

EGEE-III – Year 2: The Transition to EGI

Steven Newhouse
Technical Director
CERN

EGEE-III Final Review, 23-24 June, 2010

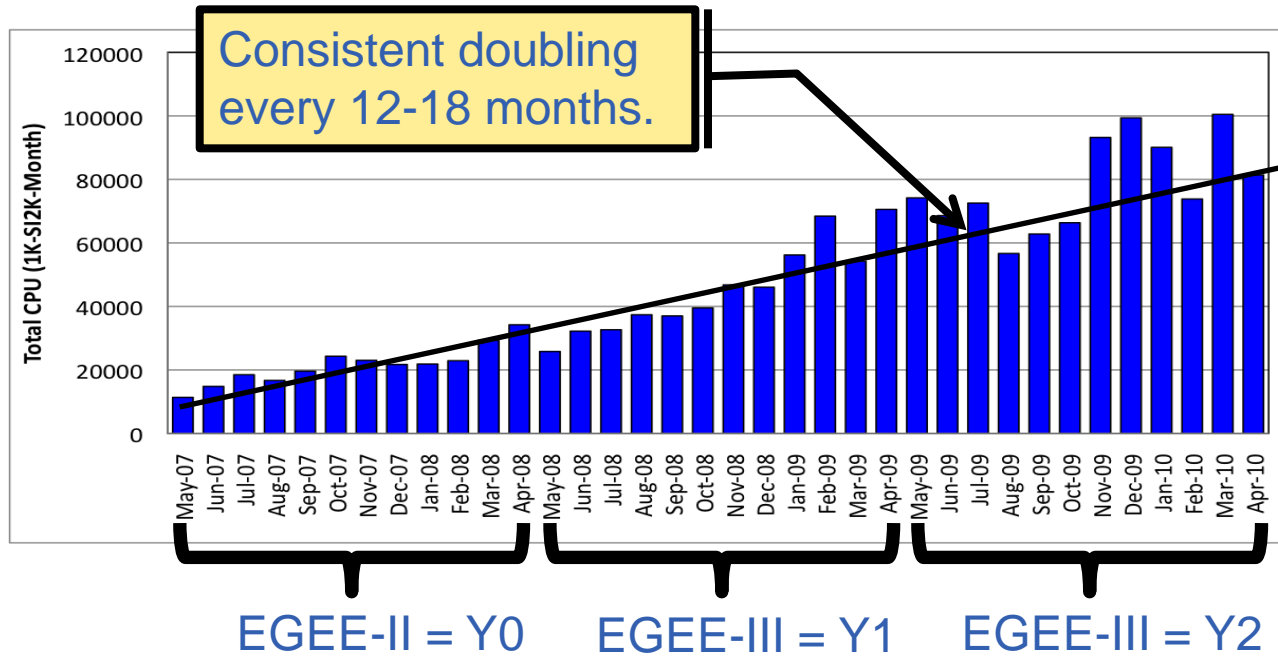
- **Maintain the production infrastructure**
 - 24x7 operation
 - Middleware development, certification and deployment
 - User community development and support
- **Migrate the production infrastructure towards EGI**
 - Transition towards sustainable operational model with NGIs
 - Move from regional to national operations
 - Remove centralised middleware integration activity
 - Reduce centralised middleware release mechanism
 - Remove separation between t-infrastructure and production infrastructure

- 10000 users: +5%
- 243020 LCPUs (cores): +75%
- 40Pb disk: +60%
- 39Pb tape: +56%
- 15 million jobs/month: +10%
- 317 sites: +18%
- 52 countries: +8%
- 175 VOs: +8%
- 29 active VOs: +32%

Average 91% **availability** (April '10)
 (NB: Raw ability of site services to be accessed)
Reliability figures allow for planned downtime
 Established exclusion and re-training of 'bad' sites



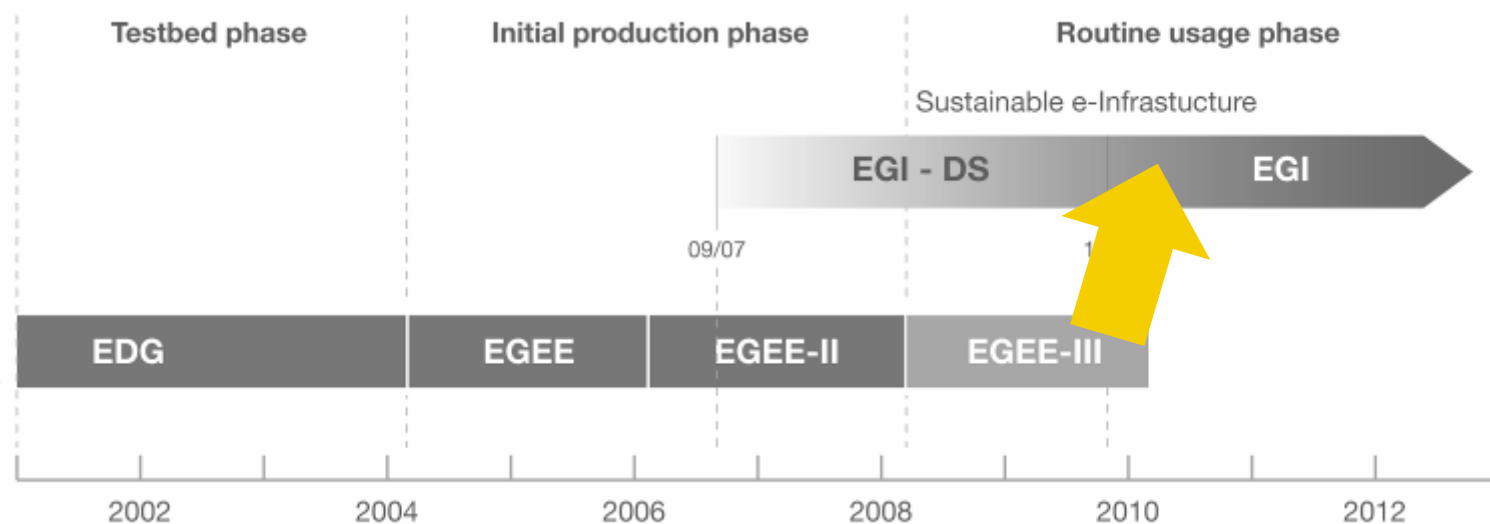
- **Organisational Collaborations**
 - European e-Infrastructure Forum
 - HPC, HTC & Network
 - Infrastructure Policy Group
 - DEISA, PRACE, OSG, TeraGrid, Naregi, WestGrid (Canada)
- **Operational Collaborations**
 - Open Science Grid & NorduGrid driven by WLCG
 - DEISA driven by Fusion workflows
- **Standards Activity in Open Grid Forum**
 - Technical and Managerial Leadership positions
 - GLUE 2.0 approved and now being implemented in production
 - PGI-WG continues discussions and consensus building



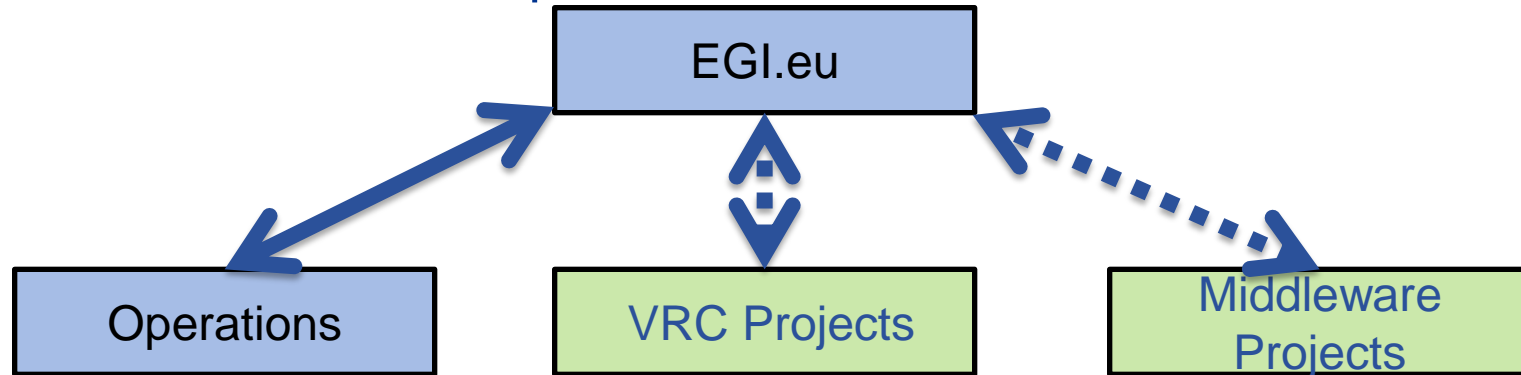
Overall CPU doubled
 • Driven by HEP

- **248 Applications registered in the Application DB**
- **RESPECT tools grew from 11(Y1) →18 (Y2)**
- **Special EGEE issue of the ‘Journal of Grid Computing’**
 - 11 papers selected from 43 submissions using ~100 reviewers
- **213 scientific papers identified by users in EGEE-III**

- **Robust & scalable architecture and implementation**
 - Substantial increase in load and sites during EGEE-III
- **Major middleware achievements**
 - Deployment of CREAM Compute Element into production
 - Improved scalability & reliability over old LCG-CE
 - Implementation & deployment of Argus authorisation server
 - Single point for site or infrastructure wide access policy
 - 181 patches releases as 17 gLite3.1 & 9 gLite 3.2 updates
- **gLite Open Consortium established**
 - Brings together existing JRA1 & SA3 partners
 - Provide for the continued collaborative support of gLite software



- **EGI model defined in Year I, DoW changed for Year II**
- **Transition to the critical structures required for EGI**
 - Start now... find out problems now... not later



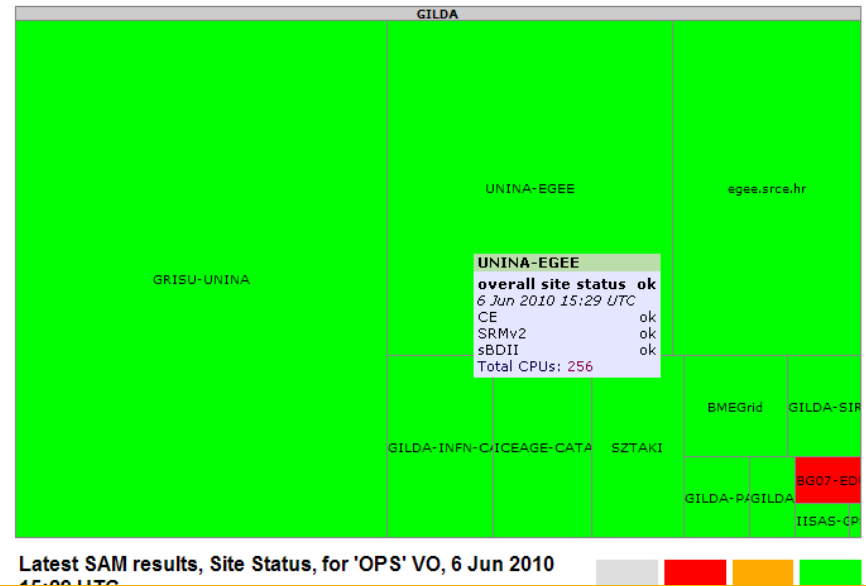
- **Move away from central operations**
 - Single 'central' team & services managed the infrastructure
- **Devolve activity to regional operations**
 - Each ROC manages their own services and sites
 - Central services and team considerably reduced
- **Further devolution from regional to national operations**
 - Critical for large ROCs such as CE & SEE
 - Each NOC manages their own services and sites
- **Provides a sustainable operation model**
 - Small coordinating central core
 - National effort invested locally for national operational issues

- **In EGI all middleware takes place outside infrastructure**
 - Allows infrastructure to orchestrate the components it needs
- **Need to devolve centralised middleware integration**
 - Build up the skills and procedures during EGEE-III Y2
 - Extend the clusters of competence model to product teams
- **Product team are responsible for complete delivery**
 - Tested, certified, documented and ready to deploy and run
 - Can be supported by shared external QA processes (e.g. EMI)
- **gLite product teams established in:**
 - Authorisation, Security, Information Services
 - Data Management, Computing Element
 - Workload Management, Logging & Bookkeeping
 - Virtual Organisation Management

- **Pre-production Service (PPS) disappears in EGI**
 - No centralised middleware testbed
- **Role of PPS**
 - Very important in earlier phases of EGEE, but now less valuable
 - Detecting deployment issues, but not a production environment
- **Replace PPS with staged rollout**
 - Deploy new releases into production on a few representative sites
 - Closely monitor and prepare to rollback if necessary
 - Trigger general release after a trial period
- **Retain PPS model of:**
 - Pilot Services: Deployment of released software to build experience
 - Experimental Services: Explore design of new services
 - Driven more by middleware projects than the infrastructure

- **GILDA independent from production infrastructure**
 - Separate infrastructure which needs to be maintained
 - Model used during training is not that used in production
 - Provides confusion to the end-users
- **Use the same tools to monitor the t-infrastructure**
 - GILDA now visible in standard monitoring tools
- **Issues:**
 - GILDA CA not accredited by EUGridPMA
 - Need to explore how new technologies can make issuing certificates for training easier

GridMap – Visualizing the "State" of the Grid



regions

sitenames

Size by:

CPUs (BDII)

use VOView

Virtual Orga:

OPS

LHCB

Services:

Site

Current Stat

Latest SAM results, Site Status, for 'OPS' VO, 6 Jun 2010 15:29 UTC



- **Establishment of MPI Task Force at EGEE'09**
 - Short term objectives to improve site/user support
 - Cross Activity support (SA1, SA3, NA4, JRA1)
- **Achievements**
 - Establishment of GGUS Support Unit & automatic tests
 - MPI-TF work with sites to fix issues & build knowledge base
 - Fixes and new releases of EGEE MPI related products/packages
 - 90% of > 90 sites available
 - Up from < 50%
- **Future**
 - Need to encourage wider deployment/use at other sites
 - Part of routine operational support

Service Availability Monitoring - MPI
2010/06/10 - 13:52:12

show	stat	description	sum
<input type="checkbox"/>	NA	no status available	0
<input checked="" type="checkbox"/>	OK	normal status	82
<input type="checkbox"/>	INFO	useful information	0
<input checked="" type="checkbox"/>	NOTE	important information	0
<input type="checkbox"/>	WARN	subject may fail soon	0
<input checked="" type="checkbox"/>	ERROR	subject has failed and problem is localized	10
<input type="checkbox"/>	CRIT	subject has failed and problem is fatal	0
<input checked="" type="checkbox"/>	MAINT	subject is under maintenance	1

Tests Displayed

ops

- MPI-st-mpi
- MPI-st-mpi-job
- MPI-st-mpich
- MPI-st-mpich2
- MPI-st-openmpi

show ops critical tests

Sort by: RegionName | ShowSensorTests

Results for a Critical Test are missing since 24 hours

testname	desc	ops	tests
mpi	MPI tests summary	CR	
mpi-ja	MPI job submission	CR	
mpich	MPI test for mpich		
mpich2	MPI test for mpich2		
openmpi	MPI test for openmpi		

No	SiteName	NodeName	Status	ops						
				openmpi	mpi-js	mpi	mpich2	mpich		
CentralEurope										
1	BUDAPEST	grid107.kfki.hu	OK	ok	ok	ok	na	na		
2	RY-JIPNR-SOSNY	ngp1.basnet.by	OK	ok	ok	ok	ok	ok		
3	RY-JIPNR-SOSNY	ngp6.basnet.by	OK	ok	ok	ok	ok	ok		
4	BY-UJIP	ce.basnet.by	OK	ok	ok	ok	ok	na		
GermanySwitzerland										
5	SCAI	cedric.scai.fraunhofer.de	OK	ok	ok	ok	na	na		
Italy										
6	GILDA-INFN-CATANIA	grid010.ct.infn.it	OK	na	ok	ok	na	ok		
7	GILDA-PADOVA	gilda-01.pd.infn.it	OK	ok	ok	ok	na	na		

- **Operations**
 - EGI-InSPIRE (SA1, NA1, some NA2, NA5 & SA2)
- **Middleware**
 - European Middleware Initiative (JRA1 & SA3)
- **User Community**
 - ROSCOE & SAFE (NA4 - SDCs)
 - TAPAS (NA4 – Application Porting)
 - CUE (NA3 & NA2 business outreach)

It became clear in February 2010 that only EGI-InSPIRE and EMI would be retained for negotiation

- **September '09: EGEE'09 in Barcelona**
 - Plans for Year II implementation widely disseminated
 - Refinement of project proposals to continue EGEE activity
- **December '09: EGI_DS Workshop in Stockholm**
 - Refinement of transition plans to submitted proposals
- **February '10: All Activity Meeting in Amsterdam**
 - Report on transition activities in deliverable
 - Issues: VRC proposals and slow ROC → NGI transition
- **March '10: VRC Meeting in Amsterdam**
 - Impact analysis of failed VRC proposals

**No immediate continued community driven development
of user activity**

- **Refinement of Country Reports from Year I**
 - Responses: NGIs: 27/42 (64%) VOs: 5/7 (71%)
- **National Operations teams & network contacts**
 - Mostly identified
- **Some increase foreseen in site resources**
 - Site commitment to VRCs and their VOs remain
 - Significant support for national VOs
 - Only 22 International VOs from a total of 82 named VOs.
- **gLite will be widely use (96%)**
 - ARC (24%) and UNICORE (28%)
- **79% have training contracts, only 42% accredited trainers**

- **Main focus has been the transition to EGI**
 - While keeping the production infrastructure going
- **Production Infrastructure**
 - Moved from a central to a regional operational model
 - Moved from central middleware testbed to staged rollout
 - Shown how t-infrastructure can be integrated into production
- **Software Development**
 - Established self-contained middleware product teams
 - Moved central testing and certification to the product teams
 - Establish gLite Open Consortium to transfer copyright from EGEE-III
- **Further development of user community in doubt**
 - Due to failed ROSCOE, SAFE, TAPAS & CUE proposals