



# A quick summary and some ideas for the 2005 work plan

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More details at <http://lcg3d.cern.ch>

# Experiment Requests



- Not a complete list
  - Rather a addendum to the experiment presentations..
- LHCb
  - PVSS
    - No request for 2005 -> change 2005 spreadsheet
  - Bookkeeping
    - T0 service sufficient
    - Application ready
  - CondDB
    - T0/1/2 required
    - T2 slicing (slice definition?) or caching

# Experiment Requests



- ALICE
  - Need to obtain T0 / online request
    - Volumes, applications and deployment dates
  - No request for database services beyond T0
  - FC (gLite)
    - No data distribution required
- ATLAS
  - GeometryDB
    - s/w ready
    - Data copy: Octopus (no slicing) or special HVS app (slicing)
      - Replication would be possible as well
  - Collections
    - Becoming available from POOL
    - Integration and reference load needed

# Experiment Requests



- CMS
  - Conditions read access via FroNtier
    - Alternative RAL based prototype
    - From T0 or also T1?
  - FC
    - Replication: none
    - Distribution: CMS peer-2-peer



- **EGEE and ARDA**
  - Still in s/w development phase
  - First deployment ideas but no concrete plans for 2005 yet
  - Development effort goes in specialised replication implementation
    - Somewhat disconnected from experiment requirements and existing deployment infrastructure?
  - Expect service request for deployment once deployment plan is agreed with experiments
    - In other words - late as well..
- **Grid Deployment Services**
  - Monitoring does use specialised replication
    - Currently based on MySQL - plans for Oracle so far w/o date?
- **Need to assure consistent deployment planning**
  - Or (temporarily?) accept a larger diversity of special services

# Grid Security



- Some ideas for integration with grid certificates
- No support of cert identity by db backends - and unlikely on 2005 timescale
  - Is individual grid identity needed as db identity
    - More for diagnostics than for authorisation
  - Cert attribute could map directly to database role set

# 3D Requests



- Data volume is determined only up to a factor of ten - still not (yet) a problem
- Other requirements (CPU, connections and I/O) are often not determined
  - Need reference work load - and leave headroom!
- Generic distribution (a la streams) used - but not main focus
  - Development of several copy mechanisms or specialised replication tools
  - Need to understand their deployment impact
- Several key apps still under development
  - ConditionsDB
    - RAL based (March)
    - FroNtier based (March?)
  - File Catalog
    - Which one? By when?
    - Will use POOL RFC until decision
  - Book keeping
    - ATLAS(failover at T0?), LHCb (T0)
- Don't want to be bureaucratic - but avoid late surprises and finger pointing
  - But need agreement on defined deployment services and plans
  - Proposal will be written up, discussed and go to the PEB

# Main Problems 2005



- Significant additional workload on many parts of the database area
  - Database application developers
    - Several new DB apps to complete and integrate on production scale
  - Service providers
    - Ongoing R&D for consolidation & scalability (CERN)
    - Coordination of distributed service (CERN and FNAL)
    - Integration and optimisation of new applications
    - Implementation of LCG service at T1
- **Likely contention at CERN and FNAL**
  - Due to late application arrival
  - Unexpected access patterns
  - Insufficient manpower on the service side



# 2005 Main Problems



- Should expect (and plan) integration bottleneck
  - Outsourcing or experiment database are unlikely more efficient solutions
- Need agreed apps deployment priority
  - and maybe change development effort to key applications
- T0 Database services need to focus on apps integration
  - Out source as much as possible
    - Database server s/w installation and patching
    - Storage subsystem configuration and deployment

# Test bed Setup



- Oracle 10g server
  - Install kits and documentation are provided for test bed sites
    - CERN can not offer offsite support though
  - At least 100GB storage
  - Application and reference load packaged by CERN / experiments
- FroNTier installation
  - Just one server plus squid installations at other sites?
  - Need squid package and install instructions (FNAL?)
  - Need a test server at CERN or FNAL
- Worker nodes to run reference load
- OEM installation for test bed administration and diagnostic
  - Propose to prepare setup between FNAL and CERN

# Workplan Q1



- **Connect the first set of sites to the testbed**
  - CNAF, FNAL, ASCC, BNL
  - Install and test Oracle 10g and FroNtier setup
  - Use POOL RFC for initial setup and distribution tests
- **Setup Oracle Enterprise Manager for testbed**
  - evaluate suitability for shared administration in WAN
- **Setup server and client side diagnostics**
  - Add client performance summary to RAL
  - Evaluate FNAL monitoring and integrate with RAL
- **CERN T0**
  - Agree and implement the integration policy
  - Implement stop-gap solution with dedicated resource for key apps
  - RAC functionality test and configuration optimisation
  - Coordinate testbed installation and documentation

# Workplan Q2



- Add second batch of sites
  - GridKa, IN2P3, more ?
- Introduce new applications into 3D testbed
  - Distribute applications and workload package as defined by experiments
  - Run distributed tests and test data distribution as required by experiments
- Sequence following priority and availability list of the experiments
- Eg
  - March: ATLAS GeomDB
  - April: LHCb ConditionsDB
  - June: CMS Conditions (via FroNtier)
- CERN T0
  - Test of RAC setup with real applications (R&D)
    - Define disk and RAC configuration
  - T0 integration of new applications (integration service) and definition of performance metric
    - Similar sequence as 3D but including T0-only apps

# Workplan Q3



- Final version of 3D service definition and service implementation documents
  - And presenting them to the PEB/GDB
- Installation of T1 production setup
  - Need the testbed to stay available for ongoing integration
- CERN T0
  - Starting to moving current and new certified apps onto new RAC infrastructure
  - Finishing new application integration
  - All applications in T0 production

# Workplan Q4



- Starting production deployment of distributed service
  - According to experiment deployment plans
- CERN T0
  - All production application migrated from Solaris cluster to RAC/Linux setup
  - Together with new applications



**Thanks to all!**

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**And a Merry Christmas...**