

A wireframe model of a human head and shoulders is positioned on the right side of the slide. The background is a dark blue digital space filled with glowing blue cubes and lines, suggesting a data or network environment. A teal rounded rectangle is overlaid on the left side of the image, containing the text 'GLIF Automated GOLE TF'.

GLIF Automated GOLE TF

Gerben van Malenstein (chair)

19-20 March 2014 – Atlanta, GA, USA



Objectives

- **Implementation of a standard: NSI**
 - Connection, discovery, topology and monitoring services
- **Proving ground for existing NSI services**
 - Verify their correct usage and suggest improvements
- **Develop new NSI services**
 - Interdomain BoD authentication and authorization
 - Performance verification
- **Professionalize operational procedures****
 - Allow real end users to utilize a stable network environment
 - Simplify maintenance for the A-GOLE operators

Automated GOLE Fabric



Milestones 2013

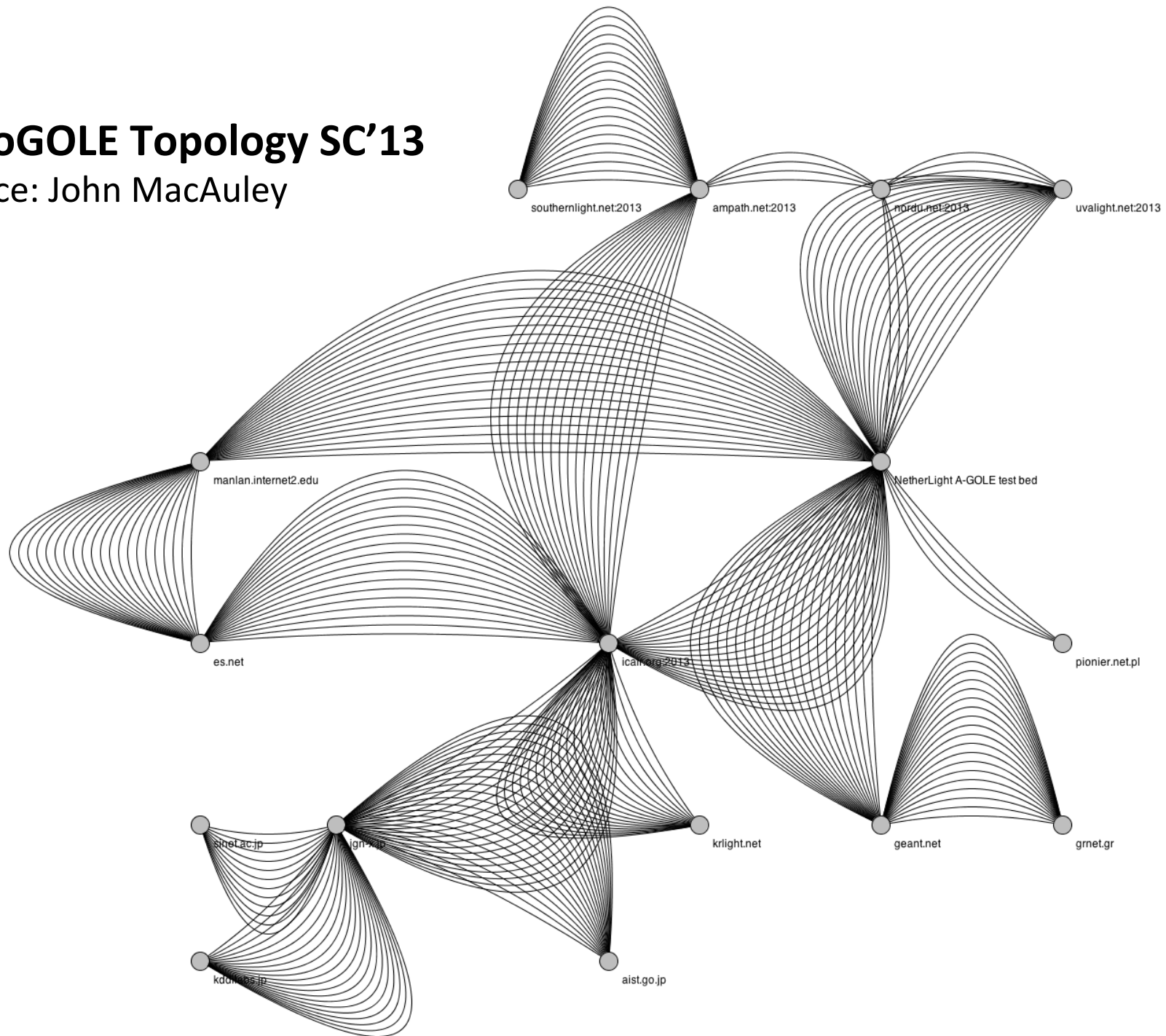
- ✓ Showing simple topology exchange at TNC2013
- ✓ NSI hands-on workshop at APAN36

GLIF Singapore / SC'13:

- ✓ NSI-CSv2.0 interoperability
- ✓ Topology exchange
- ✓ Application demo
- ✓ Press release

AutoGOLE Topology SC'13

Source: John MacAuley



AutoGOLE Press Release

GLIF Automated GOLE proves NSI Connection Service v2.0 interoperability

3 December 2013 -- The Global LambdaGrid Integrated Facility (GLIF) Automated GOLE pilot dynamically connects GLIF Open Lightpath Exchanges and networks across the globe. During SuperComputing'13 (SC'13) in Denver, United States, dynamic layer 2 services were successfully set up between twenty network domains on four continents, proving the real world compatibility of the Network Service Interface Connection Service (NSI CS 2.0). NSI is an architectural standard being developed by the Open Grid Forum (OGF), and implemented as a cooperative project with the GLIF community.

The demonstration involved six software implementations: AutoBAHN by GÉANT, G-Lambda/A by AIST, G-Lambda/K by KDDI R&D Labs, DynamicKL by KISTI, OpenNSA by NORDUnet, OSCARS by ESnet and BoD by SURFnet. Control plane communication between these Network Resource Managers (NRMs) was undertaken through the Network Services Interface Connection Service version 2.0 Release 99. The pilot used distributed network topology descriptions based on the Network Markup Language standard with NSI extensions. Multi-domain pathfinding and set up across the NRMs were accomplished by using NSI aggregator implementations; one was a joint development of SURFnet and ESnet, with the other developed by AIST.

The participating GOLEs, networks and partners during the SC'13 and earlier GLIF 2013 demonstrations were AIST (Japan), SINET (Japan), KDDI R&D Labs (Japan), JGN-X (Japan), KISTI (South Korea), SingAREN (Singapore), SouthernLight (Brazil), RNP (Brazil), AMPATH (United States), ESnet (United States), Internet2 (United States), StarLight (United States), PSNC (Poland), NORDUnet (Scandinavia), GEANT (Europe), GRnet (Greece), CESNET (Czech Republic), University of Amsterdam (The Netherlands), SURFnet (The Netherlands) and NetherLight (The Netherlands).

- <http://www.glif.is/publications/press/20131203.html>

Milestones 2014

Automated GOLE 2014 Plan v1.0, February 13, 2014

- **NSI-CS v2.0 R117 implemented (GLIF Atlanta)**
- **Authentication/Authorization ready (TNC2014)**
 - Maybe also Topology Exchange first 'draft' demo
 - 19 – 22 May, Dublin, Ireland
- **Topology Exchange ready (GLIF Annual)**
 - 14th Annual Global LambdaGrid Workshop
 - 29 September – 1 October, Queenstown, New Zealand
- **Full demonstration (SC'14)**
 - SuperComputing'14
 - 16 – 21 November, New Orleans, USA

Work items 2014

Item	Description	Due	Leading organization
Authentication / Authorization	Creating a AAI framework that allows secure setup of services	TNC2014	SURFnet (Hans Trompert)
Topology Exchange	Creating a mechanism that exchanges topology descriptions of GOLEs automatically	SC'14	ESnet, UvA (Chin Guok, Miroslav Zivkovic)
Retagging capabilities	Describing what's necessary to implement retagging capabilities inside the AutoGOLE fabric – also creating a plan for implementing	SC'14	Group effort
SDN/OpenFlow inside the AutoGOLE	It's foreseen that AutoGOLE NRMs could be talking OpenFlow to actual hardware. This item results in deployment of an OpenFlow controller speaking NSIv2 inside the AutoGOLE	Q4	iCAIR (Jim Chen, Joe Mambretti)
Operational items	Creating concepts on strengthening operations, implementing these	Q4	Tangui Coulouarn to look for someone to lead (uniform) perational issues



gerben.vanmalenstein[at]surfnet.nl



www.surfnet.nl



+31 30 2 305 305



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