OFCLEM Project Status Report
Period: 1/1/2010-3/31/2010

I. Major accomplishments

The project will deploy an OpenFlow testbed on the Clemson University campus and connect with wireless mesh access points and mobile terminals. This trial will conduct OpenFlow experimentation focused on OpenFlow enabled network operation solutions as a precursor to deployment into Clemson research and production networks.

During this period, key achievements include:

a) Completed small deployment with one Toroki switch, two wireless access points, and all OpenFlow software components in one building.
b) Completed GEC7 demo.
c) Attended OpenFlow planning meeting at GEC7.

A. Milestones achieved

Three milestones are completed in this reporting period:

1. OFCLEM: S2.a1 Select vendors (Completed early 01/28/10)
2. OFCLEM: S2.a2 Purchase equipment (Due 03/31/10)
3. OFCLEM: S2.b Campus small deployments (Due 03/31/10)

B. Deliverables made

a) Deployed small OpenFlow network
b) GEC7 demo (http://groups.geni.net/geni/wiki/GEC7Demos)

II. Description of work performed during last quarter

A. Activities and findings

a) Completed small deployment

A small network of one Toroki LS4810 switch and two PC Engine wireless access points in ECE wireless networking lab. NOX (v0.4 OpenRoads branch), SNAC (v0.4), FlowVisor (v0.4), and ENVI/LAVI (latest git release) were fully operational on a Debian Linux server. One non-OpenFlow VLAN and two OpenFlow VLANs were created.

b) GEC7 demo

The demo was based on the deployment described above. The demo shows:

- SNAC, FlowVisor, and OpenRoads NOX operations
- Handoff experiment of a video conferencing laptop client moving between two OpenRoads controlled access points on ECE building hallway; the experiment was shown via two separate real-time video streams from Clemson to GEC site, as well as ENVI/LAVI display of instantaneous network topology.

c) Attended OpenFlow planning meeting at GEC7

The meeting covered the following items:

- Progress update for all campuses. Clemson is on schedule according to plans made at previous GEC.
- Consensus on demo plan for GEC8. Each campus will scale up the network with existing configuration, conduct cross-campus experiment involving at least one or two other campuses.

- Discussion of inter-campus connectivity over NLR and/or I2. Conclusion: GPO will take charge of achieving connections needed for cross-campus experiments.

B. Project participants

The project team members are:

PI: Kuang-Ching Wang, ECE Assistant Professor
Co-PI: Jim Pepin, CTO
IT: Dan Schmiedt, Director of Network Services and Telecommunications
ECE graduate research assistants: Sajindra Pradhananga (MS), Glenn Evans (MS)
ECE undergraduate students: Bradley Collins (senior), Aaron Rosen (senior), Bob Strecansky (senior), Patrick Baxter (junior), Ryan Izard (sophomore)

C. Publications (individual and organizational)

Not available at this time.

D. Outreach activities

None in this reporting period.

E. Collaborations

The project is conducted in collaboration with campuses and backbone providers on the OpenFlow trial. We have so far worked more closely with:

a) Nick McKeown, Guru Parulkar, Guido Appenzeller and the Stanford OpenFlow group, assisting us in the acquisition, installation, configuration, and testing of OpenFlow software.

F. Other Contributions

None in this reporting period.