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Supporting Earth Science community through DILIGENT

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Describe the scientific/technical community and the scientific/technical activity using (planning to use) the EGEE infrastructure. A high-level description is needed (neither a detailed specialist report nor a list of references).

Earth Science scientists need to access data and tools within a multi-institutional,
heterogeneous and large-scale context. The analysis and the generation of objective
facts on the Earth status (i.e. Earth Observation, EO) require integration of
specific data product, handling of information in multiple forms and use of storage
and computing resources in a seamless, dynamic and cost effective way.DILIGENT
supports the Earth Science community with the facilities needed to implement such
scenario

Report on the experience (or the proposed activity). It would be very important to mention key services which are essential for the success of your activity on the EGEE infrastructure.

DILIGENT puts its bases on the integration of digital libraries and Grid
technologies. It builds on the EGEE services and part of its test-bed aims at
providing Earth Science users with a framework addressing key factors to the EO
activities, like management of very large and distributed virtual organisations;
seamless access to and handling of distributed and heterogeneous data and services;
creation of virtual thematic digital libraries; on-demand and efficient processing of
huge amounts of information; definition of ad-hoc user defined workflows of services
together with scalable and reliable executions; storage of data as well as of the
dependencies between them, and traceability of the operations performed. DILIGENT
offers end-users with a uniform information space where services to discover and
access information sources are easily accessible; Grid resources used to process data
and maintain intermediate results are managed transparently to the end-users.

With a forward look to future evolution, discuss the issues you have encountered (or that you expect) in using the EGEE infrastructure. Wherever possible, point out the experience limitations (both in terms of existing services or missing functionality)

EGEE provides the largest production grid infrastructure aiming to serve scientists
from different disciplines. Due to the heterogeneity of its clientele it implements
generic models and solutions to virtualise access to resources. Computing and storage
capacities are the two most important resources of any e-Science application but data
constitute an additional essential dimension to meet community specific operational
ambitions to promote cross-fertilization and wide collaboration processes

Describe the added value of the Grid for the scientific/technical activity you (plan to) do on the Grid. This should include the scale of the activity and of the potential user community and the relevance for other scientific or business applications

Earth Science users are concerned with the acquisition, integration and analysis of
information available at different sites. Such processes run according to specific
time constraints to meet operational needs, e.g. integration of EO products in
forecast models. Large environmental initiatives bring together operational EO-based
services, value added service providers and users to establish objective, timely,
accurate global information. The integration of technical knowledge from global to
local scale aims to support the definition and implementation of environmental
policies. While end-users are currently accessing the needed resources through
different interfaces and applications, Grid-enabled versions of current EO services
have a direct impact on such users allowing them to have a single access point to all
resources.
Diligent through EGEE resources and infrastructure enables activities like the
dynamic integration of processing results and the creation of environmental reports

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