ATLAS NCB
and
EU-GRID PROJECT

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ATLAS National Computing Board(1)

- **The NCB should** :
  - **articulate the needs and wishes of all ATLAS institutes;**
  - **follow closely all activities which are relevant to the world wide computing;**
  - **advise the decision taking bodies;**
  - **help to organise common RCs;**
  - **form working groups for specific tasks.**

ATLAS National Computing Board(2)

- **Issues discussed in the NCB**
  - CERN Computing Review
  - Role of Regional Centres
  - Interaction with MONARC
  - GRID activities
  - World Wide Computing Model
  - ATLAS S/W Agreement
  - Computing MoU
  - NCB Working Groups

ATLAS and the RC Hierarchy

- **The steps towards the final decision on the RC hierarchy will be influenced by**
  - **Results from reassessments of the data model and data sizes**
  - **MONARC and GRID findings**
  - **Common solutions (LHC RC´s)**
  - **Advice from the review panel**
  - **Data access method (ODBMS?)**

  and will be constrained by
  - **Dates for MoU, MDC´s, Computing TDR**
  - **Requirements from funding agencies**

Planning for Regional Centres

- **2001** Number and places for Tier-1 centres should be known
- **2002** Basic world wide computing strategy should be defined
- **2003** Typical sizes for Tier-0 and Tier-1 centres should be proposed
- **2003** The role of Tier-2 centres in the GRID should be known

ATLAS World-Wide Computing

- In the CTP it was not yet decided if and how much computing should be distributed
- World-wide collaboration issues are, however, instrumental to the success of the experiment
- Research is needed to obtain the best possible solution => MONARC + GRID

NCB Working Groups (1): Interaction with MONARC

- Chairperson C. Sliwa
  - collect the information needed to model the ATLAS specific computing model aspects;
  - provide input for the decision on the ATLAS RC hierarchy, the Computing TDR, and the Computing MoU;
  - report to and from MONARC;
  - provide training to get more people involved in the modelling.

NCB Working Groups (2): GRID activities

- Chairperson L. Perini
  - collect information about the various GRID activities and ensure that the collaboration knows about ongoing and planned projects relevant to ATLAS;
  - contribute to the definition of GRID tests and help to organise the participation of sites which are not directly involved in the GRID projects;
  - write a note describing the present status.

NCB Working Groups (3):
Regional Centre Working Group

- **Chairperson S. Lloyd**
  - collect information about the planning for RCs (here especially information is needed how the 'smaller' countries intend to perform off-line analysis);
  - prepare input for the Computing TDR and MoU (CPU, disks, MSS, bandwidth, manpower etc.)

NCB Working Groups (4)
World Wide Computing Model :

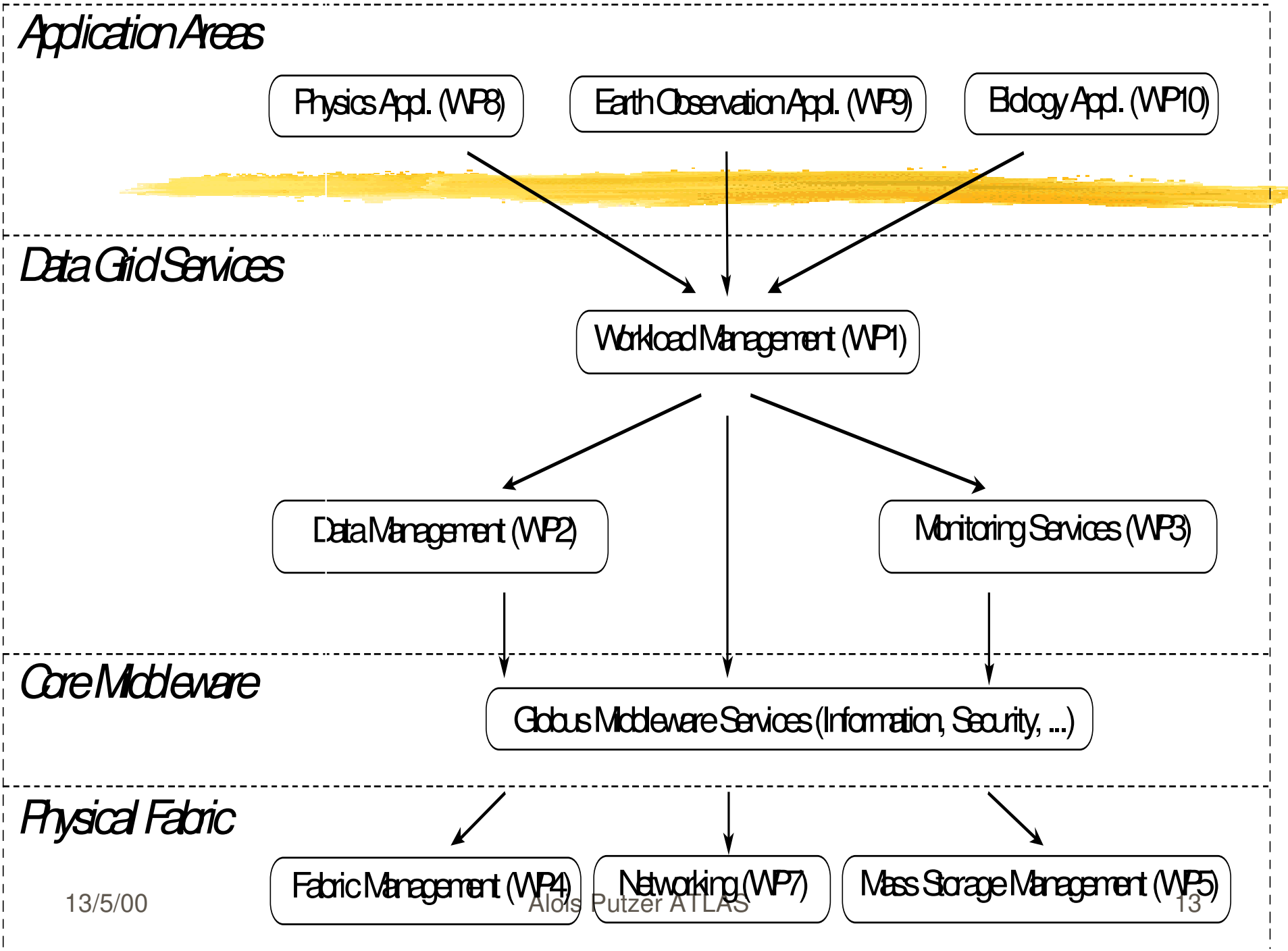
- Chairperson A. Putzer
  - Collect information needed for the planning of the world wide computing:
    - event sizes, sample sizes, 'analysis' physicists in each country, analysis groups, participation in S/W projects
      in close collaboration with the respective ATLAS groups
  - Provide input to the Computing TDR and MoU
  - Ensure that the needs and problems of all counties are properly taken into account.

The EU-GRID Project (DATAGRID)

- **Objective : Enable the analysis data stored in shared large-scale databases across widely distributed scientific communities.**
- **Proposal to**
  - **establish a high bandwidth network;**
  - **demonstrate the effectiveness of the GRID technology involving real users;**
  - **demonstrate the ability to build, connect and effectively manage large general-purpose, data intensive computer clusters (low-cost commodity components)**

Collaboration with other Projects

- The EU-Grid project will collaborate with key members of the Globus project and with the GriPhyN project.
- Profit from the Globus middleware.
- GriPhyN longer time scale and more emphasis on computer science research
- Datagrid project focusing on the rapid development of testbeds, on the demonstration of practical real-life apllications, and on production quality operation.


Application Areas
Physics Appl. (WP8)
Earth Observation Appl. (WP9)
Biology Appl. (WP10)
Data Grid Services
Workload Management (WP1)
Data Management (WP2)
Monitoring Services (WP3)
Core Middleware
Globus Middleware Services (Information, Security, ...)
Physical Fabric
Fabric Management (WP4)
Networking (WP7)
Mass Storage Management (WP5)

Objectives of the Workpackages(1)

- **Fabric Management :**
  - **Develop new automated system management techniques that will enable the deployment of very large computing fabrics;**
  - **Integrate the MSMSs with the Grid management facilities and define a common user API;**
  - **Plan, organise and operate a testbed for the applications.**
- **Grid Services**
  - **Select and integrate existing basic Grid technologies, and develop new techniques and software to provide support for the automated distribution of data across different nodes in the Grid. Grid services**

Objectives of the Workpackages(2)

- **Applications :**
  - **HEP, Earth Observation, Biology**
  - **Demonstrate the feasibility of the Data Grid technology to implement and operate effectively an integrated service in the internationally distributed environment.**
  - **Major emphasis on providing a production quality testbed.**
  - **Operate the Grid as a production facility for real live applications with real data (MC).**
  - **Practical application to real-world computing**

Milestones (agree with the testbed milestones and ATLAS MDCs dates and requirements)

- Dates are given as month in the project; the project is expected to start in 2001.
- Month 12 :Requirements studies, co-ordination with other WPs, interface with existing GRID services
- Month 18 : Run#0 : distributed MC production and reconstruction
- Month 24 : Run#1 : distributed analysis
- Month 30 : Run#2 : test the additional Grid functionality
- Month 36 : Run#3 : extend to a larger user community

ATLAS and the GRID Projects(1)

- **ATLAS fully supports the GRID projects and is participating in setting-up the HEP applications and in designing the testbed systems in such a way to grant continuous support and feedback to the development and testing of the tools.**

ATLAS and the GRID Projects(2)

- Since a lot of resources (manpower and money) will go into the GRID projects, which would otherwise be available for ATLAS prototyping, we have to ensure that the ATLAS needs are properly taken into account.
- The ATLAS contribution to the DATAGRID is at least 15 FTEs for 3 years.

ATLAS and the GRID Projects(3)

- Proper reporting between the GRID consortiums and the ATLAS computing management is essential.
- A close connection between the EU and the US GRID projects is vital.