LCG OPN operations – basic considerations

0 Terminology

LCG: LHC Computing Grid

Lightpath : as defined in /1/

OC: Operations Centre. An entity responsible for the day to day operations of a generic service or collection of services.

NOC: a specific type of OC, dedicated to operations of networks. The DANTE-NOC and NREN-NOCs are implementations of a NOC.

GGUS (cloud): The concept for LCG operations support as documented in /2/

ENOC: Network Co-ordination Service as documented in the EGEE document /3/. It is a function or service for the co-ordination of the activities of a set of NOCs involved in the setup and running of an OPN. It is performed by an OC. The reference paper describes a service which has to be upgraded for OPNs.

1 Background papers

/1/ "LHC high-level network architecture" document (Version 2.0, 30 July 2005)

http://lcg.web.cern.ch/LCG/activities/networking/LHC%20networking%20v2.dgf.doc

/2/ „LHC Computing Grid – Technical Design Report" (Version 1.04, 20 June 2005)

http://cern.ch/lcg/tdr

/3/ „EGEE: Operational Interface between EGEE and Geant/NRENs" (21 April 2005)

http://edms.cern.ch/document/565449

2 LCG operations

LCG has (or will soon have) its own Operations Centre. Basic concepts are specified in /2/. Within the LCG it is envisaged that it is possible to implement an ENOC. For this to happen, the NRENs and GEANT2 must each make available to the GGUS Cloud (LCG OC) status and/or performance information on their own portion of the e2e lightpaths for the LCG OPN they provide. The entity within the GGUS Cloud responsible for taking failure reports from users may display this on a network map.

In case of problems (inclusive network problems) end users will always call the entity within the LCG operations structure. They will not call the ENOC.

3 LCG Network Operations

The ENOC is based upon a set of components or building blocks that the NRENs and GEANT2 make available to it. To note that these building blocks are already planned work in GN2. The details of the building blocks will be developed further in GN2. These include (but are not limited to) for now:

- Operational processes between NOCs (i.e who calls whom to signal problems, who issues trouble tickets to whom, who "owns" a particular fault, what kind of reporting is performed etc);
  - The networks must establish operational procedures with the GGUS Cloud to trigger fault resolution;
  - The GGUS Cloud will issue trouble tickets to their users based on the information it receives from the networks;
- database re multidomain setup of lightpaths;
- Identification of appropriate status information re connectivity and performance of lightpaths;
- Methodologies for extracting status information on lightpaths from networking equipment
- Methodologies for making available status information to the GGUS Cloud and the ENOC

4 Miscellaneous

Input from any other forum, such as GLIF, that produces useful results towards these goals, will be of course welcome.