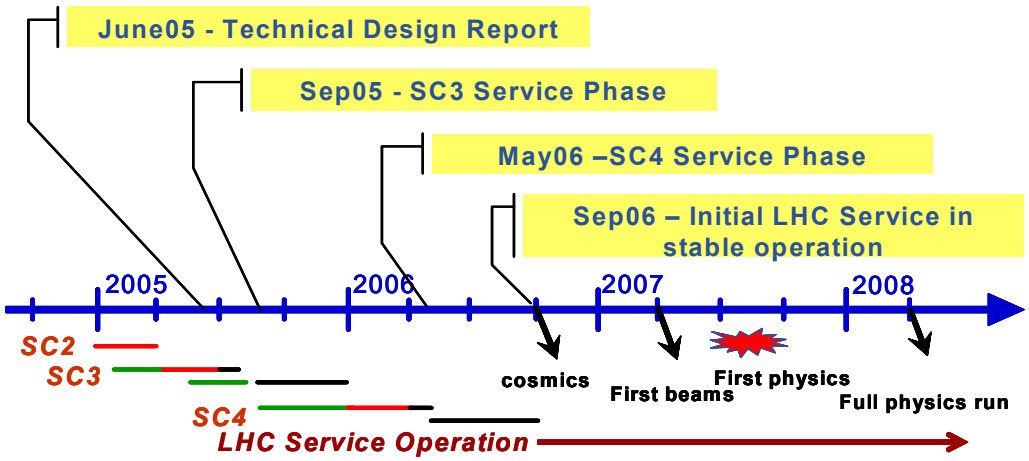
PEB Working Group for baseline middleware and associated services

The goal of the working group is to agree on the baseline "middleware" components and associated services for the initial period of LHC operation, to be provided and supported by the LCG project and operated by the LHC regional centres and grid operations centres.

In this context the “middleware” is defined as the software that lies between

- the basic software and services that we all agree on (operating system, local batch schedulers, compilers, network, ..)
- and the application – whether developed and supported in common by the applications area, or private to an experiment

Agreement is needed as input to the LCG TDR, defining the software and services that must be available in the initial LCG service that must be in operation by September 2006. All of these components, software and services, must therefore be included in the “service phase” of Service Challenge 4 that begins in May 2006 (see outline timeline diagram).



LCG Phase 2 Planning – Outline Service Timeline

Guidelines

- The working group must identify the software and services that must be provided by the project, and the areas where these will be provided by the experiments.
- It must define the baseline functionality that must be available at latest in April 2006 (for the SC4 service phase).
- Where relevant an agreed fall-back solution should be specified – but this should be a solution that will already be available for the SC3 service in 2005.
- Wherever possible, metrics should be defined for scalability and performance.
- This should not be a design exercise – rather it should draw on existing software, practice and experience – and propose only developments that are achievable within the next 12 months.
- Account must be taken of the resources available for any required development, and also the resources available to ensure long-term maintenance.

- Full account must be taken of the implications on regional centres, and grid operations infrastructure.

Examples of items where agreement is required

- Storage management software
  - SRM interface – agree on subset of SRM options
  - Specify MSS implementation to be provided at named key sites
  - Availability of base disk pool manager for other sites
- Reliable file transfer service
  - Low-level service that underlies data placement services
  - Network aware, MSS implementation aware
- File placement service
  - Selects "best" site as destination of data
  - Are generalised algorithms realistic? – or should this be an experiment specific service?
- Grid catalogue(s)
  - Global and local functionality
  - Minimum distribution/synchronisation requirements
  - Performance and scaling metrics
  - Meta-data requirements
  - Relationship of the grid catalogue to application-specific catalogues
- Workload management
  - Essential improvements required
- Grid monitoring tools and services
  - Job status and tracking
  - Resource usage
  - Accounting
- VO management services
- Applications software installation service

Database service issues are being covered already by the 3D project.

Organisation

The working group should include:

- 2 people from each experiment;
- one expert from each of the Grid Middleware, ARDA, Grid Deployment and Application areas of the project;
- a small number (~3) experts from regional centres, appointed by the GDB chair.

The chair of the working group will be appointed by the PEB.
The group should call on additional experts where necessary.

The group should report to the PEB within two months, with an interim report after 4 weeks. The report, once formally agreed by the PEB, will be provided as input to the TDR editorial group.