

## OpenFlow Campus Trials at Clemson University (1833A)

OFCLEM Project Status Report  
Period: 7/12/2012-10/25/2012 (GEC15)

### I. Major accomplishments

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

During this period, key achievements include:

- a) First campus to upgrade FOAM 0.8
- b) Provide consultation to Dell for GENI rack integration
- c) Continued meso-scale support for GENI experiments
- d) Clemson IT outreach: CC-NIE awarded and NSF Condo-of-condos workshop at Clemson
- e) Four REU students conducted two demos at GEC 15: 1) Data analysis network with Floodlight upgrade; 2) XACML/Floodlight based scheduled OpenFlow circuits for video streaming

#### A. Milestones achieved

No milestones are due this period.

#### B. Deliverables made

- a) Data analysis network setup based on Floodlight controller
- b) XACML/Floodlight integrated scheduled OpenFlow circuit setup application

### II. Description of work performed during last quarter

#### A. Activities and findings

- a) First campus to upgrade FOAM 0.8
- b) Provide consultation to Dell for GENI rack integration, working on prototype installation at Clemson
- c) Continued meso-scale support for GENI experiments
- d) Clemson IT outreach: gave plenary talk at Internet2 Fall member meeting and attended NSF Condo-of-condos workshop to provide SDN technology updates
- e) Four REU students and one new PhD student conducted two demos at GEC 15: 1) Data analysis network with Floodlight upgrade; 2) XACML/Floodlight based scheduled OpenFlow circuits for video streaming

#### B. Project participants

The project team members are:

PI: Kuang-Ching Wang (ECE Associate Professor)

Co-PI: Jim Pepin (CTO)

IT: Dan Schmiedt (Director of Network Services and Telecommunications), Wayne Ficklin (Network Engineer), Brian Parker (Network Engineer)

ECE graduate research assistant: Aaron Rosen (MS), Fan Yang (PhD), Ryan Izard (PhD)

ECE undergraduate student: Benjamin Ujcich (sophomore), Scott Groel (sophomore), James Kurtz (junior), David Reynolds (junior)

**C. Publications (individual and organizational)**

Not available in this period.

**D. Outreach activities**

- a) Internet2 Fall member meeting
- b) NSF Condo-of-condos workshop

**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, and the Stanford OpenFlow group.
- b) GENI Project Office

**F. Other Contributions**

None in this reporting period.