

FAIR data and software training TU Delft experiences

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TU Delft at a glance

Eight faculties

- Aerospace Engineering (AE)
- Applied Sciences (AS)
- Architecture and the Built Environment (ABE)
- Civil engineering and Geosciences (CEG)
- Electrical Engineering, Mathematics and Computer Science (EEMCS)
- Industrial Design Engineering (IDE)
- Mechanical, Maritime and Materials Engineering (3mE)
- Technology, Policy and Management (TPM)
- + QuTech – Research Institute for Quantum Computing and Quantum Internet

STUDENT POPULATION | December 2021

27,270

PERSONNEL | December 2021

6,347

PHD POPULATION | 2021

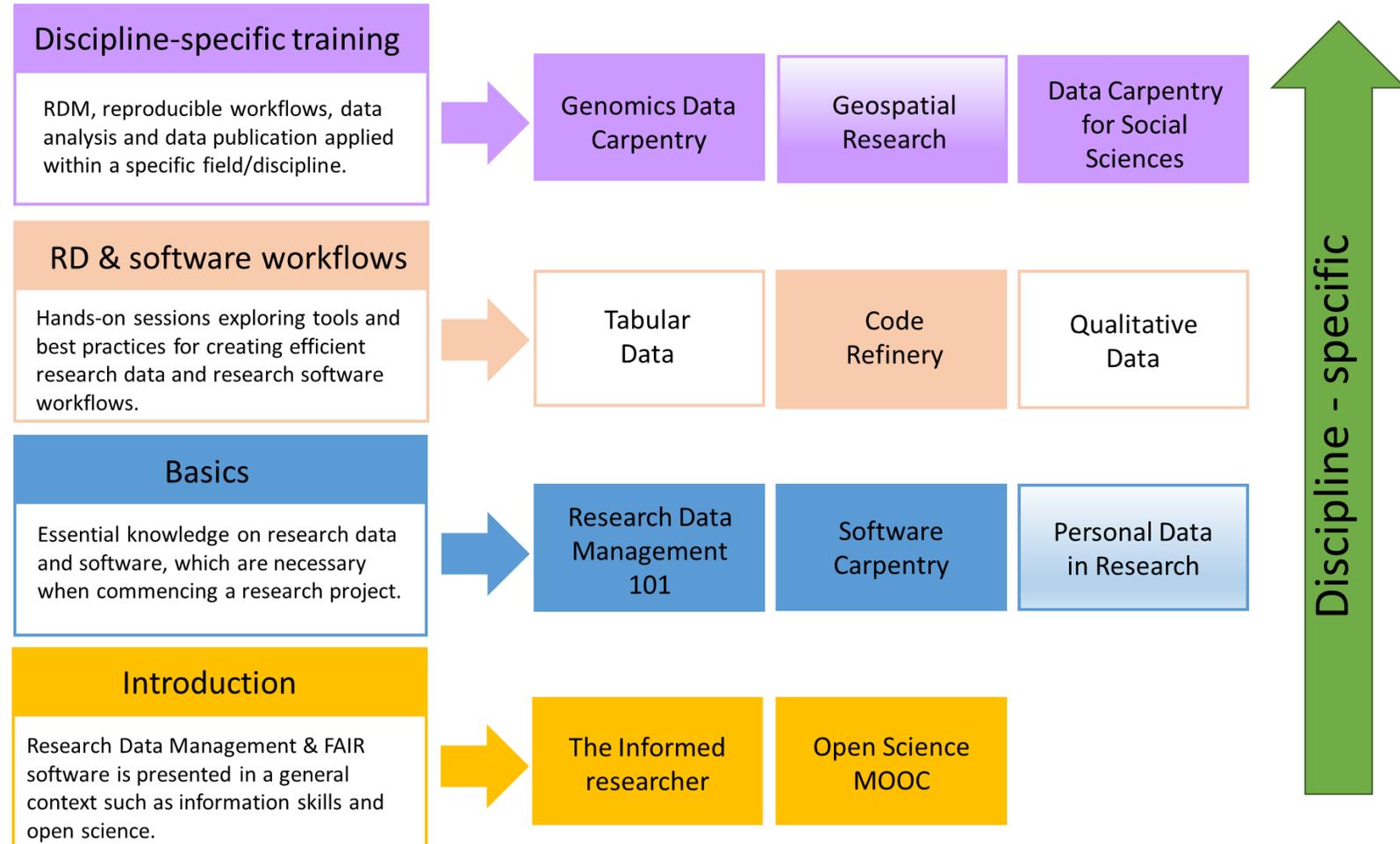
3,000

Why FAIR data and software training?

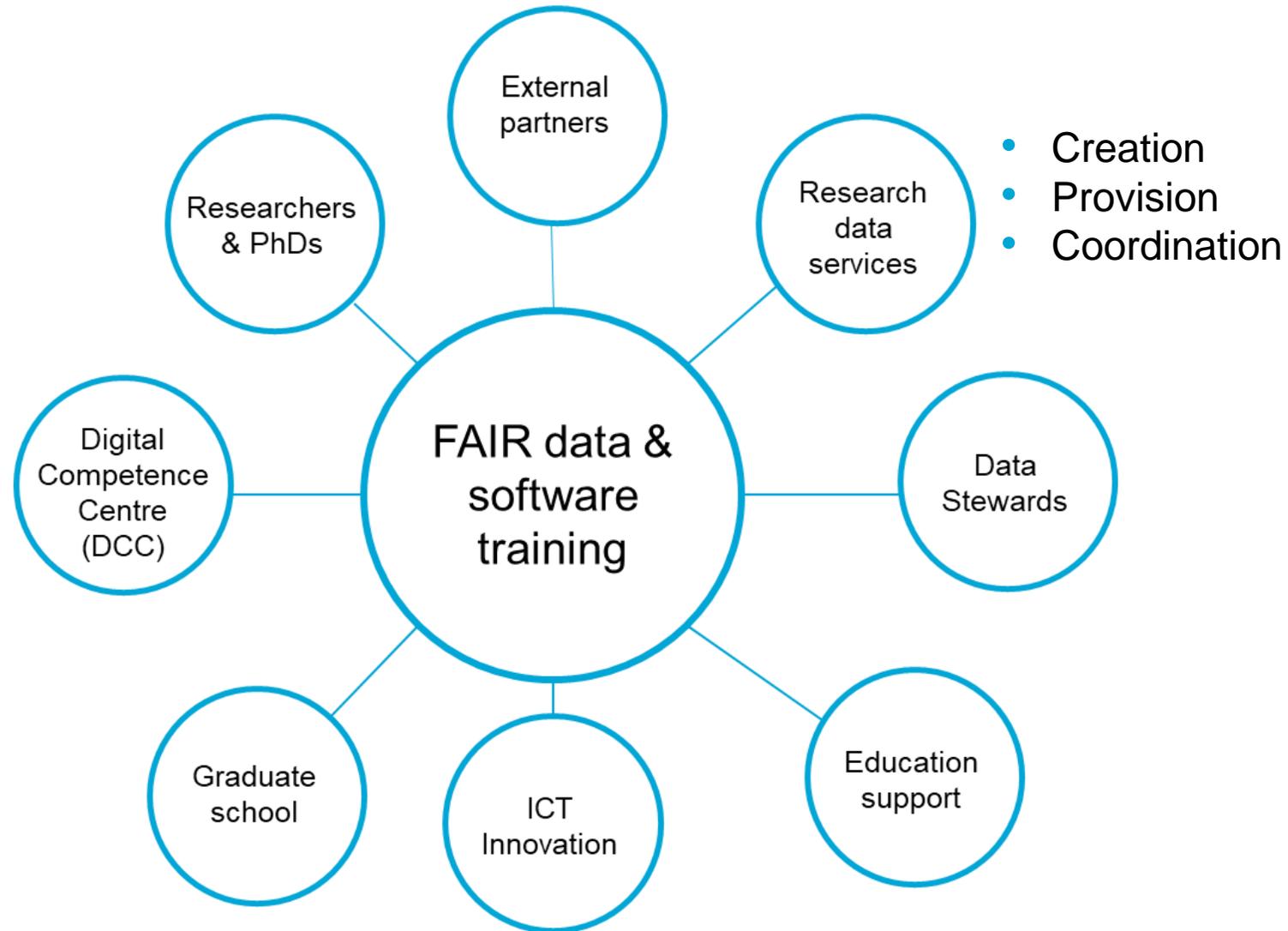
To help students and researchers at TU Delft develop the necessary skills to be able to work as **efficiently**, **reproducibly**, and **openly** as possible.

We consider these important steps for making **Open Science a reality**.

In 2019, TU Delft library and the Faculty Data Stewards drafted and started implementing a *Vision for Research Data and Software Management training*



A collaborative effort



Creation and provision of training by the library

Research Data Management 101

- RDM101 is a blended three-week course aimed at first-year PhD candidates (one online meeting per week)
- Time investment: 4 – 6 hours per week
- After taking this course, participants should be able to:
 - Realise the importance of **good data management** for research
 - Identify different **data types** relevant for their projects
 - Recognise the **relevant regulations, policies, and legal requirements** for their data
 - List the main components of the **FAIR data** principles
 - Connect the FAIR data principles to their **own research workflow**
 - Use what they learned to design an efficient **RDM strategy**

Assignment - Research Data Management 101

- Create a **data flow map**, which helps applying concepts/tools learned to their own project
- Inspired and modified from 'DataFlow kit' [DOI 10.5278/16k4-4n24](https://doi.org/10.5278/16k4-4n24)
- Each week the learners complete one part of the map according to the content they learn
- It is an effective way for learners to transform abstracted concepts into practical actions
- Learners can decide if the tools/infrastructure they get to know about are useful within their data/code workflows
- Learners are filling in a Data Management Plan (DMP) without knowing it

Tell us something that you really like about the course!

*“The **assignments**. They help me a lot about my data management plan. I can answer almost all questions in DMPonline.”*

*“The **highly practical orientation** of the course: I found a lot of suggestions on practical tools, strategies and methods to improve my RDM practices.*

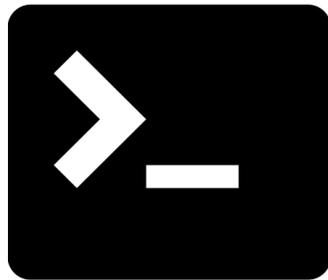
*The **interaction with the organisers**, who did a great job, showed a lot of commitment and put significant effort in answering all the doubts we had and even gave **personalised suggestions** for specific research areas.”*

So far the feedback has been really positive 😊

Collaborative efforts

Software Carpentry workshops

- These are hands-on workshops, currently given online over four half-days
- Aimed at students and researchers with no prior programming experience
- These workshops cover the basic skills needed to work reproducibly with code, such as:



- Instructors and helpers are data stewards, members of the Digital Competence Centre, colleagues from ICT innovation, Data Champions and PhD students

CodeRefinery workshops



- These are hands-on workshops organised by the CoeRefinery organisation
- TU Delft researchers can join the workshops upon provision of exercise leaders
- Aimed at students and researchers that are familiar with a programming language and would like to learn best practices when developing software
- Exercise leaders are data stewards, members of the Digital Competence Centre, colleagues from ICT innovation and Data Champions

What participants have to say about....

Software Carpentry

*“This course is **amazing!** I learned a lot about Unix and how to use Git”*

*“Thanks for the software carpentry workshop, it was the **best example of successful online education** I have experience (within the graduate school and beyond).”*

CodeRefinery

*“I really **liked the in-group exercises**, as I think that **you can learn best by doing**. Also the documentation on the websites is excellent!”*

*“The course met all my expectations and I **recommended to everyone that works with coding and/or collaborative work**”*

Final messages

*“Open Science, including access to data, is being widely promoted and there is increasing investment in cyber-infrastructures and digital platforms **but the skills that are required by researchers and research support professionals to fully exploit these tools are not being given adequate attention.**”*

(Section: Abstract)

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*“Libraries can be an important resource for universities to increase their digital workforce capacities, **provided that the necessary investment is made**”*

(Section: Recommendations for universities)

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Thanks for your attention!