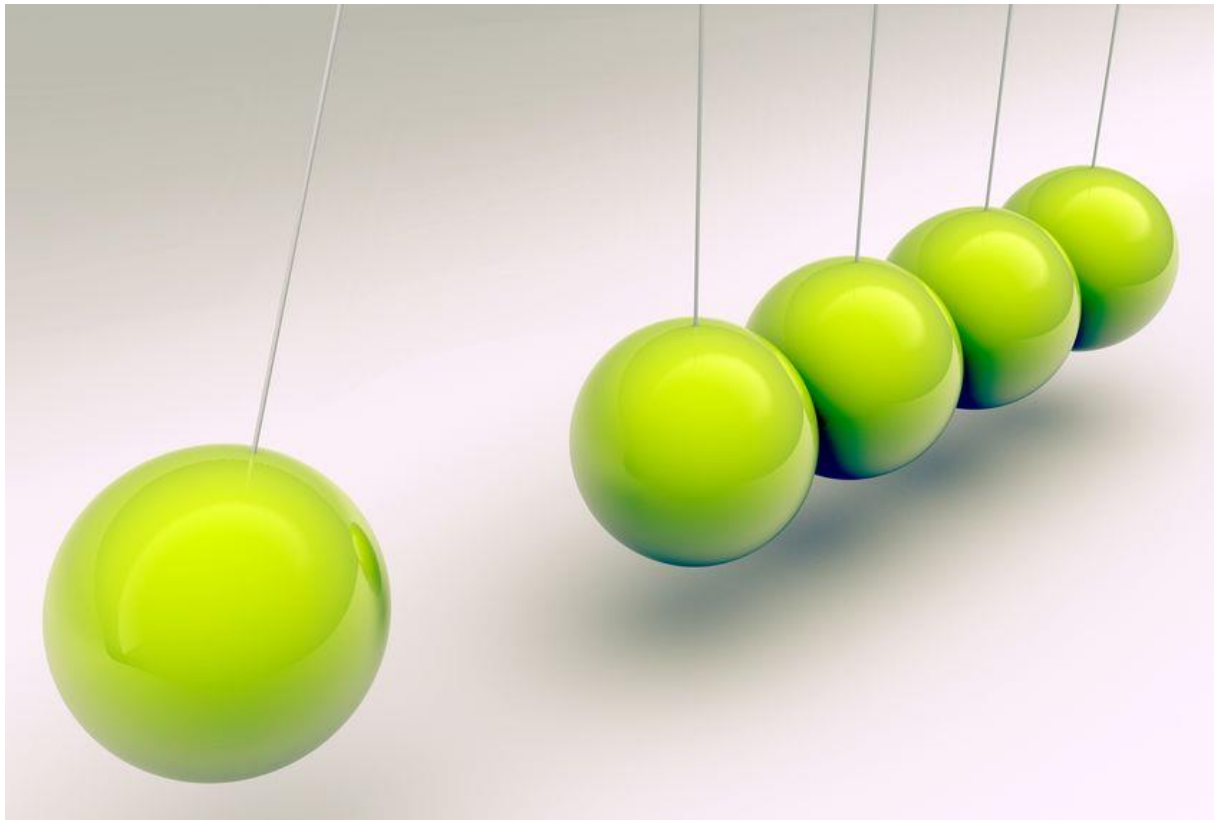
Task Group Research Software



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Mentimeter

- In your institution, are you paying attention to research software in pursue of Open Science?
  A. Yes! We are already working on it (a lot)
  B. We have created some plans
  C. We think it is interesting, but have not started yet
  D. I really don’t know

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Research software – Task group approach

- The task group of 20 participants from (research) institutions, eScience-center, DANS
- Pitch: to explore if, and to what extent and under which conditions researchers in the Netherlands develop research software that can be re-used and what factors contribute to archiving research software.
- 34 researchers and research software engineers interviewed
- Researchers selected for their experience with sharing research software for re-use
- Research software: from a tool to process and analyze data, to full computer models or software packages that are the primary outcome of the research
- Current status: report not yet published. Expected by the end of November

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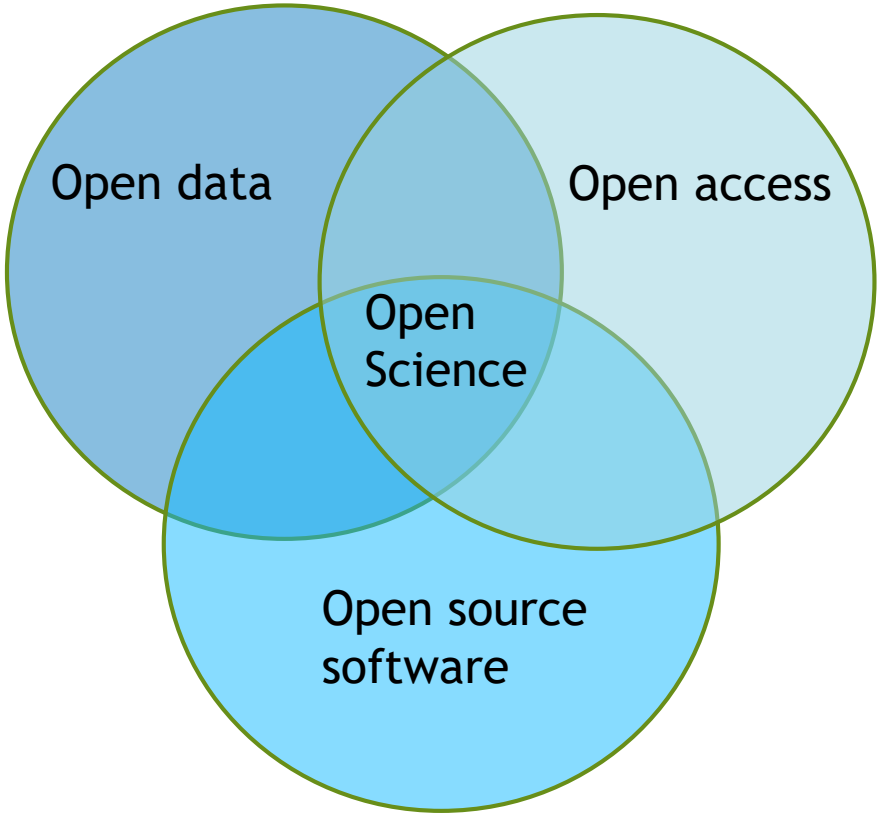
Key pillars of Open Science



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Scope research software

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Recommendations: collaborative action needed

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Recommendations: per target group

	Research funders	Institutions/ institute leaders	Faculties/ research group leaders	Researchers
Create awareness		Share stories of successful developed research software in your institution	Show the advantages of reuse of software to your researchers by using examples from within your research group, or outside	
Develop policies/ guidelines/ change	Require developed software to be as open as possible, but be flexible in your demands as not all software is worth saving forever	Develop research software policies and guidelines	Carry the change towards reusable software in your faculty/research group	
		Develop licensing policies and guidelines		
Actions	Ask researchers to include a paragraph in their funding application	Train your central research support staff, and enable them to give support in the field of software development	Train your researchers in good practices of the development of reusable software.	Enable citation of your software and deposit the research software you developed on e.g. Github or Gitlab, and archive it on Zenodo or Figshare or another citable platform including a PID
		Ask researchers to include a paragraph on software in the required Data Management Plans	Encourage your researchers to use software already developed by other researchers	Make use of software already developed by other researchers
		Offer support of research software engineers as well as infrastructural services and/or guidelines for archiving software in digital repositories, including DOI-services	Encourage your researchers to (almost) always start developing software with reusability in mind	Make sure that you cite the software you used from other researchers in your publications
		Include guidelines and training for software development in the study curriculum	Hire research software engineers	Apply the FAIR software recommendations (https://fair-software.eu) in your Data Management Plan (DMP)
Financial	Create funding lines for the development of reusable software and software archiving		Gather information about the long-term financial needs for archiving software, in order to create insight in the financial needs for future research proposals	Calculate the costs for archiving software after your research has been completed, and include these costs in your funding proposals
Academic evaluation	Acknowledge research software as a principle form of academic output	Reward software development capabilities in your evaluation procedures, according to the new Strategy Evaluation Protocol (SEP) guidelines		Citations of developed software will lead to higher rankings on the relevant lists. This can only be achieved by citations of the software by other researchers. In other words, researchers can help each other

Recommendations

- Culture and policies
- Awareness and quality improvement
- Plan for reusable software
- Recognition and reward sharing of software

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Recommendations: culture and policies

Funders and institutions develop an open science culture to stimulate sharing of software

Institutions develop policies on research software: require research software to be as open as possible

Institutions develop policies on licensing of research software

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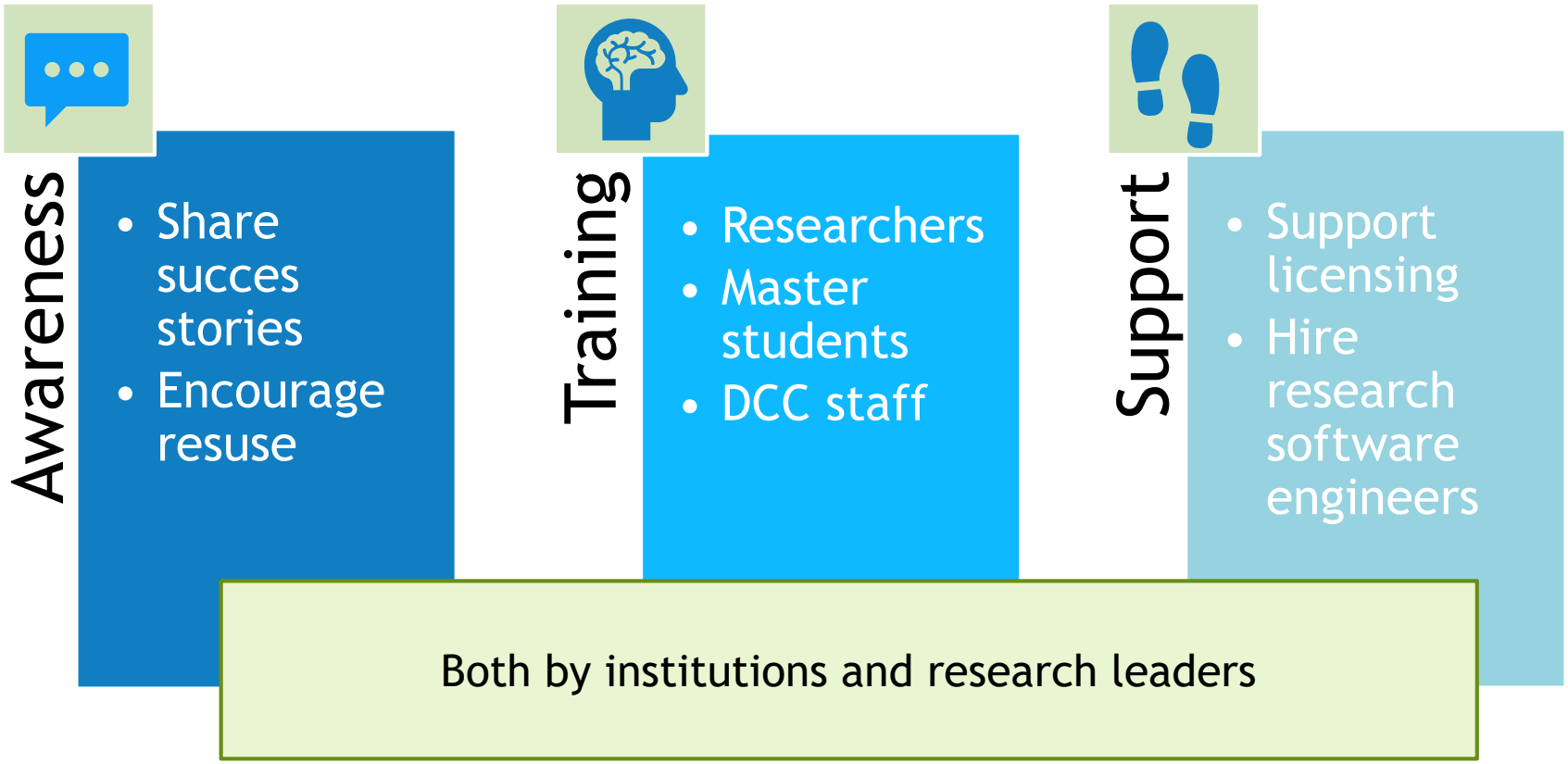
Recommendations: awareness and quality improvement



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Recommendations: plan for reusable software

Institutions

- Emphasize software in Data Management Plan templates or tools
- offer support

Research leaders

- Encourage reuse
- Encourage development of reusable software

Researchers

Apply the FAIR Software Recommendations

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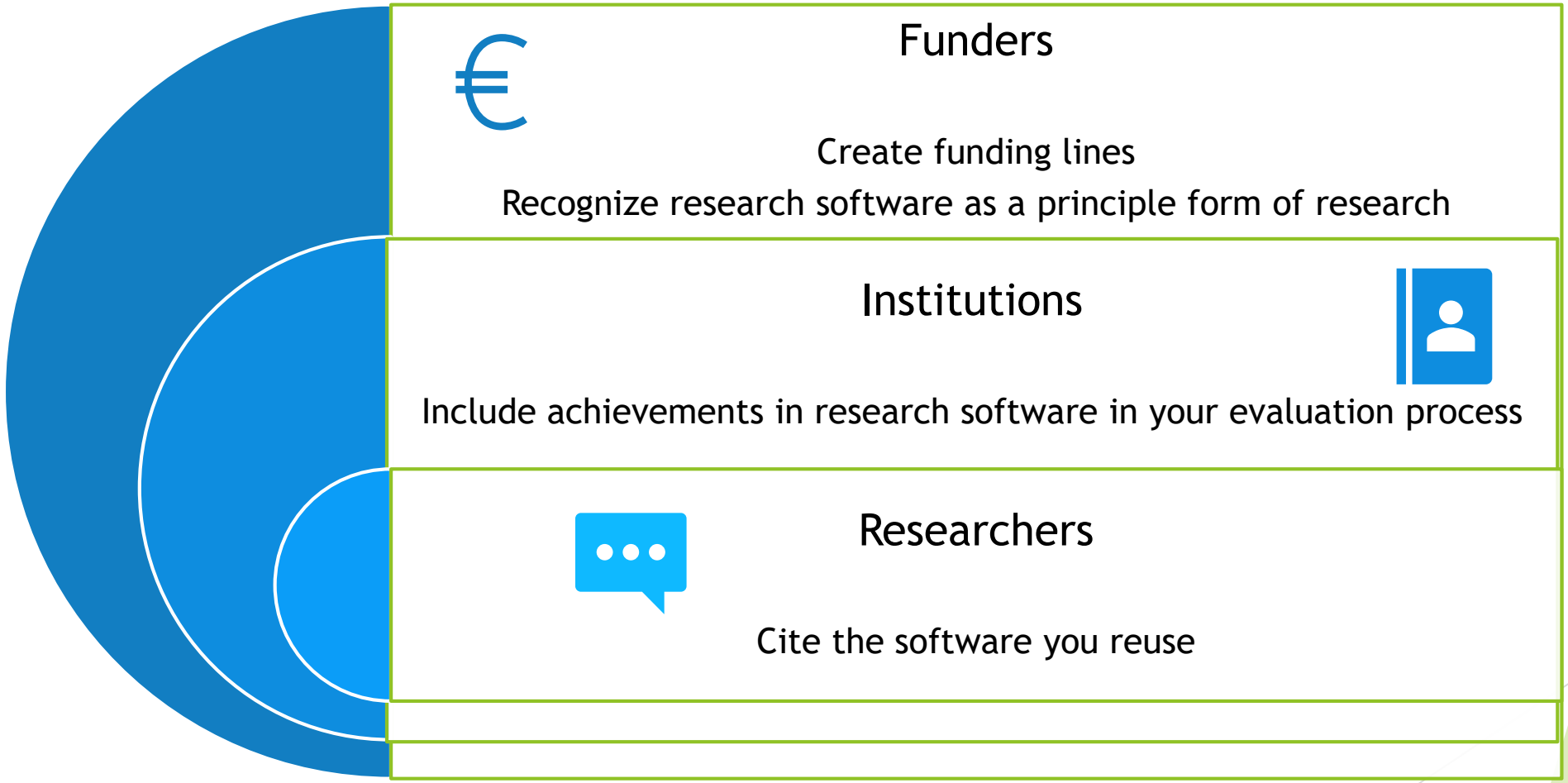
Recommendations: recognize and reward sharing of software



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How can you implement these recommendations?

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Awareness

- Work on awareness on research software at different levels in our institution:
  A. We are working on it as we speak!
  B. It is on our agenda
  C. We are looking into ways to start something
  D. I don’t think it is necessary

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Policies

- Work on policies and guidelines for faculties and researchers on research software:
  A. Our policies and guidelines are (almost) done by our local DCC
  B. We will start working on it (very) soon
  C. No planning yet, but sometime next year we will work on this
  D. We don’t want to

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Licensing

- Offer support in research software licensing
  A. We already offer support
  B. We are setting up support
  C. We are thinking about it
  D. We don’t need to set up support; it is all clear

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Quality improvement

- Increase the quality of the research software development process:
  A. All is fine as it is; no need for change
  B. Researchers really need to be trained
  C. Hiring research software engineers is/could be a solution
  D. We need more guidelines
  E. We need software archiving facilities
  F. I really don’t know

More than one answer can be selected

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Prioritize actions

- Please prioritize the actions on research software for your institution:
  A. Work on awareness
  B. Change the academic evaluation process in favor of value for research software
  C. Create policies and guidelines on research software
  D. Training/education for researchers and support staff
  E. Offer license support
  F. Hire research software engineers

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