



FAIR DATA
AUSTRIA

WHAT DOES A DATA STEWARD DO?

20.05.2021

HOSTED BY

GRAZ UNIVERSITY OF TECHNOLOGY



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AUSTRIA

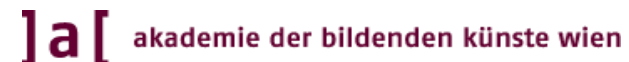


EVENT SERIES „RESEARCH DATA MANAGEMENT IN AUSTRIA“

The event series "Research Data Management in Austria" is aimed at researchers and/or research support staff and serves to promote networking and exchange on the topic of research data management tools and services.

Slides and recording on the project website soon:

forschungsdaten.at/en/fair-data-austria/materials/



WHAT DOES A DATA STEWARD DO?

You want to take your research data management to the next level, but do not know how? Would you like a contact person who can provide you with advice and support throughout the lifecycle of your research data?



The webinar “What does a Data Steward do?” will introduce you to the experts who can provide you with comprehensive advice and support on your research data management questions and challenges. You will gain interesting insights into the role and tasks of data stewards that span the entire research data lifecycle. Take this opportunity to learn more about data stewardship and the tools and services available.

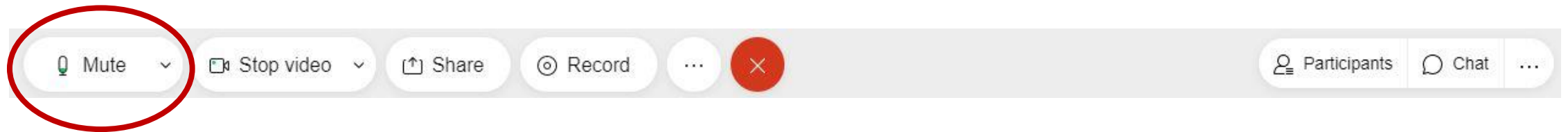
AGENDA

10.00-10.10	Welcome and opening	Ilire Hasani-Mavriqi
10.10-10.35	Professionalising data stewardship in the Netherlands: competences, training and education	Mijke Jetten
10.35-11.00	Data Stewardship at Delft University of Technology	Heather Andrews
11.00-11.10	Screen break	
11.10-11.25	RDM at Electric Drives and Machines Institute (EAM)	Sarah Stryeck and Benedikt Riegler
11.25-11.40	Research Data in a Horizon 2020 Project	Hermann Schranzhofer and Christoph Moser
11.40-11.55	E-LAB Book at FELMI-ZFE	Alexander Gruber and Armin Zankel
12.00	Closing	

Moderation: Sabrina Knopper

TECHNICALITIES

In order to avoid background noise, we ask all participants to switch to "mute"



Please post all questions in the chat, they will be answered after the presentation or as soon as appropriate



The presentations will be recorded

PROFESSIONALISING DATA STEWARDSHIP IN THE NETHERLANDS: COMPETENCES, TRAINING AND EDUCATION

Mijke Jetten - Dutch Techncentre for Life Sciences (DTL)

Mijke Jetten currently is community manager data stewardship at the Dutch Techncentre for Life Sciences (DTL) in Utrecht, the Netherlands. Before, she has worked as coordinator research data management/open science at Radboud University, the Netherlands, and has set up RDM support at the Library. She also was data steward at the Institute for Management Research at the same university. As part of her PhD on interreligious communication, Mijke has developed educational materials and organised training sessions.



DATA STEWARDSHIP AT DELFT UNIVERSITY OF TECHNOLOGY

Heather Andrews – Delft University of Technology

Heather Andrews has a background in astronomical research. She studied Astronomy at the Pontificia Universidad Católica de Chile, where she obtained a master's degree in Astrophysics. She then did her PhD in Astrophysics at the University of Leiden in the Netherlands in collaboration with researchers from NASA Ames Research Center in the United States, and researchers from the University of Western Ontario. She currently serves as a Data Steward for the Faculty of Aerospace Engineering at Delft University of Technology.





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RDM AT ELECTRIC DRIVES AND MACHINES INSTITUTE (EAM)

BENEDIKT RIEGLER & SARAH STRYECK, 20.5.2021



RESEARCHER & DATA STEWARD

Benedikt Riegler

PhD Student at the Electric Drives and Machines
Institute



Sarah Stryeck

Data Steward at Graz University of Technology

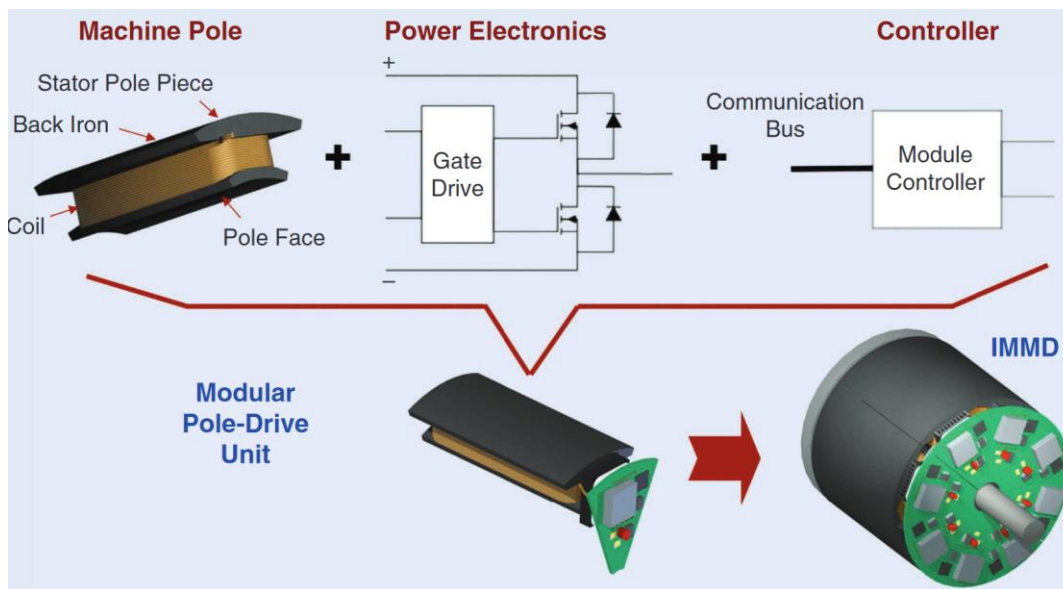


RESEARCH AT EAM (I)

Integrated Modular Motor Drives

Integration of **power electronics** into an **electric machine**.

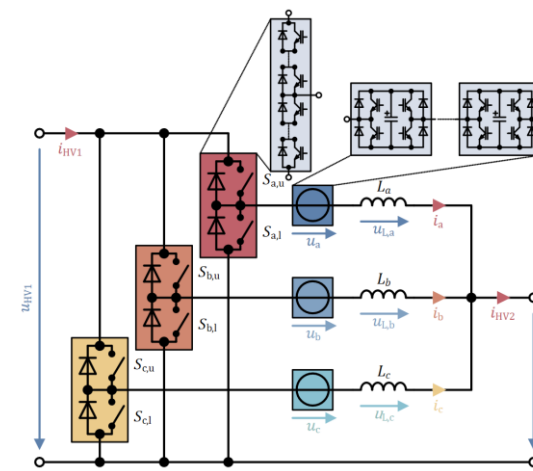
Modularizing electric machines for easier manufacturing



Source: JAHNS, Thomas M.; SARLIOGLU, Bulent. The Incredible Shrinking Motor Drive: Accelerating the Transition to Integrated Motor Drives. *IEEE Power Electronics Magazine*, 2020, 7. Jg., Nr. 3, S. 18-27

GridConv – HVDC-DC Converter

Development and build of a **high voltage DC-DC converter** for the connection of DC transmission lines/grids



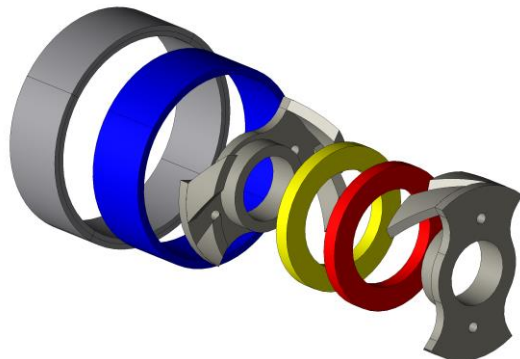
Source: Yang, Jie, et al. "The hybrid-cascaded DC-DC converters suitable for HVdc applications." *IEEE Transactions on Power Electronics* 30.10 (2015): 5358-5363..



RESEARCH AT EAM (II)

CD Laboratory for Brushless Drives for Pump and Fan Applications

- Established in **April 2016**.
- In cooperation with **MSG** Mechatronic Systems GmbH.
- *Aims to **contribute to securing** today's **automotive freedom** under increasingly tight environmental constraints by **cutting price**, **energy usage**, and the **size of automotive auxiliary drives**.*



RDM TOOLS AND SERVICES AT TU GRAZ

Features

Free

Open-source with an AGPL licence means free as in beer but also free as in freedom. You have the freedom to modify it, look how it works and even redistribute your changes!

Secure

Strong encryption, good practices and modern codebase offers the best security for your data. The only ELN with A+ rating on Mozilla's Observatory.

Responsive

You can access your lab book from any device, running any operating system, from anywhere in the world!

Cross-platform

Use your favorite operating system. You only need a recent browser.

Timestamps

RFC 3161 compliant timestamping of experiments (for intellectual property).

Inventory management

Store reagents, protocols, plasmids, cell lines, mice or anything you want, you can customize everything!

Stay master of your data

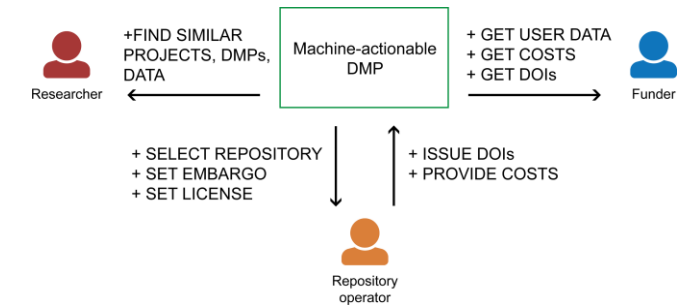
Import and export your data in common file formats (PDF, ZIP, CSV, JSON). Your data is not locked somewhere.


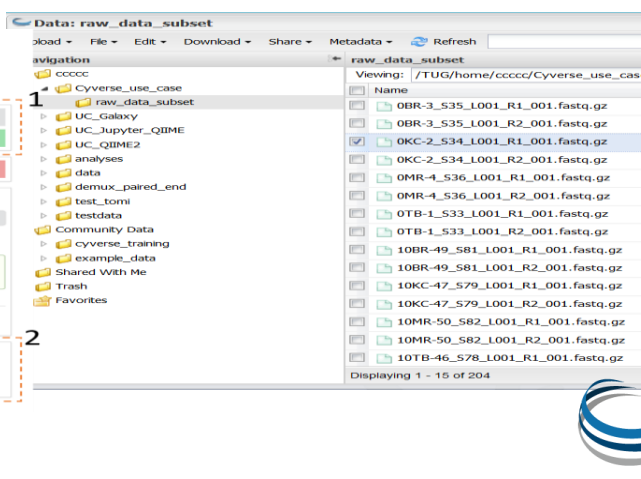
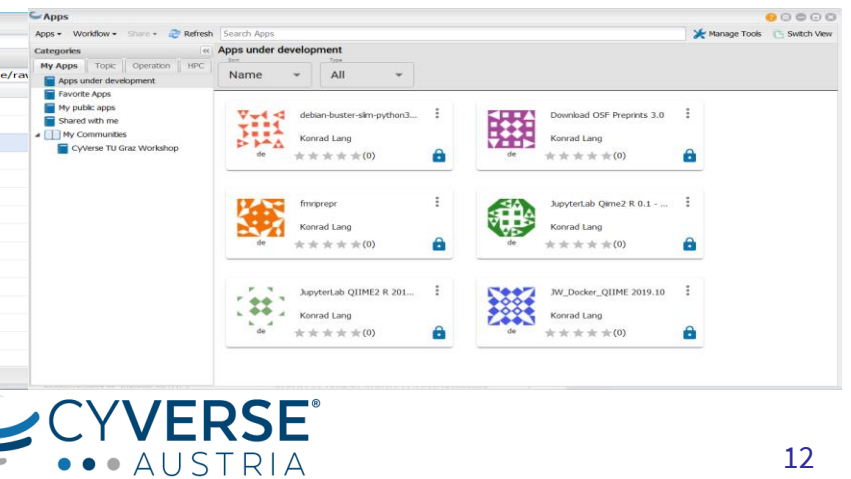
Internationalization



eLabFTW is translated in several languages because not everyone is comfortable with english.

Scheduler

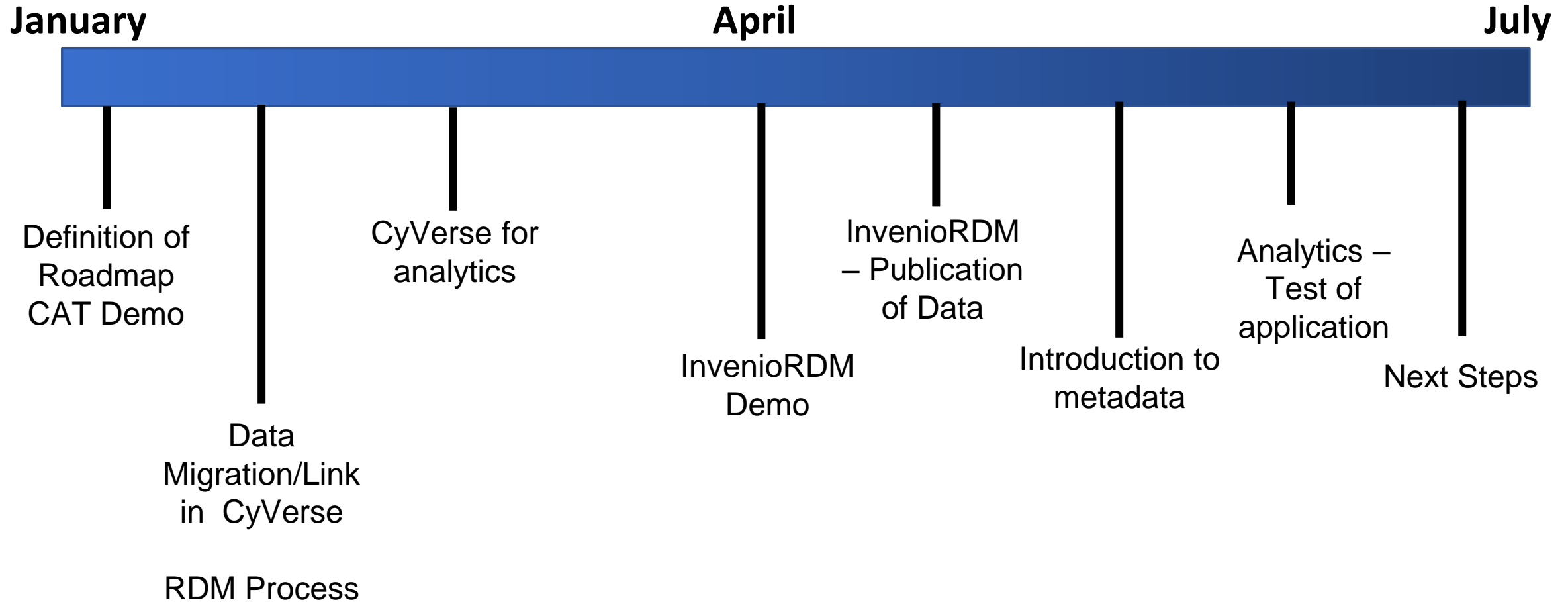
Use the integrated scheduler to book anything you need to like microscopes, rooms, machines, etc.



RDM @ CD LABOR - ROADMAP 2021

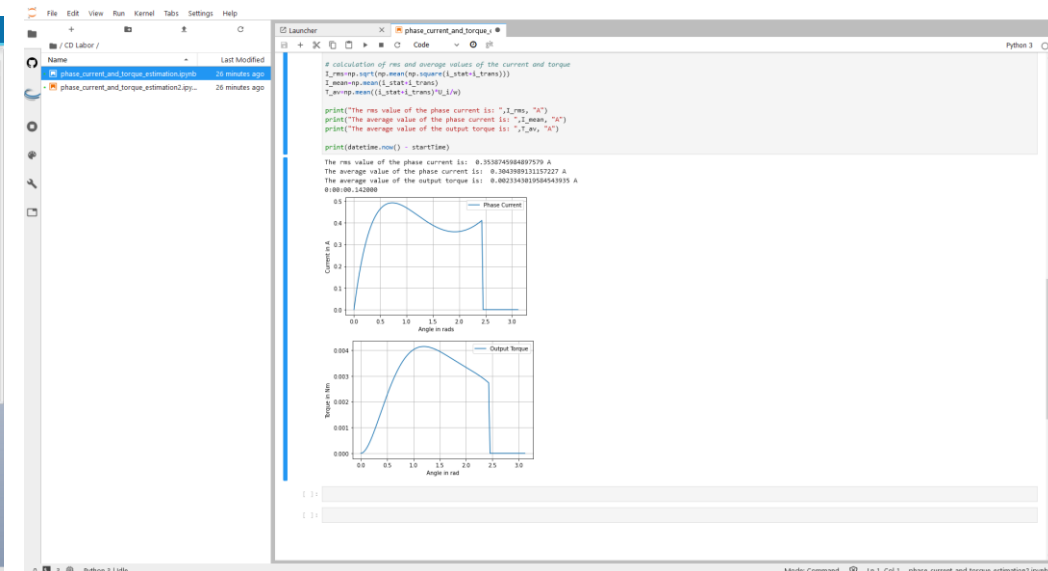
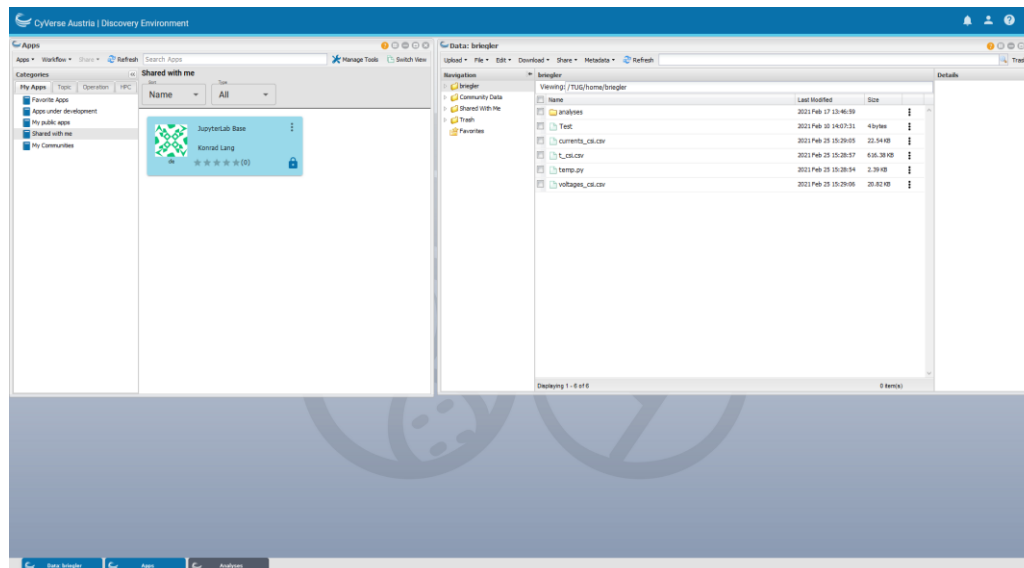


RDM IMPLEMENTATION @ EAM (I)

Test of the **CyVerse** environment together with the integrated **JupyterLab** notebooks app.

Cyverse: Online storage for **sharing** and **processing** research data.

JupyterLab: Integration of python **script calculations** and formatted **text based documentation**.



RDM IMPLEMENTATION @ EAM (II)

before (metadata in filename)

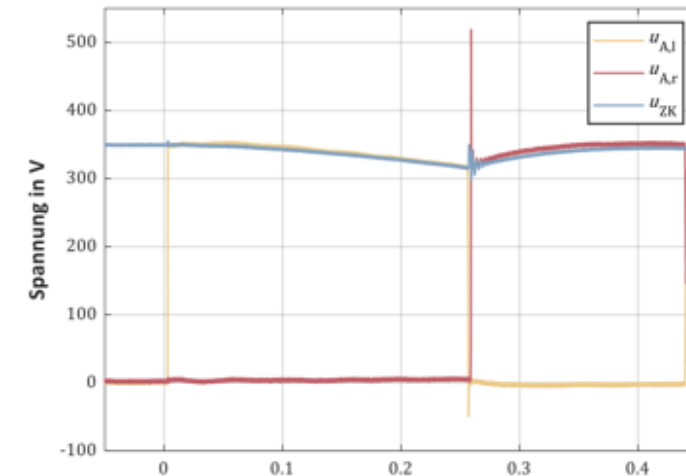
probes CH1 – CH4

C1--625Zi--A3_doublepulse_right_positive--ADP305- ... -CP031A.trc

scope type

test

Metadata



after (read metadata from file)

C1--A3_doublepulse_right_positive.trc

test

Metadata extraction in
MATLAB
(saved in Lecroy .trc file)

RDM IMPLEMENTATION @ EAM (III)

InvenioRDM: Research data of **GriDConv** project will be uploaded to InvenioRDM in the next few weeks (simulations, prototype construction data, measurement data, documentation).

Other Takeaways:

- Management of MATLAB scripts
- Revisiting the current folder structures for research data
- Test of new documentation strategies for lab measurements and calculations

SUMMARY & NEXT STEPS

In collaboration with Prof. Mützes team, we established RDM workflows and processes.

→ Blueprint for other projects, institutes, teams

Takeaway for the RDM team:

→ We learn a lot about discipline-specific requirements, workflows and data formats.

Next steps:

→ further analytics tools in Jupyter
→ If needed: DMP support





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DATA IN A HORIZON 2020 PROJECT

HERMANN SCHRANZHOFER AND CHRISTOPH MOSER, 20.5.2021



THE DATA STEWARD AND HIS CLIENT

Hermann Schranzhofer

Data Steward for the Faculty of Mechanical Engineering
and Economic Sciences at Graz University of Technology



Christoph Moser

PhD Student at the Institute of Thermal Engineering at
Graz University of Technology



DATA STEWARDSHIP AT THE FACULTY

- Implementation of the first faculty specific RDM policy
- Data Champions
- Support for Data Management Plan
- Developing Metadata
- Instructions for using the institutional repository (invenioRDM)

THE HORIZON 2020 PROJECT HYBRID BIOVGE



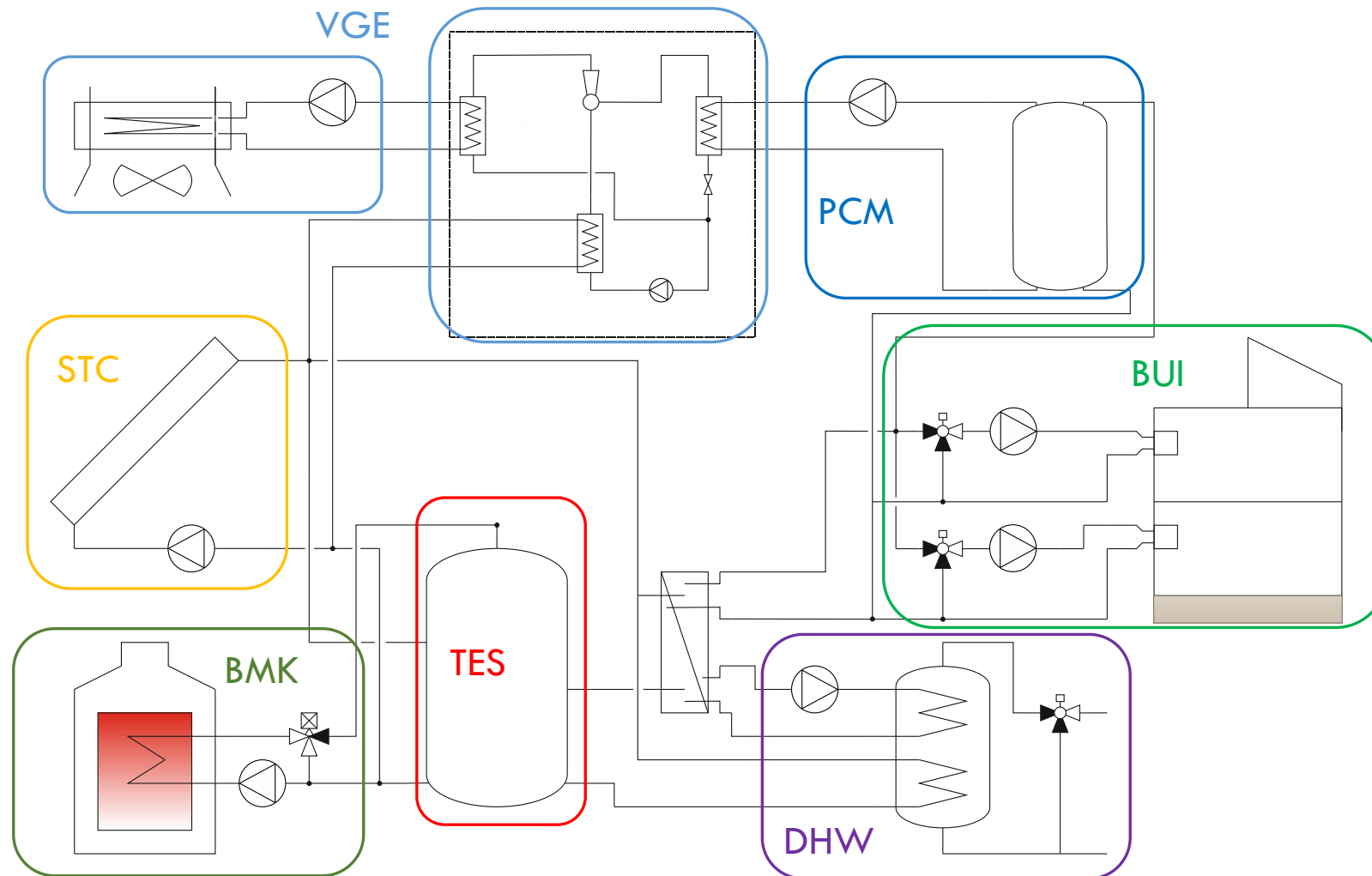
“Hybrid Variable Geometry Ejector Cooling and Heating System for Buildings Driven by Solar and Biomass Heat (Hybrid-BioVGE)”

<http://hybrid-biovge-project.eu>

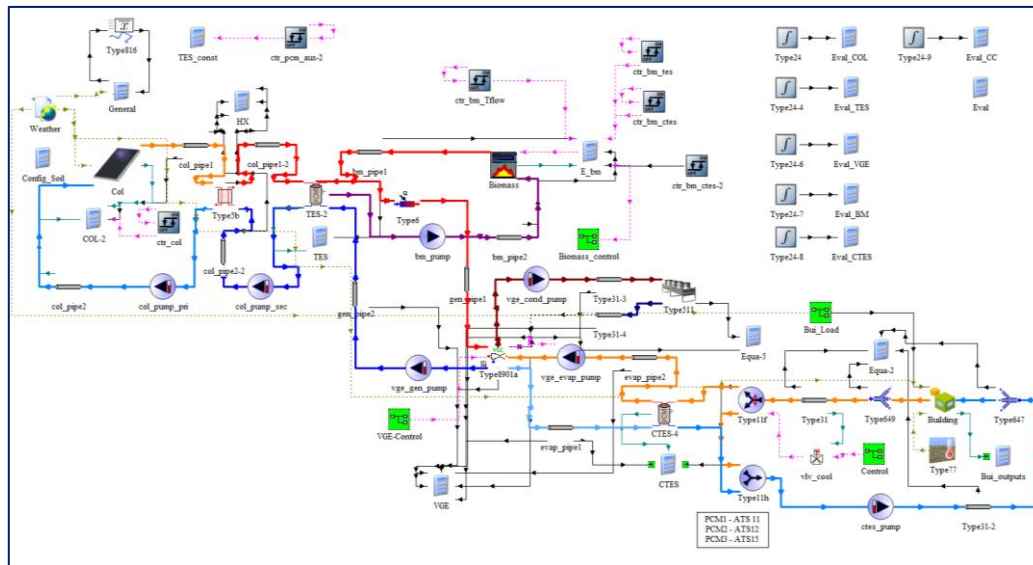


This project has received funding from the European Union’s Horizon 2020 research and innovation programme under grant agreement No 818012

SYSTEM UNDER INVESTIGATION



DATA FROM SIMULATION



©Copyright 2021 Institute of Thermal Engineering

- Simulation model (*.tpf, *.dck)
- Input data (*.tm2 , *.dat, *.b18, *.idf)
- Output data (*.out, *.lst, *.log, *.ssr)

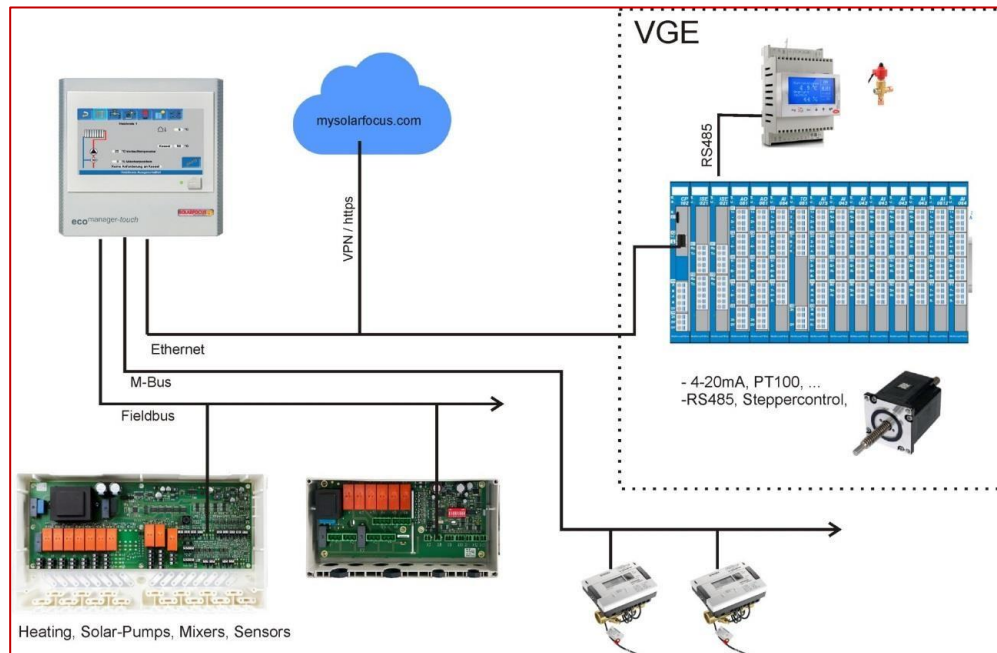
DATA FROM LABORATORY MEASUREMENTS



©Copyright 2021 Institute of Thermal Engineering

- Raw data (*.tdms)
- Processed data: (*.xlsx , *.txt)
- Output data (*.dat, *.xlsx)
- General (*.docx, *.step, *.jpeg)

DATA FROM FULL SCALE SYSTEM



©Copyright 2021 Solarfocus GmbH

Temperature, relative humidity,
flow rate, pressure,
Pump speed, valve states

THE DATA MANAGEMENT PLAN

- Description of all data produced within the project
- Definition of Metadata (due to DataCite Metadata Schema)
- Suggestion for a Repository
- Also Ethical Aspects are addressed
- DMP is available at <http://hybrid-biovge-project.eu>

PREPARING META DATA

Administrative metadata


- Technical specifications and parameters, legal information
- Examples: File format, file size, date and time of creation, licences, access rights

Structuring metadata

- Structure of the data and linkage with other data
- Examples : Table description

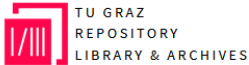
Descriptive metadata


- Describe the content of the data
- Examples: Description of the experimental set-up

Mandatory Metadata	
Identifier (DOI)*	---
Author/Contributors	Christoph Moser, Hermann Schranzhofer
Title	First Capacity measurement with pure water
Publisher*	Graz University of Technology
Year	2020
Ressource Type	Dataset
Funding Reference	This “document” is supported by European Union’s Horizon 2020 research and innovation programme under grant agreement No 818012, project Hybrid-BioVGE (Hybrid Variable Geometry Ejector Cooling and Heating System for Buildings Driven by Solar and Biomass Heat). 


Optional Metadata	
Subject	Measurement of storage prototype with pure water
Date	15.4.2021
Language	English
Related Identifier	
Size	345 kB
Format	csv
Version	V1.0
Rights	CC-BY-SA
Description	<p>This data concern experimental test results carried out in the laboratory of IWT/TUGraz during October 2020. The storage prototype was filled with pure water. Four temperature sensors were placed via thermowells inside the storage (equally distributed over the height). The charging flow, with a mass flow rate of 1500 kg/h and an inlet temperature of 5°C, enters the storage at the bottom inlet. After the charging power remains constant, the discharging process was started. The incoming flow enters the storage at the top inlet with a mass flow rate of 1500 kg/h and an inlet temperature of 25°C. Calibrated temperature sensors (PT100 with 4-wire connection) were used in the thermowells, at the in/outlet of the storage, at the outlet temperature of the flow meter and to measure the ambient temperature. A Promag50 was used to measure the volume flow into the storage.</p>

PUBLICATION ON TU GRAZ REPOSITORY




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PASSION
TECHNOLOGY



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Recent uploads

Documentation of Repository (TU Graz)

2021-04-13 (v1.0)
Software
Open

Mojib, Wali

This documentation for repository.tugraz.at was build with MkDocs, which shows the first deployment process of the TU Graz Repository.

Uploaded on April 13, 2021

Nutzungsbedingungen TUGraz Repository

2021-03-31 (v1.0)
Other
Open

TU Graz

Dokument, das die Nutzungsbedingungen für das TU Graz Repository festhält.

Uploaded on April 12, 2021

Datenschutzerklärung TUGraz Repository

2021-03-31 (v1.0)
Other
Open

TU Graz

Dokument in dem die Datenschutzerklärung für das TU Graz Repository festgehalten ist.

Uploaded on April 12, 2021

Need help?

Contact us

Repository prioritizes all Recent uploads.

We can help with:

- Uploading your research data, software, preprints, etc.
- One-on-one with Repository supporters.
- Quota increases beyond our default policy.
- Scripts for automated uploading of larger datasets.

Why use Repository?

- **Safe** — your research is stored safely for the future in TU Graz library for as long as TU Graz library exists.
- **Trusted** — built and operated by CERN and OpenAIRE to ensure that everyone can join in Open Science.
- **Citeable** — every upload is assigned a Digital Object Identifier (DOI), to make them citable and trackable.
- **No waiting time** — Uploads are made available online as soon as you hit publish, and your DOI is registered within seconds

<https://repository.tugraz.at/>

re3data.org
REGISTRY OF RESEARCH DATA REPOSITORIES



<http://doi.org/>

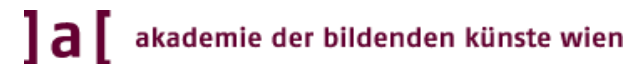
TU Graz Repository



FAIR DATA
AUSTRIA

E-LAB BOOK AT FELMI-ZFE

ARMIN ZANKEL AND ALEXANDER GRUBER, 20.5.2021



DATA STEWARD AND RESEARCHER

Alexander Gruber

Data Steward for the Faculty of Mathematics, Physics and Geodesy at Graz University of Technology



Armin Zankel

Senior Scientist at FELMI-ZFE at Graz University of Technology



Austrian Centre for Electron Microscopy and Nanoanalysis

**Institute of Electron Microscopy and
Nanoanalysis (FELMI)**
Graz University of Technology



Graz Centre for Electron Microscopy (ZFE)
Austrian Cooperative Research (ACR)



www.felmi-zfe.at

Austrian Centre for Electron Microscopy and Nanoanalysis



Austrian Centre for Electron Microscopy and Nanoanalysis



FEI QUANTA 600



ZEISS DSM 982 GEMINI



FEI QUANTA 450



ZEISS ULTRA 55



FEI TECNAI 12



FEI TECNAI F20



FEI TITAN



ZEISS SIGMA 300



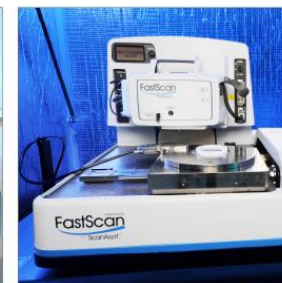
FEI DUAL BEAM FIB



Quanta 3D FEG



ALICONA IFM



VEECO AFM



FTIR & RAMAN

RDM MARKETPLACE

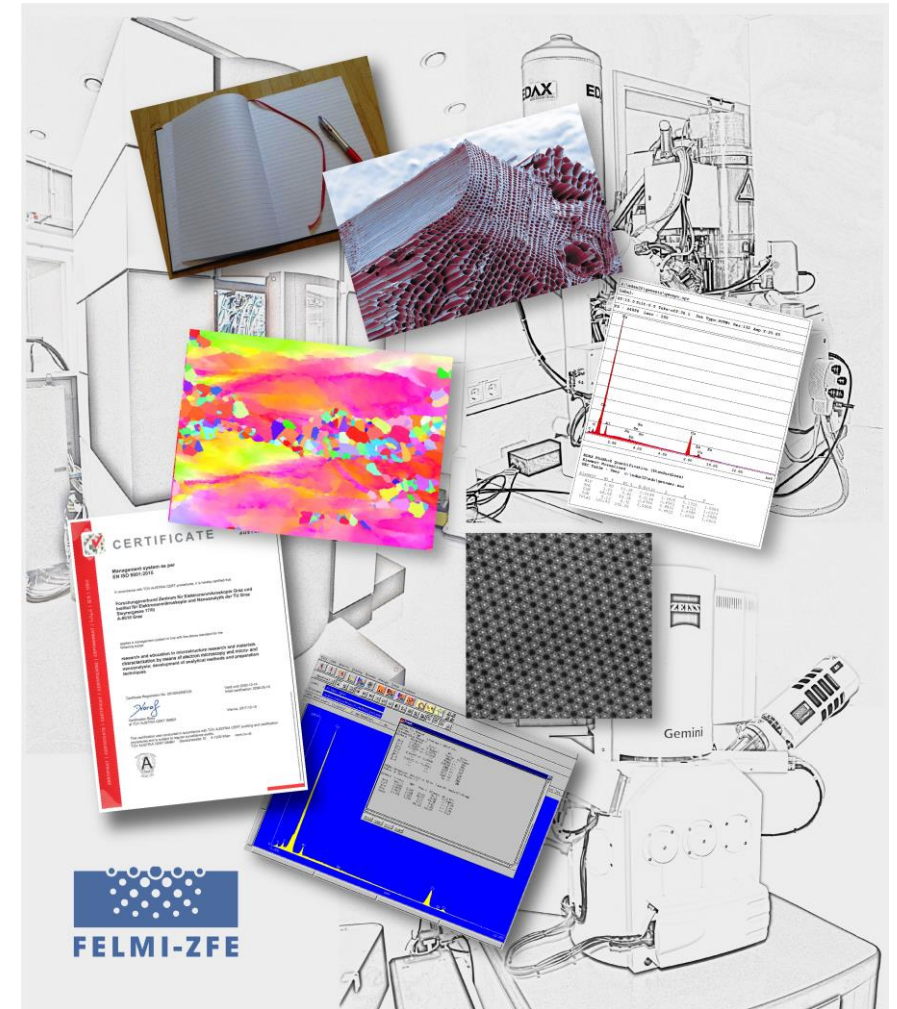
- **Seven small RDM projects** handled by researchers from different disciplines, funded by TU Graz
- **Aim:**
 - Improve data handling practices
 - Increase reproducibility and reusability of research
 - Strategy for implementing new software tools for data management
- **Covered topics:**
 - Data Stewardship
 - Repository Systems
 - Analytic Platforms
 - Other RDM tools and services

Project LAB LOG

Development of a digital laboratory logbook for specific data and metadata

Improvement of our data management with new digital tools

Strict retention of our quality and confidentiality rules



Project LAB LOG

The project team





Mag.

Ruth Schmidt

Junior Scientist | SEM

+43 316 873-8339

Publications



BSc.

Jakob Gurker

Master Student

+43 316 873 8837


QM:



DOCUMENTATION OF RESEARCH RESULTS - ELABFTW


eLabFTW – hosted at ZID. Designed by researchers, for researchers

Features




Free

Open-source with an AGPL licence means free as in beer but also free as in freedom. You have the freedom to modify it, look how it works and even redistribute your changes!




Secure

Strong encryption, good practices and modern codebase offers the best security for your data. The only ELN with A+ rating on [Mozilla's Observatory](#).




Responsive

You can access your lab book from any device, running any operating system, from anywhere in the world!




Cross-platform

Use your favorite operating system. You only need a recent browser.




Timestamps

RFC 3161 compliant timestamping of experiments (for intellectual property).




Inventory management

Store reagents, protocols, plasmids, cell lines, mice or anything you want, you can customize everything!




Stay master of your data

Import and export your data in common file formats (PDF, ZIP, CSV, JSON). Your data is not locked somewhere.



Internationalization

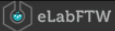
eLabFTW is translated in several languages because not everyone is comfortable with english.



Scheduler

Use the integrated scheduler to book anything you need to like microscopes, rooms, machines, etc.

DOCUMENTATION OF RESEARCH RESULTS - ELABFTW


eLabFTW

EXPERIMENTS
DATABASE
TEAM
SEARCH
DOCUMENTATION

Experiments

[Back to listing](#)

2020.11.18

Textexperiment

Background:

Goal :

Procedure :

Results :

Interpretation:

What's next:

Last modified on 2020-11-18 13:11:51

EXPERIMENTS
DATABASE
TEAM
SEARCH
DOCUMENTATION

Team

SCHEDULER
INFORMATION
TEMPLATES
EMAIL

Select an equipment

< > today

Apr 5 - 11, 2021

week list month

	MON 4/5	TUE 4/6	WED 4/7	THU 4/8	FRI 4/9	SAT 4/10	SUN 4/11
2am							
3am							
4am							
5am							
6am							

EXPERIMENTS
DATABASE
TEAM
SEARCH
DOCUMENTATION

Search

Search in: Experiments
With the tag: Nothing selected
And visibility is: Select visibility

Search only in experiments owned by: Yourself

Where date is between: TT.MM.JJJJ and TT.MM.JJJJ

And title contains:

And body contains:

And status is: Select status

And rating is: Select number of stars

Space means: and

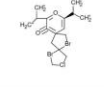
Tip: you can use % as wildcard

LAUNCH SEARCH
CLEAR ALL

Molecule drawer

Draw something

Molecule drawer



Unique eLabID: 20201118-d5bb7b47b7c8496c91ff7a2d1808184b3afa8ff8

ACTION POINTS

- Detailed introduction to the tool
- Organizing a dedicated team level in eLabFTW for secure testing
- Identification of attachment potential
- Joint transfer of a case into the tool
- Survey of requirements, ideas, wishes desired by employees

OUTLOOK

- New standalone eLabFTW instance (next weeks)
- Accounts for all (An-Institut) staff members
- Realization of suggestions from the researchers in eLabFTW
- Ongoing technical support

SAVE THE DATE

Research Data Management in the Life Sciences

8. June 2021, 10-12 CEST



<https://forschungsdaten.at/en/webinar-research-data-management-in-the-life-sciences/>

<https://biotechmedgraz.at/de/veranstaltungen/research-data-management-in-the-life-sciences/>

KONTAKT

fairdata_wp1@mlist.tugraz.at

forschungsdaten.at/projekte/fda/