TCS Multi-scale laboratories (WP16) splinter meeting @EGU2019

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9th April 2019
Outline:

✓ Multi-scale laboratories (MSL) network - mission reminder
✓ Governance structure
✓ What’s in it for laboratories?
✓ What’s in it for researchers?
✓ Technical side of the equation
✓ How are we doing and how can we improve?

Lets keep it interactive!
Multi-scale laboratories (MSL) network - mission reminder

• Creating a coherent and well-organized network of solid Earth Science laboratories

• Developing a Trans-national Access (TNA) program, that will increase European state-of-the-art solid Earth science laboratories’ attractiveness for researchers and contribute to increased researcher’s mobility, cooperation and exchange

• Implementing dedicated data services that will guarantee laboratory data harmonization for re-usability and interoperability with other solid Earth Science data

Network?

➢ Researchers
➢ Data publications
➢ Laboratories
➢ Equipment
➢ Repositories
➢ Etc.
Pan-European project with the goal:
Improving and facilitate the integration, access, use, and re-use of solid Earth science data, data products, services and facilities

Method:
Harmonizing and integrating the mosaic of distributed but separated solid Earth sciences Research Infrastructures within Europe

Deliverable:
A single sustainable, permanent and distributed infrastructure that integrates the diverse and advanced European Research Infrastructures for solid Earth science under a common framework

Governance:

*EPOS* = *E*uropean *P*late *O*bserving *S*ystem

*EPOS* = European Plate Observing System
EPOS timeline


https://www.epos-ip.org/
Solid Earth science communities thematically organized into different Thematic Core Service (TCSs)

➢ 10 TCSs in total
Data and metadata from 10 TCSs are harvested through a compatibility layer by the ICS-C.
Multi-scale laboratories (MSL)

Consortium:
11 institutes
10 countries

Governance

86 European laboratories

https://www.epos-ip.org/tcs/multi-scale-laboratories
**Multi-scale laboratories (MSL) - Governance**

**MSL governance structure EPOS-IP**
- Task leaders (UU, GFZ, ROMA3, INGV, NERC) hold monthly telecon meetings

**WP16 tasks:**
- Task 16.1 – Strategic activities and governance
- Task 16.2 – Coordination and Interaction with the community
- Task 16.3 – Interoperability with ICS
- Task 16.4 – Data services
- Task 16.5 – Trans-national Access (TNA)

**MSL governance structure EPOS-OP**
- Consortium Board: UU, GFZ, ROMA3, INGV, CNRS, ETHZ, CSIC, UBI, NERC, CNR, LMU
- Executive committee: UU, INGV, ROMA3
Developing a Trans-national Access (TNA) program, that will increase European state-of-the-art solid Earth science laboratories’ attractiveness for researchers and contribute to increased researcher’s mobility, cooperation and exchange.

Currently two types of services:
- Physical access: e.g. experimenting in the lab
- Remote service: e.g. mechanical characterization of rock analogue materials

Apply until April 21nd: [https://www.epos-ip.org/tcs/multi-scale-laboratories/data-services/transnational-access-tna](https://www.epos-ip.org/tcs/multi-scale-laboratories/data-services/transnational-access-tna)

Number of participating labs & proposals:
- 2019: 38 labs / call still open!
- 2018: 22 labs / 28 proposals
- 2017: 5 labs / 7 proposals
What’s in it for laboratories?

Become part of the MSL network

86 laboratories & growing!

Visibility within the community
What's in it for laboratories?

Share your research output

Open your lab for foreign researchers

Four subdomains (38 labs):

- Analogue modeling:
  - https://epos-ip.org/sites/default/files/repository/3rd_TNA_Call_Suppliers_Info_Analog_modelling.pdf

- Analytical & Microscopy:
  - https://epos-ip.org/sites/default/files/repository/3rd_TNA_Call_Suppliers_Info_Analytical%26Microscopy.pdf

- Paleomagnetism:
  - https://epos-ip.org/sites/default/files/repository/3rd_TNA_Call_Suppliers_Info_Paleomagnetism.pdf

- Rock/melt physics:
  - https://epos-ip.org/sites/default/files/repository/3rd_TNA_Call_Suppliers_Info_RockMelt.pdf

https://epos-msl.uu.nl
What’s expected from laboratories?

Provide information on your lab (location, contact, equipment)
What’s expected from laboratories?

Choose level of involvement within the MSL network:

- **Level 1a** – Data provider: a laboratory can join EPOS TCS MSL activities sharing its data via TCS compliant repositories linked to the TCS catalogue.

- **Level 1b** – TNA provider: a lab can join EPOS TCS MSL activities sharing its facilities.

- **Level 2** – Member (possible only after the start of the EPOS Operational Phase, from October 2019 onwards): the lab can be associated to EPOS TCS MSL if Level 1a and/or 1b are satisfied and if the lab has the "green flag" from its institution and EPOS national contact point.

- All TCS will have their own agreements for cooperation – in which the participating organizations define common goals
- For TCS Multi-scale labs we have chosen for a consortium agreement (CA)
What’s expected from laboratories?

Legal formalities (Level 1a/b)

- CC-BY 4.0 license or compliant
- no ‘private copy’ sharing
- embargo period maximized to 3yrs

Purpose: Protect EPOS from lawsuits when redistributing datasets

Online Agreement form is signed by individual users that upload datasets by means of ticking-off a checkbox. This can be done when uploading the dataset / entering the metadata. Uploader agrees to a) holding the intellectual property rights to upload the dataset and b) allows redistribution of the dataset with an appropriate open source license (CC:BY 4.0) by EPOS.

Future: ‘Disclaimer format’
What’s expected from laboratories?

List your facilities:

1. **Free access**
   - Only access to the lab is free of charge

2. **Free of charge**
   - Lab access and lab costs are waived for the user

3. **Free of charge + support**
   - Lab access and lab costs waived for the user, financial support for travel, accommodation, and food

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<table>
<thead>
<tr>
<th>R/TNA Supplier (Country Code)</th>
<th>Facility</th>
<th>Contact</th>
<th>Apparatus</th>
<th>Additional Apparatus Information</th>
<th>Type of access</th>
<th>Unit of access</th>
<th>Quantity of access to be provided</th>
<th>Estimated number of users</th>
<th>Type of support to user</th>
</tr>
</thead>
<tbody>
<tr>
<td>GFZ-Potsdam (DE)</td>
<td>Potassium Imaging and Spectral Analysis (PSA)</td>
<td>Uwe G. Bemming</td>
<td>FIB, Focused ion beam, TEM, Transmission electron microscope, SEM-CL, Scanning electron microscope-cathodoluminescence, SEM-EDX, Scanning electron microscope-energy dispersive X-ray spectrometry</td>
<td></td>
<td>Physical</td>
<td>Day</td>
<td>10 (but ideally not in one block)</td>
<td>2 to 3</td>
<td>Instrument and lab access as well as FIB sample preparation free of charge; No support for user travel and accommodation</td>
</tr>
</tbody>
</table>

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**Do you want to open your lab to other researchers?**

– Trans-national access (TNA)

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Free of charge to use lab, but consumables (analogue material) and X-ray CT scanning time needs to be paid; costs of X-ray CT is Euro 100 per hour

Free of charge (lab costs are waived for the user); No support for user travel and accommodation

Lab costs charged according to academic rate but can be put on EPOS grant; User Travel: max 500€ (within Europe), max 1000€ (outside Europe); User accommodation & food: max 100€/day
What’s in it for researchers?

Why publish your research data through the EPOS Multi-scale labs?

- Make your research data **Findable, Accessible, Interoperable, Reusable (FAIR)** and citable for other scientist!
- Prevents you and your fellow scientists from re-inventing the wheel
- Stop a large part of your data ending up in the ‘bottom-drawer’, but getting used by colleagues instead

- Because the funder (and/or journal) requires you to publish your data in a FAIR manner...
What’s in it for researchers?

Collaborations with other labs/researchers
What’s in it for researchers?

Citation index

- Journals (such as Elsevier) add links to the datasets (DOI) to already published papers!

Visibility within the community

https://epos-msl.uu.nl
MULTI-SCALE LABORATORIES

What’s expected from researchers?

Create data publication

Use standard metadata and data templates

- Collect data for publication
  (raw or processed data)
- Data in convenient format
  (Findable, Accessible, Interoperable, Reusable)
- Explanatory text
  (what information is in the publication)
- List of files
  (what folders/file types are in the publication)
What’s expected from researchers?

Upload data publications to a data repository

https://digital.csic.es/submit

http://dataservices.gfz-potsdam.de/msl/
What's expected from researchers?

Make yourself visible (ORCID)

Open anonymous sharing of data

EPOS Data Policy:
• CC-BY 4.0 license or compliant
• no ‘private copy’ sharing
• embargo period maximized to 3yrs

Cite other researcher’s data publications!

https://orcid.org/
Technical side of the equation (Otto)