

Data use-cases at CEITEC

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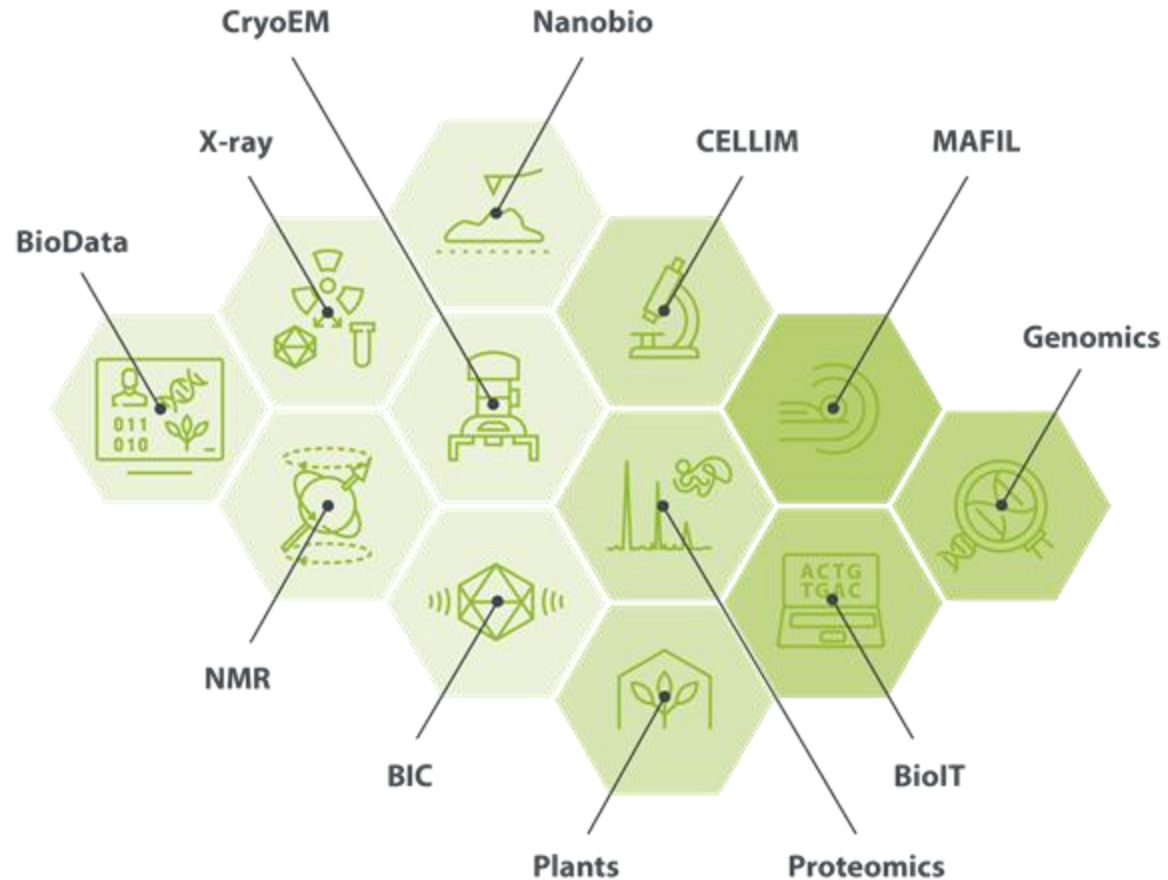
Co-funded by
the European Union



CEITEC Brno, CZ

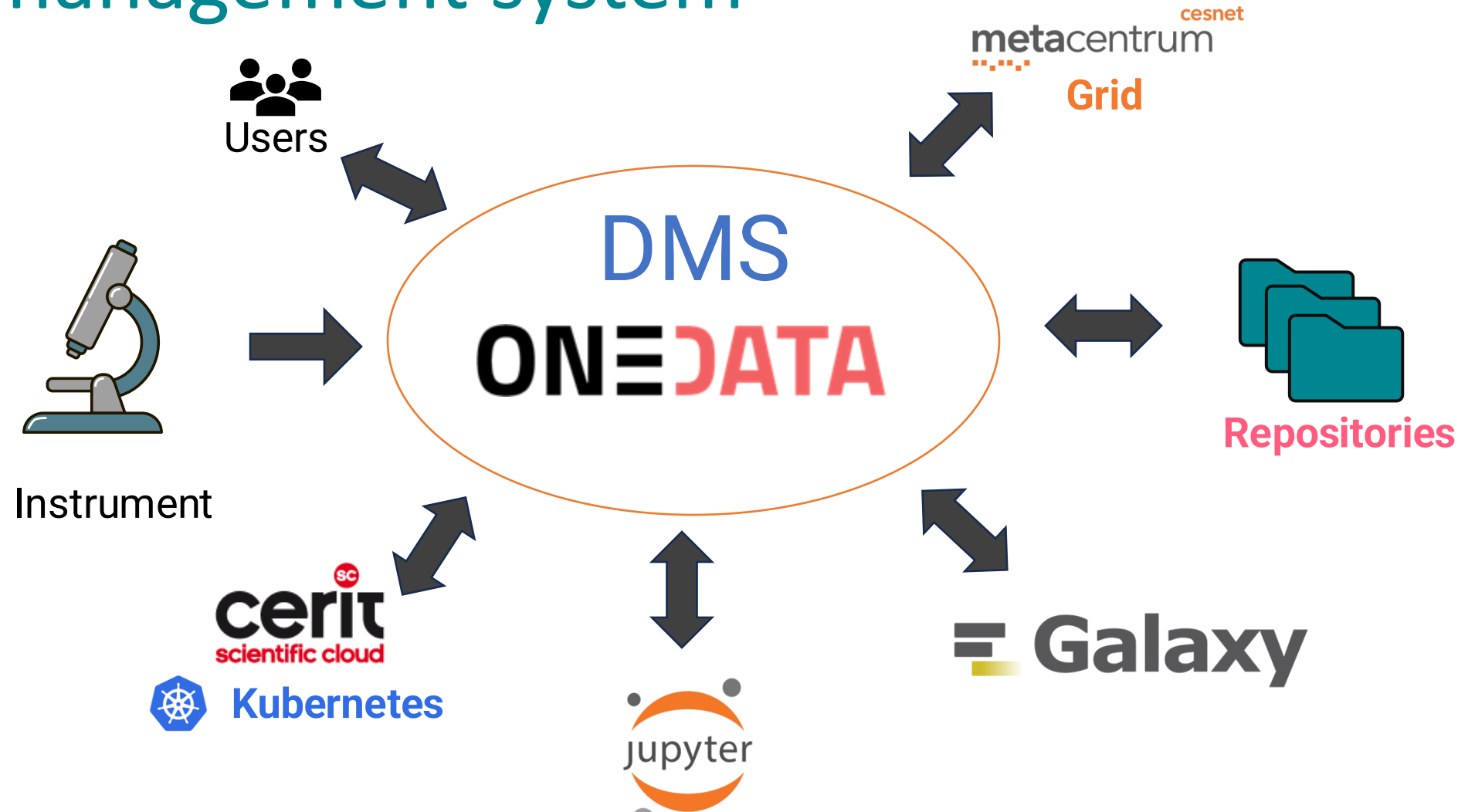
- Consortium of six universities and research institutions
 - Masaryk University, Brno University of Technology, Mendel University, University of Veterinary Sciences, Institute of Physics of Materials of the Czech Academy of Sciences, Veterinary Research Institute
- Variety of research groups
 - Life sciences, Plant biology, Advanced materials, Biomedical engineering, Neurosciences, Molecular medicine, ...
- Shared laboratories
- Approximately 600–650 employees

CEITEC MU Core Facilities



EB	Biophotonics
BIC	Biomolecular Interactions and Crystallization
BioData	Biological Data Management and Analysis
BioIT	Bioinformatics
CELLIM	Cellular Imaging
CryoEM	Cryo-electron Microscopy and Tomography
Genomics	Genomics
MAFIL	Multimodal and Functional Imaging Laboratory
NMR	Josef Dado National NMR Centre
Plants	Plant Sciences
Proteomics	Proteomics
X-ray	X-ray Diffraction and Bio-SAXS

Data management system



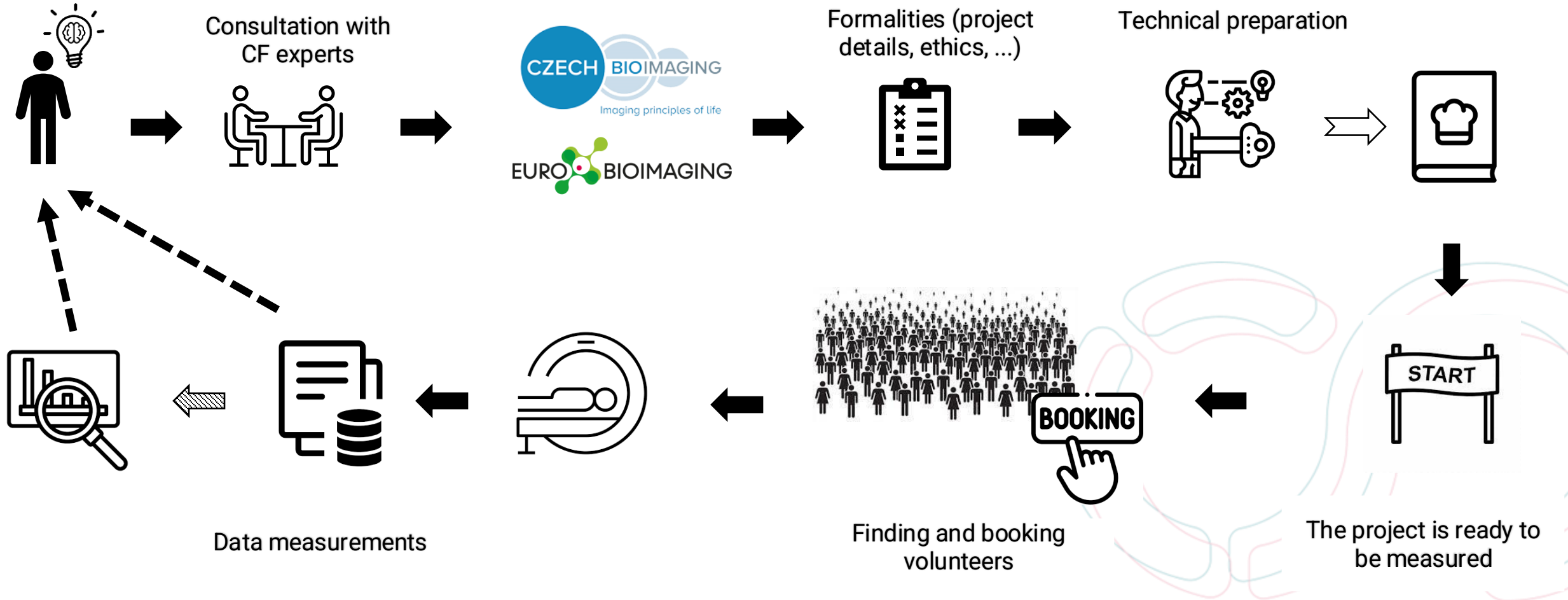
MAFIL (Multimodal and functional imaging laboratory)

- Instruments

- MR
- EEG
- HRM, Motion sensor, eye-tracking, ...)
- Concurrent measurements



Životní cyklus projektů v CF MAFIL



Project details

Planning board

Reservation list

Tickets

Infrastructure

Logbook

MAFIL projects

Original version

CS

< Back

ResArt - Development of methods for reduction of MR-induced artifact residuals in EEG.

Export to Excel

1 Potential

2 Preparation

3 Measurement

4 End

Move the project to a phase:

Unrealized

Unsuccessfully completed

Successfully completed

Basic information

Members

Reservation

Documents

Discussion

Žádosti o změnu

Audit

Project name (CZ):*

ResArt - Development of methods for reduction of MR-induced artifact residuals in EEG.

Acronym:*

ResArt

Principal investigator:*

Contact person:*

Responsible person MAFIL:*

Solving from:*

01.04.2023

Solving to:

31.12.2023

Approval required by EC?

Yes

Ethics committee:

EKV

Ethics committee approval date:

28.03.2023

☐ Data processing

Payment type:

CzechBioImaging grant scheme

Data access type:

Only with the consent of the project ...

Infrastructure approach:

☐ CZBI

☐ EUBI

☐ RIAT

Short note:

Description of the scope of services:

20 minutes in MR
20 minutes in EEG lab

Economic notes:

Project description:

Cílem projektu je vyvinout algoritmus pro čištění elektroencefalografických (EEG) dat měřených v prostředí magnetické rezonance (MR). Podle našich dosavadních pozorování

Service type

Data acquisition:

Partial service

Data acquisition preparation:

Not applicable

Analysis:

Not applicable

Contacts with access to project data

Add

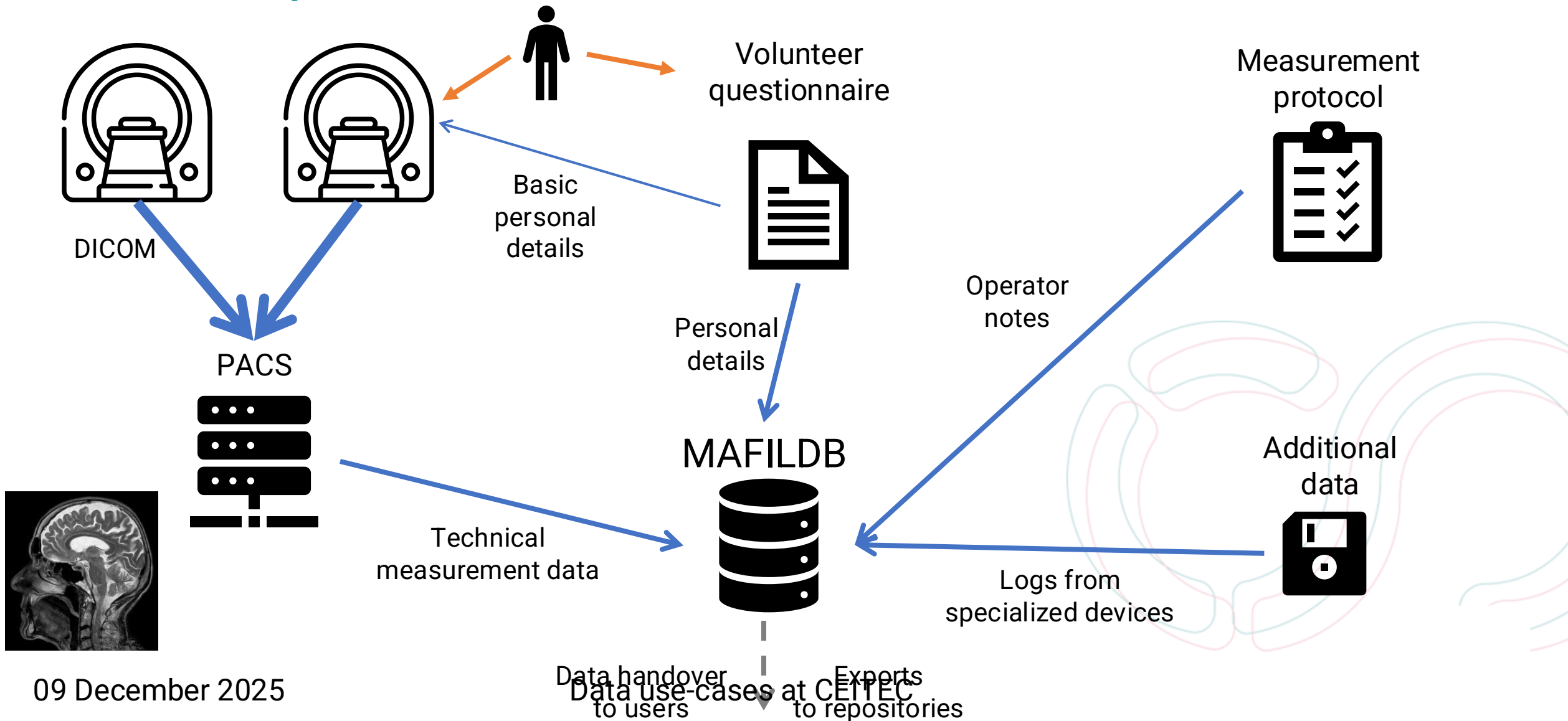
Create

Action	Firstname	E-mail	Institution	Primary project	Primary research group
Remove	Tomáš		ceitec.muni.cz Masarykova univerzita		Multimodální a funkční neurovizualizace
Remove	Anežka		ceitec.muni.cz Masarykova univerzita		CF: Laboratoř multimodálního a funkčního zobrazování
Remove	Radek Mareček	radek.marecek@ceitec.muni.cz	Masarykova univerzita		CF: Laboratoř multimodálního a funkčního

09 December 2025

Data use-cases at CEITEC

Životní cyklus dat z měření v CF MAFIL



MAFILDB

Study details

mafilddb.ics.muni.cz/pacs/study/1.3.12.2.1107.5.2.43.66042.30000023020209030698800000004

Tomáš

Tomáš Slavíček
(142023@muni.cz)

MAIN NAVIGATION

Dashboard

ENTITIES

Projects

Subjects

Visits

Visits by project

DATA ADMINISTRATION

Check new imports

PACS

Studies

Series

Instances

Statistics

SYSTEM ADMINISTRATION

Users

Log

Admin interface

Study details

Study tags in PACS

List of DICOM tags which are stored in PACS cache.

Date

02.02.2023

Time

12:40:23

Visit ID

6506A

Project

TEST-FANTOM

Subject

FANTOM ADAMsDBS

Birth date

01.01.1980

Personal ID

1-1-1980

Gender

O

Study ID

1

Study description

head^TESTING

StudyInstanceUID

1.3.12.2.1107.5.2.43.66042.30000023020209030698800000004

Visit in MAFILDB

The following visit **already exists** for this study in MAFILDB.

Visit ID

6506A

Subject

FANTOM ADAMsDBS

Project

TEST

Date

02.02.2023

Status

Processed

Actions

Details

Series in PACS

Actions

Time

SN

Description

ImageType

Instances

StationName

OperatorsName

BodyPartExamined

Series details

12:49:03.683

2

t1_mpr_sag_ejaL

['ORIGINAL', 'PRIMARY', 'M', 'ND']

160

CEIMR2

Vojta

HEAD

Series details

15:29:20.636

8

t1_mpr_sag_ejaL

['ORIGINAL', 'PRIMARY', 'M', 'ND']

160

CEIMR2

Vojta

HEAD

Series details

12:49:03.966

3

t1_mpr_sag_ejaL

['ORIGINAL', 'PRIMARY', 'M', 'ND']

160

CEIMR2

Vojta

HEAD

Series details

15:29:21.050

0

t1_mpr_sag_ejaL

['ORIGINAL', 'PRIMARY', 'M', 'ND']

160

CEIMR2

Vojta

HEAD

OperatorsName

BodyPartExamined

SequenceName

SliceThickness

RepetitionTime

SpacingBetweenSlices

PercentPhaseFieldOfView

SoftwareVersions

ProtocolName

Thickness

RepetitionTime

2150

2150

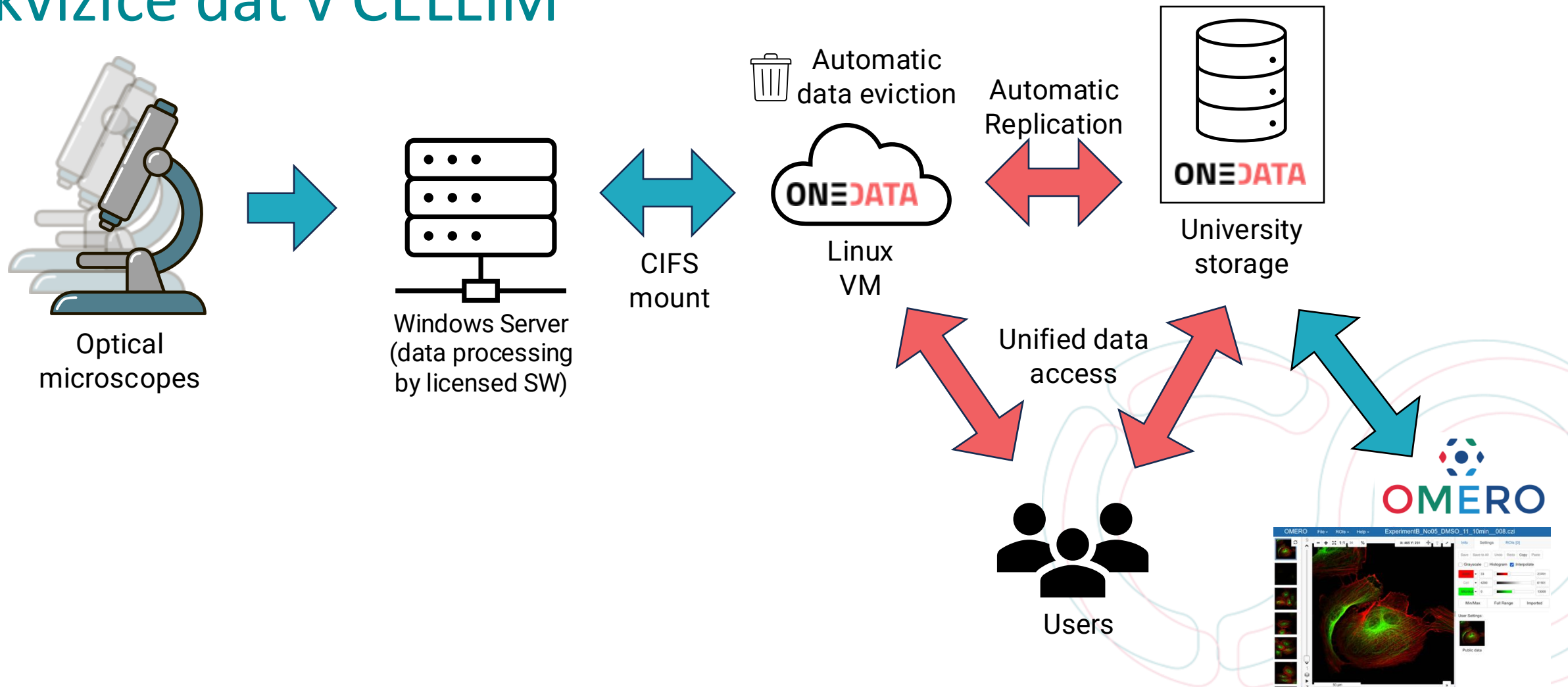
2150

2150

09 December 2025

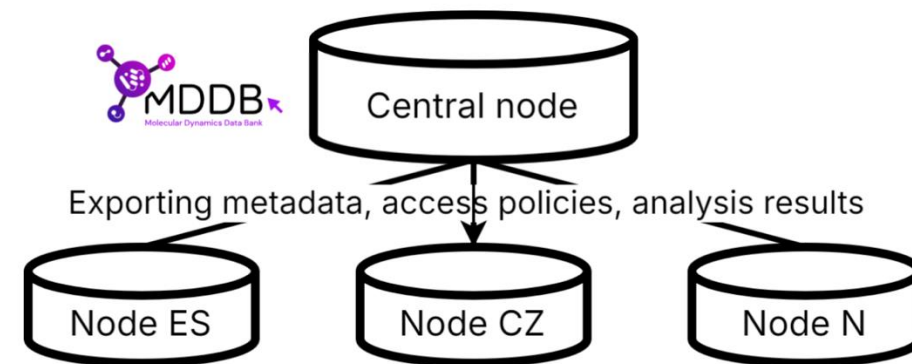
Data use cases at CEITEC

Akvizice dat v CELLIM



Molecular dynamics simulations

- Provide space for CZ simulations data (3-5PB)
- Integrate MDDDB-CZ into European MDDDB
- Features of repository:
 - **Data transfers from e-INFRA CZ**
 - **Ability to visualize MD Trajectory**
 - **Automated annotations**
 - Curated MD data
 - Integrated with persistent identifiers e.g. DOI
 - Integrated with European repository

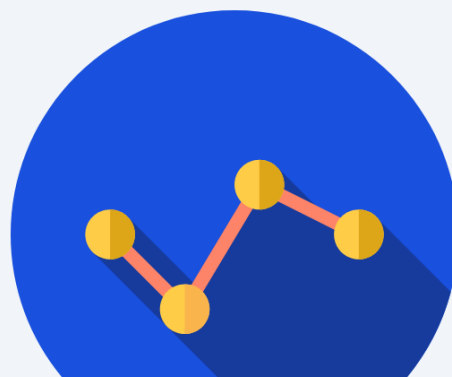


EMBL-EBI



Repository of Computational Chemistry Experiments

This repository contains experiments from various organizations. You can run simulations on experiments, download metadata and explore what you need.

[Search](#)[Deposition](#)

Explore data through interactive simulations

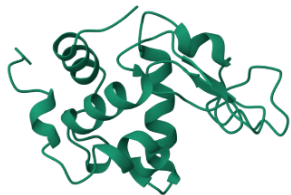
Dive into a rich library of chemistry experiments presented as dynamic, easy-to-read graphs. Analyze trends and gain real insights. Our tools help researchers, students, and educators make sense of complex data through clear visualizations

— all accessible from your browser

Data use-cases at CEITEC

[< Back](#)

Simulations from the Binding Affinity Prediction workflow of the project, 3F7I

[< Hide](#) Metadata↑
Protein: 1AKIAccess:  [Open](#)

Affiliation

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris

[Show more](#)

DOI

doi.com/xyz-abcd-efgh

Tags

Protein / Structure / Molecule

Authors

Carter Dexter / Wolberger C / Ruble JR

Date of publication

20.12.2024

Simulated object

Some molecule

Experiments

10

 Filters

Date published

▼

 Results

Result number 1

>

Metadata about the experiment

Result number 2

>

Metadata about the experiment

Result number 3

>

Metadata about the experiment

Result number 4

>

Metadata about the experiment

Result number 5

>

Metadata about the experiment

Result number 6

>

Metadata about the experiment

Result number 7

>

Metadata about the experiment

Result number 8

>

Metadata about the experiment

Result number 9

>

Metadata about the experiment

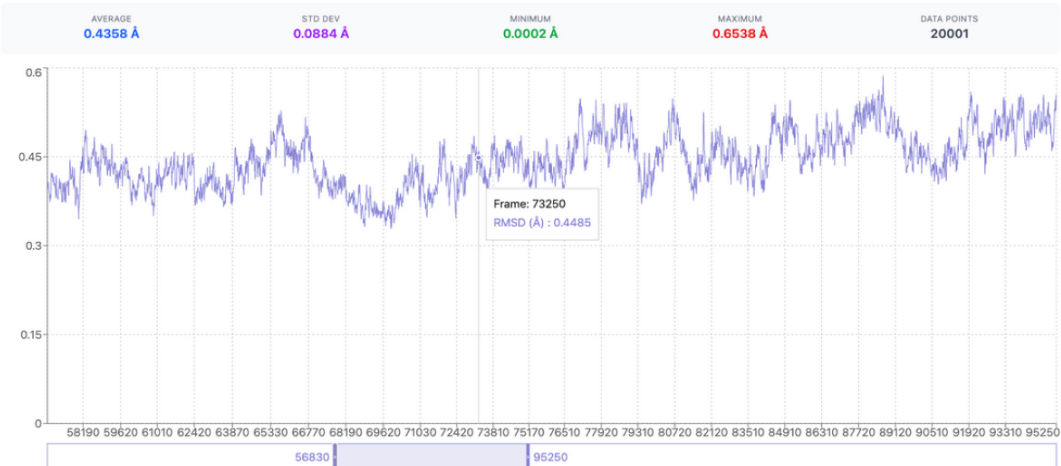
Experiment preview

Preview group ▼

Preview group ▼

Preview group ▼

Preview group ▼

[Download](#) Co-funded by
the European UnionContacts
[Documentation](#)

Data use-cases at CEITEC

Deposition steps



0 of 3 steps completed

Administrative0/9

System Information0/11

Experiments0/1

Review & Submit

System Information

* System Files

Upload .gro, .top, or .pdb files
(File upload component placeholder)

Upload the initial structural source and topology files.

Molecular System Composition

Define the biological and chemical makeup of the system.

* Initial Structural Source

e.g., PDB: 1ABC, AlphaFold

Solvent Model

e.g., TIP3P

Protein Model

e.g., Amber99sb

Ligand Model

e.g., GAFF

System Dimensions

Atom counts and box geometry.

* System Size (Atoms)

e.g., 50000

Box Volume (nm³)

Optional

Box Dimensions (nm)

X

Y

Z

Methodology

Force fields and engine details.

* Force Field

e.g., CHARMM36m

* Parametrization Method

e.g., CGenFF

Simulation Engine

Name

e.g., GROMACS

Version

e.g., 2023.1

Build (Optional)

e.g., GPU/CUDA



Trajectory



MetaDump



<https://gmd.ceitec.cz/>

Show me simulations where helix A unwinds

Search

0 results

Thank you!

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svoboda@ics.muni.cz



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YOUTH AND SPORTS