



Enabling Grids for E-science

## SA1 tasks in EGI

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- **5 tasks defined in the Blueprint, each with several subtasks, and associated manpower at the EGI.org level:**
  - Operation of tools (and services)
  - User support
  - Security
  - Other international tasks
  - Development and tool maintenance
- **Three types of tasks considered in the analysis:**
  - EGI.org task
  - NGI.org task (list not complete)
  - Central task: task undertaken by an NGI on behalf of EGI.org

Sub-task	Blueprint?	EGL.org	Central	NGI
Operations portal	Yes		X	
GOCDDB	Yes		X	
Monitoring central repository	Yes		X	
Grid accounting repository and portal	Yes		X	
Messaging system	No		X	
Test and availability description DB	No		X	
Regional/NGI grid monitoring				X
Regional operations dashboard				X

- **FACTS:**

- Most are home-developed by individual institutes without enforcement of common coding practises, repositories, packaging standards, etc
- Many only ever deployed at the institute developing them
- Many developed to conform to our custom operational model, no industry standard model or procedures (e.g. ITIL)

- **CONSEQUENCES:**

- Difficult to re-resign
- Costly to maintain (even to new people from the same institute)
- Basic documentation, testing, etc
- Difficult to split development/maintenance/service management between different partners
- **Not easily deployable at EGI.org level if the current partners do not continue to run them**

Task Name	<b>Operations portal</b>
Responsible EGI Entity	EGI.org-Operations
Task Interfaces	Web portal for workflows and documentation. Sends information to other operational tools via messaging system (e.g. changes in VO Card, Broadcasts, etc...)
Task Rights	
Task Responsibilities	Central documentation repository for EGI procedures. Provide implementations of standard EGI grid operations workflows (e.g. publishing downtimes, Broadcasts, 'VO Card's)
Resources	0.5 FTE
Assumptions	Assume EGEE procedures and workflows are carried through unchanged to EGI.org
Unknowns	EGI procedures and workflows not defined

Task Name	<b>GOCDB</b>
Responsible EGI Entity	EGI.org-Operations, NGI-National
Task Interfaces	interfaces with RCs (to update information), and to other operation tools and VO tools (to export/query information)
Task Rights	
Task Responsibilities	contains definitive list of sites and personal contact information in the EGI infrastructure; contains list of downtimes and monitorable services
Resources	1 FTE
Assumptions	same deployment model as we have know: single instance run centrally, with well defined interfaces to enter/export information, same dependencies (Oracle)
Unknowns	never has run anywhere apart from RAL

Task Name	<b>Monitoring central repository</b>
Responsible EGI Entity	EGI.org-Operations, NGI-national
Task Interfaces	Interface for management to obtain availability reports (per region, country, site etc...). Interface for other operational tools to obtain calculated availability. Interface to extract historical data from repository
Task Rights	Regional monitoring to test sites and push data to repository via messaging system using standard APIs. GOCDB to provide list of sites and services that should be used for availability calculation
Task Responsibilities	Provide authoritative EGI.org calculated availabilities. Provide long-term historical repository of all site testing.
Resources	2.5 FTE
Assumptions	Central project repository which is run by EGI.org. NGI-national entities may run similar repositories with national scope.
Unknowns	this is being prototyped now in SA1, the first regional repositories are starting to be deployed.

Task Name	<b>Grid accounting repository and portal</b>
Responsible EGI Entity	EGI.org-Operations
Task Interfaces	Web portal to view accounting data. Reporting interface to produce standard EGI.org accounting reports
Task Rights	Sites will publish their accounting data via the messaging system in a standard format
Task Responsibilities	Collect accounting data provided by sites. Summarize accounting data, and publish summaries
Resources	1 FTE
Assumptions	Centralized architecture and deployment as we have it now in EGEE
Unknowns	Wish of NGIs/ROCs to not publish directly to central accounting system, but to publish to a regional accounting system



Task Name	<b>Messaging system</b>
Responsible EGI Entity	EGI.org-Operations or a few NGI-national
Task Interfaces	Provides standardized messaging interfaces to operational tools, documentation for developers to integrate with the messaging system, messaging infrastructure for VO-level monitoring frameworks
Task Rights	
Task Responsibilities	Provide the underlying reliable and secure transport layer upon which operational tools can build a solid distributed infrastructure
Resources	2 FTE
Assumptions	distributed messaging backbone deployed for reliability and resilience at several different sites (e.g. ~3-4) within EGI (NGI-National responsibility?)
Unknowns	deployed in production for the first time now, operations tools starting to use it, we need some experience with it

Task Name	<b>Test and availability description database</b>
Responsible EGI Entity	EGI.org-Operations
Task Interfaces	Interface for management to obtain availability reports (per region, country, site etc...). Interface for other operational tools to obtain calculated availability. Interface to extract historical data from repository
Task Rights	GOCDDB provides lists of sites and services.
Task Responsibilities	Provide descriptions of tests which should be run against grid services at EGI.org sites. Allow customization of tests that should be run. Provide a list of calculations based on the tests that can then be used for e.g. availability, blacklisting, ... Allow project members to provide their own calculations
Resources	1 FTE
Assumptions	Central project repository run by EGI.org. This is a key component required by the regional monitoring system as well as the central availability calculation system. This does not include the development of the tests themselves - it is merely the metadata about the tests.
Unknowns	This is being prototyped now.

Task Name	<b>Regional/NGI grid monitoring</b>
Responsible EGI Entity	Only NGI-national
Task Interfaces	Publishes results of site testing to messaging system for multiple consumers (e.g. EGI repository, VO monitoring frameworks, etc...). Provides web portal for showing results of tests, alerts and notifications
Task Rights	GOCDDB provides list of sites and services that should be tested. EGI provides list of tests which need to be run in order to calculate EGI-standardized availability
Task Responsibilities	Test sites within NGI using standard set of tests, as agreed with EGI. Publish results of site testing to messaging system for consumption by central repository (above). Provide test results to NGI scope operations portal for alarming, ticketing and problem resolution. Notifications of test failures to RC and NGI/ROC operations staff (email, SMS, ...)
Resources	
Assumptions	only run at ROCs/NGIs. We assume that all NGIs will either run the standard Nagios based system, or develop completely their own solution which meets the same list of task responsibilities
Unknowns	This is being prototyped now in SA1, with a schedule of deployment by end 2009. Requires commitment and effort from all ROCs/NGIs to deploy and manage this component.

Task Name	<b>Regional operations dashboard</b>
Responsible EGI Entity	Only NGI-national
Task Interfaces	GOCDDB, grid monitoring, ticketing system
Task Rights	Regional monitoring will provide access to a database with the current testing results for sites. GGUS provides interface to submit and query operational tickets corresponding to grid alarms
Task Responsibilities	Calculate grid alarms based on grid monitoring of sites.
Resources	
Assumptions	This is used for 1 <sup>st</sup> line support, which is done at a regional/NGI level, so we only need regional instance. They can share tickets between each other through the central ticketing system
Unknowns	is being prototyped now in SA1. Requires commitment and effort from all ROCs/NGIs to deploy and manage this component.

- **Use Nagios to probe sites from ROC/NGI**
- **Have a self-contained set of components inside the region/NGI for:**
  - Storing topology of regional grid
  - Storing metrics results from probes
  - Raising alarms
  - Raising tickets
  - Viewing metric history and details for debugging
- **Central data stores and components for project-level systems**
  - Project level metric store
  - Availability calculation and metrics DB
  - GOCDB
- **Use messaging to exchange information between site/region/project**

- **Two EGI.org services/tools missing in the blueprint:**
  - Messaging system
  - Test and availability description DB
- **Operations model at the end of EGEE III will move responsibility to the regions; this does not mean that ALL tools will have independent regional instances**
- **Resources estimated to run these tools are underestimated (~ 3 FTE more)**
- **For the tools to be run regionally (some) and centrally in a given location (others) we need packaging, testing, documentation...**
  - The alternative for the central ones is to keep them where they are (e.g. GOCDDB, SAM, CIC portal, GGUS)
  - For the regional ones this is a MUST

Sub-task	Blueprint?	EGI.org	Central	NGI
Helpdesk (central and regional)	Yes		X	X
Triage, monitoring and escalation of user support tickets (TPM role)	Yes	X		X

### SUMMARY:

- Tasks are the same
- Description of the same model we target in SA1
- GGUS will define a common interface and it is up to the NGIs to adapt their regional helpdesks to it (being prototyped)

Task Name	<b>Helpdesk (central and regionals)</b>
Responsible EGI Entity	EGI.org-Operations, NGI-national
Task Interfaces	operation support, triage, monitoring and escalation of user support tickets, USAG, GOCDB, VOs
Task Rights	
Task Responsibilities	24x7 availability of the trouble ticketing system, implementing the flows requested by operations and users; Metrics, reports...
Resources	2 FTEs
Assumptions	will define a common interface and it is up to the NGIs to adapt their regional ones to it (being prototyped)
Unknowns	It is not clear if NGIs will have their own ticketing system or if they would use GGUS regionally. Today we have both. NGIs using GGUS as regional



Task Name	<b>Triage, monitoring and escalation of user support tickets (TPM role)</b>
Responsible EGI Entity	EGI.org-Operations, NGI-national
Task Interfaces	help desk, operations support, USAG, monitoring
Task Rights	helpdesk needs to be available
Task Responsibilities	first triage of the tickets. Monitoring of open tickets to make sure progress is made
Resources	2 FTE
Assumptions	entry point for user tickets is central, the triage is also central. This is done now with resources from all ROCs, rotating on a weekly basis. There are ongoing discussions to automate part of it (direct routing to sites, etc). Once the automation is implemented it should with a mix of automation and distribution, with central coordination
Unknowns	if the volume of tickets increases, then entry point and triage could be at the NGI level, and we would need to rethink the user support model? Once the automation is there and starts to be widely used, we don't know the resources needed in this model

Sub-task	Blueprint?	EGI.org	Central	NGI
Development and maintenance of security policies and procedures	Yes	X		X
Coordination of all aspects of operational security, including responding to security incidents	Yes	X		X

**SUMMARY:**

- looks fine, both resources and tasks
- The scope of the role and authority of the "EGI Security Officer" is currently unknown

Task Name	<b>Development and maintenance of security policies and procedures</b>
Responsible EGI Entity	EGI.org-Operations, NGI-national
Task Interfaces	Community input and management boards to review the policies, collaboration with other grids
Task Rights	The task relies on input and feedback from the NGIs and EGI.org
Task Responsibilities	The task will produce and maintain security policies for EGI.org and maintain the trust federation for authentication and authorization
Resources	0.5 FTE
Assumptions	EGI.org and the NGIs mandate the JSPG and the IGTF to implement this task
Unknowns	

Task Name	<b>Coordination of all aspects of operational security, including responding to security incidents</b>
Responsible EGI Entity	EGI.org-Operations, NGI-national
Task Interfaces	NGIs, security contacts and experts in the NGIs, community input, grid sites in the NGIs, NRENs, and collaboration with other grids
Task Rights	Support from the NGIs and their grid sites to maintain a trusted collaboration, enabling full cooperation to resolve grid security incidents
Task Responsibilities	Provide an operational response to security threats against the grid infrastructure, including enabling a coordinated response to grid security incidents
Resources	1 FTE
Assumptions	EGI should appoint an "EGI Security Officer" to coordinate the implementation of this task, to lead pan-NGI security operations and to coordinate incident response with peer grids. Additionally, each NGI should appoint an NGI security officer to coordinate security operations within the NGI, and also to collaborate with other NGIs and EGI.org
Unknowns	The scope of the role and authority of the "EGI Security Officer" is currently unknown

Sub-task	Blueprint?	EGI.org	Central	NGI
Coordination of mw deployment and support (roll out of releases)	Yes	X		X
Operation of pilot/pre-production services (?)	No	X		X
Resource allocation and brokering support for VOs from NGIs	Yes	X		X
Interoperations between NGIs and with other grids	Yes	X		X
Definition of best practices, operations procedures, operations requirements	Yes	X		X
Operation of catch-all services	Yes	X		X
Escalation of regional/NGI operation issues	No	X		
Monitoring and enforcement of SLAs	No	X		X
Operations coordination with international VOs	No	X		
Coordination of operations tool development and maintenance	Yes	X		

- **Four EGI.org tasks missing in the blueprint:**
  - PPS/pilot services, needed?
  - Escalation of regional/NGI operation issues
  - Monitoring and enforcement of SLAs
  - Operations coordination with international VOs
- **Number of FTEs depending on the structure/responsibilities of other EGI.org areas: mw**
  - little experience with rolling out mw not produced/certified/supported inside the project, and with diff mw stacks
- **Work to do in the SLA area**
  - Automation of SLA monitoring, not existing today
  - Little experience, only based on site service monitoring and site suspension by the grid operator on duty
  - No candidates to work on this

- **Operations tasks listed in the blueprint are a subset of what we have today**
  - Some are missing (and the associated FTEs)
  - More detail needed for the benefit of the migration
    - Central, regional, EGI.org?
    - Details, responsibilities
- **SA1 priorities for next year:**
  - Keep the production infrastructure running
  - Operations model at the end of EGEE III will move responsibility to the regions
    - Implement and deploy the EGEE SA1 Architecture of the regional solution
  - Make the operations tools easy to deploy and maintain