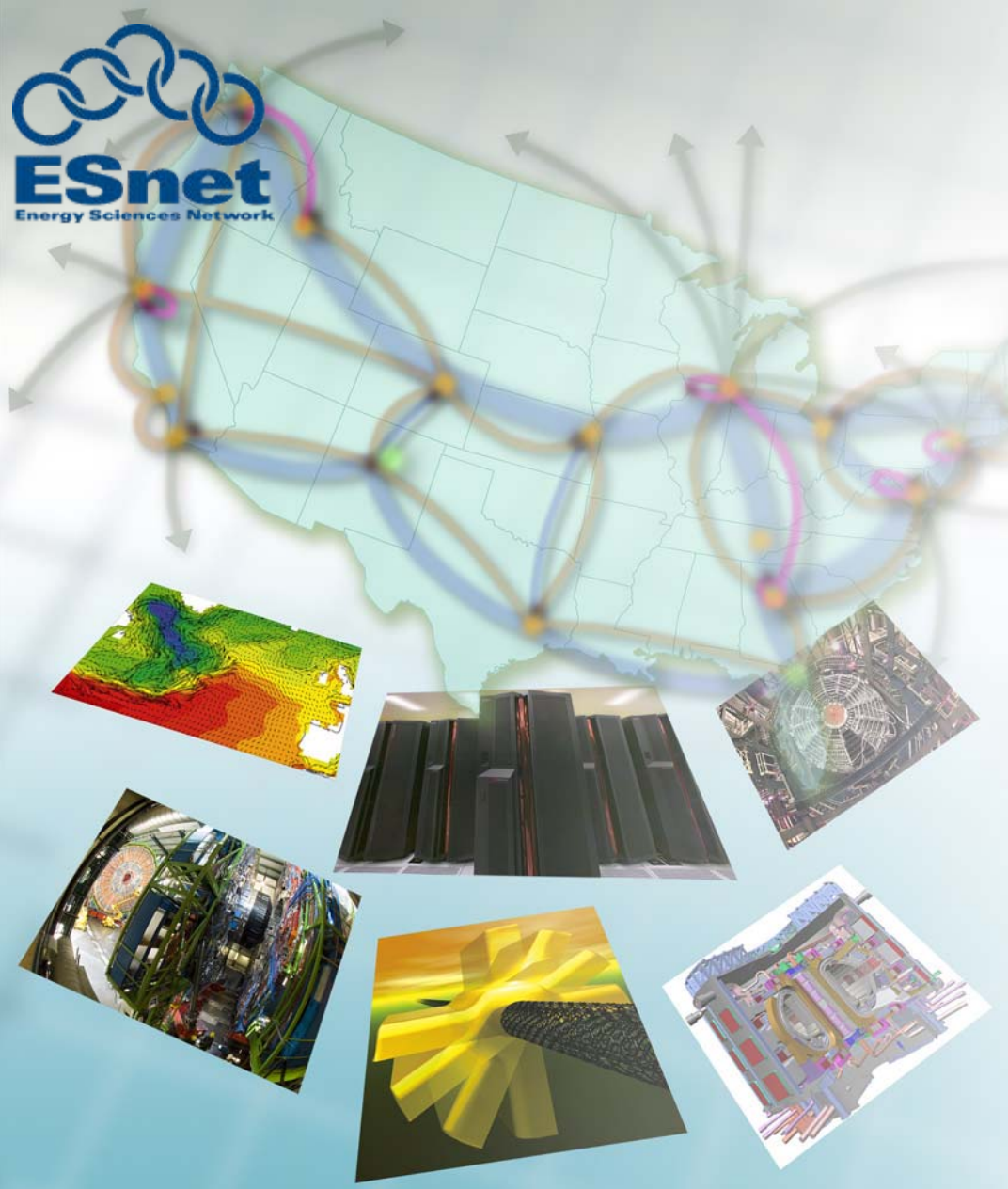


GNI API Task Force

Evangelos Chaniotakis
Network Engineering Group

Energy Sciences Network
Lawrence Berkeley National Laboratory

GLIF meeting
Daejeon, Oct 27 2009

Networking for the Future of Science

GNI API Task Force overview

- Objectives:
  - Bring network resource management developers together,
  - Develop a software framework that facilitates translating between NRM interfaces,
  - Develop a common interface prototype,
  - Develop a reference implementation of the common interface,
  - Use it to test interoperability between NRMs,
  - Learn from tests and continue improving the interface,
  - Bring feedback from this work into other working groups (OGF NSI, NML), and back into each separate project.

- Non-Objectives:
  - To become a standard.
  - To get everything 100% correct.

- Participants:
  - Representatives from G-lambda, IDC, Harmony, KISTI, NCSU

Tuesday Agenda

- Agenda bashing
- Task Force progress
- Planning: Collaborations and growth
- Planning: Deployment and demos
- Planning: Topology exchange & Pathfinding
- Planning: Security
- Demo overview

Wednesday Agenda

- Agenda bashing part 2
- Fenius live demo & review
- Fenius framework discussion
  - Toolchain
  - Architecture
  - Implementation
  - Lessons learned
  - Open issues
- Planning part 2
- Conclusions

Task Force progress

- New members:
  - KISTI with dynamicKL
  - NCSU team worked on new interface specs
- New external interface drafted
- New internal interface drafted
- Fenius framework replaced GUSI, complete rewrite
- Implemented translators for IDC, dynamicKL, Harmony, G-lambda
  - Learned a lot from the process
- AIST implemented web UI, adapted existing graphical monitoring client

Planning: Overview

- Collaborate
  - Provide feedback to NSI
  - Provide framework to rapidly test out potential NSI interface
  - Use NML for topology exchange
- Grow
  - Invite AutoBAHN and others into the task force
  - Align Fenius and Harmony
- Develop
  - Continue work on Fenius
  - Improve internal and external interfaces
  - Add security layer
  - Add topology exchange features
- Deploy
  - Deploy improved Fenius instances on real networks and GOLEs

Planning: Collaborations and growth

- Provide feedback to NSI
  - Write up lessons learned
- Implement & test NSI interface proposal
- Work with NML & PerfSONAR for topology exchange
- Provide Fenius framework to community
  - Produce developer guide document
- Harmony / Fenius collaboration
- Invite AutoBAHN, DRAC, others into TF

Planning: Security

- Freeform discussion on:
  - Requirements
  - Identity and authentication
  - Attributes and authorization
  - Standards and toolchains
- Some notes from Vangelis
  - Separate translation layer breaks some security models i.e. signed messages.
  - Do we need only username & password?

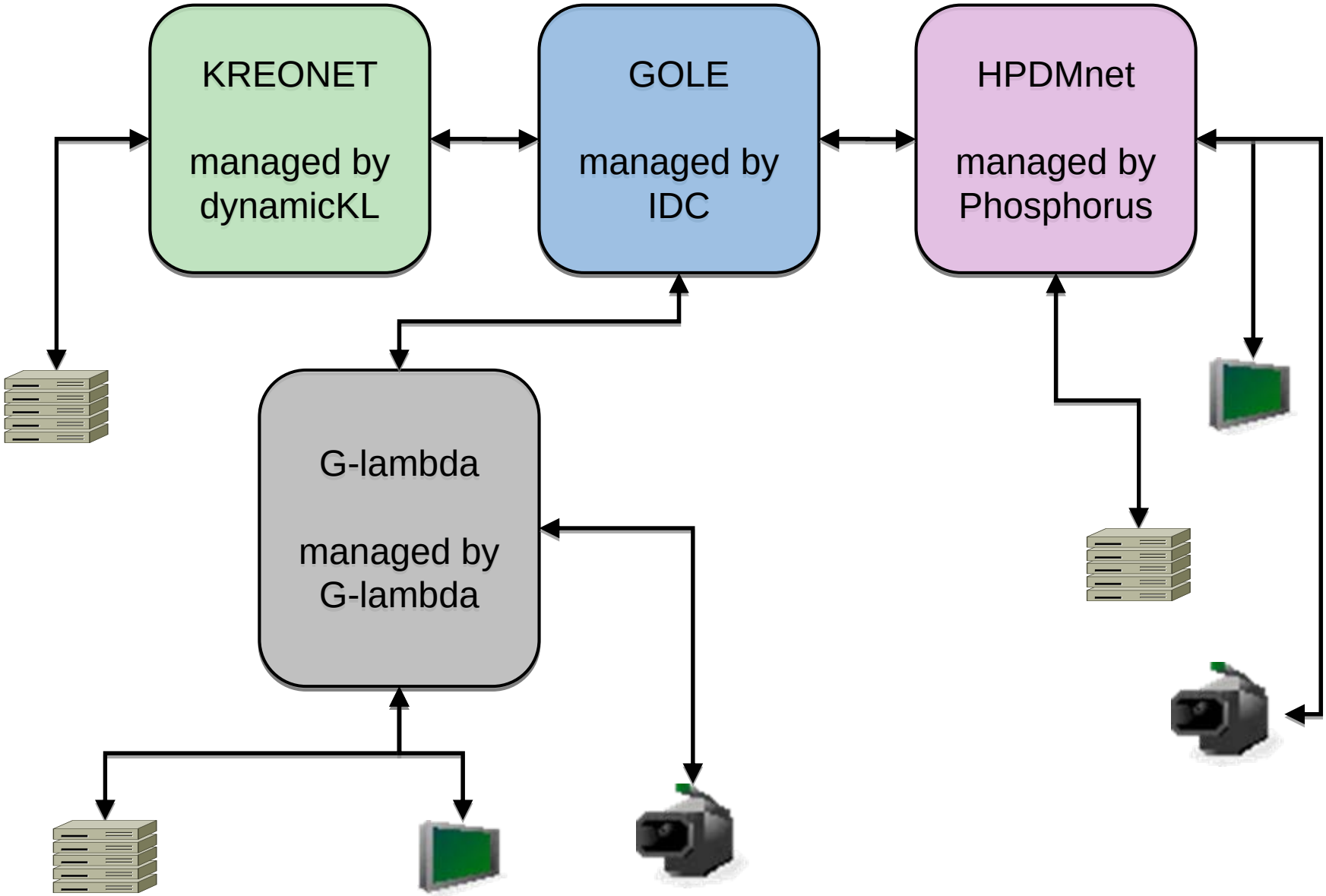
Planning: Topology Exchange & Pathfinding

- Freeform discussion on:
  - Requirements
  - Topology size / update frequency
  - Schemas
  - Deploy new service or use PerfSONAR topology server?
  - Agree that pathfinding is NOT in scope?

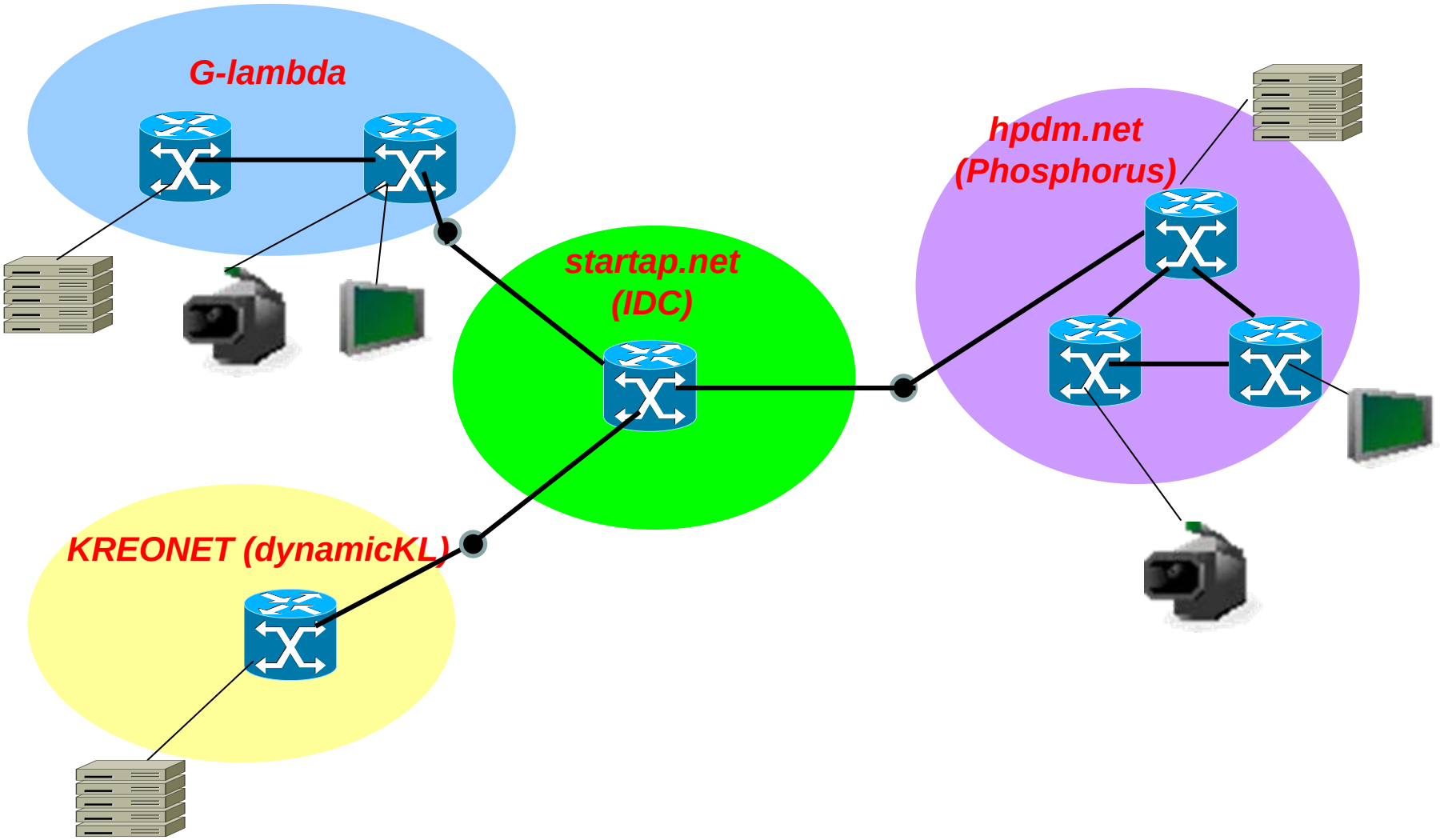
Planning: GOLEs, deployment and demos

- Fenius is NOT ready for production use.
  - But can be used for demos
- Aim for improved version by next GLIF conference.
- Locate GOLEs that want to run Fenius
- How / who will support Fenius in production?
- Demo discussion

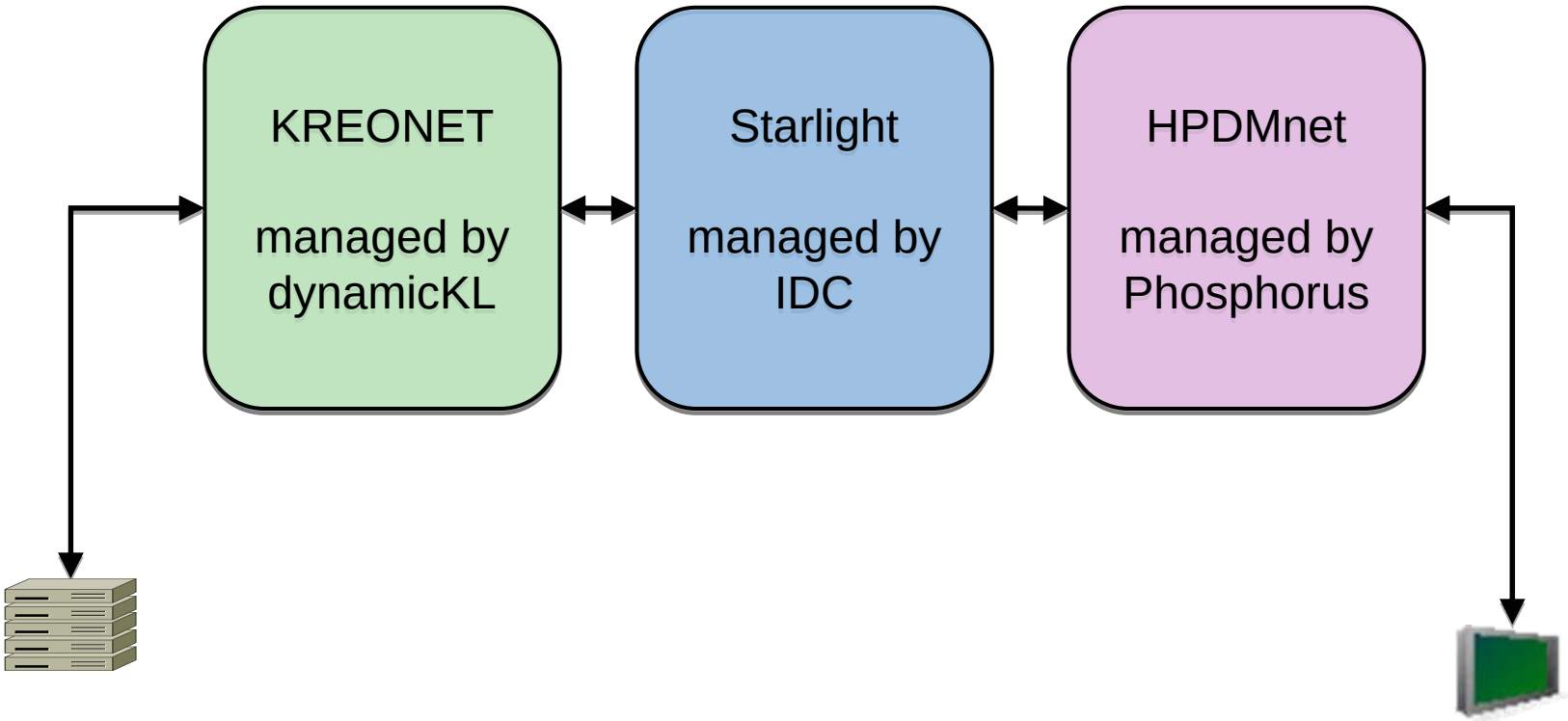
Demo overview: Simulated multidomain network



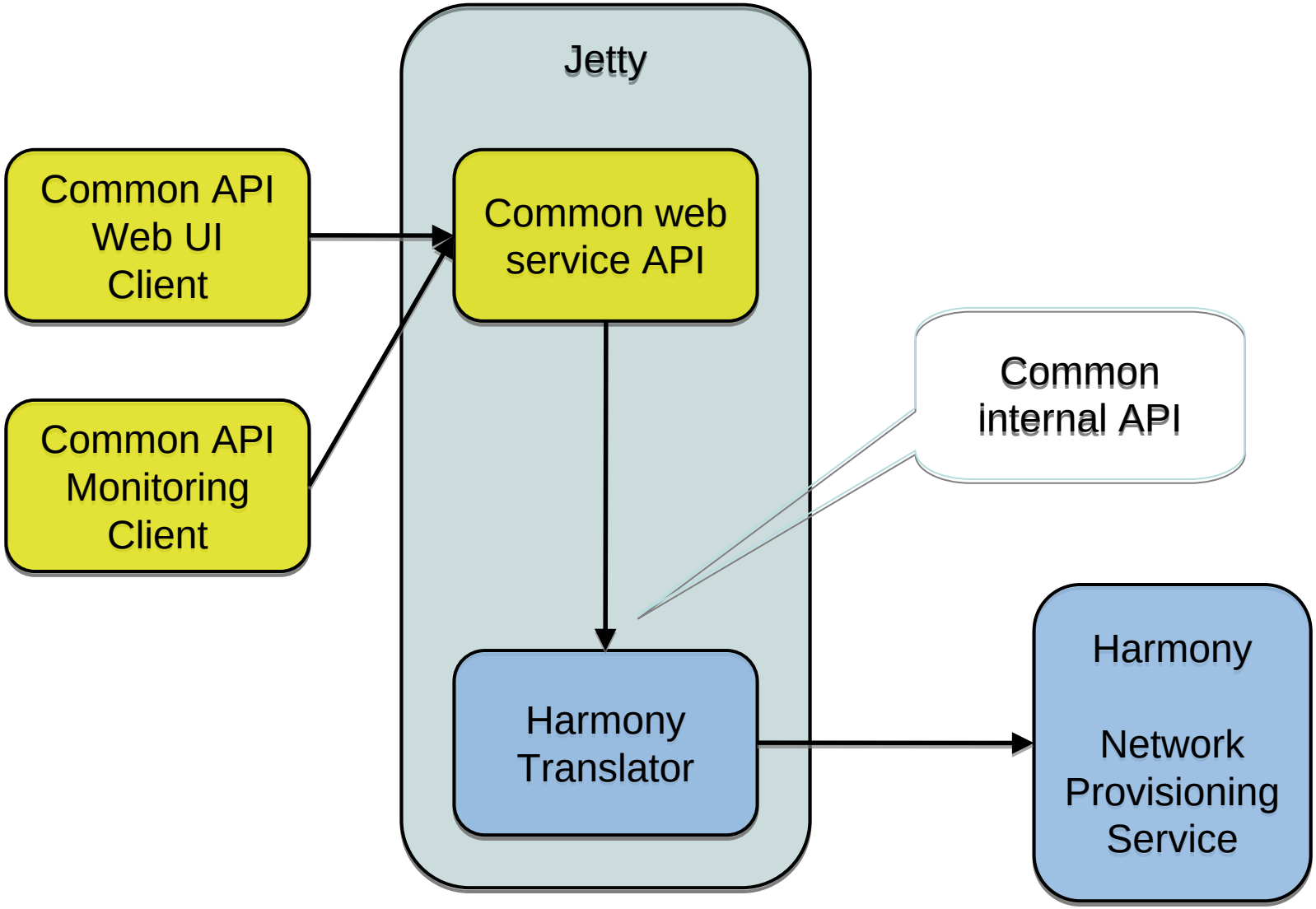
Demo overview: Simulated multidomain network



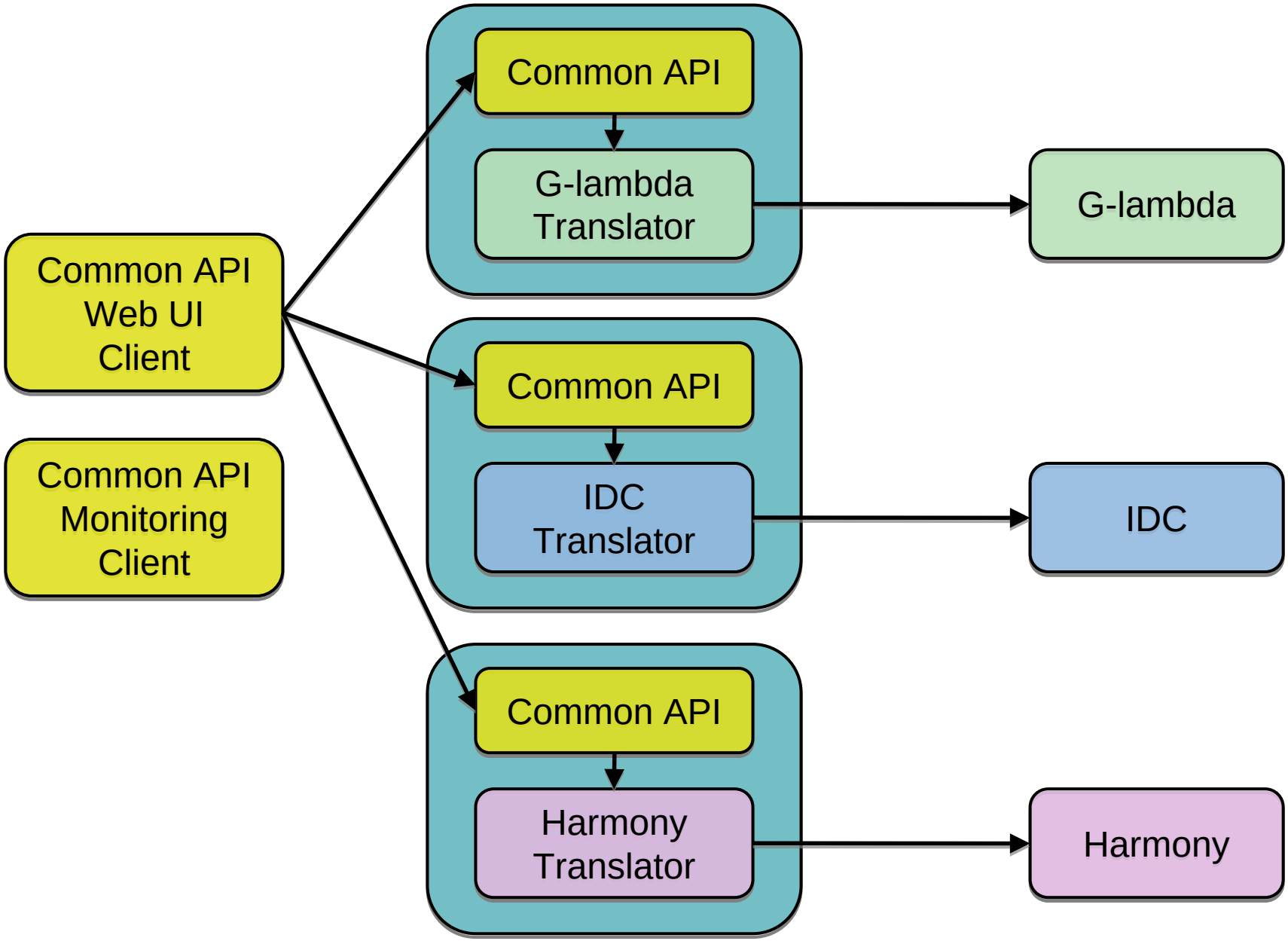
Demo overview: Desired end-to-end path



Demo overview: Fenius translation layer details



Demo overview: End-to-end request



Acknowledgements and special thanks

Fenius – G-lambda

- Tomohiro Kudoh, AIST
- Fumihiro Okazaki, AIST
- Ryousei Takano, AIST
- Atsuko Takefusa, AIST
- Seiya Yanagita, AIST

Fenius – DynamicKL

- Woojin Seok, KISTI
- Jonguk Kong, KISTI
- Huhnkuk Lim, KISTI
- Jiyun Jang, KAIST
- Young Wook Cha, ANU
- Chang Shou Han, ANU

Fenius – Harmony

- Mathieu Lemay, Inocybe
- Joan Antonio Garcia Espin, i2cat
- Jordi Ferrer Riera, i2cat
- Samir Hadjout, Synchromedia

Interface Specifications

- Gigi Karmous-Edwards, NCSU
- Mohit Chamania, NCSU
- Mohan Iyer
- Emre Yetginer, NCSU
- George Rousskas, NCSU