm/>.
- [11] Enquiries can be sent to support@bwfdm.de.
- [12] <https://e-science-tage.de/en/downloads>.
- [13] See the conference proceedings from the E-Science-Tage 2023: <https://doi.org/10.11588/heibooks.1288>.