



Enabling Grids for
E-science in Europe

*EGEE Greek 3rd parties kick-off and member
induction training, May 27-28th, 2004*

Regional Operations Center (ROC)

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Source of slices + material: EC, EGEE, CERN, GRNET

Objectives of this session

- Understand overall SA1 (GRID Operations, Support and Management) responsibilities
- Understand ROC responsibilities
- Agree on ROC organisation
- Agree on partners' responsibilities
- Please **STOP ME** if any terminology is unclear

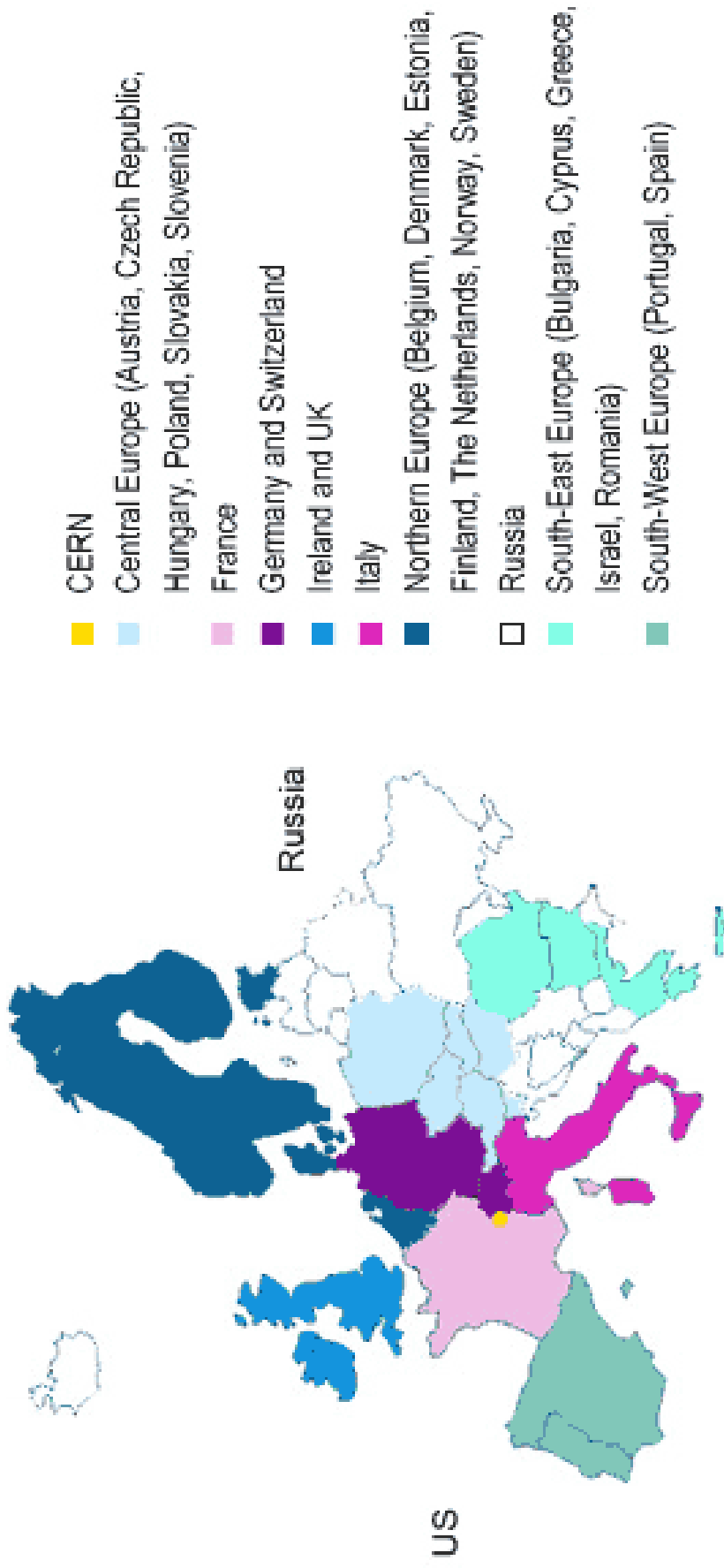
Outline

- **SA1/ROC overview**
 - High-level SA1 organisation and activities
 - Detailed ROC overall responsibilities
 - Deliverables and milestones
- **ROC organization**
 - Overall
 - Per resource center (cluster)
 - Specific responsibilities
 - Communication procedures
- **Action points**

SA1

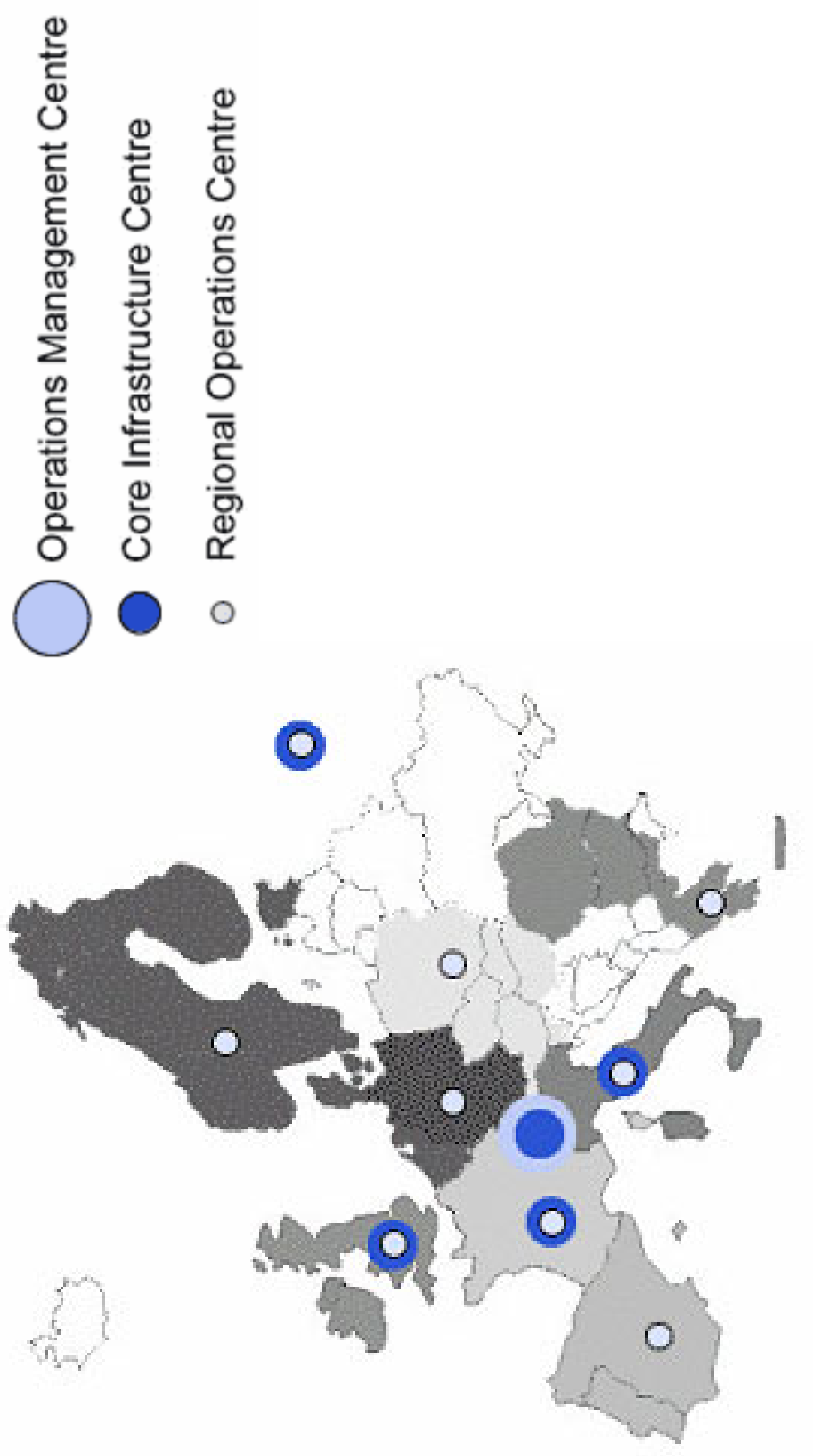
- SA1

EGEE regions



SA1 objective

- Create, operate, support and manage a production quality infrastructure



SA1 objectives: detail

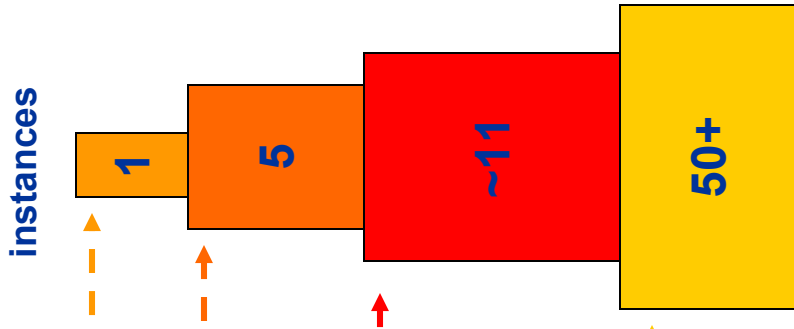
- **Core infrastructure services:**
 - Operate essential grid services
- **Grid monitoring and control:**
 - Proactively monitor the operational state and performance,
 - Initiate corrective action
- **Middleware deployment and resource induction:**
 - Validate and deploy middleware releases
 - Set up operational procedures for new resources
- **Resource provider and user support:**
 - Coordinate the resolution of problems from both Resource Centres and users
 - Filter and aggregate problems, providing or obtaining solutions
- **Grid management:**
 - Coordinate ROCs and CICs
 - Manage the relationships with resource providers via service-level agreements.

SA1 objectives: detail

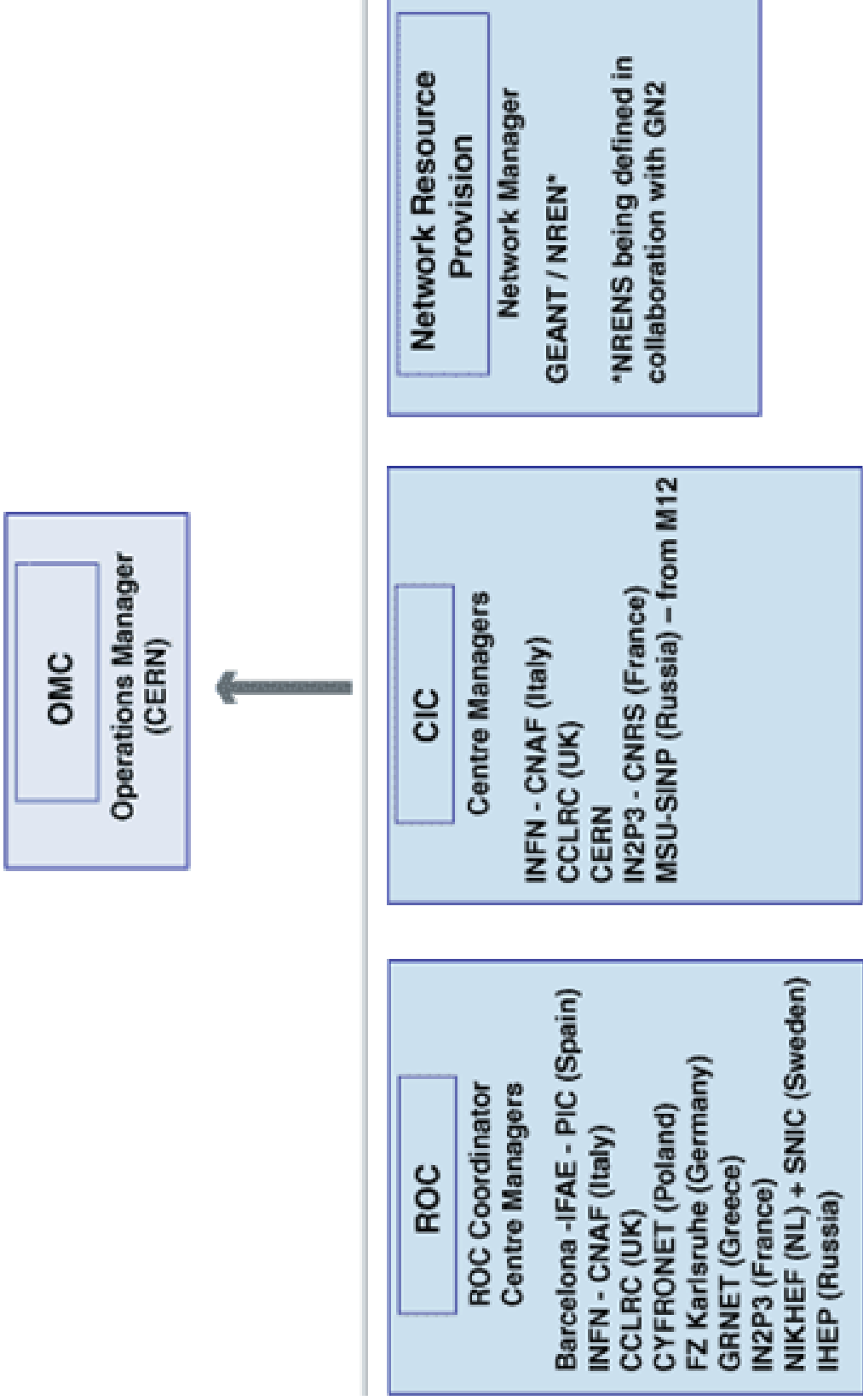
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 - Operate essential grid services
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Operations centers: hierarchy

- Implement the objectives to provide
 - Access to resources
 - Operation of EGEE as a reliable service
 - Deploy new middleware and resources
 - Support resource providers and users
- With a clear layered structure
 - **Operations Management Centre (CERN)**
 - Overall grid operations coordination
 - **Core Infrastructure Centers**
 - CERN, France, Italy, UK, Russia (from M12)
 - Operate core grid services
 - **Regional Operations Centers**
 - One in each federation, in some cases these are distributed centers
 - Provide front-line support to users and resource centers
 - Support new resource centers joining EGEE in the regions
 - Support deployment to the resource centers
 - **Resource Centers**
 - Many in each federation of varying sizes and levels of service
 - Not funded by EGEE directly

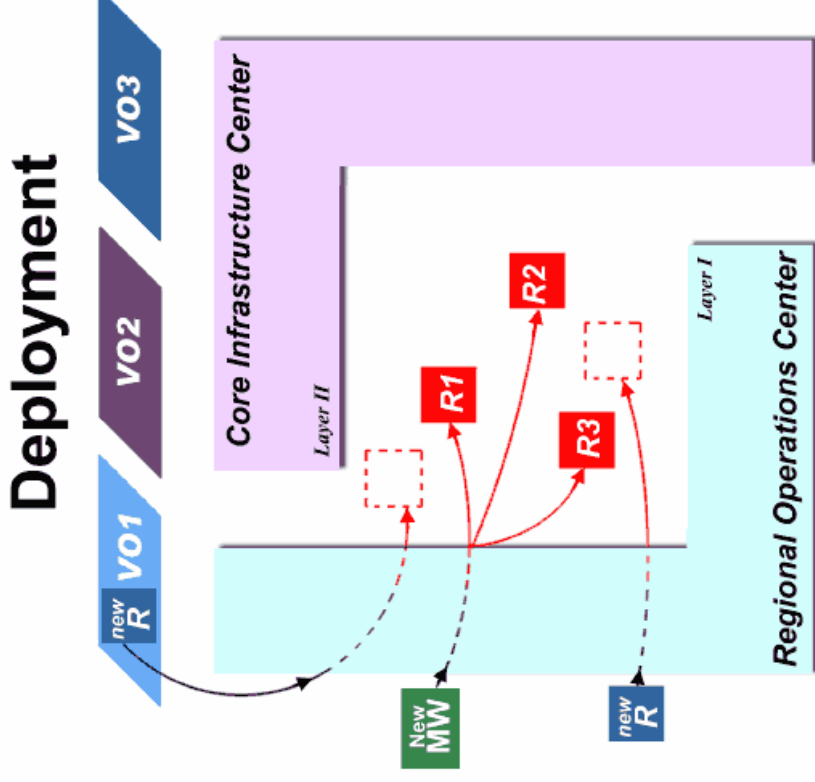


Operations centers: hierarchy



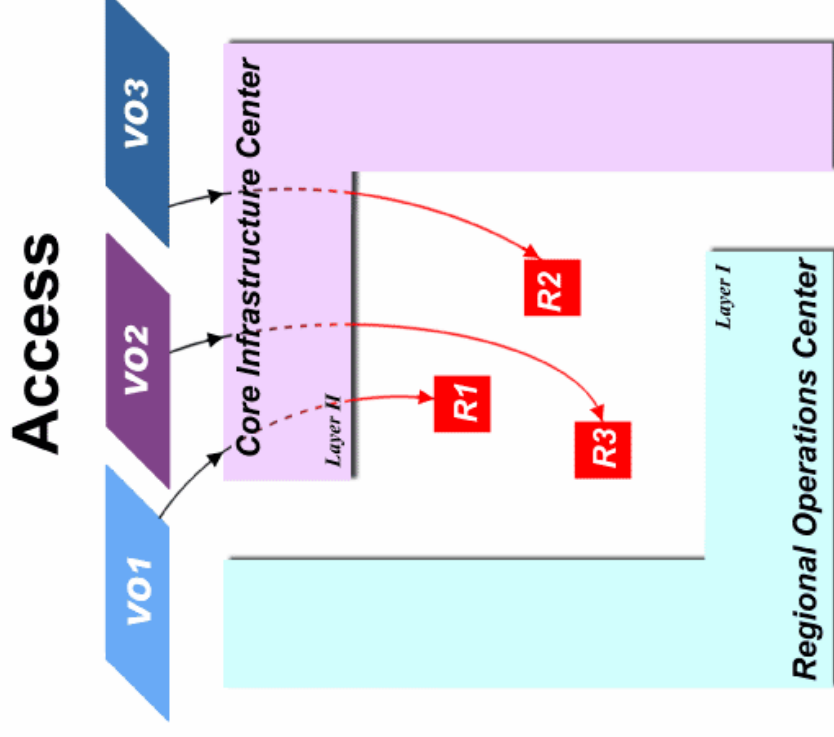
Deployment

- Of middleware and resources by ROCs



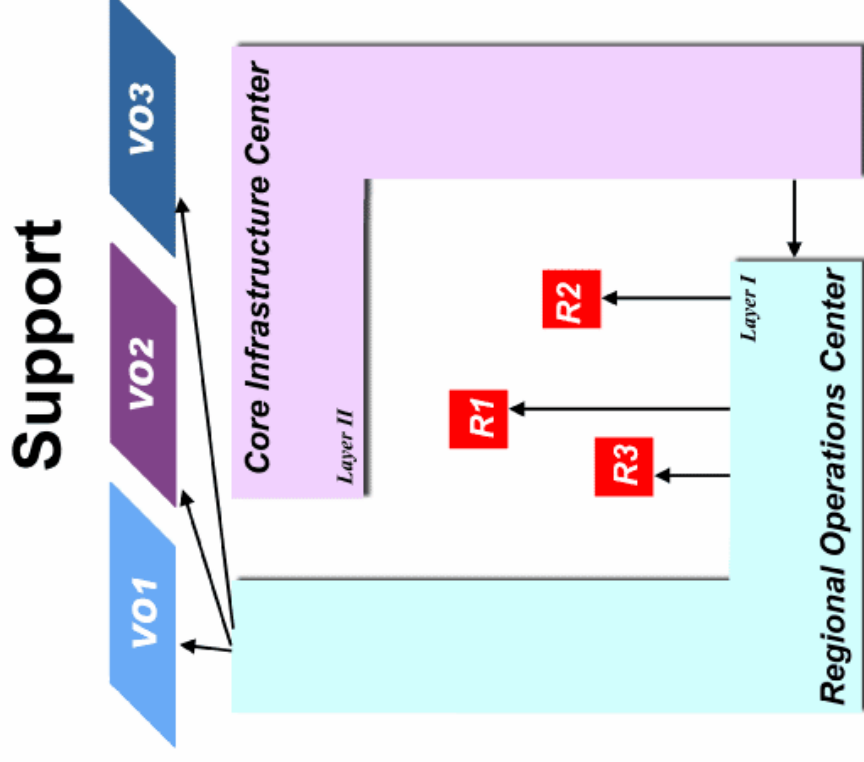
Access

- Of resources by VOs



Support

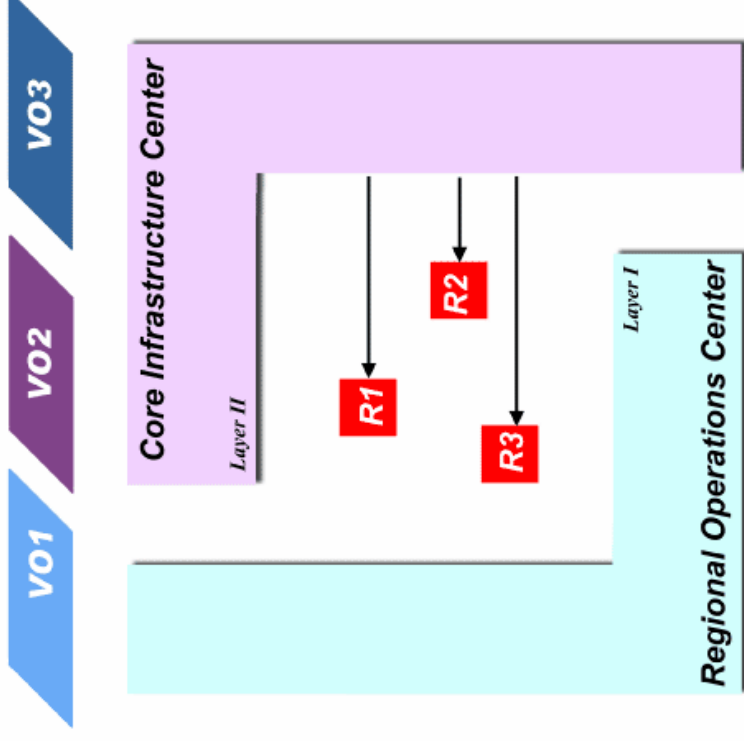
- Of VOs by ROCs



Operation

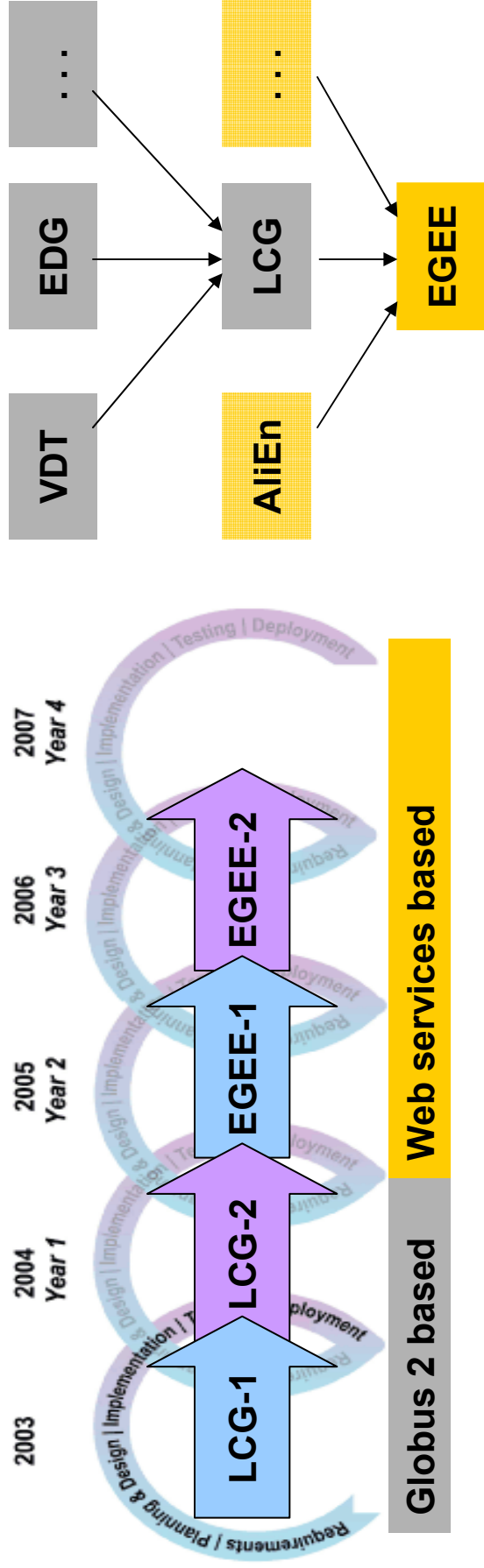
- Of Grid by CICs

Grid Operation



M/W: Lifecycles

- From 1st April 2004
 - Production grid service based on the **LCG infrastructure** running **LCG-2** grid m/w
 - In parallel develop a “next generation” grid facility
 - Produce a new set of grid services according to evolving standards (web services)
 - Run a pre-production service providing early access for evaluation purposes
 - Will replace LCG-2 on production facility in 2005



Production service

- Main production service for production applications
- MUST run reliably, runs only proven stable, debugged middleware and services
- Full support – 24x7 as soon as possible
 - Start with 16x(5-7?) – rotation of coverage between CICs
- Initial service is in place – LCG-2
- Want to add new sites in EGEE federations
 - They join via their ROCs who help deploy middleware

Pre-production service

- For next version middleware
- Initially – start with EGEE m/w as soon as there is a basic release
 - For year 1 pre-prod will run EGEE mw, prod will run LCG-2
 - When EGEE mw ready – move to prodn and pre-prod service will be next EGEE candidate release
 - Even incremental component changes – get away from big-bang changes
- Feedback from users, ROC's, CIC's, RC's is essential – this service must be widely deployed but does not need huge resources
- Initial resources – come from EDG app testbed sites, perhaps also some of the new smaller sites
- Support is 8x5

Detailed ROC responsibilities

- Detailed ROC responsibilities

Our collective aim

- **Build expertise and operational procedures that will allow Greece to:**
 - Integrate into European production-level infrastructure
 - Operate a self-standing coherent Grid infrastructure
 - Create teams of core experts for the future
- **Make sure EGEE-2 arrives and we continue our integration into European trends.**

Production service: lifecycle

- Certification and release preparation
- Deployments and upgrades
- Operations and support

Certification and release preparation

- JRA1 delivers m/w
- ROC performs acceptance testing (certification)
- Participate in development of testing suites
- Porting to other platforms if necessary (unlikely)
- Customization of m/w to the local configuration
- Documentation

- Establishing instillation guidelines and procedures

Deployment and upgrades

- New release (or upgrade) deployed on production RCs
- Site certification
- SLA establishment with RC
- Deployment of core GRID services

Operations and support

- Operational and user support
- Problem diagnosis
- Problem referral to CICs/JRA1
- Problem solutions
- Problem tracking system for support
- Monitoring

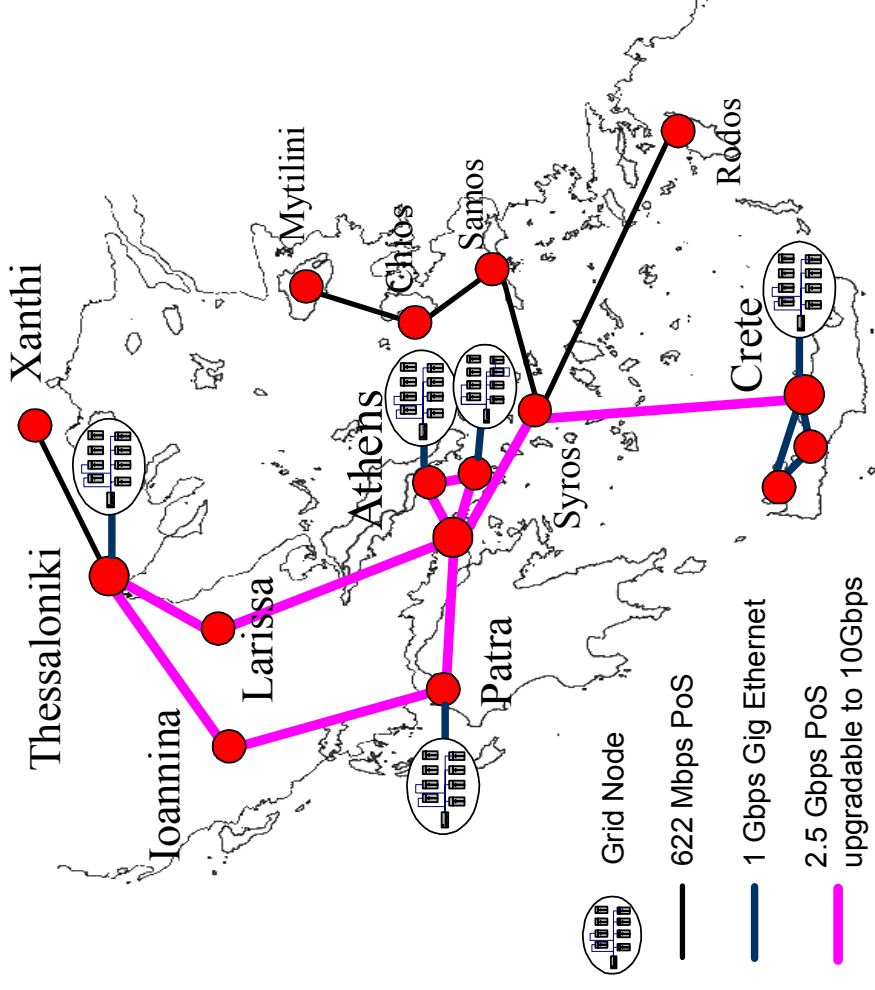
Pre-production service

- Smaller sites
- New generation m/w
- Crucial for testing and experimentation
- Activities similar to those for production service

ROC organization

- ROC organization

Greece: GRID topology



Sites

Production site	Responsible partner: operations
HG01-GRNET	ICCS
HG02 (Athens 2) + potential IASA cluster	IASA
HG03 (Thessaloniki) + potential Auth cluster	Auth+UoM
HG04 (Patras)	CTI
HG05 (Crete)	ICS-FORTH
Pre-production site	
Pre01 (UoM)	UoM
Pre02 (UoPatras)	UoPatras
Pre03 (UoA; certification site more likely)	UoA

Evolution of RCs

Site	Parallel (Gflops)	Cluster (num. nodes)	Disk (Tb)	Automated Tape (Tb)	Avg. LAN (Mbps)	Avg. WAN (Mbps)	Join	VOs supported
HG01 (GRNET)	N/A	64*2*30%	10.0	10.0	1000.0	2500.0	M0; M15	cms, alice, atlas, dteam, lhcb
HG02 (Athens2)	N/A	128*30%		N/A	1000.0	2500.0	M15	
HG03 (Saloniki)	N/A	128*30%		N/A	1000.0	2500.0	M15	
HG04 (Patra)	N/A	128*30%		N/A	1000.0	2500.0	M15	
HG05 (Crete)	N/A	128*30%		N/A	1000.0	2500.0	M15	

Production teams: responsibilities

- *EACH production team (IICS; IASA; FORTH, CTI, Auth+UoM) has these responsibilities for their cluster*
- M/W porting to other platforms if necessary
- M/W customisation if necessary
- M/W deployment and upgrades as often as necessary
- Site certification in collaboration with GRNET-HQ + CERN
- Front-line support for the operational problems
- Front-line support for local and remote users
- Automated procedures for daily checks + failure notification
- Participate in developing and running coherent Trouble Ticket (TT) and database infrastructure
- Coordinate a potential Knowledge Base

Production teams: responsibilities (cont.)

- Support local monitoring service
- Monitor the resource utilization and SLAs and provide necessary statistics for deliverables and other purposes
- Host and co-manage necessary core GRID services, as agreed with GRNET-HQ.
- Keep detailed logs of all interventions on the site
- Provide monthly timesheets to GRNET-HQ
- Provide input to deliverables as needed
- *Production work starts synchronized with dates of RC induction*

Pre-production teams: responsibilities

- Similar as production, on smaller scale
- Dedication of (non-HG) resources needed
- *Pre-production work starts ASAP*

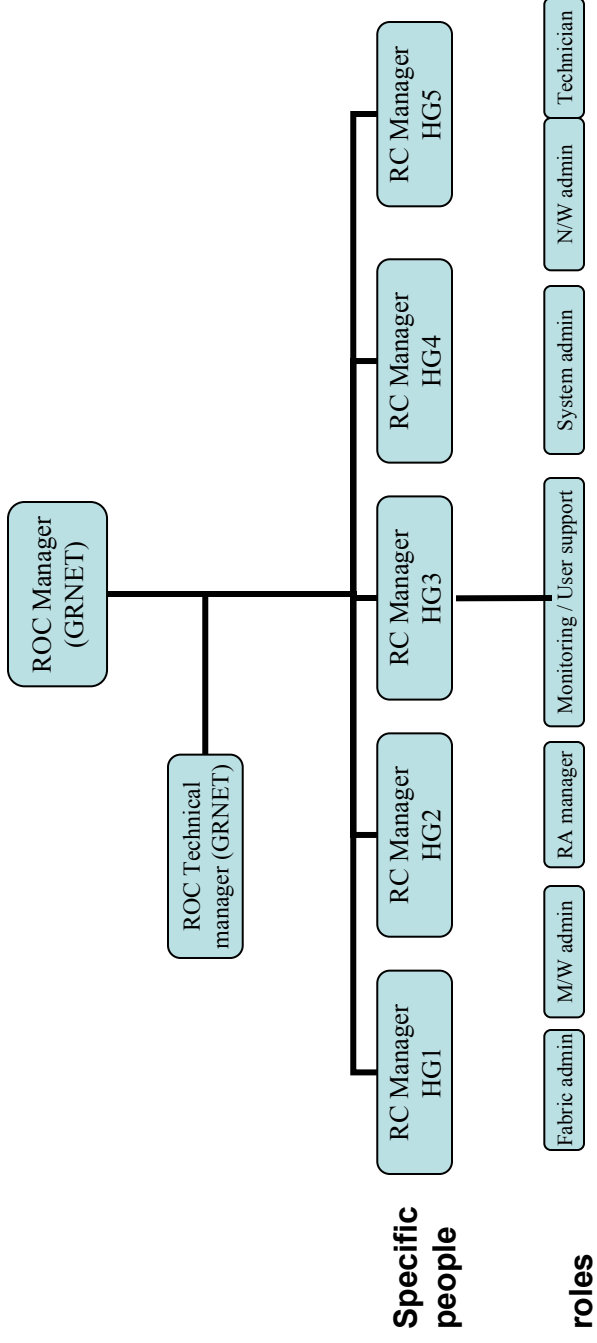
Specific responsibilities

- **UoA+IASA+GRNET-HQ:** m/w certification; release documentation, etc.
Certification testbed by IASA/UoA.
- **UoA+Demokritos:** Guidelines for configuration and automatic installation tools.
Run local installation testbed to verify installation procedures.
- **CTI:** helpdesk, knowledge database, coordination of the support procedures.
- **UoC:** EGEE-SEE website/portal.
- **IASA, UoA, Auth, ICCS:** host and co-manage necessary core GRID services,
as agreed with GRNET-HQ.
- **ICS-FORTH:** Coordinate the monitoring service (Gridlce server + database).
- **Auth and Aegean:** security. Auth operates the CA; Aegean provides support
and specific authorisation activities, site security guidelines, RA.
- **Demokritos:** certification/installation + application specific support
- **Training:** all operations people should support!
- ***Specific responsibilities start ASAP***

Milestones & Deliverables

Month	Deliverable / Milestone	Item	Lead
M03	DSA1.1	Detailed execution plan for first 15 months of infrastructure operation	
M06	MSA1.1	Initial pilot production grid operational (SEE RCs: GRNET, UCY, TAU)	
M06	DSA1.2	Release notes corresponding to the initial pilot Grid infrastructure operational	
M09	DSA1.3	Accounting and reporting web site publicly available	
M12	MSA1.2	First review	
M12	DSA1.4	Assessment of initial infrastructure operation and plan for next 12 months	
M14	DSA1.5	First release of EGEE Infrastructure Planning Guide (“cook-book”)	
M14	MSA1.3	Full production grid infrastructure operational (SEE: 9 RCs)	
M14	DSA1.6	Release notes corresponding to the full production Grid infrastructure operational	
M18	MSA1.4	Second review	
M22	DSA1.7	Updated EGEE Infrastructure Planning Guide	
M24	DSA1.8	Assessment of production infrastructure operation and outline of how sustained operation of EGEE might be addressed.	
M24	MSA1.5	Third review and expanded production grid operational	
M24	DSA1.9	Release notes corresponding to expanded production Grid infrastructure operational	

ROC organization: vertical



Specific people

roles

ROC organization: horizontal

- Teams with specific expertise established across Greece
- M/W Certification team (lead: UoA/IASA)
- Deployment team (lead: GRNET-HQ + ICCS)
- Support team (lead: CTI)

Greece: Identification of personnel & roles

An example

Collaborator name	Contact/email	Institute	Role
Ognjen Prnjat	oprnjat@admin.grnet.gr	GRNET	ROC Manager
Kostas Koumataros	kkoum@admin.grnet.gr	GRNET	ROC Technical Manager
ICCS Team	egee@eslab.ece.ntua.gr	ICCS	HG1 Node manager
Christos Kanelopoulos	skanct@physics.auth.gr	AUTH	CA admin (Greece)
Athina Sakka	sakka@admin.grnet.gr	GRNET	HG1 RA

AP: Identify ALL personnel and roles for ALL of Greece

Effort

- Effort needs to be confirmed inline with technical responsibilities defined here
- Real PMs/partner needs to be confirmed
- Real people needed: please no effort fragmentation, also please CVs.

Communications procedures

- egee-see-sa1@grnet.gr
- CERN Document Server (CDS):
<http://agenda.cern.ch/displayLevel.php?fid=41>
- Main site <http://egee-intranet.web.cern.ch/egee-intranet/gateway.html>
- EDMS server (In OTHERS/EGEE/) <https://edms.cern.ch>

Action points

- Confirm key personnel and roles, inline with technical responsibilities defined here
- Conform effort and dedication, inline with technical responsibilities defined here
- Deadline execution plan draft: **10th June**
- **ALL please send your contributions to GRNET by 10/06**
- **Final version: 30th June!! → if we do not deliver this, we will not be able to claim effort**