

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 existing 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