

EGI-ACE Open Call no.1

Checkpoint meeting with Shepherds

OpenBioMaps

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Dissemination level:

Disclosing Party:

Recipient Party:



Outline - Max 10' long talk

- *Background about the scientific use case*
- *Ambition, Impact and Challenges*
- *Integration Support*
- *Capacity Requirements*
- *Timeline*

Background about the scientific use case



The OpenBioMaps is a collaborative framework for biodiversity research and conservation. The service includes database and computational servers for building biodiversity related databases and performing scientific analyses on collected data

The OpenBioMaps used by governmental institutes, research groups, NGO-s and citizen science initiatives mostly in Hungary and Romania. It currently has about 60 active projects with nearly 1,000 users.

TEAM: University of Debrecen, Dept. of Evolutionary Zoology and Humanbiology / OpenBioMaps Consortium

Ambition, Impact, Challenge(s)



There is a growing need for complex analysis of monitoring data for conservation purposes, which can be considered as a kind of applied research without adequate research capacity (in nature conservation). OpenBioMaps provides an excellent set of tools for collecting and organizing (field) data, but it does not include research tools. In the framework of the present project, we want to implement the integration of existing research infrastructures based on a dynamically usable background infrastructure through the use of EOSC services.

In this project, we would like to extend the OBM service network with computing capabilities, as well as create a long-term supported database node for public use.

Ambition, Impact, Challenge(s)



The new OBM database and computational nodes will target new research teams and conservation institutes from Hungary, Croatia, Slovakia, Poland, Greece, the United Kingdom and Germany.

In Hungary, OpenBioMaps is used in nine National Parks, which have several international nature conservation and scientific connections with foreign nature conservation institutions and research sites. Using these new developments we are aiming to support these research connections.

Based on experience to date, the biggest challenges (in conservation research) currently are classifications based on machine learning that require high computational capacity and related data preparation.

Resource Providers:

- IFCA (with VA) -> Will allocate Computational servers.
- SZTAKI -> Will allocate the GPU one.

Integration Support



- *Deploy the application using EGI Cloud Compute resources.*
- *TOSCA experts to create the topology document to deploy the whole application.*
 - *Initial version (one single node) created in the EOSC-Hub project will be extended.*

Capacity Requirements



Three virtual servers:

- OpenBioMaps database server (IFCA):
 - 32 CPU cores
 - 64 Gb RAM
 - 512 Gb storage capacity
- Computational Server (CPU server for ecological modelling) (IFCA):
 - 128 CPU cores -> Will be splitted to 4x32 CPU
 - 256 Gb RAM -> One VM need to have 128Gb RAM
 - 2Tb storage capacity
- Computational Server (GPU server for image processing) (SZTAKI)
 - 32 CPU cores
 - 256 Gb RAM -> Will be reduced (64 Gb)
 - 4Tb storage capacity
 - Strong GPU Capacity for AI: e.g. 2x NVIDIA GeForce RTX 2070 SUPER

- Current Status:
 - Orders on EOSC Marketplace created
 - SLA Created:
 - <https://documents.egi.eu/secure/ShowDocument?docid=3565>
 - 160 CPUs, 320 GB RAM, 8 TB Storage
 - Working on software configuration to launch the initial testbed.
 - SZTAKI new testbed available in November to start tests and December in production.
 - Still not tested.
 - New installation method prepared.
 - Evolving TOSCA to adapt to new installation methods and add new nodes.
 - OpenBiomaps EOSC service registered in EOSC marketplace.
- Next planned actions:
 - Create hybrid installations between EOSC site and private Cloud
 - Evolve the EOSC Marketplace entry to connect it with IM to deploy an OpenBiomaps instance with the user requirements.



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Thank you!

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EGI-ACE receives funding from the European Union's Horizon 2020 research and innovation programme under grant agreement no. 101017567.