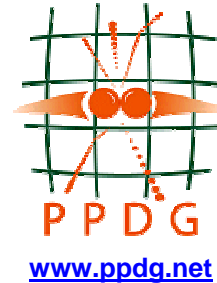# Particle Physics Data Grid Collaboratory Pilot

Integrating Datagrid Technology with Physics Experiment End-to-end Applications.

News Update - 21 Feb 2002
ppdg-exec@ppdg.net

www.ppdg.net

DOEScienceGrid.Org X.509 Certificates Authenticate file transfers across Atlantic
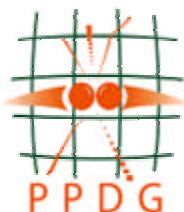
One of the critical elements of establishing the international data grid which physicists will use to carry out the scientific studies of their world-wide collaborations is the "trivial step" of identifying who is requesting some activity on this grid. The technology being deployed to enable this authentication is Public Key Infrastructure using X.509 certificates.

ESnet has set up the first elements of a PKI to be used for scientific grids and has established a Certificate Authority (CA) for the domain doesciencegrid.org (DOESG). PPDG is one of the organizations running a prototype registration authority in conjunction with this CA, in order to carry out the initial identity check of individuals requesting certificates.

A certificate was issued to a member of the D0 experiment/PPDG team on 11 Feb. 2002 and a host certificate was issued on 15 Feb. 2002 for one of the computers at Fermilab. Some technical details of how to set up these certificates and configure the globus software were worked out with the help of ESnet staff and members of the DOE Science Grid at LBNL. This D0 collaborator worked with colleagues at Imperial College, London and Lancaster University in the U.K. to establish the necessary trust relationships between the computers in the U.S. and the U.K., based on these X.509 certificates.

On 19 Feb. 2002 these colleagues performed file transfers authenticated with these certificates issued by the DOESG CA. The transfers were both directions between Imperial College and Fermilab, and also Lancaster University and Fermilab. This is documented in excerpts from email and log files below:

DOE SCIENCE GRID

Fermi National Accelerator Laboratory
A Department of Energy National Laboratory Managed by Universities Research Association

ESnet

From email sent 19 Feb. 2002 at 11:09am:

```
Dear all,
... have successfully transfered files between
Fermilab, London and Lancaster today, using the DOESG CA.
For the Fermilab side, both my host and user certificates are signed by
the DOESG CA; IC and Lancaster have included DOESG in the list of
trusted CAs for this test.

I think we can go ahead and request that DOESG be included in the list
of trusted CAs for EDG.

I append a log of our activity:

* Fermilab retrieving from IC. From the log file of Rod's computer at
Imperial College:

Feb 19 16:08:52 sampc ftpd[31368]: GSSAPI user
/O=doesciencegrid.org/OU=People/CN=Gabriele Garzoglio 762243 is
authorized
as sam

* IC retrieving from Fermilab. From the log file of my computer at
Fermilab:

Feb 19 09:53:06 sameggs ftpd[9936]: GSSAPI user
/O=Grid/O=UKHEP/OU=hep.ph.ic.ac.uk/CN=Rod Walker is authorized as sam

* Fermilab retrieving from Lancaster. From the log file of Alex's
computer at Lancaster:

Feb 19 16:13:14 fal000phys03 ftpd[3068]: GSSAPI user
/O=doesciencegrid.org/OU=People/CN=Gabriele
 Garzoglio 762243 is authorized as sam

From the log of the Fermilab machine (email on 21Feb2002):
Feb 21 03:51:19 sameggs ftpd[11661]: GSSAPI user
/O=Grid/O=UKHEP/OU=lancs.ac.uk/CN=Alex Finch is authorized as sam

Regards
Gabriele Garzoglio
```