



UNIVERSITY of **HOUSTON** | TECHNOLOGY

**PROGRAMMABLE MEASUREMENTS  
OVER TEXAS-BASED RESEARCH  
NETWORK: LEARN - *CONNECTIVITY***

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# LEARN INTEGRATION

- Philosophy:
  - LEARN will use resources that will not add any cost to the project for initial development of ORCA integration
  - Volunteering university sites in addition to UH:
    - Rice University
    - TAMU
    - UT-Austin
  - Use LEARN backbone resources with minimal engineering support



# LEARN VLAN SPACE

- Permission to use 3200 – 4000 id space
- Pending: NLR FrameNET mapping
  - Permitted NLR VLAN tag ranges ?
  - NLR-LEARN-BEN mapping ? *(2500-2042)*
- Coordination of VLAN ids among BEN-LEARN (and in-between) is a good exercise that can transfer the experience to other such integration practices – *let's come up with a generic method!*



# VLAN CONNECTION PLAN

After VLAN id mappings are complete:

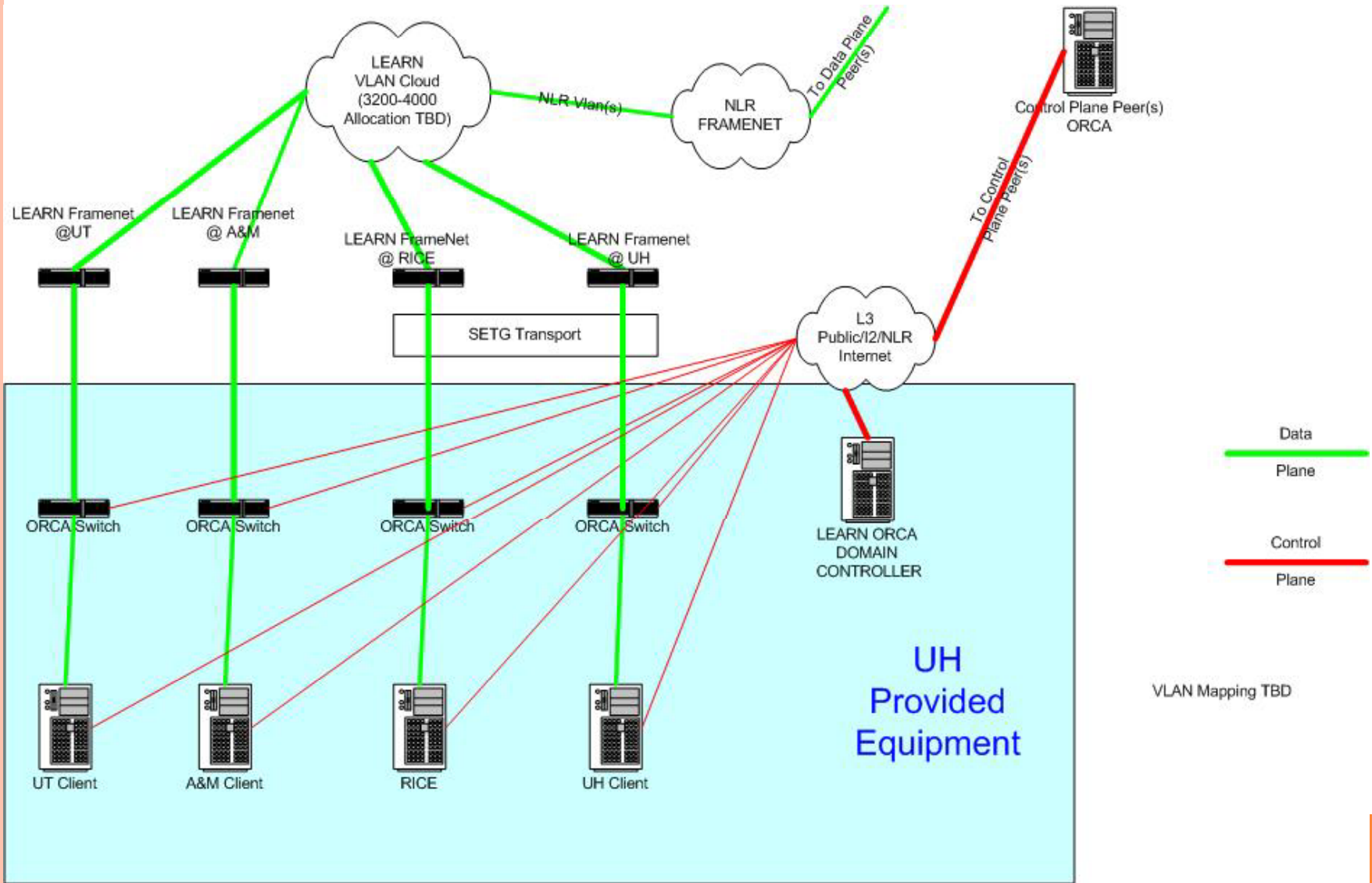
1. Load mappings on edge routers at LEARN and end points at Duke and BEN
2. Configure routers on LEARN (Cisco 3750s) at TAMU, UH, UT-Austin, and Rice
3. Test between UH and BEN
4. Test in LEARN only
5. Test between others: BEN-Rice/TAMU/UT-Austin



# INTEGRATE LEARN TO GENI THROUGH BEN

- Utilize national research network connections to deliver VLANs to GENI
  - Internet2
  - NLR
- Cost-effective nodes on LEARN:
  - TAMU
  - University of Houston
  - UT-Austin
  - Rice University





# ORCA CONTROL FRAMEWORK ON LEARN

- ORCA control of LEARN resources
  - Add/implement resource descriptions in NDL to a LEARN broker
  - Implement ORCA drivers for available Cisco 3750 switches
  - Deploy ORCA site authority in the order of implementation:
    1. UH: test between BEN-UH
    2. LEARN: deploy and implement in UH lab
    3. TAMU: test between UH-TAMU
    4. UT-Austin: test between BEN-UT-Austin
    5. Rice University: overall tests
- Deliver LEARN broker to ORCA clearinghouse



# QUESTIONS?

11/17/2009 GEC6 - ORCA - D. Gurkan, LEARN

