

# ACONET – EGI user workshop

Federated processing infrastructure for Austrian researchers

Matthias Schramm



## Presenters

Giuseppe La Rocca, EGI

- Lead of Community Support Team at EGI

Michael Redinger, ACONET, UIBK

- Head of Central IT Service, UIBK / Member of ACONET board

Josef Taha, TU Wien

- Expert in Digital Teaching and HPC

Matthias Schramm, TU Wien

- Austrian contact point to EGI

**Remote:** Krisztián Póra (SZTAKI), Attila Farkas (SZTAKI), Christian Briese (EODC), Charis Chatzikyriakou (EODC)

## Meeting targets

- To present a section of research infrastructure in Austria and its possibilities to collaborate
  - System still highly dynamic
- To introduce the ACONET backbone
- To explain access to ACONET and EGI identity federations
- To give an overview, how to approach and to use the EGI network as a user
- To show, how to make research reproducible with the EGI infrastructure
- To show the EGI federation from the view of an Austrian Service provider
- To discuss the usefulness, possibilities and obstacles of the EGI federation by Austrian users
  - → Online Survey

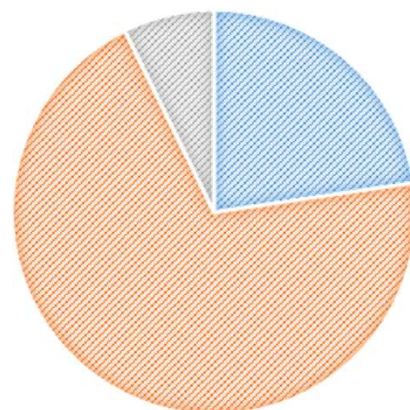


## Austrian scientific community

### National funding:

- R&D funding by central government in 2022: 3,87bn EUR
- General University Funds for R&D 2020-22: 2,11bn EUR

AUSTRIAN R&D PERSONNEL 2019 (FULL-TIME EQUIVALENT)



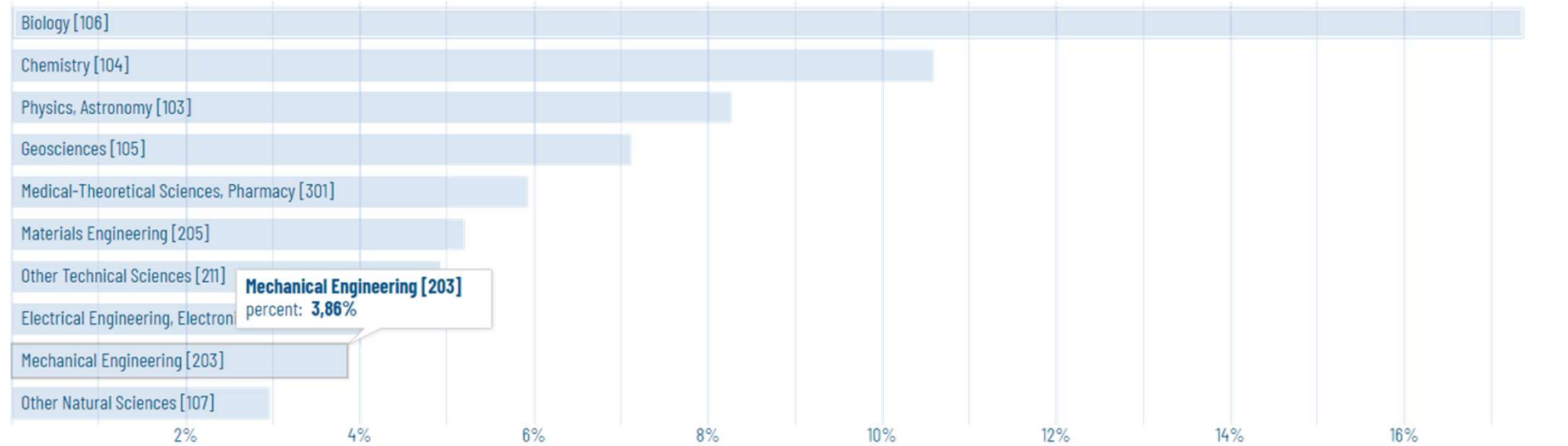
- Higher Education sector: 18970,9 (14668,5 researchers)
- Business enterprise sector: 58591,5 (33868,1 researchers)
- Government and private non-profit sector: 6097,5 (3817 researchers)

## RESEARCH AREAS / AUSTRIAN FIELDS OF SCIENCES / AUSTRIA

Federal Ministry  
Republic of Austria  
Education, Science  
and Research

FORSCHUNGS  
INFRASTRUKTUR  
DATENBANK

### TOP CATEGORIES / 3 DIGITS



### MAIN GROUPS / 3 DIGITS

**49.216%**

Natural Sciences

**26.830%**

Technical Sciences

**14.374%**

Human Medicine, Health Sciences

**4.261%**

Humanities

**2.370%**

Social Sciences

**1.663%**

Agricultural Sciences, Veterinary Medicine

**0.676%**

Fine / Visual Arts

**0.498%**

Music

**0.112%**

Performing Arts

aconet

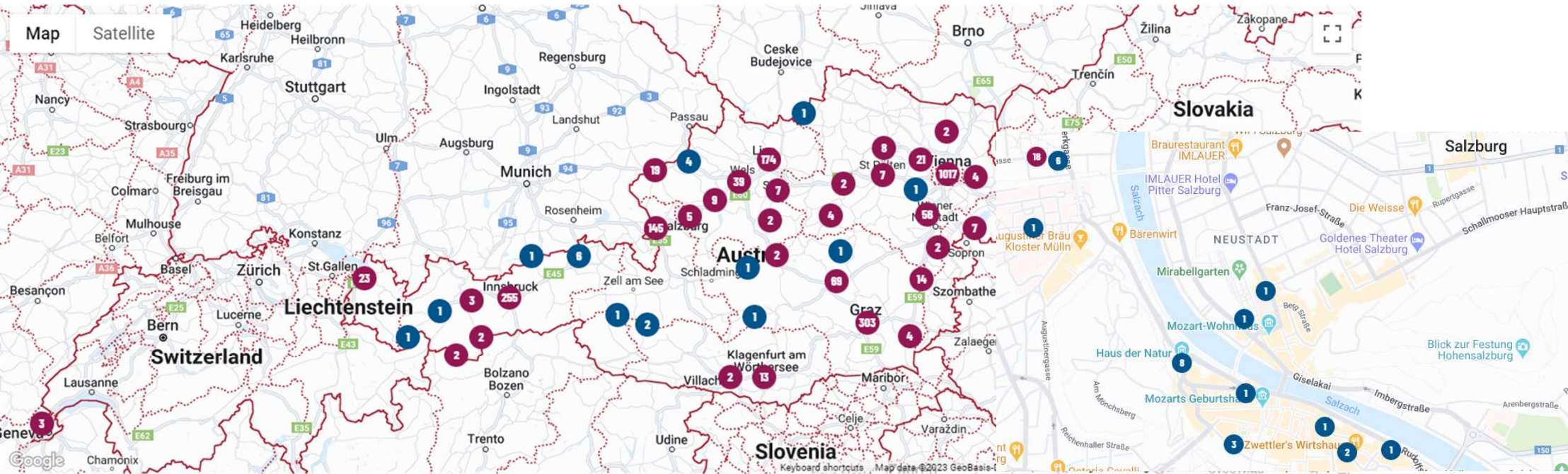
egi

# 2,249

RESEARCH INFRASTRUCTURES / OPEN FOR COLLABORATION / AUSTRIA

Federal Ministry  
Republic of Austria  
Education, Science  
and Research

FORSCHUNGS  
INFRASTRUKTUR  
DATENBANK



## 1,500

Large equipment

## 313

Core facility (CF)

## 195

Electronic database / Collection

## 133

Other research infrastructure

## 108

Spatial research infrastructure



# Example Joint Research Infrastructures

## “Research Data” digitisation cluster

- 3 infrastructure projects, funded by the Federal Ministry of Education, Science and Research
- Target: coordinating interaction between research information systems + research data management infrastructures

TU Graz	TU Wien
Akademie der Bildenden Künste Wien	Johannes Kepler Universität Linz
Medizinische Universität Graz	Medizinische Universität Wien
Universität für angewandte Kunst Wien	Universität für Bodenkultur
Universität Innsbruck	Universität Klagenfurt
Universität für Musik und darstellende Kunst Wien	Universität Salzburg
Universität Wien	Veterinärmedizinische Universität Wien
Wirtschaftsuniversität Wien	FWF – Der Wissenschaftsfonds
FFG – Die Österreichische Forschungsförderungsgesellschaft	WWTF – Wiener Wissenschafts- und Technologiefonds

+ associated partners



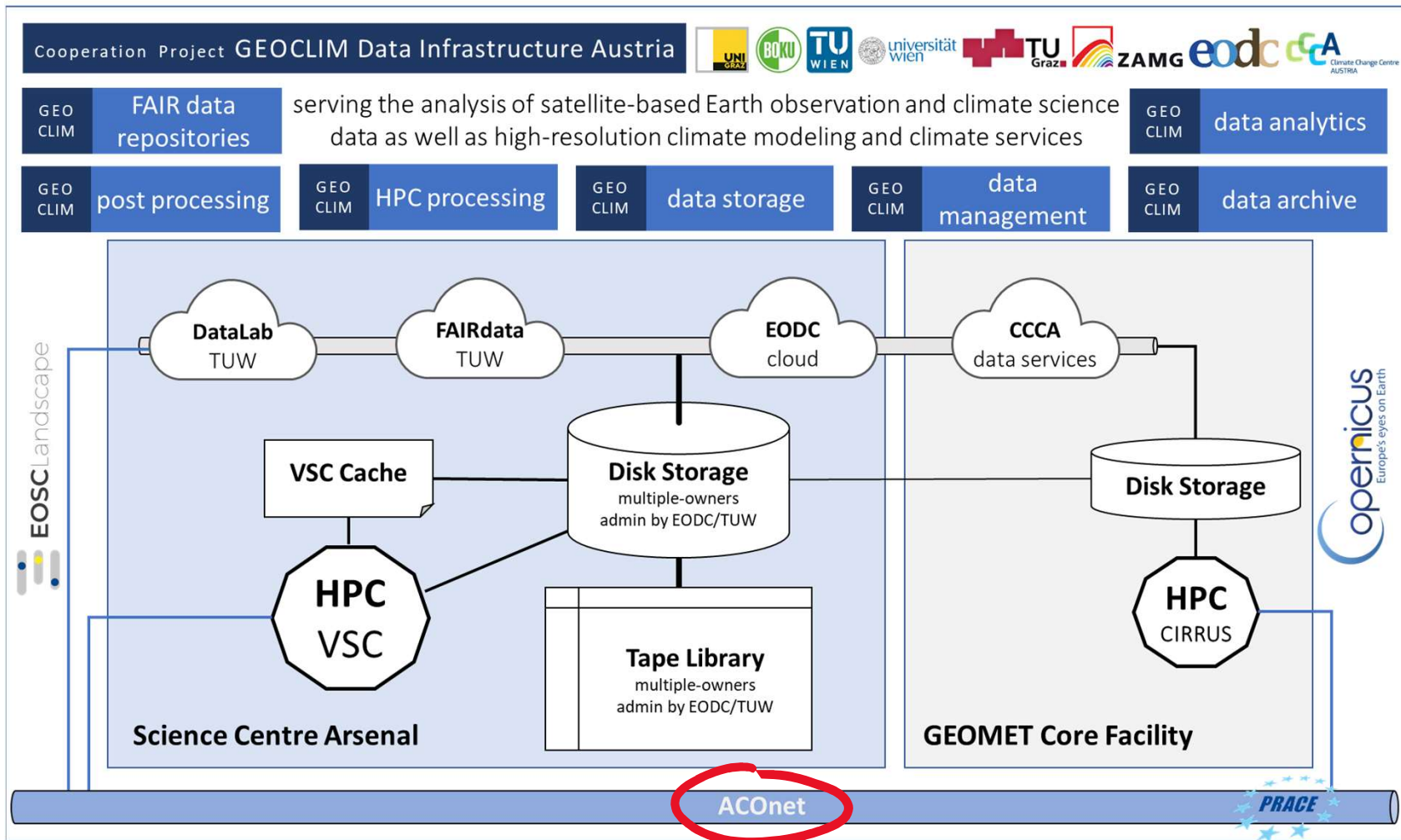
## Example Joint Research Infrastructures

### GEOCLIM

- Infrastructure project under lead of Univ. of Graz
- Target: enhancing data centres of EODC Earth Observation Data Centre and Climate Change Centre Austria–Data Centre; integrating HPC from Vienna Scientific Cluster; increasing cooperation of project partners
  - Near-real time provision of geo- and climate data; joint access to compute and storage facilities
  - Synergies in teaching in the topics of „big data“ and „machine learning“
  - Creating base for acquiring further research projects and funding (EC Horizon, national, ...)

# Example Joint Research Infrastructures

## GEOCLIM



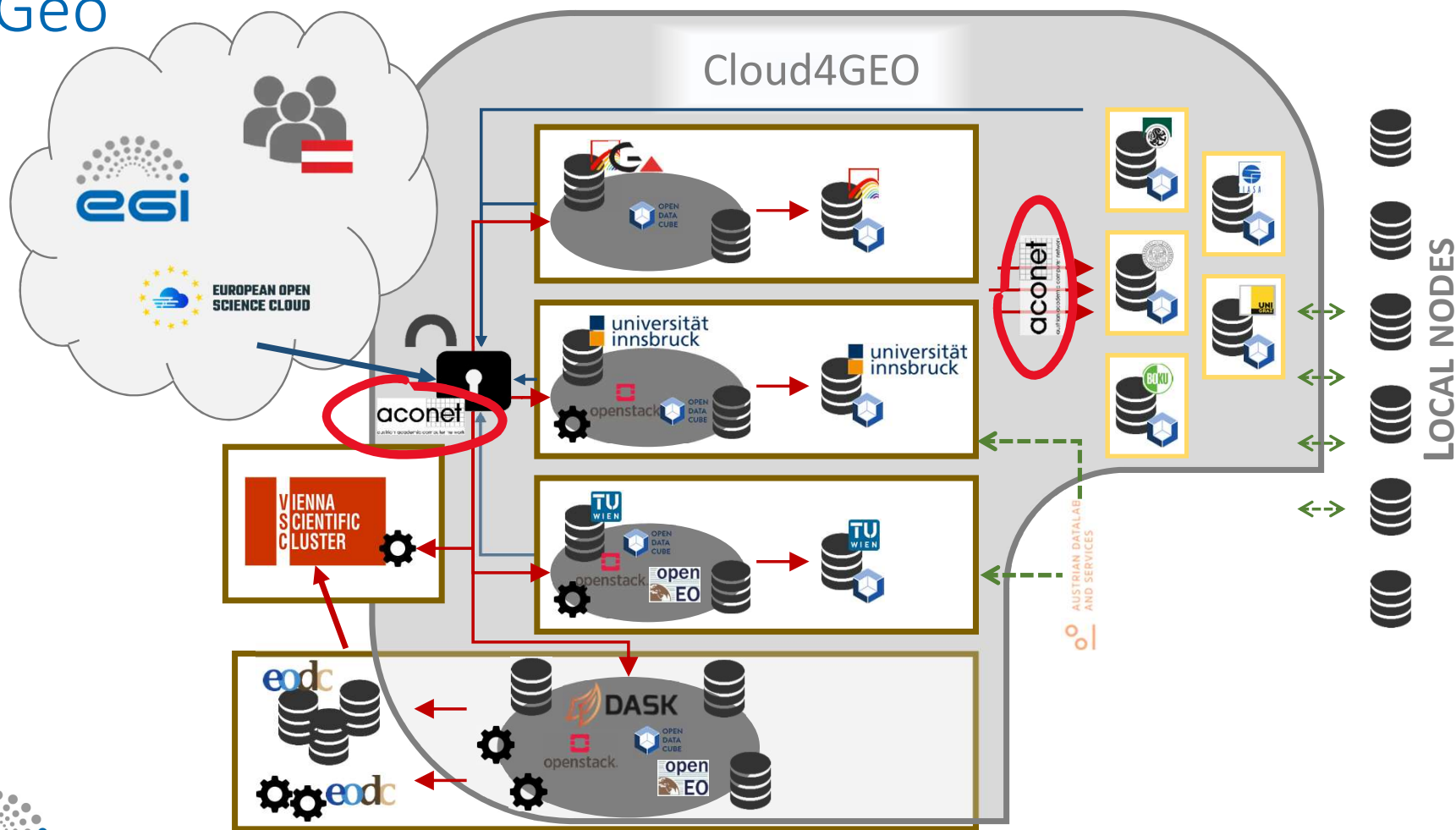
Technical setup of Austrian scientific data services & platforms. Concept: W. Wagner (TUW), C. Schubert (CCCA), GEOCLIM Consortium.

# Example Joint Research Infrastructures

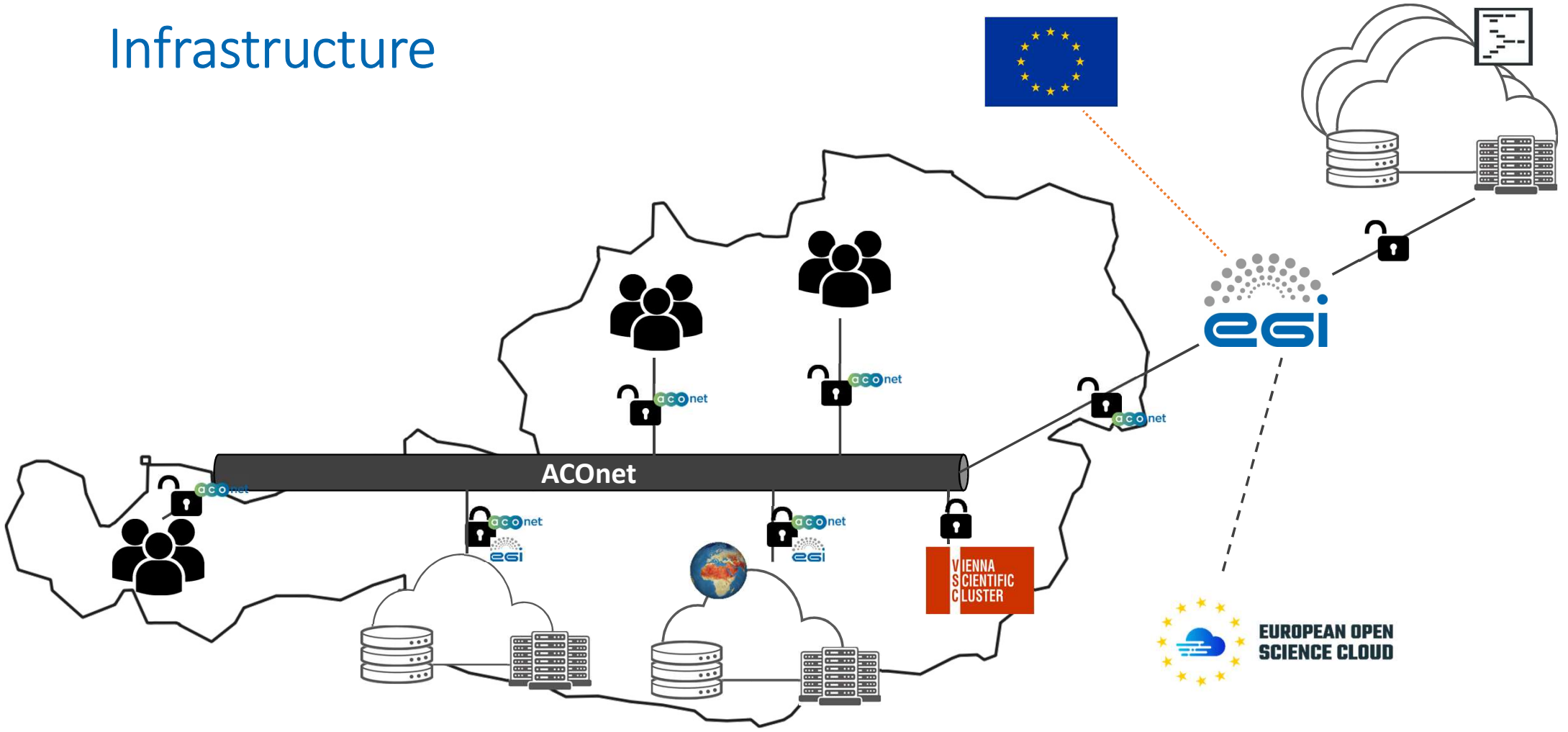
## CLIP - Cloud Infrastructure Platform

- Cloud infrastructure platform + supercomputer cluster
  - DNA sequencing, theoretical modelling and scientific visualisations of structures
- Partners:
  - Gregor-Mendel-Institute (GMI)
  - Institute of High Energy Physics (HEPHY)
  - Institute of Molecular Biotechnology (IMBA)
  - Stefan Meyer Institute (SMI)
  - Research Institute of Molecular Pathology (IMP)
- Established at the Vienna BioCenter
- Target users: scientists that use complex simulations
  - research fields ranging from geology to physics, mathematics, aerospace research

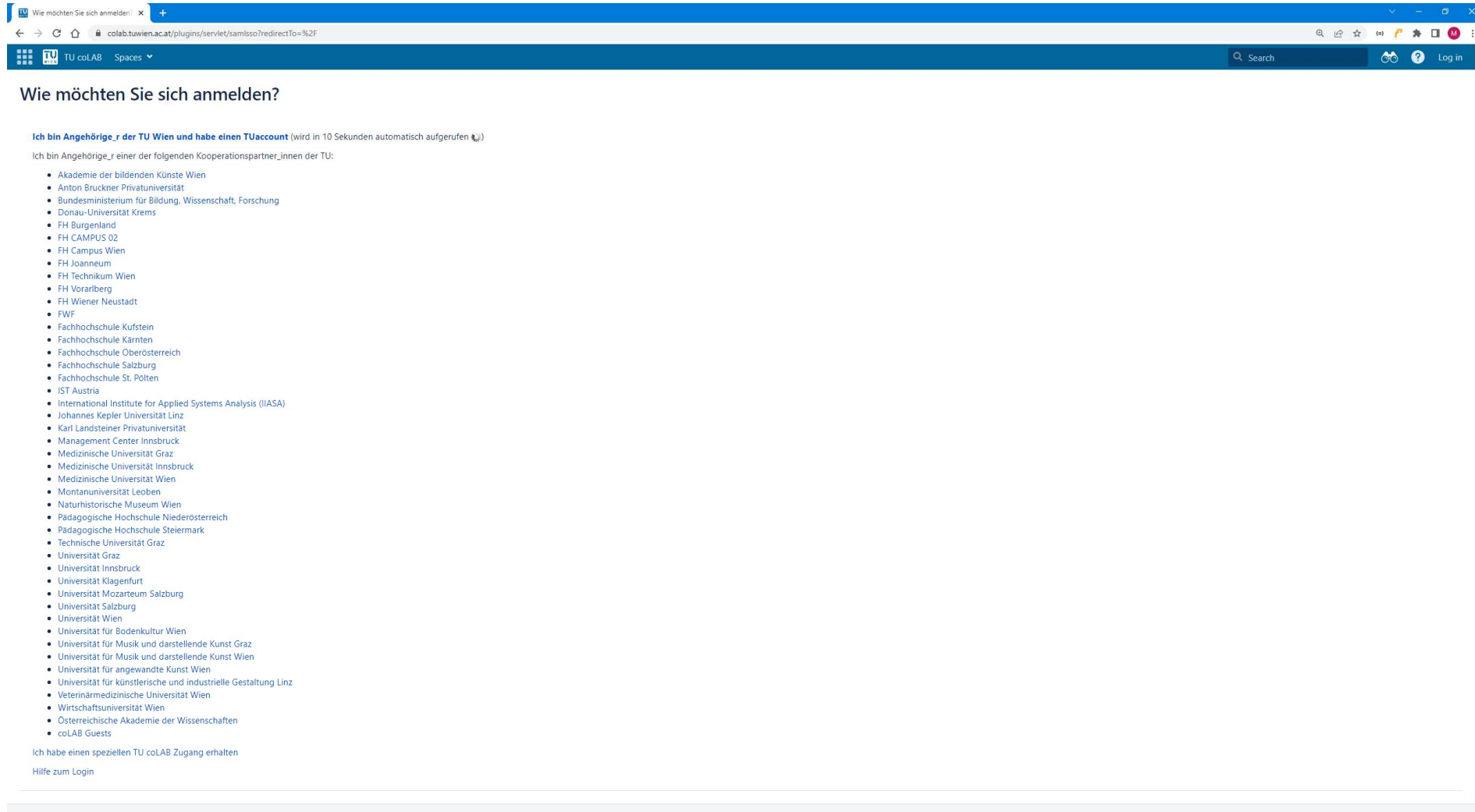
# Example Joint Research Infrastructures Cloud4Geo



# Infrastructure



# Austrian wide ACONET identity federation



Wie möchten Sie sich anmelden?

Ich bin Angehörige\_r der TU Wien und habe einen TUaccount (wird in 10 Sekunden automatisch aufgerufen)

Ich bin Angehörige\_r einer der folgenden Kooperationspartner\_innen der TU:

- Akademie der bildenden Künste Wien
- Anton Bruckner Privatuniversität
- Bundesministerium für Bildung, Wissenschaft, Forschung
- Donau-Universität Krems
- FH Burgenland
- FH CAMPUS 02
- FH Campus Wien
- FH Joanneum
- FH Technikum Wien
- FH Vorarlberg
- FH Wiener Neustadt
- FWF
- Fachhochschule Kufstein
- Fachhochschule Kärnten
- Fachhochschule Oberösterreich
- Fachhochschule Salzburg
- Fachhochschule St. Pölten
- IST Austria
- International Institute for Applied Systems Analysis (IIASA)
- Johannes Kepler Universität Linz
- Karl Landsteiner Privatuniversität
- Management Center Innsbruck
- Medizinische Universität Graz
- Medizinische Universität Innsbruck
- Medizinische Universität Wien
- Montanuniversität Leoben
- Naturhistorische Museum Wien
- Pädagogische Hochschule Niederösterreich
- Pädagogische Hochschule Steiermark
- Technische Universität Graz
- Universität Graz
- Universität Innsbruck
- Universität Klagenfurt
- Universität Mozarteum Salzburg
- Universität Salzburg
- Universität Wien
- Universität für Bodenkultur Wien
- Universität für Musik und darstellende Kunst Graz
- Universität für Musik und darstellende Kunst Wien
- Universität für angewandte Kunst Wien
- Universität für künstlerische und industrielle Gestaltung Linz
- Veterinärmedizinische Universität Wien
- Wirtschaftsuniversität Wien
- Österreichische Akademie der Wissenschaften
- coLAB Guests

Ich habe einen speziellen TU coLAB Zugang erhalten

[Hilfe zum Login](#)

# Agenda

<https://indico.egi.eu/event/6087/>

<b>09:00 → 09:30</b>	<b>Welcome and framing the workshop</b>
<b>09:30 → 10:15</b>	<b>EGI e-infrastructure - Advanced computing services for science</b>
	Coffee break
<b>10:55 → 11:25</b>	<b>ACONET services and activities</b>
<b>11:25 → 11:55</b>	<b>Distributed Deep Learning with Horovod on EGI and on other cloud resources (REMOTE)</b>
<b>11:55 → 12:55</b>	<b>Distributed cloud computing - Hands-on with EGI services</b>
	Lunch break
<b>13:45 → 14:30</b>	<b>Reproducible research with TUW and EGI services - Presentation and hands-on exercises</b>
<b>14:30 → 14:45</b>	<b>Q&amp;A</b>
<b>14:45 → 15:15</b>	<b>Earth Observation Data Centre: Austrian cloud infrastructure in the EGI federation (REMOTE)</b>
	Break
<b>15:30 → 16:30</b>	<b>Discussion - How to benefit from the presented solutions in Austria and way forward for EGI and ACONET</b>

## Question to participants

<https://indico.egi.eu/event/6087/>

- Is using the EGI infrastructures an option for you / your colleagues?
- Are there technical requirements that need to be solved?
- Do you see any other obstacles for your entity making use of the EGI network?
  - Can ACONET / EGI help overcoming those obstacles / meeting the requirements?
- Can EGI infrastructure help in current ambitions of international collaborations?
  - Can we help foster those efforts?
- Is there interest on other information formats? Bilateral? For specific research topic?
- Suggestions on next steps to bring Austrian research communities together in the EGI / ACONET federation?



<https://www.egi.eu/event/egi2023/>



The banner features the EGI logo (a semi-circle of dots above the letters 'egi') and the text 'Conference 2023' in the top left. The central focus is the large text 'EGI 2023', where each letter is a white cutout revealing a different colorful building facade. Below the main text, there are three columns of information: the website and hashtag, the dates and location, and a 'Save the Date' message.

www.egi.eu  
#EGI2023

19 – 23 June, 2023  
Novotel Poznan  
Centrum, Poland

Save the  
Date

# Thank you!

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