



European Grid Initiative

RESOURCE CENTRE OPERATIONAL LEVEL AGREEMENT v. 1.2

Document identifier:	EGI-RC-OLA-v1.2 FINAL.doc
Date:	24/10/2013
Lead Partner:	EGI.eu
Document Status:	Final
Dissemination Level:	PUBLIC
Document Link:	https://documents.egi.eu/document/31

Abstract

This document defines the responsibility of an EGI Resource Centre that is in certified, uncertified or suspended status, and the minimum set of applicable services and the respective service levels and targets that a Resource Centre is required to provide in EGI depending on the status.



I. COPYRIGHT NOTICE

Copyright © EGI.eu. This work is licensed under the Creative Commons Attribution-NonCommercial-NoDerivs 3.0 Unported License. To view a copy of this license, visit <http://creativecommons.org/licenses/by-nc/3.0/> or send a letter to Creative Commons, 171 Second Street, Suite 300, San Francisco, California, 94105, USA.

The work must be attributed by attaching the following reference to the copied elements: “Copyright © EGI.eu (www.egi.eu). Using this document in a way and/or for purposes not foreseen in the license, requires the prior written permission of the copyright holders. The information contained in this document represents the views of the copyright holders as of the date such views are published.

II. DELIVERY SLIP

	Name	Document Version	Date
Approved by	Operations Management Board	V 1.0	03/06/2011
	Operations Management Board	V 1.1	15/03/2012
	Operations Management Board	V 1.3	24/10/2013

III. DOCUMENT LOG

Please see the Resource Centre OLA Release Notes at [REL].

Issue	Date	Comment	Author/Partner
1.0	03 Jun 2011	Approval of v. 1.0 by OMB	T. Ferrari/EGI.eu D. Zilaskos/AUTH
1.1	15 Mar 2012	Approval of v. 1.1 by OMB	T. Ferrari/EGI.eu
1.2	24 Oct 2013	Approval of v. 1.2 by OMB	M. Krakowian/EGI.eu



TABLE OF CONTENTS

1 INTRODUCTION	4
1.1 Document Amendment Procedure	4
1.2 Terminology	4
1.2.1 Availability.....	4
1.2.2 Capability.....	4
1.2.3 Certified Resource Centre.....	4
1.2.4 Incident and Problem.....	5
1.2.5 Operations Centre.....	5
1.2.6 National Grid Initiative	5
1.2.7 Reliability	5
1.2.8 Resource Centre (Site).....	5
1.2.9 Resource Centre Operations Manager.....	5
1.2.10 Resource Infrastructure.....	5
1.2.11 Resource Infrastructure Operations Manager.....	5
1.2.12 Resource Infrastructure Provider.....	6
1.2.13 Service hours	6
1.2.14 Support hours.....	6
1.2.15 Unified Middleware Distribution.....	6
1.2.16 UMD-compliant Middleware.....	6
1.2.17 Virtual Organization.....	6
2 PARTIES TO THE AGREEMENT	7
3 DURATION OF THE AGREEMENT	7
4 SCOPE OF THE AGREEMENT	7
5 RESPONSIBILITIES	7
5.1 Resource Centre	7
5.1.1 Monitoring, Troubleshooting.....	8
5.1.2 Hardware and Connectivity Criteria	8
5.2 Resource Infrastructure Provider	8
6 DESCRIPTION OF SERVICES COVERED	8
6.1 Capabilities	9
6.2 Support	10
7 SERVICE REPORTING AND REVIEWING	10
8 LIABILITY	10
9 SERVICE LEVELS AND TARGETS	11
10 REFERENCES	12



1 INTRODUCTION

The Resource Centre Operational Level Agreement (OLA) – also referred to as Agreement in this document, is to obtain agreement between a Resource Centre and the respective Resource Infrastructure Provider on the commitments needed to ensure an available and reliable grid infrastructure.

1.1 Document Amendment Procedure

The Resource Centre OLA is discussed and approved by the EGI Operations Management Board (OMB) [TOR]. Amendments, comments and suggestions must be addressed to the OMB by opening a GGUS [GGUS] ticket to the Service Level Management support unit.

Changes introduced are documented in the Release Notes available at [REL].

The Resource Infrastructure Operations Manager will promptly inform his/her Resource Centre administrators about changes introduced to the requirements, service levels and targets defined in this document, and will ensure that the impact of the changes is understood.

1.2 Terminology

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.

More information about the entities defined in the sections below is available in [ARCH].

For a complete list of term definitions see [GLO].

1.2.1 Availability

Availability of a service over a given period is defined as the fraction of time the same was UP during the known interval in the given period [QOS].

1.2.2 Capability

A capability is the ability of an IT Service to carry out an activity. A capability may be 1) functional if providing an Activity for the direct benefit of the User; 2) operational if providing an Activity for supporting the Operations of an IT Infrastructure; 3) security if related to security aspects. A Capability may depend on other Capabilities. A Capability is defined and delivered by one or more Interfaces supported by one or more technology providers. Examples of functional Capability are user management, authentication and authorization, and job submission. Examples of non-functional capabilities are messaging, accounting, and monitoring.

1.2.3 Certified Resource Centre

A Certified Resource Centre is a Resource Centre that conforms to the requirements specified in the “Resource Centre Registration and Certification Procedure” [PROC09].

For more information on Resource Centre statuses see [GOC].



1.2.4 Incident and Problem

The Incident is an unplanned interruption to a service or reduction in the quality delivered by a service. A Problem is the cause of one or more Incidents¹.

1.2.5 Operations Centre

The Operations Centre offers operations services on behalf of the Resource infrastructure Provider. The operations services are delivered locally in collaboration with the relevant Resource Centres at a local level, and globally with EGI.eu.

1.2.6 National Grid Initiative

National Grid Initiatives are legal organisations that (a) have a mandate to represent their national Grid community in all matters falling within the scope of EGI.eu, and (b) are the only organisation having the mandate described in (a) for its country and thus provide a single contact point at the national level.

1.2.7 Reliability

Reliability of a service over a given period is defined as the ratio of the time interval it was UP over the time interval it was supposed (scheduled) to be UP during the known interval in the given period [QOS].

1.2.8 Resource Centre (Site)

The Resource Centre – also known as Site – is a resource administration domain in EGI. It can be either localised or geographically distributed. It provides a minimum set of local or remote user facing services provided either through UMD-compliant capabilities [UMD] or Cloud services [CS].

See section 5.1 for more information on the Resource Centre responsibilities.

1.2.9 Resource Centre Operations Manager

The Resource Centre Operations Manager leads the Resource Centre operations, and is the official technical contact person in the connected organisation. He/she is locally supported by a team of Resource Centre administrators.

1.2.10 Resource Infrastructure

A Resource Infrastructure is a federation of Resource Centres.

1.2.11 Resource Infrastructure Operations Manager

The Resource Infrastructure Operations Manager represents his/her Resource Centres within the OMB and at an EGI international level. He/She is appointed by the Resource Infrastructure Provider.

¹ Information Technology Infrastructure Library (ITIL). ITIL ® is a Registered Community Trade Mark of the Office of Government Commerce, and is registered in the U.S. Patent and Trademark Office



1.2.12 Resource Infrastructure Provider

The Resource Infrastructure Provider is the legal organisation responsible for any matter that concerns the respective Resource Infrastructure. It provides, manages and operates (directly or indirectly) all the operational services required to an agreed level of quality as required by the Resource Centres and their user community. It holds the responsibility of integrating these operational services into EGI in order to enable uniform resource access and sharing for the benefit of their users. The Resource Infrastructure Provider liaises locally with the Resource Centre Operations Managers, and represents the Resource Centres at an international level. Examples of a Resource Infrastructure Provider are the European Intergovernmental Research Institutes (EIRO) and the National Grid Initiatives (NGIs).

1.2.13 Service hours

Service hours are an agreed time period when a particular Service should be Available².

1.2.14 Support hours

Support hours are an agreed time period when a particular Service Support should be Available.

1.2.15 Unified Middleware Distribution

The Unified Middleware Distribution (UMD) is the integrated set of software components contributed by technology providers and packaged for deployment as production-quality services in EGI [UMD].

1.2.16 UMD-compliant Middleware

UMD-compliant Middleware is the software that provides one of more UMD capabilities, and complies with the UMD supported interfaces specified in the UMD Roadmap [UMD]. It is mandatory that UMD-compliant software supports Monitoring and Accounting.

1.2.17 Virtual Organization

The Virtual Organization (VO) [GLO] is a group of people (e.g. scientists, researchers) with common interests and requirements, who need to work collaboratively and/or share resources (e.g. data, software, expertise, CPU, storage space) regardless of geographical location. They join a VO in order to access resources to meet these needs, after agreeing to a set of rules and policies that govern their access and security rights (to users, resources and data).

² Information Technology Infrastructure Library (ITIL). ITIL ® is a Registered Community Trade Mark of the Office of Government Commerce, and is registered in the U.S. Patent and Trademark Office



2 PARTIES TO THE AGREEMENT

The parties to this Agreement are

- the Resource Infrastructure Provider (represented by the Resource Infrastructure Operations Manager)
- the Resource Centre (represented by the Resource Centre Operations Manager).

3 DURATION OF THE AGREEMENT

Once approved, this Agreement is valid for as long as the Resource Centre is part of the EGI production infrastructure, i.e. until the production Resource Centre registered in the central configuration repository GOCDB³ with Infrastructure status equal to “PRODUCTION”, is not turned into CLOSED status [GOC].

The Resource Centre retains the right to terminate the Agreement at any time. If parties agree to end the Agreement, then the production Resource Centre is no longer part of EGI, i.e. the Resource Centre is closed or changed into a test site.

4 SCOPE OF THE AGREEMENT

This agreement covers the commitments made by a Resource Centre with respect to its Resource Infrastructure Provider and EGI.

Unless differently specified in the document or in EGI policies and procedures, this agreement is applicable to all Resource Centres that are associated to a Resource Infrastructure Provider that meets one of the following conditions:

- the Resource Infrastructure Provider is a Participant or Associated Participant in *The European Grid Initiative Foundation* [STA];
- the Resource Infrastructure Provider collaborates with EGI.eu in a framework defined by a Resource Infrastructure Provider MoU [MoU]

and are either CERTIFIED, UNCERTIFIED⁴, or SUSPENDED.

Global and Local infrastructure services [ARCH] are out of scope of this Agreement. Similarly, this Agreement does not cover the relationship that specific VOs might have with Resource Centres; those SHOULD be detailed in VO-specific agreements.

5 RESPONSIBILITIES

This section defines the responsibilities of the Resource Centre.

5.1 Resource Centre

Resource Centres provide second-level support to users, have one or several Resource Centre administrators, and have a designated security officer. Resource Centres are expected:

- to maintain accurate information on the services they provide in GOCDB [GOC];
- to adhere to all applicable security policies and procedures defined in EGI Policies and Procedures [POL] and to other policy documents referenced therein;
- to adhere to all applicable operations procedures defined in [PROC];

³ <https://goc.egi.eu/>

⁴ Note that the approval of the Resource Centre OLA is a necessary condition for a Resource Centre to get from CANDIDATE to UNCERTIFIED status [PROC09].

- to ensure that the provisioning of services [GLO] by the Resource Centre SHALL NOT in itself create any intellectual property rights in software, information and data provided to the services provided by the Resource Centre, or in data generated by the services provided by the Resource Centre;
- to adhere to criteria and service level targets that are defined in this Agreement as applicable;
- to run UMD-compliant Middleware supported by the respective Resource Infrastructure Provider. Certified Resource Centres are encouraged to stay abreast of updates in order to benefit from the latest improvements and features;
- to respond to GGUS tickets in a timely manner.

The Resource Centre MUST provide, using GOCDB, details (name, phone number, e-mail address) of a set of contact points for security, operational and administrative emergencies.

The Resource Centre is responsible for ensuring the accuracy of the Resource Centre contact details in GOCDB.

5.1.1 Monitoring, Troubleshooting

The Resource Centre MUST:

- support a way to enable service monitoring, performed by the Resource Infrastructure Provider,
- support a way to enable central security monitoring, performed centrally by EGI.eu,
- support a way to enable testing and troubleshooting from outside the Resource Centre.

Resource Centres supporting the VO concept MUST:

- enable the OPS VO,
- enable the DTEAM VO.

5.1.2 Hardware and Connectivity Criteria

The certified Resource Centre MUST ensure sufficient computational and storage resources and network connectivity to support the proper operation of its services, as indicated by passing all relevant Monitoring Service OPERATIONS tests⁵.

5.2 Resource Infrastructure Provider

For a definition of the Resource Infrastructure Provider responsibilities see the Resource infrastructure Provider OLA [RP-OLA].

6 DESCRIPTION OF SERVICES COVERED

The Services that are offered by a certified Resource Centre MUST be:

- specified in the GOCDB,
- monitored by the Resource Infrastructure Provider Service Availability Monitoring (SAM) system,
- and the usage accounted centrally (where applicable) through a UMD-compliant middleware implementing the Accounting Capability [UMD].

⁵ https://wiki.egi.eu/wiki/SAM_Tests

6.1 Capabilities

The Resource Centre **MUST** provide access to a minimum set of Capabilities as follows:

- at least **one** local or remote service to publish information on the Functional Capabilities provided by the Resource Centre into the site Information Discovery System (e.g. site-BDII);
- at least **one** Functional Capability (e.g. Cloud Computing, File Transfer, Storage Management, Data Access, Metadata Catalogue, Compute, additional Information Discovery capability).
 - If the Compute Capability is provided, then also Storage Management (either local or off-site) is needed. (Not applicable to Cloud Resource Centers)

Certified Resource Centres **MUST** commit to achieve the availability and reliability [QOS] herein specified.

Availability and reliability statistics depend on uptime and on unscheduled/scheduled downtime. Availability of a Resource Centre is calculated as uptime per month, based on monthly/weekly/daily statistics.

Out of the list of Resource Centre services monitored by the Resource Infrastructure Provider SAM monitoring system, only a subset of Capabilities is taken into account for availability and reliability (Compute, Storage Management, and Information Discovery⁶).

For a Resource Centre to be available, Information Discovery, Storage Management (if provided) and Compute Capabilities (if provided) **MUST** be available (the algorithm takes the logical AND of all service types). If a Resource Centre has several instances of a Capability, the service is deemed to be available if any of the instances are available (logical OR). Availability figures are affected by scheduled downtimes, which **SHOULD** be kept to a minimum [QOS].

Reasonable steps must be taken to ensure that scheduled downtimes are kept, so that availability is at the specified levels. Unplanned outages can have a considerable impact on availability figures, and will also adversely affect jobs that are running at the time. Careful monitoring of resources and the local fabric can help to reduce the number of such outages, so Resource Centres are expected to take a proactive role in this domain.

Scheduled downtimes **MUST** be declared in advance in the GOCDB according to the Service Intervention Management Manual [MAN02]. Note that scheduled downtimes negatively affect availability without impacting reliability.

Missing any of following service level targets on an incident constitutes a violation (see section 10).

Service Targets

1. The Resource Centre **MUST** be **available** at least **70%** of the time per month (daily availability is measured over 24 hours).
2. Resource Centre **reliability** **MUST** be at least **75%** per month.

Service Hours

- A certified Resource Centre **MUST** offer the services specified in this section with an intended availability of 24 hours/7 days.

⁶ https://wiki.egi.eu/wiki/Availability_and_reliability_tests



6.2 Support

Incidents are unplanned interruptions to an IT Service or reductions in the Quality of an IT Service. A problem is a cause of one or more incidents⁷.

The EGI Helpdesk is a distributed system with central coordination [GGUS]. Through the EGI Helpdesk incident and problem reports can be submitted, tracked and escalated, and statistics can be generated. Statistics from GGUS are used to determine the responsiveness and the efficiency in incident and problem tracking.

Missing any of following service level targets on an incident constitutes a violation.

The Resource Centre **MUST** provide support as follows:

- Each Resource Centre **MUST** enable and support at least **one** either national or global non-monitoring/troubleshooting user group (e.g. managed using an interoperable VO management service), which **MUST** be registered in the Operations Portal⁸.
 - Resource Centres are encouraged to support as many user groups as needed. Specific agreements between Resource Centres and individual user groups are covered in separate agreements.
- The Resource Centre will provide at least **one** system administrator who is reachable during working hours of supporting organization.

Service Targets

- The Resource Centre **MUST** respond to tickets within **eight support hours** of the ticket having been assigned to it, and **SHOULD** endeavour to resolve incidents within **five working days**.

Service Hours

- Support hours are eight hours a day during the regular working hours of supporting organization, Monday to Friday – excluding public holidays in hosting country.

7 SERVICE REPORTING AND REVIEWING

EGI.eu reviews Resource Centre availability and reliability statistics on a **monthly** basis. Reports include availability and reliability statistics per Resource Centre and per Operations Centre. These are available at [PERF].

Resource Centres violating the minimum service parameters specified in this document **CAN** be requested by EGI.eu to provide justifications. In this case, the violating partner **MUST** provide a report. Information is exchanged through GGUS tickets [PROC10].

8 LIABILITY

Certified Resource Centres violating the minimum required availability for three consecutive calendar months are eligible for suspension.

⁷ Information Technology Infrastructure Library (ITIL). ITIL ® is a Registered Community Trade Mark of the Office of Government Commerce, and is registered in the U.S. Patent and Trademark Office.

⁸ <https://operations-portal.egi.eu>

9 SERVICE LEVELS AND TARGETS

Service	Service Levels	Target	Reporting
Capabilities	Minimum number of Site Information Discovery Capability	one	monthly
	Minimum number of Functional Capabilities	one	monthly
	Minimum Resource Centre availability	70%	monthly
	Minimum Resource Centre reliability	75%	monthly
Support	Minimum number of system administrators	one	NA
	Maximum time to acknowledge GGUS incident and problem records	eight support hours	NA
	Maximum time to resolve GGUS incidents	five working days	NA
	Minimum number of supported user groups	one	NA

10 REFERENCES

[ARCH]	EGI Operations Architecture, EGI-InSPIRE Deliverable D4.1, 2011 (https://documents.egi.eu/document/218)
[CS]	Cloud Services (https://wiki.egi.eu/wiki/Fedcloud-tf:Technology)
[GGUS]	EGI Helpdesk (http://helpdesk.egi.eu/)
[GLO]	The EGI Glossary (https://wiki.egi.eu/wiki/Glossary)
[GOC]	GOCDB Input System User Documentation (https://wiki.egi.eu/wiki/GOCDB/Input_System_User_Documentation)
[MAN02]	Service Intervention Management, Manual MAN02 (https://wiki.egi.eu/wiki/MAN02)
[PERF]	Availability and reliability statistics (https://wiki.egi.eu/wiki/Availability_and_reliability_monthly_statistics)
[POL]	EGI Policies and Procedures (http://www.egi.eu/policy/policies_procedures.html)
[PROC]	EGI Operations Procedures (https://wiki.egi.eu/wiki/Operational_Procedures)
[PROC09]	Resource Centre Registration and Certification Procedure, EGI Operations Procedure PROC09, May 2011 (https://wiki.egi.eu/wiki/PROC09)
[PROC10]	Recomputation of SAM results and/or availability/reliability statistics, EGI Operations Procedure PROC10, Oct 2011 (https://wiki.egi.eu/wiki/PROC10)
[QOS]	Sonvane, D.; Kalmady, R.; Chand, P. et al.; Computation of Service Availability Metrics in ACE (https://tomtools.cern.ch/confluence/download/attachments/2261694/Ace_Service_Availability_Computation.pdf?version=1&modificationDate=1314361543000)
[REL]	Resource Centre OLA Release Notes (https://wiki.egi.eu/wiki/Resource_Centre_OLA:_Release_Notes)
[REP]	NGI Annual Reports (https://wiki.egi.eu/wiki/EGI-inSPIRE_SA1#NGI_Assessment)
[RP-OLA]	EGI Resource infrastructure Provider Operational Level Agreement (https://documents.egi.eu/document/463)
[SAM]	EGI Service Availability Monitoring (https://wiki.egi.eu/wiki/SAM)
[STA]	EGI.eu Statutes, May 2010 (https://documents.egi.eu/document/18)
[TOR]	Operations Management Board Terms of Reference (https://documents.egi.eu/document/117)
[UMD]	UMD Roadmap, EGI-InSPIRE Deliverable D5.2, 2011 (https://documents.egi.eu/document/272)