GLIF - Global Lambda Integrated Facility

GLIF Overview

Kees Neggers
Tokyo, September 11, 2006

GLIF Vision

Linking the World with Light

- Optical networks are the central architectural element in support of this decade's most demanding e-science applications.
- A research world without geographical boundaries
- Hybrid research networks with
  - Packet-switched Internet for regular many-to-many usage
  - Dedicated lightpaths for guaranteed high-speed few-to-few usage.

What is GLIF

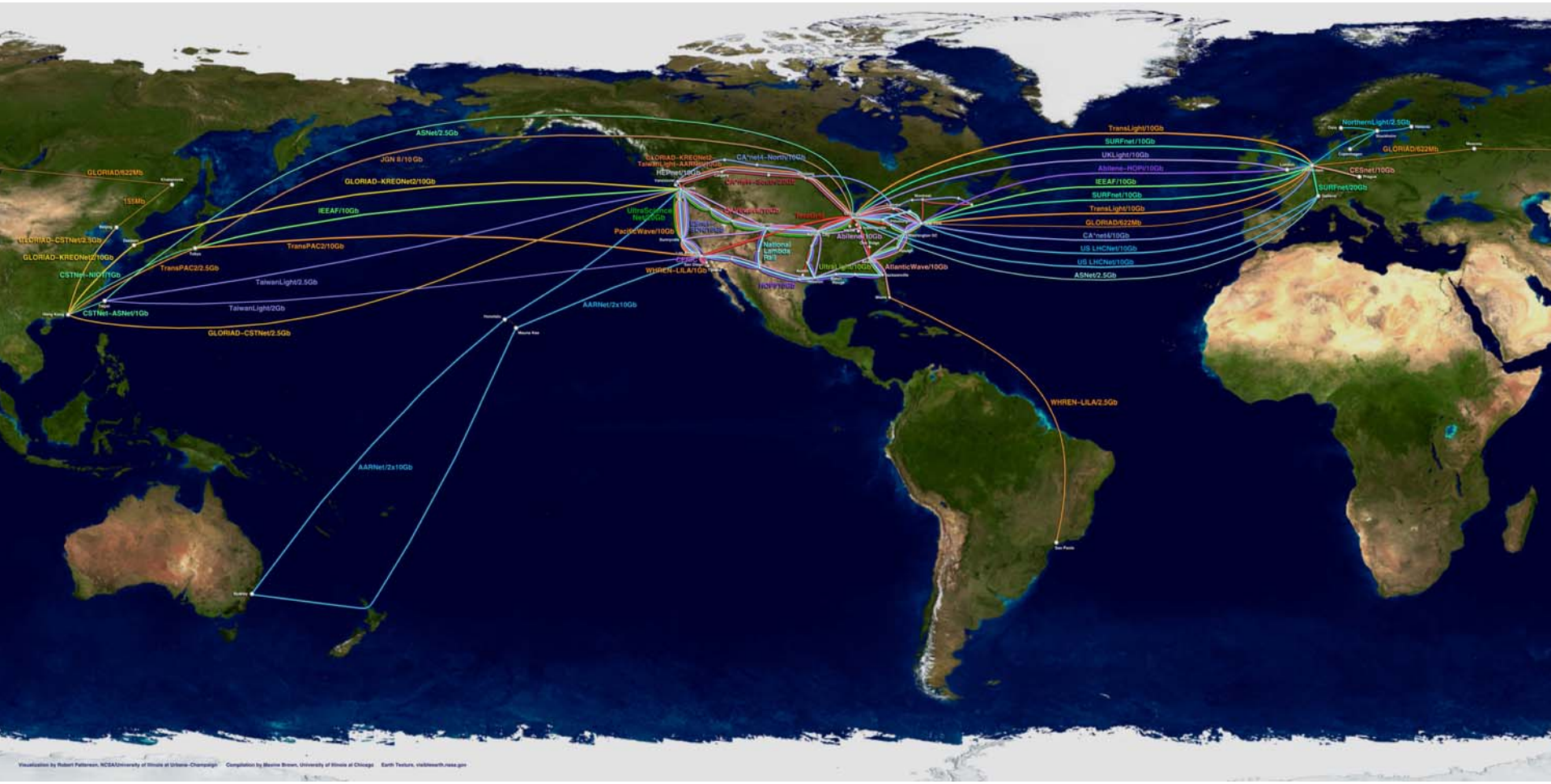
- International virtual organisation to promote and support optical networking; established in August 2003 at 3rd LambdaGrid Workshop in Reykjavik
- Open to anybody sharing the vision of optical interconnection of different facilities, who voluntarily contribute network resources (e.g. equipment, lambdas) or actively participate in relevant activities.
- Managed as cooperative activity with ‘participants’ rather than ‘members’ under a lightweight governance structure.
- Secretariat functions provided by TERENA with voluntary contributions from participants.

GLIF Participants

What is GLIF doing

- Providing a platform for global cooperation of NRENs, institutions and consortia working with lambdas.
- Helping to create a global-scale laboratory to facilitate application and middleware development, and to build distributed systems.
- Providing a forum for making contacts, exchanging information and experiences, and resolving technical problems.
- Working towards harmonisation of policy, service and fault management processes.

GLIF Infrastructure



Lambdas and GOLEs

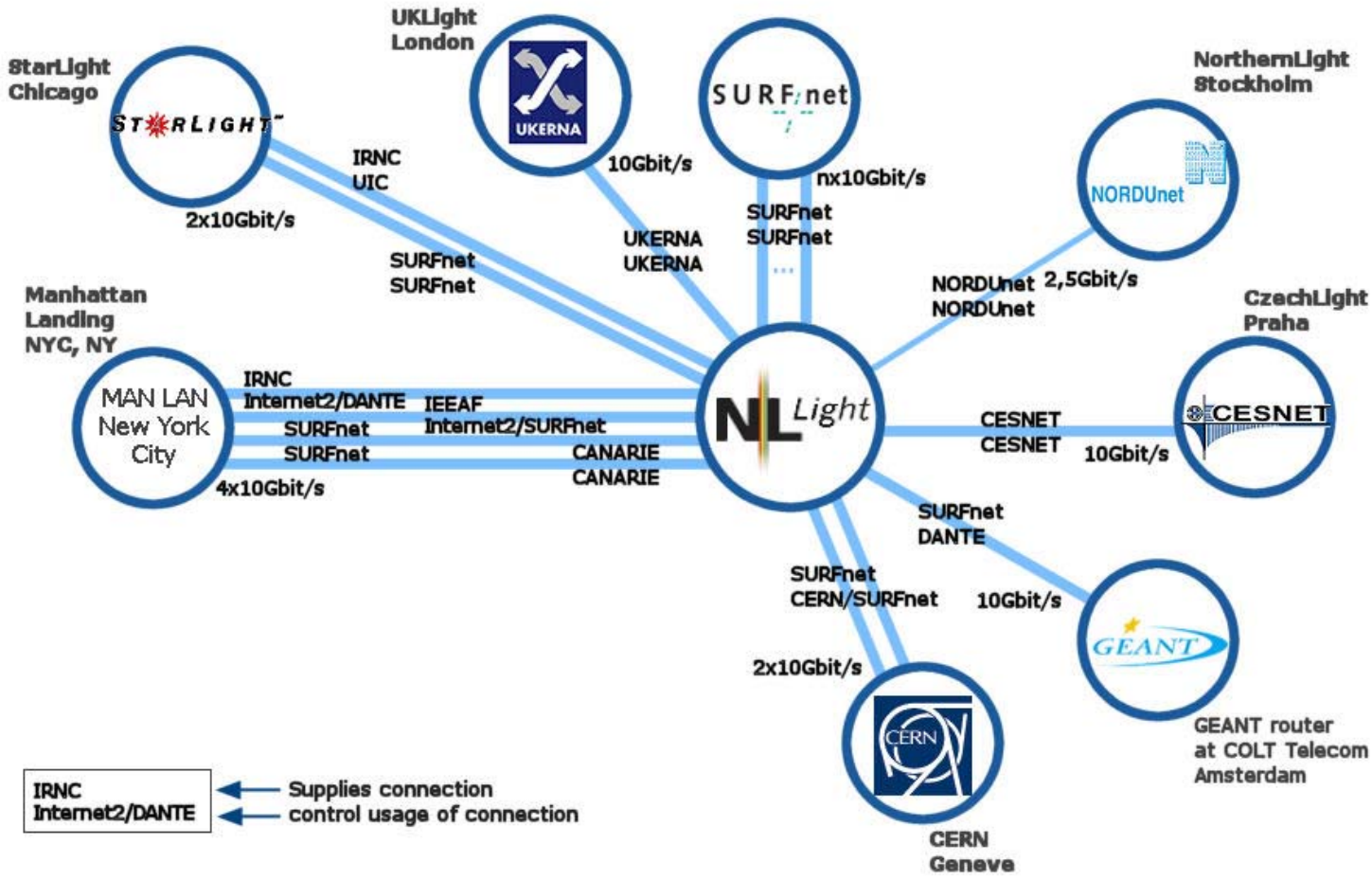
GLIF Open Lightpath Exchanges (GOLEs)

- GLIF lambdas are interconnected through established exchange points known as GOLEs.
- GOLEs are comprised of equipment capable of terminating lambdas and performing lightpath switching, allowing end-to-end connections.
- Open connection policy, AUP free, no restriction on interconnection with commercial networks
- Coordination effort to document resources, set-up and tear-down connections, troubleshoot, and establish common policies. Monthly teleconferences improving liaison.

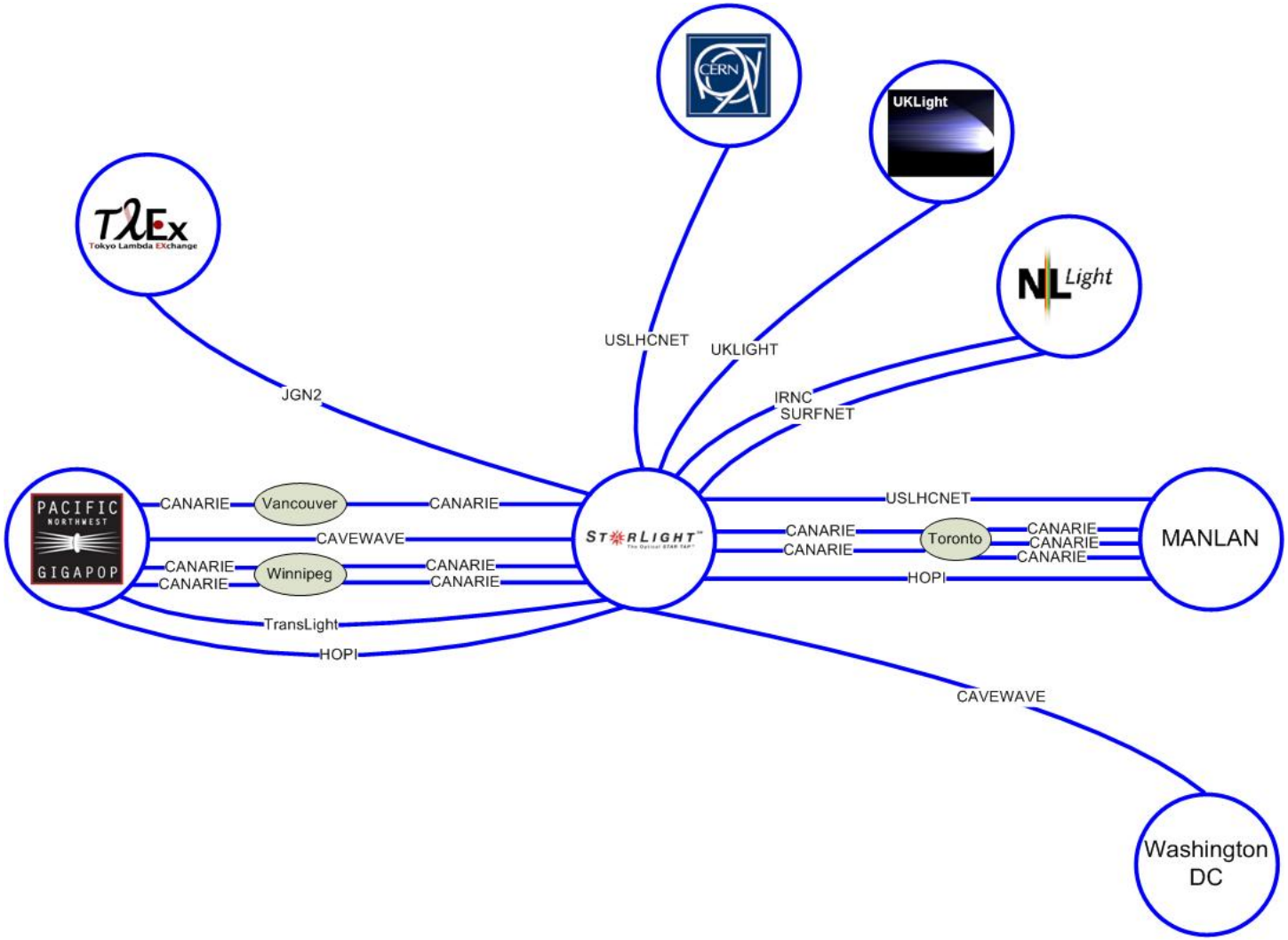
GOLEs documented on the GLIF Resources website

- CANARIE-StarLight - Chicago
- CANARIE-PNWGP - Seattle
- CERN - Geneva
- KRLight - Seoul
- MAN LAN - New York
- NetherLight - Amsterdam
- NorthernLight - Stockholm
- Pacific Northwest GigaPoP - Seattle
- StarLight - Chicago
- T-LEX - Tokyo
- UKLight - London
- UltraLight - Los Angeles

Example Topology of a GOLE - NetherLight

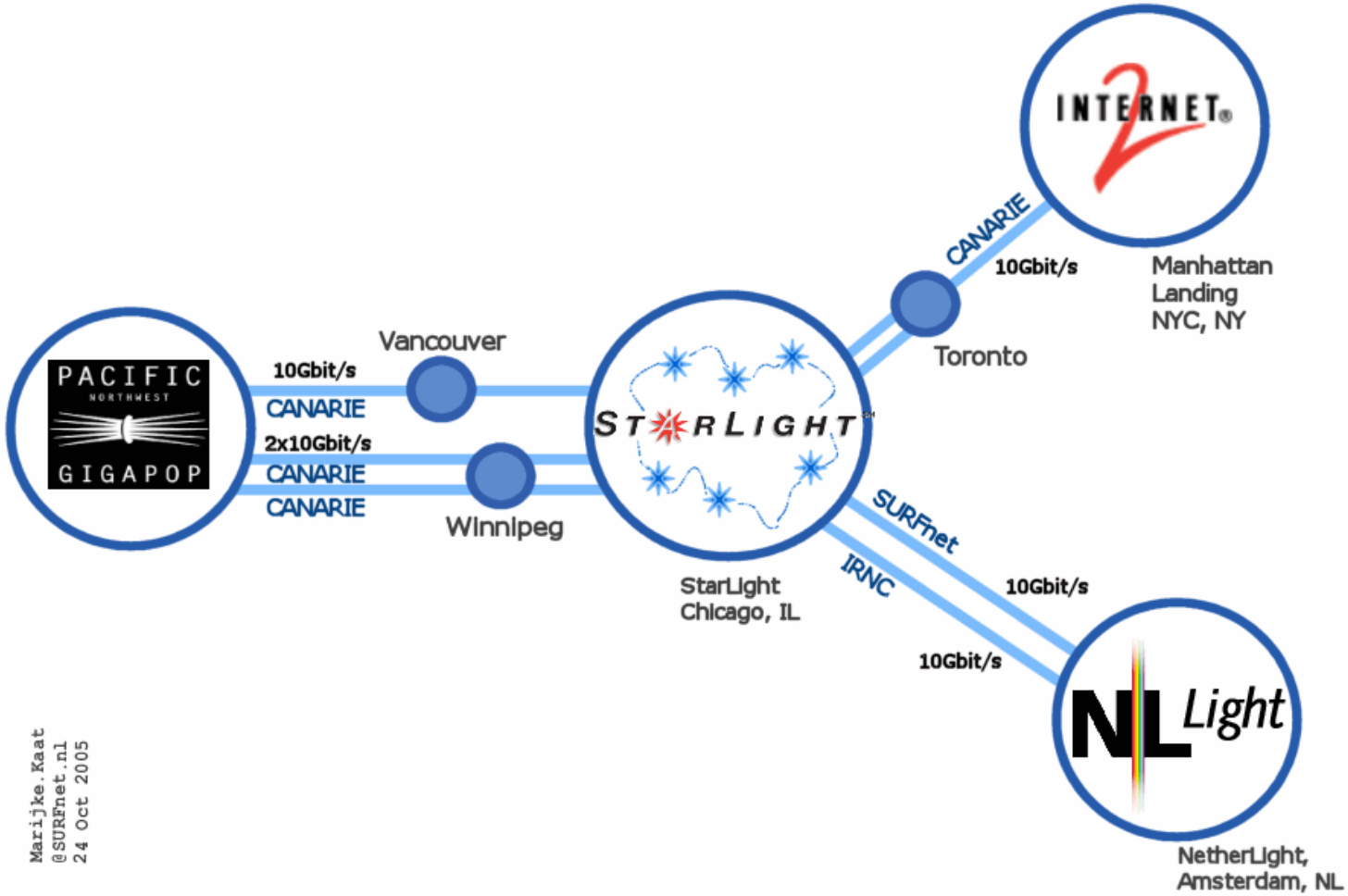


StarLight



By Linda Winkler
8/2/2006

CANARIE StarLight



Marijke.Kaat
@SURFnet.nl
24 Oct 2005

GLIF Working Groups

- 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)

Governance and Growth Working Group

- Sets overall objectives and ways of working of the GLIF
- Formulates GLIF policies.
- Defines rules concerning participation in the GLIF.
- Supervises the GLIF Secretariat (TERENA).

Secretary: Karel Vietsch

Mailing List: gov@glif.is

Research & Applications Working Group

- The primary goal of the working group is to train a new generation of scientists on the use of super-networks.
- Identifies applications that can benefit from LambdaGrids and defines the services that the user communities need.
- Stimulates the use of the emerging LambdaGrid

Mailing List: rap@glif.is

Technical Issues Working Group

- Designs and implements an international LambdaGrid infrastructure
- Identifies connection requirements and equipment being used.
- Identifies functions and services to be provided.
- Defines standard terms for GLIF technical resources.
- Develops database of GLIF technical resources.
- Identifies and documents best current practices within GLIF.

Secretary: Kevin Meynell
Mailing List: tech@glif.is

Control Plane and Grid Integration Middleware WG

- Agrees on the interfaces and protocols that communicate on the control planes of the contributed resources.
- Determines what information needs to be exchanged.
- Investigates automation of control plane mechanisms.

Secretary: Licia Florio

Mailing List: controlplane@glif.is

GLIF Secretariat Sponsors

Thank you!

And a BIG Thank You to

for hosting this GLIF Annual Workshop.