FELIX Project
FEderated Test-beds for Large-scale Infrastructure eXperiments

Collaboration project between EU and Japan
Objective: to create a common framework for Future Internet experimental research

- Create an integrated Europe-Japan SDN test-bed
- Introduce new APIs and logic for globally distributed heterogeneous SDN and IT islands, enabling them to interchange resources information, share overall resource pools, and provide dynamic network interconnectivity between and within islands
- **Utilize functionality of OpenFlow and NSI for creation of Federated SDN Services**
- Facilitate Europe-Japan collaboration on new standards for infrastructure management (both IT and network resources)
FELIX Architecture

FELIX SDN Federation Framework*

- Resource Management
- Experiment Control and Management
- Slice and Experiment Monitoring

SFA-based Federation
SDN Manager

Network infrastructure, providing dynamic NSI connections between testbeds.

* May be a single centralized instantiation or a distributed entity integrated with each individual testbed control framework.
Issues with inter-domain OpenFlow (and NSI)

- On-demand / Advance reservation
  - NSI supports advance reservation. OFC may be able to support.
  - Is advance reservation better than on-demand?
    - By advance reservation, future resource availability can be guaranteed. Is this useful?

- Pro-active management
  - OF is sometimes used to support pro-active network configuration
    - Plug in a device at any RJ45, connect the device to a certain slice according to MAC address, etc.
    - How can we support such functionality in an inter-domain OF with NSI?
  - In the first place, what is the purpose to use OF?
    - For network researches?
    - Service for general users? For what purpose?