Faculty of Electrical Engineering Engineering Mathematics and Computer Science

Research Data Management Policy

Preface

The *Faculty of Electrical Engineering Mathematics and Computer Science* is cognizant of the need to implement a robust and practical Research Data Management (RDM) policy. This is to ensure that best practices in developing scientific arguments are followed and that the results of scientific research are reproducible in the long term. These improved practices also make it possible for meeting the demands of funders and publishers with respect to research data management and sharing. The policy defines the roles and responsibilities of the various stake holders within the faculty research environment. The faculty policy uses the TU Delft Research Data Framework Policy[1] as its guiding document while the Faculty Research Data Management Policy Template[2] as its structure.

This policy is also motivated by the belief that good RDM leads to research that is more time- and cost-efficient as it prevents data loss and duplication of efforts and can contribute to the quality, reproducibility and impact of research. This policy is inspired by the FAIR principles, which requires research data to be Findable, Accessible, Interoperable and Reusable (FAIR).
This Policy document is the detailed document form of the presentation given to the management team of the EEMCS faculty on 16th October 2019. This document has been approved and has been in effect since 1st January 2020.

1] https://d1rkab7tlqy5f1.cloudfront.net/Library/Themaportalen/RDM/researchdata-framework-policy.pdf

2] https://d1rkab7tlqy5f1.cloudfront.net/Library/Themaportalen/RDM/TU%20Delft%20Research%20Data%20Policy%20Template.pdf

This policy cultivates:

• Best practice for ensuring that scientific arguments and results are reproducible in the long term.
• Better exposure of academic work of researchers at TU Delft leading to recognition of the quality of the research process as a whole.
• Responsible management of research data, including the proper handling (acquiring, storing, processing and sharing) of personal data and the protection of intellectual property rights of researchers and collaboration partners within and outside TU Delft.
• Improved practices for meeting the demands of funders and publishers with respect to research data management and sharing.
• Identifying and developing mechanisms and procedures that enable sharing of research data in complex situations along with developing procedures to implement, track and improve RDM practice in the faculty.

This policy recognises that:

• Individual departments and research groups have different working practices and processes and will therefore require dedicated implementation guidelines.
• Research Data Management covers the entire process of managing research data from its creation to its re-use and preservation, which is not equal to Open Science. While it is beneficial to publish research data openly, there might be valid ethical, legal or commercial implications, which will make data unsuitable for open sharing.
• All research data falls within the scope of the policy, here that refers to all data created in the course of research and includes code, algorithms, simulations, all experimental data (physical and digital along with accompanying notes), physical samples, questionnaires, video and audio recordings, protocols, models (detailed mathematical models to models with higher levels of abstraction) and other forms of information supporting traditional publication.

Roles and Responsibilities

The roles and responsibilities listed here correspond only to those within the faculty of EEMCS. The TU Delft Research Data Framework Policy[1] should be consulted for the roles of all other stakeholders, including the Library, ICT Department, University Services and the Executive Board of the TU Delft. Principal Investigators must:

All Researchers are responsible for:

• Ensure that research data, code and any other materials needed to reproduce research findings are appropriately documented in accordance with the FAIR principles (Findable, Accessible, Interoperable and Reusable), and deposited in a repository that guarantees access for at least 10 years from the end of the research project unless there are valid reasons not to do so.
• Should data not be made available in a repository, ensure that the data management plan and any research publications resulting from the project have a statement explaining what additional datasets/materials exists; why access is restricted; who can use the data and under what circumstances.

• Understand who owns research data resulting from their projects and what that implies in terms of data management, particularly sharing and publishing.
• Properly cite research data, in accordance with the FORCE11 Joint Declaration of Data Citation Principles[3].
• Undertake training in good data management, as required.

PhD students are responsible for:

• Develop a written data management plan (DMP) for managing research outputs within the first 12 months of the PhD study or by the time of the Go-No-Go, whichever is earlier. This applies to all PhDs who start on or after **1st January 2020**.
• Ensure that all data and code underlying completed PhD theses are appropriately documented in accordance with the FAIR principles (Findable, Accessible, Interoperable and Reusable), and deposited in a repository that guarantees access for at least 10 years from the end of the research project unless there are valid reasons which make research data unsuitable for sharing – obtain exemption from the PIs. This applies to all PhDs who start on or after **1st January 2019**.
• Request data management audit if necessary or if major loss of data occurs – defined as requiring 1 month or more to recover data or to replace it.
• Attend the relevant training in data management.

PhD Supervisors are responsible for:

• Support PhD students in preparation of a written DMP, and review the DMP – with support from the data steward if needed – within the first 12 months of PhD study or by the time of the Go-No-Go, whichever is earlier.
• Ensuring that their PhD students attend relevant training on data management.
• Enumerate the list of repositories where their research data is currently stored or is part of best practices within the field and provide it to the data steward. This list is then compiled and approved by the heads of the department.
• Ensuring that their PhD students make all data and code underlying their completed PhD theses available in accordance with the FAIR principles by depositing it in an approved repository that guarantees access for at least 10 years. This applies to all PhDs who start on or after **1st January 2019**.
• Recommend data management audit when necessary. Including when major loss of data occurs – defined as requiring 1 month or more to recover data or to replace it.
• Be a part of the Data Access Committee – if necessary – to approve access to data that is not openly shared.

PIs are responsible for:

• Ensuring that all members of the research group (including PhD students) are aware of the FAIR data principles and are appropriately trained to effectively manage research data, and that they adhere to the expectations outlined within this policy.
• Ensure that all members of the research group plan for good data management from the outset of any research project and adhere to good data management practice throughout the project's lifecycle.
• Ensuring that any agreements with external funding agencies, commercial companies or other third parties allow compliance with this data policy.
• Adhere to contractual obligations with regards to ownership of, and rights relating to, research datasets resulting from projects funded by external agencies or commercial companies.
• Budgeting for the costs of data stewardship into financial project planning at the proposal stage.
• Enumerate the list of repositories where their research data is currently stored or is part of best practices within the field and provide it to the data steward. This list is then compiled and approved by the heads of the department.
• Periodically review data audit outcomes.
• Be a part of the Data Access Committee – if necessary – to approve access to data that is not openly shared.

Heads of Departments are responsible for:

• Ensure that PI's have a research strategy in place, consistent with the faculty RDM Policy.
• Ensuring awareness of good data management practices among all researchers and students within the department.
• Developing effective strategies for monitoring and review of data management practices.
• Support Data Stewards in identifying Data Champion candidates.
• Be a part of the Data Access Committee – if necessary – to approve access to data that is not openly shared.

Faculty Dean is responsible for:

• Ensure that within their faculty there is appropriate infrastructure and the right tools for researchers to put good data management into practice.
• Ensure that necessary training and advocacy provisions are available to the

3] https://www.force11.org/datacitationprinciples

faculty, and that researchers are aware of the faculty's data management policy and are equipped with adequate skills to adhere to it.
• Ensure that Data Stewards are embedded within faculties.
• Approve or change the Faculty Policies for RDM.
• Be a part of the Data Access Committee – if necessary – to approve access to data that is not openly shared.

Data Stewards are responsible for:

• Facilitating the development, review and implementation of the faculty's research data management policy.
• Creating awareness and explaining to researchers the added value of good data management.
• Assisting researchers in planning the collection, management, and publication of data in research projects and liaising with other service providers (such as Legal services, ICT, Human Research Ethics Committee) as required.
• Advising researchers on regulations for working with personal research data. Recommending the inclusion of the TU Delft privacy team where necessary and to assist researchers in data management with respect to Human Research Ethics Committee approvals.
• Helping researchers with writing data management plans and with budgeting for research data management costs in their grant applications.
• Developing and running training events tailored to researchers' needs.
• Identifying researchers who already have good data management practices and encouraging them to become Data Champions to develop a pool of peer experts for other researchers.
• Be a part of the Data Access Committee – if necessary – to approve access to data that is not openly shared.

The *Faculty of Electrical Engineering Mathematics and Computer Science* (EEMCS) is inquisitive, resourceful and inventive. Always looking for new technologies and new applications for existing ones, we combine science and research with practice, training with discovery and the academic world with the world outside. We are not led by existing conventions, but by how we feel things should be done in an ideal situation. And we do everything necessary to get there. EEMCS provides quality on every level - our engineers, our programme, our research and our solutions. We are a solid partner for young talent, specialists in our field, clients and investors. We want to make a unique and lasting difference. With integrity and wisdom. With boldness and tenacity based on sound knowledge. At EEMCS we do things together and in cohesion. We see knowledge sharing as the way to multiply knowledge and experimenting and learning as the way to make progress. We believe in applied science, in multidisciplinary research and in cross-pollination between young and old. Our scientific interest serves societal interest. And that is in everyone's interest.

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