



Western-Hemisphere Research and Education Networks Links Interconnecting Latin America (WHREN-LILA)

Spring 2006 Internet2 Member Meeting International Task Force

April 24, 2006

Julio Ibarra, PI

Heidi Alvarez, Co-PI

Chip Cox, Co-PI

John Silvester, Co-PI



WHREN-LILA IRNC Award 0441095



- **5-year NSF Cooperative Agreement**

- ❑ **Florida International University (IRNC awardee)**
- ❑ **Corporation for Education Network Initiatives in California (IRNC awardee)**
- ❑ **Project support from the Academic Network of Sao Paulo (award #2003/13708-0)**
- ❑ **CLARA, Latin America**
- ❑ **CUDI, Mexico**
- ❑ **RNP, Brazil**
- ❑ **REUNA, Chile**



- **Links Interconnecting Latin America (LILA) aims to improve connectivity in the Americas through the establishment of new inter-regional links**

- **Western-Hemisphere Research and Education Networks (WHREN) serves as a coordinating body whose aim is to leverage participants' network resources to foster collaborative research and advance education throughout the Western Hemisphere**



Links Interconnecting Latin America

- **Miami - Sao Paulo link:**
1.2Gbps by year end, evolving to 2.5Gbps
- **Connects State of Sao Paulo academic network (ANSP) and Exchange Point, regional network (CLARA), Brazilian NREN (RNP), other international networks**
- **San Diego - Tijuana link:**
operating at 2 Gbps, providing dedicated GigE links to regional network (CLARA) and Mexican NREN (CUDI)
- **East and west coast connectivity to I2 Abilene and other US and global R&E networks**

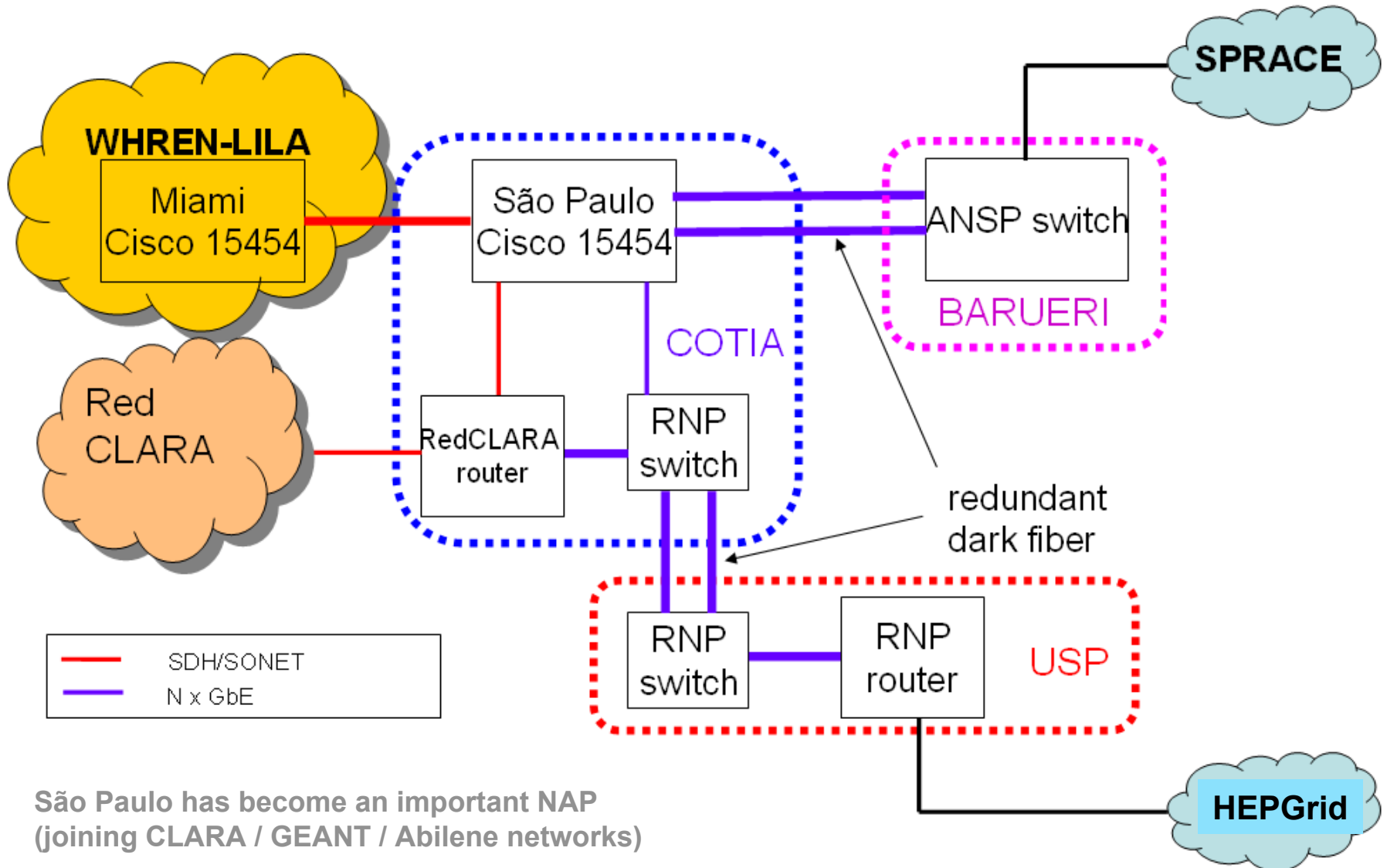


Recent Activities

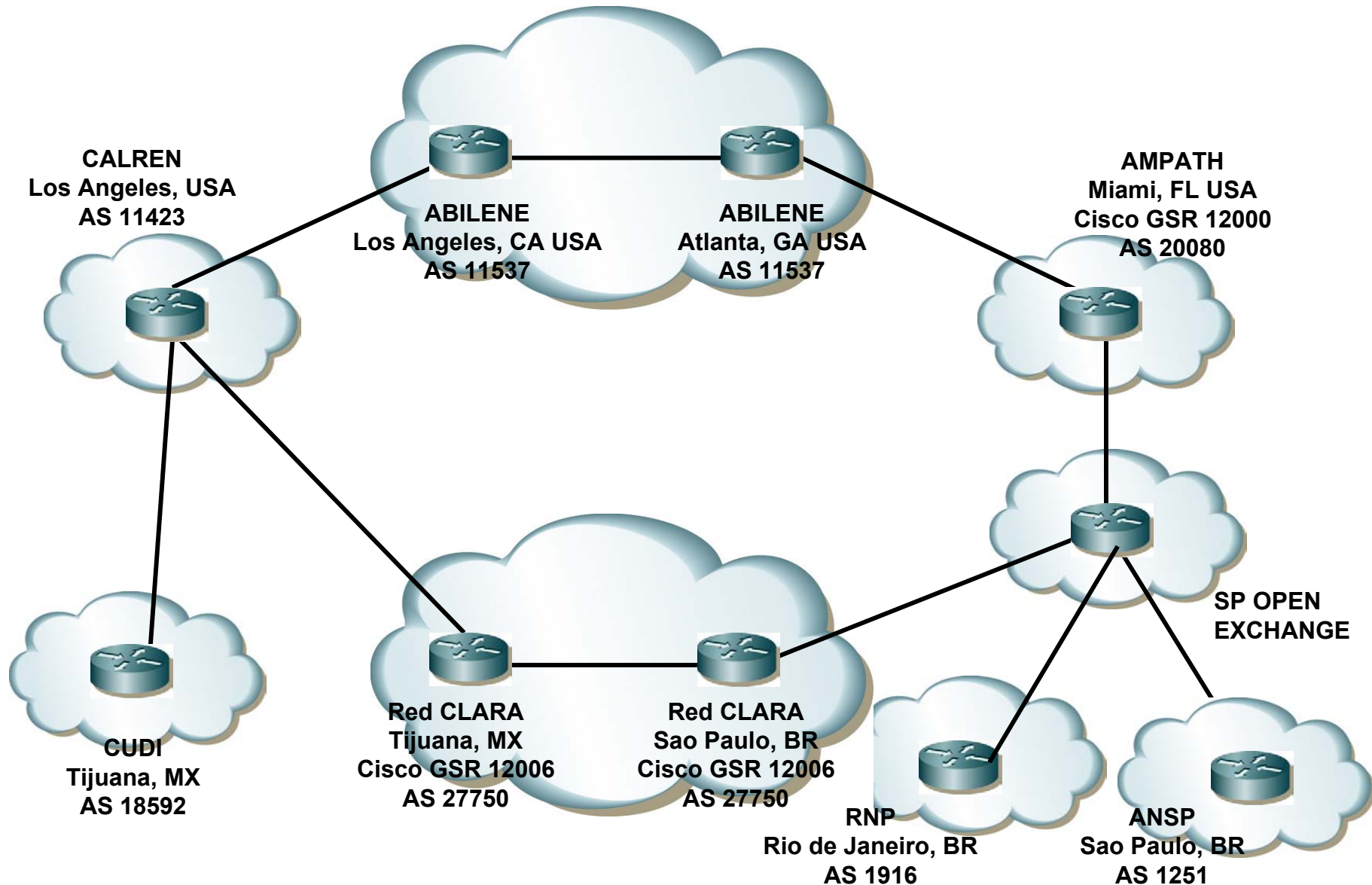


- **The Sao Paulo exchange point is in full operation**
- **A distributed exchange point service between Miami and Sao Paulo is now in service using the LILA-East link**
- **The LILA-West link is supporting the UC College Prep Online Collaboration with Mexico to benefit California English Language Learners**
- **Nicaragua and Colombia recently connected to RedCLARA**
- **14 NRENs from Latin America and RedCLARA are using the WHREN-LILA links to reach the U.S.**

Sao Paulo International connection - WHREN/LILA

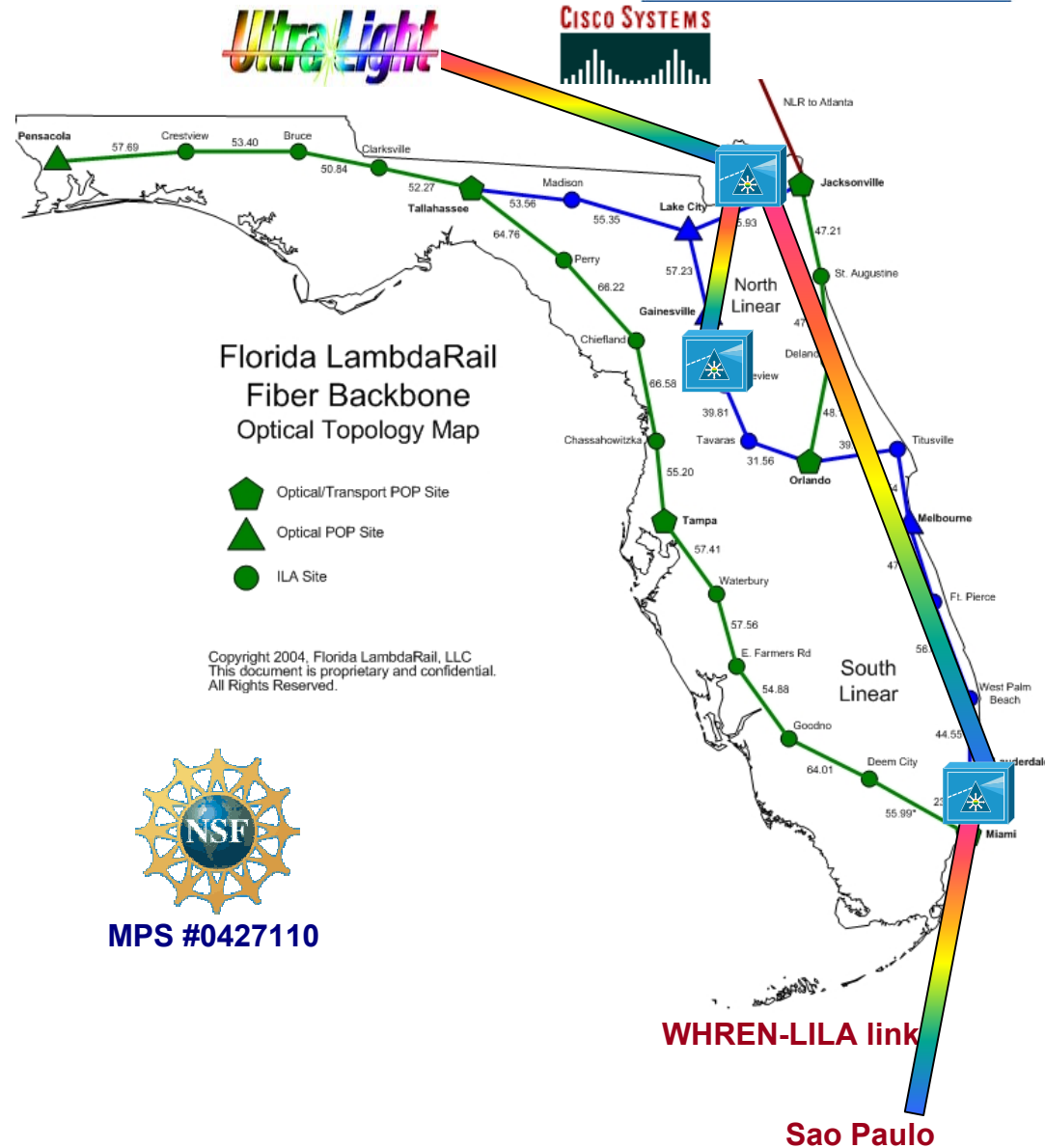


Peering Topology



UltraLight Collaboration

- UFL, FIU, CHEPREO, and communities in Brazil participating in UltraLight
- Inter-regional connectivity through WHREN-LILA link
- Demonstration project using Cisco NLR wave
- Cisco NLR wave from Jacksonville to Chicago
- Cisco-FLR provided 10GE links in Florida



Thank You!

- **WHREN-LILA, AMPATH infrastructure, CHEPREO, CyberBridges, science application support, education, outreach and community building efforts are made possible by funding and support from:**
 - National Science Foundation (NSF) awards STI-0231844, MPS-0312038, OISE-0418366, OISE-0549456, OCI-0537464, and SCI-0441095**
 - Florida International University**
 - Latin American Research and Education community**
 - The many national and international collaborators who support our efforts**