

# Software-Defined Network Exchanges

## Emerging Innovations In SDN

### Interdomain Services and Capabilities

## Global Advanced Programmable Networks

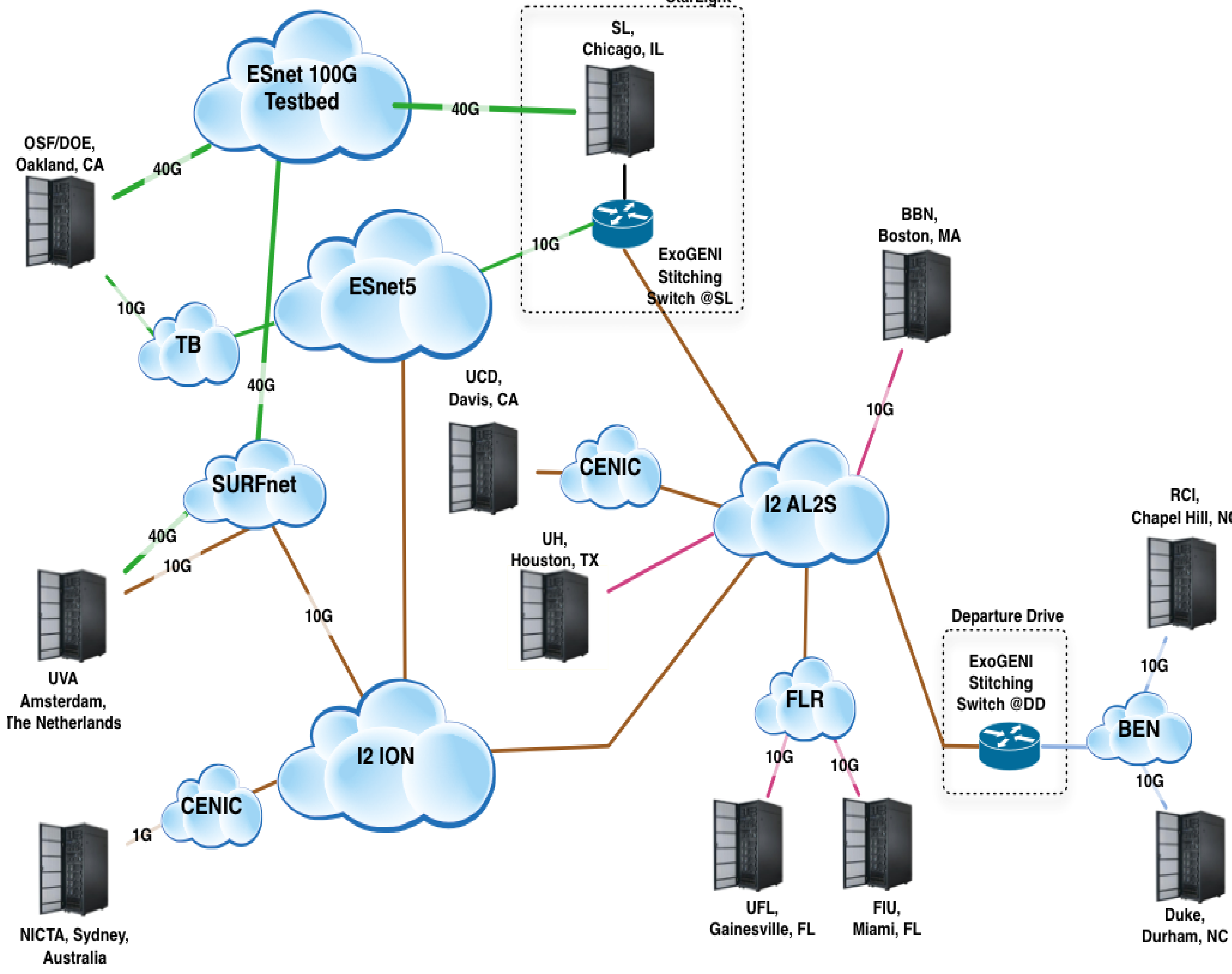
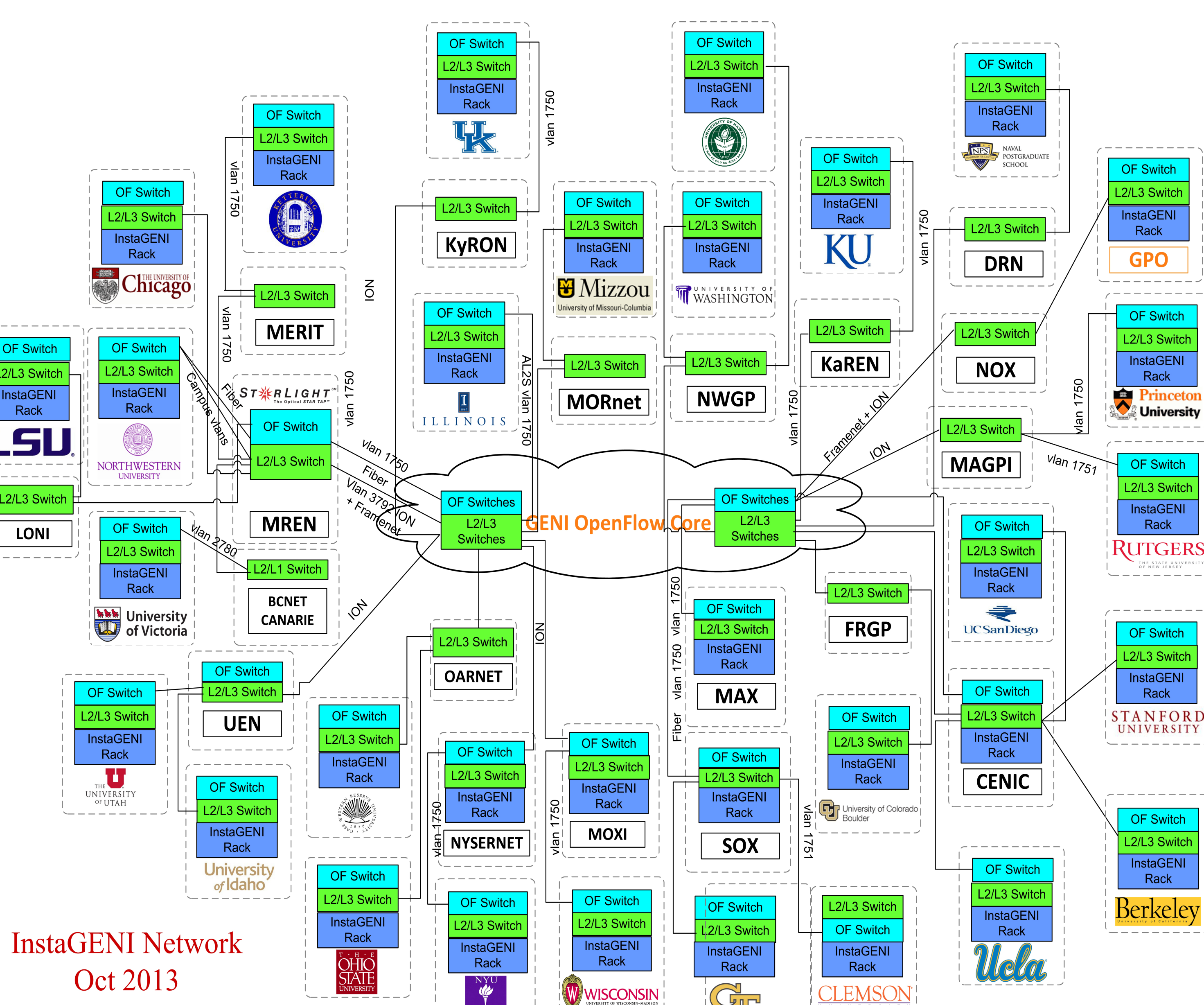
### Abstract

The Software-Defined-Networking (SDN) has quickly transformed the networking landscape. Programmable networking using SDN and related virtualization techniques are enabling the implementation of significantly higher levels of abstraction for network control and management functions at all layers and across all underlying technologies. With the increasing deployment of SDN in production networks, the need for an SDN exchange has been recognized (SDX). Consequently, the International Center for Advanced Internet Research (iCAIR) and its research partners are designing and implementing a prototype of the world's first SDX at the StarLight International/National Communications Exchange Facility, in partnership with the Global Environment for Network Innovations (GENI) program. This SDX will be a multidomain service enabling interoperability among multiple federated controllers.



### InstaGENI Racks Network

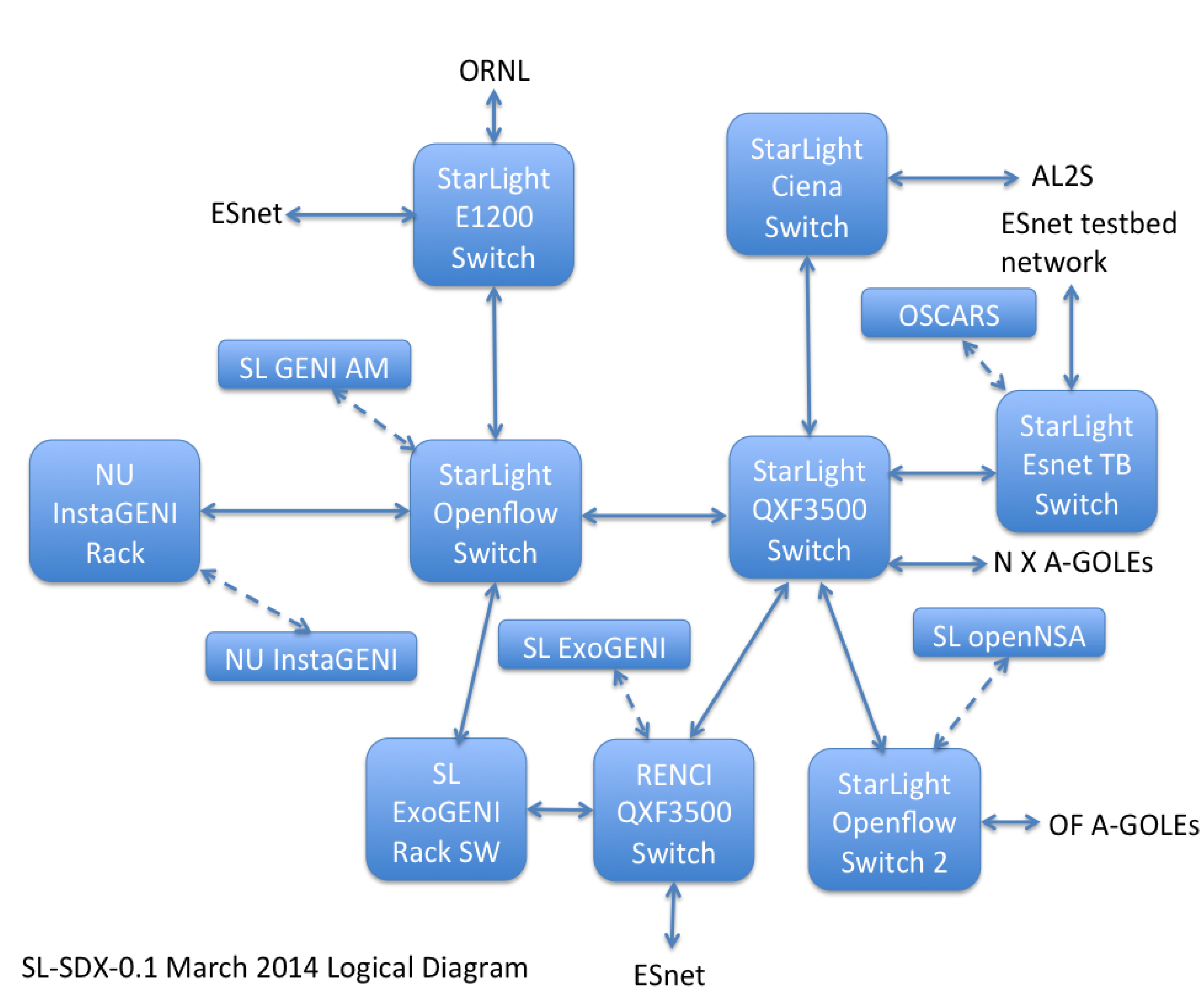
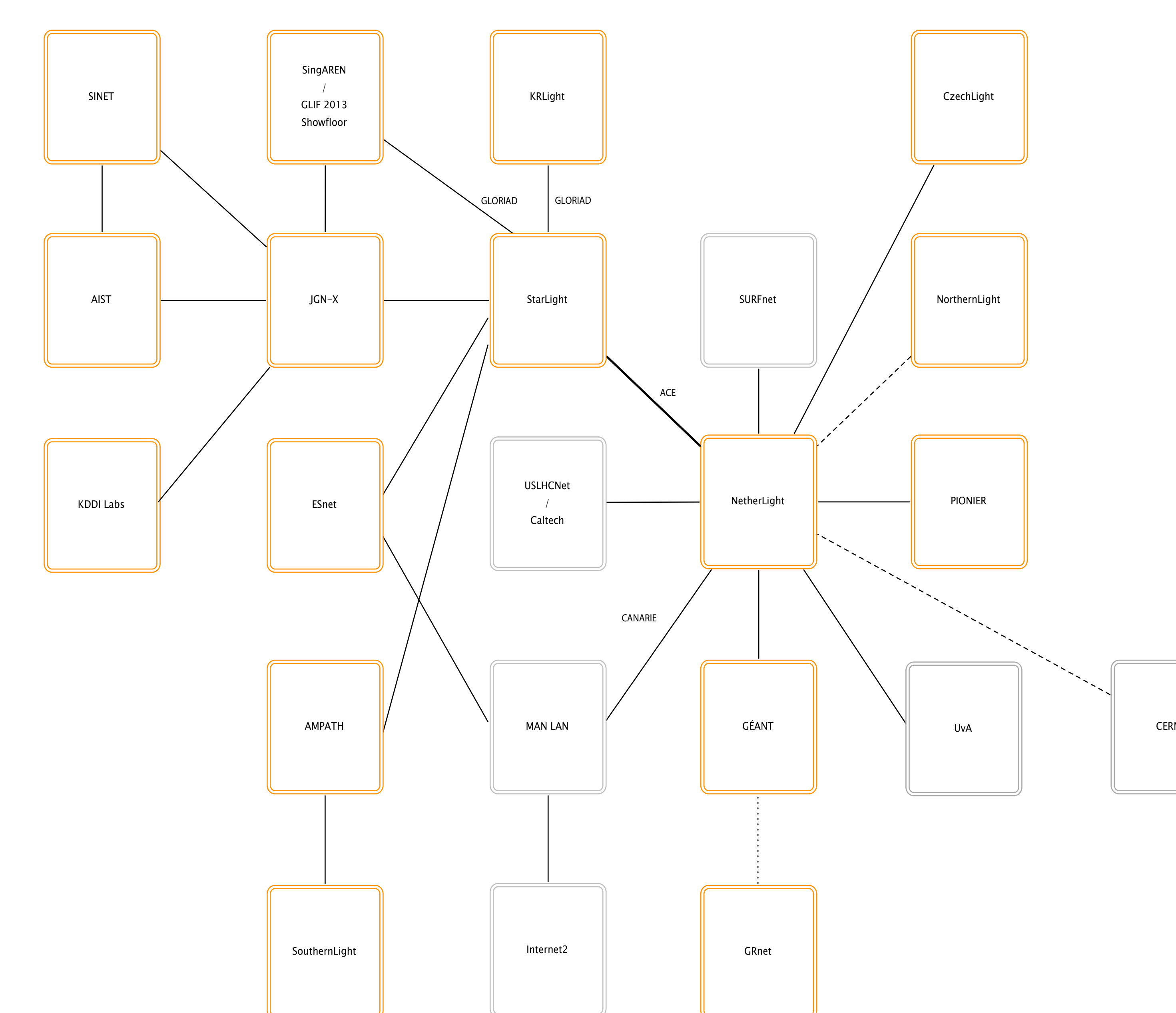
### ExoGENI Racks Network



InstaGENI Network Oct 2013

### NSI Automated GOLE Worldwide Schematic

### StarLight SDX Prototype-0.1



SL-SDX-0.1 March 2014 Logical Diagram