

Introduction to Software Management Plans

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Agenda

1. SMP – A Brief Summary
2. SMPs and DMPs
3. Target Groups and Usage Scenarios



SMP – A Brief Summary

SMP

- SMP = Software Management Plan
- Many similarities to DMPs, but some differences
- Management tool to explicitly reflect and organise research software



Reproducibility and Accessibility

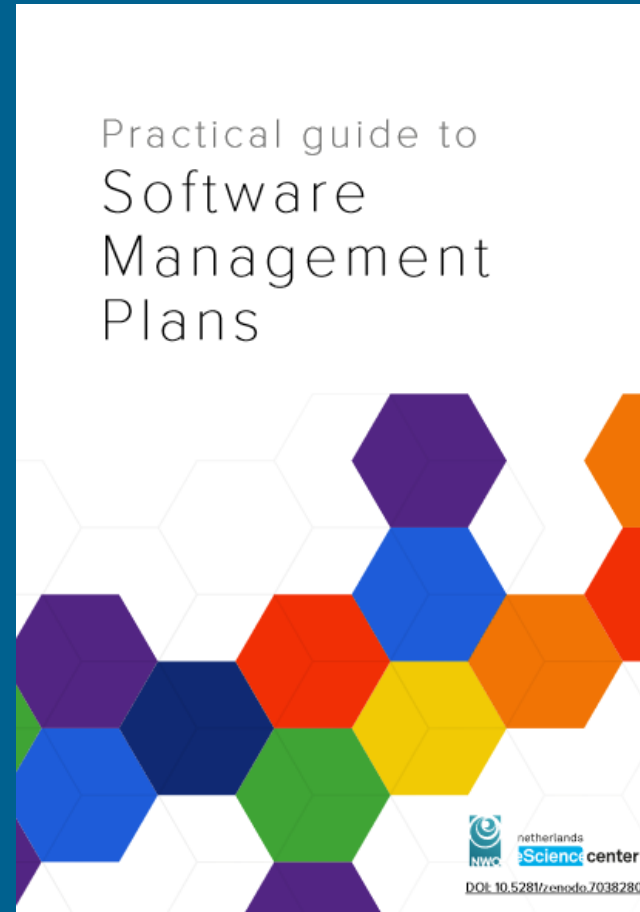
- Software is often needed to reproduce research results
 - It should be accessible according to good scientific practice
 - Internal policies, funders, and journals require or recommend the publication of software
 - i.e. “Software programmed by researchers themselves is made publicly available along with the source code.”
- Guideline 13: Providing public access to research results in the code of conduct of the DFG



SMPs in Discussion

DFG: Call for Proposals to Increase the Usability of Existing Research Software under the title „Research Software – Quality Assured and Re-usable“, (Information für die Wissenschaft Nr. 85 | 8. November 2022)

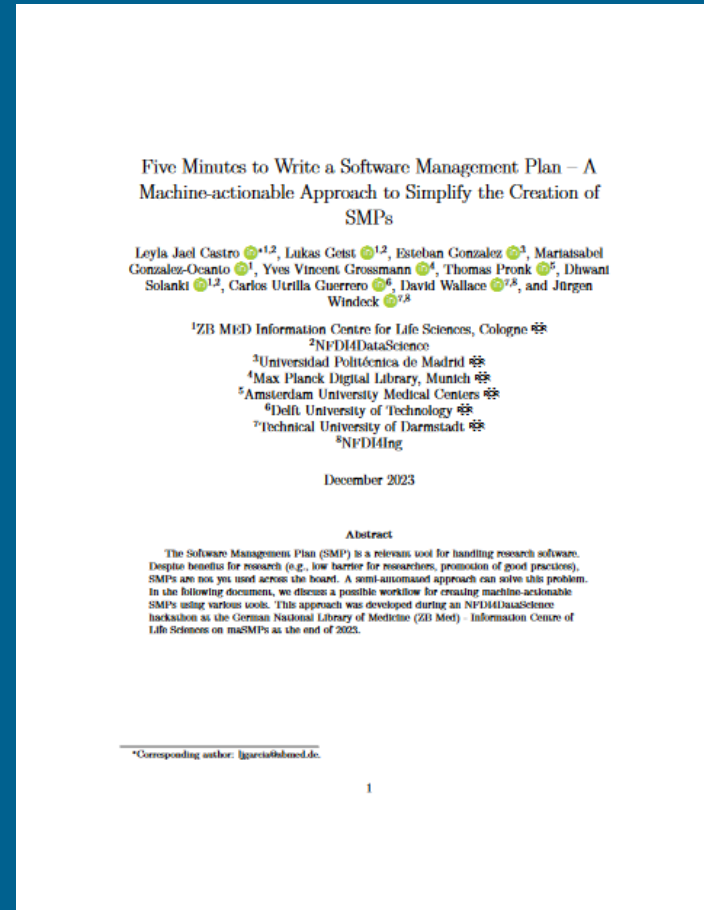
http://www.dfg.de/en/research_funding/announcements_proposals/2022/info_wissenschaft_22_85.



Martinez-Ortiz et al. (2023). Practical guide to Software Management Plans (1.1), <https://doi.org/10.5281/zenodo.7589725>, CC BY 4.0.

Vision: 5 Minutes to Write a SMP

- Make using SMPs not a burden
- Make SMP service as simple as possible with the greatest possible added value
- First entry point for software management
- Example SMP template in RDMO
 - Scale the amount of questions by DLR classification of research software



Castro et al. (2023). Five Minutes to Write a Software Management Plan – A Machine-actionable Approach to Simplify the Creation of SMPs. Zenodo. <https://doi.org/10.5281/zenodo.10374839>, CC BY 4.0.

SMP Definition

UAG-DMP of the DINI/nestor-AG Forschungsdaten:

“A software management plan (SMP) contains general and technical information about the software project, information on quality assurance, release and public availability as well as legal and ethical aspects that affect the software.

The SMP summarises information that adequately describes and documents the creation, documentation, storage, versioning, licensing, archiving and/or publication of the software created or used in a project. Associated hardware and other necessary resources, as well as other associated software and software libraries, text and data publications must also be described and are a special feature of the SMP.

The purpose of an SMP is initially to support the traceability and, if necessary, the long-term usability of the software (for direct application as well as for further processing) and to facilitate user support in the event of queries. The SMP therefore also serves the purpose of quality assurance (see FAIR4RS Principles).

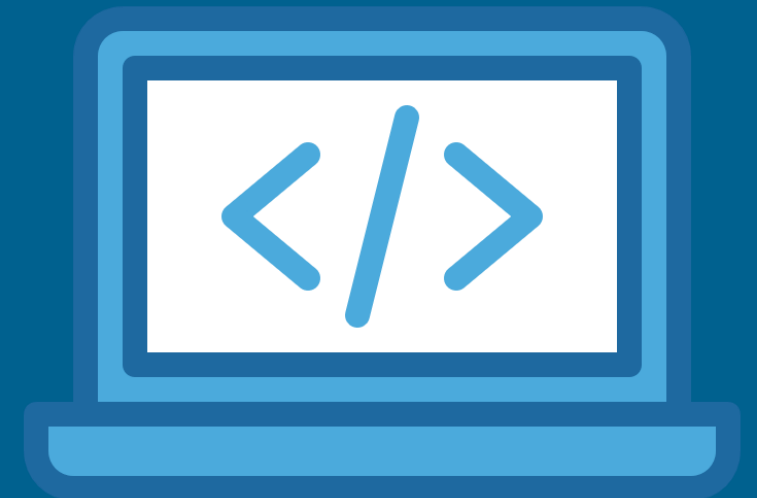
The SMP can be linked to one or more data management plans (DMP) if the software is used for data generation or processing. SMP and DMP can be summarised as output plans (see Software Sustainability Institute).”

<https://forschungsdaten.info/praxis-kompakt/english-pages/software-management-plans/>

Researchers Writing Software

Observations:

- Usually not thoroughly trained but self-educated developers
- Functionality prioritized over documentation, prioritized over sustainability
- First text publication, then nothing for a long time, followed by potential data publication and software publication
- Software is often handed over from one PhD student to the next
- ...



Why should I write an SMP?

- **For myself!**
- Together with IT/Scientific Computing Unit/... to better design a software project
- For a funding application
- For internal planning
- For sustainability and potential publication/archiving (good scientific practice)
- For quality assurance
- ...



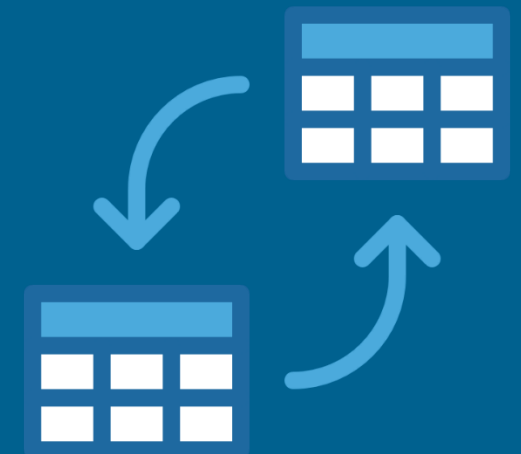
SMPs and DMPs



Comparing Software and Data I

Similarities between software and data in the research process:

- Both are taking more and more place in research
- Both are essential for reproducing research results
- Both offer potential for re-use
- Both are rarely accepted as independent research efforts
- ...



Comparing Software and Data II

Similarities between software and data in their respective management:

- Both can be archived and provided with metadata
- Both have to be curated to guarantee usability over longer periods of time
- Often, management skills are lacking for both
- ...



Comparing Software and Data III

Differences between research software and data:

- Software curation is much more elaborate
- Versioning plays a significantly bigger role with software
- Software metadata is much more homogenous
- There is a lot of experience with (open source) software licencing
- ...

Target Groups and Usage Scenarios



Target group for SMPs

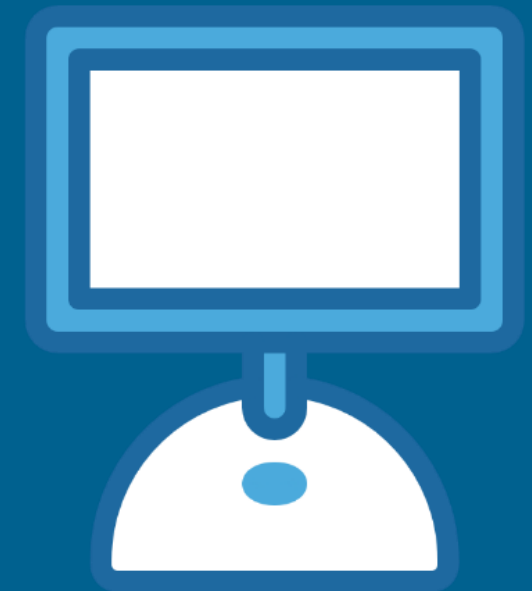
- Scientists
- Colleagues from IT, Scientific Core Unit, ... for advice
- Colleagues from the field of third-party funding applications
- Colleagues from the fields of project management and research coordination
- ...



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Scientists write SMPs

- **for themselves!**
- collaboratively with IT/Scientific Computing Unit/...
- to enhance the design of the software project
- for a third-party funding application
- for internal planning purposes
- before a consultation (e.g. by IT, Scientific Computing Unit,...)
- for sustainability and potential archiving (see GWP)
- for quality assurance
- ...



Institutional Benefits

- Support for software developers(more)
- Information about starting/running software projects
- better demand planning
- better quality assurance
- better archiving options
- better reuse options
- ...



Thanks for your attention!

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