

# Polish NGI: PL-Grid

[www.plgrid.pl/en](http://www.plgrid.pl/en)

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# PL-Grid Project

- Establish and manage Polish e-Infrastructure for supporting Computational Science in European Research Space, 2009-2011, 20M€
- Partners
  - 5 main computer centres of Poland, coordination by CYFRONET
- PL-Grid Operations Centre
  - 6 FTE for operations
  - 4 FTE for tool-related development
- Supported middlewares
  - gLite
  - UNICORE
- Polish NGI hw resources
  - 8 grid sites, ~7k cores, ~300TB



# Transition

- Plans to depart from existing ROC and become independent
  - \_ PL-Grid is the first NGI which has passed through NGI creation and registration process, finished on 31.03.2010
  - \_ Open issues
    - Infrastructure monitoring system (nagios box) need to be validated
    - finalize setup of top bdii pool (machines ready, TODO: DNS)
- Issues with the NGI creation procedure
  - \_ Current version depends on EGEE-like bodies – these should be replaced
  - \_ Should be completed with material explaining what is expected from NGI at each step
- Which activities will be run autonomously, which ones will rely on the collaboration with other NGIs?
  - \_ All NGI tasks will be run by Polish NGI



# Becoming part of EGI: Governance

- Governance

- Is the NGI committing itself to participate to the **NGI Operations Managers meeting** (1 meeting per month)?

- **Yes, timing seems reasonable**

- Is the NGI operations staff committing to participate fortnightly **operations meetings** for discussion of topics related to the middleware (releases, urgent patches, priorities...)

- **Yes**

- Is the NGI interested in contributing to the **Operations Tool Advisory Group** – OTAG – to provide feedback and requirements about operational tools to JRA1?

- **Yes**

# Becoming part of EGI: Infrastructure

- Is the NGI expected to increase its infrastructure (number of sites, resources)?
  - Yes, public tenders are being finalized these days, new resources are coming and will start operate within 1-2 months. Expect to have ~10k cores & ~2 PB more
- Is the NGI planning to integrate sites running non-gLite middleware? Open issues?
  - Yes, PL-Grid supports UNICORE. Looking for ways to provide unified way of operations for them (service registration, monitoring, support, accounting)
- Is the NGI planning to integrate itself with local Grids? Issues?
  - No local grid is foreseen so far, all works and requirements specific to PL-Grid are being **transparently integrated** on EGI infrastructure

# Becoming part of EGI: Procedures and policies

- EGEE procedures/policies
  - \_ Is the NGI familiar with existing procedures/policies?
    - **Yes. We run ROD and regional helpdesk in accordance with latest version of EGEE procedures**
  - \_ Does the NGI think procedures can be further streamlined?
    - **OLA between NGI and site - the EGEE SLAs are no longer valid**
    - **OLA between EGI and NGI**
  - \_ If the NGIs deploys different mw stacks (gLite, ARC, other...): what EGEE procedures need to be adapted?
    - **Middleware rollout, operations support – monitoring, fixing problems etc.**
- Does the NGI deploy own procedures that are not integrated with EGEE ones?
  - \_ Resource Allocation based on “computational grants” - introduced transparently to EGEE procedures
- Are the (EGEE) procedures well documented? Feel free to provide suggestions for improvement
  - \_ EGEE procedures are OK, but things are changing right now, need to follow this

# Becoming part of EGI: Support

- Does your NGI have enough manpower
  - for support to grid site managers
    - Yes, funded mainly by PL-Grid as 1<sup>st</sup> line support shifts
  - for grid oversight (monitoring shifts)
    - Yes, funding from EGI.InSPIRE (O-N-5).

# PL-Grid Operations Support

## How support activities are internally organized?

- ROD team composed of 2 people – weekly shifts
  - \_ monitoring ops and **vo.plgrid.pl** – real-life VO is very credible for monitoring
  - \_ Tools: dashboard for ops VO, SAM for vo.plgrid.pl
  - \_ **missing vo.plgrid.pl alarms in the operational dashboard**
- 1st line support – 3 people – daily shifts
  - \_ acts in first 24h, monitoring ops and vo.plgrid.pl
  - \_ support for site admins
  - \_ updating knowledge base – on weblog
  - \_ Tools: jabber server for all operational staff, accounts automatically created
- “TPM” - helpdesk supervisor – 2 people – weekly shifts
  - \_ 24h for TPM/expert action
  - \_ operational tickets updates every 3 days
  - \_ Tools: specific views in helpdesk
- Specific user domain experts provided by PL-Grid





# Becoming part of EGI: Tools

- Which “regional” tools is the NGI interested in deploying directly rather than using a central instance/view:
  - O-N-2 national accounting infrastructure (repositories and portal)
  - O-N-3 NGI monitoring infrastructure – seems like a requirement
  - O-N-4 operations portal – **if possible to have alarms from others VO then we are happy to use central instance**
  - O-N-7 helpdesk: PL-Grid Helpdesk system already set up and integrated with GGUS via Web Services
- Which own tools (if any) does the NGI deploy?
  - Bazaar for Resource Allocation
  - PL-Grid Portal for user account management and other user tools
- Is the NGI planning to run Scientific Gateways for VOs?
  - Chemistry Portal (chempo)
  - Portlets for use in PL-Grid Portal

# Availability and Operations Level Agreements

- What overall level of functional availability/reliability is the NGI ready to commit?
  - availability 90%, reliability 95%
- Will the NGI be able to comply to EGI Operations Level Agreements defining for example
  - Minimum availability of core middleware services (top-BDII, WMS/LB, LFC, VOMS, etc.)
  - Minimum availability of core operational services such as: nagios-based monitoring, helpdesk
  - Minimum response time of operations staff to trouble tickets
  - Minimum response time of the NGI CSIRT in case of vulnerability threats?

**PL-Grid considers all above metrics acceptable.**

# Training

- Is the NGI ready to provide training to its own site managers and operations staff?
  - If yes: Is the NGI willing to share training material/training events with other NGIs
  - If no: would you be interested in attending events organized by other NGIs?
  - PL-Grid training workpackage aimed mainly at end users
  - Trainings for operators usually informal, hands-on with actual tools
  - Advanced trainings for experts could be interesting

# [Any other topic]

- [Please feel free to add slides about other topics that you would like to discuss]

# Monitoring: organizational concerns

- NGI needs official procedures for monitoring system maintenance, responsibility, service requirements
  - \_ validation procedure should be refined
- We need to have an outlook on current EGEE Nagios goals, where the work is done, and what will happen in the near and far future.
  - \_ Need a procedure on how to do site certification with Nagios? Currently using SAMAP.
  - \_ Can we use a regional VO to run monitoring jobs? e.g. vo.plgrid.pl
- Who decides on contents of critical tests profile
  - \_ ROC\_SAM\_Critical profile lacks some core service checks (WMS, VOMS)
- Operators and technical staff need:
  - \_ a guide about internal workings of probes/metrics, some metrics need interpretation of their results (to determine severity), tutorials, workshops

# Regional Helpdesk tool: EGI supported solution

- PL-Grid Helpdesk system is integrated with GGUS via web services
- User accounts and support queues synchronised with GOCDB
  - \_ Site Admins, 1st line support, ROD accounts automatically created
  - \_ Site's support queue created each time new site added in GOCDB
- Role-specific views for Helpdesk Supervisor (national TPM), ROD and 1st line support
  - \_ Allows for control on time constraints on tickets processing
  - \_ Tickets “does not age” on weekends and bank holidays of Poland
- Web and e-mail interface for users, X.509 authentication
- Proposed improvements to GGUS web service interface
  - \_ ability for NGI to reassign ticket from the level of NGI helpdesk (reject it at NGI level)
  - \_ import all ticket history while assigning to NGI helpdesk after some processing in GGUS
- PL-Grid RT sources available on request
  
- Is “GGUS regional view” a solution proposed to NGIs willing to have own tool for regional support?
- How could we foster cooperation on RT integration among NGIs?

# Usage monitoring (aka. accounting)

- PL-Grid is using EGI APEL up to now
- Own solution satisfying specific PL-Grid requirements being worked on
  - \_ **PL-Grid computational grant** usage view, grants for user groups (VOs)
  - \_ Batch system monitoring (queued jobs, overall load, view on jobs efficiency)
  - \_ More fine-grain **time scale of data analysis** than EGEE tools
  - \_ Publish data to from UNICORE, cloud-like systems based on VMs
  - \_ Prototyping: easier to start with own solution
- **Currently implemented**
  - \_ data gathering from sites
  - \_ JMS interface for reporting data from other infrastructures, based on OGF
  - \_ user-level usage presentation
  - \_ Batch system monitoring - cluster load, queued jobs, job efficiency views
- **Plans**
  - \_ integration with EGI accounting system
  - \_ ability to publish data via JMS (ActiveMQ)
  - \_ publish aggregated data for entire NGI
  - \_ automatised, dynamic node benchmarking system for clusters

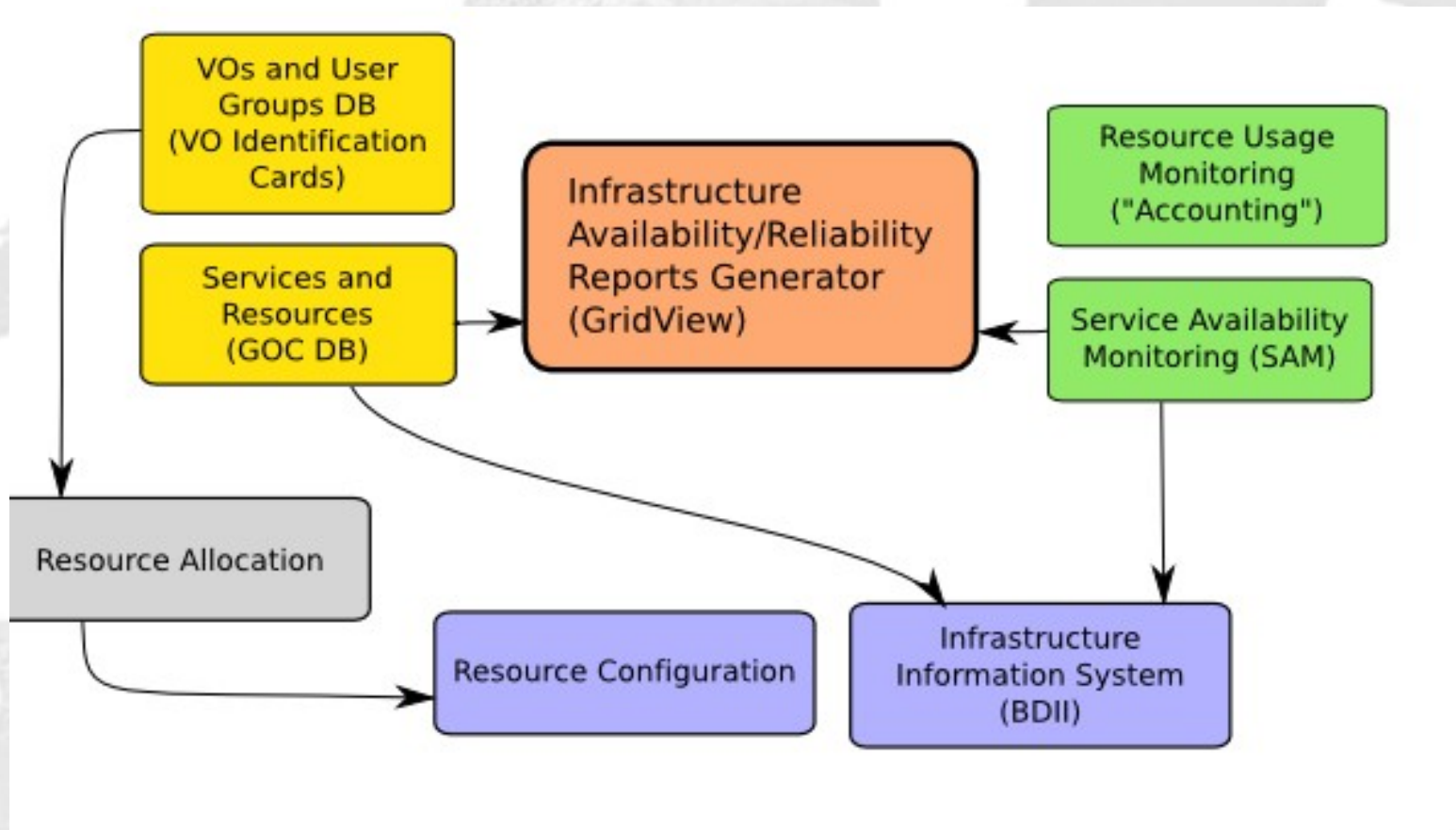


# Your best knowhow

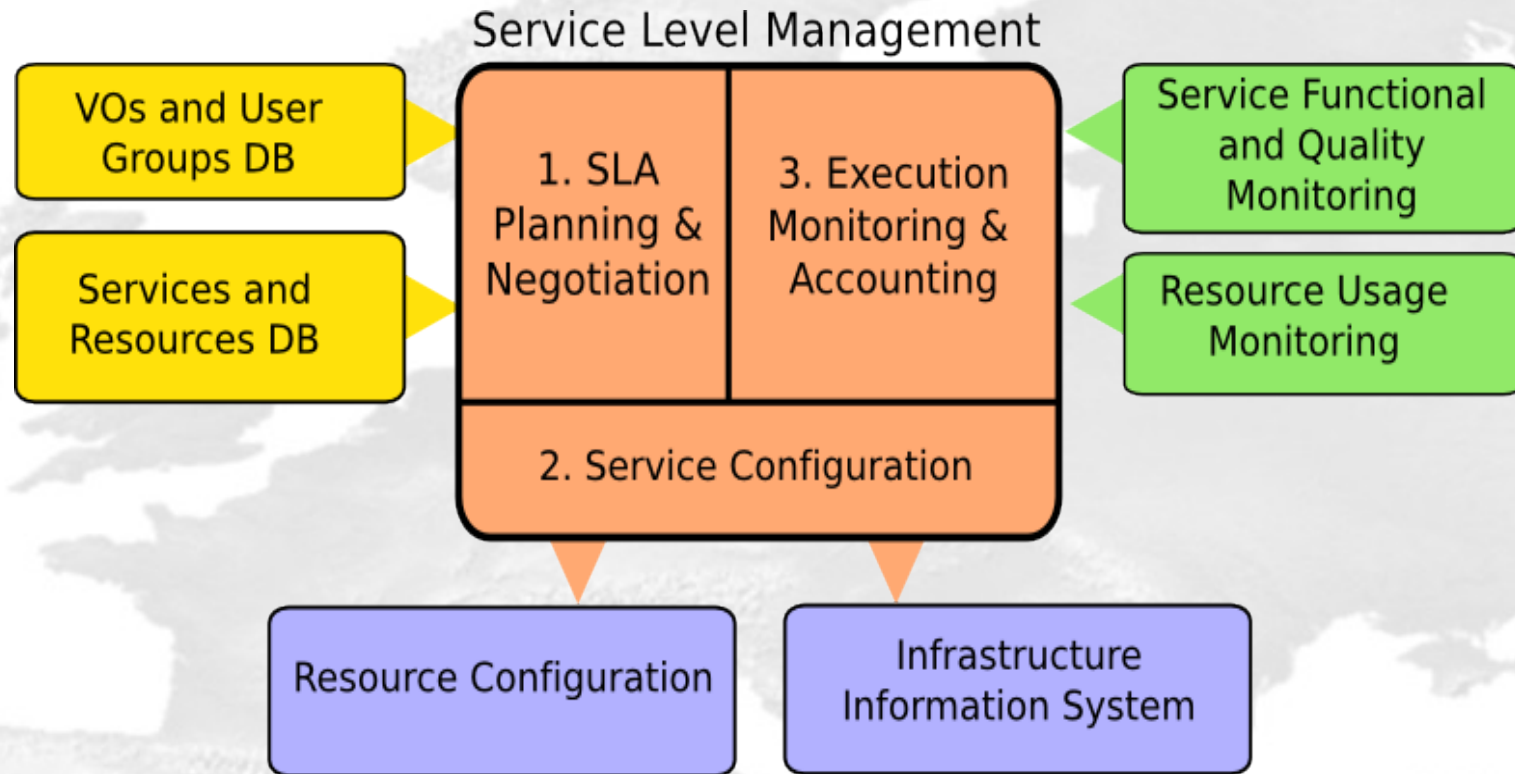
- Is there any specific Grid operations field where your NGI feels advanced/expert, and about which your NGI is willing to provide guidance to other NGIs?
  - Resource Allocation
  - Request Tracker web service integration with GGUS
  - Operations support model implementation in the NGI



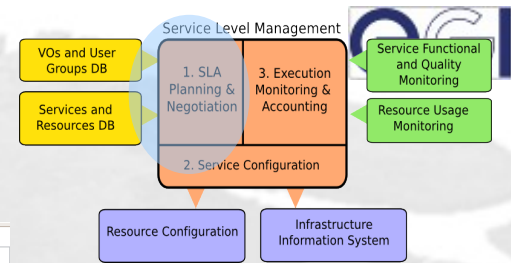
# EGI Starting Point: Availability-driven Operational Model



# Resource Allocation-oriented Operational Model



# SLA Planning and Negotiation: Tool



**grid resource BAZAAR**

Your roles: RAG

Your VOs and RCs

- VO List
  - EGEE
  - alice
  - argo
- SouthEasternEurope
- NorthernEurope
- astron
- astrop
- ncf
- nordgrid.org
- pvier
- France
- Italy
- SouthWesternEurope
- UKI
- GermanySwitzerland
- CentralEurope
- RC List
  - CERN
  - Russia
  - AsiaPacific
  - France
  - UKI
  - GermanySwitzerland
  - Italy
  - CentralEurope
  - NorthernEurope
  - SouthEasternEurope
  - SouthWesternEurope
  - EGEE

Welcome | alice | argo

New call | Date scope: Start: 1/1/1970 | End: 31/8/2009 | Set

**Actions & logs**

Date	Topic	SLA	See	Det.
2009/10/2	Tomasz Stepieniec (CYFRONET) proposed a new SLA	15		
2009/9/22	Tomasz Kukulka (jakis site) proposed a new SLA	18		
2009/8/2	Tomasz Stepieniec (CYFRONET) accepted SLA change offer	10		

**Log**

2009/10/1 Tadeusz Szymocha (IFJ-PAN-BG) proposed a new SLA

**Chart section - CPU & STORAGE**

**Number of cores/CPU**

**Storage space [GB]**

**List of calls**

Call name	VO Name	CPU	Stor.	Comp. Star	Comp. End	Act. Start	Act. End
alice call	alice	60	60	8/9/2009	9/30/2009	8/1/2009	9/1/2009

**List of SLAs**

ID	Site Name	CPU	CPU BE	Stor.	Stor. BE	Comp. Start	Comp. End
359	BMEGrid	0	24	0	2	8/9/2009	9/30/2009
367	BUDAPEST	0	150	0	52960	6/1/2009	4/30/2010

all available SLAs are shown

**Call 426: 'alice call'**

**Basic information:**

Call opening period: 2009-08-01 - 2009-09-01  
 Computation period: 2009-08-09 - 9999-01-01  
 Call status: PUBLISHED  
 Responsible person: Malgorzata Tomanek  
 VO Name: alice  
 Is active: yes  
 Is seed resources: no  
 Description: -

**Resources:**

Estimated:	cores/CPU[no]	stor. space [GB]
	60	60

**Services:**

**SLA: 367 for call: 'alice call'**

**Basic information:**

Related call: 426, alice call  
 VO Name: alice  
 Computation Period: 2009-06-01 - 2010-04-30  
 States: Main: AGREED, Activity: ACTIVE, Configuration: PREPARED  
 Responsible person: Malgorzata Tomanek  
 Description: Agreement registered according to BDII status from 1.06.2009

**Resources:**

Estimated:	cores/CPU[no]	stor. space [GB]
	1	1
Best effort:	cores/CPU[no]	stor. space [GB]
	150	52960

**Edit: 'ALICE CALL' (ID: 426)**

Here you can change your call's properties and requirements. Bold fields are mandatory

**Basic information:**

Call ID: 426  
 Call name: alice call  
 Seed resource:   
 Responsible Person: Malgorzata Tomanek

Number of CPUs: 60  
 Storage [GB]: 60 GB  
 Comp. start date: 9/8/2009  
 Comp. end date: 1/1/9999  
 Unspec. end date

Call open from: 1/8/2009  
 Call open to: 1/1/9999  
 Unspec. end date

Description:

**Services:**

VOMS:   
 LFC:   
 Top level BDII:

**Update** **Cancel**

**SLA edition: SLA no. 367**

**Best effort:**

Number of CPUs: 150  
 Storage: 52960 GB  
 Comp. start date: 18/1/2010  
 Comp. end date: 30/4/2010  
 Unspecified end date

Description: Agreement registered according to BDII status from 1.06.2009

**Services:**

VOMS: 33  
 LFC: 44

Top BDII Level: adres do serw   
 adres do serw   
  
 RB/WMS: rb 1   
 rb2

**Notification:**

PAG  Virtual Organization  
 ROC  Resource Center

**Update** **Cancel**

- Resource Allocation
- Dashboard for VOs and Resource Providers
- Traceable SLA negotiation process
- V1.2 deployed in CIC and for seed resources operation
- V2.0 with NGI-role support in alfa testing

<http://grid.cyfronet.pl/bazaar>

