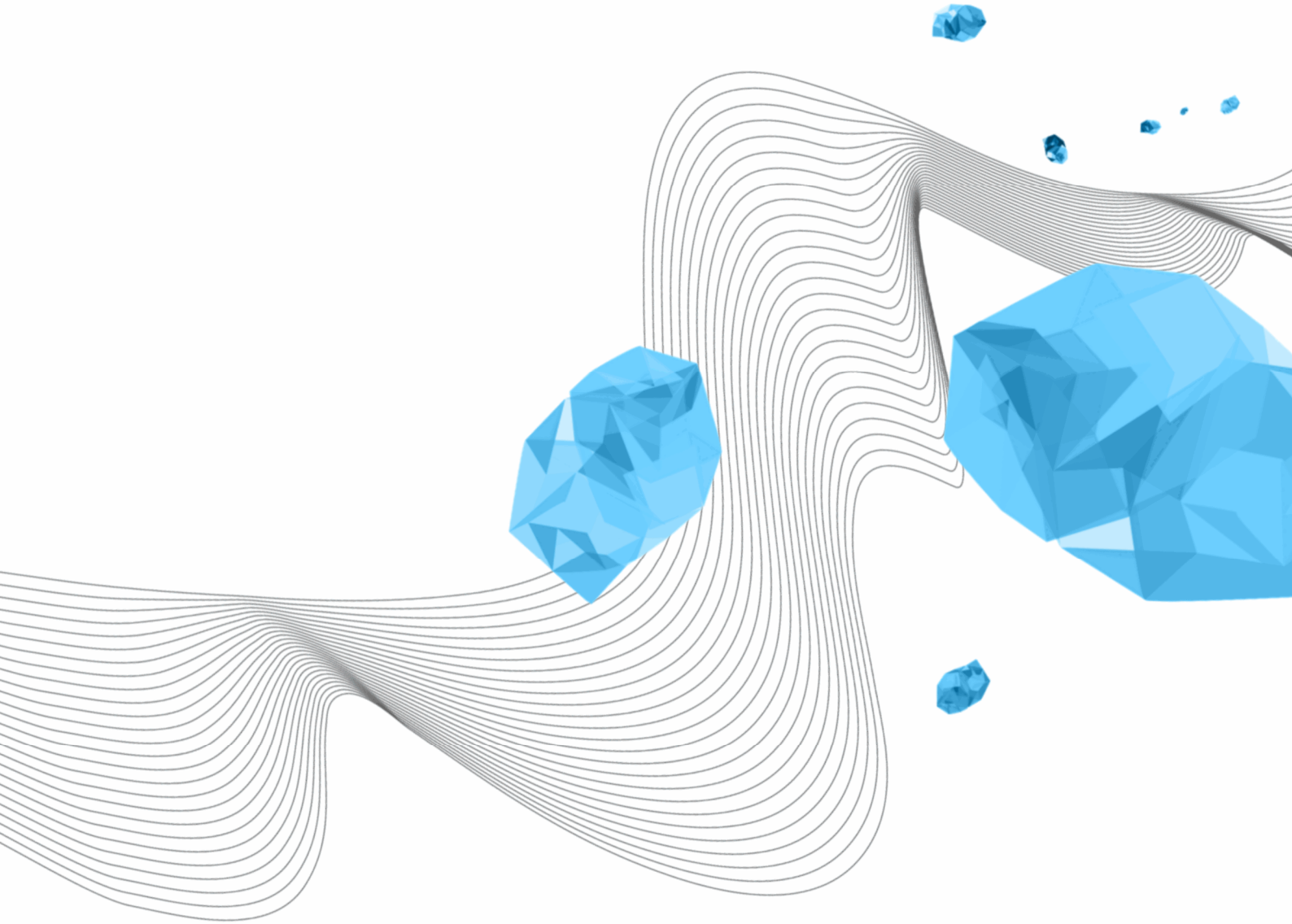
RESEARCH DATA MANAGEMENT POLICY FOR THE DEPARTMENT OF THERMAL & FLUID ENGINEERING

Reference: --

Version: 1.4

Confirmed by the chairs of the TFE department



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Document management:

Version	Date	Author(s)	Description
1.0	18-11-2020	Miguel Muñoz Rojo	Original version
1.2	25-10-2023	Martin Wilens	Updated based on the latest RDM developments at the UT/ET
1.3	02-11-2023	Martin Wilens Claas Willem Visser	Formatted as an appendix, Incorporated feedback
1.4	01-03-2024	Martin Wilens	Incorporated suggestions from Victor Wanningen and Harm Askes

1 INTRODUCTION

This policy applies to all employees who conduct and support research within the Department of Thermal and Fluid Engineering (TFE). It concerns all activities that are part of conducting research, like generating, processing, interpreting, archiving, publishing, sharing and/or distributing or deleting research data. This policy aims at offering guidance and making concrete what is needed to achieve good data management in research. This policy is supplementary to the general UT RDM policy and the ET RDM policy.

This policy is intended to ensure the appropriate handling of research data by researchers to:

- Demonstrate the scientific integrity of their research.
- Stimulate reuse of the data.
- Comply with legal requirements, codes of conduct and funding bodies' demands regarding research data management.
- Offer a framework for data agreements and handling in case of the involvement of third parties.
- Aid efficient and clear workflows for researchers.
- Limit technical and security risks, such as data loss due to people changing position or hardware failure, or risk of hacking.

2 DEPARTMENT SPECIFIC ROLES, RULES, AND RESPONSIBILITIES

General roles and responsibilities are described in the UT policy and ET faculty RDM regulations.

Within TFE department the following people can assist you with:

Clusters (software, hardware, access control, …)	Martin Wilens and LISA (Library, ICT Services & Archive) Linux administrators
Department administrators / IT contact person for Windows & P-drive control access:	Martin Wilens and Walter Lette
Questions related to research data management	Martin Wilens and the ET Faculty Research Data Steward

You can **contact the following secretaries** for non-IT related matters:

Group	Secretary
Engineering **F**luid **D**ynamics	Susan Janse Godschalk
Thermal **E**ngineering	Sally Kloost Zimmerman van Woesik
Heat **T**ransfer and **T**hermodynamics:	Sally Kloost Zimmerman van Woesik
Multis**c**ale **M**echanics	Sylvia Hodes-Laarhuis
Granular **M**aterials	Sylvia Hodes-Laarhuis
Computational **M**echanics of **M**ultiscale **M**aterials	Sylvia Hodes-Laarhuis

All PhD candidates are **obliged** to follow the TGS course entitled: Data Management Bootcamp. Every employee can find most of the contents of the course on Canvas. Questions about the Bootcamp, Canvas course, data management plans (DMPs), and data management more generally can be directed to the ET Faculty Research Data Steward.

3 BEST RDM PRACTICES

- Create a Data Management Plan (DMP) as soon as possible and keep it up to date.
- Store all relevant research data on the P-drive.
- For temporary use you can store data on your computer, flash drive or portable drive, preferrable encrypted.
- All data for a PhD defence or a research paper must be accompanied by a DMP, a metadata file and data documentation, all updated during the project.
- Create a README for every dataset.
- When a PhD defence or a paper is finished, data must be archived for 10 years on Areda (paid from central budget), 4TU.ResearchData (1 TB / year free of charge), or the P-drive. Its metadata must be registered and described in Pure (Research Information System).
- Be aware of privacy regulations if you process personal data (check UT DMP-tool) for GDPR registration.

4 STRUCTURE OF DATA STORAGE

The next structure has been created at ad.utwente.nl\org (P-drive) P:\ET\TFE\

1-DataExchange	for exchanging data within the department
2-CMMM	For group specific data
2-EFD	For group specific data
2-GM	For group specific data
2-HTT	For group specific data
2-MSM	For group specific data
2-TE	For group specific data
3-Education	All current Bachelor, Master Modules, and courses. In case of illness another teacher can take over.
3-Housing	New building, space management
3-IT	IT related data like software installations, cluster manual, Slurm examples, etc.
3-Lab	All lab related data like safety, manuals, chemicals list, Equipment software, etc.
3-Management	For Daily Management Team
3-Promotion	Data for Narrowcast etc.
3-Secr	For secretary
4-Projects	Data for research papers etc.

For new PhDs, projects and other research the department server administrator can create a folder with the name of your project (according to our naming conventions) to store all the data related to your project**.** Within this folder, **we recommend** that you define a convenient structure like the one shown in the Figure 1

Data from a EngD thesis or a PhD thesis that is not part of this publication or research should be stored in a separate folder, making it easier to archive and retrieve.

If your project budget allows, it is strongly advised to reserve some budget for data storage, for computers and computing time.
Note that sometimes grants cannot be used beyond the end of a project so do claim this early.

Files on the P-drive can be recovered to a maximum of 28 days.

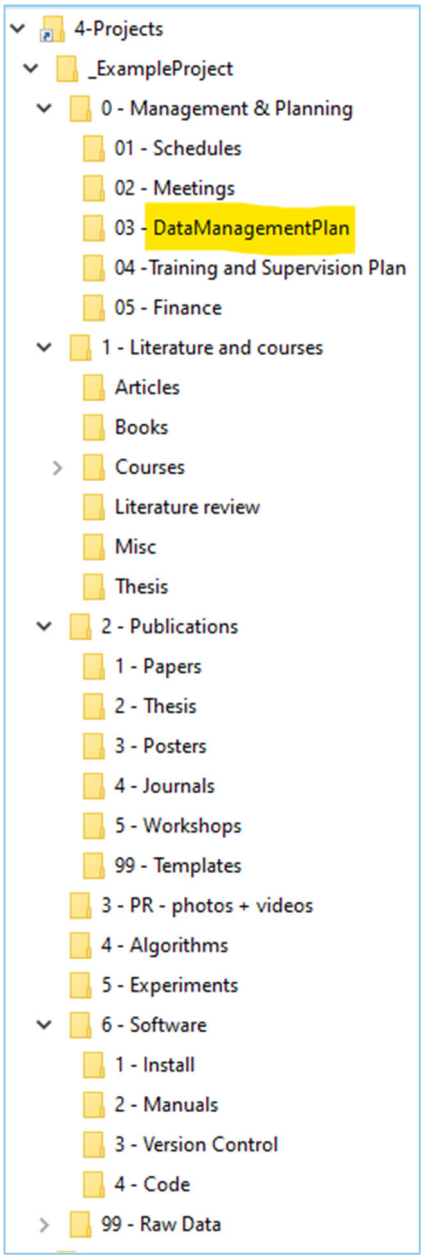

Figure 1

Rights:
The Department Administrator does not give rights on file level or very deep into a tree structure, but LISA can always assist if necessary. The rights are given preferably to groups which are kept up by the Department Administrator or the secretaries.

Prices of data storage
As researcher you should not worry about the costs of the P-drive, however you should take it into account when writing the data management plan.
You can find prices of data storage on: https://selfservice.utwente.nl/tariffs/
Contact the ET Faculty ICT Account manager for more details about UT Drive and UT Drive Plus conditions.

UniShare is very suitable for project data that involves multiple external partners, this at a favourable price with a lot of functionality.
4TU.ResearchData : 1TB of data free of charge per year. For depositing larger data collections, a one-time fee of €1.50/GB is charged.

Confidentiality
The stored data can be protected according to its confidentiality aspects. After consulting the department administrator, different mechanisms (folders with passwords, encrypted data, etc.) can be created to fulfil the needs of the project.

5 COMPUTING CLUSTERS

At this moment our group has 2 computing clusters: msm3.ctw.utwente.nl (11 nodes) and tfe2.ctw.utwente.nl (15 nodes).

PhD candidates and MSc students can get access to these clusters via their supervisor, who will send an email to the cluster administrator.

A manual can be found at: P:\ET\TFE\3-IT\Cluster\ET-Clusters.pdf, informing about connecting to the cluster, the Slurm scheduler, the VI editor, environment modules, and more.

On the TFE-cluster as well as the MSM3-cluster , data can be stored in the /home folder or in /ET_TFE_Data. After simulations and calculations are done you should put your relevant data on the P-drive if they cannot be easily re-created afterwards.

6 LICENSES

The department has the following software licenses available:

Software	License port and server	Contact person	Owner	License type
Maple2018	27005@tfe1.ctw.utwente.nl	-	TFE	Academic
Pointwise	5053@tfe1.ctw.utwente.nl	Edwin der Weide/Artur Pozarlik	TFE	Academic
Tecplot v11.2	27100@tfe1.ctw.utwente.nl	Edwin der Weide/Philip Ströer	TFE	Academic
Ansys v11.19.0	1055@tfe1.ctw.utwente.nl	Jim Kok	Thermal Eng/Fluid Mech/Solid Mech	Research + classroom
SolidWork		LISA	UT	Academic
Matlab		LISA	UT	Academic + Student
Labview	License key file	LISA	UT	Academic

Department licensed software like Ansys can be found on P:\ET\TFE\3-IT\Software\Install
UT licensed software like SolidWorks, MATLAB, LabView can be obtained via the LISA Software website, https://www.nsc.utwente.nl/software/ or the U drive (\\ad.utwente.nl\UT\Software).

Classroom licenses my only be use for educational purposes.
Research and Academic Licenses may not be used for commercial purposes.
If in doubt which license you can check the software website and contact them.

7 MISCELLANEOUS

For safety, LAB-PC's can be network restricted by putting it in a VPN (virtual private network). This way no or limited access from outside de campus will be possible. Options possible are:

- blocking proxy, access to M- P and U-drive,
- Remote login,
- Vulnerability scan,
- Fixed IP-address

(Lab-PC's are installed by LISA using a different image, have a long term Windows OS and is managed differently)

If necessary you can get admin rights on your workplace/lab computer to install software. Your IT contact person can request this at the LISA Servicedesk.

An old computer, registered on your name, can be taken over as e-waste but only if the department has no use for it for work or lab use.

Your supervisor or head of department can approve for supplies for working from home.