Annex 1: SERVICES

# EGI-ACE services

## EGI Dynamic DNS service

The Dynamic DNS service provides a unified, federation-wide Dynamic DNS support for VMs in EGI infrastructure. Users can register their chosen meaningful and memorable DNS host names in given domains (e.g. my-server.vo.fedcloud.eu) and assign to public IPs of their servers. By using Dynamic DNS, users can host services in EGI Cloud with their meaningful service names, can freely move VMs from sites to sites without modifying server/client configurations (federated approach), can request valid server certificates in advance (critical for security).

<https://marketplace.eosc-portal.eu/services/dynamic-dns-service>

## EGI Cloud Compute

Cloud Compute gives you the ability to deploy and scale virtual machines on-demand. It offers guaranteed computational resources in a secure and isolated environment with standard API access, without the overhead of managing physical servers. Cloud Compute offers the possibility to select pre-configured virtual appliances (e.g. CPU, memory, disk, operating system or software) from a catalogue replicated across all EGI cloud providers.

<https://marketplace.eosc-portal.eu/services/egi-cloud-compute>

## EGI Cloud Container Compute

Cloud Container Compute (in Beta phase) gives you the ability to deploy and scale Docker containers on-demand. It offers guaranteed computational resources in a secure and isolated environment with standard API access, without the overhead of managing the operating system. The result is improved performance, ideal for development work.

<https://marketplace.eosc-portal.eu/services/egi-cloud-container-compute-beta>

## EGI Data Transfer

Data Transfer allows you to move any type of data files asynchronously from one place to another. The service includes dedicated interfaces to display statistics of on-going transfers and manage network resources. Data Transfer is ideal to move large amounts of files or very large files. The Data Transfer service has mechanisms to ensure automatic retry in case of failure.

<https://marketplace.eosc-portal.eu/services/egi-data-transfer>

## EGI DataHub

The DataHub allows to bring data close to the computing to exploit it efficiently and publish a dataset and make it available to a specific community or worldwide across federated sites.

<https://marketplace.eosc-portal.eu/services/egi-datahub>

## EGI High-Throughput Compute

With High-Throughput Compute you can run computational jobs at scale on the EGI infrastructure. It allows you to analyse large datasets and execute thousands of parallel computing tasks. High-Throughput Compute is provided by a distributed network of computing centres, accessible via a standard interface and membership of a virtual organisation. EGI offers more than 700, 000 cores of installed capacity, supporting over 1.6 million computing jobs per day. This service supports research and innovation at all scales: from individuals to large collaborations.

<https://marketplace.eosc-portal.eu/services/egi-high-throughput-compute>

## EGI Notebook

Notebooks is a browser-based tool for interactive analysis of data using EGI storage and compute services. Notebooks are based on JupyterHub technology. This service can combine text, mathematics, computations and their rich media output using Jupyter technology, and can scale to multiple servers and users with the Cloud Compute service.

<https://marketplace.eosc-portal.eu/services/egi-notebooks>

## EGI Online storage

Online Storage allows you to store data in a reliable and high-quality environment and share it across distributed teams. Your data can be accessed through different standard protocols and can be replicated across different providers to increase fault-tolerance. Online Storage gives you complete control over the data you share and with whom.

<https://marketplace.eosc-portal.eu/services/egi-online-storage>

## EMSO ERIC Data Portal

The Data Portal provides users with a single access point to all EMSO ERIC data services. It offers tools that enable users to easily find and access harmonized data sets, application programming interfaces (APIs), dashboards, data tools, and a virtual research environment.

<https://marketplace.eosc-portal.eu/services/emso-eric-data-portal>

## Deep training facility

Distributed training facility for Machine Learning, Artificial Intelligence and Deep Learning models. This service offers a set of tools to build and train Machine Learning, Artificial Intelligence and Deep Learning models in distributed e-Infrastructures. Ready to use models are available for transfer learning or reuse. Models can be built from scratch or form existing and pre-trained models (transfer learning or model reuse).

<https://marketplace.eosc-portal.eu/services/deepaas-training-facility?q=DEEP+training+facility>

## Elastic Cloud Compute Cluster (EC3)

The Elastic Cloud Computing Cluster (EC3) is a platform that allows creating elastic virtual clusters on top of Infrastructure as a Service (IaaS) providers, either public (such as Amazon Web Services, Google Cloud or Microsoft Azure) or on-premises (such as OpenNebula and OpenStack). Through a 'job wizard' interface, the user can configure the virtual cluster with a predefined set of applications that will be deployed in the clouds underpinning the EGI Applications On Demand infrastructure. The installation and the configuration of the cluster are performed by means of the execution of Ansible receipts. The cluster configured by EC3 is private: as soon as it is configured the user will have root access to the environment, and can setup and configure the cluster installing additional libraries and software to their needs

<https://marketplace.eosc-portal.eu/services/elastic-cloud-compute-cluster-ec3>

# DICE services

## B2SAFE

B2SAFE is a robust, safe and highly available service which allows community and departmental repositories to implement data management policies on their research data across different geographical and administrative domains in a trustworthy manner. B2SAFE is a way to distribute and store large volumes of data for a long-term to those sites which are providing powerful data processing, analysis and data access facilities. The service operates on the domain of registered data: data objects are made referenceable via globally unique persistent identifiers (PID) which are managed by the corresponding administrative domains.

<https://marketplace.eosc-portal.eu/services/b2safe>

## B2HANDLE

A distributed service for storing, managing and accessing persistent identifiers (PIDs) and essential metadata (PID records) as well as managing PID namespaces. The implementation of the service relies on the DONA/Handle persistent identifier solution. B2HANDLE can be used by middleware applications, end-user tools and other services to reliably identify data objects over longer timespans and through changes in object location or ownership.

<https://marketplace.eosc-portal.eu/services/b2handle>

## B2DROP

A secure and trusted data exchange service for researchers and scientists to keep their research data synchronized and up-to-date and to exchange with other researchers. An ideal solution to store and exchange data with colleagues and team members, synchronise multiple versions of data and ensure automatic desktop synchronisation of large files.

<https://marketplace.eosc-portal.eu/services/b2drop?q=B2DROP>

## B2SHARE

B2SHARE is a user-friendly, reliable and trustworthy way for researchers, scientific communities and citizen scientists to store and share small-scale research data from diverse contexts. B2SHARE is a solution that facilitates research data storage, guarantees long-term persistence of data and allows data, results or ideas to be shared worldwide. Standard. For the individual researchers who do not have adequate facilities for storing, preserving and sharing data, B2SHARE Service is a customer-facing service which provides a safe repository for scientific data and an easy way to share it in the research community.

<https://marketplace.eosc-portal.eu/services/b2share>

## B2ACCESS

B2ACCESS is the EUDAT federated cross-infrastructure authorisation and authentication framework for user identification and community-defined access control enforcement. B2ACCESS allows users to authenticate themselves using a variety of credentials. B2ACCESS service is a customer facing service that provides federated access to the services in a trusted way.

<https://marketplace.eosc-portal.eu/services/b2access?q=B2ACCESS>

# OpenAIRE services

## OpenAIRE Research Graph

OpenAIRE Research Graph is an open resource that aggregates a collection of research data properties (metadata, links) available within the OpenAIRE Open Science infrastructure for funders, organizations, researchers, research communities and publishers to interlink information by using a semantic graph database approach.

<https://marketplace.eosc-portal.eu/services/openaire-graph-access-api?q=OpenAIRE+Research+Graph>

## Zenodo

Zenodo is a general purpose repository that enables researchers, scientists, projects and institutions to share, preserve and showcase multidisciplinary research results (data, software, publications, and other research objects) that are not part of the existing institutional or subject-based repositories of the research communities. It is founded in the trustworthy CERN data centre and enables everyone to participate in Open Science. Used by more than 200K researchers and 7K communities all over the world.

<https://marketplace.eosc-portal.eu/services/zenodo?q=Zenodo>

## EpiSciences

Episciences is an overlay journal platform. It is an innovative combination of the two routes of free access: the gold route by hosting journals in open access (overlay journals) and the green route where articles are submitted to these journals by depositing them in an open archive. By design, Episciences is an actor of open science and open access. The journals hosted by the Episciences platform are diamond open access journals, they adhere to the FAIR principles (Findable, Accessible, Interoperable, Reusable). The articles are available in open access via Episciences and on the original Archive; they benefit from a perennial access and a unique identifier.

<http://catalogue.openaire.eu/service/openaire.episciences>

## Amnesia

AMNESIA allows end users to anonymize sensitive data in order to share them with a broad audience. The service allows the user to guide the anonymization process and decide on a flexible trade-off between privacy guarantee and data utility. The service is offered through a web interface that allows users to explore the anonymized data visually. Moreover, the service detects duplicate anonymized files when they are uploaded to Zenodo. Reduce or eliminate the dangers to the privacy of the users that are associated with the data. Allow data owners or curators to safely share the data with other experts and to benefit from their processing on them.

<https://marketplace.eosc-portal.eu/services/amnesia?q=AMNESIA>

## ARGOS

Argos is the online machine-actionable tool developed by OpenAIRE to facilitate Research Data Management (RDM) activities concerning the implementation of Data Management Plans (DMPs). It is an open, extensible and configurable tool which follows global standards including the DMP Common Standard of Research Data Alliance (RDA) for machine actionability. Argos uses OpenAIRE guides created by its RDM Task Force to familiarize users with basic RDM concepts and guide them throughout the process of describing their data. It also utilises the OpenAIRE pool of services and inferred sources to make DMPs more dynamic in use and easier to be completed, published and exploited in the Open Science ecosystem. Argos is based on the OpenDMP open source software, developed in collaboration with EUDAT CDI.

<https://marketplace.eosc-portal.eu/services/argos?q=ARGOS>

## OpenAIRE MONITOR

An OpenAIRE on-demand service that provides user-friendly, customizable dashboards of well-documented and timely monitoring indicators of research activities, built upon the OpenAIRE Research Graph (https://graph.openaire.eu). As the number of programmes available for financing research activities has been growing steadily, so has the need to update the monitoring and evaluation of such activities. The OpenAIRE Monitor aims to create a well-rounded and relevant set of metrics, as well as composite and more advanced indicators to build funder, institutional and research infrastructure monitoring dashboards. It offers functionalities such as external (public stakeholders) vs internal (team members) dashboards, downloading of visualizations and datasets, filtering of indications and links to actual research outputs, with the aim of being a one-stop shop for the monitoring, policy-making, analysis and reporting needs of stakeholders.

<https://marketplace.eosc-portal.eu/services/openaire-funder-dashboard-a84b99a1-ee29-4b96-92e7-f3502e5de1a8>

## OpenCitations

OpenCitations is an independent not-for-profit infrastructure organization for open scholarship dedicated to the publication of open bibliographic and citation data by the use of Semantic Web technologies. It provides more than one billion citations data that can be reused for any purpose and can be accessed via SPARQL endpoints, REST APIs, and that can be downloaded in bulk.

<http://catalogue.openaire.eu/service/openaire.opencitations>

## ScholExplorer

Scholexplorer is a service that provides access to the largest collection of Open Access (CC-BY) citations between articles and datasets, datasets and datasets, as exposed by Crossref, DataCite, EMBL-EBI, and OpenAIRE. Links (and objects) are provided by data sources managed by publishers, data centers, or other organizations providing services to store and manage links between data sets and publications. Scholexplorer aggregates link metadata harvested from the data sources and out of these, it builds harmonised and de-duplicated graphs of scholarly objects. The graph is openly accessible (CC-0) via search REST APIs that return links in Scholix format.

ScholeXplorer has serviced more than 2 Billion API requests and includes more than 260 Million bi-directional article-dataset and dataset-dataset links.

<https://marketplace.eosc-portal.eu/services/openaire-scholexplorer?q=OpenAIRE+ScholeXplorer>

## Usage Counts

UsageCounts service collects usage data from Open Science content providers repositories, journals, and other scientific data sources. Then, it aggregates them, delivering standardized activity reports about research usage and uptake. It complements existing citation mechanisms and assists institutional repository managers, research communities, research organizations, funders, and policy makers to track and evaluate research from an early stage.

<https://marketplace.eosc-portal.eu/services/openaire-usage-statistics-e1f37ca5-146a-48d3-afa1-58c29e12c026?q=OpenAIRE+Usage+Counts>

## OpenAPC

OpenAPC collects, aggregates and publishes data on Open Access journal articles (APCs), Open Access Books (BPCs) and other cost data from participating institutions. It aims at transparency, comparability and tracking of cost developments in the field of Open Access publishing. Therefore, OpenAPC allows libraries, funding agencies, researchers, developers and 3rd party services to keep track and provide access to the Open Access record of European expenditure for APC or other cost data, e.g. from transformative agreements, across publishers, journals, academic institutions and countries. All OpenAPC data is made freely available under the Open Database License (ODBL). OpenAPC complies with current recommendations for cost transparency in an Open Access based scholarly publication system. It is important to point, that all data is provided voluntarily by universities and other HEI, funders or national consortia. Major PlanS cOAlitionS members and supporters e.g. Wellcome Trust, FWF, or the Bill & Melinda Gates Foundation are already contributing data to OpenAPC.

<https://marketplace.eosc-portal.eu/services/openapc?q=OpenAPC>

## Open Science Observatory

The Open Science Observatory presents a collection of indicators and visualizations that help interested stakeholders (policy makers and research administrators among others) better understand the Open Science landscape in Europe across countries and (coming soon) subject areas. The platform assists the monitoring, and consequently the enhancing, of open science policy uptake across different dimensions of interest, revealing weak spots and hidden potential. Based on the OpenAIRE research graph, following open science principles and an evidence-based approach, the indicators can be used to provide timely and reliable insights on the evolution of open science in Europe and assist in promoting good practices.

<https://marketplace.eosc-portal.eu/services/open-science-observatory?q=Open+Science+Observatory>

## OpenAIRE Login

OpenAIRE Login enables researchers to securely access and share common resources and services using identities from eduGAIN, the global network of academic identity federations. For users coming from the industry or citizen scientists who may not have access to eduGAIN, the OpenAIRE Login service supports additional trusted authentication providers, such as social networks, community identity providers and other platforms such as ORCID that can provide federated user identities. OpenAIRE Login allows connecting services using popular protocols, such as OpenID Connect and SAML, to securely authenticate and identify their users, organise them in groups, assign them roles and centrally manage access rights for accessing protected resources.

<https://marketplace.eosc-portal.eu/services/openaire-login?q=OpenAIRE+Login>

## OpenAIRE PROVIDE

A bundle of services for content providers to share and exchange metadata and content using EOSC metadata frameworks and Rules of Participation. The service provides metadata validation, reporting and brokering functionalities, providing feedback about gaps between EOSC data sources, and maintaining an up-to-date scholarly record.

<https://marketplace.eosc-portal.eu/services/openaire-content-provider-dashboard-fed69851-6cb0-4d62-9689-26d19c6ff889?q=OpenAIRE+Content+Provider+Dashboard>

## OpenAIRE EXPLORE

The OpenAIRE Discovery portal provides access to Open Access research content. It is based on OpenAIRE's open scholarly communication graph that includes all research and scholarly activities, spanning all phases of the research life cycle. The OpenAIRE scholarly communication graph is created bi-monthly by aggregating, cleaning, transforming and inferring content retrieved from OpenAIRE's European and global network of validated OA data providers. In addition to the usual search and browse mechanisms, the OpenAIRE Discovery portal provides end user functionalities which allow users to: find the most fitting repository to deposit their publication or data, authoritatively enrich the underlying content (e.g., linking research results to funding, linking research results to external sources), view and download reports or graphs of aggregated research outcomes (e.g., per funder, project, institution) and their stats. Enable intelligent and contextualized research discovery.Connect public to open access research in Europe and beyond.9, 200 registered users. 50, 000 users use the service on the average every month.

<https://marketplace.eosc-portal.eu/services/openaire-explore-portal?q=OpenAIRE+Explore+Portal>

## OpenAIRE CONNECT

OpenAIRE CONNECT is a service that enables research communities to build on-demand, personalised, Research Communities Gateways on a domain and reach out to researchers from a single entry point.

<https://marketplace.eosc-portal.eu/services/openaire-research-community-dashboard-e347a58e-d556-4610-985d-8d74e96b3172?q=OpenAIRE+Research+Community+Dashboard>

## OpenAIRE Broker

Content providers can use the OpenAIRE Broker service via the OpenAIRE PROVIDE. Thanks to the Broker, repositories, publishers or aggregators can exchange metadata and enrich their local metadata collection by subscribing to notifications of different types. The Broker is able to notify providers when the OpenAIRE Graph contains information that is not available in the original collection of the provider. For instance, the provider can be notified about additional PIDs of  publications (e.g. DOIs).

<https://marketplace.eosc-portal.eu/services/openaire-broker>

## OpenAIRE Validator

The OpenAIRE Validator service is used by content providers who wish to register to OpenAIRE and allows them to verify that they are compliant with the OpenAIRE guidelines. The service also checks the quality of implementation of the OAI-PMH protocol. Content providers can use the service after logging into the OpenAIRE PROVIDE. If validation succeeds the provider can be registered to join the OpenAIRE infrastructure. The provider's content is regularly aggregated to contribute to the OpenAIRE Research Graph. OpenAIRE allows for registration of institutional and thematic repositories registered inOpenDOAR, research data repositories registered in re3data, individual e-Journals, CRIS, aggregators and publishers. The Validator service is realised with a configurable software that allows users with administrative rights to customize the validation rules to be applied. This feature makes it easier to adapt the service when the OpenAIRE guidelines are updated and also to offer similar services, possibly with different rules and configurations, to third-parties.Increased interoperability. The Validation service has been deployed also for National and Regional Aggregators like La Referencia (Latin America, 11 countries), Fecyt (Spain), Mincyt (Argentina).

<https://marketplace.eosc-portal.eu/services/openaire-validator?q=OpenAIRE+Validator>