



EGI VO

SERVICE LEVEL AGREEMENT

Customer	Perovskite material studies/perla-pv.ro
Service Provider	EGI Foundation
First day of service delivery	23/08/2021
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DOCUMENT LOG

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TERMINOLOGY

The EGI glossary of terms is available at: <https://wiki.egi.eu/wiki/Glossary>

For the purpose of this Agreement, the following terms and definitions apply. The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in RFC 2119.

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The present Service Level Agreement (“the Agreement”) is made between **EGI Foundation (the Service Provider)** and **Perovskite material studies/perla-pv.ro represented by University of Bucharest (the Customer)** to define the provision and support of the provided services as described hereafter. Representatives and contact information are defined in Section 6.

Molecular dynamics simulations will be run to characterize halide perovskite materials, interfaces and defects for energy efficient solar cells. LAMMPS¹ software package will be used to run these simulations.

Density functional theory (DFT) and machine learning (ML) with SIESTA code and artificial neural networks using TensorFlow library with Keras frontend will be used to predict electronic properties of hybrid perovskite materials and interfaces.

The customer responsible for the Perovskite material studies use case is **University of Bucharest**.

The Component providers are delivering a part of the Service(s) and are listed in section 1.

This Agreement is valid from **23/08/2021** to **22/08/2022**.

The Agreement was discussed and approved by the Customer and the Service Provider on **13/08/2021**.

1 The Services

All services provided by EGI are listed under: <https://www.egi.eu/services/>

Possible allocation types:

- **Pledged** - Resources are exclusively reserved to the Community.
- **Opportunistic** - Resources are not exclusively allocated, but subject to local availability.
- **Time allocation** - Resources are available for a fixed time period.

Possible payment mode offer:

- **Sponsored** - Model where the Customer uses Services that are funded, or co-funded by the European Commission or government grants.
- **Pay-for-use** - Model where the Customer directly pays for the Services used.

The Services are defined by the following properties:

Cloud Compute (category: Compute)

Description: <https://www.egi.eu/services/cloud-compute/>

- Resource Centre: **CLOUDIFIN (Country: Romania)**

¹ <https://lammps.sandia.gov/>

- Cloud Compute
 - Number of virtual CPU cores: 320
 - Memory per core (GB): 4
 - Local disk (GB): 10GB
 - Public IP addresses: 1
 - Payment mode offer: Sponsored
 - Other technical requirements: Technical support for Slurm, Tensor Flow, Keras and MPI libraries.
 - Duration: 23/08/2021 – 22/08/2022
- Allocation type: Pledged
- Provider AUP link: <https://documents.egi.eu/public/ShowDocument?docid=2623>
- Supported VOs: perla-pv.ro
- VO ID card: <https://operations-portal.egi.eu/vo/view/voname/perla-pv.ro>
- VO-wide list: <https://appdb.egi.eu/store/vo/perla-pv.ro>
- GOCDB endpoints URLs: cloud-ctrl.nipne.ro (org.openstack.nova)

Check-In (category: Security)

Description: <https://www.egi.eu/services/check-in/>

- Component Provider:
 - Check-In (as community AAI/IdP): <https://aai.egi.eu/registry/>
 - Deployment Type²: Shared
 - AAI protocol³: SAML/OIDC
 - Authentication options (select all that apply)⁴: all supported
 - User registration and group management service operated by⁵: EGI/Community
 - User registration and group management⁶: COmanage (perla-pv.ro)
 - Access to the e-infrastructure services⁷: EGI

The Services are supported by additional services:

- Accounting⁸

² Shared, Dedicated

³ OIDC, SAML (multiple option can be selected)

⁴ eduGAIN, ORCID, Google, Facebook, LinkedIn, X.509 digital certificates, Other (please specify)

⁵ Community, EGI

⁶ COmanage, Perun, VOMS, ask EGI support to choose the group management technology, Other (customer can specify other group management systems)

⁷ EGI, EUDAT, GEANT (multiple options can be selected)

⁸ <http://accounting.egi.eu/>

- Service Monitoring⁹ (EGI operational Virtual Organization only)

Note: Please note that the following Services are not provided by EGI Foundation:

- Monitoring of perla-pv.ro
- Monitoring of services provided by the Customer on agreed resources

2 Service hours and exceptions

The Services operate during the following hours: twenty-four (24) hours a day, seven (7) days a week, three hundred sixty-five (365) days a year.

The following exceptions apply:

- Planned maintenance windows or service interruptions (“scheduled downtimes”¹⁰) will be notified via email in a timely manner i.e. 24 hours before the start of the outage¹¹.
- Downtime periods exceeding 24 hours need justification.

3 Support

Support is provided via EGI Service Desk¹². Access requires a valid X.509 or the login via an EGI SSO account¹³. Support is available between:

- Monday to Friday.
- From 9:00 to 17:00 in the time zone of the relevant Resource Centres.

Service times always apply with the exception of public holidays in the country of the supporting Resource Centres.

3.1 Incident handling

Incidents will be handled according to the Quality of Support level that is estimated according to the impact of the outage or service quality degradation.

The Quality of Support in this Agreement has level: **Medium**¹⁴

Incident priority	Response time
Less urgent	5 working days
Urgent	5 working days

⁹ <http://argo.egi.eu/>

¹⁰ https://wiki.egi.eu/wiki/GOCDB/Input_System_User_Documentation#Downtimes

¹¹ <http://goc.egi.eu/>

¹² <http://helpdesk.egi.eu/>

¹³ <https://www.egi.eu/sso/>

¹⁴ https://wiki.egi.eu/wiki/FAQ_GGUS-QoS-Levels

Very Urgent,	1 working day
Top Priority	1 working day

so the incidents, based on their priority will be responded to with the following response times:

Incident priority ¹⁵	Response time	Comment
Less urgent	5 working days	wishes and enhancements that are "nice to have"
Urgent	5 working days	service degraded; work-around available
Very Urgent	1 working day	service degraded; no work-around available
Top Priority	1 working day	service interrupted; needs to be addressed as soon as possible

Table 1. Response times to incidents according to the incident priority of "Medium" services

3.2 Service requests

In addition to resolving incidents, standard service requests (<https://confluence.egi.eu/display/EGISLM/EGI+Service+requests>) will be fulfilled through the defined support channels in the same way as incidents. Service requests are classified as "Less urgent".

4 Service level targets

Monthly Availability

- Defined as the ability of a service to fulfil its intended function at a specific time or over a calendar month.
- Minimum (as an average percentage per month):
 - Service Cloud Compute: 90%
 - CLOUDIFIN: 90%

Monthly Reliability

- Defined as the ability of a service to fulfil its intended function at a specific time or over a calendar month, excluding scheduled maintenance periods.
- Minimum (as an average percentage per month):
 - Service Cloud Compute: 90%
 - CLOUDIFIN: 90%

Quality of Support level

- Medium (Section 3)

¹⁵ https://wiki.egi.eu/wiki/FAQ_GGUS-Ticket-Priority

5 Limitations and constraints

The Services provisioning is subject to the following limitations and constraints.

- Support is provided in English.
- Availability and Reliability calculations are based on the Service Monitoring operational results.
- Failures in VO monitoring are not considered as SLA violations.
- Downtimes needed to ensure the security of the Service issues are not considered Agreement violations.
- Failures of resource providers not being part of EGI production infrastructure are not considered as Agreement violations.
- The individual service components provide resources may be terminated or replaced due to failure, retirement or other requirement(s). EGI Foundation has no liability for any damages, liabilities, losses (including any corruption, deletion, or destruction or loss of data, applications or profits), or any other consequences resulting from the foregoing.
- Force Majeure. A party shall not be liable for any failure or delay in the performance of this Agreement for the period that such failure or delay is due to causes beyond its reasonable control. Means any
 - fire, flood, earthquake or natural phenomena,
 - war, embargo, riot, civil disorder, rebellion, revolutionwhich is beyond the Provider's control, or any other causes beyond the Provider's control.

6 Communication, reporting and escalation

6.1 General communication

The following contacts will be generally used for communications related to the Service(s) in the scope of this Agreement.

Customer contact	Alexandru Nemnes, alexandru.nemnes@unibuc.ro
Customer technical contact	Kristinn Torfason, kristinnt@ru.is Alexandru Nemnes, alexandru.nemnes@unibuc.ro
EGI Foundation contact	Giuseppe La Rocca sla@mailman.egi.eu SLA Coordinator at EGI Foundation

EGI Foundation technical contact	Matthew Viljoen operations@egi.eu Operations manager at EGI Foundation
Service Support contact	See Section 3

6.2 Regular reporting

As part of the fulfilment of this Agreement and provisioning of the Service(s), the following reports will be provided:

Report title	Contents	Frequency	Produced by	Delivery
Services Performance Report	The document provides an overall assessment of service performance (per month) and SLA target performance achieved during the last 6 months	Every six months	EGI Foundation	Email to the Customer
Scientific Publications report	The document provides a list of scientific publications benefiting from the Service.	Yearly and with the Agreement ending.	Customer	During satisfaction review

Service Performance Report:

- EGI Foundation will provide every six month a written report about the performance of the Service(s) with the justification of any underperforming and SLA violation.

Scientific Publication report:

- The Customer will provide a list of publications supported by the Service(s) and acknowledging the usage of the Service(s). **The acknowledgement statement specified in Section 8.2 shall be included in the Customer's website and reported in any scientific publications profiting from the use of the Services defined in Section 1.**

All reports shall follow predefined templates¹⁶.

6.3 Violations

The EGI Foundation commits to inform the Customer, if this Agreement is violated or violation is anticipated. The following rules are agreed for communication in the event of violation:

- In case of violations of the Services targets for **four months** or **two consecutive months**, EGI Foundation will provide justifications to the Customer.

¹⁶ <https://documents.egi.eu/document/2748>

- In case of unavailability of the Component Provider to provide the Service(s), the EGI Foundation will search for a new Component Provider and support migration.
- The Customer will notify the supporting Component Provider in case of suspected violation via the EGI Service Desk (Section 3). The case will be analysed to identify the cause and verify the violation.

6.4 Escalation and complaints

For escalation and complaints (A customer complaint is a customer's expression of dissatisfaction with an EGI Service, either orally or in writing), EGI Foundation contact (section 6.1) point shall be used, and the following rules apply.

- In case of repeated violation of the Services targets for **four months** or **two consecutive months**, a review of the Agreement will take place involving the parties of the Agreement.
- Complaints or concerns about the Services provided should be directed to the EGI Foundation contact who will promptly address these concerns. Should the Customer still feel dissatisfied, about either the result of the response or the behaviour of the supporting Component Provider, complaints@egi.eu should be informed.

7 Information security and data protection

The following rules for information security and data protection related to the Service(s) apply.

- Assertion of absolute security in IT systems is impossible. The Component Provider is making every effort to maximize the security level of users' data and minimise possible harm in the event of an incident.
- The Component Provider will define and abide by an information security and data protection policy related to the Service(s) being provided.
- The parties of the Agreement will meet all requirements of any relevant policy or procedure of the Provider¹⁷ and will comply with the applicable national legislation.
- The Component provider (see section 1) holds the role of the data controller and should be contacted directly for data subject matters.

¹⁷ https://www.egi.eu/about/policy/policies_procedures.html

8 Responsibilities

8.1 Of EGI Foundation

Additional responsibilities of EGI Foundation are as follows.

- EGI Foundation adheres to all applicable operational and security policies and procedures¹⁸ and to other policy documents referenced therein.
- EGI Foundation monitors the Service(s) and its components in order to measure the fulfilment of the agreed service level targets.
- EGI Foundation retains the right to introduce changes in how the Service is provided, in which case the Service Provider will promptly inform the Customer and update the Agreement accordingly.

8.2 Of the Customer

The responsibilities of the Customer are:

- **The customer facilitates the use of EGI acknowledgement by communicating to users the need of adding the following sentence in acknowledgement: “This agreement is sponsored by EGI and the EGI-ACE H2020 project (GA no. 101017567) with the dedicated support of the CLOUDIFIN provider”.**
- The Customer will provide during Agreement review (yearly) list of scientific publications benefiting from the Service(s) defined in Section 1.
- The Customer must not share access credentials with anyone else.
- The data stored in the system by the Customer must not cause any legal violation due to the content type (such as copyright infringement, dual use, illegal material).
- By default, the data stored in the Service Provider by the Customer are not backed-up except if explicitly specified in the Agreement.
- The use must be consistent with the Acceptable Use Policy (AUP)¹⁹ of the Service as well as AUP of the Service Provider (if exist).
- The Customer will notify the Service Provider in case the actual amount of the Service(s) used results in being under- or over-estimated. The Customer will request an update of the Agreement to ensure optimal usage of the Service(s).
- The Customer will create, with the support of the Service Provider, one or more Virtual Organizations (VOs) to define the group of users entitled to access the Service. Information about the VO will be regularly updated in EGI Operations Portal²⁰.

¹⁸ https://www.egi.eu/about/policy/policies_procedures.html

¹⁹ <https://documents.egi.eu/document/74>

²⁰ <http://operations-portal.egi.eu/>

- The Customer must request EGI Service Desk support²¹ to enable assigning tickets with appropriate VO name.
- When applicable, the Customer is responsible for ensuring that the Virtual Machine images endorsed and listed in the AppDB²² VO image lists are properly maintained and updated.
- The Customer is responsible for the management of their own data including movement or removal of the data once the agreement is terminated.

9 Review, extensions and termination

The Services performance will be reviewed against the defined Service level targets according to Section 4. The Agreement will be annually reviewed until expiration.

If the Customer wishes to extend the duration after the Agreement termination date, an extension will be negotiated with EGI Foundation. **The extension of the agreement between the Customer and the Service Provider shall be justified upon the receiving of a list of scientific publications produced during the duration of the agreement, and the effective use of the Service(s) as reported in the EGI Accounting Portal²³.**

EGI Foundation retains the right to introduce changes in the Service, in which case the Customer retains the right of terminating the Agreement.

The Agreement can be terminated at any time upon agreement of the parties. Amendments, comments and suggestions must be addressed to EGI Foundation and the Customer according to Section 6.

²¹ https://wiki.egi.eu/wiki/FAQ_GGUS-New-Support-Unit

²² <https://appdb.egi.eu/>

²³ <https://accounting.egi.eu/>