



EGI Pay4Use VO

SERVICE LEVEL AGREEMENT

| | |
|--------------------------------------|---|
| Customer | DIGITbrain/vo.digitbrain.eu |
| Service Provider | EGI Foundation |
| First day of service delivery | 01/01/2021 |
| Last day of service delivery | 31/12/2023 |
| Status | FINAL |
| Agreement finalization date | 31/01/2021 |
| Agreement link | https://documents.egi.eu/document/3696 |



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DOCUMENT LOG

| <i>Issue</i> | <i>Date</i> | <i>Comment</i> | <i>Author</i> |
|--------------|-------------|--|--|
| FINAL | 31/01/2021 | Agreed SLA with the Customer | Giuseppe La Rocca/EGI Foundation |
| v0.2 | 16/07/2021 | Added a statement to clarify that the unused budget during the service reporting period will be freed. | Giuseppe La Rocca/EGI Foundation |
| v0.3 | 01/04/2022 | Added P4U OLA with IFCA to provide GPU access. Added DataHub for dedicated space for the model repository. Added EGI Check-In. | Sebastian Luna-Valero, Gianni Dalla Torre. |

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 **DIGITbrain/vo.digitbrain.eu (the Customer)** to define the provision and support of the provided services as described hereafter. Representatives and contact information are defined in Section 6.

DIGITbrain¹ is an EU innovation program to give SMEs easy access to digital twins. A Digital Twin is a computer-based application/simulation that mimics the real production line of a company and runs in parallel with the real manufacturing process. Using this Digital Twin, companies can rationalise the manufacturing process, make predictions regarding expected machine failures and can predict maintenance needs.

The Customer is a consortium represented by **PNOConsultant**.

This Agreement is valid from **01/01/2021** to **31/12/2023**.

The Component Provider will guarantee the availability of the platform for a maximum of 90 days from the end of the agreement, or until the final DIGITbrain review takes place (with no additional costs). In order to review the terms and conditions for a possible additional extension, a check-point will take place 3 months before the end of this agreement.

The Agreement was discussed and approved by the Customer and the Provider on **31/01/2021**.

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 Customer.
- **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 service used.

The Services are defined by the following properties

¹ <https://digitbrain.eu/>

| Cloud Compute | | |
|-------------------------------|--|-------------------------------|
| Resource Centre: | 100%IT | IFCA |
| ServiceCategory: | Cloud Compute | Cloud Compute |
| Number of virtual CPU cores: | 160 vCPUs @ £3.75 per vCPU per month | 10 |
| Memory per core (GB): | 400GB RAM @ £1.75 per GB per month | 45 GB in total |
| Local disk (GB): | 4000GB standard disk @ £0.035 per GB per month 500GB NVMe Flash high-speed disk @ £0.12 per GB per month | 25 GB |
| Public IP addresses: | 50 IPv4 addresses @ £1.75 per address per month | 1 |
| Allocation type: | Pledged ² | Pledge |
| Other technical requirements: | All computing servers use Dell hardware running Intel(R) Xeon(R) CPUs (min spec E5-2680 v4 @ 2.40GHz). CPUs are not over-contended, so users will achieve the maximum possible performance from the servers. | Access to GPU Nvidia T4 |

² Resources are exclusively reserved to the Customer

| | | |
|---------------------|---|-------------|
| | <p>Dual redundant power supplies feed all racks, and network connectivity also features multiple redundant connectivity based on Cisco and Juniper networking components throughout the network. Multiple independent internet connections are also in place to ensure the service is always available.</p> <p>Data is stored on multiple redundant servers, so no single hardware failure can cause any loss of data. In addition, we can offer NVMe flash disk for the high performance SSD storage, offering very high IO capability in excess of that normally achieved with conventional SSDs and capable of handling the most demanding workloads.</p> <p>Additional resources can be added at a cost of:</p> <ul style="list-style-type: none"> • £3.75 per vCPU per month • £1.75 per GB RAM per month • £0.035 per GB of Disk per month • NVME Flash Disk (high IOPS disk): £0.12 per GB per month • IPv4 addresses: £1.75 per IPv4 per month | |
| Payment mode offer: | Pay-for-use ³ | Pay-for-use |

³ See service offer for specifications (e.g. pricing, administration)

| | | |
|--------------------------------------|---|---|
| Duration: | 01/01/2021 - 31/12/2023 | 01/04/2022 - 31/12/2023 |
| GOCDDB endpoints URLs | cloud-egi.100percentit.com (org.openstack.nova) | portal.cloud.ifca.es (org.openstack.horizon) |
| Storage | | |
| Resource Centre | CYFRONET | IFCA |
| Category | DataHub | Online Storage |
| Guaranteed storage capacity [TB]: | 10GB | 1 TB |
| Opportunistic storage capacity [TB]: | N/A | N/A |
| Standard interfaces supported: | REST, CDMI | POSIX |
| Storage technology: | OneData | Ceph |
| Other technical requirements: | Dedicated space for DIGITbrain Model Repository | N/A |
| Duration: | 01/04/2022 - 31/12/2023 | 01/04/2022 - 31/12/2023 |
| Payment mode offer: | Sponsored | Pay-for-use |
| Allocation type: | Pledged | Pledged |
| Security | | |
| Resource Centre | GRNET | |

| | | |
|--|--|--|
| Category | Check-In (as community AAI/IdP). | |
| Deployment type | Shared | |
| AAI Protocol | OIDC, SAML | |
| User registration and group management | Operated by EGI: https://aai.egi.eu/registry/ COmanage group: vo.digitbrain.eu Enrollment URL: https://aai.egi.eu/registry/co_petitions/start/coef:142 | |
| Duration | 01/04/2022 - 31/12/2023 | |
| Payment mode offer: | Sponsored | |
| Virtual Organisation | | |
| Supported VOs: | vo.digitbrain.eu | |
| VO ID card: | https://operations-portal.egi.eu/vo/view/voname/vo.digitbrain.eu | |
| VO-wide list: | https://appdb.egi.eu/store/vo/vo.digitbrain.eu | |
| Provider AUP link | https://documents.egi.eu/document/2623 | |
| Service Offer/Cost | GBP | EUR |
| Compute | 1587.50£ per month | 812,49€ per VM per month with the following specs: <ul style="list-style-type: none"> • 10 vCPUs |

| | | |
|---------------------|---|---|
| | | <ul style="list-style-type: none"> • 45 GB RAM • 25 GB local disk • GPU Nvidia T4 <p>for extended periods, (at least 1 month) a discount of up to 50% on the fixed price will be applied</p> |
| Technical support | Technical support on the IaaS platform is included to help with initial setup. Support on VMs and application setup and deployment is not included, but can be provided at additional cost. | |
| Storage | | 13,31€ per TB per month |
| Total ⁴⁵ | 19050.0 £ per year | 9909.6 € per year |
| Other | The costs reported in this agreement are based on actual usage. Unused budget during the service delivery period will be freed. | |

⁴ Excluding VAT (reverse charging).

⁵ In case all the pool of resources will be used.

The Services are supported by additional services:

- Accounting⁶
- Service Monitoring⁷ (EGI operational Virtual Organization only)

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

- Monitoring of vo.digitbrain.eu
- 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”⁸) will be notified via email in a timely manner i.e. 24 hours before the start of the outage⁹.
- Downtime periods exceeding 24 hours need justification.
- Human support is provided during support hours.

3 Support

Support is provided via EGI Service Desk¹⁰. Access requires a valid X.509 or the login via an EGI SSO account¹¹. Support is available between:

- Monday to Friday.
- From 9:00 to 17:00 CET/CEST 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.

⁶ <http://accounting.egi.eu/>

⁷ <http://argo.egi.eu/>

⁸ https://wiki.egi.eu/wiki/GOCDB/Input_System_User_Documentation#Downtimes

⁹ <http://goc.egi.eu/>

¹⁰ <http://helpdesk.egi.eu/>

¹¹ <https://www.egi.eu/sso/>

The Quality of Support in this Agreement has level: **Medium**¹²

| Incident priority | Response time |
|-------------------|----------------|
| Less urgent | 5 working days |
| Urgent | 5 working days |
| 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 ¹³ | Response time | Comment |
|---------------------------------|----------------|--|
| Less urgent | 5 working days | wishes and enhancements that are "nice to have" |
| Urgent | 1 working day | 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 requests¹⁴ (e.g. change requests, information requests, documentation) 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):
 - Cloud Compute: 99%
 - 100%IT: 99%
 - Storage
 - IFCA (Ceph): 90%
 - CYFRONET (DataHub): 95%

¹² https://wiki.egi.eu/wiki/FAQ_GGUS-QoS-Levels

¹³ https://wiki.egi.eu/wiki/FAQ_GGUS-Ticket-Priority

¹⁴ <https://confluence.egi.eu/display/EGISLM/EGI+Service+requests>

- Security
 - Check-In: 95%

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):
 - Cloud Compute: 99%
 - 100%IT: 99%

- Storage
 - IFCA (Ceph): 90%
 - CYFRONET (DataHub): 95%

- Security
 - Check-In: 95%

Quality of Support level

- **Medium** (Section 3)

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.
- In no event will EGI Foundation be liable for any special, incidental, punitive or consequential damages (including, without limitation, lost profits, loss of use, loss of data or loss of goodwill), or the costs of procuring substitute products and / or Services, arising out of or in connection with this agreement or the use or performance of any

products and / or Services provided by EGI Foundation hereunder, whether such liability arises from any claim based upon breach of contract, breach of warranty, tort (including negligence), product liability or otherwise. The parties have agreed that these limitations will survive and apply even if any limited remedy specified in this agreement is found to have failed of its essential purpose.

- EGI Foundation liability to the Customer with regards to an individual service is restricted to the total value of any amounts paid by the Customer to EGI Foundation in the previous 12-month period on that individual service.
- 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, revolution
 which 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 in the scope of this Agreement.

| | |
|---|--|
| Customer contact | Antonio M. Ortiz Antonio.Ortiz@pnoconsultants.com |
| Customer technical contact | Tamas Kiss T.Kiss@westminster.ac.uk |
| 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, the following reports will be provided:

| Report title | Contents | Frequency | Produced by | Delivery |
|-----------------------------|--|----------------------------------|----------------|-----------------------|
| Services Performance Report | The document provides an overall assessment of service | Every 6 months, unless otherwise | EGI Foundation | Email to the Customer |

| | | | | |
|--------------------------------|--|---------------------------------------|----------|----------------------------|
| | performance (per month) and SLA target performance achieved during the last 6 months | specified/requested by 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 |

All reports shall follow predefined templates¹⁵.

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.
 - In case of unavailability of the Component Provider to provide the service, 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 apply.

¹⁵ <https://documents.egi.eu/document/2748>

- 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 being provided.
- The parties of the Agreement will meet all requirements of any relevant policy or procedure of the Provider¹⁶ 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.

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 procedures¹⁷ and to other policy documents referenced therein.
- EGI Foundation monitors the Service 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 Provider will promptly inform the Customer and update the Agreement accordingly.

8.2 Of the Customer

The responsibilities of the Customer are:

1. **The customer facilitates the use of EGI acknowledgement by communicating to users the need of adding the following sentence in acknowledgement: "This work used the EGI infrastructure with the dedicated support of 100%IT".**
2. The Customer will provide during the Agreement review (yearly) the list of scientific publications benefiting from the Service.
3. The Customer must not share access credentials with anyone else.
4. 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).

¹⁶ https://www.egi.eu/about/policy/policies_procedures.html

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

5. The use must be consistent with the Acceptable Use Policy¹⁸ of the Service as well as AUP of the provider (if exist).
6. The Customer will notify the Provider in case the actual amount of the Service used results in being under- or over-estimated. The Customer will request an update of the Agreement to ensure optimal usage of the Service.
7. The Customer must request EGI Service Desk support¹⁹ to enable assigning tickets with appropriate VO name.
8. When applicable, the Customer is responsible for ensuring that the Virtual Machine images endorsed and listed in the AppDB²⁰ VO image lists are properly maintained and updated.
9. The Customer is responsible for the management of their own data including movement or removal of the data once the agreement is terminated.

9 Finance and administration

9.1 Service Offers

The EGI Foundation is expected to adhere to the service offer and associated costs provided and agreed timescales, unless changes are otherwise agreed between both parties in writing (See Section 2).

9.2 Invoicing and Payment Schedule

The EGI Foundation is to invoice the Customer directly according to the below schedule.

Note that invoices need to be accompanied by a Service Performance Report (see Section 6.2), and need to be based on actual consumption.

| Service delivery period | Invoicing frequency | Produced by | Delivery |
|---|---|--------------------|-----------------------------|
| Period 1. 01/01/2021 – 31/05/2021 | Once, based on actual consumption + VAT by 30/06/2021 | Component Provider | Email to EGI contact |
| Period 2. 01/06/2021 – 30/11/2021 | Once, based on actual consumption + VAT by 31/12/2021 | Component Provider | Email to EGI contact |
| Period 3. 01/12/2021 – 31/05/2022 | Once, based on actual consumption | Component Provider | Email to EGI contact |

¹⁸ <https://documents.egi.eu/document/74>

¹⁹ https://wiki.egi.eu/wiki/FAQ_GGUS-New-Support-Unit

²⁰ <https://appdb.egi.eu/>

| | | | |
|--|---|--------------------|-----------------------------|
| | + VAT by 30/06/2022 | | |
| Period 4. 01/06/2022 – 30/11/2022 | Once, based on actual consumption + VAT by 31/12/2022 | Component Provider | Email to EGI contact |
| Period 5. 01/12/2022 – 31/05/2023 | Once, based on actual consumption + VAT by 30/06/2023 | Component Provider | Email to EGI contact |
| Period 6. 01/06/2023 – 30/11/2023 | Once, based on actual consumption + VAT by 31/12/2023 | Component Provider | Email to EGI contact |

Invoice details:

Name: Tiziana Ferrari, EGI Foundation Director

Address: Science Park, 140 - 1098XG – Amsterdam, The Netherlands

VAT: NL8219.84.986.B.01

Email: inkoop@egi.eu

Date: [DD/MM/YYYY]

Reference: DIGITbrain, 952071

10 Review, extensions and termination

This agreement is subject to review on an annual basis (at the end of the calendar year from the service delivery date) by which a customer performance validation will be conducted and a report produced (see Section 6.2).

The continuation of this agreement is subject to successfully meeting customer performance requirements outlined in Section 4.

Reviews of the agreement can be performed at any time by written request by any party.

If the Customer wishes to extend the duration after the Agreement termination date, an extension will be negotiated with EGI Foundation.

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.