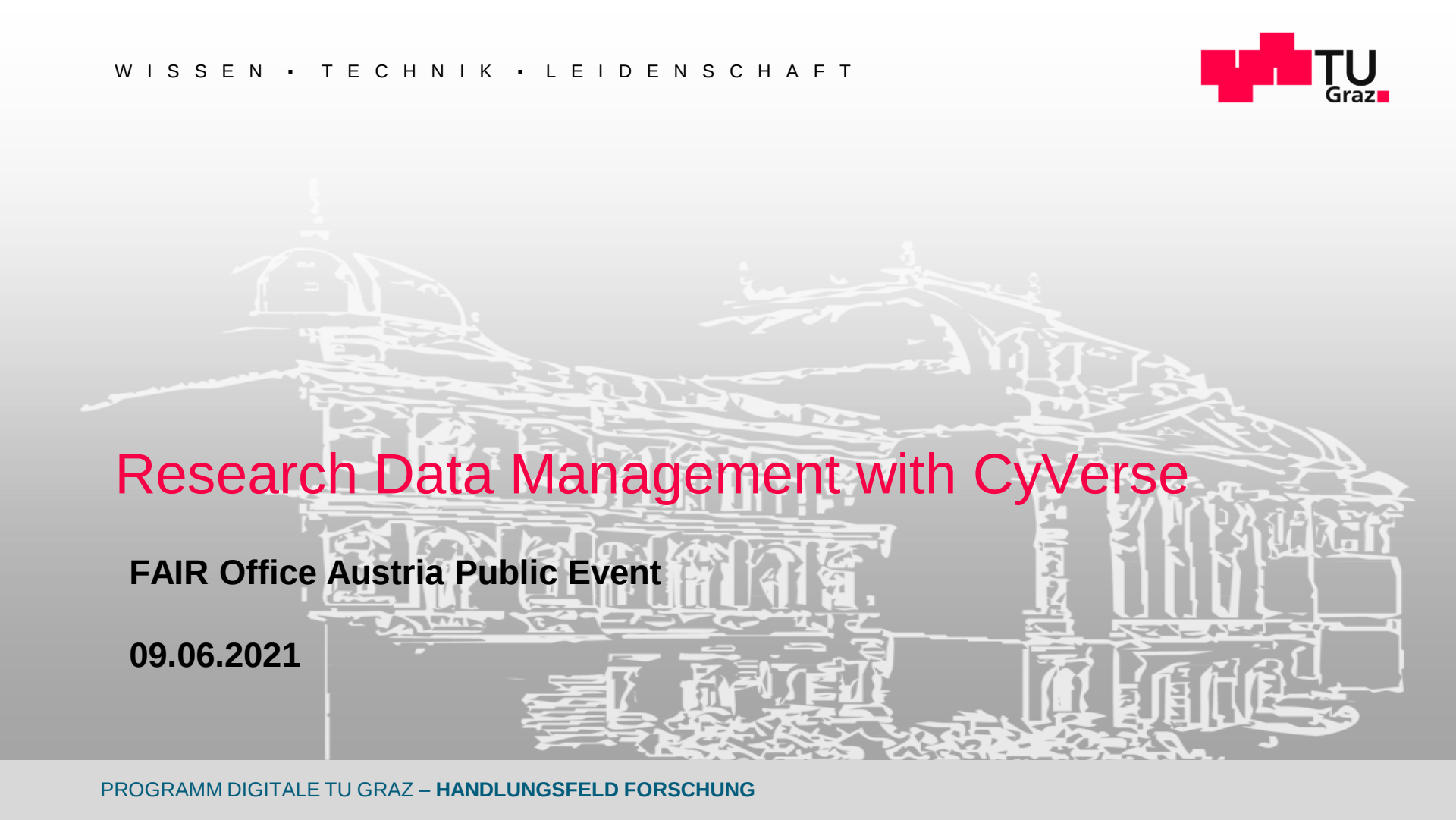


A grayscale, high-contrast image of a classical building with a large dome and many windows, serving as the background for the slide.

Research Data Management with CyVerse

FAIR Office Austria Public Event

09.06.2021

RDM Infrastructures

Internal

Lab Information
Systems



External



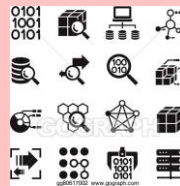
Generation

Data
Management

Analysis

Publication

Archival



**CLOSED
DATA**

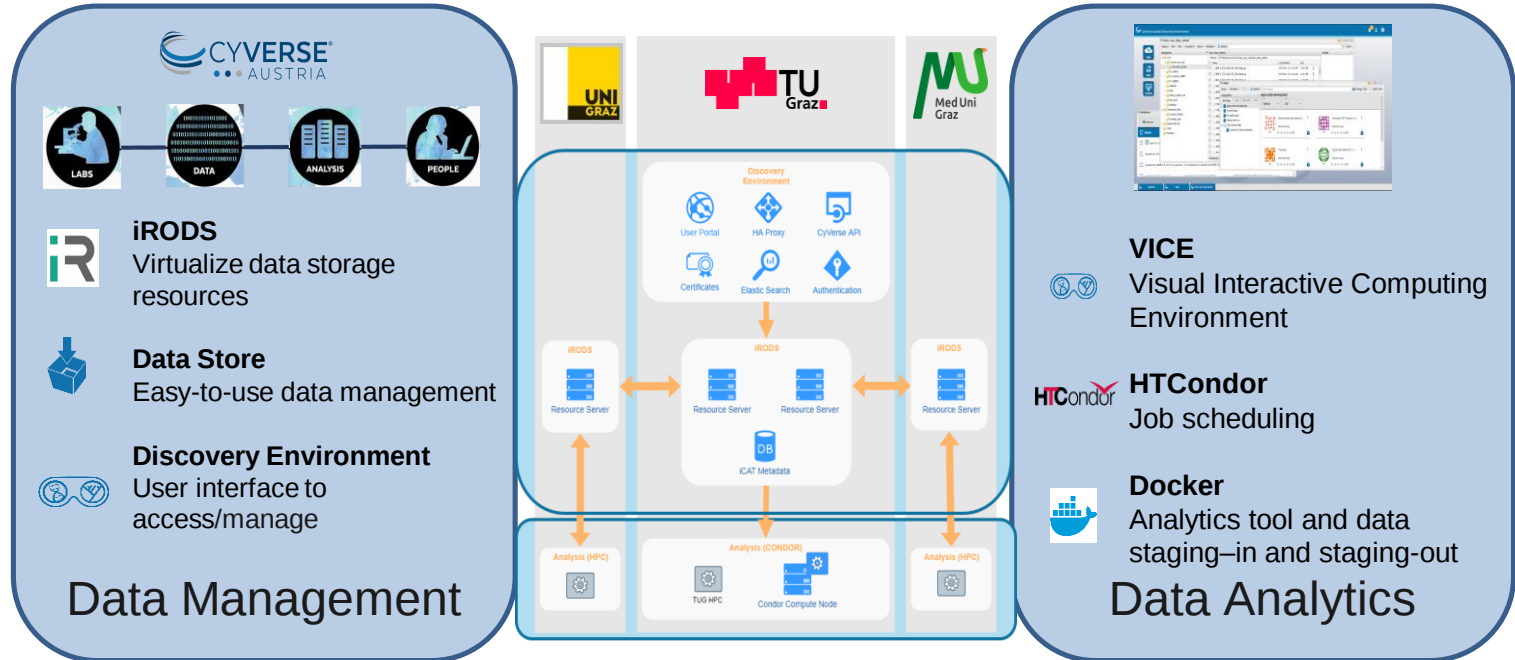


**FAIR
DATA**

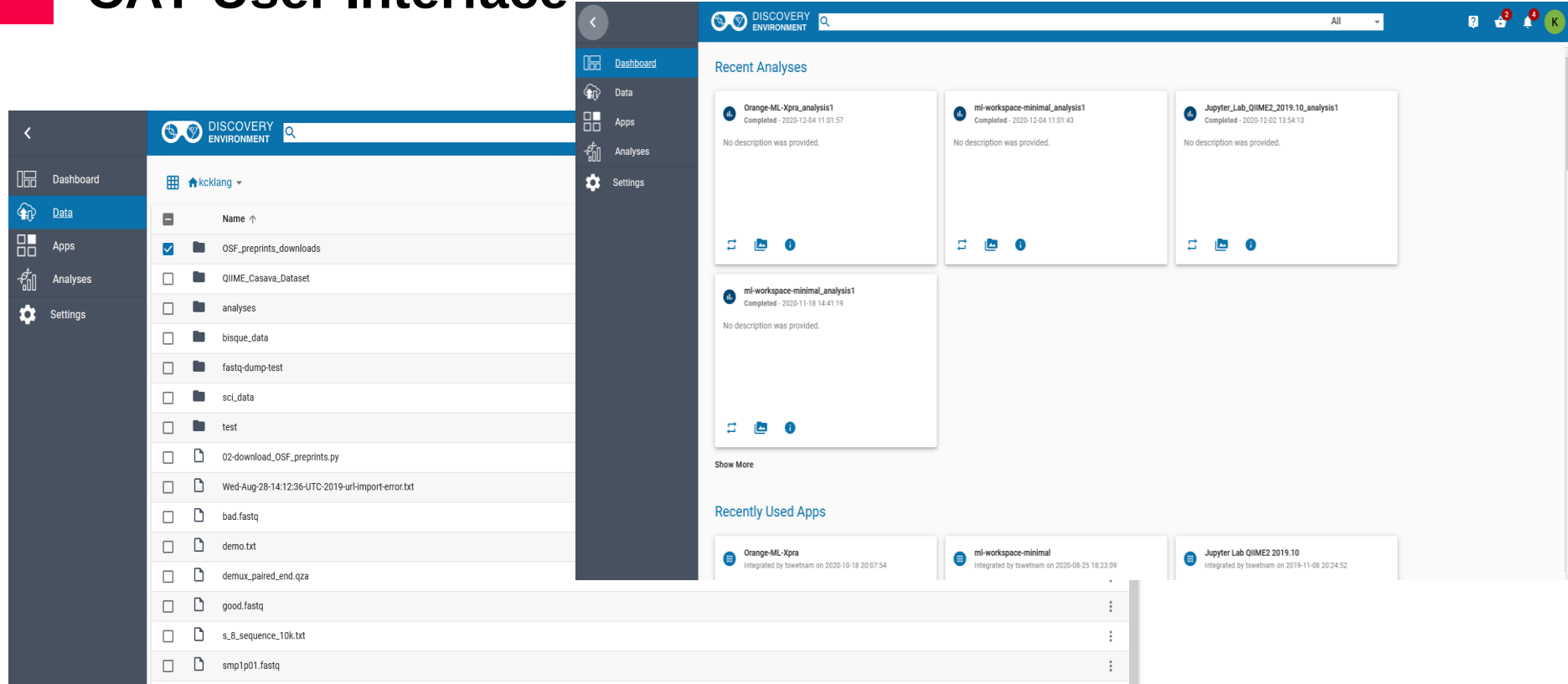
Data Stewardship

Setup

- Started as *Hochschulraum-Strukturmittel-Projekte (HRSM)* project at TU Graz
- Independent platform connecting researchers – based on the open source project at University of Arizona



CAT User Interface



The screenshot displays the CAT User Interface for the Discovery Environment. The interface is divided into a sidebar menu on the left and a main content area on the right.

Sidebar Menu:

- Dashboard
- Data
- Apps
- Analyses
- Settings

Main Content Area:

The main content area is titled "DISCOVERY ENVIRONMENT" and includes a search bar. It displays a list of recent analyses and recently used apps.

Recent Analyses:

- Orange-ML-Xpra_analysis1**
Completed - 2020-12-04 11:01:57
No description was provided.
- mi-workspace-minimal_analysis1**
Completed - 2020-12-04 11:01:43
No description was provided.
- Jupyter_Lab_QIIME2_2019.10_analysis1**
Completed - 2020-12-02 13:54:13
No description was provided.
- mi-workspace-minimal_analysis1**
Completed - 2020-11-18 14:41:19
No description was provided.

Recently Used Apps:

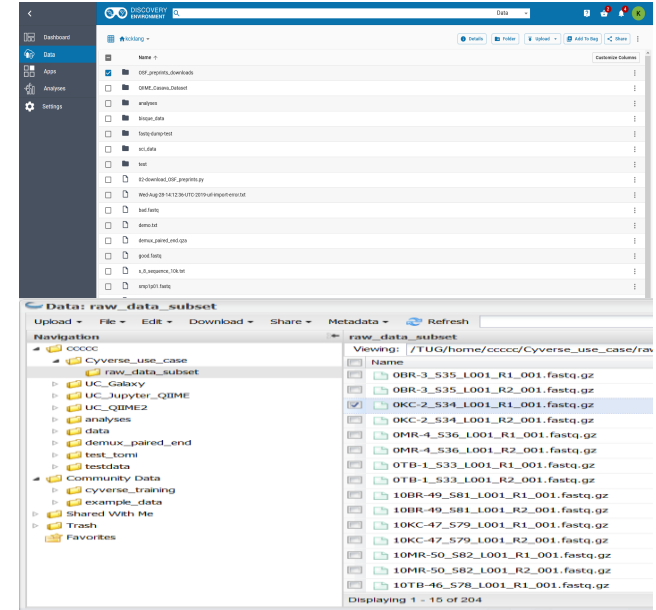
- Orange-ML-Xpra**
Integrated by tsawetnam on 2020-10-18 20:07:54
- mi-workspace-minimal**
Integrated by tsawetnam on 2020-08-25 18:23:09
- Jupyter Lab QIIME2 2019.10**
Integrated by tsawetnam on 2019-11-08 20:24:52

File List:

Name
OSF_preprints_downloads
QIIME_Casava_Dataset
analyses
bisque_data
fastq-dump-test
sci_data
test
02-download_OSF_preprints.py
Wed-Aug-28-14:12:36-UTC-2019-url-import-error.txt
bad.fastq
demo.txt
demux_paired_end.qza
good.fastq
s_8_sequence_10k.txt
smp1p01.fastq

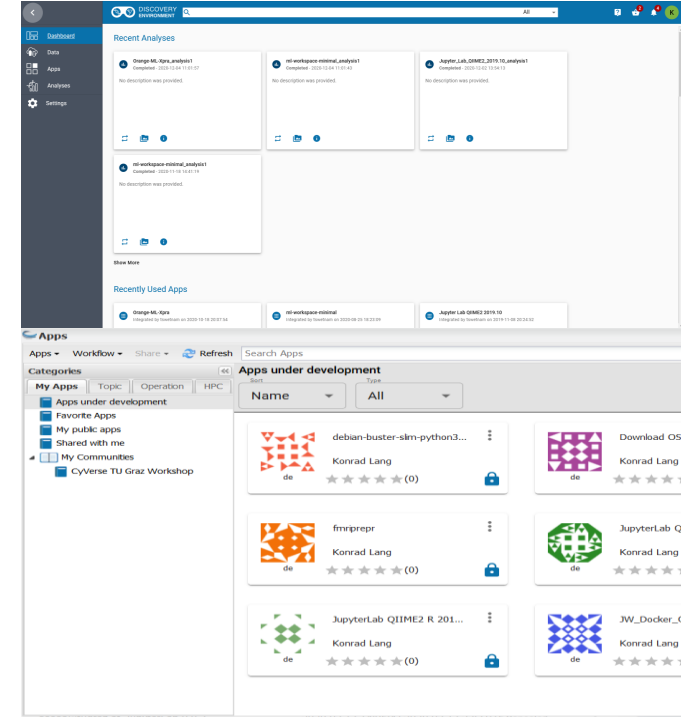
Data Management

- Data in-house, access from everywhere via VPN
UI and command-line (*iCommands/iRODS*)
Cyberduck
WebDAV (*Web-based Distributed Auth and Vers*)
Drag&Drop in UI
- Logfiles for activities
- Data sharing with collaborators (*view and edit rights*)
- External data can be linked with iRODS
- ElasticSearch for Data Discovery
- FAIR data management (*metadata documentation*)
- Automated extraction of metadata
- Flexible usage of storage resources



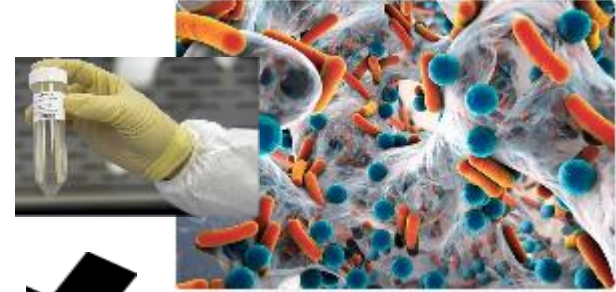
Data Analytics

- UI and command-line
- Bring your own Analysis/Application
- Interactive applications and scripts in background
- Data and apps in-house, access from everywhere via VPN
- Life Science community apps, but also generic applications (*e.g. Jupyter Notebooks, Rstudio, Orange, ML Workspace, ...*)
- Integration of home-made tools
- Logfiles for activities
- Reproducibility (*conservation of app version*)
- Analysis pipelines with workflow engine
- Connection to high-performance computing (HPC) resources
- Flexible usage of computing resources

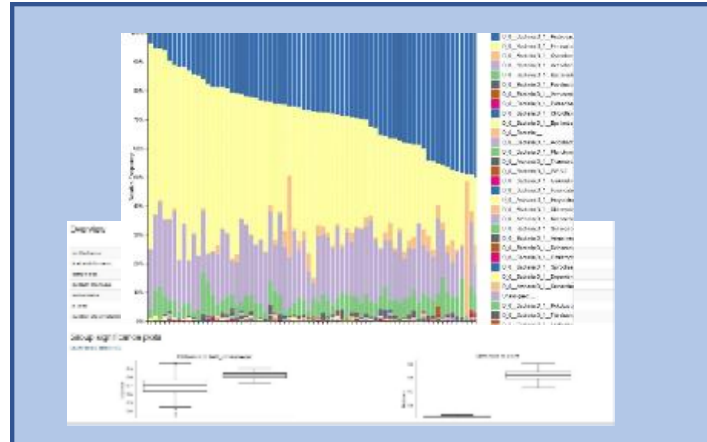


Use Case I – Data merging for metagenomics

Biotic surface
Tomislav
Cernava
TU Graz



Abiotic surface
Alex Mahnert
MedUni Graz

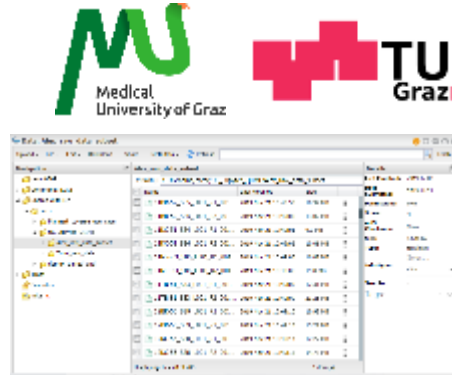


Use Case I – Data merging for metagenomics

Data Sharing



Data Analytics



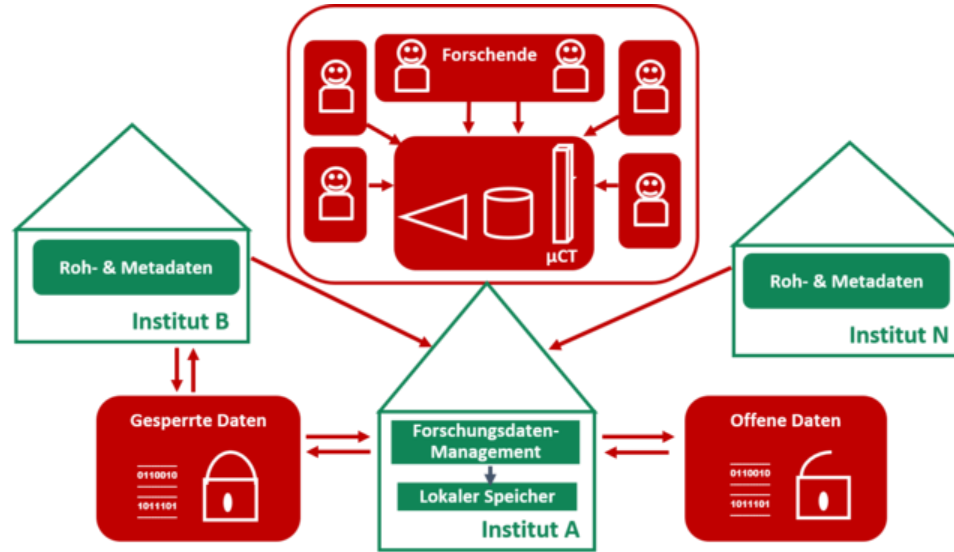
Adjust metadata

Merge metadata

Link data to metadata

Shared analysis

Use Case II – Data Sharing for Core Infrastructures



μCT at TU Graz. 13 Institutes at the BioTechMed universities use a computer tomograph located at Graz University of Technology. In order to make data from the system available for researchers at Medical University of Graz and University of Graz, CAT will be used.

Thank you!

Prof. Dr. Stefanie Lindstaedt

slind@know-center.at

<https://cyverse.tugraz.at>

