



Global Lambda Integrated Facility Technical Working Group  
11-12 September 2006  
Akihabara Convention Hall, Tokyo, Japan

A total of 28 persons attended the meeting chaired by Erik-Jan Bos (SURFnet) & René Hatem (CANARIE). The scribe was Kevin Meynell (TERENA).

## 1. Approval of minutes

The minutes of the previous meeting on 8-9 February 2006 in Albuquerque, USA were approved.

## 2. GOLE Updates

### *StarLight*

Linda showed a diagram of the latest StarLight topology (see <http://www.glif.is/meetings/2006/tech/winkler-starlight.jpg>), and asked what sort of information the community wished to see included. There was a trade-off between having detail and making things over-complicated.

Mark Prior (AARNet) asked whether Pacific Wave should be shown as two or three locations. Linda felt the diagram should only show the next hops from StarLight.

René said that the new diagram was very useful and that the CANARIE StarLight diagram could be replaced by this one. However, these diagrams could get out-of-date quite quickly, so there should be mechanism for regular updating.

ACTION 20060911-1: Kevin Meynell to replace CANARIE StarLight diagram with updated diagram.

### *Pacific Northwest GigaPoP*

Brad Jordan (PNWGP) gave a presentation on the Pacific Northwest GigaPoP (see ?)

Erik-Jan asked whether the PNWGP should actually present itself as one or three GOLEs. René replied that he preferred to see individual centres as he felt this was more relevant. Jerry Sobieski (MAX) added that GOLE boundaries needed to be defined as well.

### *KRLight*

JongUk Kong (KISTI) gave a presentation about KRLight (see ?). This currently had 10 Gbps connections to the Pacific Northwest GigaPoP in Seattle, and to HKLight in Hong Kong.

Linda asked which connections through KRLight were part of GLORIAD. JongUk replied the link from NetherLight through Seattle was GLORIAD funded.

### *MAN LAN*

Christian Todorov (Internet2) showed a diagram of the latest MAN LAN topology (see ?).

Linda asked which onward connections were to other GOLEs, and whether all the connections represented GLIF resources. Christian replied the diagram represented all connections whether GLIF or not, and that the diagram should probably be brought into line with the other GOLE depictions.

#### *NetherLight*

Ronald van der Pol (SARA) gave a presentation about NetherLight (see ?).

René said that he noticed that the SURFnet and NetherLight dark fibres would meet in Hamburg, and asked whether a GOLE would be located there. Erik-Jan replied this would just be an interconnect point and no GOLE was planned.

#### *NorthernLight, T-LEX, CENIC, CzechLight & HKOEP*

Lars Fischer (NORDUnet), Akira Kato (WIDE Project), Dave Reese (CENIC), Jan Radil (CESNET) and Qin Gang (CSTNET) all showed diagrams of their GOLE's latest topology (see ?).

#### *Further discussion*

Erik-Jan asked whether all GOLEs could update their diagrams to use a similar style to the StarLight diagram. A standard representation would make things clearer, and as well as easier to maintain.

Kevin Meynell asked how the StarLight diagram was produced. Linda replied it was drawn with Visio.

Linda asked whether the Washington exchange point could be described as a GOLE. Erik-Jan replied there was no hard-and-fast rule about what constituted a GOLE, and it was really down to being accepted as one by the other GOLEs. It was certainly expected that the number of GOLEs would increase in the coming year.

The current list of GOLEs was then reviewed, and it was agreed that CzechLight (Prague) and HKOEP (Hong Kong) should now be considered to be GOLEs. However, the status of UltraLight was somewhat unclear as it was a network rather than an exchange point.

In order to help the GOLE operators keep their information updated, the GLIF Secretariat was asked to set-up a Wiki on the GLIF website. This should initially include the GOLE resources, but could also be used for other important information.

ACTION 20090911-2: Kevin Meynell to set-up Wiki on GLIF website.

### **3. GOLE Teleconferences**

Erik-Jan reported that regular monthly teleconferences had been held for the GOLE operators over the past year. It was generally agreed these had been useful, although attendance at the last two teleconferences had been quite low. He therefore asked whether they should continue to be held, or whether the low turnout was just a temporary aberration.

The consensus was that the teleconferences remained useful and should continue. These should generally be organised once per month, but the schedule should take into account important events as well as quieter holiday periods.

Under the rotating chairmanship principle, Akira Kato (WIDE Project) still had one more meeting to chair, and he was asked to set the date of the next teleconference. However, a new chair would be sought for the following meeting, ideally from North America as this region was next in the rotation.

ACTION 20060911-3: Akira Kato to set the date of the next teleconference. *This was subsequently arranged for 18 October 2006 at 14.00 UTC*

Some North American-based operators mentioned they had problems dialling international numbers from their organisations. Although the teleconferencing bridge at TERENA did have SIP-based VoIP capabilities, not many people had or were familiar with SIP clients. Kevin was therefore asked to look into the possibility of using Skype instead.

ACTION 20060911-4: Kevin Meynell to investigate the possibilities of using Skype for GOLE teleconferences.

#### **4. SC'06 Connectivity Issues**

Christian Todorov (MAN LAN) and Linda Winker (Argonne Labs) discussed the connectivity arrangements for Supercomputing 2006 (11-17 November). Connectivity would be provided via Atlantic Wave to Miami, with an extension to Tampa from there. This could also be reached through Abilene and NLR FrameNet/PacketNet.

Those requiring connectivity to SC'06 needed to arrange this as soon as possible. Kevin was asked to put the logistical and contact information on the GLIF website.

ACTION 20060911-5: Kevin Meynell to put SC'06 connectivity information up on the GLIF website.

#### **5. TL1 Toolkit**

Ronald van der Pol (SARA) gave a presentation about the TL1 Toolkit that was being developed by SARA (see <http://www.glif.is/meetings/2006/tech/vdpol-tl1-toolkit.pdf>). SURFnet6 equipment supported TL1, but this had an arcane command syntax and it was difficult to parse the output. The TL1 toolkit was a Perl module that provided engineers with an easy-to-use API, and returned information using standard Perl data structures. It also allowed easy handling of connections, whilst automatically taking care of logins and logouts.

The TL1 toolkit was currently being used to provide an overview of cross connects (lightpaths) on both SURFnet6 and NetherLight. A cron job was used to periodically interrogate the network equipment, with the retrieved data being stored in a MySQL database. PHP was then used to display lightpath information on a web page.

It was proposed that the TL1 toolkit could be used as a debugging aid by all GOLE operators. It would then be possible to display the end-to-end status of lightpaths through GLIF, as well as make this data available to other GOLEs. This could be done by retrieving cross connect and alarm data into a MySQL database, and cross-referencing this with topological information provided by NDL. The data could also be exported to the likes of perfSONAR and other network monitoring programs.

The development of the TL1 toolkit was funded by SURFnet and the Gigaport project. It was available under an Apache 2.0 licence and could be downloaded from <https://noc.sara.nl/nrg/TL1-Toolkit/>.

John Graham (University of London Computer Centre) asked whether the toolkit could be adapted to support proprietary extensions to the standard set of TL1 commands. Ronald replied this was possible as the toolkit already had an extensible API.

John also asked what happened if there were discrepancies between the information generated by NDL, and that retrieved via the toolkit. Ronald replied that some checks were conducted, but discrepancies showed-up quite quickly anyway.

Alan Verlo (University of Illinois at Chicago) asked whether the toolkit could provision circuits as well as retrieve information. Ronald replied there wasn't currently any plan to support provisioning as they didn't have any need for it. However, it could be added if there was sufficient interest.

Ronald then asked whether any other GOLEs would be interested in using the toolkit. StarLight and MAX expressed interest, as did UKLight. However, John felt it might be a problem to host unknown software on production services.

## **6. Service Contracting & Fault Resolution Process**

René presented the document he had drafted that proposed a fault resolution process for multi-domain lightpath connections between GLIF organisations (see <http://www.glif.is/working-groups/tech/fault-resolution.pdf>). This had originally been presented at the previous working group meeting in Albuquerque, and had been updated based on the comments received there.

It was proposed to circulate this on the working group mailing list, and then put it up on the GLIF Wiki for further comment.

ACTION 20060911-6: René Hatem to circulate fault resolution process document on Technical WG mailing list.

## **7. Issue Analysis Hybrid Networks**

Erik-Jan presented the document he had drafted defining the open questions on lighpath provisioning (see <http://www.glif.is/working-groups/tech/hybrid-network-issues.pdf>). This outlined the business framework for operating lighpath-based networks, the mechanism for using and providing lighpaths, and developing services based on these.

A number of useful comments and suggestions were received, and these would be incorporated into the document. It would then be posted on the GLIF Wiki for further comment.

## **8. New topics**

There was a round-table discussion of items that the group would like to work on:

Erik-Jan suggested that a common scheme for lighpath naming would be beneficial, as the current ad-hoc system of naming sometimes created confusion. Local equipment and policy might impose some restrictions, but any move towards more consistent names would be welcome. Alan thought this should be extended to circuit naming as well.

Christian thought that the GOLE resource information should also include information about policy as well. This would need to include demarcation of each exchange point.

Finally, Stanislaw Sima (CESNET) suggested the working group could provide advice on technical equipment.

## **9. Date of next meeting**

It was proposed to hold the next meeting (together with the Control Plane WG) in conjunction with the Internet2/ESCC Joint Techs Workshop in Minneapolis, USA (11-15 February 2006). The GLIF Secretariat would make the necessary arrangements with Internet2 and announce the details on the mailing list.

ACTION 20060911-7: Kevin Meynell to make arrangements for next meeting.

## **Open Actions**

20060911-1 Kevin Meynell to replace CANARIE StarLight diagram with updated diagram.

20090911-2 Kevin Meynell to set-up Wiki on GLIF website.

20060911-3 Akiro Kato to set the date of the next teleconference.

20060911-4 Kevin Meynell to investigate the possibilities of using Skype for GOLE teleconferences.

20060911-5 Kevin Meynell to put SC'06 connectivity information up on the GLIF website.

- 20060911-6 René Hatem to circulate fault resolution process document on Technical WG mailing list.
- 20060911-7 Kevin Meynell to make arrangements for next meeting.