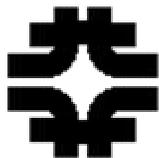


## Division Expectations of Facilities

Ruth

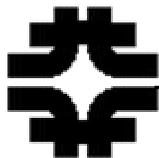
Caveats: I have not had a chance to talk to anyone in person about this.. So please excuse things that are wrong, misleading etc



Divisions Expectations and Program of Work for Facilities already far advanced and successful. We have a lot of institutional experience, knowledge and understanding.

Vicky has given us a clear message of her expectations

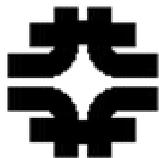
- to engage the Division with the Experiments and other Users in the planning, deployment and support of capable, usable and performant Facilities that fully meet their needs today and in the future.
- to ensure that the Departments and Groups within the Computing Division are enabled to provide effective Operational Services and contribute leadership in the development and deployment of Advanced Technologies and Architectures



The Wide Band construction project will result in the infrastructure and opportunity to deploy significantly scaled Hardware Facilities.

The Facility projects and program of work, as with all the Divisions programs, are collaborations with other Departments in the Division, the Experiments and with external collaborators, as well as more risky and less directed soft funded programs.

In the area of Grids and Data Management, our broader Fermilab CD Facility is expected to be a full and significant partner in the national and international Grid Facilities in support of the Experiments distributed data access and analysis systems.



Most Facility Services will be extended to support sharing by and management in support of multiple-users (VOs).

New and extended Facilities will be designed and developed as far as reasonable for shared use - for more than one User at Fermilab and potentially eventually negotiated agreements with users outside Fermilab - with a direction towards more sharing and commonality within the constraints of requirements, schedule and budget.

US CMS Tier-1 Facilities is expected to support managed, policy based shared use by the global collaboration and possibly with US ATLAS.

It is expected that, without reducing efficiency and effectiveness, Run 2 and US CMS Facilities will be shared within a few years.

Grid Services provided by the Facilities will part of the Open Science Grid.

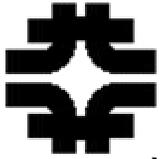


It is expected that Operational Support for Facility Services will be fully Automated.

Facility Services - a representative long list and surely some I have left out

Operations Support  
Customer Support  
System Design  
System Integration  
Compute Farms  
Permanent Storage  
Durable and Transient Storage  
User Space Management  
Virtual Organization Management  
Resource - Compute, Network,  
Storage - Management  
Batch Workflow Management  
Interactive Workflow Management  
Collaboration Management  
Data Transfer

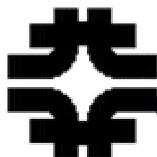
Data Management and Access  
End to end Network provision and  
management  
End to end Security Infrastructure  
Databases  
Accounting  
Auditing Monitoring  
Information Directory Services  
(names, catalogs etc)  
Library Services (documentation,  
publishing, printing, web)  
Administration  
Diagnostics Software  
Publishing and Distribution  
Licensed Software Support



We will need to continue to understand how each of these Services will become being part of the Grid connected Infrastructure - interfaces, extensions, developments, mitigations just like when Services moved to a Network connected infrastructure. Of course are already doing this and we will continue to do this bit by bit and it will take a long time.

We are and will collaborate with equivalent groups from

- other Labs: BNL, SLAC, ANL, LBNL, JLAB- Facility Centers: NCSA, SDSC
- University development groups: Caltech, UCSD, UMich, UofC, IU, UTA...,
- Computer Science and IT groups: LBNL, ANL, Wisc, Virg Tech, UIC, DePaul, NIU, NWU,.
- Internationally: UK, SurfNet, DESY, INFN, Taiwan...
- CERN



Open Science Grid is the roadmap:

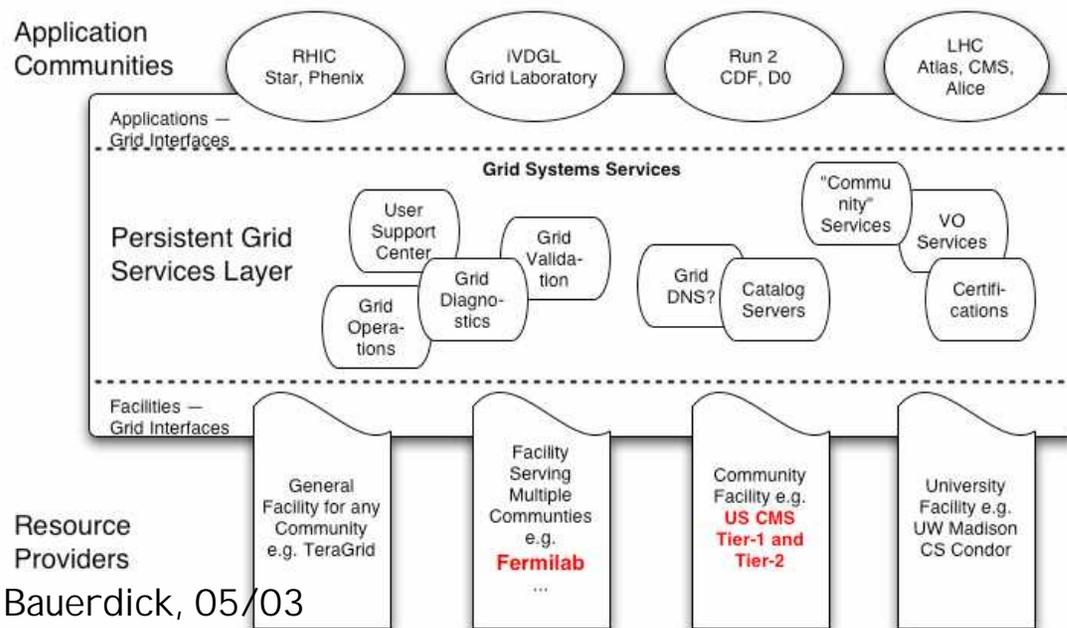
Build upon existing achievements towards a sustained US national production grid for the long term - past 2010.

US LHC will build and contribute their resources into a coherent infrastructure to provide the initial federation.

Add Laboratory and University resources to the common infrastructure. Develop the general Grid infrastructure to support other sciences.

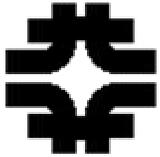
Focus on ongoing benefits to science through an end-to-end iterative approach.

Engineered approach to scalable system services.



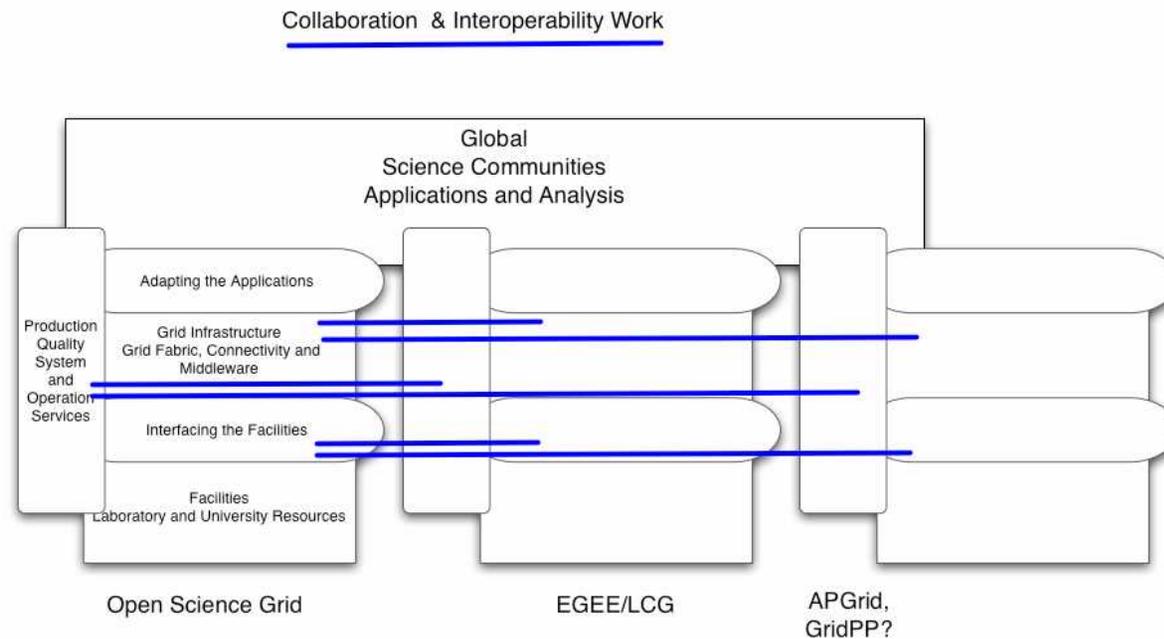
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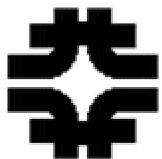
L. Bauerdick, 05/03



Build, extend and test the US infrastructure in partnership with CERN and the LCG in support of the global grid for LHC experiments data access and analysis.

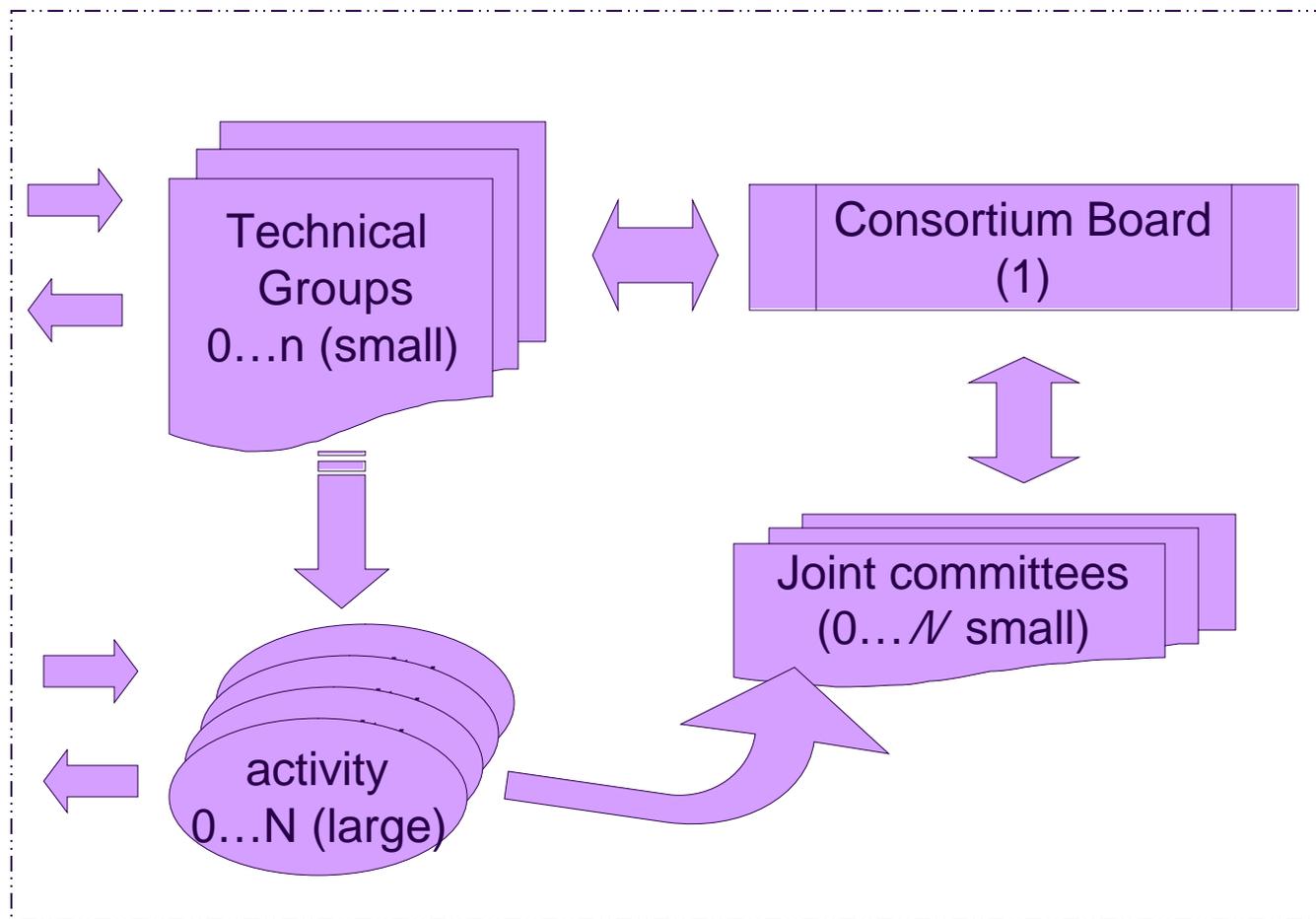
Collaborate with the EGEE, itself a multi-disciplinary project, on middleware and operational infrastructures; and with other partners on networking, education etc.





# OSG Consortium Architecture - a work in progress not complete - discussed at the joint steering meeting yesterday

\* Fermilab Facilities



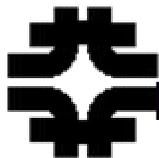
Participants provide:  
resources, management,  
project steering groups

OSG Process Framework



Technical Groups propose, organize and oversee activities, Liaise with their peer organizations in the U.S. and world-wide, Participate in relevant standards organizations, Representatives of each technical group participate in OSG-wide Joint Committees such as integration & operations

Activities (=Projects) Well defined, scoped set of contributing tasks provided by participants joining the activity (atomic units of work). Self organized and operated. Communicates with sponsoring TG providing general oversight and reporting. Interfaces to other Activities through Joint Committees.

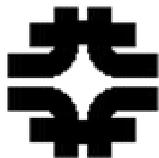


PPDG , Facilities, and Trillium (Grid3 evolution, iVDGL , PPDG)  
roadmap - a work in progress - from yesterday

Grid3: Til around Feb 2005? Operate and sustain through ATLAS DC2. Support ongoing simulation production for US ATLAS and US CMS. Other applications are opportunistic. Specific targetted applications on agreement.

Grid Development Laboratory: Deploy new technologies and services; Sandbox grid; Noproscibed Operational expectations; Multi-VO environment equivalent to single VO development testbeds VDT testers:

Open Science Grid - 0 (or 4): Production Grid infrastructure. Contributions from FERMI LAB, US CMS , Grid3 evolution, iVDGL, PPDG, BNL, SLAC, NERSC, JLAB, Experiments..+++.  
Need to define scope and capabilities; plan deliverables etc etc etc...Goal for ~ Feb '05



## GRUFF - Yes Please

From BobT at last weeks GDB minutes: " ..The Division will be looking at New Muon space to locate its first grid facility, along with the Lattice QCD cluster. One proposal is to build this facility not with new nodes but with decommissioned nodes from the Run II buys. ...There is NOT a firm commitment to a specific number on the Grid by a specific time, but a clear desire to be a reasonably large presence on the Grid.... Not a definite number of machines promised at this point. Goal is to be a reasonable presence, consistent with needs of our own program. "

From Ian Fisk today, US CMS User Facility Manager "US CMS contributions yet to be worked through - next discussion at the US CMS CCF WBS harmonization meeting Thursday at 11 am"

Pending Action item: Consider first grid facility implementation in the light of current exp't plans for node usage.