Multi-point Network Provisioning using GLIF/fenius Interface

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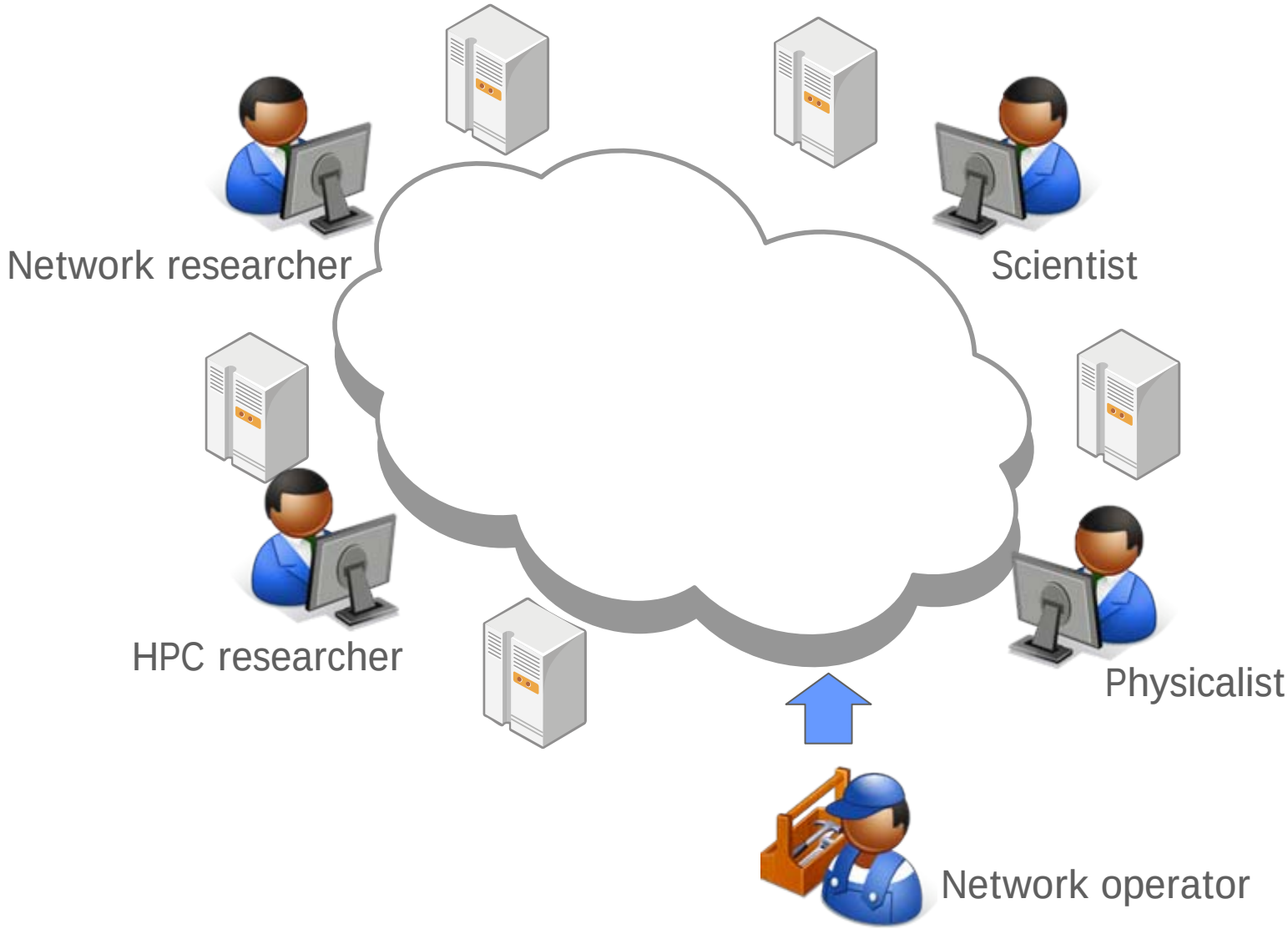
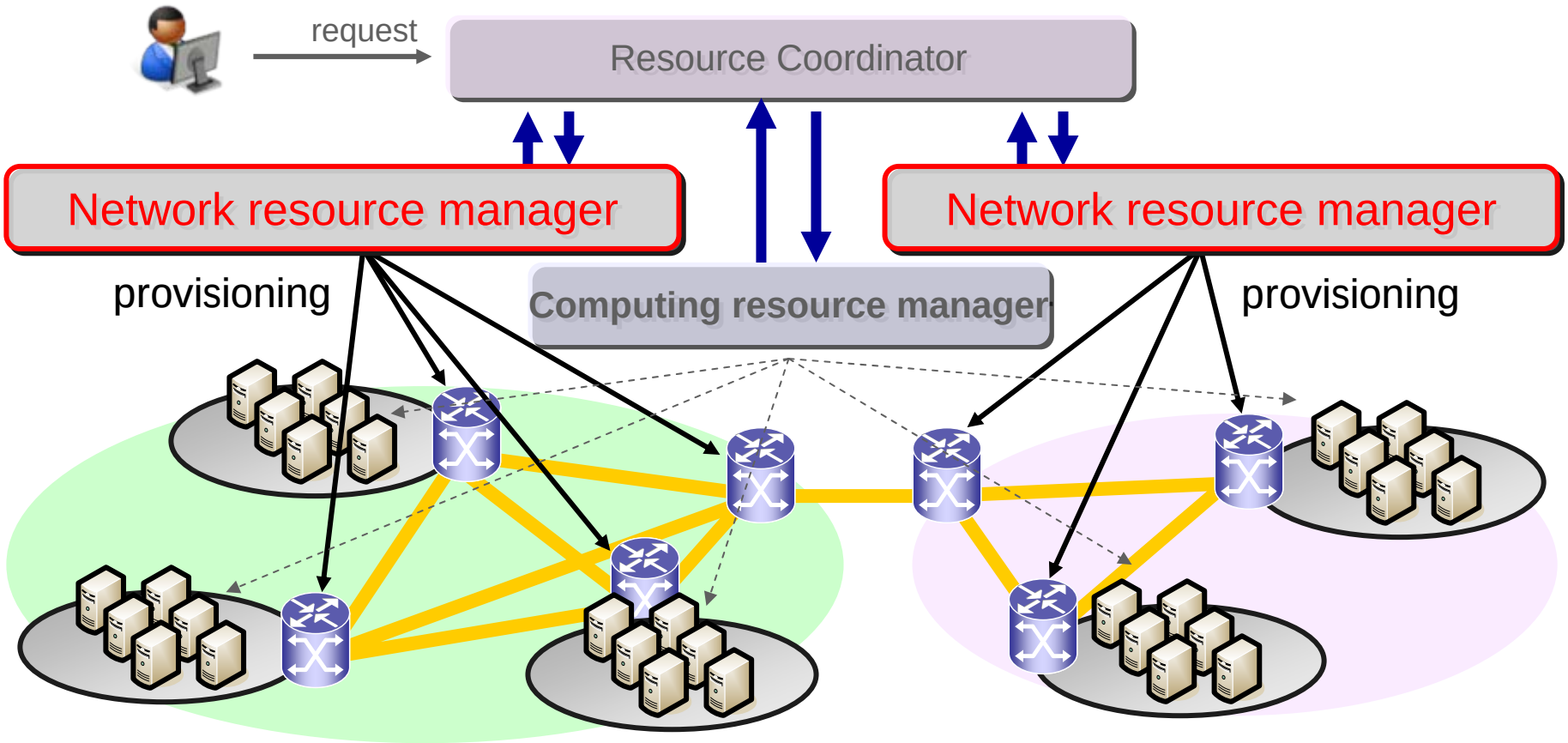
KDDI R&D LABS

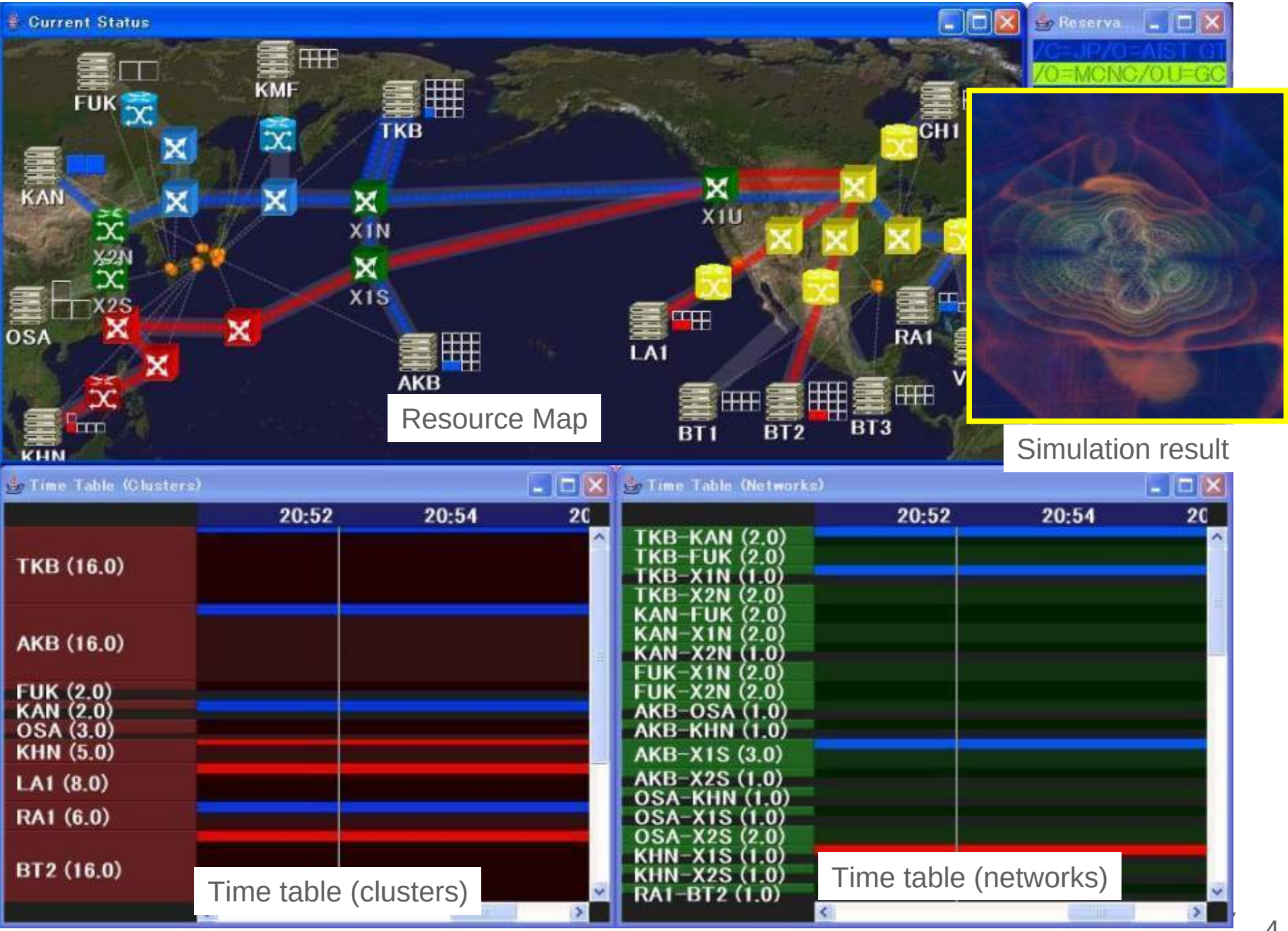
Dynamical network provisioning



G-lambda project

- A joint project of NICT, AIST, NTT and KDDI R&D labs
  - To define and standardize the web service interface between network and applications




Current Status
FUK
KMF
TKB
CH1
KAN
X1N
X1U
X2N
X1S
X2S
OSA
LA1
RA1
AKB
BT1
BT2
BT3
KHN
Resource Map
Simulation result
Time Table (Clusters)
20:52
20:54
TKB (16.0)
AKB (16.0)
FUK (2.0)
KAN (2.0)
OSA (3.0)
KHN (5.0)
LA1 (8.0)
RA1 (6.0)
BT2 (16.0)
Time table (clusters)
Time Table (Networks)
TKB-KAN (2.0)
TKB-FUK (2.0)
TKB-X1N (1.0)
TKB-X2N (2.0)
KAN-FUK (2.0)
KAN-X1N (2.0)
KAN-X2N (1.0)
FUK-X1N (2.0)
FUK-X2N (2.0)
AKB-OSA (1.0)
AKB-KHN (1.0)
AKB-X1S (3.0)
AKB-X2S (1.0)
OSA-KHN (1.0)
OSA-X1S (1.0)
OSA-X2S (2.0)
KHN-X1S (1.0)
KHN-X2S (1.0)
RA1-BT2 (1.0)
Time table (networks)

Network Provisioning Systems

Japan

Network Resource Manager (NRM)

US

Dynamic Circuit Network (DCN)

Europe

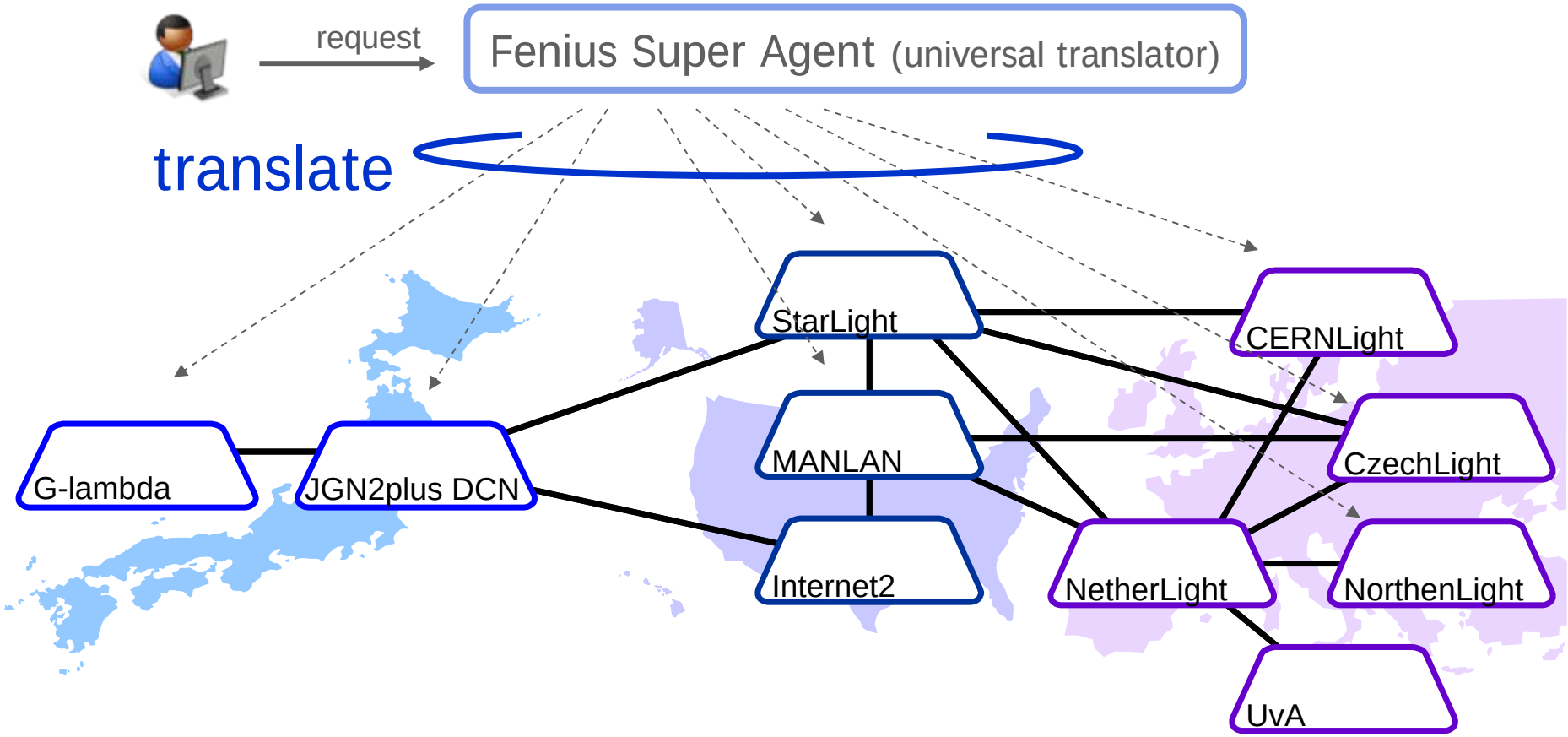
Harmony

Argia / Chronos

Open DRAC

GLIF Fenius

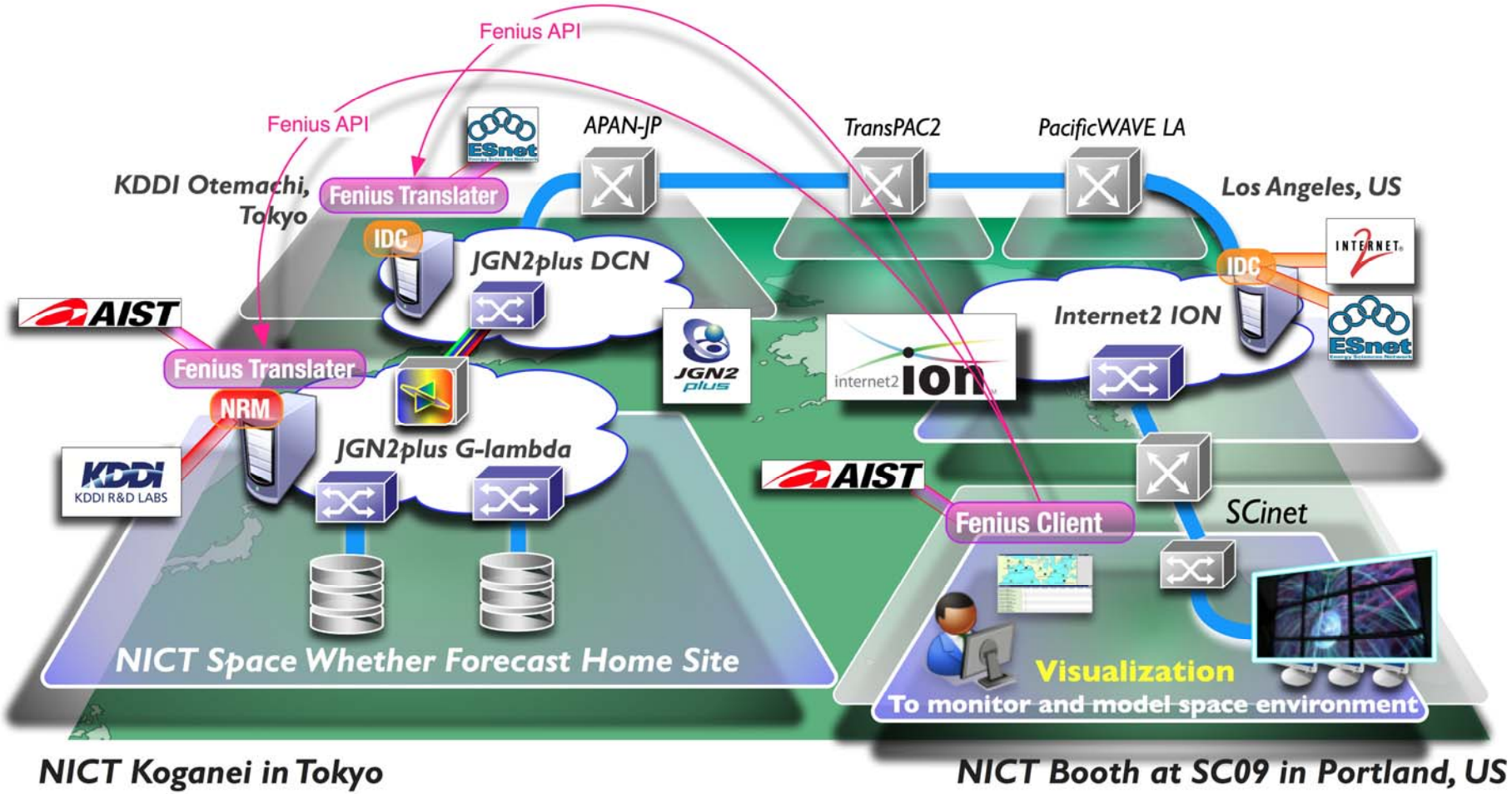
- A universal translator to establish interoperability among different network provisioning systems.



Demonstration at SC09

3 domains

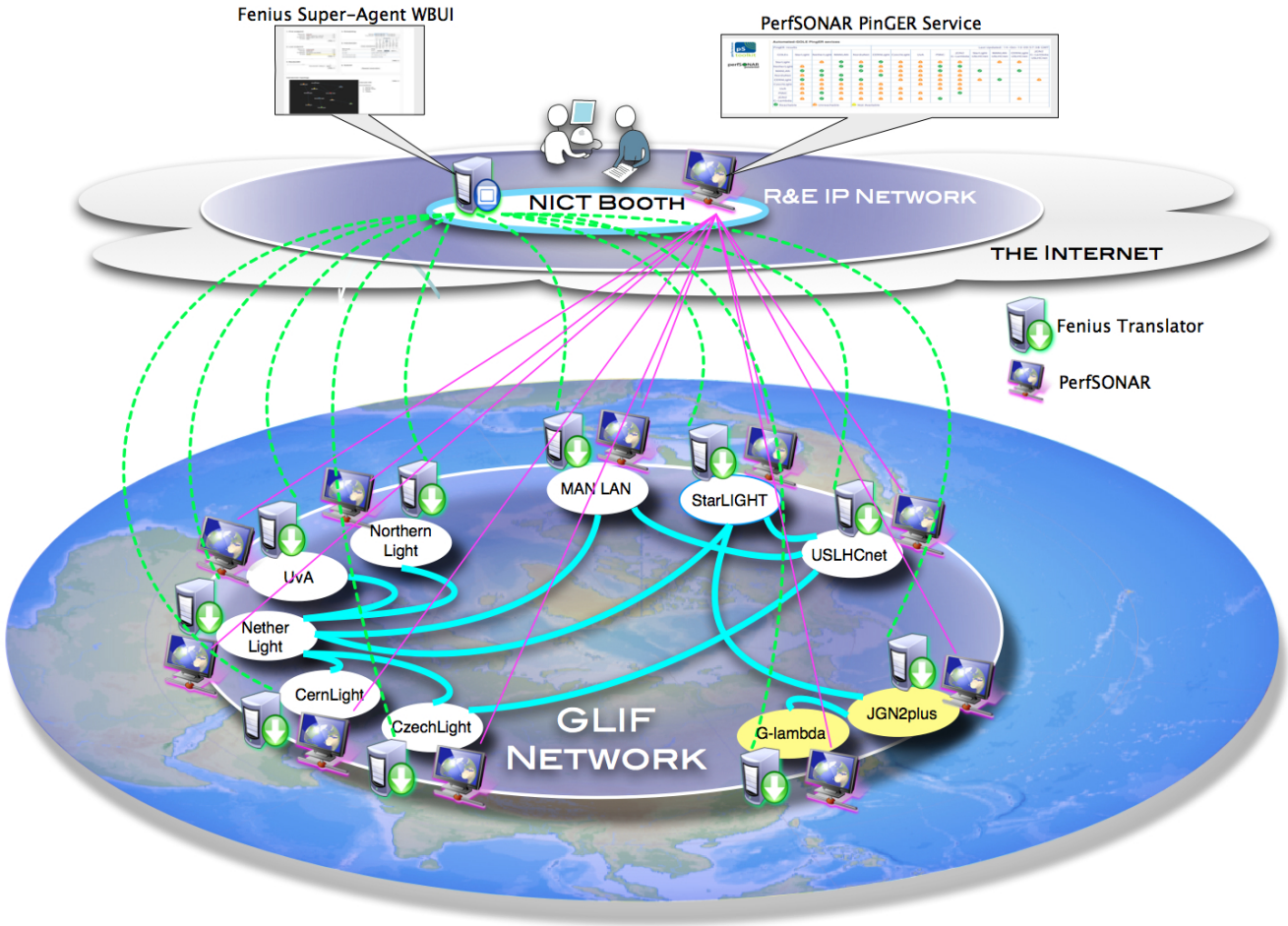
Japan:2 (JGN2plus DCN、G-lambda), US:1 (Internet2 ION)



Demonstration at GLIF2010

9 domains

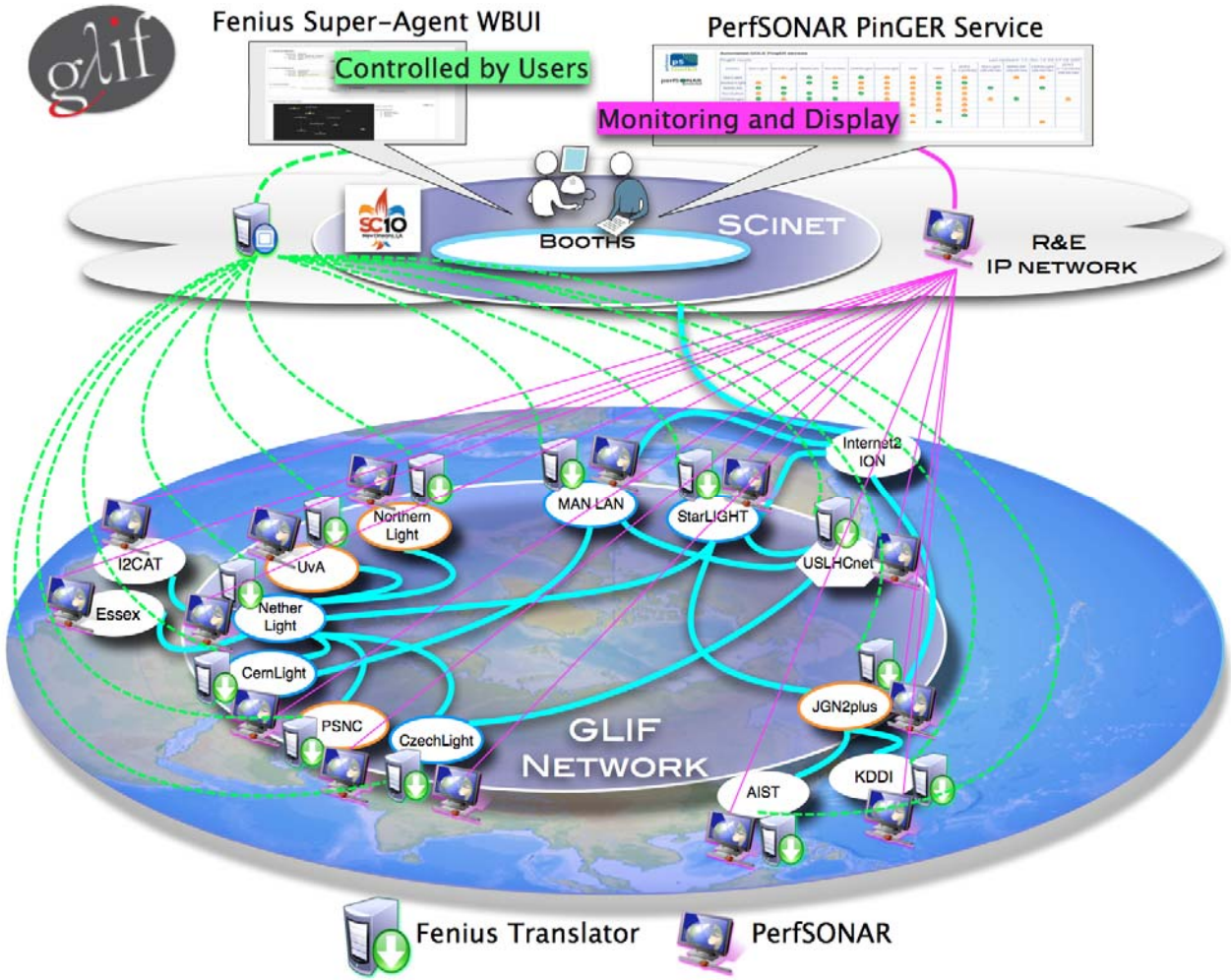
Japan:2 (JGN2plus DCN、G-lambda/AIST), US:3, EU:4



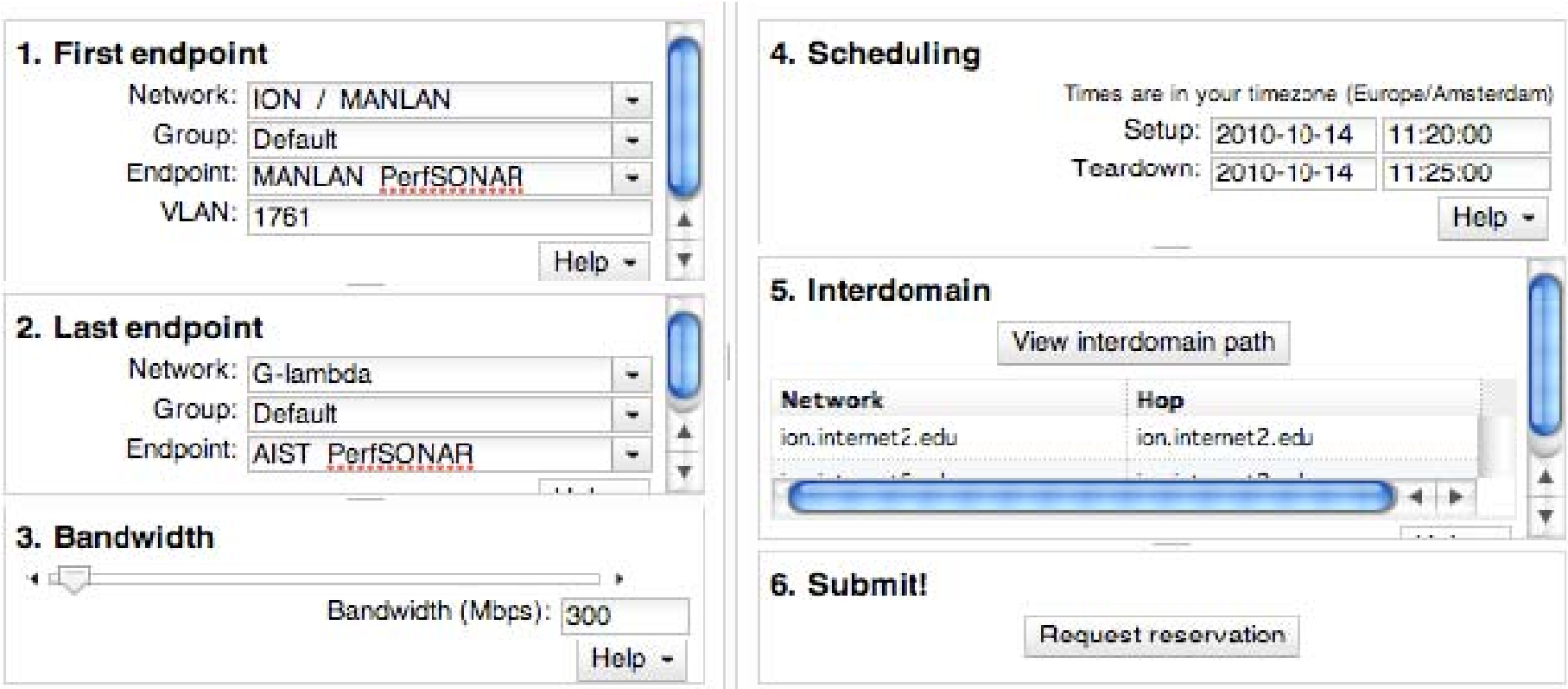
Demonstration at SC10

14 domains

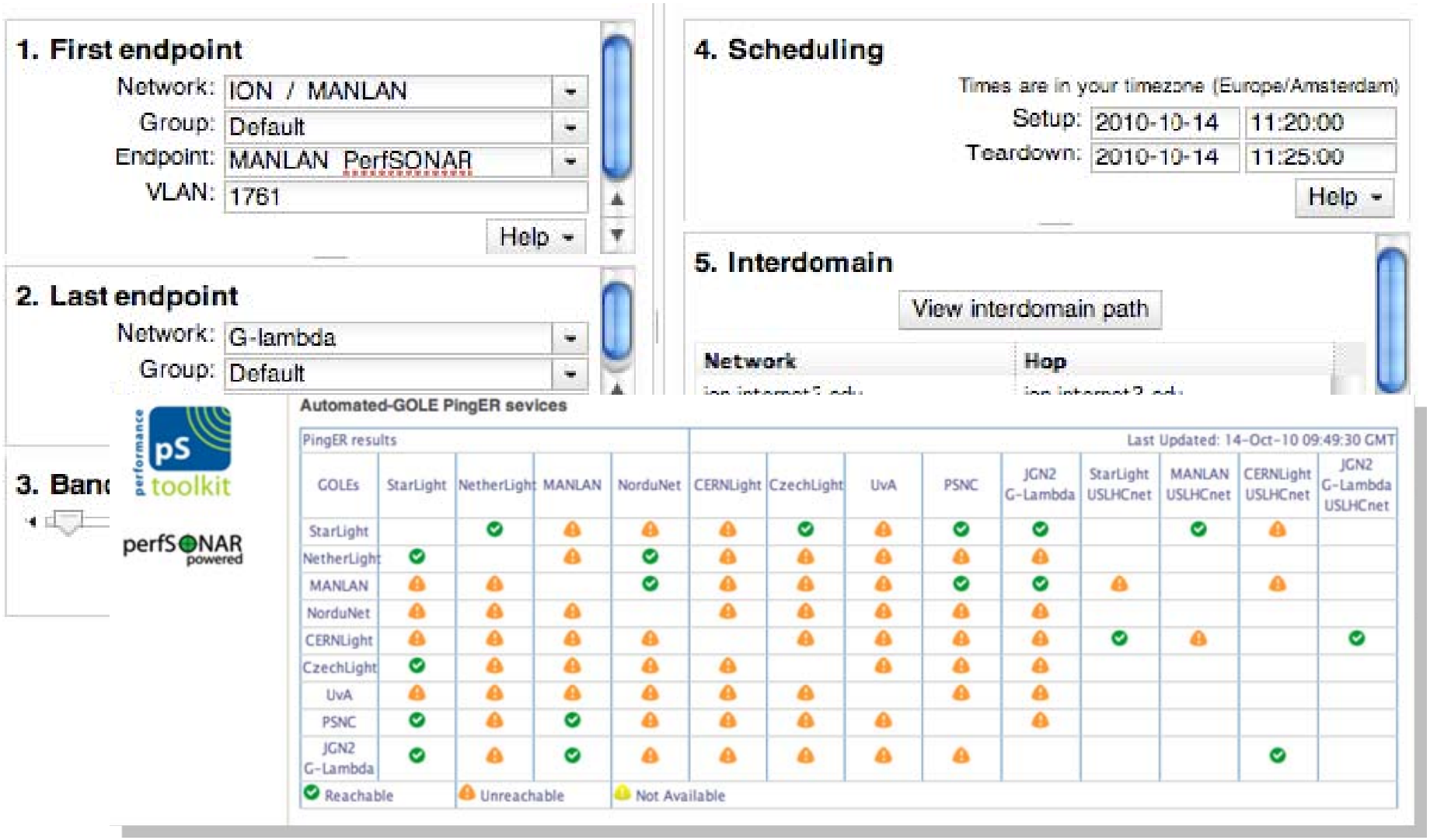
Japan:3 (JGN2plus DCN、G-lambda/AIST, G-lambda/KDDI), US:5, EU:6



Demonstration results at GLIF2010 / SC10

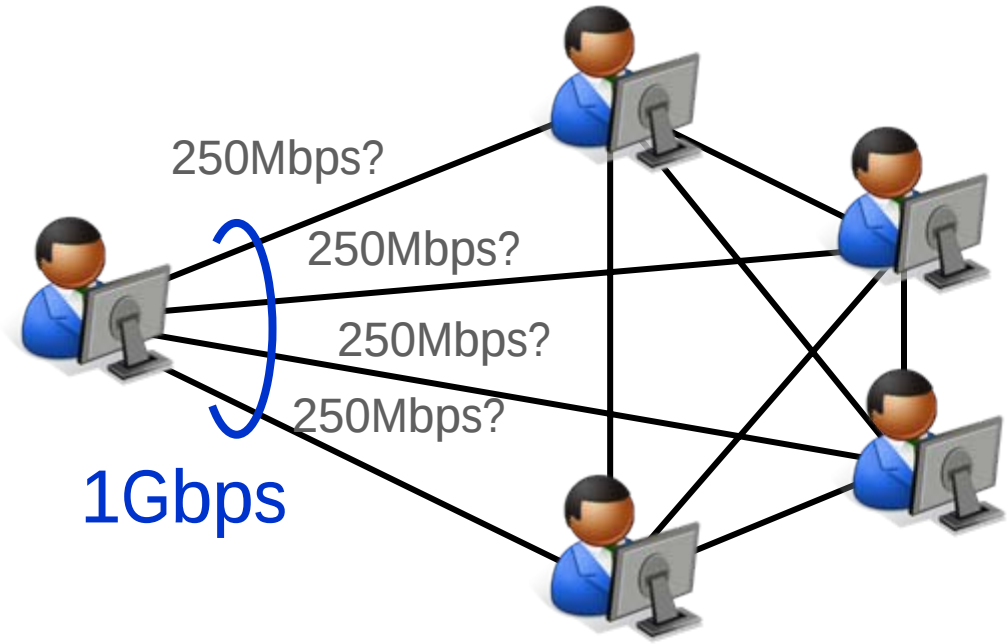


Demonstration results at GLIF2010 / SC10



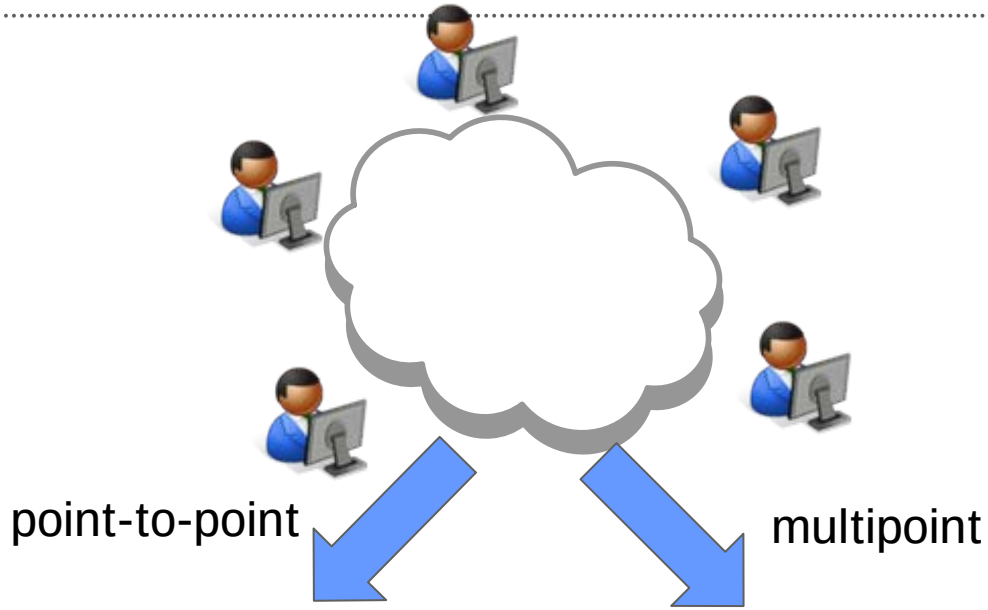
Problems of point-to-point provisioning

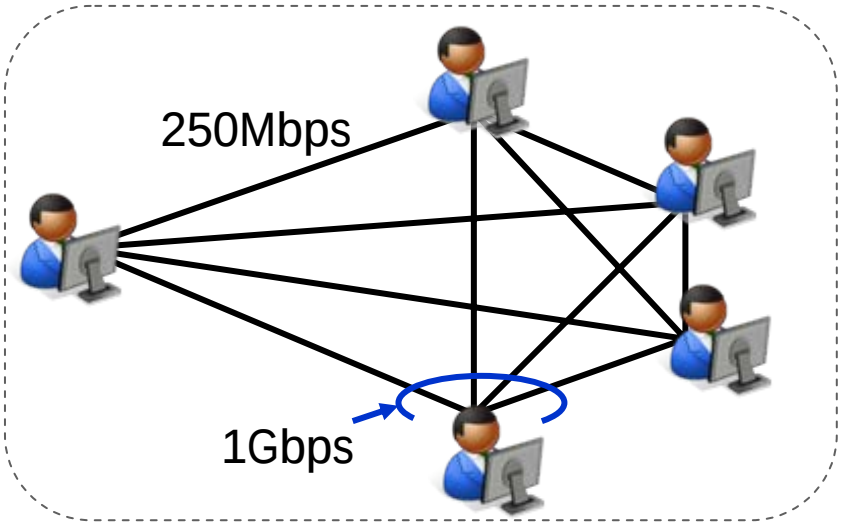
- Full-meshed path provisioning
- Bandwidth arrangement among connections

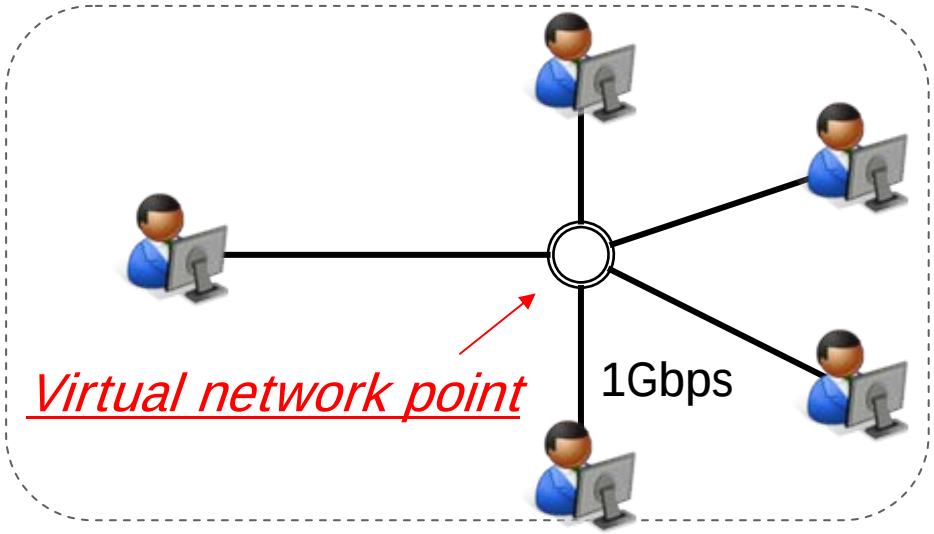


...not familiar to users

Multipoint network provisioning







Fenius IF

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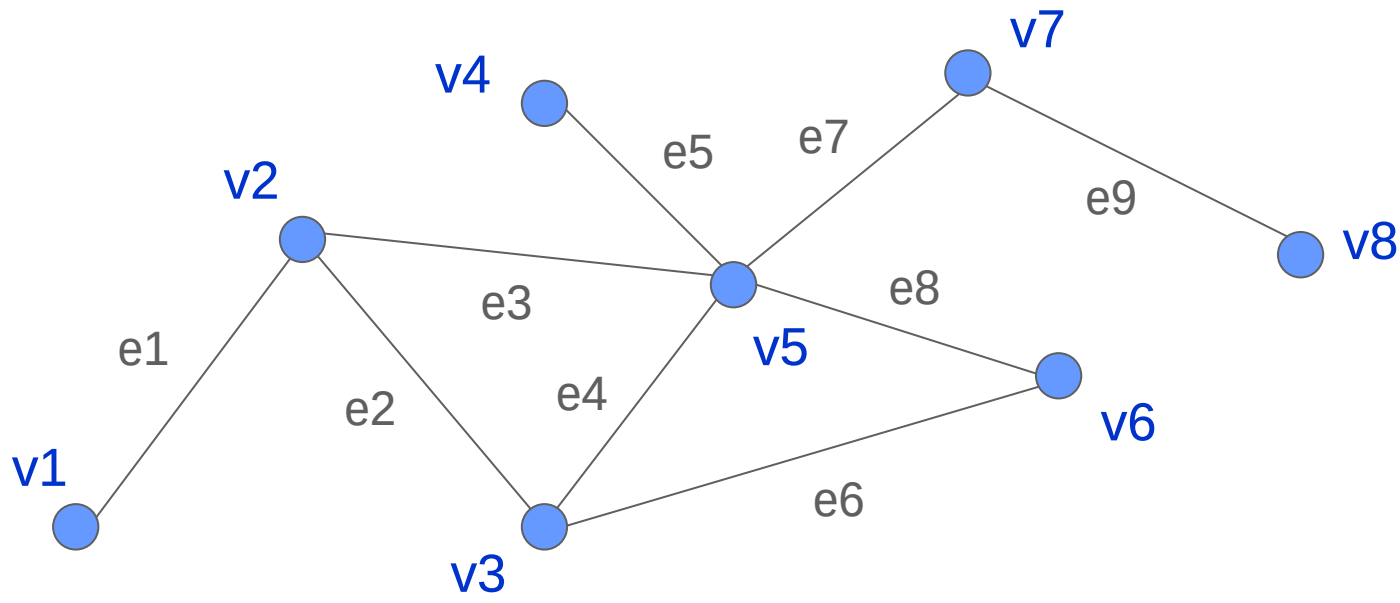

SuperAgent Web UI

Web UI for multipoint network

common Fenius API

Fenius IF

Reservation database

Mediator

Topology database

Switch controller

(G-lambda client)

(OSCARS client)

Telnet

SOAP

SOAP

G-lambda NRM

OSCARS

SC10

Summary

- Dynamical network provisioning is covered globally.
  - But, only POINT-TO-POINT.

- Miltipoint networks can be applied to more various applications.