# Glif Control Plane Meeting

# Minneapolis 14-15 February 2007

## Introduction

Gigi welcomed the participants and opened the meeting discussing the status of the work in the Control Plane area.
Some work on related issues is being undertaken within the OGF.
One of the issues that the CotrolPlane wg has discussed a lot also in the previous meetings is the need for an XML schema to describe the network topology.

Tom Leham reported that in the usage of a similar XML schema has been discussed also in the framework of perfSONAR (the monitoring tool that is being developed by GEANT2, Internet2, ESnet and RNP).

The newly established OGF working group called Network Mark-up Language Working Group (NML-WG) is also addressing the same issue.
The NML-WG will furthermore work to provide a standardized schema to describe network topology.
It was agreed that the GLIF community will also contribute to the NML-WG and that the GLIF control Plane WG will use the schema that will be eventually defined by the NML-WG to create inter-domain network graphs.

It was suggested this WG to agree on some recommendations and to send them to the NML wg.

ACTION: Gigi and Licia to send an email to the list and ask for possible inputs for the NML-WG.

## Issues of Access Control and Resource Trading for Inter-Domain Provision

(Admela Jukan, University of Quebec & Vassilis Prevelakis, Drexel University)

Due to the weather conditions neither Admela nor Vassilis could reach Minneapolis and their talk was given remotely via Skype video, which worked rather well.
Admela and Vassilis presented their idea to allow users to directly submit commands to the network elements, which in return would verify the users' rights and based on that results allow the users to get (or not) what requested.
The users would have one point of contact (the broker) instead than contacting multiple providers.
The model foresees the presence of a security framework to supports resource reservations for Grid-class applications over optical network.
The users access control would be handled by switching to the credential-based access control strategy, in order to eliminate the layers (which would appear for instance using VPN) and replace them with credential chains.

## Dynamic Services Control Plane: Overview and Status

(Tom Lehman, USC-ISI)

Tom gave an update on dynamic services control plane developments in the DRAGON project.
The DRAGON (Dynamic Resource Allocation via GMPLS Optical Networks) project is developing technologies to enable dynamic provisioning of network resources on an inter-domain basis across heterogeneous network technologies.
DRAGON has defined a network architecture and a control plane model. The controlplane is based on the extension of the GMPLS IP control plane to enable multi-domain, multi-layer, multi-service provisioning which also includes AAA.

DRAGON control plane components are:
Network Aware Resource Broker – NARB, that is an agent that represents a domain;
Virtual Label Swapping Router –VLSR, that are open source protocols running on a PC that act as GMPLS network element;
Client System Agent –CSA, the end system or client software for signaling into network;
Application Specific Topology Builder –ASTB, User Interface and processing which build topologies on behalf of users.

DRAGON uses Recursive Per-Domain inter-domain path computation.

DRAGON people are working with other groups (such as Internet2, ESnet, CANARIE, GEANT2 JRA3, university of Amsterdam and SURFnet) to agree on InterDomain Routing, Signaling, Path Computation using web service based tools.

Tom gave also an update on DICE on behalf of Victor Reijs who could not attend the meeting. DICE group (Dante, Internet2, CANARIE, ESnet) met for the first time in 2003 and since then other meeting have followed.
The group discusses issues on monitoring, security, bandwidth on demand and AA. The first cooperation was on the term path/p2p, which resulted in a document on the path services provided by several networks.

## Recent Experience with GMPLS E-NNI

(John Moore, MCNC)

John reported on the recent experiment with GMPLS E-NNI conducted within MCNC, in particular in the framework of the Enlightened project.
Enlightened is a national (US) footprint GMPLS-enabled test-bed, managed as a single domain. There is one international connection so far to Japan.
Enlightened test-bed runs GMPLS E-NNI between the three separate domains.

## Discussion

A discussion followed.
One of the issues discussed was how the network resources and the topology of a network are made known. Typically a resource broker knows the network resources.
The possibility of using a centralized database to allow resources brokers to talk to each other was also discussed.
The database would work like a repository that would contain the network information each domain wants to publish, in order to create the requested path.
The resource brokers would publish their own information to the database.

However such a repository would not help the end-users in finding out what is available on a particular network.
It was suggested to create an end-user or other resource repository (something similar to a telephone book). For example compute resources as end points or large scale instruments, data stores, etc.

Based on the discussion Gigi produced a draft model of the inter-domain service provision architecture on the white board with everyone's input. This involves determining which network resources are available and how they're interconnected, in order to create lightpaths on demand.
There was lots of discussion on the architecture and some changes were suggested.

ACTION: Gigi to circulate the updated version of the architecture.

## Summary of actions

ACTION150207-01: Gigi and Licia to send an email to the list and ask for possible inputs for the NML-WG.
ACTION150207-02: Gigi and Licia to send an email to the list and ask for possible inputs for the NML-WG.
ACTION150207-03: Gigi to circulate the updated version of the architecture.