Automated GOLE

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14th Annual Global LambdaGrid Workshop

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SURF NET

Status 2014

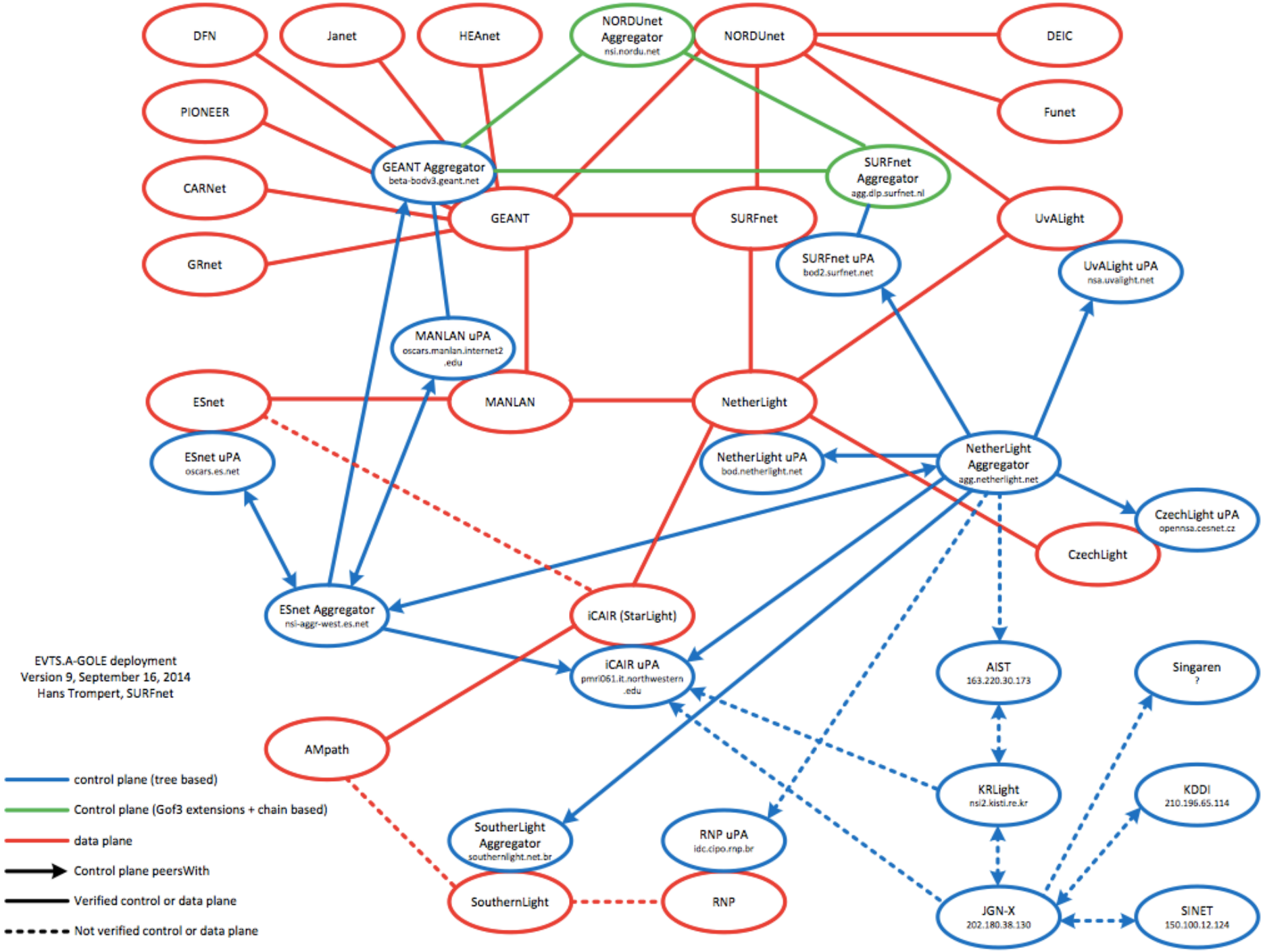
- Implementing NSI-CSv2.0 (GFD.212)
- Implementing two-way TLS on the control plane
- Implementing OpenFlow-based controlling in at least one domain (StarLight)
- Implementing Authentication and authorization (draft implementation)
- Implementing topology exchange
- Improve operational procedures

Goals 2014

- Two-way TLS and NSI-CSv2.0R117

		TO									
		AutoBAHN	DynamicKL	G-lambda/A (PA)	G-lambda/K	OpenNSA	OSCARS	SURFnet BoD	nsi-safnari	nsi-requester	G-lambda/A (Aggr)
FROM	AutoBAHN	X								X	
	DynamicKL		X				X			X	
	G-lambda/A			X			X			X	
	G-lambda/K				X		X			X	
	OpenNSA					X	X			X	
	OSCARS		X	X	X	X	X	X		X	
	SURFnet BoD						X			X	
	nsi-safnari									X	
	nsi-requester									X	
	G-lambda/A (Aggr)									X	X

	NSI-CSv2-R117 & Two-way TLS OK
	Two-way TLS OK
	NSI-CSv2-R117 OK
	Started testing
	Found errors/On-Hold
	Not started testing


DFN
Janet
HEAnet
NORDUnet Aggregator
nsi.nordu.net
NORDUnet
DEIC
PIONEER
Funet
GEANT Aggregator
beta-bodv3.geant.net
SURFnet Aggregator
agg.dlp.surfnet.nl
CARNet
GEANT
SURFnet
UvALight
GRnet
SURFnet uPA
bod2.surfnet.net
UvALight uPA
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MANLAN uPA
oscars.manlan.internet2.edu
ESnet
MANLAN
NetherLight
ESnet uPA
oscars.es.net
NetherLight uPA
bod.netherlight.net
NetherLight Aggregator
agg.netherlight.net
CzechLight uPA
opennsa.cesnet.cz
CzechLight
ESnet Aggregator
nsi-aggr-west.es.net
iCAIR (StarLight)
iCAIR uPA
pmri061.it.northwestern.edu
AIST
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Singaren
?
AMpath
KRLight
nsi2.kisti.re.kr
KDDI
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SoutherLight Aggregator
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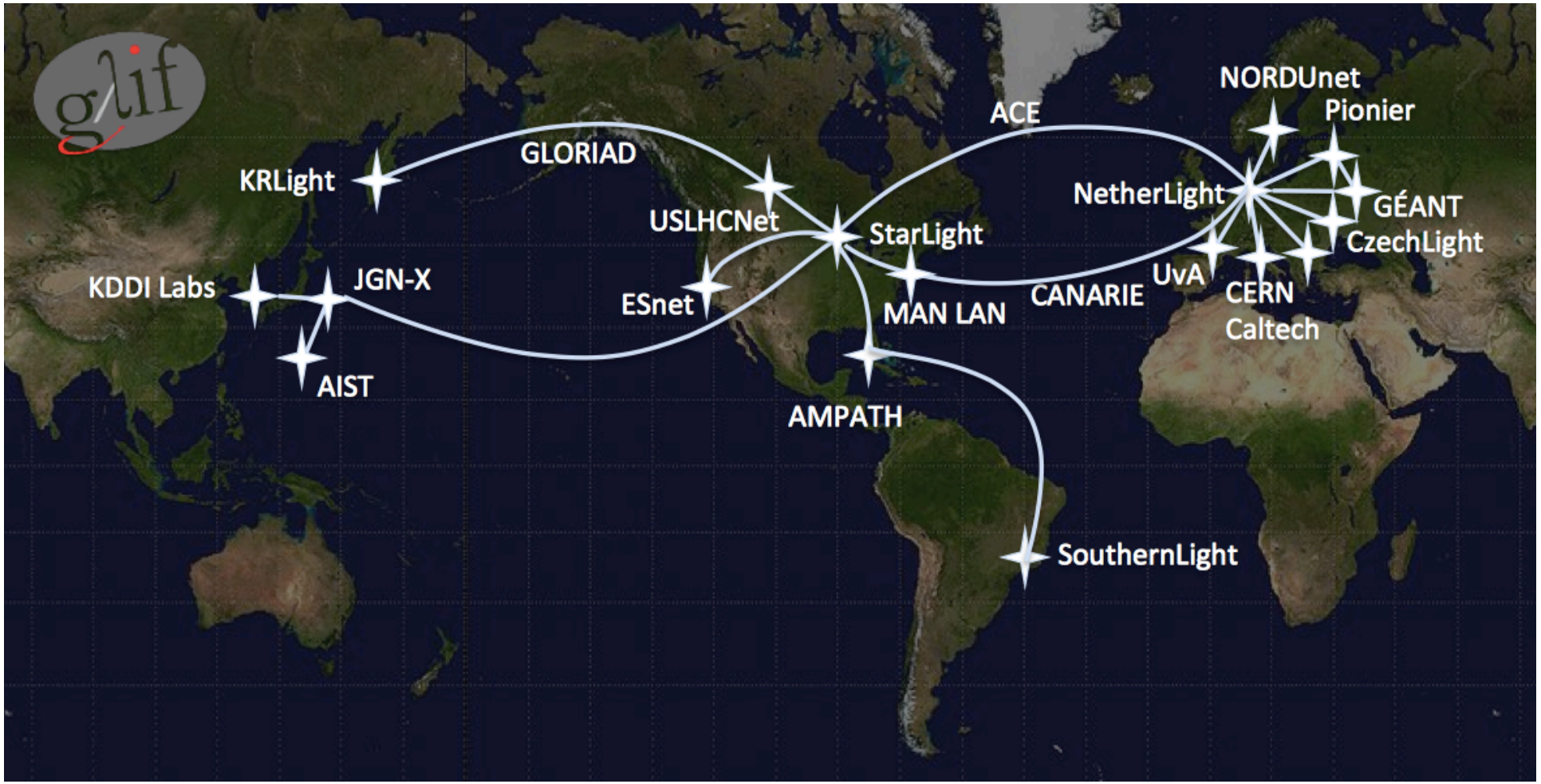
RNP uPA
idc.cipo.rnp.br
SouthernLight
RNP
JGN-X
202.180.38.130
SINET
150.100.12.124
EVTS.A-GOLE deployment
Version 9, September 16, 2014
Hans Trompert, SURFnet
control plane (tree based)
Control plane (Gof3 extensions + chain based)
data plane
Control plane peersWith
Verified control or data plane
Not verified control or data plane

AutoGOLE as a production facility



The Automated GOLE was moved into production on Friday September 12, 2014.
We do expect further necessary improvements throughout the fabric and need user involvement to evolve.

AutoGOLE for LHC

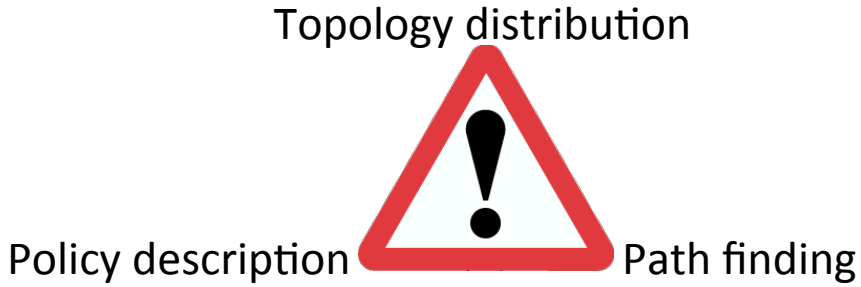
- **AutoGOLE as starting platform for LHCONE Point2Point Experiment**
- *LHC meeting Ann Arbor: "For the LHCONE Point2Point Experiment, the Automated GOLE offers to provide a starting point to conduct real traffic experiments between a small number of LHC sites"*
- *Typically, 2-3 sites per continent to start with. For Europe these **could** be DE-KIT, NDGF and SURFsara. For the US sites may volunteer, as well as for e.g. Latin America and Asia.*

AutoGOLE for LHC (Proposed timeline)

- Before SC'14
  - LHC sites to join P2P experiment on AutoGOLE are identified
- End of 2014
  - LHC sites are connected to nearest AutoGOLE participant on the data plane
- 2015Q1
  - First implementations and testing with middleware (NSI) by LHC sites
- 2015Q2
  - Experiment results and conclusion with the option to continue the effort by adding more LHC sites

Plan 2015

- **Facilitating LHCONE Point2Point Experiment**
- **Improve operational procedures**
- **OGF: solve topology distribution, path finding, policy description triangle**
  The Automated GOLE cannot proceed without a solution for interworking of:



(!) Outcome OGF discussion needed

- Network providers must be able to describe the link policies they enforce
- Policies must be distributed, for example through augmenting topology descriptions
- Path finders need to take policies into account to only provide viable paths (have a high success rate)

- **As soon as an outcome is there, AutoGOLE will implement the solution**

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