



Enabling Grids for E-science

SA1: Grid Operations

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www.eu-egee.org



- **Goals**
- **Changes in EGEE III**
- **Towards a fully distributed operations model**
- **Effort**
- **Tasks**
- **Deliverables and Milestones**
- **Organization**
- **Conclusion**

Goals

- The provision of a large-scale, production Grid infrastructure that interoperates at many levels, offering **reliable** services to a wide range of applications
 - Continuation of the present service
- Set the groundwork for the migration to a **distributed model** based on coordination at the European level of National Grid Infrastructures
 - This is the challenge for the next 2 years, to do this without breaking the 1st goal (continuation of reliable service)

With the constraints:

- 2 years
- Significantly less effort

No major content changes! Mostly in the organization

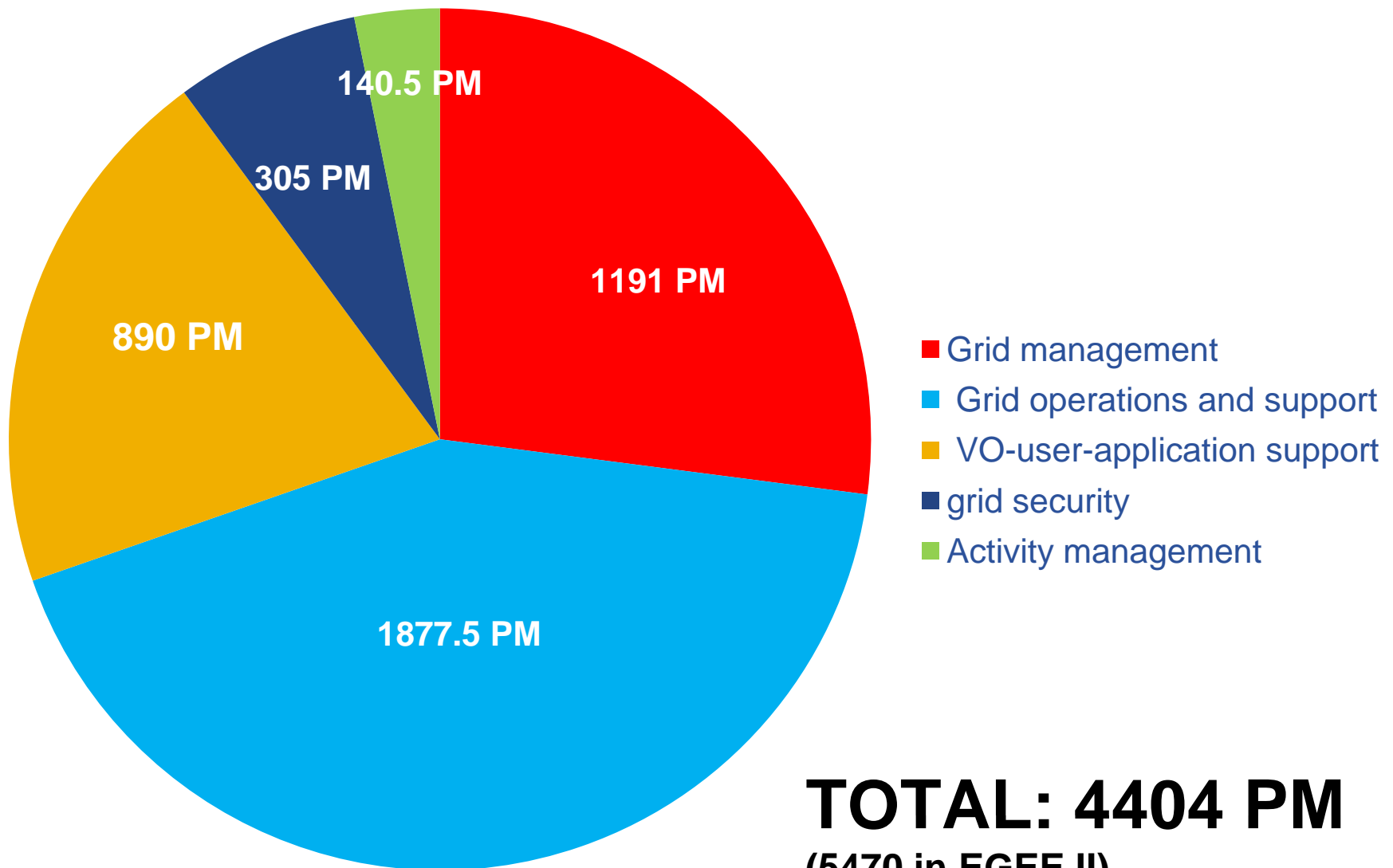
- Move from central **supervision** to central **coordination**
- All tasks distributed to ROCs, with OCC or one of the ROCs responsible for coordination
- Improve coordination and working model so all this is possible and effective
- Define clear interfaces: between OCC and ROCs(NGIs), between ROCs(NGIs) and sites
- Test possible transitional organisational structures towards and NGI model

What is our present (EGEE II) model?

- **Grid management**
 - Central coordination for all of the tasks, in many cases localised at CERN (team is called OCC: operations Coordinations Centre)
- **Grid operations and support**
 - In general, problem monitoring (SAM) and reporting done centrally by the COD is not well integrated with the daily operations and monitoring carried out at each site
 - Best effort/informal coordination of operations tool and requirements gathering. Most tools are deployed centrally (main instance run in one region serving the whole infrastructure)
- **Support to VOs, Users, Applications**
 - Central access point for user support, connected to all the ROCs
- **Grid security**
 - Central coordination, with effort from all ROCs and a broad collaboration from sites

What is our target model?

- ROCs (NGIs) are responsible for day to day operations, **without** a central organization **overseeing** them. Set of operations tools supporting this
- **Central** body (OCC) responsible for **coordination** of cross-regional tasks
- Clear interfaces/targets between OCC and ROCs(NGIs), between ROCs(NGIs) and sites
- Sites with well developed fabric tools that monitor local and grid services in a common way and trigger alarms directly, so most of the issues are solved at this level



TOTAL: 4404 PM
(5470 in EGEE II)

1191 PM

- Overall coordination of the Operations through the Operations Coordination Centre.
- ROC Management
- **Monitoring and enforcement of Service Level Agreements**
- Application – Resource Provider Coordination. The **Resource Allocation Group** is co-chaired by NA4 and SA1.
- Grid Accounting
- Interoperability and collaboration.
- Operation of national or regional Certification Authorities and Registration Authorities where required, including overall “catch-all” authorities for EGEE.
- Quality assurance

Process of providing virtual organisations with access to compute and storage resources (known issue in EGEE II)

- All JRUs/NGIs or partners in SA1 are required to commit a certain percentage of their resources to be used by new VOs (seed resources)
 - “catch-all” or regional VOs for new user groups in the region
- Funding of **51,000€** to provide additional computing resources for new user communities not linked to the partners of the EGEE consortium:
 - Installed at a **maximum of 3 sites** that can guarantee access to the resources with a high level of service for new VOs according to a Service Level Agreement to be defined
 - The Service Level Agreement and selected sites will be **subject to approval of the Project Management Board**.
- The NA4 VO manager’s group will be responsible for identifying new VOs eligible for project support.

1877.5 PM

- **Grid Operator on Duty**
- **Oversight and management of Grid operations**
- **1st line support for operations problems**
- **Run Grid services for production and pre-production services**
- **Middleware deployment and support**
 - Coordination of middleware deployment and support for problems
 - Regional certification of middleware releases (anticipated to be very rare and will require specific justification)
- **Interoperations: local, regional, international**
- **Monitoring tools to support Grid operations: Operations Automation Team, responsible for the overall strategy to coordinate tool development**

- **Task started and evolved following operation needs:**
 - SAM, Gstat, CIC portal, GOCDB, etc
- **No formal coordination**
- **Central part of present operations model**
- **Operations Automation Team**
 - Improve site reliability by wider deployment of fabric management tools at sites
 - Devolve central systems, where possible, to regional systems
 - Create architecture for new shared infrastructure required to support the operational tools
 - Measure and improve the availability 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 visualization of the state of infrastructure for site administration, regional operators and project managers
 - Provide reporting tools for the OCC and project management

890 PMs

- **GGUS** management and tools
- **TPM and user support effort.** This is staffed by effort from each of the ROCs as one of their **mandatory** core tasks. Support for middleware related issues is the responsibility of JRA1 and SA3. Dedicated LHC experiment support by the EIS team
- **Regional helpdesk**
- **SA1 participation in site and user training.** SA1 will work together with NA3 on developing material for on-line training for site administrators.

305 PMs

- A security team responsible for coordinating all aspects of operational security, including responding to security incidents,
- A team dealing with security vulnerabilities in the middleware and deployment,
- Responsibility for developing and maintaining the Security Policy and procedures jointly with other Grids,
- Ensuring the continued existence of a federated identity trust domain, and encouraging the integration of national or community based authentication-authorisation schemes.

140.5 PMs

- Activity management
- ROC coordination
- Coordination with and participation in project technical bodies
- Oversight and management of specific technical tasks within SA1
- Federation reviews
- Metrics and Quality Team. Ensures that the appropriate sets of metrics are gathered within the operation to monitor the quality of all aspects of the operation, for monitoring SLAs, and for reporting purposes. The partner reviews will be organised by this team.
- Contributions to general project tasks (conference preparation, reviews, etc.)
- Production, editing, reviews of milestones and deliverables

	Description	Delivery date
DSA1.1	Global Grid user Support (GGUS) Plan	2
DSA1.2	Assessment of production service status	11 - 22
DSA1.3	Report on the status of the regional Operations Centres (ROCs) and national/regional grid integration	14
DSA1.4	Progress report on SLA implementation	16
DSA1.5	Operations Cookbook	18

	Description	Delivery date
MSA1.1	Operations Automation Strategy	1
MSA1.2	Operations procedures in place	1
MSA1.3	Activity Quality Assurance and measurement plan	2
MSA1.4	Security assessment plan	2
MSA1.5	SLA Roadmap	3
MSA1.6	Assessment of the status of user support	4
MSA1.7	Assessment of infrastructure reliability	6
MSA1.8	Grid Security Vulnerability and Risk Analysis	11
MSA1.9	Status report on Interoperations	12
MSA1.10	Grid Computer Security Incident handling	16
MSA1.11	Security Policy Integration	20

- **Activity coordination: OCC plus ROC managers plus task/subtask responsables (coordination of a subtask across ROCs)**
 - Phone meetings every 2 weeks, to present plans, track progress, discuss issues
 - Face to face meetings (3-4 per year)
- **Weekly Operations Meeting and Operations Workshops**
 - Deals with daily operations: information sharing, raise issues

- **Moving to a fully distributed model**; we have some experience with this, SA1 is partially distributed already
- **Challenge to do this with less effort and in 2 years**; no place for duplication, loose initiatives
- **Collaboration is essential**; we need an agreed vision as input to EGI, and we need to work together towards this vision
- **Site responsibility for daily operations is the best way of saving effort and simplifying operations at all levels!**
 - We need to provide the tools to facilitate this
 - We need more site involvement
 - Site and ROC/NGI partnership should be reinforced