

EGEE-III

MEMORANDUM OF UNDERSTANDING BETWEEN ROC FRANCE AND SITES

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Abstract: This document formalizes the services which a site provides to its Regional Operations Centre, and vice-versa.

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1. INTRODUCTION

EGEE makes a collection of hardware, software and support resources available to the European academic community and others. This Memorandum of Understanding (MoU), derived from a model for a Service Level Agreement (SLA) of EGEE, available at <https://edms.cern.ch/document/860386/>, is intended to specify the constraints imposed on Regional Operations Centres (ROCs) and sites (resource centres) in order to ensure an available and reliable grid infrastructure.

2. PARTIES TO THE MEMORANDUM

The parties to this MoU, which is not legally binding, are:

Regional Operations Centre France

Site (Resource Centre)

2.1. ROCS

EGEE is divided into Regional Federations, each hosting a ROC. A ROC consists of a manager or a management team and support staff. ROCs provide a framework of support, to both users and sites, in order to allow them to use the data and computational resources of the grid. The list of EGEE ROCs is maintained at [R 1R-4]. The EGEE project decided that all ROCs and sites have to sign a SLA (the one mentioned in the introduction). However, to avoid legal conflicts ROC France decided to rename the Service Level Agreement to Memorandum of Understanding which makes clearer that there is no legal obligation in this document.

2.2. SITES (RESOURCE CENTRES)

All EGEE sites that run grid middleware and are members of one of the afore-mentioned ROCs must sign this MoU with their ROC¹. Grid middleware is defined as being supported versions of gLite middleware [R 7R-8], or middleware that is interoperable with it. The Site (Resource Centre) provides the actual computational resources, such as Computing Elements (CE), Storage Elements (SE), and middleware services.

3. DURATION OF THE MEMORANDUM

This MoU is valid for as long as the site is part of the EGEE production infrastructure, i.e. the site is registered in GOCDB as being certified for production.²

4. AMENDMENT PROCEDURE

The MoU may be amended at any time if there is mutual agreement by both parties. This will usually take the form of a signed and dated MoU addendum.

5. SCOPE OF THE MEMORANDUM

This Memorandum of Understanding (MoU) covers the commitments made by a site with respect to its ROC and, correspondingly, the commitments that a ROC makes to its member sites. It does not cover specific core infrastructure services, such as GOCDB, GGUS, and SAM. Neither does this MoU cover the relationship that specific VOs might have with sites; those should be detailed in VO-specific agreements.

¹ See the last two sentences of the previous paragraph.

² At the end of the EGEE project, this document obviously needs a confirmation by the sites and the entity succeeding the ROC.

6. RESPONSIBILITIES

This section defines the responsibilities of each party. The overall task for all concerned is to operate, support, and manage a production quality grid infrastructure across the European Research Area.

6.1. REGIONAL OPERATIONS CENTRE (ROC)

The main responsibilities of the ROC are:

- provide Help Desk facilities (first-level support) either by using GGUS [R 6R-6] support units to create a regional Help Desk within GGUS, or by providing a regional Help Desk which is interfaced with GGUS;
- register site administrators in the available Help Desk facilities;
- provide third-level support by helping in the resolution of advanced and specialized operational problems that cannot be solved by site administrators. If necessary, the ROC will propagate and follow-up problems with higher-level operational or development teams;
- ticket follow-up (ensure that sites work on tickets opened against them).
- respond to tickets from sites in a timely manner (see Section 11)

ROCs manage and support the deployment of gLite middleware on sites, and are also responsible for registering new sites. Their administrative tasks include:

- maintaining accurate GOCDB entries for the ROC manager and their deputies;
- adhering to the Operational Procedures described in the Operations Procedures Manual [R 2R-2];
- raising any issues deemed necessary by the sites to the attention of operational, development, deployment, monitoring, and/or certification teams, and ensuring that these issues are properly dealt with;
- follow-up of site-specific issues in the weekly EGEE SA1 operations meeting.

The ROC must provide, using GOCDB, details (name, phone number, e-mail address) of a set of contact points for security, operational and administrative matters. The ROC is responsible for ensuring the accuracy of ~~its~~ contact details in the GOCDB database.

6.2. SITES (RESOURCE CENTRES)

Sites provide second-level level support, have one or several site administrators, and have a designated security officer. Sites are expected to:

- adhere to the Operational Procedures described in the Operations Procedures Manual [R 2R-2];
- maintain accurate information on the services they provide in GOCDB [R 3R-4];
- adhere to the Grid Site Operations Policy [R 4R-6], and other policy documents referenced therein;
- adhere to the requirements stated in the Security and Availability Policy document [R 5R-8];
- adhere to the criteria and metrics that are defined in this Memorandum of Understanding (MoU);

- run supported versions of gLite (or compatible) middleware [~~R 7R-8~~]³. ROC France must be notified if the site cannot abide to this condition for any reason, e. g. because of a MoU with a VO supported by the site.
- respond to GGUS tickets in a timely manner (see Section 11)

The site must provide, using GOCDB, details (name, phone number, e-mail address) of a set of contact points for security, operational and administrative emergencies. The site is responsible for ensuring the accuracy of site contact details in the GOCDB database.

7. HARDWARE AND CONNECTIVITY CRITERIA

The site must ensure sufficient computational and storage resources and network connectivity to support the proper operation of its services, as indicated by consistently passing all relevant SAM critical tests [~~R 10R-14~~].

8. DESCRIPTION OF SERVICES COVERED

The services that are offered by a site to EGEE must be specified in the GOCDB and be monitored by SAM. *Those services not offered to EGEE or only on the national level but implying a responsibility for the ROC should be the object of an additional, separate agreement between site and ROC.*

Sites are encouraged to provide both Computing Elements and Storage Elements⁴. However, the minimum requirements in terms of the resources that a site must provide are as follows:

- **one** site BDII;
- at least **one** CE or SE
 - CE must have a number of Worker Nodes totalling at least **eight** CPUs/cores attached to it. Lower numbers need an explicit agreement from ROC France.
 - SE must have a capacity of **one TB** or more. Lower numbers need an explicit agreement from ROC France;
- an EGEE-supported Accounting Service.

Exceptions to the mentioned minimum requirements are possible during the initial setup phase of a site and for sites providing special grid services, but need an explicit agreement with ROC France.

If a site provides a CE but no SE, it has to declare a “close SE” on another site. This cannot be done without a mutual agreement between both sites involved.

9. SERVICE HOURS

The site should offer the services specified in Section 8 with an intended availability of 24/7. The site support service must be available during the regular business hours of the site’s host organization. *These site support ~~A-site’s~~ service hours⁵ must be specified in GOCDB. Response times to trouble-tickets are expressed in service hours.*

10. AVAILABILITY

³ Sites are encouraged to stay abreast of grid middleware updates in order to benefit from the latest bug-fixes.

⁴ Classic SE, SRMv1 or SRMv2

⁵ *Site support service hours are shortly named “service hours” or “office hours” elsewhere in the text.*

Sites and ROCs must commit to achieve the availability and reliability of grid services specified in this MoU. Reasonable steps must be taken to ensure that scheduled downtimes are kept to 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 should help reduce the number of such outages, so sites are expected to take a proactive role in this domain.

Out of the list of site services monitored by SAM, only the "CE, SE, SRM and sBDII" services are taken into account for site availability and reliability calculations. GridView is used to calculate a site's MoU conformance, using data from GOCDB and SAM. Details of the GridView algorithms are documented in [R 9R-9]. If the site offers special services not already covered by the previous, to all sites in the ROC's domain or to specific VOs, the ROC might define additional criteria for site availability and reliability calculations. This needs to be specified explicitly in the MoU.

For a site to be available, all of the afore-mentioned services must be available (logical AND of all service types). If a site has several instances of a service type (e.g. Computing Elements), the service is deemed to be available if any of the instances are available (logical OR). Availability figures include scheduled downtimes, which should be kept to a minimum.

1. **Site must be available (UP) at least 50% of the time per month**
(Daily availability is measured over 24 hrs)
2. **Site reliability must be at least 75% per month**
(Reliability = Availability / (Availability + Unscheduled Downtime))⁶

Scheduled Downtime must be declared in advance in the GOCDB according to the procedure and deadlines specified in the Operational Procedures [R 2R-2]. Note that Scheduled Downtimes negatively affect Availability figures, but not Reliability figures.

11. SUPPORT

GGUS [R 6R-6] is the central support tool (Service Desk) used by EGEE, and as such, provides the mechanism for entering problem reports, tracking and escalating them, and providing statistics. Statistics from GGUS will be used to determine the responsiveness of sites, and the efficiency of the ROC in problem tracking.

- the ROC must respond to tickets raised by its sites within **four office hours** of the ticket having been assigned to it

In terms of support provided by sites, the following applies:

- the site will provide at least **one** system administrator who is reachable during service hours;
- the site must respond to GGUS tickets within **eight office hours** of the ticket having been assigned to it, and resolve incidents⁷ within **five working days**.

Missing any of these metrics on an incident constitutes a violation.

11.1. VO SUPPORT

⁶ In the extreme case of a site being in scheduled downtime over the whole period, reliability is considered to be undefined.

⁷ We use the ITIL distinction between incidents and problems. An incident can be resolved (quickly) by a site, whereas a problem needs to be escalated and requires more time. The metric pertains only to incidents.

- The site must support the “ops” VO (the “ops” VO is a pre-requisite for SAM monitoring to function correctly).

Each site must support at least **one** user-community VO, but sites are encouraged to support as many VOs as they reasonably can. Specific agreements between sites and individual VOs should be covered in a separate MoU. Foreseeable conflicts between those MoUs and this one should be signalled to ROC France by the site.

12. SERVICE REPORTING AND REVIEWING

Tracking of MoU conformance shall be done on a **monthly** basis. Site availability reports will be published by GridView [R 8R-8], and sites are responsible to provide justifications for any MoU violations. Similarly, ROCs must justify any violations on their side, if any. During the lifetime of the EGEE project, conflicts arising from this MoU between sites and ROC France which cannot be solved by the both parties can be signaled to the OCC. After the end of the EGEE project, the French Institut des Grilles⁸ is responsible to define the procedure to be applied.

13. PERFORMANCE INCENTIVES/PENALTIES

This Memorandum of Understanding is to set expectations and targets. No penalties for missing targets will be applied, but results will be published openly. However, the measures foreseen in the Operations Procedures manual [R2] must be applied. According to the manual this may result in site suspension. Failures of the ROC are handled by the OCC.

⁸ See <http://www.idgrilles.fr>

14. SITE CERTIFICATION

When a site enters the French EGEE grid infrastructure, the ROC is responsible to verify the criteria mentioned in this MoU. In addition, a certification procedure has to be followed as described in [R x].

Essentially, it consists in verifying the accuracy of the site's contact point information and the execution of a security self audit. During an initial ramp up period which should be defined case by case but should not be longer than half a year, the site may deviate from this MoU and its metrics, but should stay in close contact to its ROC if it does so.

Deviations which happen repeatedly or persistently beyond the ramp up period either lead to a redefinition of the site's service objectives or make it undergo the certification procedure again.

15. TABLE OF METRICS

	Value	Section
Minimum number of site BDIIs	one	8
Minimum number of CEs or SEs	one ⁹	8
Minimum number of WN CPUs/cores	eight ¹⁰	8
Minimum capacity of SE(s)	one TB ¹¹	8
Minimum site availability	50%	10
Minimum site reliability	75%	10
Period of availability/reliability/outage calculations	per month	10
Minimum number of system administrators	one	11
Maximum time to acknowledge GGUS tickets	eight office hours	11
Maximum time to resolve GGUS incidents	five working days	11
Minimum number of supported user-community VOs	one	11
Tracking of MoU conformance	monthly	12

Nb. Ticket response times are measured in site office-hours as defined in the GOCDB

15.16. SIGNATORIES

Authorized representatives of the parties to this Memorandum of Understanding:

For the ROC (ROC Manager or ROC Deputy Manager):

Name Title Date:

For the Site:

Name Title Date:

⁹ Exceptions possible when agreed with ROC France

¹⁰ Exceptions possible when agreed with ROC France

¹¹ Exceptions possible when agreed with ROC France

46.17. REFERENCED DOCUMENTS AND WEB-SITES

R 1 - List of EGEE ROCs

<http://egee-sal.web.cern.ch/egee-sal/>

R 2 - Operational Procedures

<https://twiki.cern.ch/twiki/bin/view/EGEE/EGEEROperationalProcedures>

R 34 - GOCDB

<https://goc.gridops.org/>

R 46 - Grid Site Operations Policy

<https://edms.cern.ch/document/819783/1>

R 58 - Security and Availability Policy for LCG

<https://edms.cern.ch/document/428008>

R 6 - Global Grid User Support (GGUS)

<https://gus.fzk.de/pages/home.php>

R 78 - Supported versions of gLite middleware

<http://glite.web.cern.ch/glite/packages/latestRelease.asp>

R 8 - GridView Monitoring and Visualization Tool

<http://gridview.cern.ch/GRIDVIEW/>

R 9 - GridView Availability and Reliability Calculations

https://twiki.cern.ch/twiki/pub/LCG/GridView/GridView_Service_Availability_Computation.pdf

R 1014 - Site Availability Monitoring (SAM)

<https://lcg-sam.cern.ch:8443/sam/sam.py>

R 15 - Site certification procedure

[http://xxxx \(to be defined\) xxx](http://xxxx (to be defined) xxx)