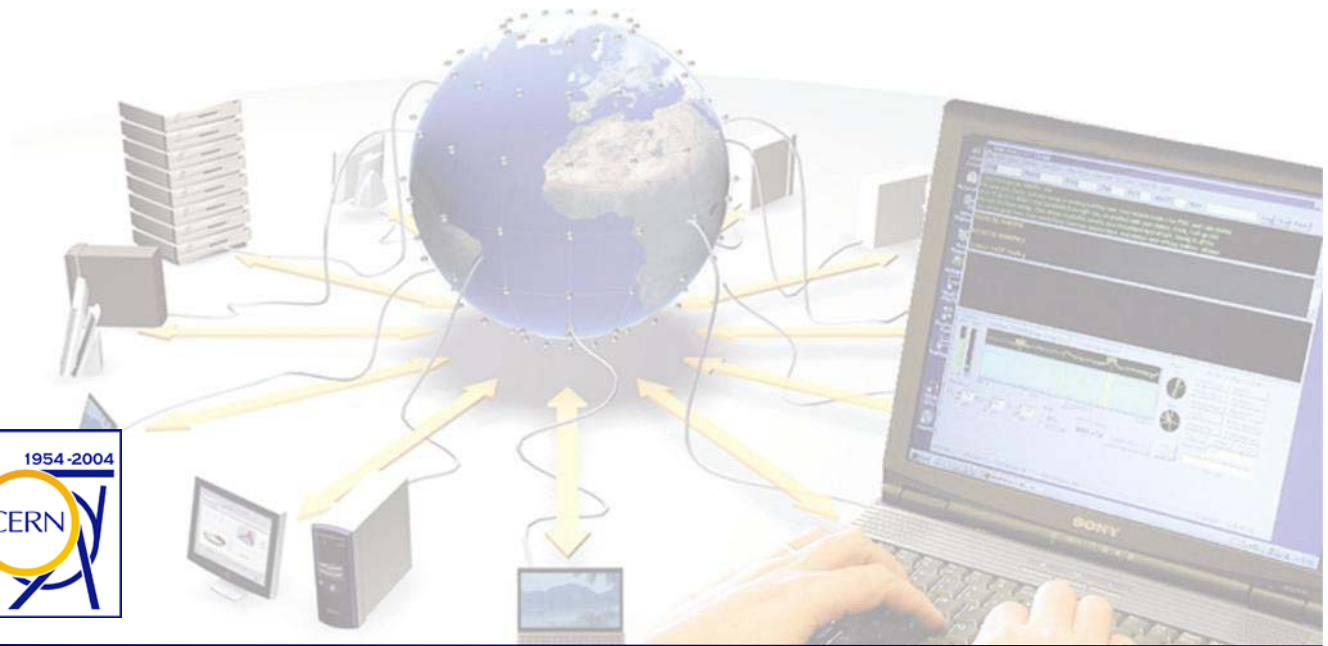




“LCG and OSG Operations Workshops and Transition to SL3”

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- LCG Workshop on operations
 - Nov. 2-4, 2004
 - CERN, Geneva
 - [agenda](#)
- iVDGL/OSG Grid Operations Workshop
 - Dec 1-3, 2004
 - Indiana University, Indianapolis,
 - [agenda](#)
- Transition to SLC3



- Motivation
 - LCG -> (LCG/EGEE) transition requires changes
 - roles and interoperation between:
 - OMC, CICs, ROCs, RCs
 - Lessons learned during DCs need to be implemented
 - Many different activities need to be coordinated
- 02 - 04 November at CERN
 - >80 participants including from GRID3 and NorduGrid
 - Agenda: [Here](#)
 - 1.5 days of plenary sessions
 - describe status and stimulate discussion
 - 1 day parallel/joint working groups
 - very concrete work,
 - results into creation of task lists with names attached to items
 - 0.5 days of reports of the WG



- Operational Security
 - Incident Handling Process
 - Variance in site support availability
 - Reporting Channels
 - Service Challenges
- Operational Support
 - Workflow for operations & security actions
 - What tools are needed to implement the model
 - “24X7” global support
 - sharing operational load (CIC-on-duty)
 - Communication
 - Problem Tracking System
 - Defining Responsibilities
 - problem follow-up
 - deployment of new releases
 - Interface to User Support





- Fabric Management
 - System installations (tools, interfacing tools with each other)
 - Batch/scheduling Systems (openPBS/Torque, MAUI, fair-share)
 - Fabric monitoring
 - Software installation
 - Representation of site status (load) in the Information System
- Software Management
 - Operations on and for VOs (**add/remove/service discovery**)
 - Fault tolerance, operations on running services (stop, upgrades, re-starts)
 - Link to developers
 - What level of intrusion can be tolerated on the WNs (farm nodes)
 - **application (experiment) software installation**
 - Removing/(re-adding) sites with (fixed) troubles
 - Multiple views in the information system (maintenance)



- User Support
 - Defining what “User Support” means
 - Models for implementing a working user support
 - need for a Central User Support Coordination Team (CUSC)
 - mandate and tasks
 - distributed/central (CUSC/RUSC)





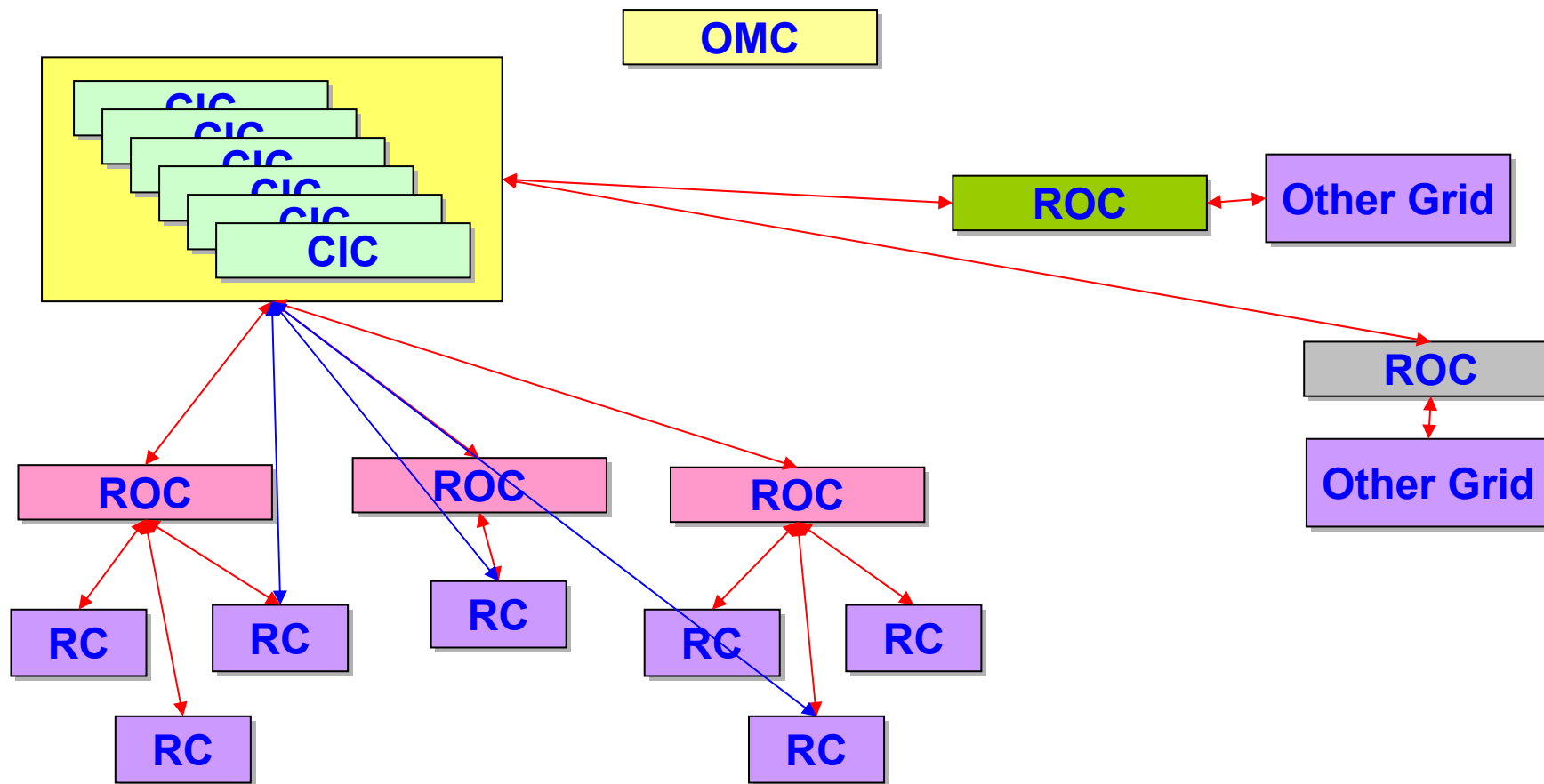
- **Very productive workshop**
- Partners (sites) assumed responsibility for tasks
- Discussions very much focused on **practical** matters
- Some problems ask for architectural changes
 - gLite has to address these
- It became clear that not all sites are created equal
 - in the past the development was driven by large, complex sites
 - smaller sites with less experience need different deployment model
- Removing troubled sites is inherently problematic
 - removing storage can have grid wide impact
- Key issues in all aspects is to define split between:
 - Local,Regional and Central control and responsibility
- All WGs discussed communication





- **Operations Center role rotates through the CICs**
 - **CIC on duty for one week**
 - **Procedures and tasks are currently defined**
 - **first operations manual is available (living document)**
 - tools, frequency of checks, escalation procedures, hand over procedures
 - **CIC on duty [website](#):**
 - **Problems are tracked with a tracking tool**
 - **now central in Savannah**
 - **migration to GGUS (remedy) with link to ROCs PT tools**
 - **problems can be added at GGUS or ROC level**
 - **CICs monitor service, spot and track problems**
 - **interact with sites on short term problems (service restart etc,)**
 - **interact with ROCs on longer, non trivial problems**
 - **all communication with a site is visible for the ROC**
 - **build FAQs**
 - **ROCs support**
 - **installation, first certification**
 - **resolving complex problems**

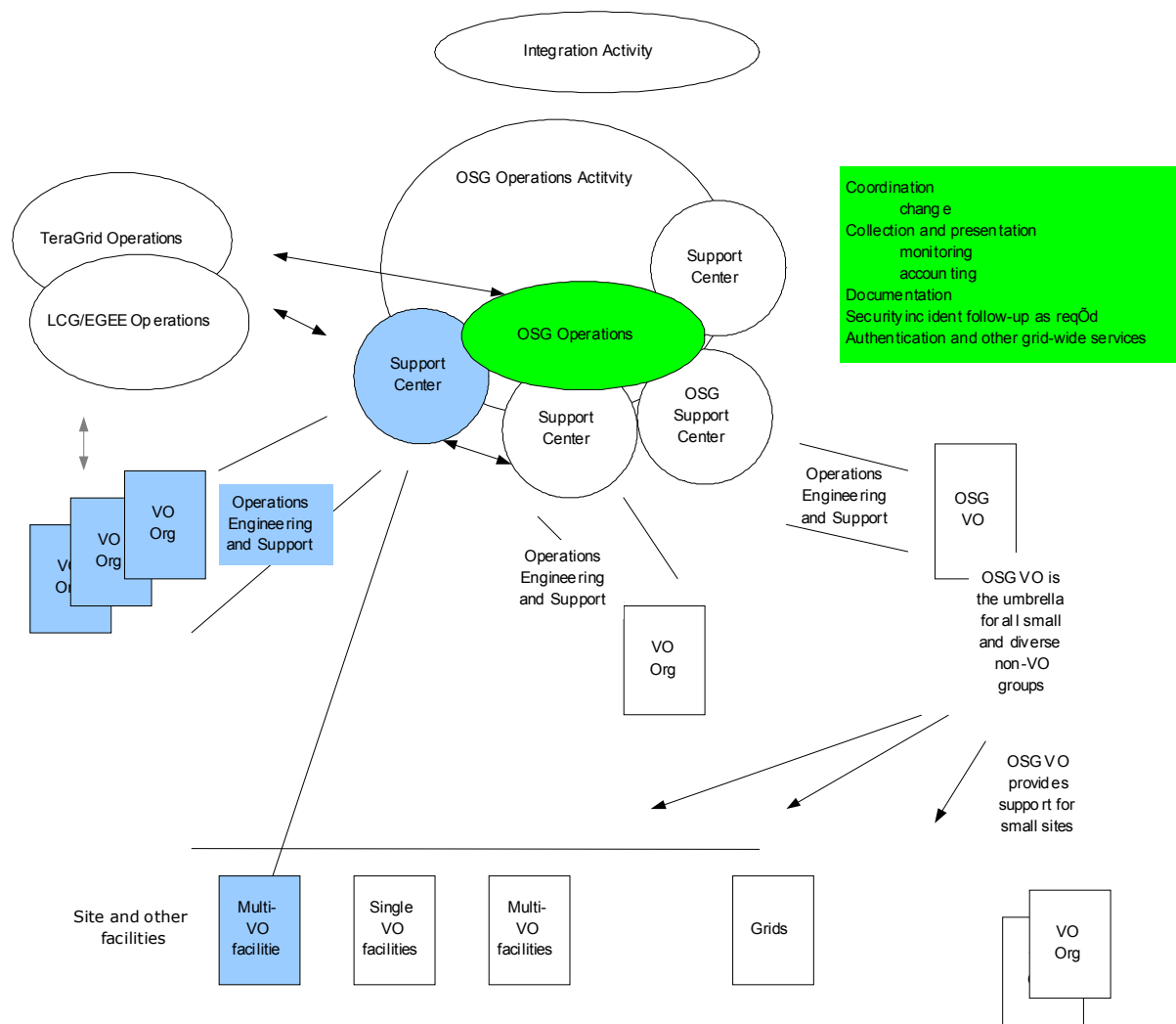




- iVDGL/OSG Grid Operations Workshop
 - Dec 1-3, 2004
 - Indiana University, Indianapolis,
 - [agenda](#)
- Motivation
 - Collect operational experience from various grids
 - GRID3, TeraGrid, LCG
 - Work on an operations model for OSG
- Structure
 - Some presentations
 - Breakout sessions
 - one session on interoperation
 - Joint sessions

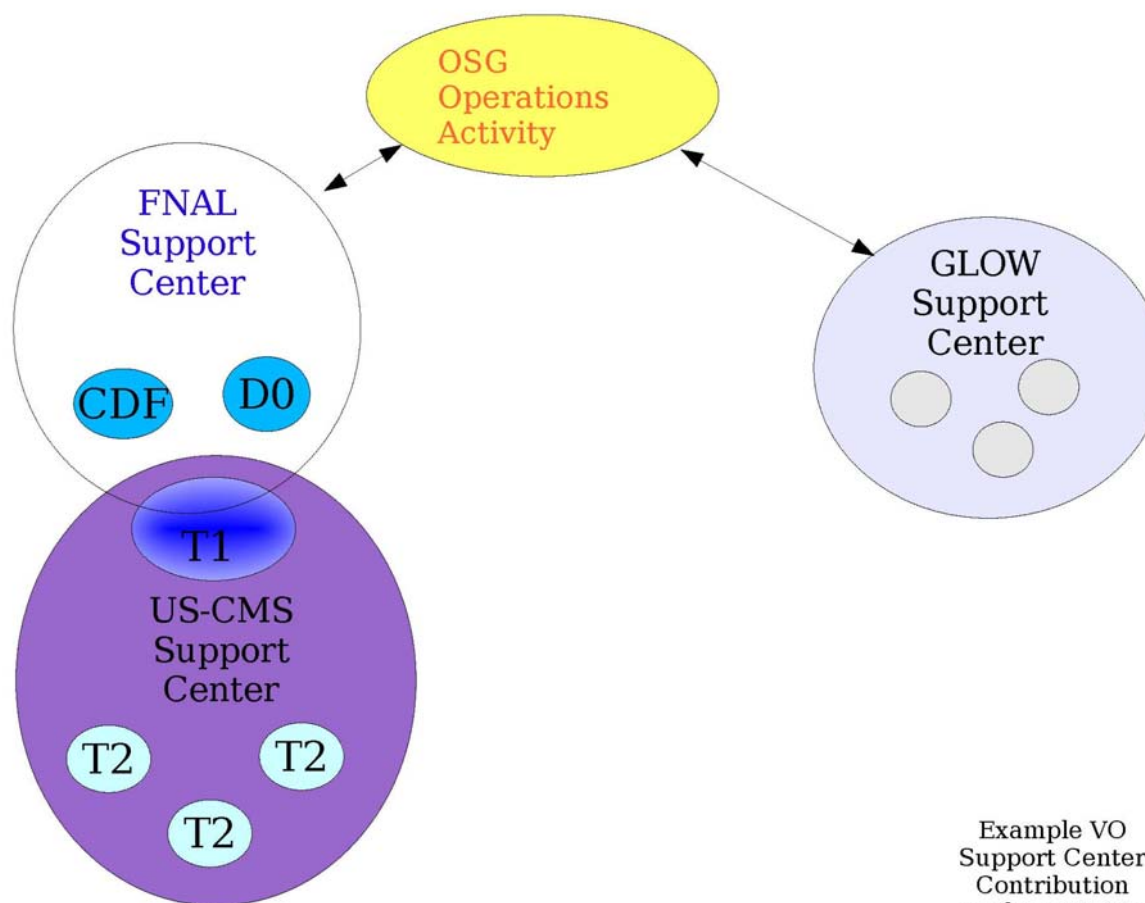
- Support Structure
 - hierarchy (needed?, wanted?)
 - communication
 - support center(s)
 - roles, expectations
- Support Services
 - define services and interfaces
 - customers/providers
 - service contracts (implied)
 - metrics and minimal services
- Provisioning
 - services at a site
 - metrics

- Use case scenarios
 - operational end-end
 - communication
- Results:
- Condensed in a first draft document
 - Description of Open Science Grid Operations or Open Science Grid Operations Model



Grid Operations		Providers	Services	Consumers
management				application developers
	experts collective			virtual organizations
	engineering			resource owners & providers
	service desk			users
			faciliate and support communications	
			coordinate and track problems and security incidents	
			coordinate and track requests for assistance	
			respond to "how to" questions	
			publish status and problem management reports	
			maintain the repository of support and process information	
			schedule and coordinate grid service and middleware changes	
			monitor the status of grid resources	
			maintain grid-controlled software packages and cache	
			provide site software not supported through VDT	
			verify software compatibility	
			site installation and configuration support	
			provide ease-of-installation tools	
			develop instructions on how to plug things together	
			troubleshooting for grid service and application failures	
			provide and maintain common grid services	
			provide development guidance and assistance	
			provide specialized services for VO's and applications	
			create APIs to information resources	
			liaison VDT developers and application developers	
			maintain the iVDGL VO	
			policy statements	
			policy information and enforcement	

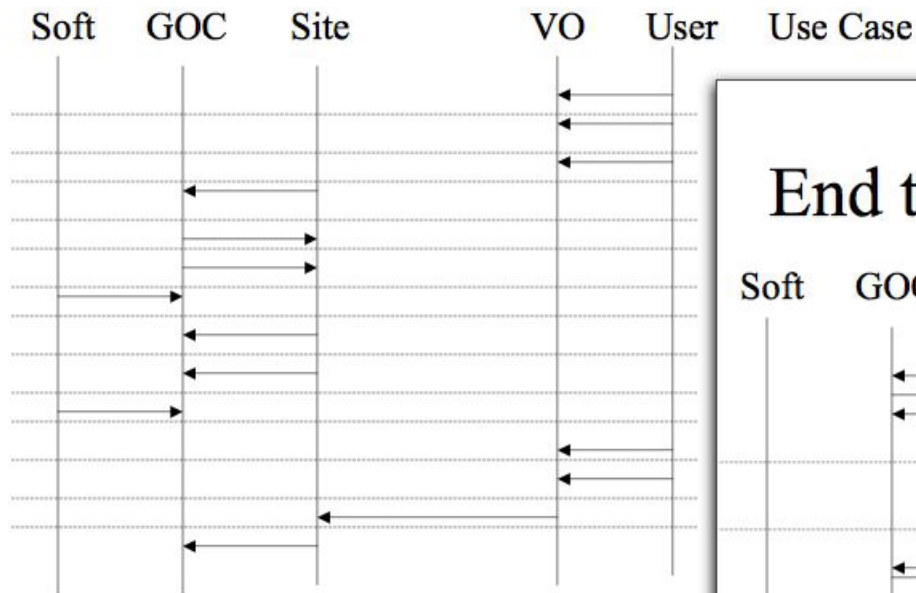




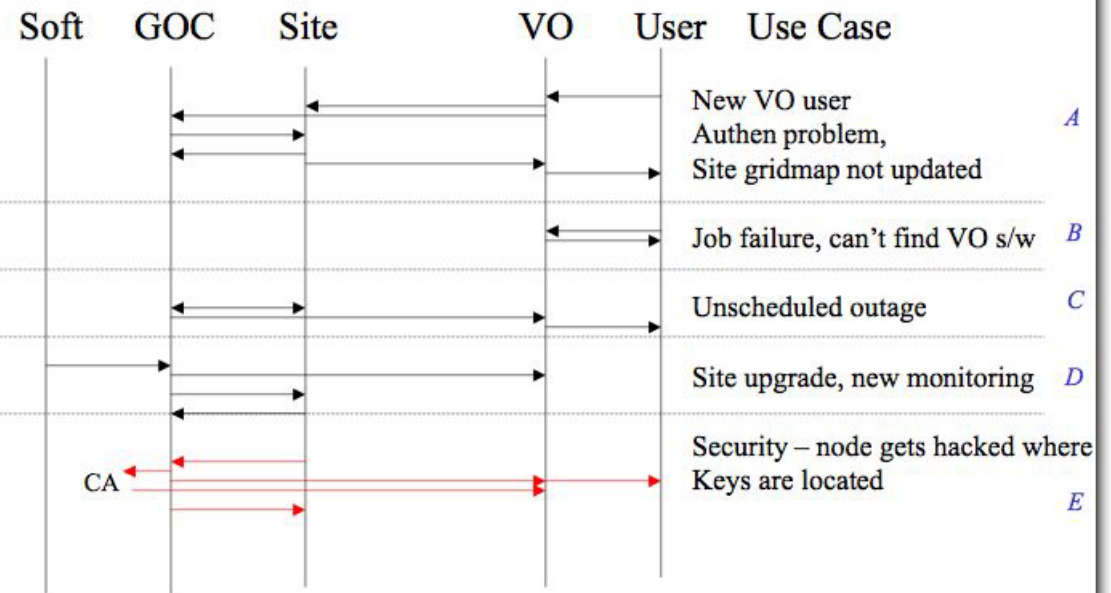
Example VO
Support Center
Contribution
as shown in Fig
1.



First contact for support



End to end flow for specific cases



- Information System
 - GRID3 based on GLUE plus 5 attributes
 - these could be included in GLUE
 - Quite some interest in using the same Generic Information Provider
 - Quite some interest in using the BDII
- Quite some interest in using Logging and Bookkeeping
 - follow-up meeting last Friday at CERN
 - discussion on state model (common super states, individual internal states)
- VOMS to create the gridmap files
 - some problems to implement certain policies
 - VO A's site can be used by VO B users, but user has to be US user
- One site now working with Laurence Field on the technical implementation
 - Michigan Indiana



- Model
 - Users/Brokers should be able to discover resources in GRID3 and LCG without switching tools
 - LCG user will use LCG middleware on GRID3 nodes via the user level installed WNs (ready for SLC3)
 - Versions maintained by LCG
 - Grid3 users will use GRID3 middleware (client libs) on LCG
- No interoperability in terms of file catalogues planned for the near future
- Operation coupled via the GRID3 operations center and the CERN CIC



- GRID3 Operations are much more centralized
 - NOC in Indiana provides 24/7
 - VOs play active role in support
- Experience same problems that we have seen
 - responds from sites, config problems
 - very little middleware (no broker, LB, rudimentary info system)
 - same success rate
- GRID3 VOs have very different role
 - resource providers
 - service providers
 - many single VO sites under direct VO control
- OSG still on “brain storm” level
 - but making rapid progress



- LCG -2-3-0 released for RH 7.3 and SL3
 - Fully interoperable
 - RH-7.3 released for LCFGng and YAIM (wait for next slides)
 - SL3 for YAIM (plus for UIs and WNs as user level tar-ball)
 - RPMs available via APT and YUM rpm repositories
- Problems
 - not all VOs are ready at the same time
 - **clear statement by all VOs needed!!!!**
 - sites have different timeframes for switching
- Proposed Steps (as described in the installation notes)
 - move service nodes RBs, BDIIs, CEs etc. to SL3 a.s.p.
 - maintained OS, less security risks
 - large sites have to split clusters and use two CEs
 - resize according to usage
 - small sites should follow main VO's requirements
 - splitting the farm requires additional hardware and maintenance
 - reduced efficiency



- **Yet Another Installation Method**
 - new way to package the generic (manual) installation and config
 - assumes OS already installed
 - installation and config separated
 - install via RPM lists or APT (one RPM depending on all RPMs)
 - all configuration information in one file
 - key value pairs, one file for all nodes
 - scripts to configure packages
 - Process (wrapped in a set of scripts)
 - install OS (your way, kickstart,...)
 - install middleware (apt-get, or RPM list)
 - edit config file
 - source config
 - source functions
 - run functions
 - easy to adapt to local fabric management tools
 - easy, fast traceable configuration (30 minutes for a site)

- Why?
- Sites that want to minimize their effort
 - unpack UI/WN tar ball on one node
 - configure
 - test
 - export on shared file system or copy to UIs/WNs
- Sites that want to relocate the software
- Users who want to install “private” UIs