Contribution ID: **160** Type: **demo presentation**

The use of GRID tools for automatic file transfer of ARGO-Yangbajing experiment data.

Wednesday 9 May 2007 19:30 (20 minutes)

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).

The aim of ARGO-YBJ experiment is the study of cosmic rays registered at the
Yangbajing Laboratory altitude, at 4300m a.s.l. in Tibet.
ARGO-YBJ is an Italian -
Chinese collaboration that involves researchers of INFN in Lecce, Napoli, Roma,
Torino, Pavia, of IASF in Palermo, of IHEP in Beijing and of the Chinese
Universities in ShanDong, Chengdu, Lhasa, KunMing, ZengZhou and HongKong.

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.

We designed and realized a set of scripts, that use the FTS PERL API and a dedicated
DataBase, to perform the experiment data file transfer from a SE, gathering the files
from ARGO-YBJ data acquisition system, to one of the prosessing site (IHEP in Beijing
or CNAF in Bologna). The file transfer uses the FTS channels, open previously between
the SE at Yangbajing and the SEs at IHEP and CNAF. We tested the whole system on a
local testbed at INFN Roma 3, that was extended afterwards to the IHEP and CNAF
sites. For monitoring purposes a graphical interface was also developed.
An efficient data mover system needs an stable and efficient FTS and SRM services. In
our particular case an efficient link and routing between italian and chinese sites
are mandatory.

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)

The future evolution of our procedures foresees the confrontation of SRM file
transfer comands in respect of FTS comands. In the past we

experienced some problems
in using the FTS JAVA API due mainly to the insufficient “how to use” documentation,
and this explain why we decided to use FTS PERL API instead. The achievement of good
performance in our automatic file transfer system strongly depends from an efficient
and reliable network link to the CSTNET chinese research network.

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

Some aspects of the gamma ray astronomy, like Gamma Ray Burst phenomena, require the
access and the processing of the data in the shortest possible time. The use of
simple procedures, based on FTS services, to transfer data from the remote
experimental site to the SEs at the processing sites and the automatic introduction
of these data into the LFC catalogues allows us a fast processing and access to the
interesting data. Moreover we implemented a procedure, also based on GRID tools, to
mirror the data available at each moment at Chinese and Italian processing sites, to
allow the both communities to cooperate eficiently in analysing the data and at the
same time to realize a backup of the data. We are going to process around 200 TBytes
of raw experimental data, producing 30 TBytes of reconstructed events.

Author: Dr CELIO, Paola (Istituto Nazionale Fisica Nucleare - Sezione Roma III)

Co-authors: BUDANO, Antonio (INFN Roma 3); STANESCU, Cristian (INFN Roma 3); GIORGIO, Emidio (INFN Catania); RUGGIERI, Federico (INFN Roma 3); GALEAZZI, Fulvio (INFN Roma 3); ANDRONICO, Giuseppe (INFN Catania); LAROCCA, Giuseppe (INFN Catania); GARGANA, Riccardo (INFN Roma 3); BARBERA, Roberto (Physics and Astronomy Department Catania); CELLINI, Simone (INFN Roma 3); ARDIZZONE, Valeria (INFN Catania)

Presenter: Dr CELIO, Paola (Istituto Nazionale Fisica Nucleare - Sezione Roma III)

Session Classification: Poster and Demo Session

Track Classification: Experience with application domains –setting up and production