

## **CCIRN meeting Xi'an**

(Sunday 26<sup>th</sup> August 2007)

Notes was taken by Andrew Howard.

### **Present:**

Kevin Thompson, David West, Shigeo Urushidani, Florencio. L Utreras, Jim Williams, Karel Vietsch, Don Riley, Yong-Jin Park, Warren Mathews, Julio Ibarra, Heidi Alvarez, John Silvester, Xing Li, Congxiao Bao, Kilnam Chon, Shigeki Goto, Ranjan Kumar, Erik-Jan Bos, Heather Boyles, Kees Neggers, Andrew Howard, George McLaughlin (remote)

**Meeting opened:** 09:05

The meeting was chaired by Xing Li.

**Previous meeting minutes:** Minutes of previous CCIRN meeting reviewed and accepted.

Additional agenda items.

\* Review of action items from last meeting.

\* Date for next meeting

### **Next generation network projects:**

**David West presented on the GEANT2 (and 3) networks and development in the European networking arena. [attachment 1]**

*Xing Li:* Are there any equivalent projects to GENI occurring in Europe ?

*David:* No direct equivalents, a more evolutionary approach of building upon current systems rather than a revolutionary change.

*Julio:* What overlap do programs like EGEE have ?

*David:* EGEE and other projects (level 3)

*Kilnam:* Is there any discussion or facilitation of GEANT3 being able to support next generation technology beyond lambda networking ?

*Karel:* The EC has a range of funding budgets: infrastructure, testbeds, NG nets etc. Several projects have been submitted for EC funding but no funding has yet been allocated.

The European NRENs are focused on infrastructure projects which makes it difficult to find resources for testbeds. NG experiments are supported over lambda networks but are likely to require industry support.

**Prof Xing Li presented on the CNGI-CERNET2/6IX [attachment 2]**

*Don Riley:* Can the Olympics content be made available to the global R&E networks ?

*Xing Li:* CERNET is not a content provider.

*Kilnam:* What is the average aggregate traffic this year ?

*Xing:* The presentation reflects total traffic aggregated over the CERNET2 network

*Kilnam:* What is the expected traffic growth ?

*Xing:* Difficult to predict.

*Kees:* Routing and topology selection. How is this to be co-ordinated globally ? (This question follows the routing/latency/bandwidth discussion at the Washington DC CCIRN meeting.

– Peering (full service not a subset service).

*Xing Li:* I suggest to continue discussion in related meeting.

*John:* How much V4 traffic is being overlaid ?

*Xing:* The CERNET2 network is native IPV6 and is transporting IPV6 traffic only (not carrying IPV4 traffic)

*Don:* How can we work together on these V6 initiatives ?

*Xing:* I suggest to continue discussion in related meeting.

**Kevin Thompson (NSF) presented on GENI and FIND (Future Internet Design).  
[attachment 3]**

*Kilnam:* How is the best way to develop international collaboration ? How is this exposed to the users ? How will GENI assist with establishing linkages between the researchers ?

*Kevin:* The iterative approach that is being taken by the GENI project office should support expansion to international linkages.

*John:* There are some examples of this currently occurring.

*Heather:* How much can CCIRN assist to distribute information and foster co-operation on GENI ?

**John Silvester presented on NLR and the NLR service offerings  
[attachment 4]**

**Heather Boyles presented on Internet2 Optical Networking initiatives  
[attachment 5]**

*Kees:* Referring to: Internet 2 Optical Network slide  
Are the Core nodes connected to the backbone via loops or a single path ?

*Heather:* The critical nodes are connected using loops. The diagram presented does not show a detailed physical network topology.

**Kees Neegers discussed the progress of GLIF.  
[attachment 6]**

The next GLIF meeting will be held in Prague 17-18 Sep.

GEANT is a hybrid network with more than half being dark fibre.

Acceptable Use Policy on GEANT light paths:

GEANT light paths are AUP free.

The participating NREN Acceptable Use Policies apply.

Applications program details are being maintained by Maxine Brown and are available on the GLIF website.

The GLIF secretariat is operated by Terena and funded by participants.

Erik-Jan Bos: Directed participants to the GLIF technical and working group web site at <http://www.glif.is>

**Shigeo Urushidani presented on the Japanese Academic Networks SINET3.  
[attachment 7]**

*Kees:* Are the 40Gbs circuits currently in operation ?  
*Shigeo:* Yes they are provided by NTT.

**Yong-Jin Park (ANF) presented on KREONET KREONet2 and GLORIAD  
[attachment 8]**

**Ranjan Kumar presented on ERNET initiatives in India.  
[attachment 9]**

*Don:* What are the future plans for the Knowledge network ?  
*Ranjan:* ERNET is confident that funding will be available.

*Xing:* Your presentation indicated a very high of NAT. Could you explain this in more detail please ?

*Ranjan:* Each institution is allocated 32 public addresses and multiple levels of NAT are used. In the Indian environment bandwidth is more important than address space.

**Xing Li presented on Support for high performance UDP/TCP applications.  
[attachment 10]**

*Heather:* How does this compare to other performance monitoring tools ? PerfSONAR etc.  
*Xing:* The initial system was developed to assist users to test TEIN2. We would like to create a wider measurement framework and leverage how the various monitoring frameworks are able to provide different information.

*Heather:* Is there a permanent iperf test schedule which tests against I2 servers.

*Xing:* Not currently, however it would be advantageous to work with other regions to build a more complete network measurement framework.

**Heather Boyles discussed diversity of intercontinental links  
[attachment 11]**

*Heather:* How can NRENs support each other to achieve greater diversity and obtain better prices ?

*Kees:* As part of the procurement process it is important to obtain path information from vendors. A complete end to end path map is required, in particular when the physical diversity is unknown.

*Erik:* Will update Heather with more information.

*Xing:* During the Taiwan earthquake all carriers tried to obtain capacity from ANC which was the only cable operating after the event.

George McLaughlin reported on indicative costs for a proposed new cable system.

*Kees:* Do you have indicative costs for participation in the new system.

*George:* The expected minimum US\$3M up front(one-off) investment + 3% O&M which provides an AUS-West Coast > Hawaii> Guam> Singapore/Malaysia path with add/drop to other countries on the direct path would have cost around US\$8million (one-off for the life of the system) plus an estimated 3% O&M. Backhaul within a country would be an additional cost. Countries on a spur would cost a little more to connect.

Total cost of the entire cable system (~2Tbps spanning 12 countries) US\$500M.

*Jim:* Solicited support for CCIRN to cover cable maps, joint purchasing.  
Jim volunteered to collect information for Pacific, Heidi Alvarez for South America, Heather Boyles for Atlantic. Two areas: India to Europe and Northern Europe need to be covered. David will cover the Northern and Southern European cables.

*Xing:* During the Taiwan earthquake the commercial providers were a very expensive and could not provide a cost effective service to backup the traffic volumes.

**Karel presented on the TERENA European NREN Compendium.  
[attachment 11]**

How can the efforts be synchronised ? What co-ordination techniques could be implemented between the regional groups conducting these surveys (video conference meetings).

**Shigeki Goto presented on the APAN Survey/Compendium.  
[attachment 12]  
(download PDF from APAN website)**

*Florencio:* South America are working on a similar effort and expect to release sometime in the next year.

*Karel:* Based on the TERENA experience it is necessary to validate the information provided and to have technical staff review the answers. Europe relies on participants understand the benefits of involvement rather than offering incentives for participation.

**Reviewing Regional Network Projects: David West presented on the European initiated network projects EUMEDCONNECT , TEIN2 and Sub-Saharan Africa.  
[attachment 13]**

*John:* Asked about the connection to Palestine.

*David:* Some difficulties related to the internal political environment were delaying the connection. The situation has been resolved by adjusting the relationship partners.

*Kees:* What national funding opportunities are available ?

*David:* Efforts are ongoing to encourage national funding participation.

*Heather:* Is the UbuntuNet a new connection or an existing connection ?

*David:* It is a combination of the existing connection and terminating traffic on the UbuntuNet router in London instead of into directly into GEANT.

*Kees:* Carrier monopolies and limited competition is still limiting the capacity available into Africa.

**Florencio presented on the RedCLARA program in South America.  
[attachment 14]**

*Kilnam:* Is Cuba part of CLARA ?

*Florencio:* They are not currently connected but the intent is to connect them.

*Karel:* Discussion on projects between continents.  
What opportunities/interest exists for providing assistance or knowledge transfer between participants ?

Karel presented some examples of successful TERENA programs:

Eduroam  
CSIRT Training (Security response workshop)  
6DISS (IPV6 training/workshop)

*Julio:* How are the workshops conducted ?

*Karel:* Instructors travel to sites and conduct training

*Kees:* Have you contacted ISOC regarding this ?

*Karel:* Not yet but the idea has merit.

*Florencio:* There is significant merit and demand for technical courses. The impact of the NRENs on the economies of the countries is significant. A seminar on this would be valuable.

*Heather:* Hands on performance workshops have been popular with I2 members.

*Jim:* A security exercise at Indiana in co-operation with Internet2 was extremely valuable.

*Florencio:* Virtual training resources (remote labs) are a great way of reducing the costs for complex workshops. Technical training using the network itself has tremendous value.

**Action item:** Discussion on this topic will continue via email lead by Karel.

**Jim Williams presented an update on RENOG.**

[attachment 15]

<http://www.renog.org>

*Kees:* Referred to Xing Li presentation on routing challenges and encouraged the group to solve them.

*Heather:* The RENOG meetings are connected to the I2 meetings and APAN meetings for convenience and frequency. Is there a requirement to hold a separate workshop ?

**Karel presented on EARNEST a follow-up study to the SERENATE study.**

[attachment 16]

## **ACTION ITEMS:**

Review of last years action items: Most seem to be completed.

Cable mapping.

CLARA APAN peering in Seattle.

Refresh of CCIRN website.

- the designated representatives will meet with the APAN Secretariat to work through updating the website

**Next CCIRN meeting:**

Suggestion to hold next meeting in conjunction with the TNC meeting 19-22 May in Bruges Belgium on Sunday the 18<sup>th</sup> of May ( <http://tnc2008.terena.org>) with the following [CCIRN in South America.](#)

Prof Li thanked the participants for a good meeting.

**Meeting Closed:** 18:05