



Enabling Grids for E-science

Network activity transition to EGI-NGI

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All Hands meeting GARR/Rome
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www.eu-egee.org



- **SA2 current state and EGEE-III second year objectives**
- **EGI-NGI and transition work**
- **Future network activity in EGI**
- **Discussion**

SA2 current state and EGEE-III second year objectives

SA2 – EGEE-III

TSA2.1 Running the ENOC

TSA2.2 Support for the ENOC

**Operational procedures
(CNRS)**

WLCG Support (CNRS)

**Operational tools and
maintenance
(RRC-KI, CNRS)**

Monitoring (DFN)

**Grid Network monitoring
(CNRS)**

Troubleshooting (DFN)

**Site networking needs
(RedIRIS)**

**TSA2.4 Management and
general project tasks**

**TSA2.3 Overall Networking
coordination**

**IPv6
(GARR, CNRS)**

**TT exchange standardization
(GRNET)**

**Advanced network services
(GRNET)**

TNLC

- **TSA2.1: Running the ENOC (CNRS)**
 - Publish procedure and code of the ENOC
- **TSA2.2: Support for the ENOC**
 - TSA2.2.1: Operational procedures and follow-up (CNRS)
 - Adapt procedure for EGI
 - TSA2.2.2: LCG Support (CNRS)
 - Mainly the support of the LHCOPN
 - TSA2.2.3: Operational tools and Maintenance (CNRS/RRC-KI)
 - RCC-KI project
 - TSA2.2.4: Network monitoring
 - **TSA2.2.4.1: Troubleshooting (DFN)**
 - *Development and deployment of PerfSONAR-Lite TSS*
 - **TSA2.2.4.2: Site network needs (RedIRIS)**
 - *Deployment of PerfSONAR and analysis*

- **TSA2.3: Overall networking coordination**
 - TSA2.3.1: Relationship with NREN, TNLC (CNRS)
 - Support on Ticket trouble management and monitoring
 - TSA2.3.2: Advanced network services (GRNET)
 - SLA automation
 - Detail during this meeting
 - TSA2.3.3: IPv6 follow-up (GARR/CNRS)
 - Main objectives have been already achieved
 - Thus other activities (JRA1, SA3) have time to handle IPv6 during EGEE-III
 - Next objectives will be presented later
 - TSA2.3.4: Trouble ticket exchange standardization (GRNET)
 - Trouble ticket normalization software delivered
 - Software documentation
 - Dissemination

- Foundation of the relationship between the applications (the users), the middleware and the network
- Troubleshooting
- Identify site and application needs and network performance
 - increase application performance
- Identify bottleneck
- Indentify QOS needs
- “Applications look network as only able to deliver best effort and grids applications are designed to bear it”

- **Lot of works have been already done and should be reused**
 - In DataGrid, EGEE (<https://edms.cern.ch/document/695235/2>)
 - Project DORII (DSA1.1)
 - GEANT (http://monstera.man.poznan.pl/jra1-wiki/images/5/50/GN2-05-265_Deliverable_DJ1.2.3-v2.0.doc)
 - GGF (<http://www.gridforum.org/documents/GWD-R/GFD-R.023.pdf>)
- **Investigate and try to design a solution by the end of EGEE-III according strong constraints of EGEE (300 sites, etc...) which will be implemented during EGI-NGI**
 - **A working group: Application (Users), Sites, Operation Grid, NRENs, Middleware, SA2**

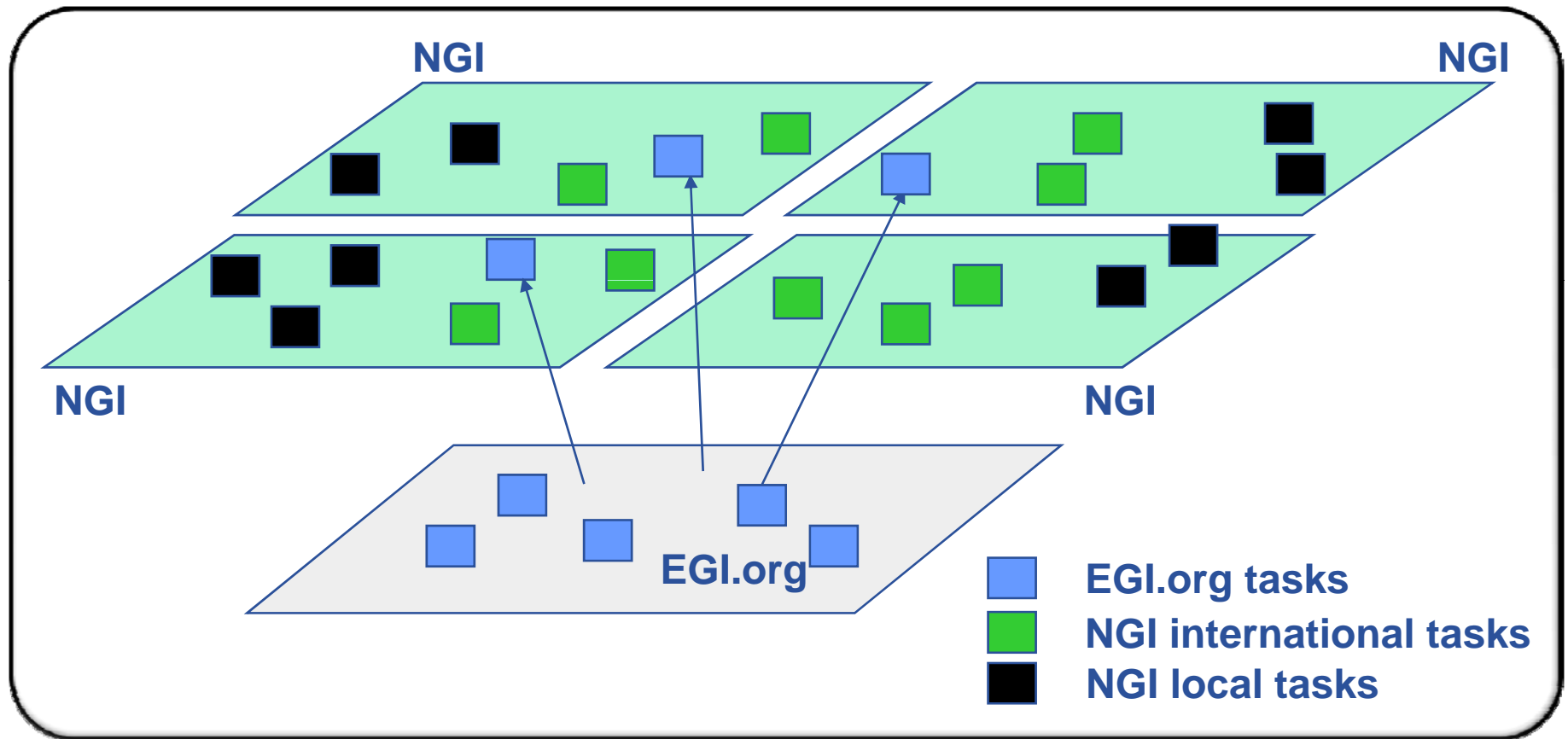
- **SA2. Encourage the deployment of a set of high quality monitoring tools in order to achieve effective troubleshooting of network problems.**
- **Response: In order to facilitate and speed up network problem solving for EGEE clients, SA2 will develop during EGEE-III network troubleshooting tools. The software will be based on a central web-server where authorized Grid clients will be able to request measurements between sites using tools such as traceroute, ping, bandwidth measurements, etc. The implementation is based on a platform independent plugin architecture in connection with a common core perfSONAR interface. Measurement requests and results are made available via the central web-server with only a light-weight client set up at each Grid site.**
- **Follow-up: where is this documented?**

- **SA2. Adopt a pro-active attitude in reconciling the requirements of user communities with the level of service supported in the infrastructure. SLAs may be helpful in this respect.**
- **Response: SA2 will advertise to the different user communities what the network can offer to their application thanks to web pages and by taking part in related conferences. SA2 will also improve the SLA automation through AMPS (Advance Multi-Domain Provisioning System). SA2 will examine the possibility of introducing new advanced services produced by the EU research community to the EGEE users. Those new services are experimental thus SA2 will see if it is realistic to test them according to SA2's means and constraints due to the services deployment.**
- *Follow-up: where is this documented?*

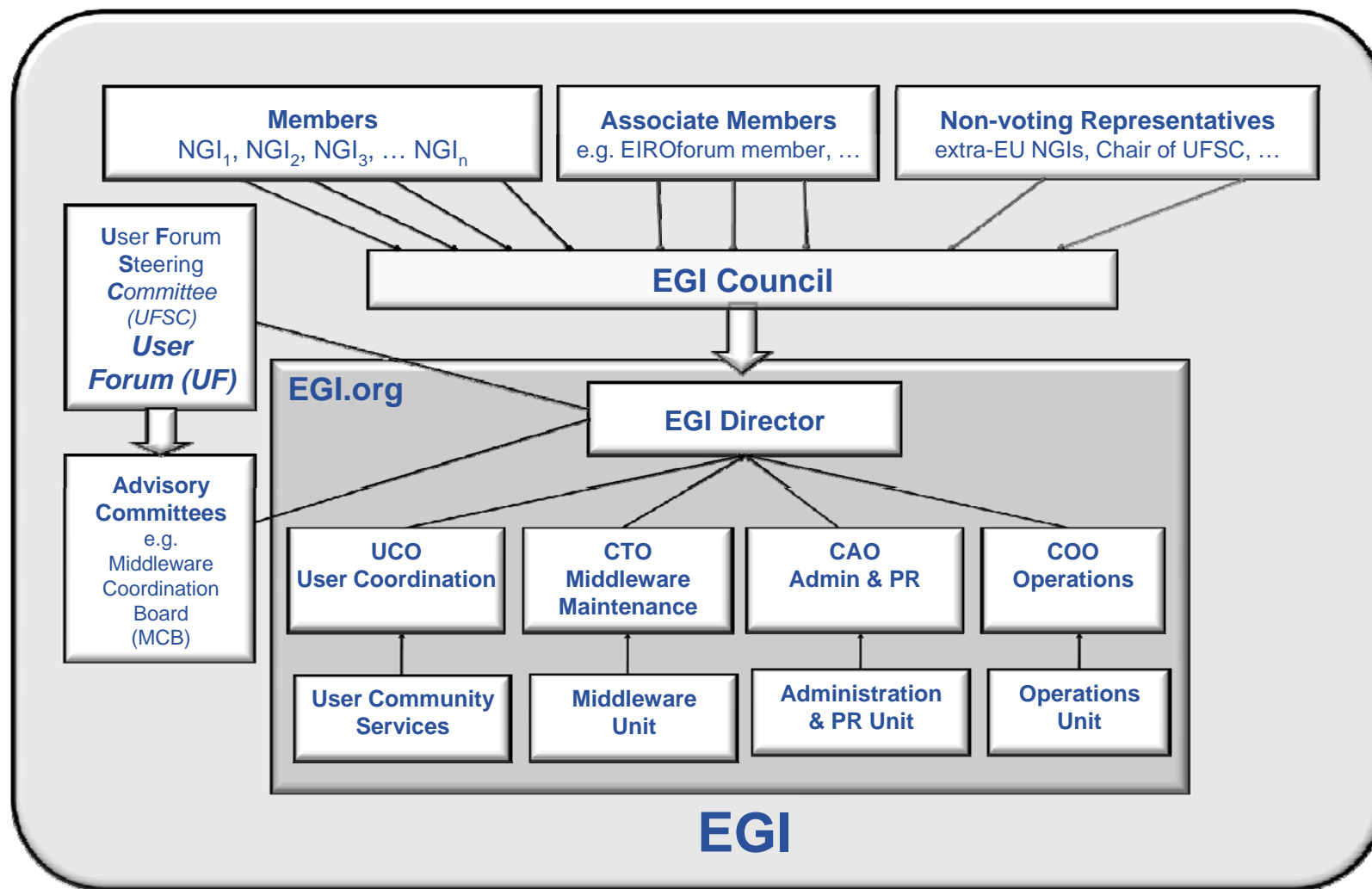
EGI-NGI and transition work

- **EGI = EGI.org + NGIs**
 - EGI.org as a coordinating body
 - NGIs basic sustainable actors
 - National funding
 - Own agenda and tasks
 - Synergies when working together at the EU level – *NGI/ international tasks*
- **No middleware development within EGI**
 - However, middleware maintenance included

With the courtesy of EGI_DS team



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With the courtesy of EGI_DS team

- **National and Institutional funding for research infrastructures**
- **EC funding**
 - International coordination
 - International activities
 - Innovation
 - Start up phase
- **National co-funding of all these activities**

With the courtesy of EGI_DS team

Funding view of (medium) NGI



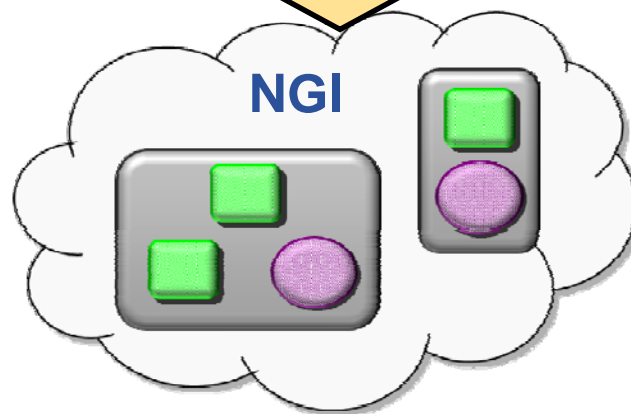
EC Funding

600 k€

600 k€



National
Co-Funding



“Average medium
sized NGI”

Membership
Fees **30 k€**

EGI.org

With the courtesy of EGI_DS team

- **EGEE and similar EU projects**
- **EGI.org**
 - Location: Amsterdam
 - Key personnel identification
- **NGIs maturity level**
- **May be no funding during 3 or 6 months after the end of EGEE-III and before the beginning of EGI**

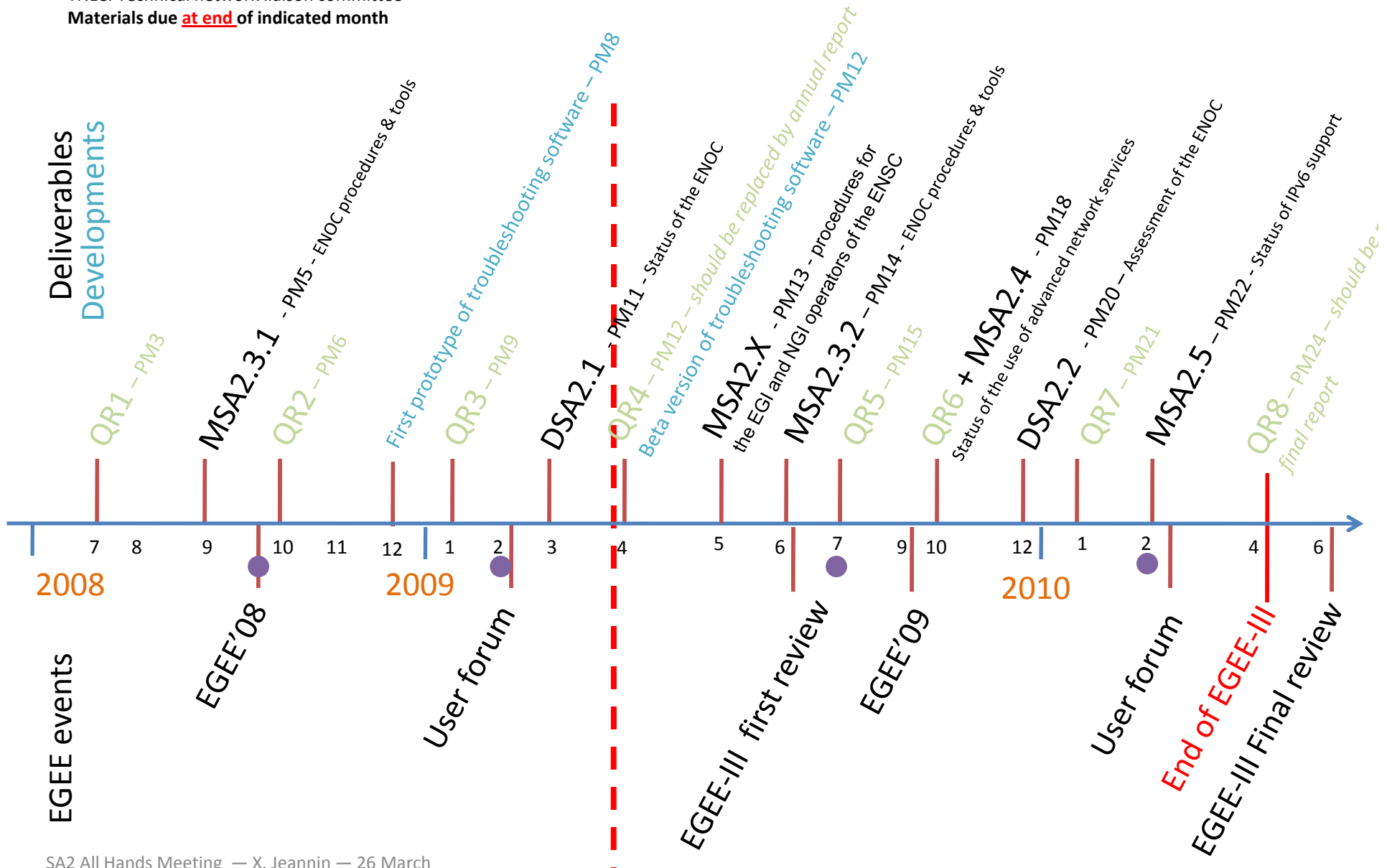
- **All EGEE software codes should be publicly published and documented**
 - CVS, Sourceforge
 - IPv6 Care, Code Checker
 - Ticket normalization software
 - PerfSONAR-Lite TSS
 - ENOC: Softwares and procedures
- **Maybe a SA2 repositorie?**

- **Additional Activity Milestones for Year II**
 - PM 13: SA2: Establish the operational procedures for the EGI and NGI operators of the ENSC and its integration into existing EGEE and future EGI infrastructures.
 - PM 17: SA2: Document the availability of all source code for networking operations and support through pointers to the relevant source code repositories or package. Document the software in order that it can be built by groups other than their development groups. Review the operational experience from operating the ENSC. [Review this milestone with MSA2.3.2 with a view for merging.]

SA2 deliverables' roadmap and main EGEE events

QR: Quarterly report
 TNLC: Technical network liaison committee
 Materials due at end of indicated month

+ 4 TNLC ●



Future network activity in EGI

- **EGI tasks of network activity**
 - **The coordination of the network** support will provide an interface between European Grid Infrastructure and network providers.
 - **Network service level management**
 - A continual identification, monitoring and review of the levels of IT services specified in the network SLAs.
 - **EGI Network Support Center (ENSC) running (old ENOC)**
 - **Network services deployment** (Collaboration with NREN)
 - **Monitoring deployment**
 - Deployment of **advanced network services**

- **Not a network activity like in EGEE**
 - A EGI DS poll identified network as less crucial activity
 - Network is seen only as best effort: no useful services identified by users (applications)
- **Future network activity in EGI**
 - **The coordination of the network** 0,5 FTE sure EGI level O-E-12
 - **Network service level management (monitoring, SLA)** O-E-3 O-N-3
 - 0,5 FTE not sure at unknown level
 - **EGI Network Support Center (ENSC) running (old ENOC)** O-E-6/7
O-N6/7
 - 0,5 FTE nearly sure at NGI level
 - International task, one NGI provide this service on behalf of all of them
 - Rotate the NGI ENSC amongst interested NGIs (SA2 Partner)

- **From lesson learnt during EGEE,**
 - ENOC fully implemented since end of EGEE-II
 - ENOC insufficiently used
 - Troubleshooting activity should be lowered at minimum and kept especially for big issues
 - Turn ENOC into a EGI Network Support Center

- **Role of the ENOC in the EGI/NGI:**
 - Run, maintain and implement network operational tools of the ENSC for the service level management.
 - Deploy new tools for network Grid management.
 - Computing the impact of trouble on grid projects (through network trouble tickets).
 - Ensure the end-to-end connectivity is achieved; troubleshoot problem should be kept to coordinate big or exceptional issues.
 - Maintain a link between network operations and grid operations.
- **The procedure and the software will be published according to EGI model**
- **Rotate international task around current SA2 partners**

Task	Task Title	change	EGI.org	SSC	NGI
TSA2.1	ENOC running	should include the daily network monitoring of the Grid project			X
TSA2.2	Support for the ENOC				
TSA2.2.1	Operational procedures and follow-up	should be finished by the end of EGEE-III			
TSA2.2.2	LCG support	Support to Grid projects should be included into management	X		
TSA2.2.3	Operational tools maintenance and development	tools need to be maintained			NGI host ENOC
TSA2.2.4	Network monitoring tools	setting-up the monitoring solution is not handled now and should be done in collaboration NRENs?	X		X
TSA2.3	Overall Networking Coordination				
TSA2.3.1	Relations with NRENs: TNLC, etc.	Relation with NRENs should be maintained and specific working group should be set up when necessary.	X		
TSA2.3.2	Advanced network services	Not handled?			
TSA2.3.3	IPv6 follow-up	deployment, moved to operation activity			
TSA2.3.4	Trouble Ticket exchange standardisation	should be finished by the end of EGEE-III			
TSA2.A	Management and general project tasks	Should be renamed in network coordination	X		

- **We should focus to on EGEE-III objective, no extension**
 - Answer to EGEE reviewer recommendation
- **SA2 migration toward EGI**
 - Publish and document SA2 software
 - New milestone
 - ENOC → ENSC
- **EGI**
 - May be no funding during 3 or 6 months after the end of EGEE-III and before the beginning of EGI
 - Network activity will be lowered considering EGI manpower
 - Rotate international task (ENOC/ENSC) around current SA2 partners
 - Maintain the collaboration with the NRENs, how?

Discussion