Shakedown Experimentations and Prototype Services on Scalable, Agile, Robust, and Secure Multi-Domain Software Defined Networks

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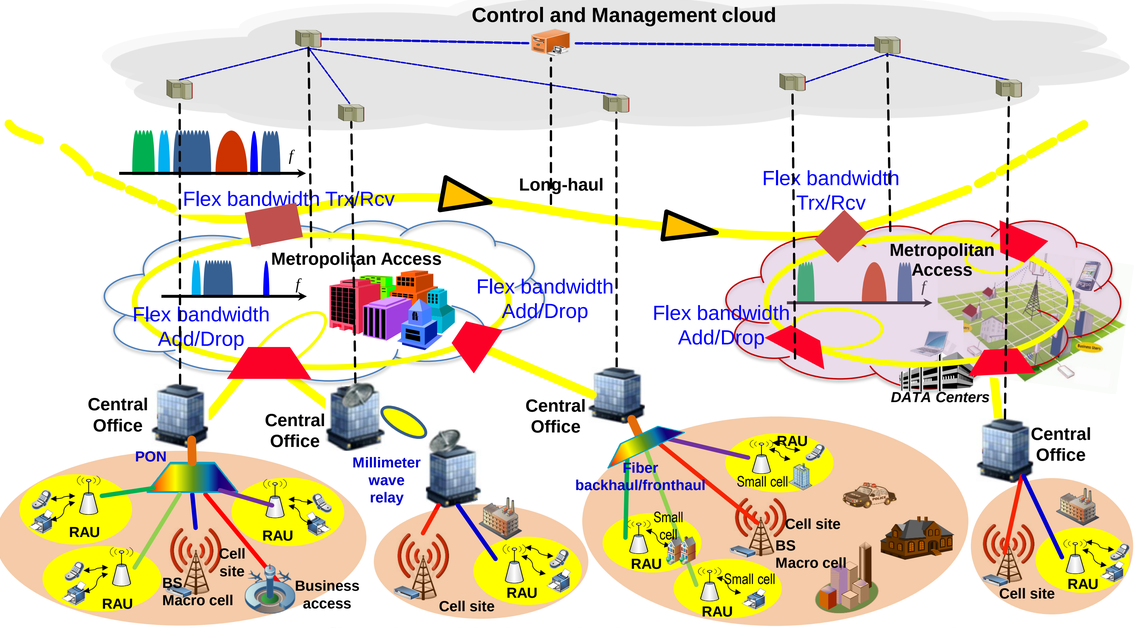
Abstract

This project pursues design, operation, and experimentations on multi-domain software-defined-networks. We develop a restoration scheme for SD-EONs and conduct the experimental validation on GENI testbed. A field trial of broker-based multi-domain software-defined heterogeneous wireline-wireless-optical networks based on UCD, COTN, and ESNet networks is also demonstrated.

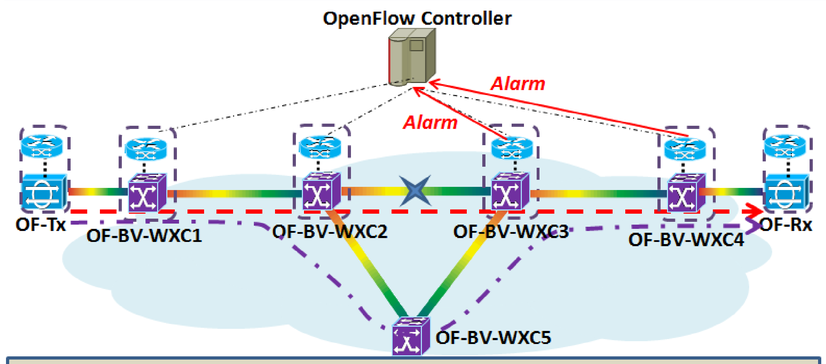
Project Objectives



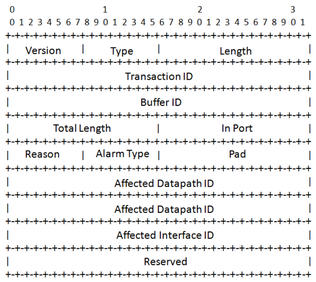
Software-defined multi-domain heterogeneous networking

- **Conduct a number of key experiments testing a new cross-layer and multi-domain OpenFlow control and management mechanism across multiple GENI testbeds while paying special attentions to configurability, security, and monitoring**

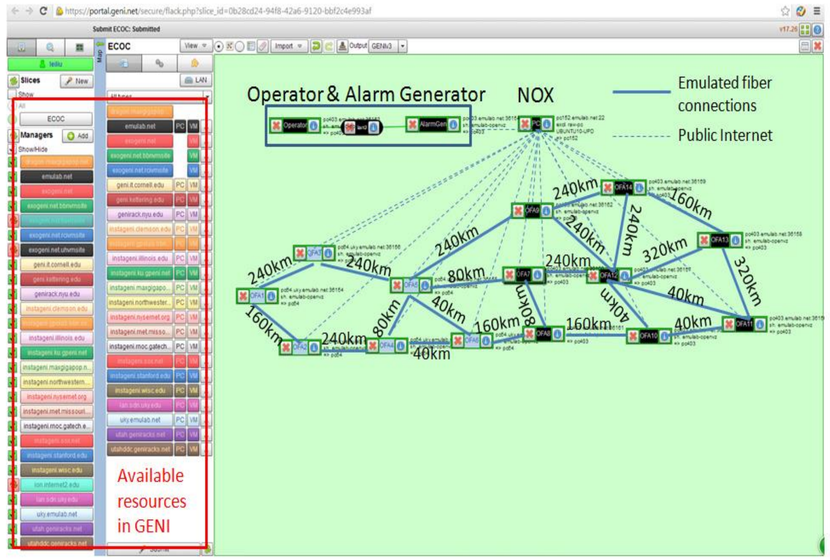
Dynamic Lightpath Restoration Demo for Elastic Optical Networks

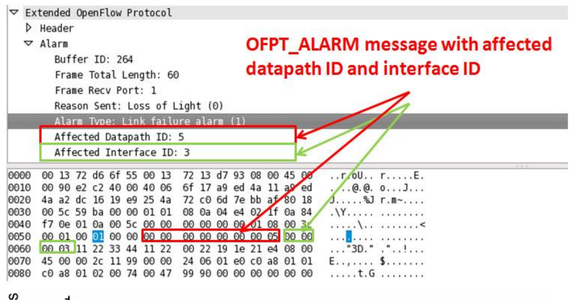


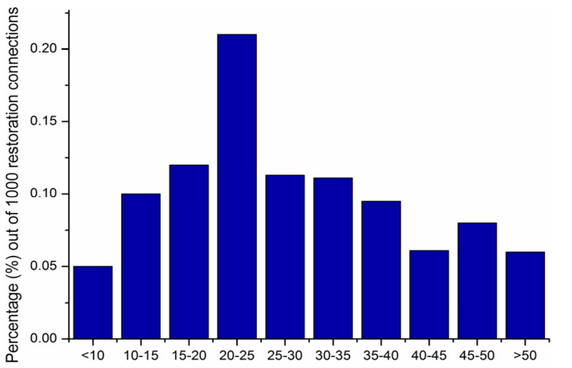
OFPT_ALARM message



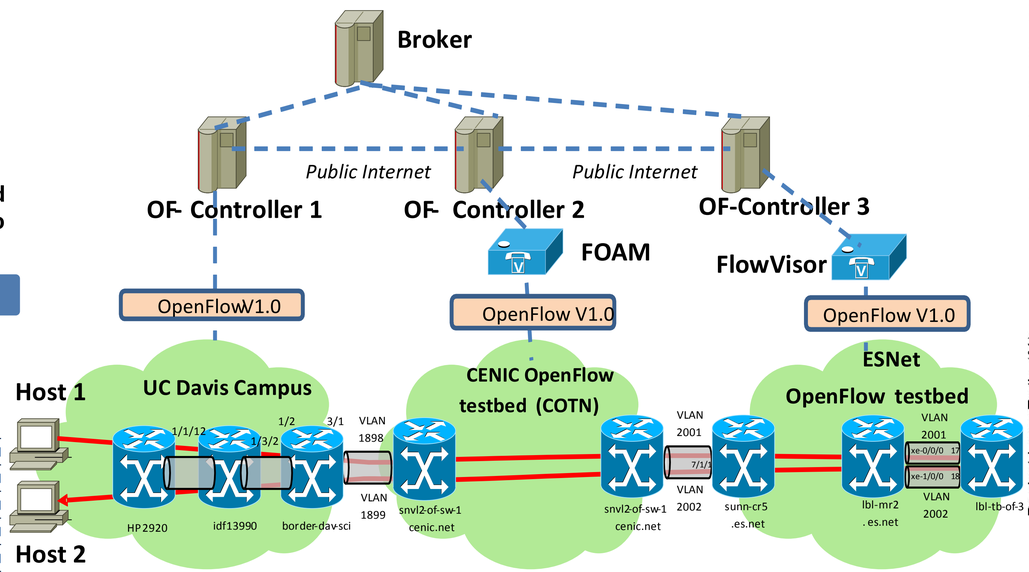
Experimental setup on GENI testbed

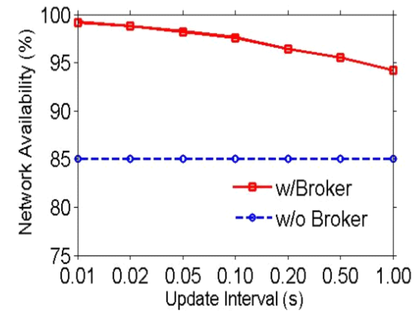


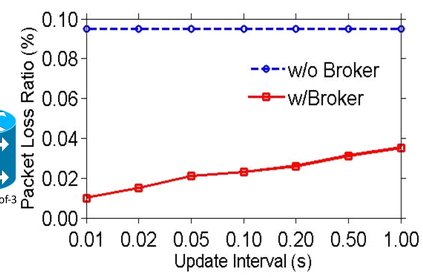




Field Trial of Broker-based Software-defined Multi-domain Heterogeneous Networks







Acknowledgements

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