

EGEE-III

GLOBAL GRID USER SUPPORT (GGUS) PLAN

PLAN FOR THE CONTINUED DEVELOPMENT OF THE
GLOBAL GRID USER SUPPORT (GGUS)
INFRASTRUCTURE

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Abstract: This document describes the current status of the user support infrastructure of the EGEE-III project and the plans for further development of this infrastructure during the course of the project. The main focus will be on the central part of this infrastructure - the central help desk, which is run at Karlsruhe Institute of Technology and the management structure for the support processes. This plan lays out the context in which this activity is performed, the parties involved and the current status. On the basis of this status description, the plan develops which tasks will be dealt with in EGEE-III, separating them into continuous and one-off tasks. Finally the document gives an outlook to changes that might be brought on by the transition to the EGI operations model.

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1. INTRODUCTION

1.1. PURPOSE

The purpose of this document is to give a guideline for the further development of the GGUS system in EGEE-III. It describes the status of the support infrastructure at the beginning of EGEE-III and defines the work items that will have to be dealt with during the course of the project. These items have been grouped into continuous and one-off tasks.

1.2. DOCUMENT ORGANISATION

The description of the document is contained within §2.

1.3. APPLICATION AREA

This document is intended for readers who are internal to the project and who are members of the SA1 Activity. It is especially relevant to members of the activity working on user support.

The document is also relevant to the people carrying out the assessment of the status of the user support (MSA1.6) due in PM 4.

The document is also relevant to managers of other EGEE-III activities.

1.4. REFERENCES

The number of references associated with this document is very short. It is not intended to repeat material already in the references. The references are the Description of Work (DoW) [R 1] and the Work Breakdown Structure [R 2]. A small number of URLs are quoted in the text of this document to provide further information, on items such as the document amendment procedure and the glossary of terms.

Table 1: Table of references

R 1	http://edms.cern.ch/document/886385 Description of work – part of the Technical Annex for EGEE-III
R 2	http://edms.cern.ch/document/??? EGEE-III - Detailed work breakdown structure including names and assignments

1.5. DOCUMENT AMENDMENT PROCEDURE

This document is under the responsibility of FZK. Amendments, comments and suggestions should be sent to Torsten Antoni (Torsten.Antoni@kit.edu). The procedures documented in the EGEE

“Document Management Procedure” will be followed:

<http://project-EGEE-III-na1-qa.web.cern.ch/project-EGEE-III-NA1-QA/EGEE-III/Procedures/DocManagmtProcedure/DocMngmt.htm>.

1.6. TERMINOLOGY

This subsection provides the definitions of terms, acronyms, and abbreviations required to properly interpret this document.

A complete project glossary is provided in the EGEE glossary <http://egee-technical.web.cern.ch/egee-technical/documents/glossary.htm>.

Glossary

ASGC	Academia Sinica Grid Computing Centre
CIC	Core Infrastructure Centre
COD	CIC-on-duty
ROC DECH	German-Swiss Federation with EGEE
DoW	Description of Work
EGI	European Grid Initiative
EGI.org	Central Coordination Body of EGI
ESC	Executive Support Committee
FZK	Forschungszentrum Karlsruhe (predecessor of KIT)
GGUS	Global Grid User Support
GOCDB	Grid Operations Centre Data Base
IWR	Institut fuer wissenschaftliches Rechnen at FZK
KIT	Karlsruhe Institute of Technology (successor of FZK)
MoU	Memorandum of Understanding
NGI	National Grid Initiative
OCC	Operations Coordination Centre
OLA	Operational Level Agreement
OPN	Optical Private Network
OSG	Open Science Grid
RC	Resource Centre
ROC	Regional Operations Centre
Savannah	A bug tracking system
SCC	Steinbuch Centre for Computing
SU	Support Unit
TPM	Ticket Process Management
USAG	User Support Advisory Group
VO	Virtual Organisation
VSG	Verteilte Systeme und Grid (Department of SCC at KIT)

2. EXECUTIVE SUMMARY

Grid user support is a challenging task due to the distributed nature of the grid. The variety of users and Virtual Organisations adds further to the challenge. Support requests come from grid beginners, from users with specific applications, from site administrators, or from grid monitoring operators. With its Global Grid User Support infrastructure (GGUS), EGEE provides a portal where users can find support in their daily use of the grid. The current use of the system shows that the goal has been achieved with success.

The grid user support model in EGEE can be captioned "regional support with central coordination". This model is realised through a support process which is clearly defined and involves all the parties that are needed to run a project-wide support service. This process is sustained by a help desk system which consists of a central platform integrated with several satellite systems belonging to the Regional Operations Centres (ROCs) and the Virtual Organisations (VOs). The central system interconnects the ROCs and VOs and the other project wide groups like middleware, network, and service groups. Additionally the central system acts as a portal for users, offering the possibility to document problems and requests in the form of trouble tickets. Since all trouble tickets pass through the central system it is the perfect place to store information on problems and of course also their solution in a knowledge base, available to users and support staff.

A well established and functional user support service permeates the whole project and it is one of the core non-middleware services and as such one of the key success factors in running a production quality infrastructure. Over the course of the series of EGEE projects the support system and the management of the support process has been professionalised by applying proper change and process management strategies. The central system is being improved through a series of regular new releases, which are well planned and documented, including release notes.

The GGUS (Global Grid User Support) team develops and maintains the central help desk system (also called GGUS, www.ggus.org) for the EGEE infrastructure, which integrates the support efforts throughout the project.

This planning document first describes the status of the user support infrastructure at the beginning of EGEE-III, this includes a description of the management procedures and the partners involved in this activity. A User Support Advisory Committee consisting of members of all relevant parties during regular meetings plans the long term strategy for the development of the support infrastructure. There also is a working group deciding, on the basis of the strategic directions form USAG, on the content of the regular releases of the central help desk.

On the basis on this status description the plan lays out the concrete work items that are known at this point to be realised during the course of the project. These plan items are grouped into recurring items and one-off tasks.

The continuous items consist of management, maintenance and administration tasks. The one-off tasks basically describe the concrete development items that are being grouped into releases that will be deployed in regular intervals. We expect between one or two major releases per year that will involve participation from regional parts of the support infrastructure and will necessitate service verifications after the deployment.

The last part of the document describes our current understanding of the EGI operations model and its possible implications on the user support model. Since the EGI model is currently not yet clearly defined and far from stability. Therefore it is difficult to plan a possible transition strategy. Therefore GGUS will continue its functionality expansion keeping in mind the potential increase of regionalisation of support effort systems in the EGI/NGI decentralisation spirit but it will wait for SA1 directives before engaging in concrete an EGI-dependent plan.

3. THE CONTEXT

The user support activity in EGEE-III is part of the overall operations structure which is run by the SA1 activity. The resources for the user support activity are coming from within SA1 but collaboration with other activities is a strong requirement in some areas.

3.1. THE MANAGEMENT STRUCTURE

The management responsibility for the user support activity lies with the Steinbuch Centre for Computing (SCC, the successor of IWR) at Karlsruhe Institute of Technology (KIT, the cooperation of Forschungszentrum Karlsruhe GmbH (FZK) and University Karlsruhe), which also leads the distributed ROC DECH. It works in close relation with the SA1 management at CERN. The working group dealing with the Global Grid User Support (GGUS) is located in the department SCC-VSG and it is lead by Dr. Torsten Antoni. It consists of six people, four of whom work (partly) for EGEE (for details see next paragraph). It is answerable from an institutional point of view to the management of SCC and KIT and from a project point of view to the SA1 management.

3.2. THE GGUS PARTNERS

The user support activity is a distributed effort. It works on the basis of a central integration platform and several local support systems (more detail on the technical set-up in chapter 4). There are two GGUS partners working on the central system. They are located at KIT and at Academia Sinica Grid Computing Centre in Taiwan (ASGC).

3.3. OTHER BODIES

Apart from the two teams described in the paragraphs above, there are other bodies involved in making the user support activity perform well. On a regional or VO-wide level all the ROCs and VOs have to provide resource to guarantee support for regional or VO-specific problems (this is described in chapter 4). On a project wide level there are two other important bodies, the User Support Advisory Group (USAG) and the Operations Coordination Centre (OCC). The role of these bodies will be described in the following paragraphs.

3.3.1. The USAG

The USAG mandate is to:

- Examine requirements from all relevant parties - VOs, ROCs and Sites, identify common points and differences and see how they influence the grid support processes and tools.
- Consolidate all requirements taking into consideration the needs and operational procedures of ROCs and sites.
- Advise on the consequent evolution of the Global Grid User Support (GGUS), which is the core system of the grid support effort.
- Report on the development, testing, and deployment plan for new GGUS features compared to the recommended evolution.
- Make known to the appropriate forum - VOs, ROCs, sites and all other SUs the suggested GGUS system evolution and the procedures that need to be updated accordingly.
- Define the expectations from all Support Units (SUs) via Operational Level Agreements (OLAs), get acceptance by the SUs and leave OLA enforcement to the management partners involved.

USAG meets on a monthly basis.

Participation is requested from all ROCs (representatives should be authorised to comment on their ROC's TPM commitments), the GGUS developers, OCC (member chairing USAG: M.Dimou), NA4, VO's, sites (in agreement with their ROC).

More information on USAG can be found here:

https://twiki.cern.ch/twiki/bin/view/EGEE/SA1_USAG

Additionally to the monthly meetings, a subgroup of USAG meets on a weekly basis to discuss the items collected in the so-called "shopping list", a project in the Savannah bug tracker, used to store and prioritise the requests for new features and changes. The outcome of these discussions is the content of the regular releases of the GGUS portal.

3.3.2. The OCC

The OCC is described at various points in the DoW [R 1]. The OCC is located at CERN. The OCC coordinates the SA1 activity and its tasks and has the mandate to distribute tasks to the ROCs as necessary.

The OCC is a managed organisation and the OCC manager reports to the activity leader for SA1, and people in the OCC in return report to the manager of the OCC. In order to fulfil its role to coordinate the overall user support activity, the OCC has taken on responsibility to manage the USAG (see 3.3.1).

CERN also acts as a Regional Operations Centre for the resource centre located at CERN, and also for resource centres located outside of EGEE-III regions. CERN also collaborates with other grid infrastructure projects. CERN is collaborating with major centres outside of EGEE-III to set up ROC-like centres within their region. It is important for the reader of this document to distinguish between CERN as the home of the OCC and CERN as the home of a global ROC.

3.4. THE GGUS CENTRE

The GGUS centre at SCC-KIT provides the technical infrastructure needed to ensure the proper performance of the central integration platform for the user support infrastructure. It also has to make sure that all the GGUS partners provide their part of the infrastructure and fulfil their part of the processes.

4. THE DESCRIPTION OF GGUS

This Chapter describes the status of the user support activity at the beginning of EGEE-III.

4.1. USER SUPPORT IN EGEE-III

The requirements for the support system for EGEE have grown substantially since the initial plans for a support system were conceived in 2003. This was and is due to an increasing usage and widening of the scope of the system. In order to make progress, this has required a great deal of cooperation from the various parties associated with support. In general this has worked well. We believe that we understand the nature of the requirements well now, and certainly much better than we did at the beginning of EGEE-II. Nevertheless, the requirements are likely to grow, and change with time, and the need for cooperation and flexibility will remain. In writing this section, there are areas which we have not discussed which may emerge as being very important during the course of the project. It is important to note that additional work is likely to emerge during the project and so an on-going spirit of good will and cooperation will be required to be successful. The primary purpose of GGUS is to provide support for the end user to ensure that problems are resolved in a timely and accurate fashion without the user having to know anything of the complexity of the operational structure of the grid. However, in doing this GGUS is also supporting a number of operational aspects of the grid, and in

particular the COD. The purpose of COD is to monitor and alert system administrators to problems with the services which they are providing. COD raises tickets in the GGUS system.

4.2. THE MODEL OF USER SUPPORT

The model of user support that will be applied in EGEE-III is based on the one of the Global Grid User Support (GGUS) in EGEE/EGEE-II. This support model in EGEE can be captioned "regional support with central coordination". Users can submit a support request to the central GGUS help desk and in most cases to their Regional Operations' Centre (ROC) or to their Virtual Organisation (VO) support service.

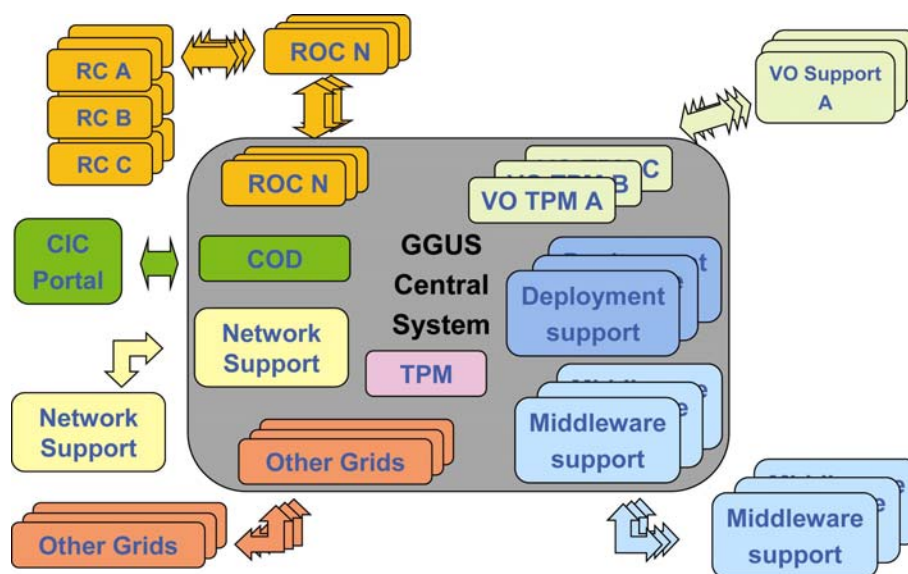


Figure 1: GGUS Model

Within GGUS there is an internal support structure for all support requests. The ROCs and VOs and the other project wide groups such as middleware groups (JRA), network groups (NA), service groups (SA) and other grids' support infrastructures (OSG, NorduGrid, etc.) are connected via a central integration platform provided by GGUS. Interfacing other grid infrastructures' support systems will become more and more important in the light of long term sustainability and grid interoperation. The GGUS central help desk also acts as a portal to which all users can send their requests. They can submit them directly to the GGUS system via a web form or email interfaces. This central help desk keeps track of all support requests and is used to assign them to the appropriate support groups. In this way, formal communication between all support groups is possible. To enable this, each group has to have an interface (email or interface between ticketing systems) between its internal support structure and the central GGUS application (this is the case for most of the ROCs). Support units that do not have a local help desk can also use the GGUS portal as their ticketing system. Changes or updates happening to a ticket in any of the interconnected help desk systems are propagated to the GGUS system. The current status of the tickets can therefore be followed up in the GGUS system. The model just described is represented in figure [Figure 1].

The ROCs' and VOs' internal support structures can be organised as it is most fitting for the community they serve. However, the interface to the central GGUS system has to be well established and conform to the defined specifications. In the central GGUS system, the initial problem analysis is

delivered by first line support experts provided by the ROCs and by the Virtual Organisations and it is widely distributed. The VO specific first line support for most of the VOs happens outside of the GGUS system. The first line support dealing with grid services and middleware problems are called TPMs (Ticket Processing Managers), they are provided by the ROC and are therefore experts in grid deployment. There are VO support groups for all VOs supported by GGUS. These groups consist of experts in gridified VO software, which enables them to classify VO specific problems. These experts can either provide the solution to the problem reported or escalate it to more specialised support units which provide network, middleware and grid service support. They may also refer it to specific ROCs or VO experts. TPMs have also the duty of following tickets by using GGUS, which holds the current status of all tickets, making sure that users receive an adequate answer, coordinating the effort of understanding the real nature of the problem and involving more than one second level support unit if needed. The following figure depicts the ticket flow [Figure 2].

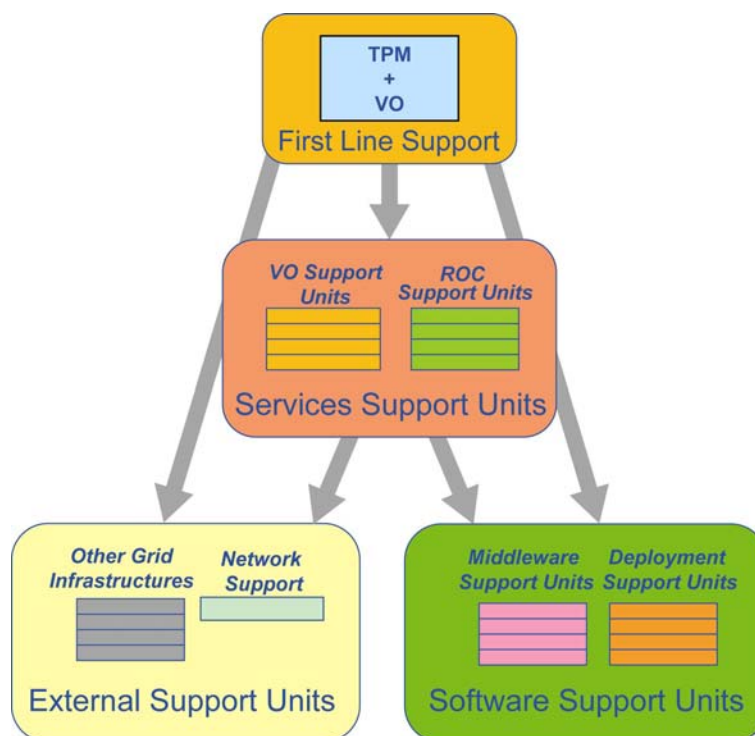


Figure 2: GGUS support workflow

To provide appropriate user support, the distributed structure of EGEE-III and the VOs has to be taken into account. The community of supporters is therefore distributed. Their effort is coordinated centrally by GGUS and locally by the local ROC support infrastructures. To help coordinating the grid support activities, the Executive Support Committee (ESC) has been put in place in EGEE-II and is now being followed up by the USAG.

4.3. GGUS FIRST LINE SUPPORT

4.3.1. Ticket Processing Managers (TPM)

The user community of the EGEE project is very diverse and the applications built on top of the middleware are highly complex. As a result, for most users it will not be possible to decide with a sufficient level of certainty whether a problem originates from the middleware, deployment or

application domain. Therefore it is crucial to have a first line of generic grid experts, the Ticket Processing Managers (TPM), who analyse the problems reported and assign them to the correct second level support units. Since many problems are rooted in the operation and configuration of the grid resources or have to do with the middleware interfaces, the natural source of grid experts to act as TPM is the ROCs. The TPM duty rotates on a weekly basis between the participating ROCs. A TPM shift team consists of at least 3 persons. A TPM group takes care of problems submitted to GGUS during the week of their shift and older problems that are still open. They classify problems distinguishing between operational problems, configuration problems, (violations of service level agreements), problems that originate from the resource centres (RC) and problems that originate from the global services, from some internal problems of the software or from external sources (e.g. networks). Problems that are linked to an RC are then transferred to the responsibility of the ROC with which the RC is associated.

4.3.2. Virtual Organisation First Line Support

The Virtual Organisations have support infrastructures to help their users with VO-specific problems. These infrastructures are under their own control. Mostly they are using other tools to support this effort. The important thing here is that there needs to be a proper way of exchanging information between the VO and the grid user support.

4.4. REGIONAL OPERATIONS' CENTRES (ROC)

The Regional Operations Centres are responsible for dealing with problems arising in their associated RCs. These may be reported by users through the regional or global help desk or may have been noticed by the COD through the SAM tests. The Regional Operations Centres will also provide support to grid users to resolve infrastructure and general grid problems i.e. those arising from operations and middleware. User problems originating with applications per se must be identified and referred to the relevant user community. Some of the Virtual Organisations already have their own support structures which can do problem triage and problem resolution. On a less immediate level, applications issues may be pursued with the assistance of the application development support described in NA4.

The collective and individual responsibilities of the Regional Operations Centres will include the following tasks:

- interface local support systems with the integration platform provided by GGUS
- participate in operating a distributed query and problem tracking database and a wiki system to keep a single EGEE Grid-wide log of all reported problems and solutions
- provide grid operations training and user support training for staff at resource centres
- participate to the USAG to coordinate central support activities

Tickets sent to local help desks are, if necessary, forwarded to the central GGUS ticketing system and vice versa.

4.5. RESOURCE CENTRES (RC)

The resource centres are not present with support units as such, but they play an essential role in the support system, which is to cooperate with their ROC to solve operational problems as they arise.

4.6. GGUS SPECIALISED SUPPORT UNITS

GGUS benefits from experts spread all over the world for solving issues related to grid security, to networks, and to the interfaces with other grids. The GGUS system can contact these experts via the GGUS portal where mailing lists that the GGUS operation team keeps updated are linked with the

responsible units. The specialised supporters have the responsibility of solving the problem, communicating with the user in those cases when further specific information is needed. They work in coordination with the TPM teams.

4.7. MIDDLEWARE SUPPORT UNITS

In EGEE-III JRA1 members react only to items submitted to the Savannah bug tracker and not to tickets submitted to the GGUS system. This requires a change in the overall problem handling process for the middleware support units which is still under discussion. In the meantime JRA1 will dedicate some effort to managing the GGUS tickets in order to ensure a proper continuity with the past.

4.8. THE GGUS OPERATIONS TEAM

The GGUS operations team in FZK has the overall responsibility for the EGEE support infrastructure. However the complete list of tasks is provided in chapter 5 and the assignment of these tasks to various parties is in chapter 6.

4.9. OTHER SUPPORT SERVICES

4.9.1. Knowledge base and search engine

Since GGUS is the central point for all support requests, it is also the right place to build a knowledge base for all grid related problems and their solution. A mechanism has been put in place in the GGUS support system to trigger the compilation of user and services FAQ pages as wiki pages in the GOC wiki provided by ASGC. Whenever a GGUS supporter considers the solution of a problem of general interest, he/she can then ask GGUS for the compilation of a corresponding wiki page. GGUS takes care of executing this task and making the pages available to users. Such pages together with other user documentation and relevant mailing list archives are the primary sources for the specialised GGUS search engine for problem solving. The FAQs that are compiled by the GGUS partner ASGC can be found at the following URL:

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

Additionally to collecting FAQs and other useful information for users and support staff, GGUS is currently working on a semantic analysis of the collected material. This will enable a search over all the material and a combined presentation of the search results from the various sources (Figure 3).

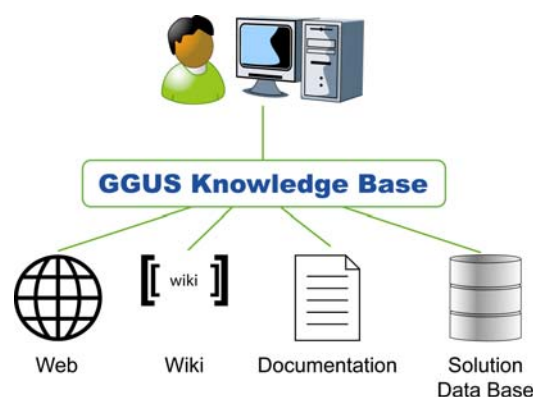


Figure 3: Schematic view of the GGUS knowledge base

4.9.2. Training

There will be TPM training for the new teams from the regions joining the TPM effort.

Training for other support staff will be held on request.

Offering training on a regular basis didn't really work out in EGEE-II.

4.9.3. Documentation

A set of documentation on the whole user support effort exists but will have to undergo a thorough revision in EGEE-III. Also new documentation concerning the preparation of the transition to the EGI operations model will have to be written.

4.9.4. Metrics

Metrics are collected for several purposes and audiences.

Apart from metrics describing the performance of the user support staff, the most important ones to be collected will be related to the WLCG MoUs and to the service level descriptions in SA1.

5. THE PLAN ITEMS

5.1. INTRODUCTION

Since the usage and the scope of the GGUS system has increased constantly during the series of EGEE projects, there are still new requirements from various parties coming in that have to be discussed, prioritised and implemented. Additionally there are of course recurring tasks that also have to be dealt with.

In this plan we have therefore grouped the items into continuous tasks and one-off tasks. This seemed the appropriate choice at this stage where the support processes are well established and clearly assigned to the partners.

5.2. CONTINUOUS TASKS

This section deals with continuous or recurring tasks that have to be dealt with on a regular basis. Most of them are small ones but in the sum add up to quite a big part of work of the partners involved in user support.

We have grouped these tasks according to the roles of the people performing them.

5.2.1. TPM tasks

As described above the TPM is the grid first line support in EGEE. This is a distributed task performed by members of all the ROCs taking on responsibility on a rotating basis. Each week there are two teams on shift. One lead team and one back-up team. It is the lead team's responsibility to triage new incoming tickets and to assign them to the correct support unit.

They also have to monitor already existing tickets to make sure they are solved in a timely manner. TPM is active during normal working hours.

Additionally there is a TPM monitoring task which lies within the responsibility of ROC CERN/OCC. The TPM monitor makes sure the TPM task is performed properly and assists with complicated cases of long-standing tickets.

The TPM management task is performed by ASCG as GGUS partner. It mainly consists of negotiating the TPM schedule with all the ROCs. This takes into account public holidays in the different countries whenever possible.

5.2.2. Support staff tasks

The main task for a person belonging to the support staff, this means being part of one or more of the support units in GGUS, is dealing with tickets assigned to their support unit in a professional and timely manner.

Comments concerning possible improvement of the support processes and infrastructure from the support staff are always welcome.

5.2.3. ROC support staff tasks

Support staff at the ROCs has two main tasks. It has to react to tickets being assigned to the ROC through the GGUS portal, which means solving them or assigning them to the responsible RC or regional support unit. Additionally it also has to act as first line support for regional users using the ROC help desk to submit their problems.

5.2.4. GGUS developer tasks

The GGUS developers are responsible for taking the input from the USAG on improvements to the system and create concepts for viable solutions that meet the needs defined.

They have to then implement these solutions and prepare the regular releases.

They react to acute problems that interrupt the proper service provision by GGUS.

Additionally they are also responsible for providing the GGUS end of interfaces to other applications and help the external developers with their side of interfaces to GGUS.

5.2.5. GGUS team member tasks

The members of the GGUS operations team have the following tasks to fulfil:

- ensure that the GGUS system is operational
- plan, document, announce and deploy GGUS releases on a monthly basis
- announce downtimes of local services used by GGUS
- regular attendance in various phone conferences:
 - joint WLCG-EGEE-OSG operations meeting
 - SA1 operations coordination meeting
 - shopping list meeting
- representing GGUS at grid related conferences
- organising and carrying out trainings for TPM and supporters
- providing escalation reports and metrics for various groups on a regular basis

The escalation reports (https://gus.fzk.de/pages/metrics/download_escalation_reports.php) are prepared on Mondays at the time of TPM shift change. A well-designed colour scheme helps to easily discover tickets that have not been treated in a prompt or efficient way. They constitute a tool used in the Operations' Weekly meeting and the SA1 Coordination meeting for identifying weak areas and improving the support quality.

5.3. ONE-OFF TASKS

The one-off tasks consist mostly of the monthly releases of the GGUS portal and the roughly biannual major releases that are expected.

5.3.1. GGUS 7.0

The GGUS 7.0 release, which is the first major release during EGEE-III, took place at the beginning of July 2008. It mainly dealt with requirements for special ticket routing for urgent problems concerning services provided for the LHC experiment VOs. In the following paragraphs we describe the main features of this release.

5.3.1.1. Alarm Tickets

GGUS now offers alarm tickets for the LHC VOs ALICE, ATLAS, CMS and LHCb. Alarm tickets can only be created by a small group of experts (~4 persons / VO). These experts have to authenticate with a valid certificate. Alarm tickets are routed to the appropriate ROC bypassing TPM. In parallel an alarm email is generated. This alarm email is signed with a GGUS certificate and sent to the Tier-1 alarm email addresses. It is up to the Tier-1 sites to decide how to deal with this alarm email. Alarm tickets can be created via web portal or via email. For creating alarm tickets via email a template has to be used.

5.3.1.2. Team Tickets

GGUS now offers "team tickets" for the LHC experiment VO shifters. TEAM tickets are editable not only by the ticket submitter but by all members of a dedicated team regardless of them having support access or not. They are routed to the appropriate ROC bypassing the TPM similar to alarm tickets. In parallel an email notification is sent to the site. But this is no alarm email. TEAM tickets can be created via web portal or via email. For creating TEAM tickets via email a template has to be used.

5.3.1.3. MoU Area

There is now a new field "MoU Area". Only members of LHC experiment VO shifts are able to set and/or change the MoU values for problems at Tier 0, Tier 1 and Tier 2 level. These values are taken from the MoU itself. The list might be subject to change.

5.3.1.4. GGUS user database

The GGUS user database contains information on the access rights of users and members of the support staff. For managing permissions on alarm and team tickets the GGUS user database has been adapted.

5.3.2. July 2008 release

The July release of the GGUS system will focus mainly on requirements to support the operation of the LHCOPN. Additionally there will be some changes to fail safe system of GGUS.

5.3.2.1. GGUS fail safe system

Start of operation of the new fail safe system for GGUS based on virtual machines. In a second step this will also enable a transfer of the whole system to the University Karlsruhe in case of a campus wide problem at FZK.

5.3.2.2. LHCOPN

LHCOPN will use the GGUS system. A prototype will be set up in the July release, the full version is planned to be operational after October 2008.

LHCOPN will not have its own application, like e.g. CIC or ENOC, but a special view on GGUS. This will include some extra fields that are at the moment relevant only for the OPN. These fields can only be modified by authorised OPN support staff, but the tickets will be visible for all users for information purposes.

The special features for OPN are:

- the OPN ticket will be stored not only in the ticket database table, but also in a separate OPN specific table
- the tickets will have an additional status "scheduled"
- for every ticket there will be a beginning and end date
- there will be three ticket categories: "Incident", "Maintenance" and "Test"
- there will be an additional field "Impacted Link", which explicitly shows which network links are impacted by the problem
- the OPN support staff can dynamically decide which T1 centres will be informed about a problem or if a broadcast will be sent to all T1s
- escalation procedures are not yet finally decided upon by the OPN

5.3.3. Future releases

The content of future GGUS releases will be discussed during the regular shopping list meetings on the basis of prioritising the entries in our savannah "shopping list" project.

There will be other major releases like the GGUS 7.0 release additionally to the regular monthly ones. We estimate that these will be roughly on a biannual basis. These releases will deal with changes that require changes to the support infrastructure that necessitate changes on the interfaces to the regional help desks. Service verifications will be run after these releases to make sure that the system as a whole is properly working.

In the following paragraphs we describe the main areas where changes, improvements and new features are foreseen at the moment. This list will very possibly change during the course of the project. This could be reflected in EGEE-III milestone MSA1.6.

5.3.3.1. Reporting

As requests for more and more reports and different metric files increase steadily, GGUS plans to implement an online report generator. The existing search engine allows the creation of a result list based on various search criteria. Additionally the data output will be offered in different formats and layouts like xls, pdf, etc.

5.3.3.2. Connecting GOCDB

Closer collaboration with GOCDB has begun. It is targeted to retrieve detailed site information from GOCDB. On the one hand, site managers request to be able to list all tickets assigned to their sites. On the other hand in the context of alarm and team tickets it is required to have the information about EGEE/LCG-site names, associated ROC/Tier and their contact persons ready. This information should be provided by the GOCDB and be available in GGUS through and interface to GOCDB.

5.3.3.3. Knowledge base

A number of suggestions have been gathered from the results of a survey among the support staff. These will be implemented to enhance the knowledge base.

5.3.3.4. Service Ticket Type

With more end users working on the grid the number of tickets will increase and different types of requests will be submitted. It might then make sense to early in the process differentiate between these. This could be done by creating a new type of tickets not dealing with reported problems but

request for a specific service. Most of these service requests are at the moment dealt with informally but with the numbers increasing supporting these processes technically will become important.

5.3.3.5. Protected Ticket Type

For some areas, like for example security, it might be of interest to have a special category of tickets that are not visible for the general public, but restricted to the members of a specific group.

5.3.3.6. VOMS integration

VOMS is the grid authorisation package. The technical details of an automatic extraction from VOMS sub-groups of designated supporters (VO Support, Team members, Authorised Alarmers) will be investigated by GGUS and USAG experts this autumn.

5.3.3.7. SLD/OLA between GGUS and TPM

Following the "Service Level Description (SLD) between ROCs and Sites" document (<http://edms.cern.ch/document/860386>) as a template, an Operational Level Agreement (OLA) between TPMs within the ROCs and GGUS (<http://edms.cern.ch/document/888089>) is prepared and evolving. In the USAG framework, this effort will expand to other major Support Units. The actual conformance to the various SLA/SLD/OLA metrics is the concern of the OCC.

5.3.4. Redefinition of the workflow for middleware specific GGUS tickets

As stated in paragraph 4.8 the workflow for tickets concerning middleware issues has to be reviewed and newly defined to fill the current gap in support process. JRA1 and SA1 will have to work together to find a solution that satisfies both parties.

6. PREPARATION FOR THE TRANSITION TO EGI OPERATIONS MODEL

During the second year of the EGEE-III project the focus of the work of GGUS will be on preparing for the EGI operations model, while at the same time ensuring that the good quality of the user support in EGEE is not affected and all the procedures that have proven useful in EGEE-III will be kept in place. GGUS will continue its functionality expansion keeping in mind the potential increase of local ticketing systems in the EGI/NGI decentralisation spirit but it will wait for SA1 directives before engaging in concrete an EGI-dependent plan.

6.1. USER SUPPORT IN EGI

Our current understanding is that there will be a continuation of a central help desk in EGI since formal traceable communication between the NGIs and EGI.org, the building blocks of EGI will be at least as important as it is now in EGEE. Whether all NGIs will have their own help desk system in place we cannot foresee, but we assume that some will federate in regions with a regional operations centre. We strongly encourage this, as it will help in setting up working support processes.

These support processes will in EGI strongly depend on the scope of the VO. For regional VOs the support will be strictly local, they will contact the regional help desk with their problems and requests and these will be dealt with locally if possible. Some problems of course will have to be escalated to support units outside the region, if for example the middleware exerts a located somewhere else.

For global VOs the process is as of now unclear. The current version of the EGI Blueprint Document plans with a central first line support team and with specialised support centres for VO specific problems, but there have been discussions whether this couldn't be regionally. This would mean that each global VO would have to affiliate with an NGI and then this NGI would be responsible for providing support to this VO.

6.2. DEFINITION OF REGIONAL AND CENTRAL TASKS

There are two types of global tasks foreseen in EGI. The first are EGI.org tasks which are done centrally for the whole of EGI. Then there are the so-called international NGI tasks, which are tasks that have to be done in every NGI to ensure a proper functioning of EGI.

The user support also consists of a number of tasks from both of these task types.

At the moment it is not defined in detail, what will be EGI.org tasks and what will be NGI international tasks.

6.2.1. Central Tasks

It is clearly a central task to run the central integration platform to which all the regional help desks will have to interface. This of course also includes the definition of which information is to be exchanged between the help desks.

To manage the overall user support task an advisory group will be set up involving experts from all relevant parties. It will be the responsibility of EGI.org to organise and manage this group.

6.2.2. Regional tasks

All NGIs will have to make sure that they are in a position to support their users. How this is done is their responsibility. However they have to react to support request to them coming from the central help desk. We expect some NGIs to have a help desk system interfacing the central one and some of the NGI using the central help desk directly. TO NGIs wanting to use the central help desk directly EGI.org will offer to customise it to meet their needs.

6.3. COLLABORATION WITH EGI.ORG

A strong collaboration between EGEE and EGI will be necessary to ensure that during the transition no services will be deprecated. It has taken too long a time to successfully establish the support procedures and to achieve acceptance from the users to take any risks here.

6.4. COLLABORATION WITH NGIS

All NGIs, or preferably federations of NGIs have to be contacted by EGI and informed about the requirements for setting up the support infrastructure. The NGIs tasks and responsibilities should be explicitly stated in the contracts with the NGIs.

EGI.org must inform the NGIs about the options of running a regional help desk or using the central one. If needed, GGUS will give advice to the NGIs on how to set up their user support infrastructure. To enable this GGUS needs information on the status of the NGIs from EGI.org.