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Subject: **PROPOSAL FOR EGEE-III OPERATIONS AUTOMATION TEAM**

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Distribution

1. INTRODUCTION

In EGEE-III, within the SA1 activity, there is a new team, called the 'Operations Automation Team' which is "tasked with coordinating monitoring tools and developments, and will have a specific goal of advising on strategic directions to take in terms of automating the operation – replacing manual processes with automated ones in order that the overall level of operations effort can be significantly reduced in any long term infrastructure."[1]

This document proposes a mandate and composition of such a team, and outlines some of the areas that it would need to consider.

2. MANDATE

This team will define the workplan for all operational tool development and track the progress of that work. It will define and implement the procedures to ensure that any new work on operational tools proposed during the lifetime of the project is in line with the common strategy.

The mandate of the team is to:

- Examine tools currently used in the operations of the EGEE infrastructure to see how to improve the automation of the infrastructure and standardise the interactions between the components
- Decide on modifications to existing components and requirements for new components to achieve this improvement
- Negociate with development and deployment partners on who will take responsibility for delivery of any new components
- Co-ordinate the development activities on all operational tools within the project
- Define milestones for rolling out these tools into the operational environment
- Manage the deployment process for the tools during the lifetime of the project

The scope of work includes but is not limited to the following tools:

- Service and Availability monitoring
- Collection of Usage Records (Job, Data Transfer and Data Storage) and the calculation of system reliability
- SLA compliance monitoring systems
- Grid accounting systems
- Site monitoring of grid services
- Operational tools for Grid operators

[1] INFRA-2007-1.2.3

While it cannot be directly responsible for analysing the design of software created by the Joint Research Activities of the project, the team should use the experience gained to recommend how to improve the reliability and scalability of operational monitoring components developed within SA1.

This group will report to the ROC managers and SA1 activity leader.

3. PRINCIPLES

Some general principles apply to direct this activity:

- The infrastructure already uses a set of operational tools, and any work must use them as a starting point. Modifications to the tools should move the tools closer towards convergence, and be based on adoption of common protocols and standards.
- Many of the tools used in monitoring the operational infrastructure of EGEE are based on systems with large centralized components. At the start of EGEE-III, with the creation of EGI and multiple NGIs on the horizon, we are moving towards an era of more distributed operations. The architecture and physical deployment of the tools should reflect this distribution of operations.
- The distribution of funding on the project dictates that the prime responsibility for maintenence and development of the different tools should be distributed between the different ROCs.
- Since we need to continually monitor the existing, operating infrastructure, the deployment plan must take into account a transparent upgrade of the current tool set. This will be helped by a modular structure with loose coupling which allows for partial upgrade over time.
- The tools should have an architecture such that they can easily be used in a “stand-alone” by an EGEE related project.
- Where possible, commodity components with existing support channels and active communities should be considered. This not only will let us leverage their expertise, but reduce development and maintenance costs, as well as to attract new collaborators with existing knowledge of these tools.

4. AREAS OF WORK

Taking both the mandate and general principles into consideration, the following initial areas of work are proposed:

- Improve site reliability by wider deployment of fabric management tools at sites
- Devolve central monitoring systems, where possible, to regional systems
- Create architecture for new shared infrastructure required to support the operational tools
- Measure and improve the availabity and reliability of the operational tools themselves
- Design SLA compliance tools (availability and reliability calculation)
- Collection of usage and accounting information for CPU/Disk/Network
- Provide vizualization of the state of infrastructure for site administration, regional operators and project managers
- Provide reporting tools for the OCC and project management

It is considered that the information system (BDII) is a middleware component and is outside the scope of this work. However there is considerable overlap in terms of the schema used to describe the grid topology and the management of both activities should establish a forum from which a common approach should be taken.

The work of the group will be targeted to architecture definition, design proposals, and coordination of the implementation/rollout. The implementation and roll out will be done by the existing development teams or new ones launched as needed.

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5. COMPOSITION

The group will have 10-12 members – it is envisaged that in order to help communication and flow ofideas between the regions, each region would have a member on the team. These members would come from different backgrounds to provide a balanced view from the multiple stakeholders. They must have strong technical ability and vision, and be capable of representing the view of their community, and making decisions for them. They must commit to dedicate at least 20-30% of their time to the team, at least in the first 6 months of EGEE III.

The stakeholders are :

- Operational management – a representative from the OCC
- Tools developers – architect level staff from the various tools(SAM/GridView, CIC Portal, gStat, GOCDB, APEL, ENOC tools)
- Grid Operator on Duty team
- Experts in the underlying monitoring systems to be used (e.g. Nagios)
- ROC representatives – active members of the ROC operations teams
- Site managers - representative members of the site management community
- Related projects representatives

Of course an individual member of the team may represent more than one of the stakeholders.

6. MILESTONES

- Mandate agreed and published by start of May
- High level architecture and Roadmap plan by mid-May. This should include a rough cost estimation (PMs) on operations at a ROC and at a central level using the proposed tools (or a comparison with the present model, specifying where the effort will be reduced)
- Detailed implementation sub-plan per tool (existing or new) by the end of June
- Deployment plan by the end of June. This should include a cost estimation (PM) for the implementation.
    - This should involve deployment to several ROCs by the end of the PY1