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on behalf of the IGI Collaboration

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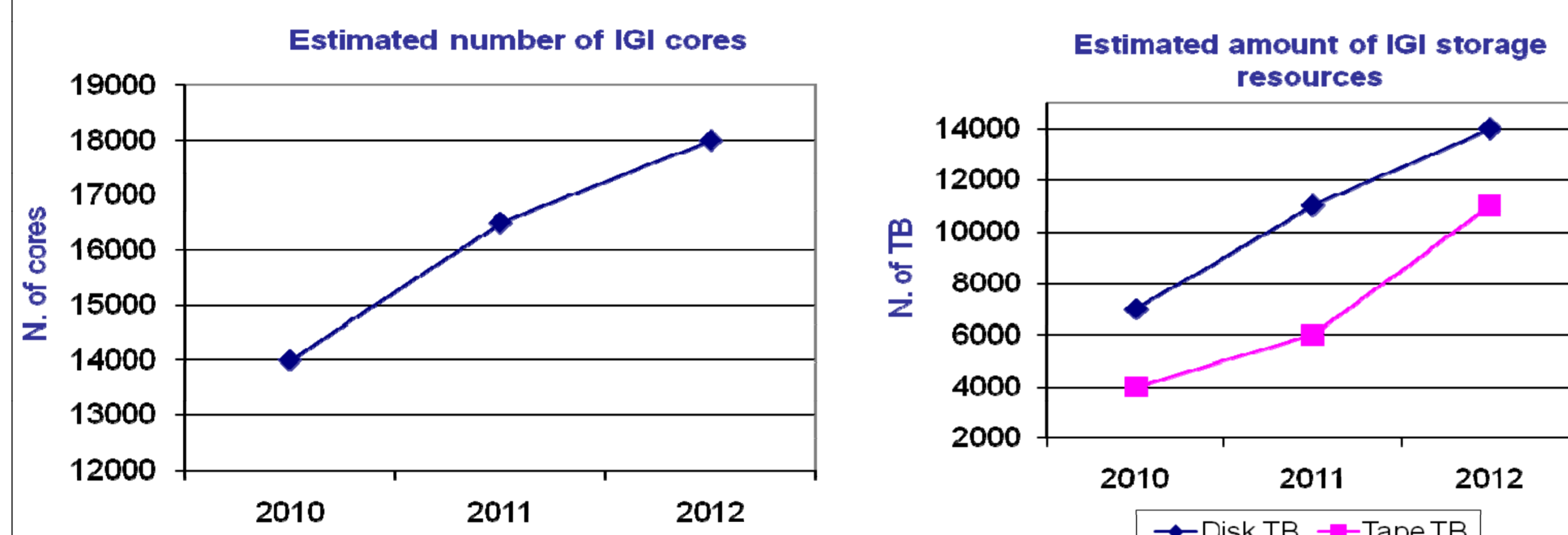
IGI is the Italian NGI (National Grid Initiative). It will be part of the European Grid Infrastructure (EGI).

The **IGI Grid Infrastructure** is constituted by various local Grid Infrastructures setup in the framework of national and EC-funded projects (CYBERSAR, CRESCO, EGEE, INFN GRID, PI2S2, SCOPE, etc.).

The **IGI Operations Unit** will be responsible for operating the national Grid Infrastructure, and will operate in collaboration with the EGI Operations Unit. IGI will rise to the challenge to integrate **heterogeneous computing and storage resources**, and to enable the **interoperation** between regional/institutional Grids and HPC centers.

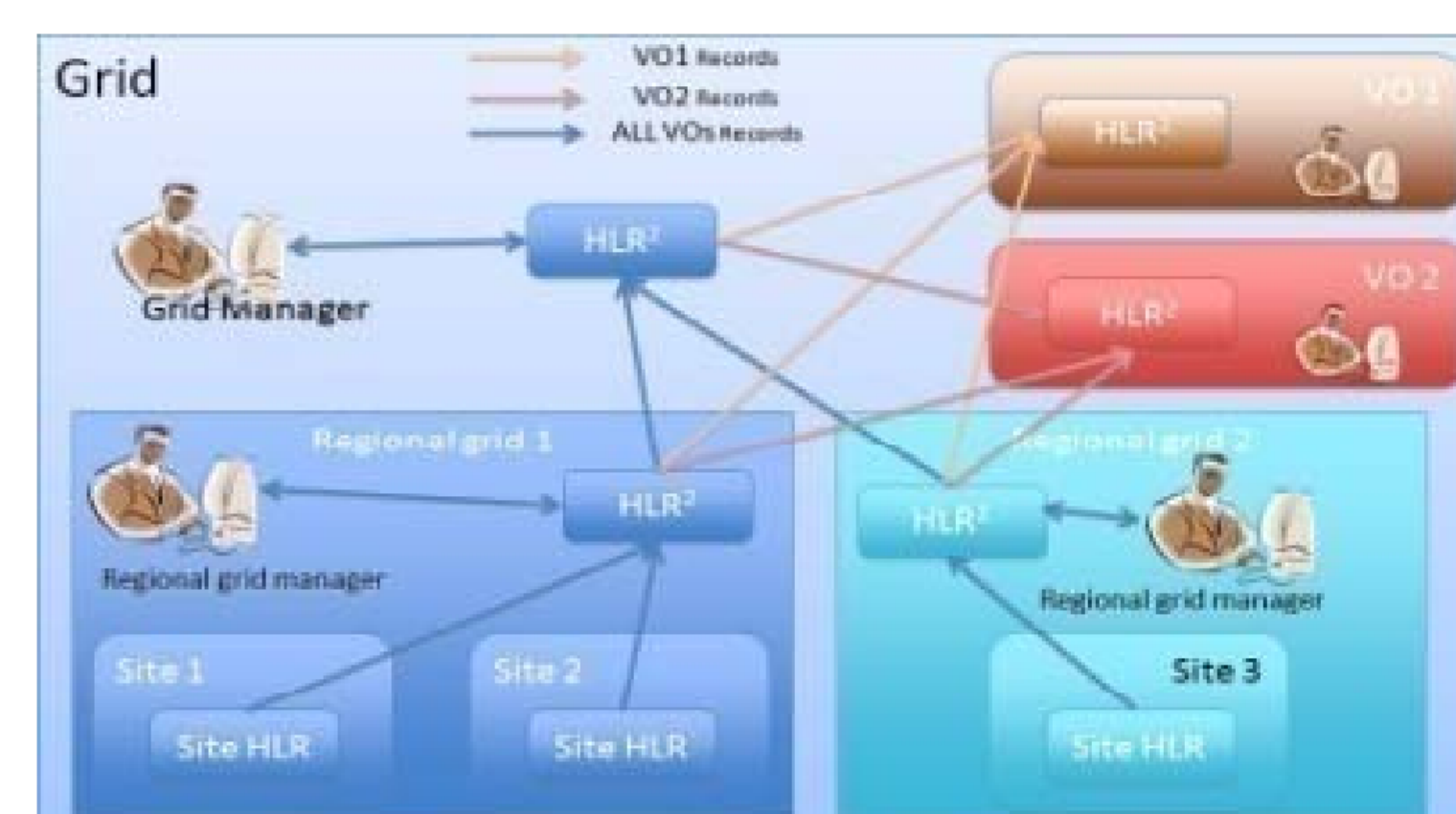
The **IGI middleware release** will extend the EGI Unified Middleware Distribution, and will incorporate additional components according to the requirements of local user communities. In addition to the middleware services, IGI will provide fundamental services such as **accounting, monitoring, security and support**.

Facts and Figures



Accounting

DGAS (Distributed Grid Accounting System) with its hierarchical topology provides a reliable and flexible system for regional, national and international Grids as well as for accounting at VO-level. Different accounting policies can be implemented.



Usage records for **storage and CPU accounting** (both Grid and local jobs) are collected.

Sensors for **PBS, LSF and Condor** are available.

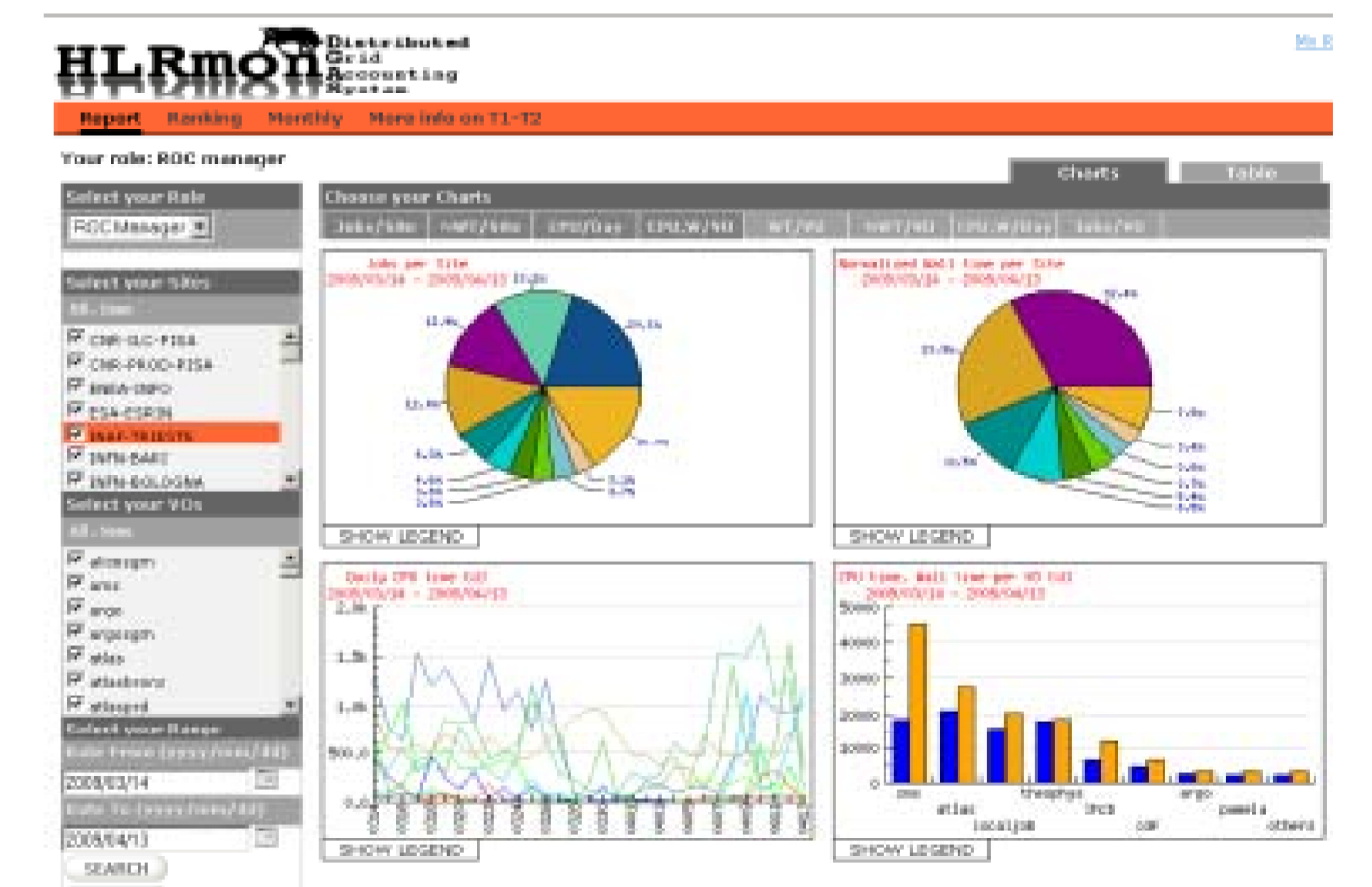
Data collected by external sensors could also be imported.

Pricing of resources and economic accounting are also supported.

Data correctness is regularly checked.

Data can be consulted via a national (**HLRmon**) and a global **EGEE web portal**.

Confidentiality is enforced through secure internal DGAS transactions.



Monitoring Infrastructure

It will leverage on the widespread adoption of **Nagios** both at national level (to collect local information from sites) and at site level.

Availability, reliability, and suitability to specific workload of different sites will be assessed wherever possible, using the Service Availability Monitoring framework, which will be extended to better support requirements of **parallel and HPC jobs**, with particular emphasis on **MPI**.

Feedback from site local Resource Management Systems will be exploited to complement SAM tests results, and to provide seamless, continuous monitoring of applications Service Level Agreements.

The IGI Regional Ticketing System

It relies on **XOOPS/xHelp** open source tools, interfaced to the central ticketing system (GGUS). Tickets are exchanged through the **SOAP** protocol. The IGI helpdesk supports both national and international VO users, as well IGI resource site managers, in reporting and solving problems related to grid services and software.

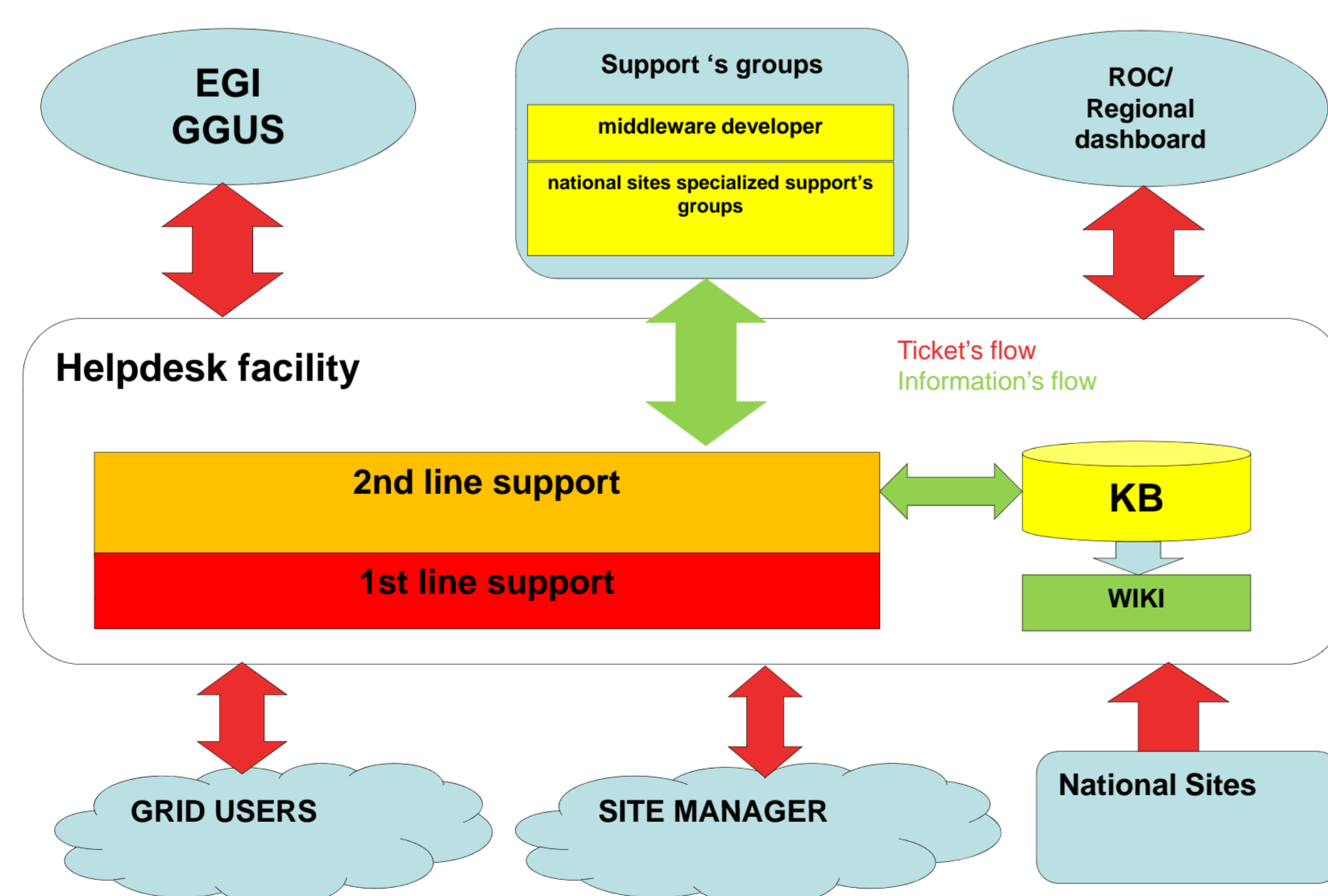
The IGI community is encouraged to share local experiences by joining specialized supports groups.

The IGI HelpDesk Model

It is based on a **two-level hierarchy for 1st and 2nd line support** to optimize the manpower allocation and increase efficiency. Shifts are organized to ensure continuous support and Grid infrastructure supervision.

1st level support team provides help with basic issues whose symptoms and related solutions has already been coded in a Knowledge Base system. The 2nd level support team provides specialized support and it interacts directly with middleware developers as well as with specialized support groups from national sites to fix the problem, to verify the solution and then update the **Knowledge Base** which is also available via a WIKI interface.

The Helpdesk facility is also responsible of ticket follow-up to and from EGI infrastructure and of responding to trouble tickets in a timely manner.



Security

Security is very important in a computing distributed infrastructure. The harmonization of security practices at the Grid sites, the monitoring of resource security status and the oversight and follow-up of the security incidents are building blocks of a secure environment.

A IGI central team will coordinate security activities and will participate to the relevant EGI security coordination bodies and working groups. The other main security tasks IGI will provide are: management of the **IGI Certification Authority**, **security challenges** to test the security procedures and responsiveness at sites, **support and training** for the security issues to Grid site administrators and development of security probes for the Nagios monitoring system.

Network Services

Network connectivity is provided by the **GARR**, the Italian NREN. A thorough collaboration between IGI and GARR will be established to improve the network services provided to the Grid user community, such as **end-to-end network performance testing**, testing of **new transfer technologies**, network **troubleshooting**, etc.