Questionnaire for NGIs about Network Support

Which Use Case/Item among the following ones (A,B,….G) **should be addressed at an EGI scale,** globally (defining a common strategy, common tools, common teams if required, well-established workflows) ?

For each one of them, please specify one of the suggested answers (1,2,3....) which does imply specifying also if you -as an NGI - are able to commit manpower and/or resources (if yes, please provide also an indicative estimate). The suggested answers are ordered decreasingly according to the level of direct involvement each NGI would prefer and can afford : Higher answer numbers mean "In favor, and I wish to contribute", whereas lower numbers mean "not interested, won't contribute any manpower".
Please complete the Table 1 at the end of this document and return this questionnaire to the network.support@mailman.egi.eu mailing list **as soon as possible**, **if possible before Tuesday November the 16th**.

A. **Having a general purpose Network Support Unit in GGUS for EGI Users and Site Administrators, for the posting of any problem which might come from the Network.**

[GGUS]

NGIs – in close collaboration with their corresponding NRENs – commit manpower to implement a group of people acting as first level support unit within GGUS for all matters related to the network. This group of people (could be shifting personnel from a given NGIs for a given period) should assess the submitted GGUS tickets assigned to the Network Support, try to figure out the possible issues behind them, involve NGIs and NRENs accordingly, escalating the problem if required. A well defined workflow should be implemented. The idea is to provide users with a general access point for network related issues within the GGUS support system (taking advantage of the users' familiarity with it) and having a first common support at the EGI level around network. The tickets, after an initial inspection by the first level EGI network support team, could then, if required, be escalated to the individual NRENs, informing the NGIs.

Suggested answers: (please select a number and report it in the table at the end of this document)

5) Yes, we think having a team of people acting as first level support for network related matters within GGUS is useful, and we will commit manpower to give a body to it.

4) We think that having a support unit for network matters in GGUS is useful, but we cannot commit any resource/manpower

3) We think that having a GGUS support unit for Network is useful but tickets should be handled automatically according to a given workflow and routed to NRENs/NGIs contacts (or support systems), therefore no need to have a team behind it.

2) We think that a support unit for the Network in GGUS is useless. (users should directly refer to individual NGIs or NRENs)

1) Other : please specify (use the comment column in the table at the end of this document).

B. Grid users experiencing deteriorating, poor performances in a data transfer
[PERT]

The idea would be to set up a team of people (may be establishing shifts among volunteering NGIs) in charge of acting as a first single contact point for users of the EGI infrastructure experiencing poor network performances in data transfers (either directly using gridFTP /globus-url-copy or a given application from a VO/VRC, from UI or from a Job). This people should do the first basic checks from remote and support the users in initial debugging anything which might come from the user's side.

If required, they should then route the issue to the involved NRENs, especially their PERT teams (*Performance Enhancement Response Team*) if available, notifying the corresponding NGIs. They may also benefit from the GEANT EduPERT service. (Note that this team might also be a part of the previously mentioned general GGUS support team, although the emphasis here is on "things are working, but slowly, providing very poor or poor performances, whereas the general GGUS team could be acting as first contact for ANY issue around network).

The added value of this approach with respect to having users contacting directly their site administrators and the NREN is that this team could also make use of Grid specific know-how on the middleware or the applications, they could also contact the VRCs/VOs if required, to sort out anything which might come from the application side; that all users would always have the same contact for this sort of issues, that things could be traced and monitored more easily in trends and statistics.

For example, team experts could know (being in touch with the Grid applications domain) that a given specific version of a specific VO framework/application (or a specific middleware component e.g. SRM/SE version or type) has a well known issue with networking performances, and they could therefore more efficiently guide users w.r.t. what network-only experts would be able to do. Also, VOs/VRCs would have a valuable source of feedback on their applications run by all grid users, not gathering spread information from individual NRENs and Site administrators.

NGIs willing to see such a service in place should commit some effort on the team and/or the tools/services, if possible.

Suggested answers: (please select a number and report it in the table at the end of this document)

5) We think having a global EGI PERT access point for users experiencing poor performances is useful; we also think that forming a team with Grid-added know how is a valuable thing, and we are willing to contribute to such a team providing manpower or resources.

4) We think having a global EGI PERT access point for users experiencing poor performances is useful; we also think that forming a team with Grid-added know how is a valuable thing, but we cannot commit any resource/manpower to such a team.

3) We think that having a global EGI PERT access point for users is useful, but this team (or even tool) should only act as a dispatcher of the issue to the NREN and GEANT PERT teams (therefore no need to add Grid / Middleware know how). So it should only act as a single entry point for users for PERT-like issues.

2) We think that nothing like this is required / useful.

1) Other: please specify (use the comment column in the table at the end of this document).

C. **Grid users and Site Administrators being notified in advance of the unavailability of a resource center** for a given VO / VRC due to a scheduled maintenance of network related devices (scheduled maintenance) or to an acknowledged fault in link or network device.

[Scheduled Maintenances]

NRENs are normally aware of scheduled maintenance or accidents related to their network devices or their PoPs. They could notify them (in advance in the case of scheduled maintenance of unavailability) to the users impacted by these issues. **Normally this happens at the network coordination level, so that NRENs warn their Access Point Managers;** these then inform users locally of possible issues. (in reaching external sites, in general).
In some cases also APMs of a given NREN are informed within that single NREN and in some cases information exchanges with GEANT is involved. But often the liaison to the Grid community is left to the initiative of the individual APM. (There might also be cases in which the Net-NOCs deals with Grid users directly).
NGIs and NRENs could collaborate by agreeing on providing a global (EGI scale) service informing Grid users on the unavailability of sites, by either

1. notifying this information to subscribing users for a site
   [A) **pushing** information to selected (subscribing) users] (a given VO/VRCs might have special interest on specific sites)

2. or by advertising this information globally in one place.
   [B) central location gathering all information – interested users access it and fetch the required information **(pull approach)**].

This would require the collaboration of NRENs and GEANT to have a mapping between individual devices or entire PoPs and specific Grid resource centers. So that the national NGI could be informed by the national NREN about similar issues. The National NGI could then push this information further to the unique web location or to the list of subscribing users for that site (also to be stored at some place).

Suggested answers: (please select a number)

6) We think having a global EGI service/tool to warn users and site administrators about scheduled maintenances is useful; we think that a system pushing information to selected Grid users/Site Admins (A) is the option to go for and we are able to commit manpower and resources to build it.

5) We think having a global EGI service/tool to warn users and site administrators about scheduled maintenances is a very useful thing; we think that storing this information centrally in one place (B) is the option to go for, and we are able to commit manpower and resources to build it.

4) We think having a global EGI service/tool to warn users and site administrators about scheduled maintenances is useful; we think that a system pushing information to selected Grid users/Site Admins (A) is the option to go, but we cannot commit any resource nor manpower to develop nor maintain such a system/service.

3) We think having a global EGI service/tool to warn users and site administrators about scheduled maintenances is useful; we think that storing this information centrally in one place (B) is the option to go for, but we cannot commit any resource nor manpower to develop nor maintain such a system/service.

2) We think that nothing like this is required nor useful.

1) Other: please specify (use comment column in the table at the end of this document).

D. **Grid Site administrators or Grid NGI Operations Center team members experiencing problems in reaching a given end site (CE, SE, InfoSys)**
                                            [**Troubleshooting on-demand**]

Here NGIs could coordinate their efforts to identify and test tools to perform network troubleshooting on demand, to make them available to the whole EGI community, to provide assistance and support for deployment, configuration and running of these tools.
In particular, a network troubleshooting software (network bandwidth, connectivity, etc ..) called perfSONARLite TSS that allows site administrators to access remote troubleshooting tools located on remote EGI sites has been developed during EGEE with the support of GEANT. Further improvements are planned within the **HINTS** project in order to make the tool mature. This tool also targets NGI operation centers that can use it for their own sites.
(For a description of HINTS see for example https://wiki.egi.eu/w/images/0/00/HINTS_4.pdf)

Suggested answers: (please select a number and report it in the table at the end of this document)

4) We think having a Network Troubleshooting on demand tool is useful, and we can provide manpower or resources, if required, to contribute to such a tool, or to perform beta testing.

3) We think having a Network Troubleshooting on demand tool is useful, but we cannot commit any resource nor manpower to contribute to or test such a tool.

2) We think that having a a Network Troubleshooting on demand tool is useless.

1) Other: please specify (use the comment column in the table at the end of this document).

E. **VRCs/VOs having further, additional needs in terms of permanent monitoring of specific paths**, i.e. which form of scheduled network monitoring information could be useful to put in place within the NGI sites and other EGI sites (need to necessarily identify a reduced mash according to a ranking which could be decided also involving the VRCs/VOs)
                                            [**VRC-e2e-multidomain-monitoring**]

EGI could set up, through contributing NGIs, a global scheduled network monitoring service, based on known tools (for example PerfSONAR MDM, NDT, NetJobs …), which might also

include an alarming system, for a specific subset of all the possible e2e paths within the EGI infrastructure, according to the needs of the major VOs/VRCs. The user community (VOs/VRCs) could help identifying and specifying to the EGI network support coordination a list of e2e paths mostly relevant for them. For these sets of paths a global scheduled monitoring system could be put in place

(analogously to that the LHCOPN is doing with PerfSONAR-MDM, http://lhcopn-mdm.geant.net/portal/index.jsp).

The GEANT reference tool for e2e multi-domain monitoring is **PerfSONAR** (see www.perfsonar.net or http://www.perfsonar.net/use-cases.html) .

Furthermore, a tool called **NetJobs** has been developed during EGEE which requires no local deployment at the sites, since it is based on the usage of Grid jobs to gather network monitoring information, so that sites would only have to accept two running jobs at their sites.

(For presentations on PerfSONAR and NetJobs take a look at https://wiki.egi.eu/wiki/NST#Presentations_on_Network_Monitoring_and_Support_for_EGI).

Suggested answers: (please select a number and report it in the table at the end of this document)

6) We think having a Network Monitoring tool for scheduled network monitoring measurement on a specific subset of the EGI e2e paths is useful**, and we can provide manpower or resources, if required, to contribute to such a tool, to **locally deploy** it at our sites, and/or to perform **beta testing**.

5) We think having a Network Monitoring tool for scheduled network monitoring measurement on a specific subset of the EGI e2e paths is useful, and we can provide manpower or resources, if required, to **locally deploy** its required services/components at our sites (but not to directly contribute to ir nor beta test it)

4) We think having a Network Monitoring tool for scheduled network monitoring measurement on a specific subset of the EGI e2e paths is useful, but we cannot provide any manpower nor resources to contribute to the development or the testing such a tool, and we are not interested in deploying any local probe or tool at our sites, but still we could afford to use a tool which requires **no local deployment** (like NetJobs)

3) We think having a Network Monitoring tool for scheduled network monitoring measurement on a specific subset of the EGI e2e paths would be in principle useful, but **we cannot provide any manpower** nor resource to contribute to it, and **we cannot afford deploying anything** locally at our sites.

2) We think that having a Network monitoring tool for scheduled network monitoring measurement on a specific subset of the EGI e2e paths is useless.

1) Other: please specify (use the comment column in the table at the end of this document).

F. Users, Site Administrators and NGI Operation Center teams needing to check and monitor in time if specific grid services at various locations are reachable

[DownCollector]

EGI could ensure that a basic global service is put in place consisting of a set of distributed grid services polling servers; similar to what the DownCollector does using a star topology. The DownCollector (https://net.egi.eu/DownCollector/) is a tool checking that registered Grid Services in the GOC DB are reachable from a single initial location; Such a tool could be structured and generalized to gather information from various DownCollector instances, so that Grid-NOCs could refer to such an EGI service to verify whether a given service is reachable from a given location.
The results provided by this tool could be integrated into the EGI operational dashboard.

Suggested answers: (please select a number and report it in the table at the end of this document)

4) We think having a DownCollector tool is useful, and we can provide manpower or resources, if required, to possibly deploy a local instance of the tool and make it accessible to other users or a global collector service.

3) We think having a DownCollector tool is useful, but we cannot provide manpower nor resources to contribute to the deployment.

2) We think that having a DownCollector tool is useless.

1) Other: please specify (use the comment column in the table at the end of this document).

G. Grid Sites and users belonging to VRCs having network requirements for the medium and long term

[Policy and cooperation]

The idea would be to establish an EGI group of people, a body permanently in charge of interfacing the NRENs, EGI.eu, EMI, DANTE, GEANT and TERENA to discuss issues related to the provisioning of network connectivity or the upgrade of existing links, new services, standards, new tools for monitoring, new joint initiatives on tutorials, dissemination on tools, test and prototyping of middleware with respect to the network layer, so that the requirements coming from the EGI user community and the VRCs could be shipped to the Network community. The idea is that this team should possibly be made of people belonging to both NRENs and NGIs and should act as a first contact for users, sites , middleware providers and EGI operations (mostly SA1 and JRA1) for all medium and long term issues and planning involving the network. The group should act as a liaison and coordination body.
Activities could involve the exploitation of new network-aware middleware components, the testing of the IPv6 compliance of the middleware, the testing of the performances of specific middleware components with respect to the TCP/IP performances, the test of new monitoring tools for the EGI community.
The group should act as an EGI-NGIs representative body for network matters towards the rest of the world. It should not perform directly testing of tools, but should ensure that at the EGI community level the activities carried out by the NGIs (supported by GEANT and the NRENs) around these middleware-network requirements gathering and testing are consistently coordinated and carried out in an effective manner. This group could liaise or overlap in composition with the first two proposed teams (GGUS and PERT).

Suggested answers: (please select a number and report it in the table at the end of this document)

6) We think establishing a permanent EGI group around network support for Policy and Cooperation is useful, and we can contribute with manpower to give a body to this team.

5) We think establishing a permanent EGI group around network support for Policy and Cooperation is useful, but we cannot contribute to it.

4) We think establishing a permanent EGI group around network support for Policy and Cooperation is useful, but we think this group should actually be made by same group of persons dealing with GGUS and PERT. So the 3 proposed teams should actually be merged into a unique network support team dealing with all these three matters : GGUS Support, PERT issues and Policy&Cooperation. We can contribute with manpower to give a body to this team.

3) We think establishing a permanent EGI group around network support for Policy and Cooperation is useful, but we think this group should actually be made by the same group of persons dealing with GGUS and PERT. So the 3 proposed teams should actually be merged into a unique network support team dealing with all these three matters : GGUS Support, PERT issues and Policy&Cooperation. We however cannot directly contribute with manpower nor resources to give a body to this team.

2) We think that having such a Policy and Cooperation Group is useless.

1) Other: please specify (use the comment column in the table at the end of this document).

Table 1: Answers to be provided to this Questionnaire

Question	Answer number	Provided manpower or resources (if possible) and/or Comments *(or alternative answer, if you selected answer n.1 : other)*
A (GGUS)		
B (PERT)		
C (Shed. Maint.)		
D (on-dem. Troublesh.)		
E (e2e multid. Monitoring)		
F (Down Collector)		
G (Policy and Cooperation)		