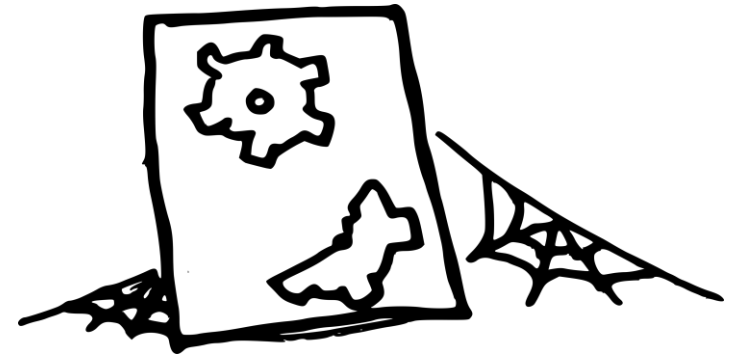
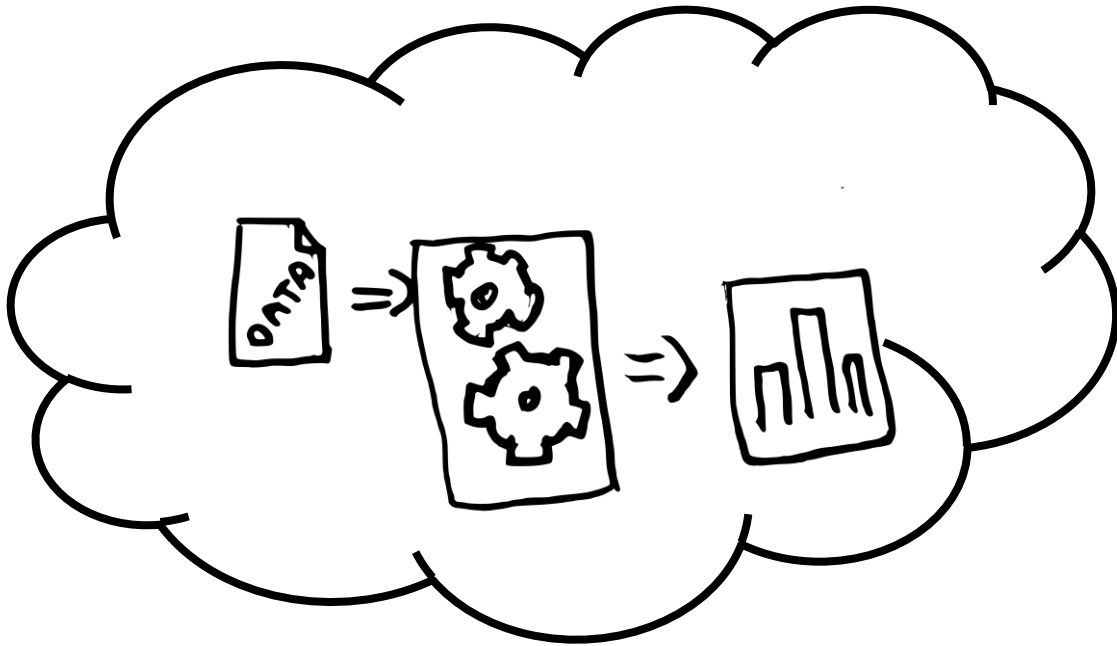


Software Management Plans

Carlos Martinez-Ortiz

netherlands
eScience center

Software breaks over time



Which software do we mean?

ANALYSIS CODE

capture research processes and methodology:
the steps taken for tasks like data generation,
preparation, analysis and visualisation

PROTOTYPE TOOLS

demonstrate a new idea, method
or model for research

RESEARCH SOFTWARE INFRASTRUCTURE

capture more broadly accepted and used ideas,
methods and models for research



Manage your software

- Building on the success of Data Management Plans (DMPs)
- A document detailing how research software will be managed
 - What does it do?
 - Who is it for?
 - What resources does it need?
 - Who is responsible?
 - How long will it be available?
 - ...
- Clarity early on, avoid problems later
- Can be part of a project proposal, or generated in the early phases

Practical guide to
Software
Management
Plans



Why use a SMP?

- Make technical choices explicit
- Plan for necessary resources
- Assess whether new software is really needed
- **NOT** another bit of admin: software management leads to better science!

Practical guide to
Software
Management
Plans



Science Europe Recommendation

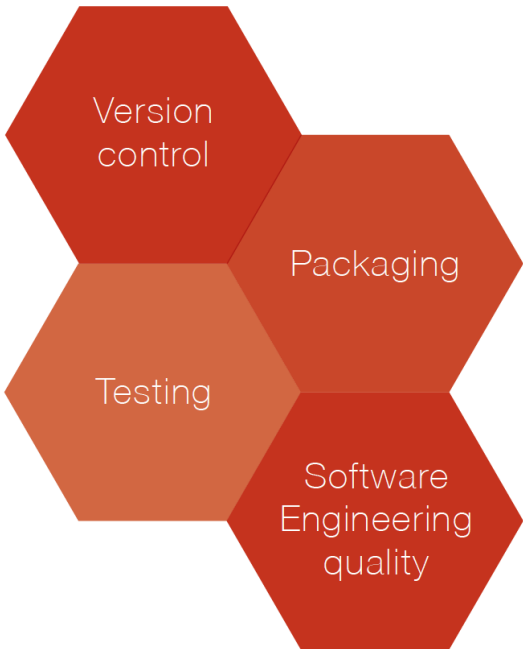
- “Provide guidance regarding research software management”

<https://doi.org/10.5281/zenodo.13740998>

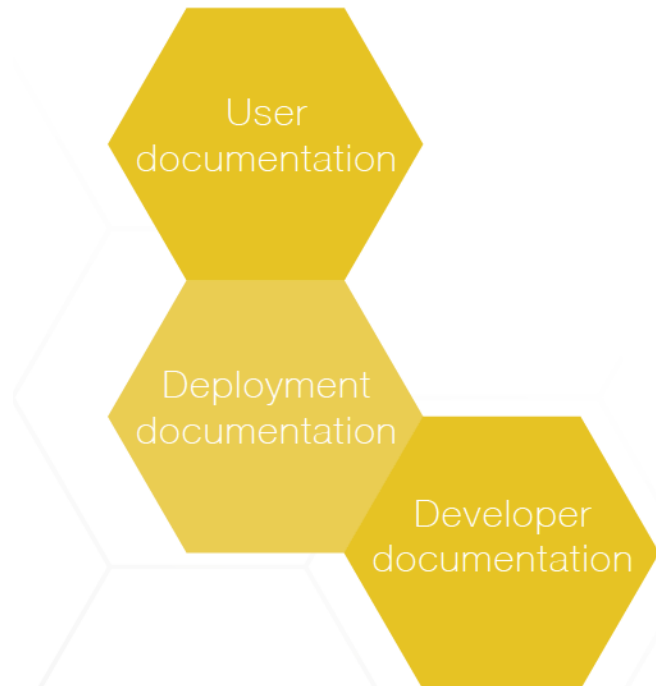


SMP requirements

Engineering Focus



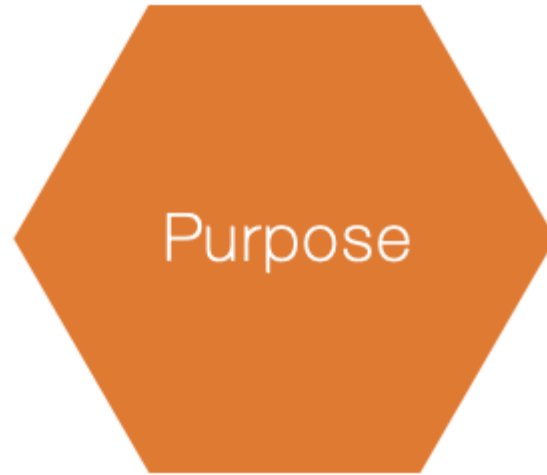
Documentation



Purpose

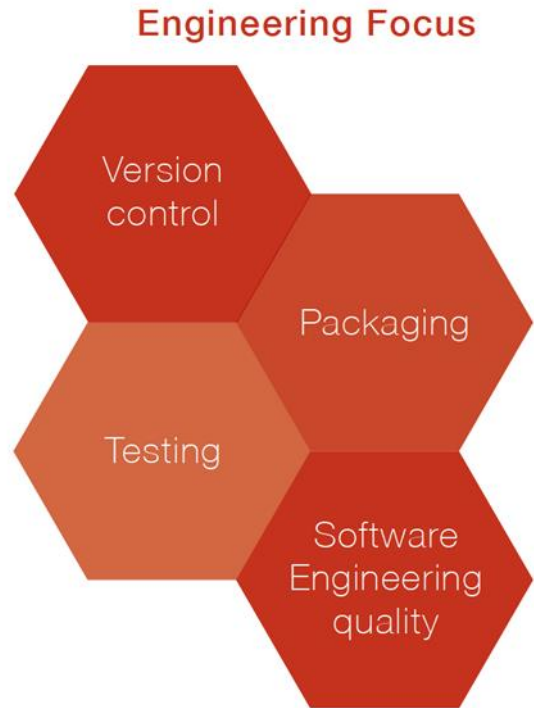
Project management focus





- What problem does it solve?
- Who is the intended audience?
- What are its advantages and limitations?





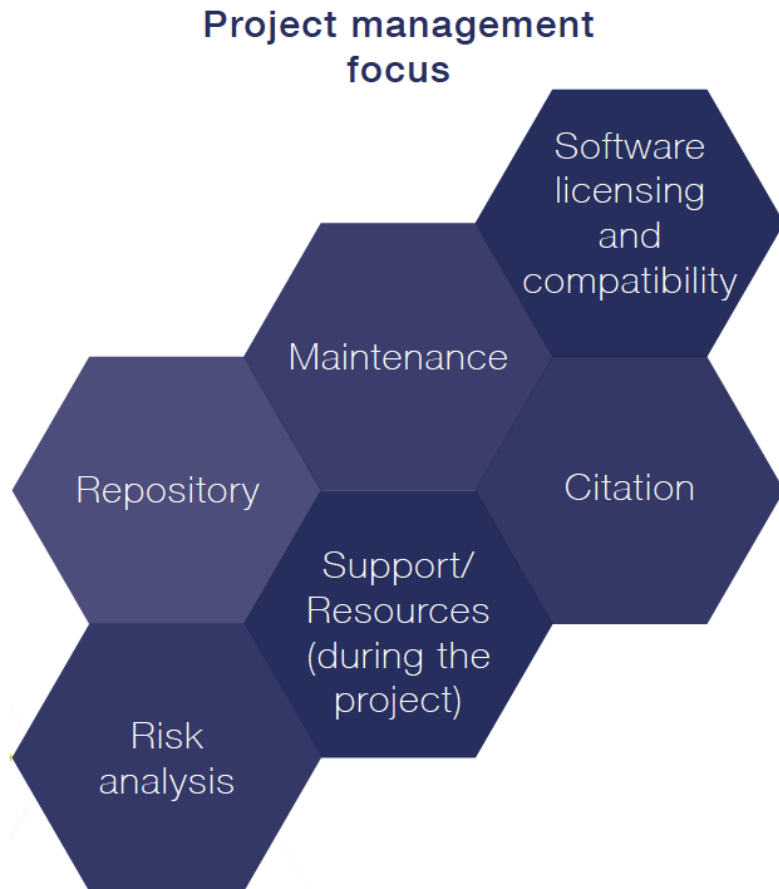
- What version control will you use?
- How will you test the software?
- How will the project be organized or packaged?
- How will you manage code quality?





- What documentation will you provide
 - for users?
 - for developers?
- How will you manage system requirements (e.g. dependencies)?





- What license will you use?
- How will the software be maintained? For how long?
- How should the software be cited?
- What repository(ies) will you use?
- What resources will you need?
 - e.g. infrastructure, personnel, training, hardware...
- What risks and challenges do you foresee?

Resources



The Turing Way

- <https://book.the-turing-way.org/>
 - Version Control
 - Licensing
 - Making Research Objects Citable
 - Code Testing
 - Code Reviewing Process



Research Software Support

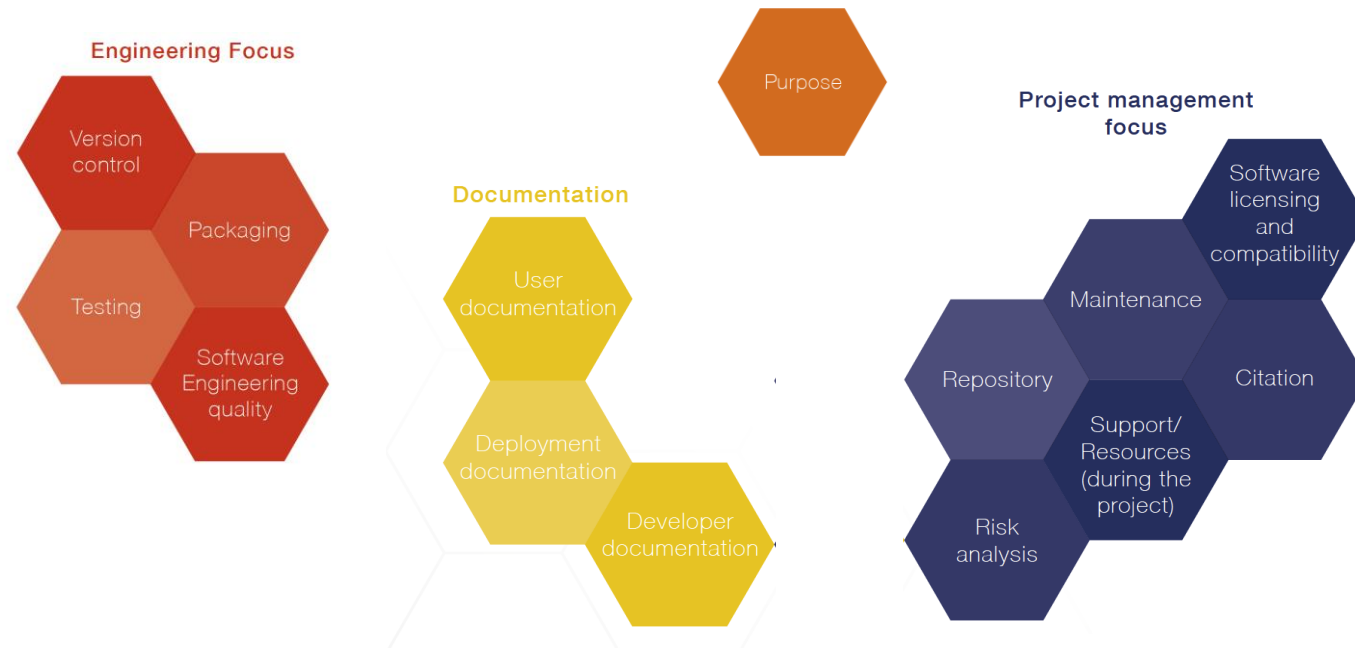
- What is Research Software?
- Software in Scientific Landscape
- Software Management Plans
- Software licenses
- Software publication
- Software citation
- Software version control
- Documentation
- Software testing

<https://tinyurl.com/researchsoftware-2024>

The screenshot displays the 'Research Software Support' website. At the top, the title 'Research Software Support' is followed by navigation links for 'Modules', 'About', and 'Contribute', and the 'netherlands eScience center' logo. Below this is a 'Module: researchsoftware' header with a horizontal menu of seven items: 'Learning objectives', 'What is software?', 'Software and data', 'Research Software', 'Research software', 'Research software?', and 'Research life cycle'. The main content area features a large blue and purple graphic with the text 'Research software' and the 'netherlands eScience center' logo. A 'Speaker notes' box on the right contains the text 'No notes on this slide.' At the bottom, a footer states: 'These materials are developed by the Netherlands eScience Center. Licensed under CC-BY 4.0 unless otherwise noted.'

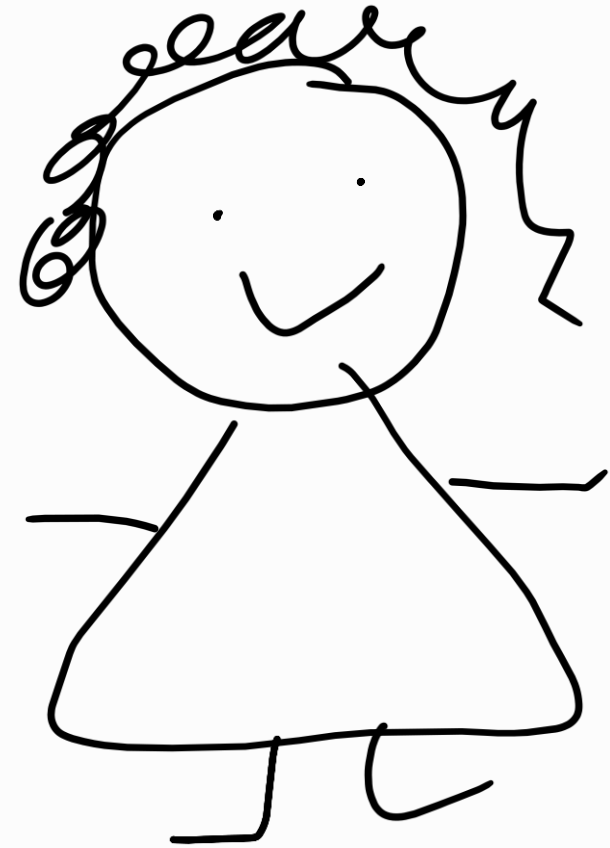
Build your own SMP

- Based on your own software / software you are familiar with
- Pick the requirements you think are suitable
- How do you (plan to) implement them?
- Talk to each other!



Example

- Marta, PhD student
- Gets data from “the lab”
- Uses R to analyse the data and classify “good” and “bad” samples
- Published a paper and wants to make sure others can reproduce her results



Let's stay in touch



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[@neocarlitos](https://twitter.com/neocarlitos)

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