



23rd APAN Meeting
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Update on TERENA activities



Outline

- › What is TERENA ?
- › Yearly Overview of European NREN activities – the Compendium
- › Global Lambda Integrated Facility - GLIF
- › Mobility and roaming – eduroam
- › Server Certificate Service – SCS
- › Next-generation collaboration services
- › Involvement in EU-funded projects



What is TERENA ?

- › The **T**rans-**E**uropean **R**esearch and **E**ducation **N**etworking **A**ssociation
 - › From the legal point of view, a not-for-profit association incorporated under Dutch law
- › Networking the Networkers
- › A global player in the research and education environment
- › Technical Programme, Task Forces
- › TERENA Secretariat – located in Amsterdam
 - › 15 staff
 - › Role in coordinating activities
 - › Technical support for task forces



The TERENA Compendium

- › Since 2001, the reference on networks for research and education
- › The 2006 edition in numbers:
 - › 86 pages
 - › 58 NRENs interviewed in EU and EFTA countries
- › www.terena.org/compendium
- › Contact:
Bert van Pinxteren
(pinxteren_at_terena.org)



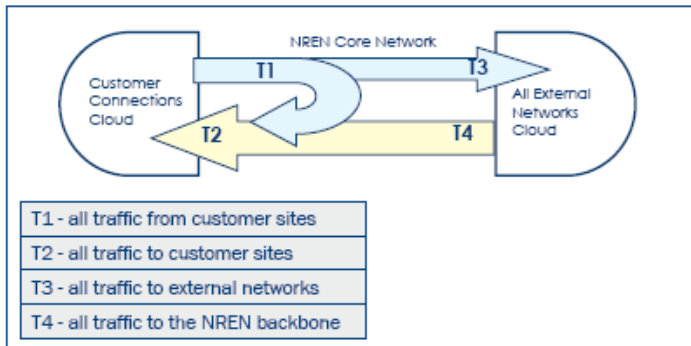


Compendium 2006 – Findings (1/2)

- › Steady increase in the number of universities connected at Gigabit speeds

| Group of NRENs | Percentage of Connections to Universities at $\geq 1\text{Gb/s}^3$ | | |
|-----------------|--|---------|---------|
| | In 2003 | In 2005 | In 2006 |
| EU/EFTA | 15% | 24% | 31% |
| Other Countries | | | 13% |

- › High increase in the number of schools and primary education institutes connected
- › Steady traffic growth rates



| Group of NRENs | 'T3' growth a year | | 'T4' growth a year | | 'T3' growth a year | 'T4' growth a year |
|-----------------------------------|--------------------|-----------|--------------------|-----------|--------------------|--------------------|
| | 2003-2004 | 2004-2005 | 2003-2004 | 2004-2005 | 2003-2005 | 2003-2005 |
| EU-15/EFTA ¹ | 30% | 25% | 39% | 42% | 28% | 41% |
| New EU member states ² | 85% | 36% | 78% | 44% | 59% | 60% |
| EU/EFTA ³ | 42% | 28% | 48% | 43% | 35% | 45% |
| Other ⁴ | 28% | 41% | 45% | 35% | 34% | 40% |



Compendium 2006 – Findings (2/2)

- › Many NRENs deploying dark fibre (including cross-border deployment examples)

| Group of NRENs | Number of NRENs in the Survey (2006) | Proportion with at Least Two-thirds Dark Fibre Backbone | | |
|-----------------|--------------------------------------|---|------|-----------------|
| | | 2005 | 2006 | 2008 (expected) |
| EU-25/EFTA | 28 | 24% | 36% | 44% |
| Other Countries | 18 | | 6% | 18% |

- › Diversified service portofolios:
 - › CSIRTs
 - › PKI
 - › Grids
 - › voice and video conferencing
 - › bandwidth on demand



eduroam

- › Education Roaming (<http://www.eduroam.org/>) – eduroam allows eduroam-enabled users to roam among other eduroam institutions and get online using the same credentials they would use at their home institutions.
- › eduroam infrastructure based on:
 - › RADIUS server hierarchy
 - › 802.1X secure access technology
- › Increased deployment throughout 2006
 - › 500+ institutions connected in Europe, Australia and Taiwan
- › APAN region very interested
 - › <http://www.eduroam.edu.au/APAN-eduroam/index.html>
- › Hot in 2007
 - › Service activity started in the framework of the GN2 project (follow-up to JRA5)
- › TERENA contact: Licia Florio (florio _at_ terena.org)



Server Certificate Service

- › Problem:
 - › Self-issued certificates not recognised by browsers
 - › Having an accredited CA is very expensive
 - › Cost per certificate is high if purchased commercially
 - › Demand for certificates on the rise in the NREN community:
 - › Grids, AAI middleware, eduroam, VPN, etc.
- › Our solution: SCS
 - › 8 NRENs and TERENA signed a contract (after selecting the commercial supplier via a Call for Proposals) with GlobalSign in Jan 2006
 - › New three years contract signed in Jan 2007
 - › deliver server certificates for research and education institutes connected to these NRENs
 - › Other NRENs may join (3 new members in Oct 2006) – everybody pays a yearly fee
 - › TERENA contact: Guy Van Den Bergh
(vandenbergh _at_ terena.org)

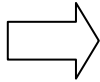


Service Certificate Service - details

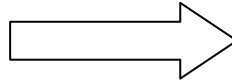
- › RA admins from each NREN trained by GlobalSign
- › Workflow:



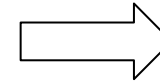
Sysadmin generates Key and CSR via web form



GlobalSign notices the request and sends a challenge to the RA admin



RA admin checks rights, privileges, and if they approve



Sysadmin receives the certificate by email

- › SCS server certificates chain up to the GTE CyberTrust Global Root
 - › Hence no pop-ups on most browsers
- › For issuing SCS certificates, the Cybertrust Educational CA intermediate certificate is used (2006–2013)
- › More than 1400 certificates issued in 2006



Enhanced Collaboration technologies

- › Voice and video conferencing (classic H.323) is old technology, pretty well known and widely used
 - › But scalability and survivability still an issue. Task Force Video Conference Service Studies (TF-VSS).
- › Augment this with instant messaging, presence, desktop sharing, etc.
- › NRENs in Europe are testing new technologies in this area
- › And thinking of a coordinated infrastructure
 - › Task Force Enhanced Communication Services (TF-ECS)
- › TERENA contact: Catalin Meirosu



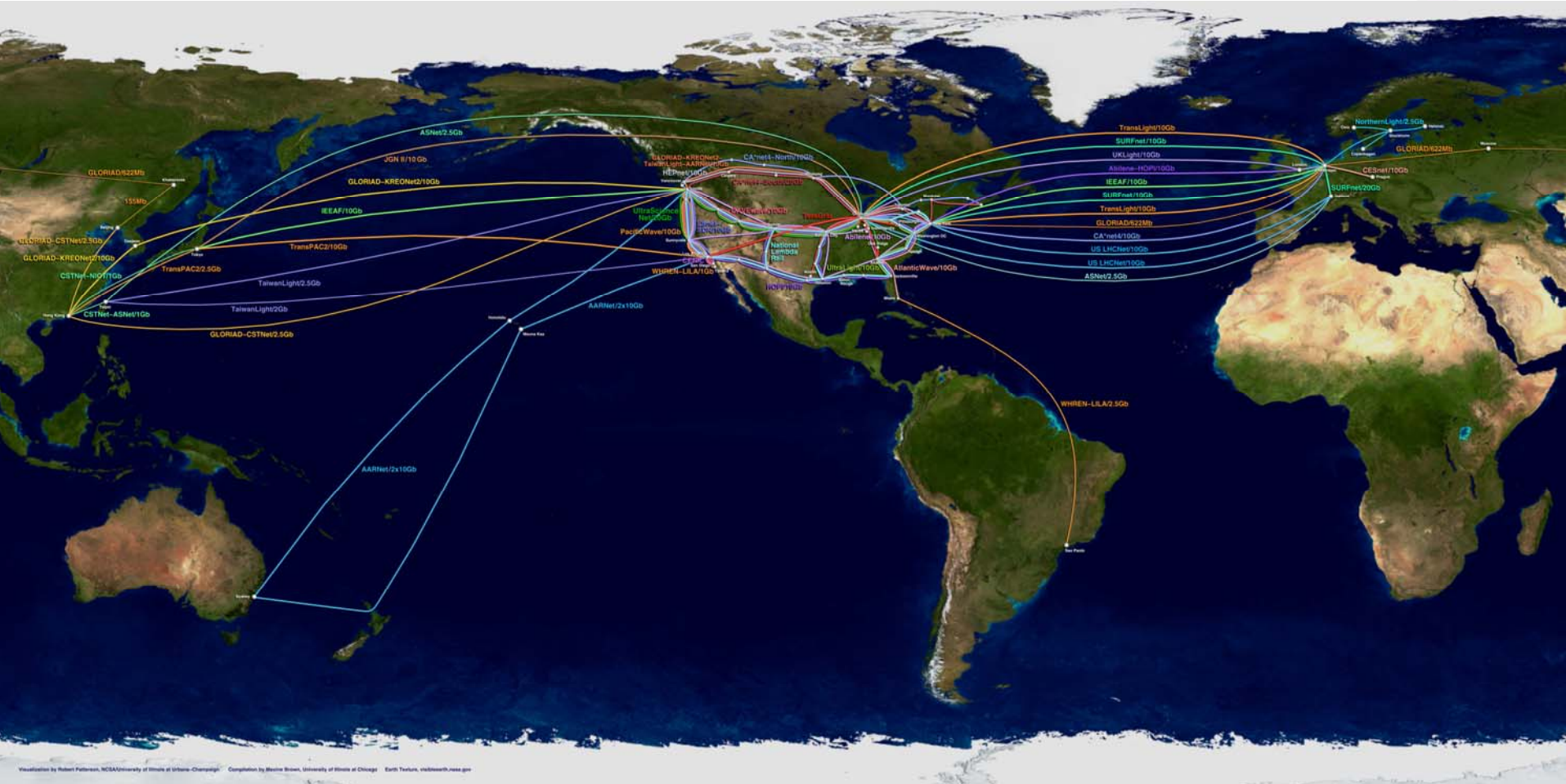
GLIF

- › A global initiative for promoting and supporting optical networking in research and education
- › Managed as a cooperative organisation, with “participants” rather than “members”
 - › Currently 42 participants (see <http://www.glif.is/participants/>).
- › A forum for making contacts, exchanging information and experiences, and resolving technical problems.
- › Working towards harmonisation of policy, service and fault management processes.
- › Secretarial functions assured by TERENA, with contributions from sponsors. Contacts: Kevin Meynell (meynell_at_terena.org) and Licia Florio





GLIF infrastructure



As presented by Kevin Meynell at the CLARA 2006 workshop in Quito



GLIF activities

- › Governance & Growth Working Group
 - › Chair: Kees Neggers (SURFnet)
- › Technical Issues Working Group
 - › Co-Chairs: Erik-Jan Bos (SURFnet) & René Hatem (CANARIE)
- › Control Plane & Grid Integration Middleware Working Group
 - › Chair: Gigi Karmous-Edwards (MCNC)
- › Research & Applications Working Group
 - › Co-Chairs: Maxine Brown (UIC) & Larry Smarr (UCSD)
- › Winter 2007 working groups meeting
(<http://www.glif.is/meetings/2007/winter/>)
14-15 February 2007 at the University of Minnesota,
Minneapolis, United States



EU-funded projects

- › The European Commission funds efforts in the research and technical development areas through the Framework Research Programmes. FP6 ongoing, FP7 first calls issued in Dec 2006
- › TERENA is currently involved in a series of projects
 - › GN2:
 - › the Compendium
 - › EARNEST foresight study
 - › support for less advanced research networks in and around Europe
 - › IPv6: 6DISS
 - › Network monitoring: LOBSTER
 - › Honeynets: NoAH



The NoAH project

- › Network of Affined Honeypots (NoAH)
<http://www.fp6-noah.org>
- › Pilot project developing an innovative honeynet that integrates low interaction and high interaction honeypots
- › Argos – a secure system emulator used as a high-interaction honeypot
- › honey@home – a user-friendly redirector for dark traffic
- › Malware signature generation
- › TERENA contact: Catalin Meirosu





TERENA

Networking the Networkers



TERENA Networking Conference'07

- › 21-24 May, in Lyngby/Copenhagen, Denmark
<http://tnc2007.terena.org>
location: Technical University of Denmark
- › Theme: “Transparent Networks, Visible Services”
- › 92 papers (about half of them invited), in four parallel sessions
- › About 500 participants
- › Call for posters to be issued soon
- › Join us in Lyngby!