



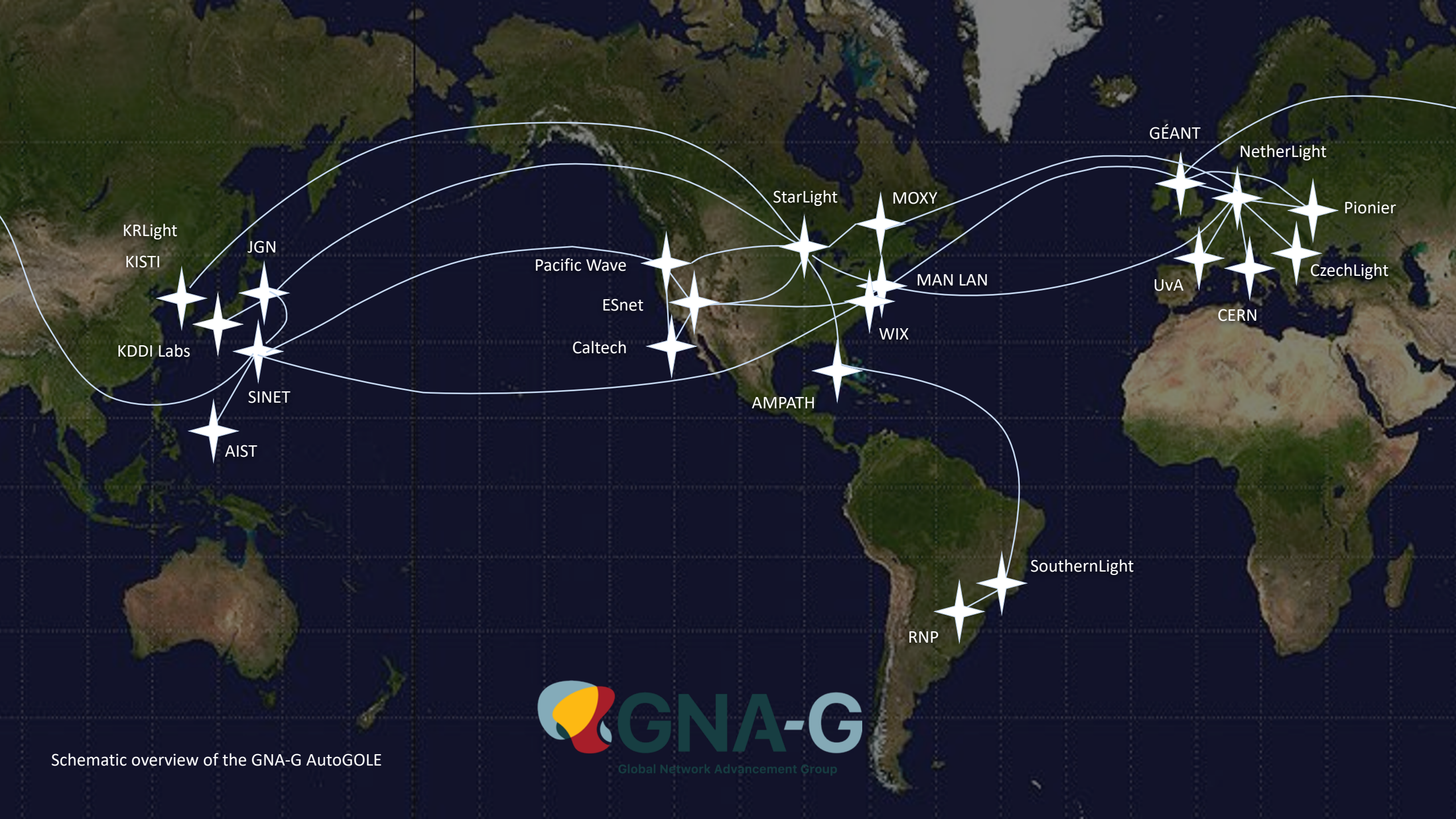
Global Network Advancement Group

AutoGOLE/SENSE Working Group

GNA-G Community VCs – 26 May 2020

Gerben van Malenstein

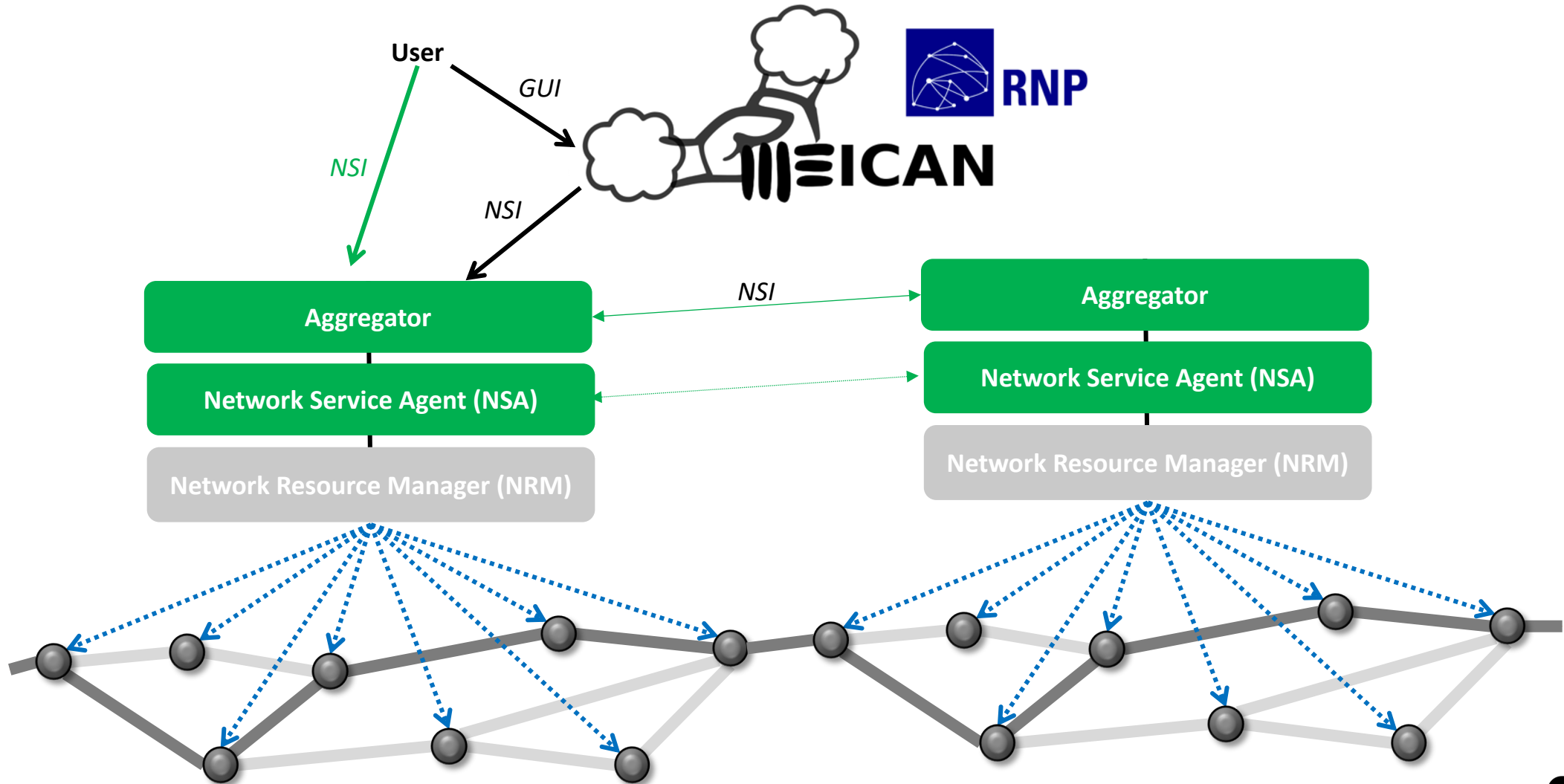
SURF



Schematic overview of the GNA-G AutoGOLE



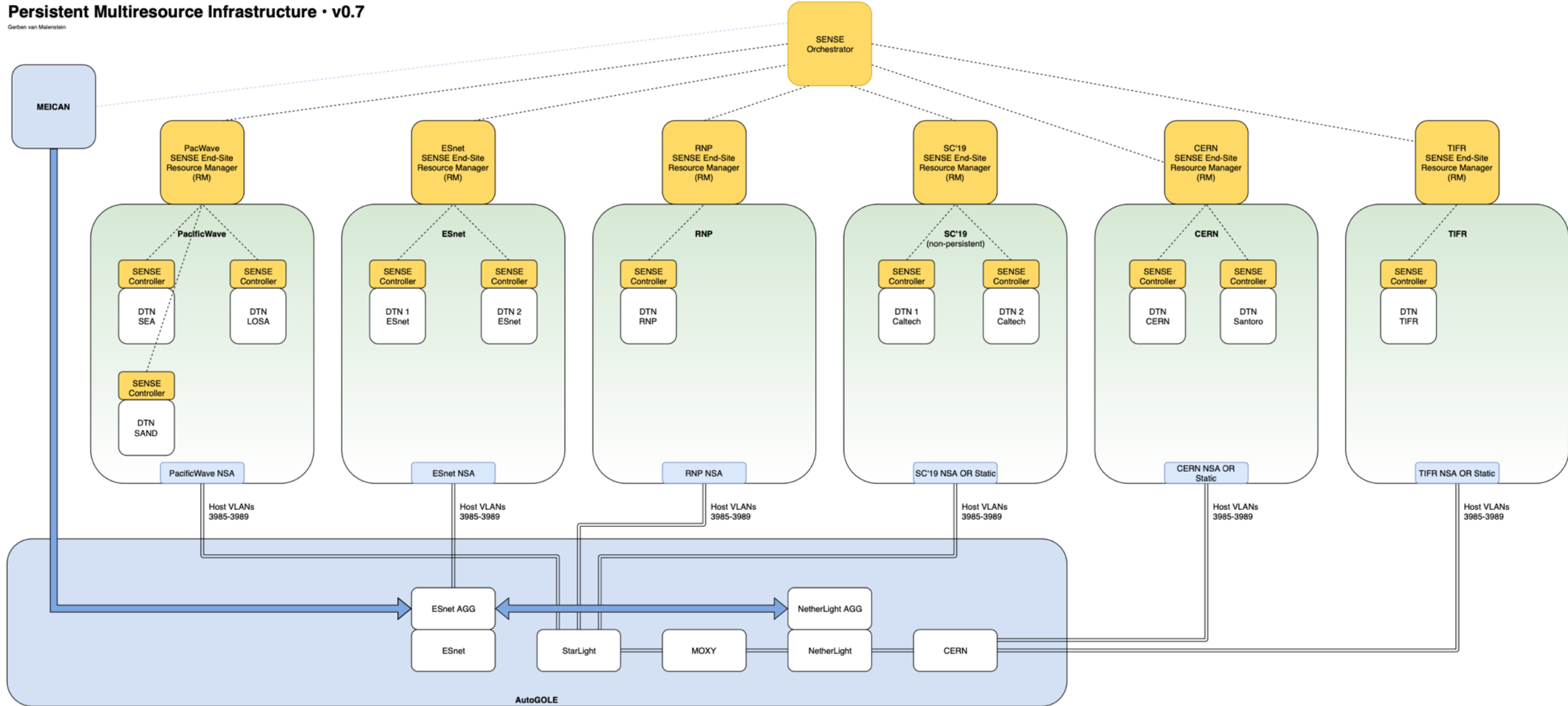
GNA-G AutoGOLE: multi-domain network services on-demand



SC'19 – Demonstration overview

Persistent Multiresource Infrastructure · v0.7

Gerben van Malenstein





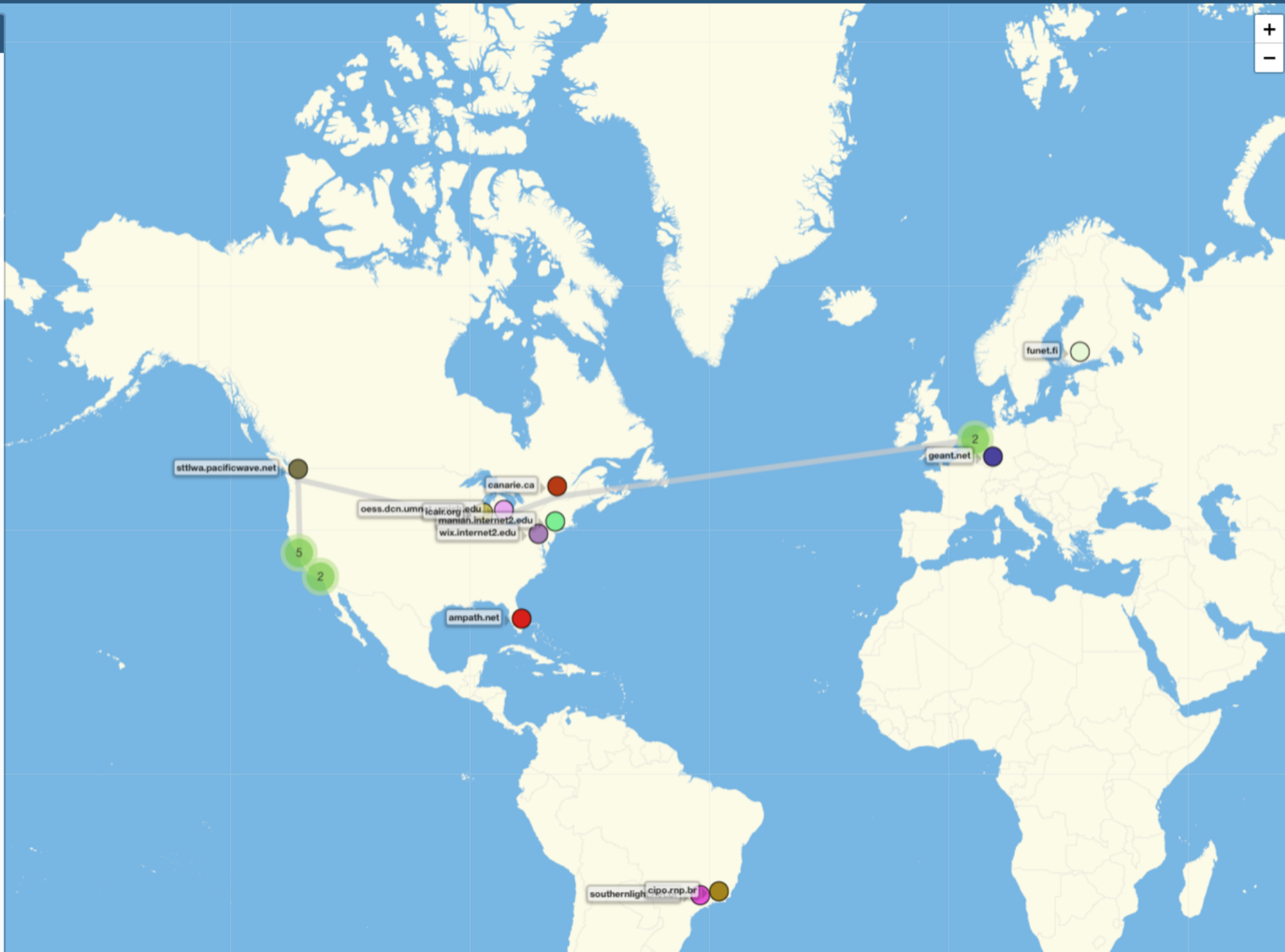
Step 1: Path

Search +9

Source

- lsanca.pacificwave.net
Network: lsanca.pacificwave.net:2016
Port: dtn0.lsanca
VLAN: 3987
- snvaca.pacificwave.net
Network: snvaca.pacificwave.net:2016
Port: snvl2-pw-sw-1_e2_2
VLAN: 3987
- sttlwa.pacificwave.net
Network: sttlwa.pacificwave.net:2016
Port: icair-grp
VLAN: 3987
- icair.org
Network: icair.org:2013
Port: nl-cern1
VLAN: 3987
- canarie.ca
Network: canarie.ca:2017
Port: ANA1
VLAN: 3987
- netherlight.net
Network: production7
Port: Asd001A_8700 07-8/2 CERN
VLAN: 3987

Destination





NSI Safnari

Usage **Connections**

Connection 6dfa8e66-cd18-4d57-bb3a-5b17c44c267f - CERN DTN - LA DTN with ERO - VLAN3988 - jhess

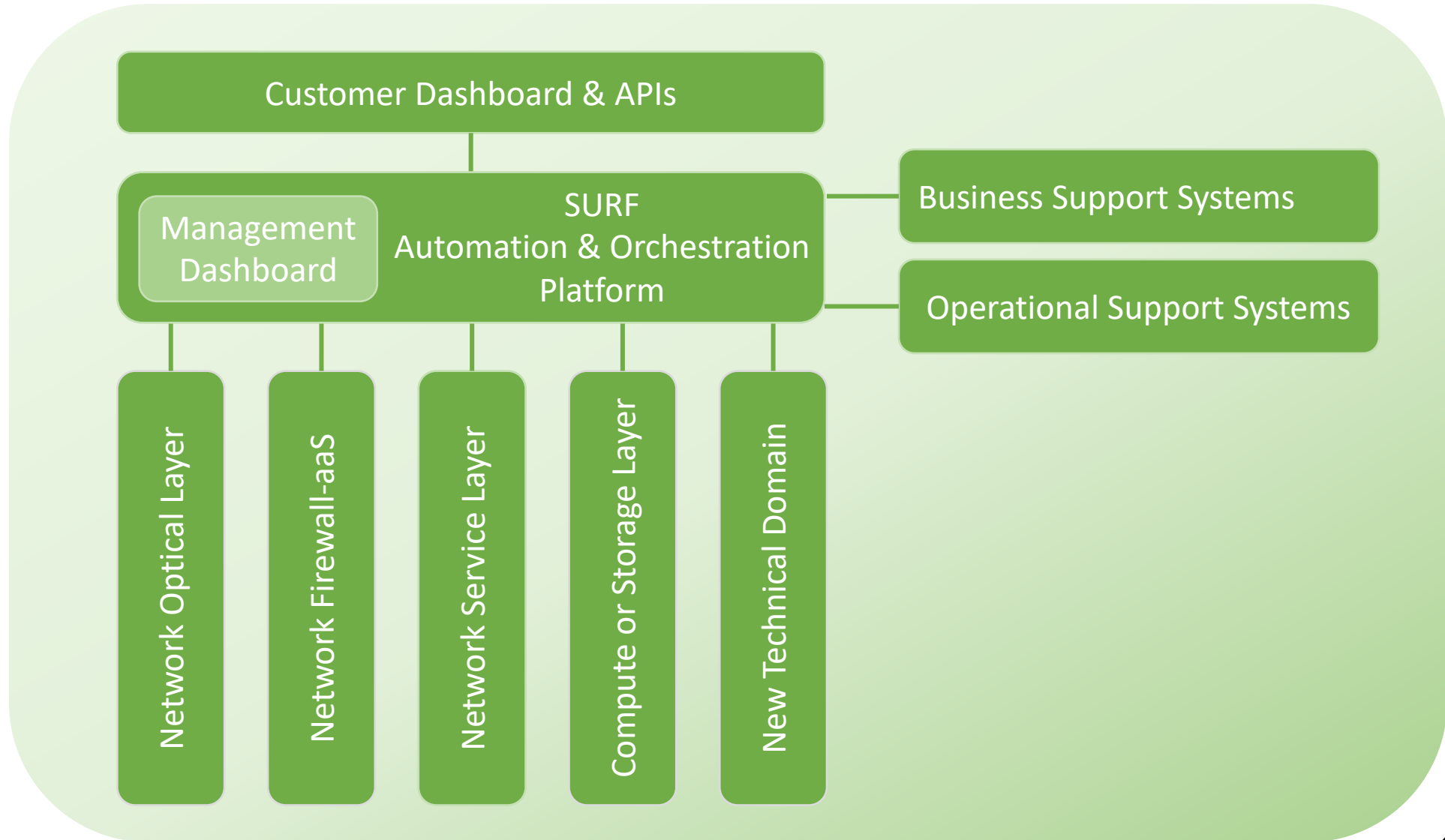
Start: 2019-12-03T21:53:44.796Z **End:** 2019-12-04T21:48:44.796Z
Bandwidth: 200 **Version:** 0
Global id: - **Requester:** urn:ogf:network:cal.bears:2019:nsa:requesterNSA
Source: urn:ogf:network:lsanca.pacificwave.net:2016:topology:dtn0.lsanca?vlan=3988
Destination: urn:ogf:network:netherlight.net:2013:production7:cern-1?vlan=3988

Child connection ID	NSA	Path	Status	Error?
LS-fa09b582ce	lsanca.pacificwave.net:2016:nsa	From lsanca.pacificwave.net:2016:topology:dtn0.lsanca?vlan=3988 To lsanca.pacificwave.net:2016:topology:losa2-pw-sw-1_e1_1?vlan=3988	Released, Inactive	none
SN-740979f3c0	snvaca.pacificwave.net:2016:nsa	From snvaca.pacificwave.net:2016:topology:snvl2-pw-sw-1_e7_2?vlan=3988 To snvaca.pacificwave.net:2016:topology:snvl2-pw-sw-1_e2_2?vlan=3988	Released, Inactive	none
ST-64a9e1b353	sttlwa.pacificwave.net:2016:nsa	From sttlwa.pacificwave.net:2016:topology:icas-sttlwa01-03_e1_1?vlan=3988 To sttlwa.pacificwave.net:2016:topology:icair-grp?vlan=3988	Released, Inactive	none
IC-b47da37bc7	icair.org:2013:nsa	From icair.org:2013:topology:pwave-grp?vlan=3988 To icair.org:2013:topology:nl-cern1?vlan=3988	Released, Inactive	none
19001CS08-ANA	canarie.ca:2017:nsa	From canarie.ca:2017:topology:CHCG1?vlan=3988 To canarie.ca:2017:topology:ANA1?vlan=3988	Released, Inactive	none
890861b8-c20f-4968-aa4e-a670ef50f7c6	netherlight.net:2013:nsa:safnari	From netherlight.net:2013:production7:ana-1?vlan=3988 To netherlight.net:2013:production7:cern-1?vlan=3988	Released, Inactive	none

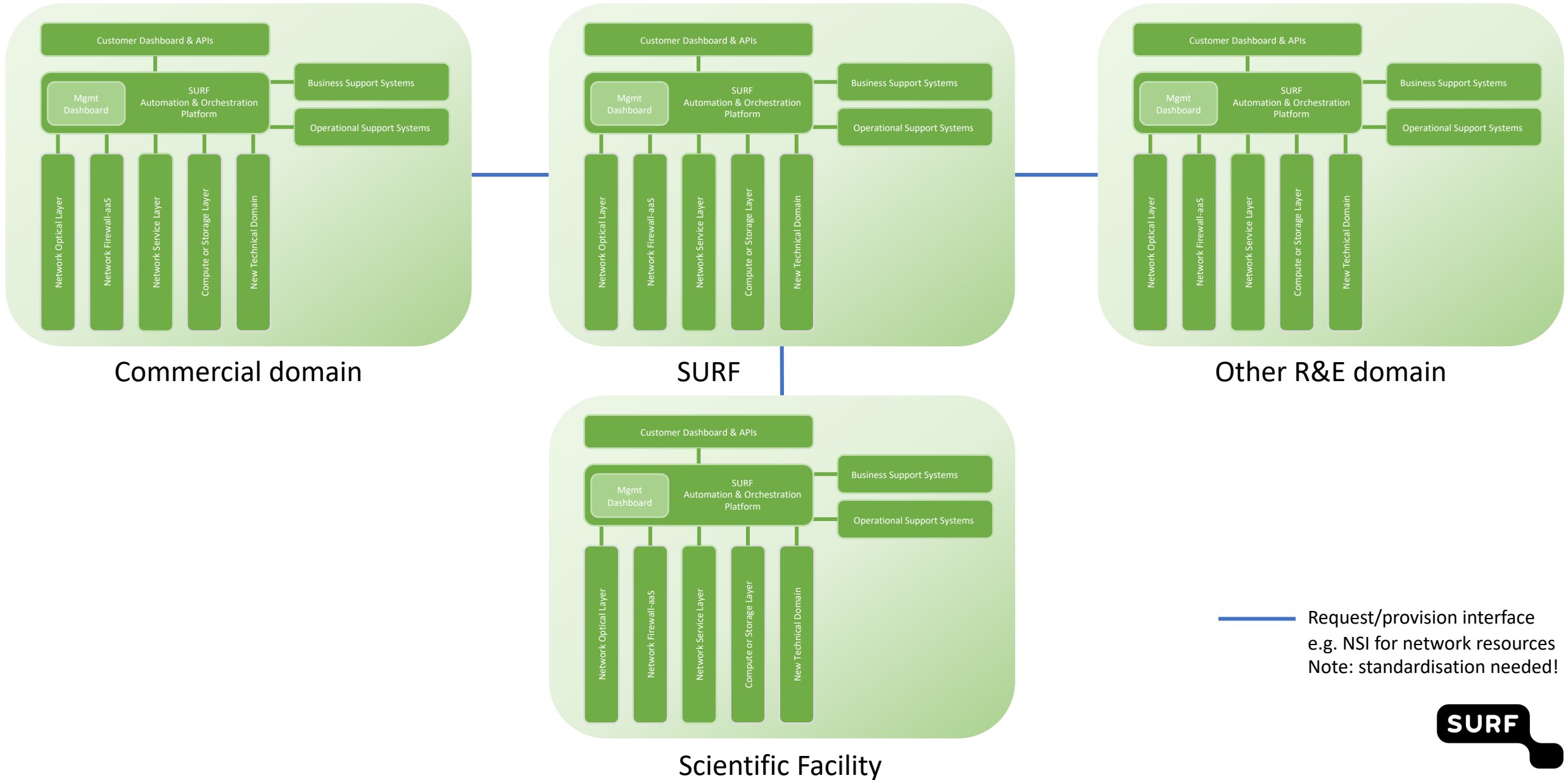
```
[jhess@nsi0 ~]$ onsa reserve -d netherlight.net:2013:production7:cern-1?vlan=3988 -s lsanca.pacificwave.net:2016:topology:dtn0.lsanca?vlan=3988 -o snvaca.pacificwave.net:2016:topology:snvl2-pw-sw-1_e2_2, sttlwa.pacificwave.net:2016:topology:icair-grp, icair.org:2013:topology:nl-cern1, canarie.ca:2017:topology:ANA1?vlan=3988 -r -x -z -v -c "CERN DTN - LA DTN with ERO - VLAN3988 - jhess"
Defaults: {action/types} xmlns:gnsbod="http://nordu.net/namespaces/2013/12/gn
certificate : /etc/pki/tls/certs/nsi0.lsanca.pacificwave.net.cert
key : /etc/pki/tls/private/nsi0.lsanca.pacificwave.net.key
service : https://nsi-aggr-west.es.net:443/nsi-v2/ConnectionServiceProvider
provider : es.net:2013:nsa:nsi-aggr-west
host : nsi0.lsanca.pacificwave.net
bandwidth : 200
starttime : 2019-12-03 21:53:44.796718
requester : cal.bears:2019:nsa:requester
certificate_dir : /etc/pki/tls/certs/
endtime : 2019-12-04 21:48:44.796747
port : 7443
Requester URL: https://nsi0.lsanca.pacificwave.net:7443/NSI/services/ConnectionService
Site (TLS) starting on 7443
Certificate subject <X509Name object '/OU=Domain Control Validated/CN=nsi-aggr-west.es.net'>
Received SOAP request. Action: "http://schemas.ogf.org/nsi/2013/12/connection/service/reserveConfirmed". Length: 3828
ERO parsing in reserveConfirmed not implemented yet, full path will not be available
Connection created and held. Id 6dfa8e66-cd18-4d57-bb3a-5b17c44c267f at urn:ogf:network:es.net:2013:nsa:nsi-aggr-west
Source -> Destination: <STP lsanca.pacificwave.net:2016:topology:dtn0.lsanca?vlan=3988> - <STP netherlight.net:2013:production7:cern-1?vlan=3988>
Certificate subject <X509Name object '/OU=Domain Control Validated/CN=nsi-aggr-west.es.net'>
Received SOAP request. Action: "http://schemas.ogf.org/nsi/2013/12/connection/service/reserveCommitConfirmed". Length: 1772
Reservation committed at urn:ogf:network:es.net:2013:nsa:nsi-aggr-west
(TLS Port 7443 Closed)
```

```
[jhess@nsi0 ~]$ onsa provision -x -z -v -c 6dfa8e66-cd18-4d57-bb3a-5b17c44c267f
Defaults: tent
certificate : /etc/pki/tls/certs/nsi0.lsanca.pacificwave.net.cert
key : /etc/pki/tls/private/nsi0.lsanca.pacificwave.net.key
service : https://nsi-aggr-west.es.net:443/nsi-v2/ConnectionServiceProvider
provider : es.net:2013:nsa:nsi-aggr-west
host : nsi0.lsanca.pacificwave.net
bandwidth : 200
starttime : 2019-12-03 21:59:03.952765
requester : cal.bears:2019:nsa:requester
certificate_dir : /etc/pki/tls/certs/
endtime : 2019-12-04 21:54:03.952798
port : 7443
Requester URL: https://nsi0.lsanca.pacificwave.net:7443/NSI/services/ConnectionService
Site (TLS) starting on 7443
Certificate subject <X509Name object '/OU=Domain Control Validated/CN=nsi-aggr-west.es.net'>
Received SOAP request. Action: "http://schemas.ogf.org/nsi/2013/12/connection/service/provisionConfirmed". Length: 1764
Connection 6dfa8e66-cd18-4d57-bb3a-5b17c44c267f provisioned
(TLS Port 7443 Closed)
```

SURF vision on Automation & Orchestration: mid term, adding optical layer and research on new technical domains



SURF vision on Automation & Orchestration: multidomain interoperability, R&E + Commercial + Scientific Facility



GNA-G AutoGOLE activities 2020

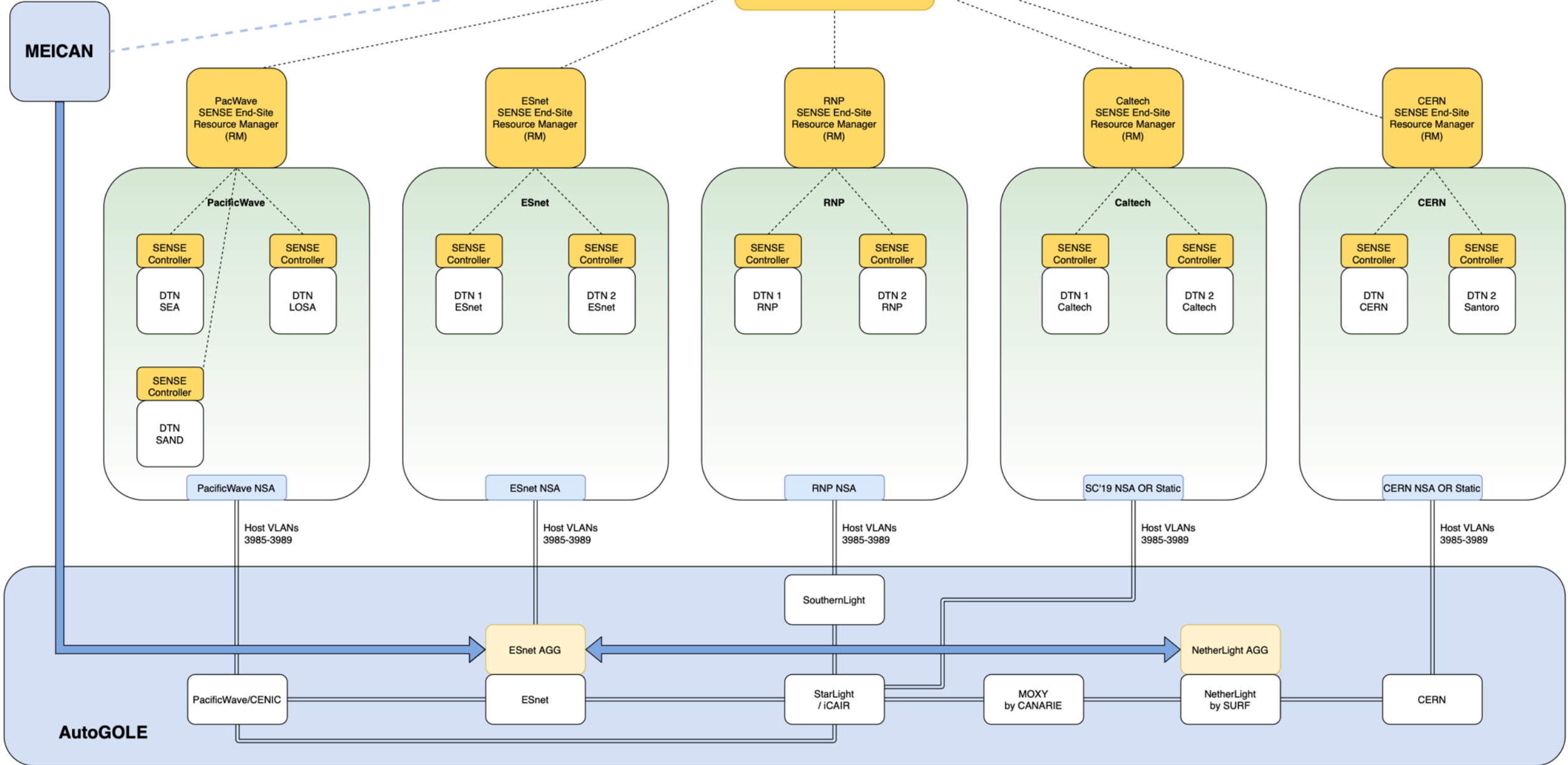


- **Production**

 - focusing on the network with NSI
 - dynamic ANA

- **Innovation**

 - towards multi-resource provisioning with SENSE
 - combining the network with Data Transfer Nodes
 - connecting the CERN DTN to Seattle and Los Angeles DTN





ANY QUESTIONS?



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« **DRIVING INNOVATION TOGETHER** »

SURF