

GLIF, the Global Lambda Integrated Facility

GLIF 10 year Overview

Kees Neggers

10th Annual Global LambdaGrid Workshop
CERN, Geneva 13-14 October 2010

GLIF History

- At the Beginning of this century there was a growing awareness that Next Generation Research Networks would not be a simple extrapolation of the current Internet evolution
- On September 11-12, 2001 a first meeting and LambdaGrid Workshop was hosted in Amsterdam by the Trans-European Research and Education Networking Association (TERENA, Europe)
- The Hybrid Networking concept has evolved since then in a global context in GLIF Working groups and yearly LambdaGrid Workshops combining the strengths of advanced users and research infrastructure providers

GLIF vision

Linking the World with Light

- The 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.

Global Lambda Integrated Facility

- GLIF is an international virtual organization managed as a cooperative activity with 'participants' rather than 'members' with a lightweight governance structure.
- Open to anybody sharing the vision of optical interconnection of different facilities, who voluntarily contributes network resources (e.g. equipment, lambdas) or actively participates in relevant activities.
- Secretariat functions provided by TERENA with voluntary contributions from participants.
- 3 Working Groups



GLIF 2002

was again in Amsterdam, hosted by the Amsterdam Science and Technology Centre in conjunction with iGrid 2002



SURF

NET



GLIF 2003 in Reykjavik, Iceland, hosted by NORDUnet

Renamed GLIF, a *virtual facility* in support of persistent data intensive scientific research and middleware development on LambdaGrids



GLIF 2004 in Nottingham, UK, hosted by UKERNA



GLIF 2005 in San Diego, CA, US, hosted by Calit2

in the brand new Calit2 building in conjunction
with iGrid 2005



GLIF 2006 in Tokyo, Japan, hosted by NICT and WIDE



SURF

NET



GLIF 2007 in Prague, CZ hosted by CESNET



SURF

NET



GLIF 2008 in Seattle hosted by PNWGP and UW



SURF

NET



GLIF 2009 in Daejeon, Korea, hosted by Kisti



SURF

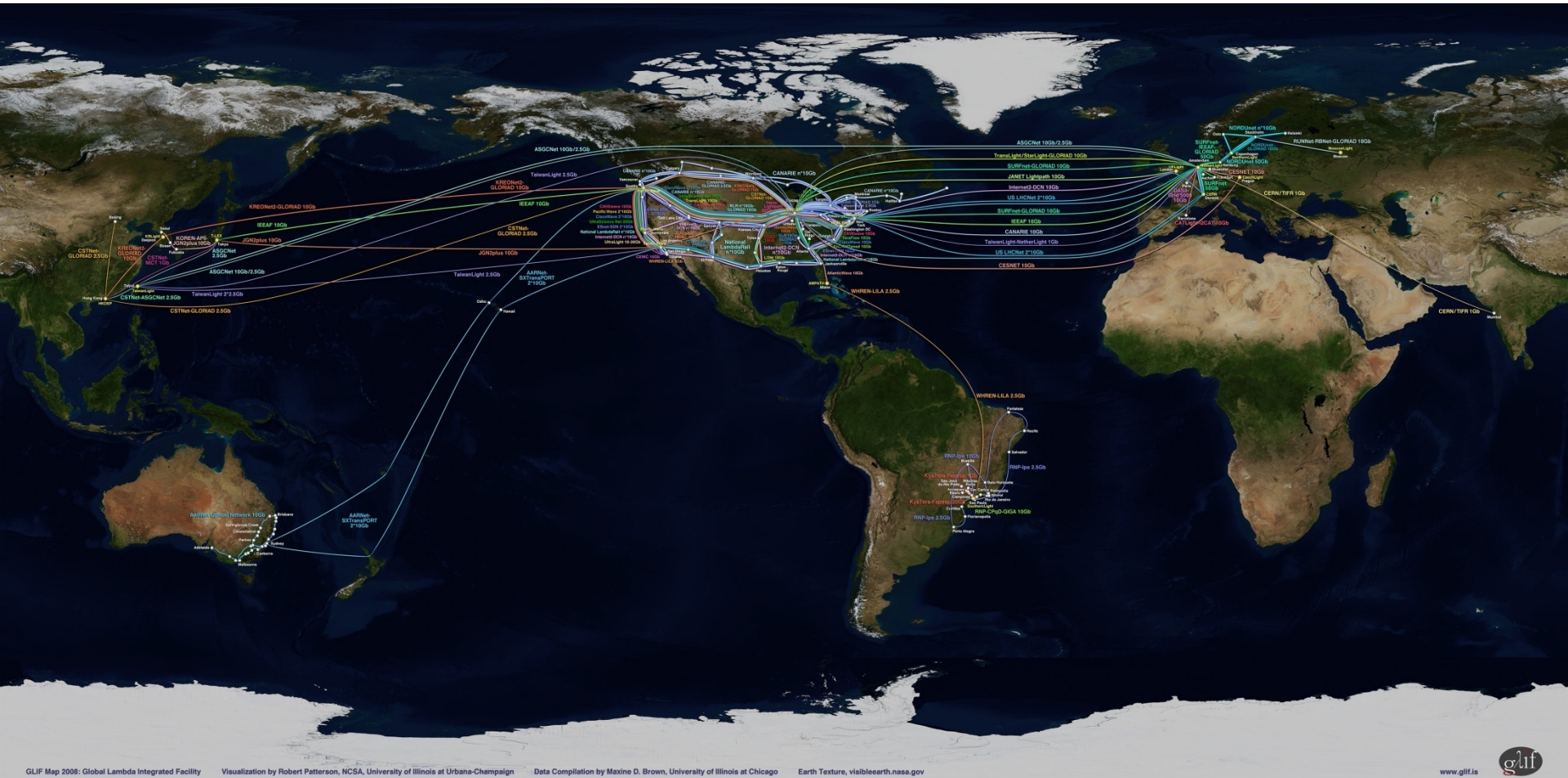
NET



GLIF resources: GOLEs

- GLIF lambdas are interconnected through established lightpath exchange points known as GOLEs: GLIF Open Lightpath Exchanges
- GOLEs are comprised of equipment capable of terminating lambdas and performing lightpath switching, allowing end-to-end connections
- GOLEs have an open connection policy

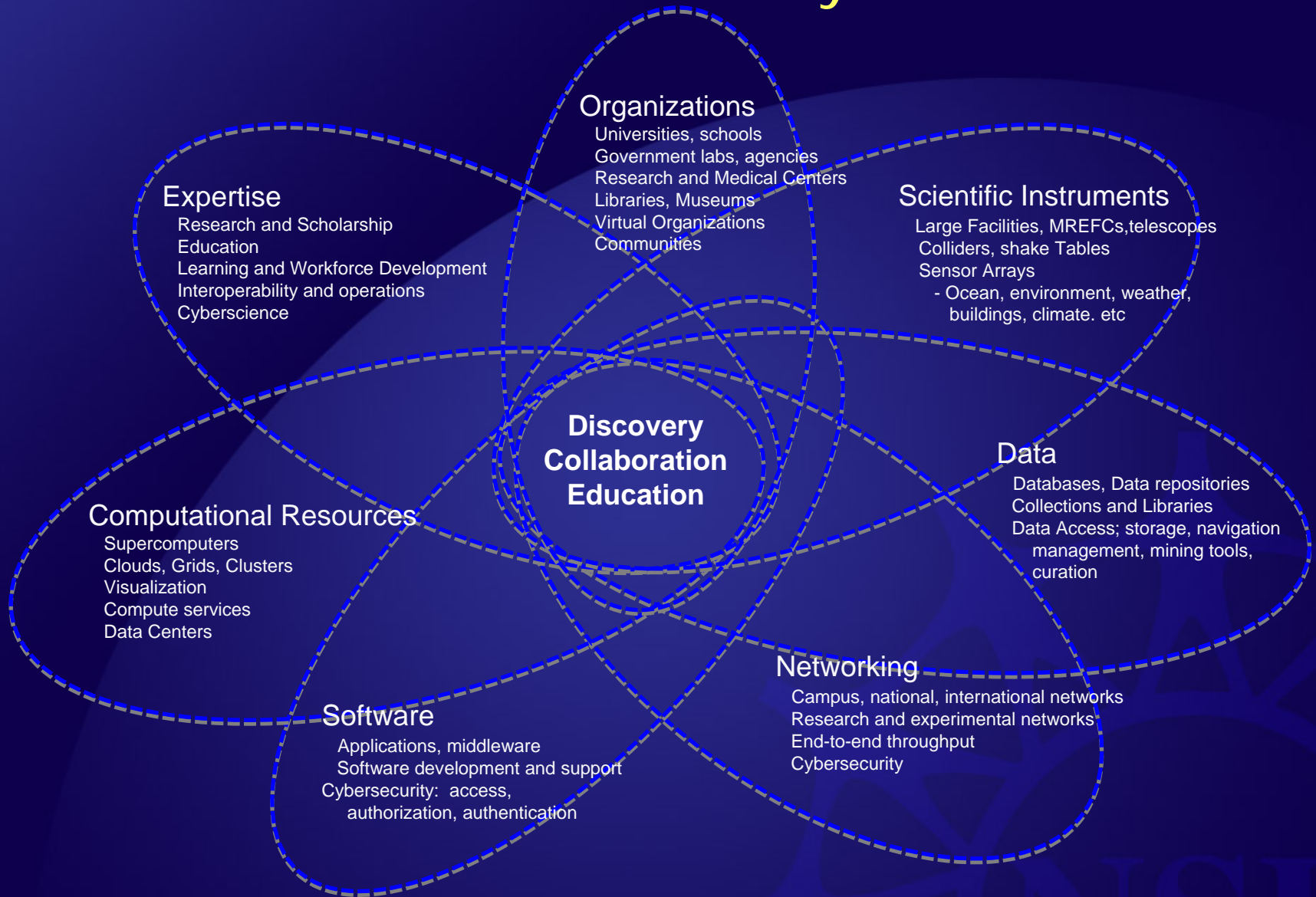
GLIF resources: lambdas



What's next

- 40 G applications
- Dynamic GOLEs
- **Providing users with seamless access to a global e-Infrastructure Ecosystem**

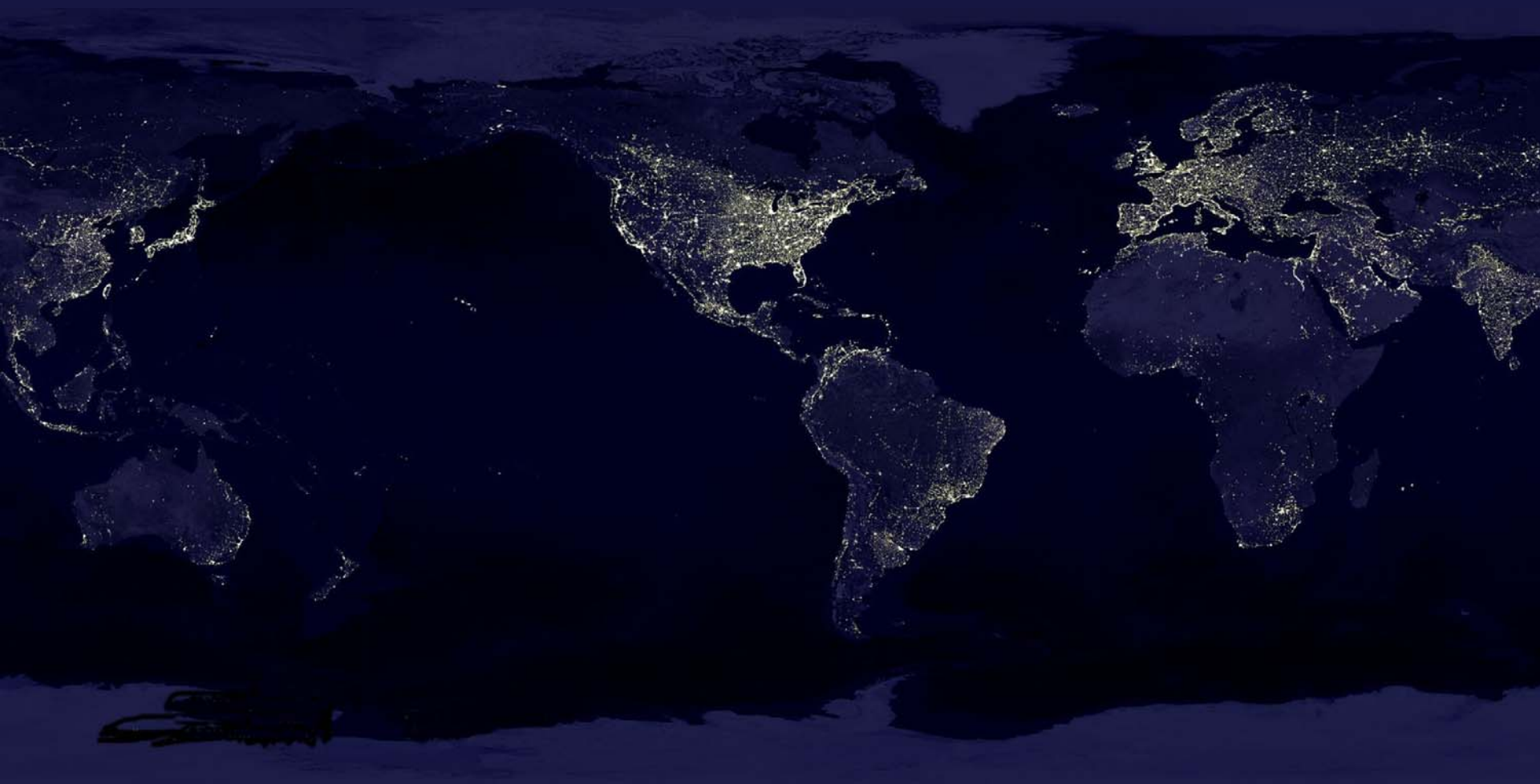
E-Infrastructure Ecosystem



Maintainability, sustainability, and extensibility

(Source: Alan Blatecky, 2010)

Thank You



<http://www.glif.is/>