

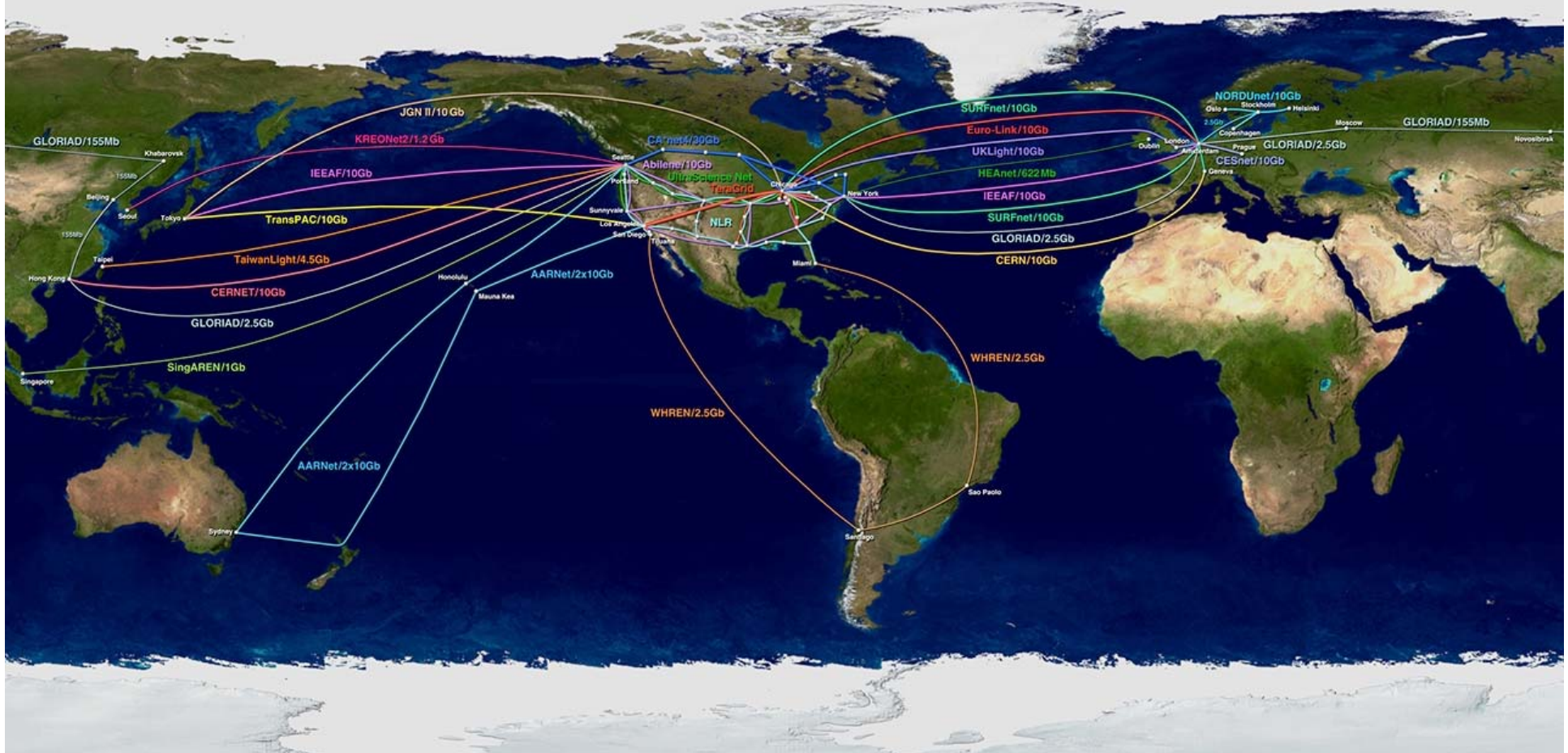
GLIF, the Global Lambda Integrated Facility



Kees Neggers
Managing Director SURFnet

CCIRN
4 June 2005, Poznan, Poland

Linking the World with Light – the GLIF Challenge



GLIF vision

Linking the World with Light

- It is no longer sufficient to connect researchers to the internet, they have to be connected to each other.
- GLIF community shares a common vision of building a new grid-computing paradigm, in which the central architectural element is optical networks, not computers, to support this decade's most demanding e-science applications.

History of Lambda Workshops

- **Brainstorming in Antalya, TR at TERENA Networking Conference in 2001**
- **Lambda workshops so far were by invitation only but always attached to an open event related to lambda networking:**
- **September 2001: first Lambda Workshop in Amsterdam followed by open Lambda Workshop organized by TERENA**

GLIF History

- **Second Lambda Workshop in 2002 in Amsterdam was attached to iGrid2002, hosted by Science Park Amsterdam**



GLIF

- **August 2003: third Lambda Workshop in Reykjavik hosted by NORDUnet and attached to the NORDUnet 2003 Conference**
- **In Reykjavik with 33 participants from Europe, Asia and North America it was agreed to continue under the name:**

GLIF: Global Lambda Integrated Facility



GLIF Founding Members



SURF/net
/



GLIF after Reykjavik

- **GLIF is a collaborative initiative among worldwide NRENs, consortia and institutions with lambdas; as such GLIF is clearly positioned on the demand side of the market**
- **GLIF is a world-scale Lambda-based Laboratory to facilitate application and middleware development**
- **GLIF will be managed as a cooperative activity**
- **WWW.GLIF.IS will be the home for all interested in the GLIF activities**

GLIF Working Groups

- **Governance and Growth**

- Kees Neggers - kees.neggers@surfnet.nl - chair.

Goal: To identify future goals in terms of lambdas, connections and applications support, and to decide what cross-domain policies need to be put in place

- **Research and Applications**

- Peter Clarke - clarke@hep.ucl.ac.uk - chair

Goal: To identify applications that can benefit from LambdaGrids, and to define the services that the user communities need

- **Technical Issues**

- Erik-Jan Bos - erik-jan.bos @ surfnet.nl – co-chair

Rene Hatem - rene.hatem@canarie.ca - co-chair.

Goal: To design and implement an international LambdaGrid infrastructure, identifying equipment, connection requirements, and engineering functions and services

- **Control Plane and Grid Integration Middleware**

- Gigi Karmous-Edwards - gigi@mcnc.org - chair

Goal: To agree on the interfaces and protocols that talk to each other on the control planes of the contributed Lambda resources

GLIF Nottingham Participants



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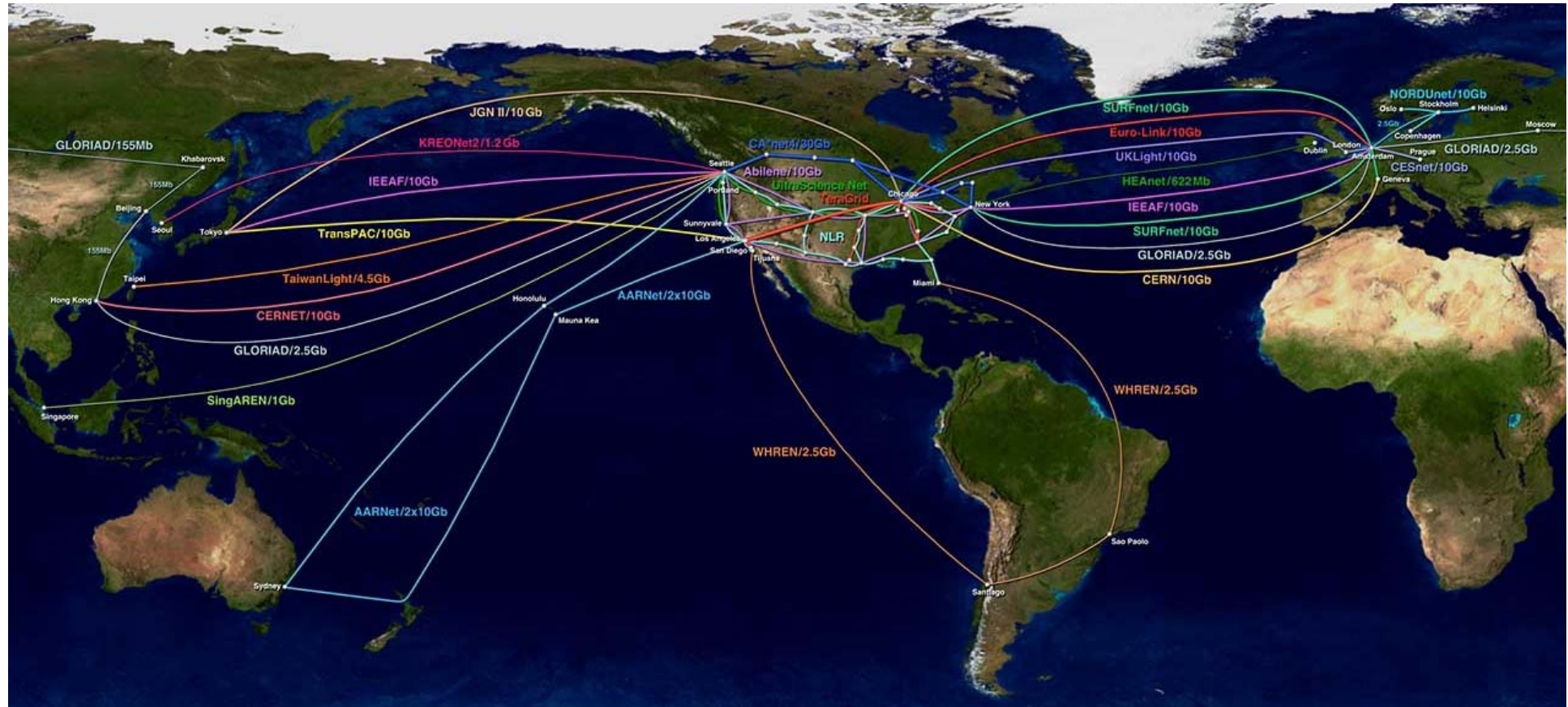


GLIF after Nottingham

- **GLIF is an open community**
- **GLIF has participants, not members**
- **GLIF “glues” together the networks and resources of its participants**
- **TERENA to serve as the GLIF Secretariat**

Appropriate to their mission and the spirit of community cooperation, GLIF participants implemented a “lightweight” governance structure.

GLIF World Map – December 2004



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Visualization courtesy of Bob Patterson, NCSA.



Open GLIF Optical Exchanges

- **GLIF infrastructure will be Multi-domain**
- **Like the Internet lambda networking will move from research to commercial networks**

Open GLIF Optical Exchanges will be key to facilitate

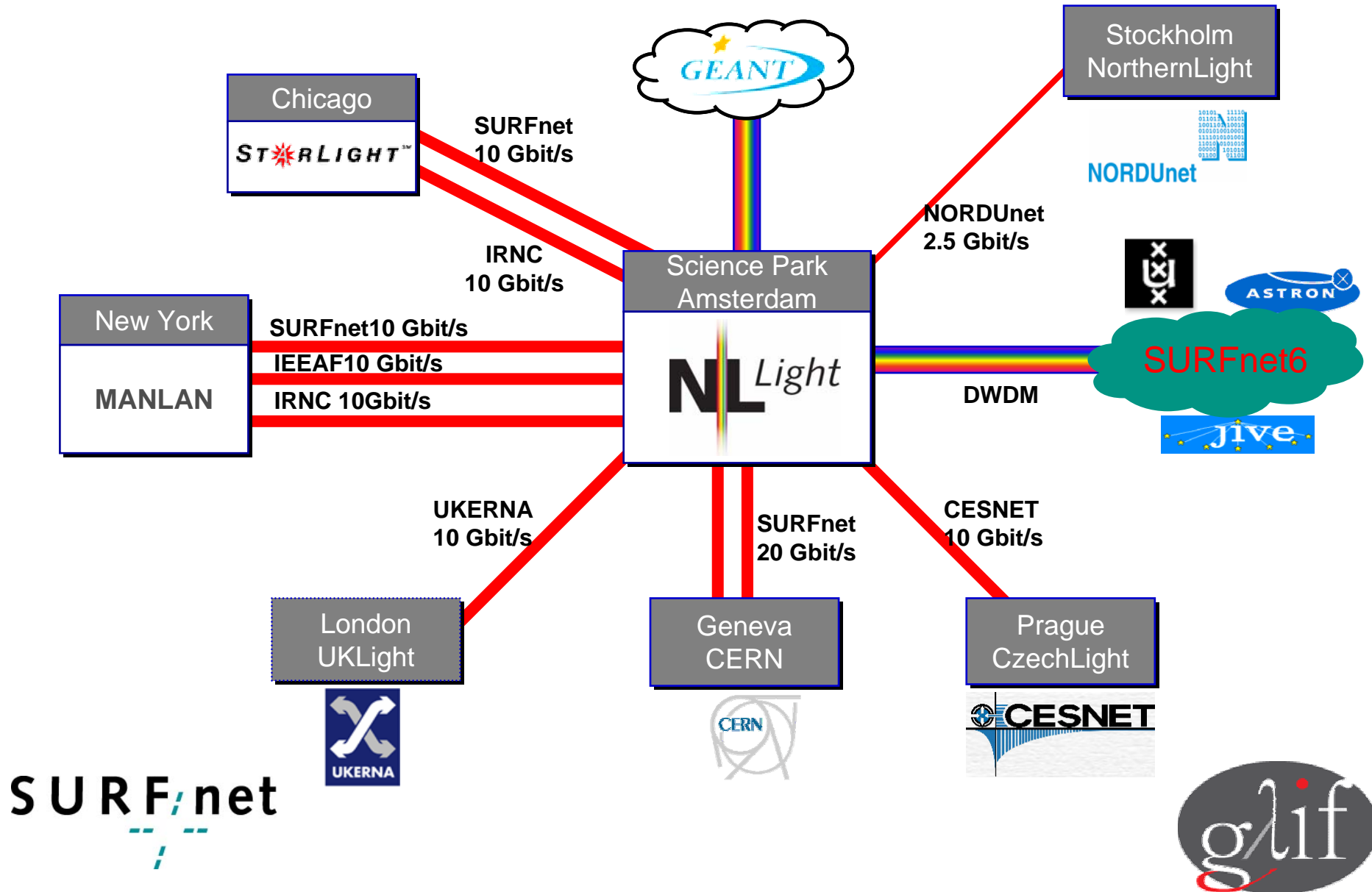
- **the further evolution and scaling of the emerging GLIF infrastructure.**
- **the interworking with the commercial domain**
- **the smooth migration from the research area to the market**

NetherLight: Open GLIF Optical Exchange



- **Open Optical Exchange in Amsterdam**
 - Operational since January 2002
 - Established in Science Park Amsterdam
 - Built and operated by SURFnet
- **Nortel Networks HDXc at the centre**
- **Full duplex 640G non-blocking cross-connect capability**

NetherLight 3Q2005



GLIF Optical Exchanges

- NetherLight-Amsterdam
- CzechLight-Prague
- UKLight-London
- NorthernLight-Stockholm
- Barcelona
- StarLight-Chicago
- MAN LAN-New York
- PNWGP-Seattle
- Pacific Wave-Los Angeles
- Atlantic Wave-
NY/WashingtonDC/Atlanta/
Miami/Sao Paulo
- TLEX- Tokyo
- HKLight-Hong Kong
- DragonLight-HK/Beijing
Sydney
- BLEX-Bangkok
- Singapore

GLIF 5th Annual Workshop

The GLIF 5th Annual Global LambdaGrid Workshop will be held in September 2005 in conjunction with iGrid 2005 meeting in the new UCSD Cal-(IT)² building in San Diego, California, USA,

*i*Grid 2005

THE GLOBAL LAMBDA INTEGRATED FACILITY

September 26-30, 2005
University of California, San Diego
California Institute for Telecommunications and Information Technology [Cal-(IT)²]
United States

SURFnet

