



MEMORANDUM OF UNDERSTANDING BETWEEN

EGI FOUNDATION AND TERRADUE

TABLE OF CONTENTS

BACKGROUND	3
ARTICLE 1: PURPOSE	4
ARTICLE 4: COMMUNICATION	8
ARTICLE 5: RIGHTS AND RESPONSIBILITIES	8
ARTICLE 6: FUNDING	9
ARTICLE 7: ENTRY INTO FORCE, DURATION AND TERMINATION	9
ARTICLE 8: AMENDMENTS	9
ARTICLE 9: ANNEXES	9
ARTICLE 10: LANGUAGE	9
ARTICLE 11: GOVERNING LAW - DISPUTE RESOLUTION	9
ANNEX 1 – EGI FOUNDATION DESCRIPTION	11
ANNEX 2 – TERRADUE DESCRIPTION	12
ANNEX 3 – SLA DESCRIPTION	12
ANNEX 4 – RIGHTS AND RESPONSIBILITIES	12
ANNEX 5 – SETTLEMENT OF DISPUTES	15

BACKGROUND

EGI Foundation

The EGI Foundation is a not-for-profit foundation established under Dutch law to coordinate EGI. EGI is an international collaboration that federates the digital capabilities, resources and expertise of national and international research communities in Europe and worldwide. The main goal is to empower researchers from all disciplines to collaborate and to carry out data- and compute-intensive science and innovation.

The EGI Foundation has participants and associated participants drawn from representatives of national e-infrastructure consortiums (NGIs), EIROs, ERICs, and other legal entities. These entities provide the physical resources and shared services that enable EGI to deliver, improve and innovate services for communities.

A more detailed description of EGI is attached as Annex 1.

Terradue

Terradue¹ was established in 2006 as a Web 2.0 company and always nurtured this culture. Since 2009, Terradue has accompanied the European Space Agency ESRIN transition from Grid to Cloud services. The company has years of experience in supporting Principal Investigators in their use of Earth Observation (EO) data within state of the art Exploitation Platforms.

Thematic Exploitation Platforms and NextGEOSS Use Cases

Terradue develops and operates the Geohazards and Hydrology Thematic Exploitation Platforms, which are ESA-funded initiatives. The Geohazards Exploitation Platform (Geohazards TEP) is part of an ESA-funded initiative designed to address the challenges traditionally associated with handling complex data streams. The platform gives users direct access to large EO data sets relevant to Geohazards. As a Cloud platform, the GEP provides access to virtualized and federated applications based on satellite data. By bringing processing chains close to the data, and by providing a collaborative environment to foster community exchanges, the Geohazards TEP enables users to allocate time and resources effectively to make a step change in exploiting and sharing satellite-based measurements and improving the understanding and investigation of hazards. The Hydrology Thematic Exploitation Platform (Hydro-TEP) is an ESA-funded development which is designed to provide a broad and very diverse user community with the opportunity of extracting hydrological information from multiple models and data streams (e.g. rain gauges, socio-economic statistics, satellites), using a remote and distributed computing infrastructure and reducing the computational load involved in downloading the final results. Such an approach will enable the extensive time series analysis of dynamic hydrological processes over large areas, for mapping the frequency of floods and droughts, or for mapping water productivity over large river basins or even entire continents.

Terradue is also responsible to support service integration and bring its expertise in the provision of EO data and distributed computing platforms enabling scientific applications to exploit distributed processing capabilities on the NextGEOSS use cases. NextGEOSS is a H2020 project developing the next-generation hub for Earth Observation data in Europe, where users can connect to access data and deploy EO-based applications. The concept revolves around providing the data and resources to the users' communities, together with Cloud resources, seamlessly connected to provide an integrated ecosystem for supporting applications. A central component of NextGEOSS is the strong emphasis put on engaging the communities of providers and users, bridging the space in between. This developing will be the GEOSS European hub consisting providing access to the diverse European range of Earth observation data (space-based and in situ data, from research and operational data infrastructures, across disciplines and communities) and services, as well as other relevant data sources such as socio-economic related ones. Starting with the NextGEOSS platform services and 5-step user experience for its on-boarding process, the NEXT-EOS Community Activity is a new GEO activity that seeks to achieve faster uptake through operating a datahub and a set of platform

¹ https://www.terradue.com

services in support of Earth observation technology innovators & application builders. The NEXT-EOS Community Activity relies firstly on existing federated services provided by its members, leveraging EU funded resources and more. The NEXT-EOS Community Activity will work with other GEO Community Activities, Initiatives, and Flagships especially the regional hubs EuroGEO, AmeriGEO, AfriGEO and AOGEO, with the goal to improve interoperability and embrace best practices.

Both the TEP and NextGEOSS use cases leverage Terradue's Cloud Brokering framework (based on OpenNebula), which has been already used with external providers (Interoute, Amazon EC2) and it can be extended with additional Cloud providers.

A more detailed description of Terradue is attached as Annex 2.

EGI Resource Providers

Several EGI Resource Providers will be contributing to the activities and objectives of this MoU comprising:

- 100 Percent IT Ltd (100%IT) United Kingdom²
- Centro de Supercomputación de Galicia (CESGA) Spain³
- Akademickie Centrum Komputerowe Cyfronet AGH (CYFRONET) Poland⁴
- The Bari ReCaS DataCenter (RECAS-BARI) Italy⁵

The 4 EGI Resource Providers are predicted to provide a balanced resource share (e.g. one fourth each) of a total of **124 vCPU cores**, **280GB of RAM** and **2.4TB of storage**⁶ where the minimum granularity is 16GB of RAM and 100Gb of local disk storage per VM.

With this MoU, EGI, during the context of the EGI-ACE project, will be committed to increase, when possible, the pledged resources to support the new EO and the TEPs use cases, and continue the operation of the NextGEOSS pilots in the EGI Cloud.

The minimal granularity to be offered by the cloud providers interested to support the use cases and pilots via SLA, will be composed of:

- VMs with 16 or more vCPU cores, 64 GB of RAM, 100GB of disk storage, and
- 1 or more TB of block storage per provider.

Cloud providers contributing to the INFRAEOSC-07 will be considered as potential candidates to address the new specifications.

ARTICLE 1: PURPOSE

The purpose of this Memorandum of Understanding (MoU) is to define a framework of collaboration between the EGI Foundation (including the resource providers) and Terradue (hereafter also referred to as "the Party" or the "Parties") for delivering the activities outlined within the Joint Work Plan (Article 3). The Parties recognise, by this MoU, the opening of a wider and longer-term cooperation in activities, which will bring visible benefits to everyone involved.

ARTICLE 2: DEFINITIONS

For the purpose of this MoU, the following definitions are relevant:

• The terms defined in the EGI glossary (https://wiki.egi.eu/wiki/Glossary-V2)

ARTICLE 3: JOINT WORK PLAN

The parties contribute to enable the vision of providing European scientists and international collaboration for sustainable distributed computing services to support their work.

In this broad context, the specific goals of the collaboration are to:

• Integrate federated authentication mechanisms in the TEP platforms based on the EGI AAI Check-In service.

² http://100percentit.com/

³ http://www.cesga.es/

⁴ http://www.cyfronet.krakow.pl/

⁵ http://www.recas-bari.it/index.php/it/

⁶ The following pledged resources are guaranteed. The additional capacity will be actively sought during the period of the new SLA, which will be formally reviewed on at least an annual basis or as the new use cases are identified and need to be onboarded.

- Advance integration of Cloud services and data with the authorization layers within the EGI Federation.
- Provide end-user support, at both technical and service level, and consultancy to integrate new EO
 data processing services on Geohazards TEP and Hydrology TEP platforms with the EGI
 infrastructure. Continued support of the TEP platforms already deployed in the EGI Federation.
- Provide end-user support, at both technical and service level, and consultancy to support to
 operate the EO data processing services from H2020 NextGEOSS already deployed in the resource
 providers of the EGI Federation, as well as consultancy to integrate upcoming ones from Next
 Generation Earth Observation Services (NextEOS) GEO Community Activity.
- Assess EGI Federated Cloud APIs for Cloud resources provisioning, auto-scaling (out/in), accounting, when performed from Terradue Cloud Platform.
- Identify cloud providers, within the EGI Federated Cloud Infrastructure, and their capacity to match
 Terradue requirements for compute and storage resources to better support opportunities of
 deploying operational data processing services.
- Establish a Service Level Agreement (SLA) between the EGI Foundation (the Provider) and Terradue (the Customer) to specify the services to be provided for supporting Terradue activities and how they will be provided.
- Create Operational Level Agreements (OLAs) between the EGI Foundation and the selected cloud providers identified to support Terradue activities.
- Establish a collaboration framework to guarantee the long-term sustainability and the continuous update of the agreed SLA/OLAs.
- Establish potential longer-term business relationships based on initial proof of concepts and clarify/define QoS requirements and assurances.
- Conduct joint and individual promotion of each Party and agreement of activities and objectives.

The specific activities to be carried out in the framework of the collaboration are⁷:

WP1 – Technical Integration of the Platforms in the EGI Federation

Parties Involved: EGI Foundation, EGI cloud providers, Terradue.

Description of work:

- Provide technical support to integrate the EGI AAI Check-In service and enable access to the Geohazards and Hydrology TEP platforms using federated authentication mechanisms (<u>EGI Foundation</u>, <u>Terradue</u>).
- Advance the use of EGI Federation Cloud APIs for automation of the Cloud resources management (EGI Foundation, Terradue).
- Support the integration of EGI Federation processing clusters for the platforms (<u>EGI Foundation</u>, Terradue).
- Provide technical support and adequate services to support the Terradue's mission which is to innovate services for scientists in the European Research Area (ERA), tailored to their data integration and analysis goals (EGI Foundation, Terradue).

Expected outcome:

• A1.1 (12/2021) – Federated authentication mechanism is integrated in the TEP platforms (<u>EGI Foundation</u>, <u>Terradue</u>).

⁷ The Party leading the activity is underlined.

- A1.2 (12/2022) Cloud APIs to automate the cloud resources management of the EGI resources are integrated for the platforms (EGI Foundation, Terradue).
- A1.3 (every year) Continual analysis of the technical requirements and integration of the Terradue platforms with the EGI services (EGI Foundation, Terradue).
- A1.4 (12/2021 and every 6 months) Assessment and improvement of the adopted solutions (<u>EGI Foundation</u>, <u>Terradue</u>).

WP2 – Agreement of SLA and OLAs between parties.

Parties Involved: EGI Foundation, EGI cloud providers, Terradue.

Description of work:

• Negotiate, sign and update of SLA and OLAs between the parties involved in this agreement to support the selected TEPs use cases (EGI Foundation, EGI cloud providers, Terradue).

Expected outcome:

- A2.1 (every year) SLA between parties is Agreed/Extended/Renewed (EGI Foundation, Terradue).
- A2.2 (every year) OLAs with the new/existing providers supporting the SLA are Agreed/Extended/Renewed (EGI Foundation EGI, EGI cloud providers).
- A2.3 (every 6 months) A report to evaluate the performance and service delivery of the resource providers involved in this agreement between parties is produced (<u>EGI Foundation</u>, <u>EGI cloud providers</u>).
- A2.4 (every 6 months) A report with the usage statistics of the TEP and NextGEOSS use cases is produced. Usage statistics are collected from the Customer. If necessary, the Provider may ask the Customer for a report in an intermediate period (<u>Terradue</u>).

Note:

- The SLA/OLAs agreements will be reviewed every year up to the end of this MoU, but at any time Terradue can inform EGI Foundation of a change in the requirements needed.
- In these cases, EGI Foundation will take proper actions.

WP3 – Operations and monitoring of the services involved in this agreement

Parties Involved: EGI Foundation, EGI cloud providers, Terradue.

Description of work:

- Maintenance and improvement of the operational environment to allow the platforms to run processing tasks in the EGI infrastructure (EGI Foundation, EGI cloud providers).
- Monitor the availability of the provisioned EGI core services and service components (<u>EGI</u> Foundation).
- Monitor the Customer's services running on the platforms (Terradue).

Expected outcome:

- A3.1 (every 6 months) The A/R report to monitor the EGI core services involved in this agreement is produced (EGI Foundation).
- A3.2 (every year) The A/R report to monitor the Customer's services is produced (<u>Terradue</u>).

WP4 - Platforms' Productions

Parties Involved: EGI Foundation, EGI cloud providers, Terradue.

Description of work:

• Continued support for the execution of the Geohazards and Hydrology TEPs, the NextGEOSS and

NextEOS GEO Community Activity pilot use cases in the provisioned resources (<u>EGI Foundation</u>, <u>EGI Cloud providers</u>, <u>Terradue</u>).

• Deployment and configuration of new data processing services in the EGI Federation with potentially resource capacity funded in EGI-ACE project (EGI Foundation, Terradue).

Expected outcome:

- A4.1 (12/2021) New data processing services are successfully executed in the provisioned resources (Terradue, EGI cloud providers).
- A4.2 (12/2021 and every year) Analysis report of technical and operation improvements performed for the newly deployed processing services (EGI Foundation, Terradue)
- A4.3 (2021 and every 6 months) Review the list of use cases. Update timelines of the Geohazards and Hydrology TEPs and the NextGEOSS/Next-EOS use cases (EGI Foundation, Terradue).

Note 1: The pilot cases will be performed earlier 2021, further outcomes will be added in the next document review.

Note 2: Terradue will acknowledge the support of the EGI Foundation and the use of EGI cloud providers' resources in each and every, whether verbal or written, communication about pilots' results (whenever these have been achieved relying on EGI resources).

WP5 – Business Development

Parties Involved: EGI Foundation, Terradue.

Description of work:

• Define business models for long-term service delivery and support.

Expected outcome:

- A5.1 (2021 and every year) Analysis of Quality of Service (QoS) requirements for commercial offerings is ready (EGI Foundation, Terradue).
- A5.2 (02/2023) Defined business model for continuous operations (EGI Foundation, Terradue).

WP6 - Marketing

Parties Involved: EGI Foundation, Terradue.

Description of work:

Ensure visibility of both parties via networks for marketing and communication opportunities.

Expected outcome:

- A6.1 (02/2021) Joint announcement of MoU (EGI Foundation, Terradue).
- A6.2 (02/2021) Dedicated mention of the other Party on its own website (<u>EGI Foundation</u>, <u>Terradue</u>).
- A6.3 (2021 and every year) Publication of results. If necessary, the Provider may ask the Customer for a report in an intermediate period (<u>Terradue</u>).

The EGI Foundation Community Support Team (CST) and the Service Delivery and Information Security (SDIS) will coordinate the periodic review of the progress of the activities defined in the table above, follow-up the milestones and distribute reports to both Parties. Special meetings between the points of contact designated under Article 4 (Communication) shall be held, as often as necessary, to examine the progress in

the implementation of this Agreement.

ARTICLE 4: COMMUNICATION

The Parties shall keep each other informed on all their respective activities and on their progress and shall consult regularly on areas offering potential for cooperation.

Terradue will accept and comply with EGI Foundation policies and procedures that apply to the users of EGI (http://go.egi.eu/policies and procedures).

Joint working groups may be established to examine in detail proposals in areas assigned to them by the Parties referred to in Article 2 (Joint Work Plan) and to make recommendations to the Parties.

Each Party shall designate a "point of contact" that shall be responsible for monitoring the implementation of this MoU and for taking measures to assist in the further development of cooperative activities. Such points of contact shall be the ordinary channel for the Parties' communication of proposals for cooperation.

The primary point of contact for each Party is:

EGI Foundation: Diego Scardaci < diego.scardaci@egi.eu>

Terradue: Pedro Pereira Gonçalves <pedro.goncalves@terradue.com>

Questions of principle or problems that cannot be solved at primary contact level are escalated to the EGI Foundation Director and the Terradue CEO or *Highest Role applicable*.

ARTICLE 5: RIGHTS AND RESPONSIBILITIES

The procedure is set out in Annex 4.

ARTICLE 6: FUNDING

Each Party shall bear the costs of discharging its respective responsibilities under this MoU, including travel and subsistence of its own personnel and transportation of goods and equipment and associated documentation, unless otherwise agreed in this MoU.

Each Party shall make available free of charge to the other Party any office/meeting space needed for the joint activities.

The Parties' obligations hereunder are subject to their respective funding procedures and the availability of appropriated funds. Should either Party encounter budgetary problems in the course of its respective internal procedures that may affect the activities carried out under this MoU, that Party shall notify and consult with the other Party in a timely manner in order to minimize the negative impact of such problems on the cooperation. The Parties shall jointly look for mutually agreeable solutions.

In order to reduce the impact on travel costs, face-to-face meetings should be co-located with other events where participants are likely to attend. Meeting via teleconferences should be considered when the nature of the discussion does not strictly require a face-to-face presence.

ARTICLE 7: ENTRY INTO FORCE, DURATION AND TERMINATION

This MoU will enter into force when signed by the authorized representatives of the Parties and shall remain in force until completion of the activities identified in Article 2 (Joint Work Plan), or upon termination of the projects in which the Parties participate, or upon three (3) months prior written notice by one Party to the other. In the event of termination, the parties shall endeavour to reach agreement on terms and conditions to minimize negative impacts on the other Party. In the event of the continuation of the present cooperation, the Agreement may be extended and/or amended by mutual agreement in writing.

ARTICLE 8: AMENDMENTS

The MoU may be amended by written agreement of the Parties. Amendments shall be valid only if signed by the authorized representatives of the Parties.

ARTICLE 9: ANNEXES

Annexes 1, 2, 3, 4 and 5 attached hereto have the same validity as this MoU and together constitute the entire understanding and rights and obligations covering the cooperation accepted by the Parties under this MoU. Annexes may be amended following the provisions of Article 8: Amendments.

ARTICLE 10: LANGUAGE

The language for this MoU, its interpretation and all cooperative activities foreseen for its implementation, is English.

ARTICLE 11: GOVERNING LAW – DISPUTE RESOLUTION

The terms of this MoU shall be interpreted in accordance with their true meaning and effect independently of national and local law. Provided that if and insofar as this MoU does not stipulate, or any of its terms are ambiguous or unclear, reference shall be made to the substantive laws of Belgium. Disputes shall be resolved by amicable settlement or failing which by mediation in accordance with the procedure set out in Annex 5.

Memorandum of Understanding between EGI Foundation and Terradue

IN WITNESS WHEREOF, the Parties have caused their duly authorised representatives to sign two originals of this Memorandum of Understanding, in the English language.

The following agree to the terms and conditions of this MoU:

Docusigned by: Tigiana Furari 465881FE0D144C8	Pedro Gonsalves D52AEF6ED7DE4D4
Tiziana Ferrari	Pedro Pereira Gonçalves
EGI Director	Terradue CTO
Jun 26, 2020 11:46 CEST	Jul 20, 2020 16:52 CEST
Date	Date

ANNEX 1 – EGI FOUNDATION DESCRIPTION

The EGI Foundation (also known as Stichting EGI and abbreviated as EGI.eu) is a not-for-profit foundation established under the Dutch law to coordinate the EGI Federation (abbreviated as EGI), an international collaboration that federates the digital capabilities, resources and expertise of national and international research communities in Europe and worldwide. The main goal is to empower researchers from all disciplines to collaborate and to carry out data- and compute-intensive science and innovation.

The EGI Federation is one of the largest distributed computing infrastructure for researchers. It leverages the local investments of national research funding agencies by bringing together hundreds of data centres worldwide. It also includes the largest research cloud federation in operations in Europe with tens of participating cloud providers across most of the European countries offering laaS cloud and storage services. The current federated resources represent altogether more than 350 Petabytes of online storage and 380 Petabytes of archival storage supported by more than 1 Million CPU Cores for data processing and analysis needs. EGI expanded the federation of its facilities with other non-European digital infrastructures in North America, South America, Africa-Arabia and the Asia-Pacific region, as such EGI fully realised the "Open to the World" vision. In order to interoperate at international level, EGI and its partners operate in the context of a lightweight collaboration framework defining rules of participations via a corpus of policies and technical guidelines.

The EGI Foundation has participants and associated participants drawn from representatives of national e-infrastructure consortiums (NGIs), EIROs, ERICs, and other legal entities. These entities provide the physical resources and shared services that enable EGI to deliver, improve and innovate services for communities.

The EGI Foundation coordinates areas such as overseeing infrastructure operations, user community support, contact with technology providers, strategy and policy development, flagship events and dissemination of news and achievements. As part of its mandate, the EGI Foundation actively represents the EGI federation at European level with policy makers and funding agencies, it provides expert advice to shape policies and funding programs and also supports the implementation of the policy priorities. In the policy area of open science, EGI is a key stakeholder represented in and contributing to the EC Open Science Policy Platform. The EGI Foundation holds certifications in both ISO/IEC 9000 "Quality Management" and ISO/IEC 20000 "IT Service Management".

The EGI Foundation has experience in defining, setting-up and operating multi-level governance frameworks suitable for coordinating and enabling service and resource provisioning across multiple stakeholders from different countries and organisations. In addition, has experience in legal, procurement and governance functions in EU research infrastructures including the setting up and the establishment of a European Research Infrastructure Consortia (ERIC).

EGI offering includes a federated laaS cloud to run compute- or data-intensive tasks and host online services in virtual machines or docker containers on IT resources accessible via a uniform interface; high-throughput data analysis to run compute-intensive tasks for producing and analysing large datasets and store/retrieve research data efficiently across multiple service providers; federated operations to manage service access and operations from heterogeneous distributed infrastructures and integrate resources from multiple independent providers with technologies, processes and expertise offered by EGI; consultancy for user-driven innovation to assess research computing needs and provide tailored solutions for advanced computing.

Over the last decade, EGI has built a federation of long-term distributed compute and storage infrastructures that has delivered unprecedented data analysis capabilities to more than 60,000 researchers from many disciplines (e.g., Medical and Health Sciences, Natural Sciences, Engineering and Technology, Agricultural Sciences, and Art and Humanities). Examples of the supported research include the search for the Higgs boson at the Large Hadron Collider particle accelerator at CERN; finding new tools to diagnose and monitor diseases such as Alzheimer's, and the development of complex simulations to model climate change.

The EGI Cloud Federation aggregates resources by defining a set of standard open-source interfaces and protocols to access the different cloud functions - such as resource discovery, user authentication, compute and data access services - in a uniform way at all the sites, enabling workloads to span and seamlessly migrate across resource centers. Through the EGI Virtual Machine image library – the Application Database

– EGI offers the possibility to share and reuse virtual appliances and to dynamically deploy them in a federated cloud infrastructure. Besides cloud compute and storage services, the cloud will offer the capability of accessing open datasets of public and commercial relevance for scalable access to big research data, fostering a culture and environment for sharing and reuse of open research data. EGI supports the implementation and adoption of cloud open standards.

The EGI technical platforms are co-developed with research communities and technology providers. In order to do so, EGI has established processes and technical infrastructures for requirements gathering, software validation, verification and distribution through the Unified Middleware Distribution.

Through its services for High Throughput Computing, Cloud, Federated Operations and Community-driven innovation and support (https://www.egi.eu/services/), EGI actively supports the European Open Science Cloud initiative and leads the EOSC-hub project, which brings together multiple service providers to create the Hub: a single contact point for European researchers and innovators to discover, access, use and reuse a broad spectrum of resources for advanced data-driven research. For researchers, this will mean a broader access to services supporting their scientific discovery and collaboration across disciplinary and geographical boundaries.

In the context of the EOSCpilot project, the EGI Foundation is one of the main contributors to the design and definition of the EOSC architecture and the federated service management framework, and coordinates service pilots participated by the scientific demonstrators. EGI also contributed to the definition of the governance framework and to the works on Rules of Participation. EGI has experience in the drafting of governing documents and policies such as intellectual property, scientific data, ERIC procurement rules, code of conduct, voting rules and rules of procedures for assembly of members and administration and scientific committees. VAT issues, contractual agreements, service level agreements, user agreements, supply agreements and research collaboration agreements.

The EGI Foundation has also most of their staff members that are certified at the expert level for the FitSM standard (http://fitsm.itemo.org/) and has contributed to the development of professional IT service management skills in the Research e-Infrastructure community by delivering a large number of trainings.

ANNEX 2 – TERRADUE DESCRIPTION

Terradue (https://www.terradue.com/) was established in 2006 as a Web 2.0 company and always nurtured this culture. Since 2009, Terradue has accompanied the European Space Agency ESRIN transition from Grid to Cloud services. The company has years of experience in supporting Principal Investigators in their use of EO data within state of the art Exploitation Platforms.

Terradue Srl is addressing the Earth Sciences research & education sector, with core competencies aimed at engineering distributed systems & Cloud services, providing consultancy for international organisations, and developing partner programs for Terradue's Open Source Software & Open Standards strategy.

Terradue UK Ltd is an operating subsidiary for the Climate Change market, with core competencies aimed at leveraging Open Web and e-Infrastructure components, in support of Terradue's Space & Innovation strategy.

The company has an international footprint with offices in Rome, Italy and Harwell Oxford, UK, and a flexible modus operandi as a distributed enterprise, that currently offers representations in Paris, France (Business Development and coordination with EC Initiatives and International Institutions).

Terradue mission is to innovate services for scientists in the European Research Area, tailored to their data integration and analysis goals.

The company contributes to build Earth Sciences research ecosystems where public and private sectors jointly identify capacity gaps and develop innovative solutions that aim at better-prepared people for the new digital, computational science.

As many research infrastructures in Europe still need enhanced ICT provisioning approaches, Terradue develops the service integration layers that connect scientists to the Web and Cloud resources that can empower their research.

ANNEX 3 – SLA DESCRIPTION

The Service Level Agreement ("the Agreement") between the EGI Foundation (the Provider) and Terradue (the Customer) to define the provision and support of the provided services is available online⁸.

ANNEX 4 – RIGHTS AND RESPONSIBILITIES

A. GENERAL

- 1. Parties agree to adhere to applicable policies and procedures relating to the use of the production infrastructure and/or platform.
- 2. A Party, which makes material, equipment or components available to the other Party, for the purposes of activities under this MoU shall remain the proprietor of such material, equipment or components.
- 3. Each Party shall remain fully responsible for its own activities, including the fulfilment of its obligations under any grant agreement with the European Commission or under any consortium agreement related thereto.

B. PERSONNEL

- 1. Each Party shall be solely responsible for any personnel hired to carry out work under this MoU.
- 2. In case personnel employed by one Party temporarily carries out work under this MoU on the premises of another (hereafter referred to as "secondment"), the following provisions shall apply:
- (a) The persons seconded shall be subject to all regulations, including, in particular, safety regulations, applicable on the site of the Party they are seconded to.
- (b) The personnel seconded by a Party to another shall remain employees of the Party having seconded them and such Party, as employer, shall bear exclusive responsibility for the payment of salary and for the procurement of adequate social security and insurance, including third party liability insurance and health insurance.

⁸ https://documents.egi.eu/public/ShowDocument?docid=2763

(c) Unless otherwise agreed by the Parties concerned, Intellectual Property Rights generated by personnel seconded by a Party to another shall be owned by the Party having seconded such personnel.

C. INTELLECTUAL PROPERTY RIGHTS AND LICENSE

- 1. "Intellectual Property Rights" shall mean all intellectual creations including but not limited to inventions, know-how, layouts, drawings, designs, specifications, computer programs, reports, processes, protocols, calculations and any other matter and protected by intellectual property rights, whether registered or not, including patents, registered designs, copyrights, design rights and all similar proprietary rights and applications for protection thereof.
- 2. Intellectual property rights generated by a Party under this MoU shall be the property of that Party who shall be free to protect, transfer and use such Intellectual Property Rights as it deems fit.
- 3. Notwithstanding the foregoing each Party shall grant the other a non-exclusive royalty free, perpetual license to use the Intellectual Property Rights generated by it under this MoU for use within its project or for the exploitation of the results thereof. Such license shall include the right to sublicense the entities involved in the project.

D. JOINTLY OWNED RESULTS

1. Results that were jointly generated by both Parties will be jointly owned by the Parties, hereinafter referred to as ("Jointly Owned Results") and each of the Parties shall be free to use these Jointly Owned Results as it sees fit without owing the other Party any compensation or requiring the consent of the other Party. Each Party, therefore, for example and without limitation, has the transferable right to grant non-exclusive, further transferable licenses under such Jointly Owned Results to third parties. Each Party shall be entitled to disclose such Jointly Owned Results without restrictions unless such Jointly Owned Results contain a Joint Invention in which case no disclosure must be made prior to the filing of a priority application.

2. With respect to any joint invention resulting from this MoU (i.e. any invention jointly made by employees of both Parties), the features of which cannot be separately applied for as Intellectual Property Rights and which are eligible for statutory protection requiring an application or registration (herein referred to as "Joint Invention"), the Parties shall agree on which Party will carry out any filling as well as any further details with regard to persecuting and maintaining of relevant patent applications.

E. PUBLIC RELATIONS

- 1. Any publication by a Party resulting from the activities carried out under this MoU shall be subject to prior agreement of the other Party not be unreasonably withheld.
- 2. The Parties may, each, release information to the public, provided it is related only to its own part of the activities under this MoU. In cases where the activities of the other Party are concerned prior consultation shall be sought. In all relevant public relations activities, the contribution of each Party related to activities covered by this MoU shall be duly acknowledged.

F. CONFIDENTIALITY OF INFORMATION

- 1. The Parties may disclose to each other information that the disclosing Party deems confidential and which is (i) in writing and marked "confidential", or (ii) disclosed orally, and identified as confidential when disclosed, and reduced in writing and marked "confidential" within fifteen (15) days of the oral disclosure (hereafter referred to as "Confidential Information"). Confidential Information shall be held in confidence and shall not be disclosed by the receiving Party to any third party without the prior written consent of the disclosing Party.
- 2. Notwithstanding the foregoing a Party is entitled to disclose Confidential Information which it is required by law to disclose or which, in a lawful manner, it has obtained from a third party without any obligation of confidentiality, or which it has developed independently from any Confidential Information received under this MoU, or which has become public knowledge other than as a result of a breach on its part of these confidentiality provisions.

G. LIABILITY

- 1. Each Party shall use reasonable endeavors to ensure the accuracy of any information or materials it supplies to the other Party and of any other contribution it makes hereunder and promptly to correct any error therein of which it is notified. The supplying Party shall be under no obligation or liability other than as stated above and no warranty or representation of any kind is made, given or to be implied as to the sufficiency, accuracy or fitness for a particular purpose of such information, materials or other contribution or as to the absence of any infringement of any proprietary rights of third parties through the possession or use of such information, materials or other contribution. The recipient Party shall be entirely responsible for its use of such information, materials or other contribution and shall hold the other Party free and harmless and indemnify it for any loss or damage with regard thereto.
- 2. Except in case of gross negligence or willful misconduct, neither Party shall be liable for any indirect or consequential damages of the other Party, including loss of profit or interest, under any legal cause whatsoever and on account of whatsoever reason.

H. PARTICIPATION IN SIMILAR ACTIVITIES

1. Parties are not prevented by this MoU from participating in activities similar to those described in this document with third parties. There is no obligation to disclose any similar activity to the other party. However, when considered of mutual benefit, both parties are encouraged to involve the other party in similar activities to the goal of disseminating the knowledge about EGI Foundation.

ANNEX 5 – SETTLEMENT OF DISPUTES

- 1. Any dispute, controversy or claim arising under, out of or relating to this MoU and any subsequent amendments of this MoU, including, without limitation, its formation, validity, binding effect, interpretation, performance, breach or termination, as well as non-contractual claims, will try to be solved through mediation, according to the rules of bMediation, Brussels.
- 2. The Parties undertake not to put an end to the mediation before the introductory statement made by each Party in joint session.
- 3. Should the mediation fail to bring about a full agreement between the Parties putting an end to the dispute, sole competent courts will be the courts of Brussels.
- 4. The costs including all reasonable fees expended by the Parties to any mediation hereunder shall be shared equally between the Parties.



Certificate Of Completion

Envelope Id: 47226575DA5A4927A1A370C6D3D724E6

Subject: Please DocuSign: MoU_EGI-Terradue_2021-2023

Source Envelope:

Envelope Originator: Document Pages: 17 Signatures: 2 Certificate Pages: 5 Initials: 0 **Project Office** 140 Science park

AutoNav: Enabled

Envelopeld Stamping: Enabled

Time Zone: (UTC+01:00) Amsterdam, Berlin, Bern, Rome, Stockholm, Vienna Amsterdam, North holland 1098XG

> project-office@egi.eu IP Address: 77.173.138.112

Sent: 25 June 2020 | 11:58

Resent: 08 July 2020 | 18:37

Signed: 20 July 2020 | 16:52

Sent: 25 June 2020 | 11:58

Viewed: 26 June 2020 | 11:46

Signed: 26 June 2020 | 11:46

Sent: 25 June 2020 | 11:58

Status: Completed

Record Tracking

Holder: Project Office Status: Original Location: DocuSign

25 June 2020 | 11:48 project-office@egi.eu

Timestamp Signer Events Signature DocuSigned by:

Pedro Gongalnes

Pedro Goncalves

pedro.goncalves@terradue.com

Security Level: Email, Account Authentication

(None)

D52AEF6ED7DE4D4. Resent: 09 July 2020 | 11:30 Resent: 20 July 2020 | 11:15 Signature Adoption: Pre-selected Style Viewed: 20 July 2020 | 16:50

Using IP Address: 109.51.134.198

Electronic Record and Signature Disclosure:

Accepted: 20 July 2020 | 16:50

ID: 38a4ee1c-fd66-4508-8883-b5d4977ec333

Company Name: EGI Foundation

Tiziana Ferrari tiziana.ferrari@egi.eu

Director **EGI** Foundation

(None)

Security Level: Email, Account Authentication

Electronic Record and Signature Disclosure: Not Offered via DocuSign

DocuSigned by: Tiziana Furrani 465881FE0D144C8..

Using IP Address: 87.7.67.244

Signature Adoption: Pre-selected Style

In Person Signer Events Signature **Timestamp**

Editor Delivery Events Status Timestamp

Agent Delivery Events Status Timestamp

Intermediary Delivery Events Status Timestamp

Certified Delivery Events Status Timestamp

Carbon Copy Events Status Timestamp

COPIED

Fabrice Brito

fabrice.brito@terradue.com

Security Level: Email, Account Authentication

(None)

Electronic Record and Signature Disclosure:

Not Offered via DocuSign

Carbon Copy Events

Giuseppe La Rocca giuseppe.larocca@egi.eu

Security Level: Email, Account Authentication

Electronic Record and Signature Disclosure:

Accepted: 17 January 2019 | 12:47 ID: f38354df-b53f-4e1d-be46-1b7d09ae7698

Company Name: EGI Foundation

Status **Timestamp**

> Sent: 25 June 2020 | 11:58 Viewed: 25 June 2020 | 12:38

Witness Events	Signature	Timestamp	
Notary Events	Signature	Timestamp	
Envelope Summary Events	Status	Timestamps	
Envelope Sent	Hashed/Encrypted	20 July 2020 11:15	
Certified Delivered	Security Checked	20 July 2020 16:50	
Signing Complete	Security Checked	20 July 2020 16:52	
Completed	Security Checked	20 July 2020 16:52	
Payment Events	Status	Timestamps	
Electronic Record and Signature Disclosure			

COPIED

CONSUMER DISCLOSURE

From time to time, EGI Foundation (we, us or Company) may be required by law to provide to you certain written notices or disclosures. Described below are the terms and conditions for providing to you such notices and disclosures electronically through the DocuSign, Inc. (DocuSign) electronic signing system. Please read the information below carefully and thoroughly, and if you can access this information electronically to your satisfaction and agree to these terms and conditions, please confirm your agreement by clicking the 'I agree' button at the bottom of this document.

Getting paper copies

At any time, you may request from us a paper copy of any record provided or made available electronically to you by us. You will have the ability to download and print documents we send to you through the DocuSign system during and immediately after signing session and, if you elect to create a DocuSign signer account, you may access them for a limited period of time (usually 30 days) after such documents are first sent to you. After such time, if you wish for us to send you paper copies of any such documents from our office to you, you will be charged a \$0.00 per-page fee. You may request delivery of such paper copies from us by following the procedure described below.

Withdrawing your consent

If you decide to receive notices and disclosures from us electronically, you may at any time change your mind and tell us that thereafter you want to receive required notices and disclosures only in paper format. How you must inform us of your decision to receive future notices and disclosure in paper format and withdraw your consent to receive notices and disclosures electronically is described below.

Consequences of changing your mind

If you elect to receive required notices and disclosures only in paper format, it will slow the speed at which we can complete certain steps in transactions with you and delivering services to you because we will need first to send the required notices or disclosures to you in paper format, and then wait until we receive back from you your acknowledgment of your receipt of such paper notices or disclosures. To indicate to us that you are changing your mind, you must withdraw your consent using the DocuSign 'Withdraw Consent' form on the signing page of a DocuSign envelope instead of signing it. This will indicate to us that you have withdrawn your consent to receive required notices and disclosures electronically from us and you will no longer be able to use the DocuSign system to receive required notices and consents electronically from us or to sign electronically documents from us.

All notices and disclosures will be sent to you electronically

Unless you tell us otherwise in accordance with the procedures described herein, we will provide electronically to you through the DocuSign system all required notices, disclosures, authorizations, acknowledgements, and other documents that are required to be provided or made available to you during the course of our relationship with you. To reduce the chance of you inadvertently not receiving any notice or disclosure, we prefer to provide all of the required notices and disclosures to you by the same method and to the same address that you have given us. Thus, you can receive all the disclosures and notices electronically or in paper format through the paper mail delivery system. If you do not agree with this process, please let us know as described below. Please also see the paragraph immediately above that describes the consequences of your electing not to receive delivery of the notices and disclosures electronically from us.

How to contact EGI Foundation:

You may contact us to let us know of your changes as to how we may contact you electronically, to request paper copies of certain information from us, and to withdraw your prior consent to receive notices and disclosures electronically as follows:

To contact us by email send messages to: celine.bitoune@egi.eu

To advise EGI Foundation of your new e-mail address

To let us know of a change in your e-mail address where we should send notices and disclosures electronically to you, you must send an email message to us at celine.bitoune@egi.eu and in the body of such request you must state: your previous e-mail address, your new e-mail address. We do not require any other information from you to change your email address..

In addition, you must notify DocuSign, Inc. to arrange for your new email address to be reflected in your DocuSign account by following the process for changing e-mail in the DocuSign system.

To request paper copies from EGI Foundation

To request delivery from us of paper copies of the notices and disclosures previously provided by us to you electronically, you must send us an e-mail to celine.bitoune@egi.eu and in the body of such request you must state your e-mail address, full name, US Postal address, and telephone number. We will bill you for any fees at that time, if any.

To withdraw your consent with EGI Foundation

To inform us that you no longer want to receive future notices and disclosures in electronic format you may:

- i. decline to sign a document from within your DocuSign session, and on the subsequent page, select the check-box indicating you wish to withdraw your consent, or you may;
- ii. send us an e-mail to celine.bitoune@egi.eu and in the body of such request you must state your e-mail, full name, US Postal Address, and telephone number. We do not need any other information from you to withdraw consent.. The consequences of your withdrawing consent for online documents will be that transactions may take a longer time to process..

Required hardware and software

Operating Systems:	Windows® 2000, Windows® XP, Windows Vista®; Mac OS® X
Browsers:	Final release versions of Internet Explorer® 6.0 or above (Windows only); Mozilla Firefox 2.0 or above (Windows and Mac); Safari TM 3.0 or above (Mac only)
PDF Reader:	Acrobat® or similar software may be required to view and print PDF files
Screen Resolution:	800 x 600 minimum

Enabled Security Settings:	Allow per session cookies

^{**} These minimum requirements are subject to change. If these requirements change, you will be asked to re-accept the disclosure. Pre-release (e.g. beta) versions of operating systems and browsers are not supported.

Acknowledging your access and consent to receive materials electronically

To confirm to us that you can access this information electronically, which will be similar to other electronic notices and disclosures that we will provide to you, please verify that you were able to read this electronic disclosure and that you also were able to print on paper or electronically save this page for your future reference and access or that you were able to e-mail this disclosure and consent to an address where you will be able to print on paper or save it for your future reference and access. Further, if you consent to receiving notices and disclosures exclusively in electronic format on the terms and conditions described above, please let us know by clicking the 'I agree' button below.

By checking the 'I agree' box, I confirm that:

- I can access and read this Electronic CONSENT TO ELECTRONIC RECEIPT OF ELECTRONIC CONSUMER DISCLOSURES document; and
- I can print on paper the disclosure or save or send the disclosure to a place where I can print it, for future reference and access; and
- Until or unless I notify EGI Foundation as described above, I consent to receive from exclusively through electronic means all notices, disclosures, authorizations, acknowledgements, and other documents that are required to be provided or made available to me by EGI Foundation during the course of my relationship with you.