

nfdi.software - unlock software, activate research data.

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Abstract:

nfdi.software aims to improve the access to and the use of research data with appropriate software. The proper linking and contextualisation of research software opens up the possibility of using research data sustainably and expanding the spectrum of analysis and processing. The need for a central access point for research software of the NFDI consortia arises from the growing need of the scientific disciplines of the cultural sciences, humanities and social sciences, engineering and the natural and life sciences to ensure the sustainable use and further development.

Although much work regarding research software is planned and conducted by at least 20 NFDI consortia, there is currently a lack of a cross-consortia initiative focused on common objectives, bringing together reliable contributions from these consortia with the necessary impetus and producing results that can be used by the majority of the consortia. nfdi.software is intended to link and coordinate independent individual developments from these areas in the federated data infrastructure.

Initialisation Phase 1, scheduled to start in late summer 2024, will establish the necessary communication for a concerted effort, bring together stakeholders and providers to jointly design the interplay of related consortia services, and provide an integrative prototype for first-hand experience to support the practical identification of issues and gaps and subsequently the design of Integration Phase 2.

nfdi.software provides the foundation for establishing standards and for networking across the NFDI. During the initialisation phase, an approach is developed based on the experience of previous initiatives, leading to a 'Prototype for Integration'. In its initial phase, it will build on top of four proven solutions, thus minimising duplication of work while maximising compatibility to other similar and/or complementary efforts. Bio.tools (1) and the Research Software Ecosystem is a portal supported by the European Infrastructure for Biological Information (ELIXIR), where researchers can find and compare bioinformatics tools thanks to curated metadata. The Research Software Directory (2) aims at finding and reusing cross-domain research software, stimulating reuse, encouraging proper citation, and making the impact of research software more visible. Betty's Research Engine (3) is a search engine that finds software repositories and links them to corresponding scientific publications and enriches the results with harmonised metadata. Physics.tools (4) searches in publications for referenced software and automatically retrieves accessible metadata information from the code repository. The criteria catalogue of the TMF ToolPool Health Research ensures exemplarily the high quality of registry entries.

Moreover, nfdi.software will utilise further solutions, e.g., Papers with Code, CodeMeta, CFF, and Zenodo, learn from them and integrate. The EOSC is the target destination when it comes to aligning with European efforts. It is aimed to push this concept by focusing on the needs in the national context towards “One NFDI”. As a central service, nfdi.software will harvest, aggregate, and harmonise software metadata from NFDI consortia marketplaces and registries, and will provide back enriched and curated metadata. The marketplace is therefore a complementary platform that also reflects the relevance, acceptance, and possibilities of the respective software within the research domains.

Keywords: Research Software, RSE, marketplace, metadata