Summary item 2

- WP9 – Earth Observation Applications (50m)
  - DataGrid EO requirement (LF, 15m)
  - DataGrid WP9 tasks, WP9 Plan (JL, 15m)

Summary

- Objectives
- Tasks
- Planning
- Summary of Activities

Introduction

- In March we presented our objectives, achievements, issues and actions, and plans for the year
- Activities proceed according to plan. There are no major deviations to report since the 1st March Review
- We have analysed our tasks and objectives and believe we are on target

EO key objectives (as for Tech Annex)

- **In WP 9 description**
  - ✓ … bring Grid-aware application concepts into the earth science environment…
  - ✓ …The application specific components … will consist of adaptation of existing systems and services and integration within the DataGRID infrastructure…
  - ✓ Specification of EO requirements, their development and implementation is the core of the activity.
  - ✓ A complete application that involves the use of atmospheric Ozone data is selected as a specific testbed.
  - ✓ The scalability of the GRID environment to meet earth science and application user community requirements will be investigated.
  - ✓ EO science covers a wide range of application requirements that goes from Parallel computing (e.g. Meteo modeling) to distributed processing (e.g. reprocessing of large volume of data).

EO WP9 tasks (as for Tech Annex) (1)

- Task 9.1: EO requirements (D9.1) – completed

  On going work (D9.6) – delivery planned for June 2002

  - 1) Assess requirements implementation after TB1
  - 2) Extended requirements as results of EO testbed
  - 3) Scale up study implication in requirements

- Task 9.2: EO related middleware components (D9.2) – completed

  Key results: interface with ENEA Grid infrastructure in TB0 and TB1

- Task 9.3: EO Platform Interface Development (D9.4) – on going
  - Integration with EO image processing COTS (IDL) completed
  - Procedures for EO user applications on going
  - Implementation of Earth Science portal on going
  - EO Infrastructure integration, interface with AMS archive, EO catalogue systems … analysed

EO WP9 tasks (as for Tech Annex) (2)

- Task 9.4: EO Ozone application (D9.3 and D9.5) – ongoing

  Next delivery planned for Dec 2002. Scenario include 1-5 years Ozone data reprocessing using:

  - ENEA Grid and DataGrid environments
  - Dedicated ES generic user interfaces based on WEB Mapping Portal
  - Collaborative environment for validation of results
  - Multi source of data to be integrated in final delivery

- Task 9.5: Earth Science application scale-up study (D9.6) – close to completion

  Key results:

  - Various EO GRID applications being analysed
  - Identification of potential technologies to be integrated

Planning

- Our strategy takes into account several phases towards development of an EO Grid Infrastructure
  - Start from complete absence of a Grid infrastructure
  - Analysis, requirements, prototyping
  - Site installation
  - Integration in exsiting infrastructure
  - Acquire expertise, develop support capability
  - Demonstrate benefits
  - Scale up

Short Term Planning

Q5, Q6 (PM12-18) January-June

- TB1 Validation
- Development of EO Infrastructure & Architecture
  - Distributed Data Handling
- EO Application Development
- TB1 Site Installation
- Delivery: D9.6 EO Application Scaling Study
- Input to EDG Architecture Group

Medium Term Planning

Q7, Q8 (PM19-24) July-December

- WP9 sites operations
- Tasks 9.3 & 9.4
- Delivery: D9.3 Demonstration & Report

Long Term Planning

Q9-Q12 (PM25-36) to December 2003

- Completion of Tasks 9.3, 9.4
- D9.4 EO Application Platform Interface
- D9.5 Demonstration & Report

ESA Key activities (1)

- **Participation to PMB and WP9 team management**
- **External Interfaces and Promotion**
- **System aspects (underestimated effort)**
  - Participation to ATF, PTB, WPM, …
  - Support to system validation (not planned)
  - Testbed site (not planned)
- **EO Application aspects**
  - GOME processing methods based on NN
  - Interface to Legacy systems
    - IDL
    - reference archive, reference catalogue, …

ESA Key Activities (2)

- Input to Architecture Group
  - Role of EO Applications: to provide balance and assure a "application neutral" architecture
  - Act through gathering EO requirements and channeling them into the Architecture Design process
  - Responding to ATF questions
  - Assess the EDG Architecture with respect to the desired functionality, provide feedback

ESA Key Activities (3)

- **Testbed validation**
  - Testing and validation of Testbed1 middleware (1.1, 1.2, 1.3 release)
- **Develop ESA EO Grid Infrastructure**
  - Integration of MUIS EO Product Catalog
  - Integration of ESA AMS system
  - High-speed connection to ENEA HPC network
  - Installation of First ESA DataGrid site
    - using DataGrid installation tools
    - installation of 2 CEs
      - ESRIN cluster using PBS
      - ENEA using LSF/AFS
    - SE 0.5TB RAID on ESRIN cluster connect to AMS
  - **Other sites to follow**

ESA Key Activities (4)

- **Develop Use Cases for end-to-end GOME processing and validation demonstration across three sites**
  - Holland, France and Italy.
  - Generate complete, validated multi-year dataset of GOME L2 products
- **Develop EO Grid Application Interfacing Components**
  - Re-usable components for generic application interfacing
  - Development in line with WP8-9-10 application layer