

Data Stewardship and RDM support

Practices from TU Delft

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Who are we?



Data Steward
Faculty of Mechanical Engineering (ME)
Delft University of Technology



Head Research Data and Software
Library
Delft University of Technology



Outline

- About us and TU Delft
- Data Stewardship and RDM support at TU Delft
 - Policy
 - People
 - Workflows
 - Infrastructure
- Data Stewards in Mechanical Engineering and beyond
 - Requests
 - Training
 - Other activities

- Located in Delft, The Netherlands
- Founded in 1842, oldest and largest technical university in The Netherlands
- 8 faculties across science, engineering and design

Personnel 7,266 (61% scientific staff, 41.5% international staff)	Student population 26,418	BSc/MSc diplomas 7,131
PhD population 3,313	PhD defences 408	Publications 4,442

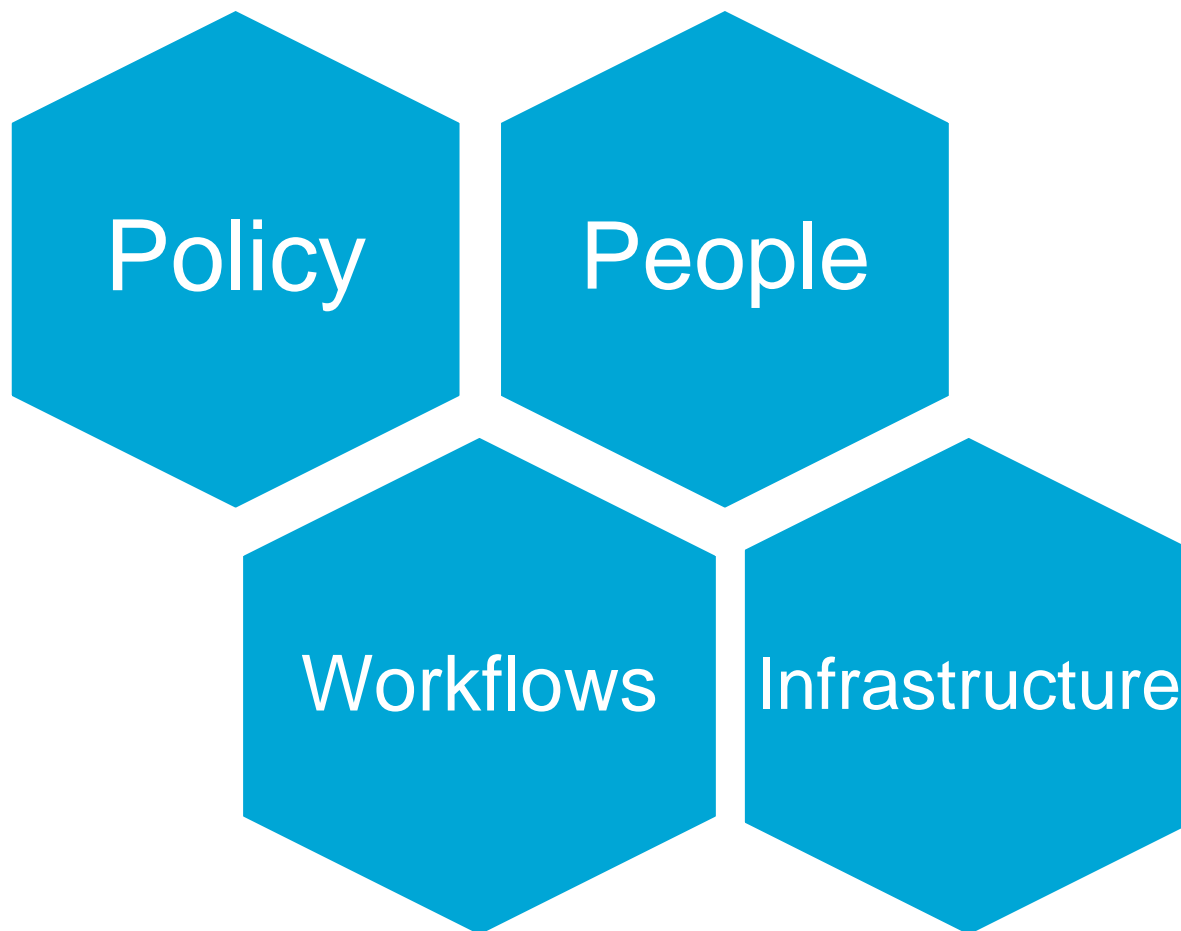
December 2023

<https://www.tudelft.nl/en/about-tu-delft/facts-and-figures>





Key components in RDM support





Policies and Governance

Selected policies affecting RDM initiatives at TU Delft

- 2016 TU Delft Open Access Policy
- 2018 TU Delft Strategic Framework 2018 - 2024
- 2018 Netherlands Code of Conduct for Research Integrity
- 2018 TU Delft Research Data Framework Policy
- 2019 Dutch Research Council protocol on Research Data Management
- 2021 TU Delft Research Software Policy and Guidelines

Selected legislation affecting RDM initiatives at TU Delft

- 2018 European General Data Protection Regulation
- 2019 European Open Data Directive
- 2019 Taverne Amendment (Dutch Copyright Act, 2015)

Open Science policies at TU Delft

Open Education

Open Educational
Resources (OER) policy
TU Delft

Research and Innovation

Research Data Policy
Framework

Research Software
Policy

Research Software
Guidelines

Open Access Publishing

TU Delft policy on
Open Access
Publishing

People and Community

Recognition and
Rewards TU Delft

Research Data Management

TU Delft & Faculty
Policies

<https://www.tudelft.nl/en/open-science/about-the-programme/policies-guidelines>

Research Data and Software Policies

- University level



- Faculty Research Data Management Policies
 - 8 Faculties
 - 1 Institution



FAIR Data and Software Support at TU Delft

Research Team: Data Managers and RSEs

- Hands-on support, as part of research group
- Skills and expertise retained within the group

Digital Competence Centre: Data Managers, RSEs, HPC

- Central pool for up to 6 months project support
- Skills and expertise are transferred through co-creation

Faculties: Data Stewards

- Advice and coordination at faculty level
- Advocacy and training
- Faculty policy and workflow

The Library: Research Data & Software Services

- Training
- Tools
- Policies and workflows
- Data stewardship coordination
- RDS innovation

4TU.Federation: 4TU.ResearchData

- Repository for data and software
- Tools and workflow integration
- Capacity building for data stewards

Thematic Digital Competence Centre for Natural and Engineering Sciences

Data Stewardship programme at TU Delft

- Objective
 - Address disciplinary needs regarding Research Data Management (RDM)
 - Cultural change: research environment + people's mindsets → research behaviour

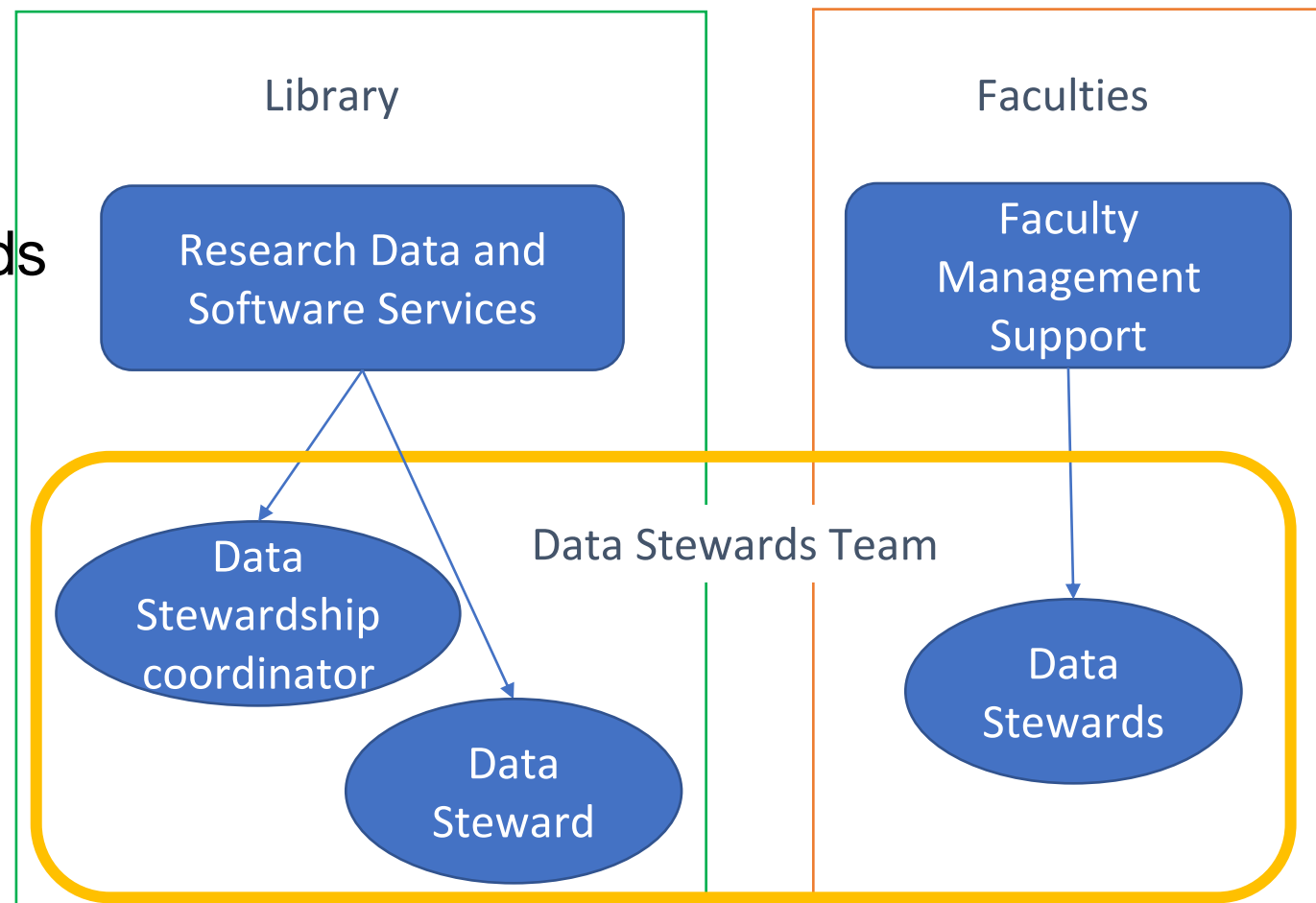
- Pilot started in 2017 with university support
- Became a regular service since 2020
- Achievement report: [2018](#), [2019](#), [2020](#), [2021](#)

- Key to success:
 - Understanding,
 - Engagement,
 - Impact.



Data Steward Team Structure

- Capacity
 - 1 Coordinator
 - 1 Library data steward
 - 12 Faculty Data Stewards
- Communication
 - Daily: MS Teams
 - Weekly: 1h team meeting



What do Data Stewards do?

- Daily support on data management
 - Advice, DMP review and training
- RDM policy implementation
- Community engagement
- *Faculty/discipline specific practices*

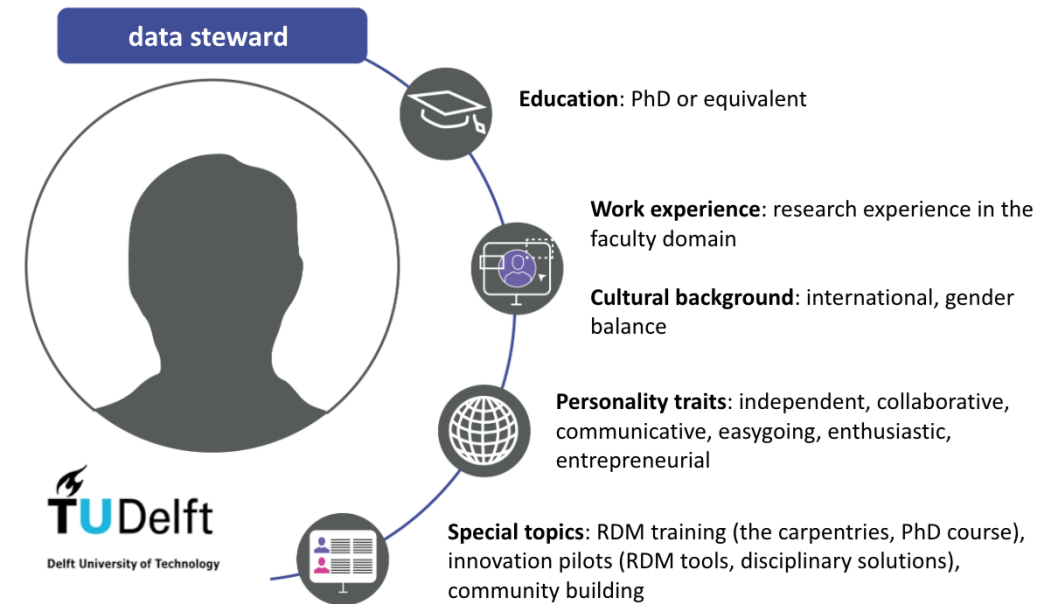


✓ Advisory

✗ Policing

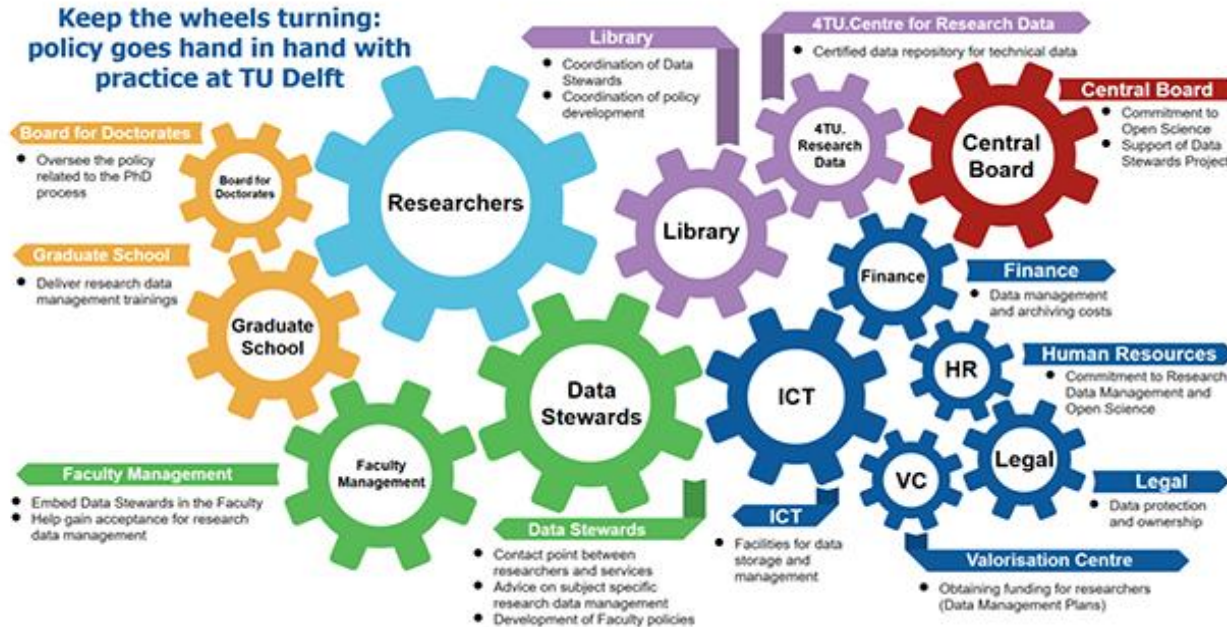
Data Stewards Profile

- Knowledge on
 - Disciplinary research context
 - Up to date RDM practices and requirements
 - Implication of legal/ethics/privacy
 - Institutional services and organization
- Skills of
 - Interpersonal communication
 - Team work & entrepreneurship
 - Coordination, training
 - Community building
 - Policy making / advising
 - Research



Mijke Jetten, Marjan Grootveld, Annemie Mordant, Mascha Jansen, Margreet Bloemers, Margriet Miedema, & Celia W.G. van Gelder. (2021). Professionalising data stewardship in the Netherlands. Competences, training and education. Dutch roadmap towards national implementation of FAIR data stewardship (1.0). Zenodo.
<https://doi.org/10.5281/zenodo.4486423>

Data Stewardship is more than Data Stewards



Issues are often more complex, especially in multi/interdisciplinary research:

- Data collection, storage, sharing and reuse practices
- Implications of legal/ethics/privacy and institutional requirements
- Different levels of data literacy in the project consortium
- Disciplinary practices of Rewards & Recognitions
-

Cruz, M., Dintzner, N., Dunning, A., van der Kuil, A., Plomp, E., Teperek, M., ... & Versteeg, A. (2019). Policy needs to go hand in hand with practice: The learning and listening approach to data management. *Data Science Journal*, 18(1).

Coordination and Coordinator

- Data Stewards team coordination
 - Team catch up meetings
 - Keep team updated about university services
 - Best practices for university and faculties
 - New Data Steward on boarding
- University level coordination
 - Development / implement RDM tooling and guidance
 - Advice on faculty level Data Stewardship
 - Partnership building with other university services

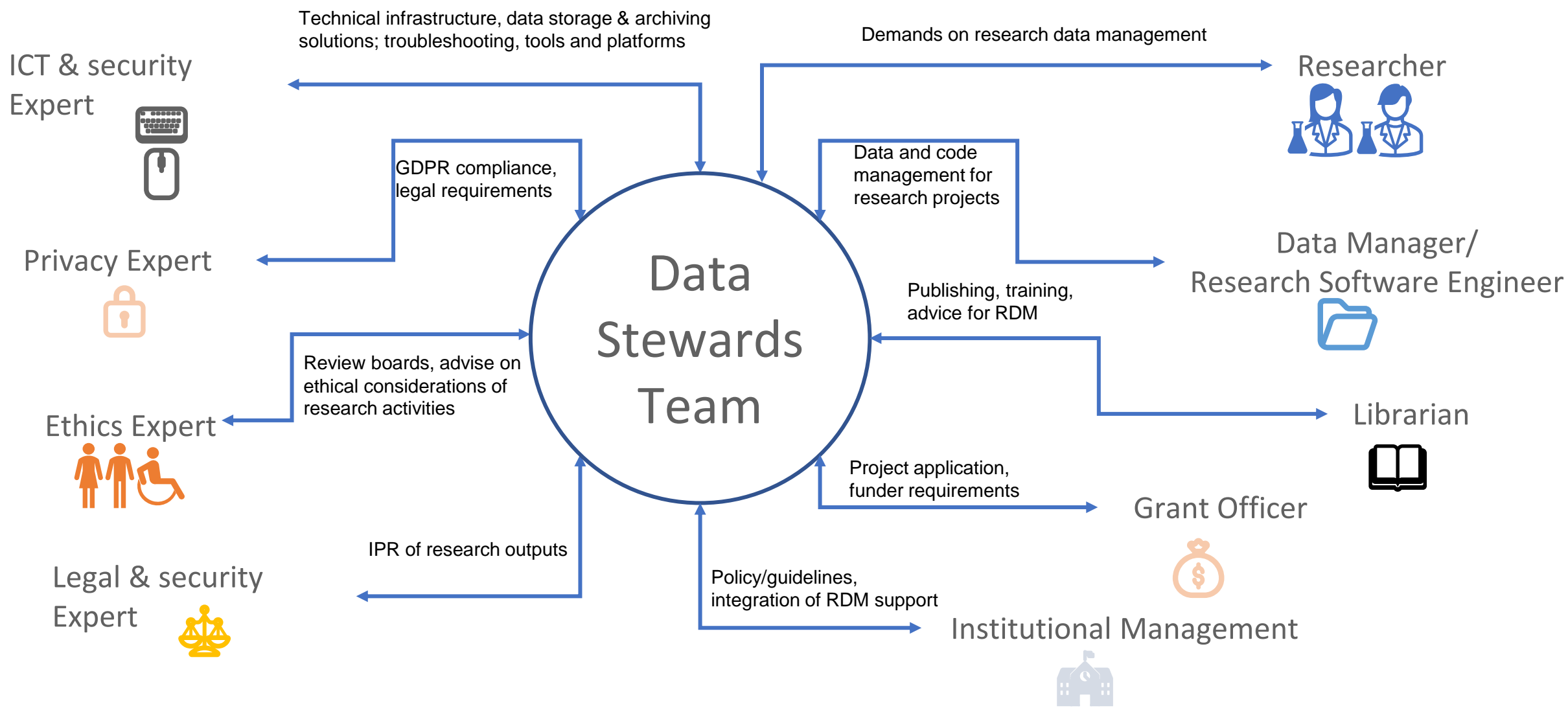


Coordination and Coordinator

- Research Data Management (related) policy
 - Review/improve university/faculty RDM policy
 - Advice on other university policy in relation to RDM
 - Advice on / stay informed with (inter)national RDM/OS policies
- Community engagement / participation
 - Exchange / promote
 - Professionalising Data Stewardship



RDM support ecosystem at TU Delft



Engage others in Data Stewardship

Researcher



- Awareness of the importance of RDM
- Acknowledgment of own responsibilities
- Willingness to obtain basic digital/data skills
- Collaborate with Data Stewards and other experts

Research support teams



- Show interest in how research works
- Provide compliant services and tools
- Collaborate with each other at operational level

Institutional Management



- Allow room for exploration/innovation
- Support integration of Data Stewardship with existing services
- Support sustainable expertise (career tracks)

Technical infrastructure at TU Delft

Active research stages

Data storage:

*TU Delft Project data storage,
Microsoft OneDrive for Business,
Microsoft Teams/sharepoint,
SURFdrive,
Cloud*

<https://storagefinder.tudelft.nl/>

Applications:

*DMPOnline,
ELN: Rspace, eLABjournal
GitLab, Qualtrics, SURFfilesender,
Journal Browser, and many more*

<https://softwarefinder.tudelft.nl/>

Long term archiving

Data repository:

4TU.ResearchData

TU Delft repository:

All research publications,
PhD thesis,
Student reports/thesis



4TU.ResearchData

- Data repository for 4 Dutch Technical universities
- Hosted and managed at TU Delft
- Software [Djehuty](#)
 - in-house development
 - free & open source
- [Team structure](#)
 - Director
 - Repository manager
 - Technical team
 - Software engineer,
 - Data solution engineer
 - Data curator
 - Community manager
 - Trainer of digital competence
 - Communication advisor



TU Delft Repository

- Institutional repository for academic output and digital assets
- Research and education
- Open source, launched in July 2024
- Team and governance
 - Research infrastructure coordinator
 - Repository and Current Research Information System (CRIS) manager
 - Technical developers + software engineer
 - UX designer
 - Team of metadata specialists

What Data Stewardship Model is for me?



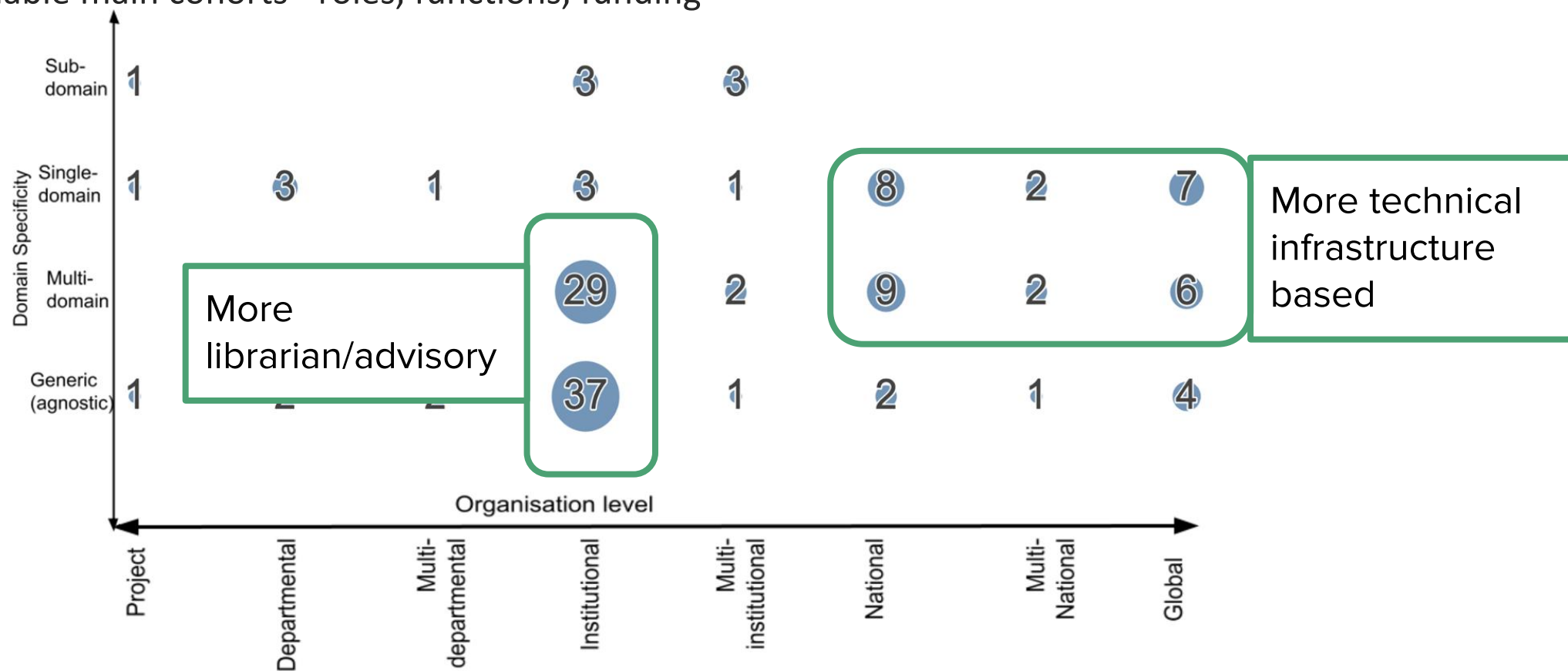
RDA Survey on
Data Stewardship Models
(<https://doi.org/10.5281/zenodo.6665146>)

- Survey report
<https://doi.org/10.15497/RDA00075>
- Survey dataset available
<https://doi.org/10.5281/zenodo.6665306>

What Data Stewardship Model is for me?

Key messages from the survey

1. 136 responses: 82 'complete'
2. Two identifiable main cohorts - roles, functions, funding



What Data Stewardship Model is for me? (hard to copy from others)

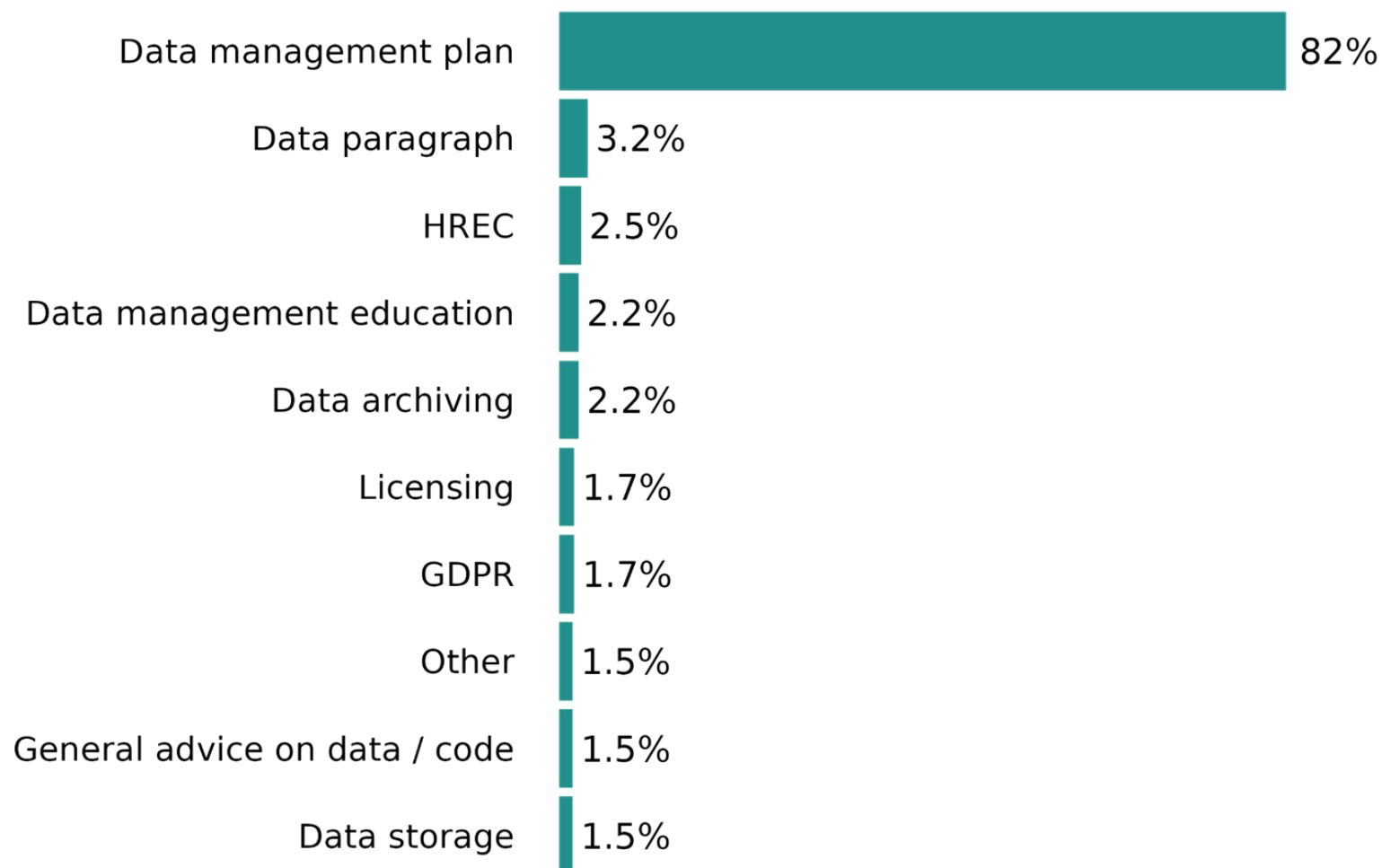
- Budget and resources
 - Centralised vs Decentralised
 - New services vs Existing services
- Objectives
 - Institutional vision and strategy
 - Focus of support
 - Infrastructure, tooling, applications
 - Institutional processes
 - Research activities / researchers' awareness
- Types of Data Steward support
 - Hands on support to research projects (research, infrastructure)
 - Domain-specific advisor (generic, research)
 - Data management strategy (policy)





Data Steward in Mechanical Engineering

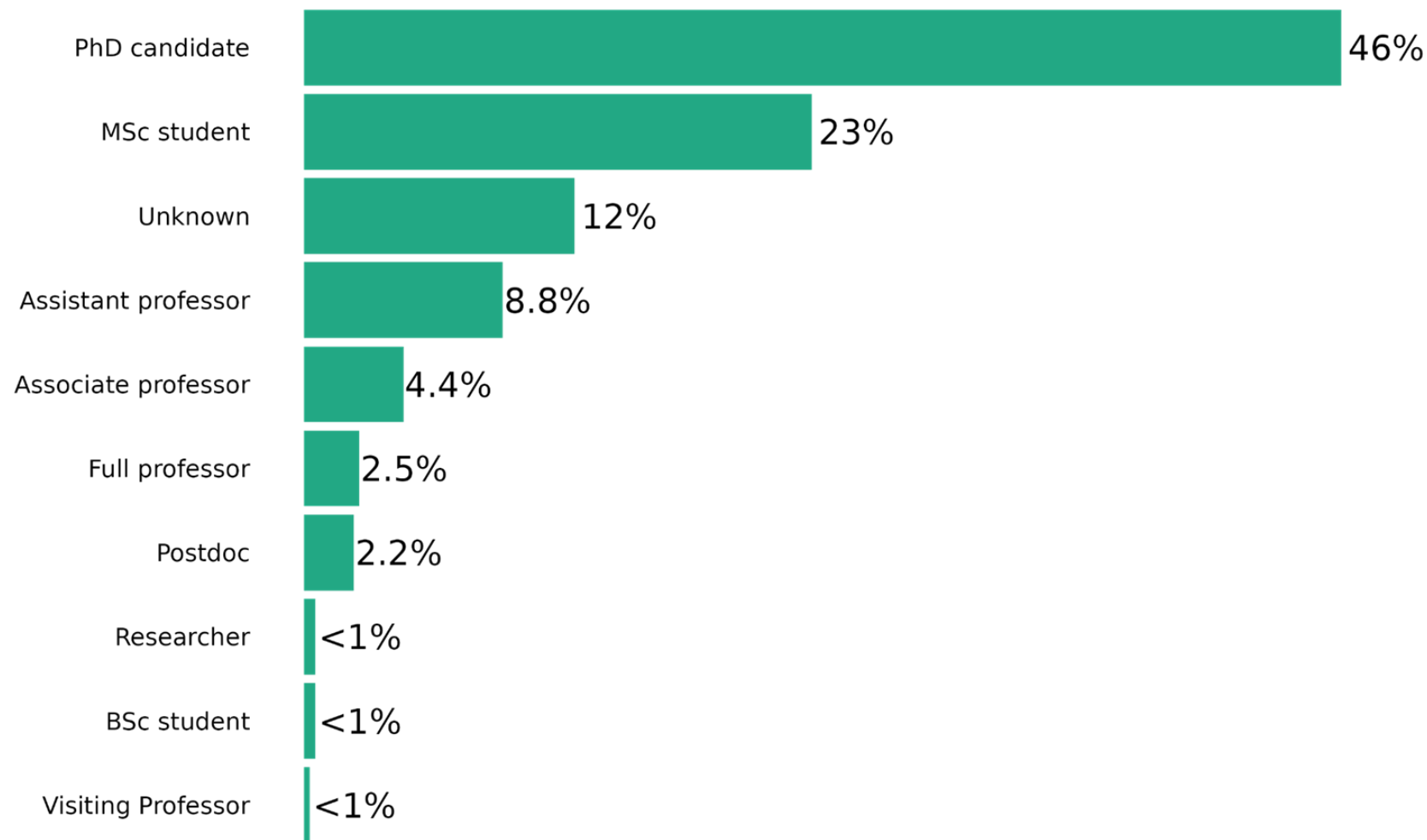
Requests:





Data Steward in Mechanical Engineering

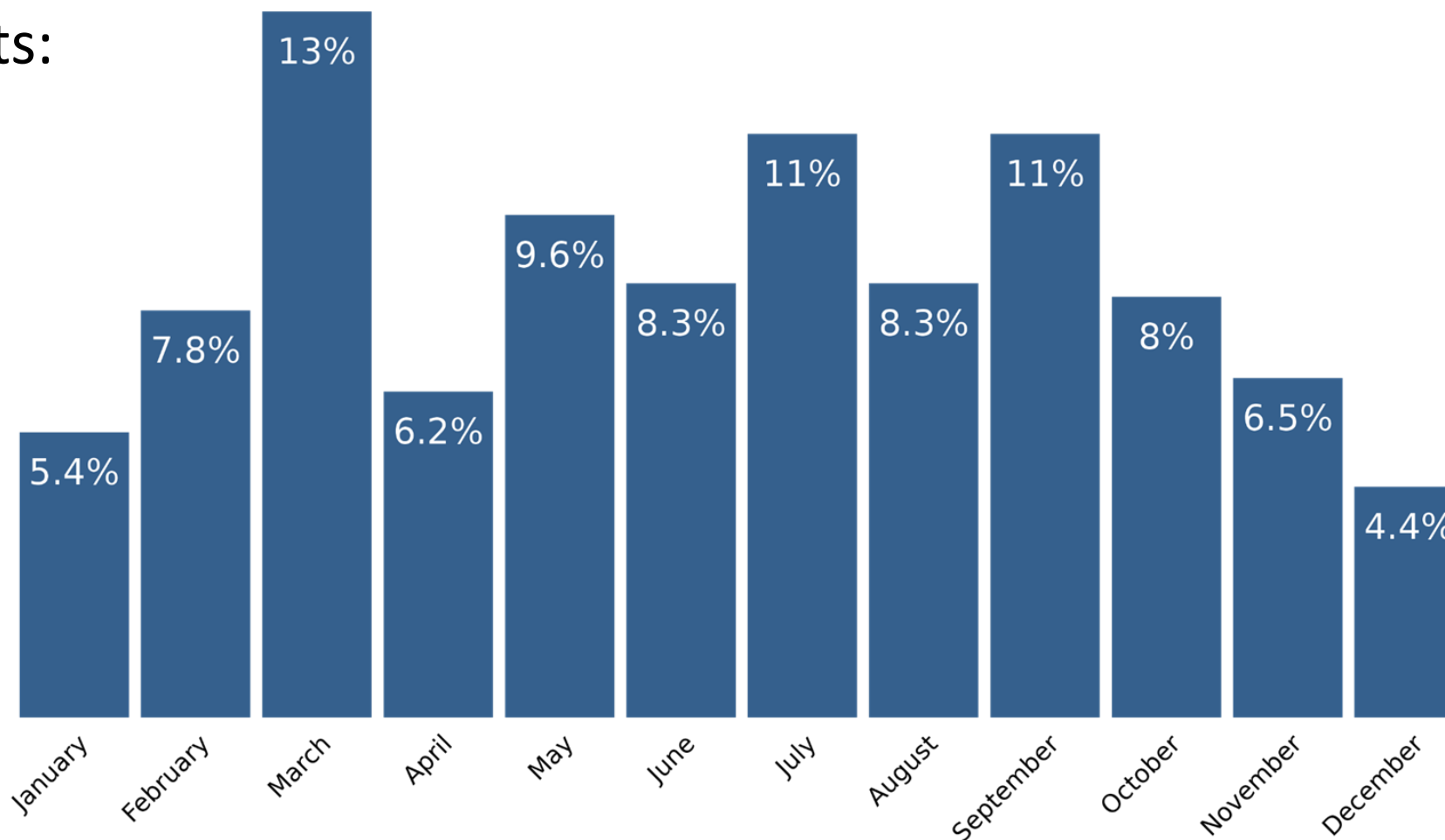
Requests:





Data Steward in Mechanical Engineering

Requests:





Data Steward in Mechanical Engineering

Examples of requests

Can you provide guidance on the type of research data that is expected to be uploaded, as well as the appropriate repositories for doing so?

Can you provide guidance on selecting the appropriate license type when uploading this data? What factors should be considered when choosing the license?

We plan to conduct a usability study involving participants with prior conditions who can be considered vulnerable data subjects. Could you please look at the attached data management plan (DMP) and advise whether a data protection impact assessment (DPIA) is required for this study?

I've been working on setting up a version control repository for my project, but I think I may have encountered some problems in the process. Who would be the best person for me to reach out to in order to get help with properly configuring the repository without risking any data loss?



Data Steward in Mechanical Engineering

Trainings

- Offer trainings for new PhD candidates
 - Introductory lecture on RDM at TU Delft and creating a DMP
 - Good RDM practices
 - Inform about facilities available
 - Sessions discussing personal workflow
- Offer Guest lectures in BSc and MSc courses
 - General RDM
 - FAIR data
 - Open Science

First lecture slides: <https://doi.org/10.5281/zenodo.7908034>

Second lecture slides: <https://doi.org/10.5281/zenodo.7712769>

Data Steward in (and beyond) Mechanical Engineering

Other responsibilities

- Contribute to the Open Science section of the research assessment
- Contribute to faculty- and uni-wide policies and guidelines
 - Software policy
 - Research Data Framework
 - Funder-specific guidance (e.g., Horizon Europe)

Other activities

- Instructor and helper in [Carpentries](#) workshops
- Hosting a panel discussions (e.g., Open Science and Industry collaborations)
- Organising Open Science trainings and events
- Developing [Open Science-themed games](#) for training (and fun)
- Co-organising the [TU Delft R Cafe](#)
- Publishing Consultation Group



Thank you

Questions?



Optional discussion points

- Data Stewardship model: centralized or embedded?
- Data Stewards background: general research background or domain-specific training?
- RDM infrastructure: in-house development or third-party application?



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Get in touch for any questions

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