



# Americas Lightpaths (AmLight) Update



**South American Astronomy Coordinating  
Committee (SAACC) Virtual Meeting  
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# AmLight Goals

- AmLight aims to enhance science research and education in the Americas by
  - Providing operation of production infrastructure
  - Engaging U.S. and Latin American science and engineering research and education communities
  - Creating an open instrument for collaboration
- Goals for Year 3
  - Improving network operations among collaborating organizations
    - Documentation of operations and procedures, and development of shared practices to support AmLight collaborators' evolving needs
    - Enhancing measurement operational capabilities through the use of passive and active monitoring systems, and performance measurement (perfSonar)
  - Supporting rational growth of a regional network infrastructure
    - Plans for increasing bandwidth capacity to 40, 100 Gbps
    - Path diversity supported by multiple carriers (AmLight 2013)
  - Supporting hybrid network services
    - Persistent layer2 network service provided through static and dynamic approaches
    - Provide science project engagement, working with developers, engineers, operators and science communities to increase adoption of hybrid network services; eg., engaging the SAACC, LHCONE, GLEON (Global Lakes project), etc.



# AmLight: International Collaborations



- Florida International University (AMPATH @ FIU)
- Corporation for Education Network Initiatives in California (CENIC)
- Lonestar Education and Research Network (LEARN)
- Academic Network of Sao Paulo (ANSP-FAPESP)
- Association of Universities for Research in Astronomy (AURA)
- Cooperación Latino Americana de Redes Avanzadas (CLARA)
- Corporación Universitaria para el Desarrollo de Internet (CUDI)
- Red Universitaria Nacional (REUNA)
- Rede Nacional de Ensino e Pesquisa (RNP)
- Florida LambdaRail
- Internet2
- Southeastern Universities Research Association (SURA)
- AtlanticWave Exchange Points
- National LambdaRail





# AmLight 2013 Topology

- ANSP: 2x 10G links  
S Paulo – Miami
  - (W) via Santiago (LAN)
  - (E) direct (Telfonica)
- RNP: 2x 10G links  
S Paulo – Miami
  - (W) direct (Telefonica)
  - (E) via Rio de Janeiro & Fortaleza (LAN) (+ redundant terrestrial links)
- RedCLARA:
  - 1G link Panama – Miami (LAN)
  - 10G terrestrial link Santiago – S Paulo



# Achievements in 2012

- Operating a hybrid networking services environment:
  - A DYNES/OSCARS regional node was established at AMPATH in collaboration with Internet2
  - Service announcement at <http://amlight.net/News/files/708cf6f6d403bcfe2b7d3b03ba458c6c-19.html>
  - Supporting dynamic circuit requests from Brazil, Internet2 and ESnet.
  - Received NSF CC-NIE network infrastructure award to build a [ScienceDMZ](#) at FIU
- Operating an advanced measurement environment:
  - Deployed CAIDA's Coral Reef passive monitoring system at AMPATH
  - CAIDA's Active (ARK) monitor now on ANSP network
  - Adapted Coral Reef for AmLight's hybrid networking environment



## FlowSurge: NSF CC-NIE award at FIU

- NSF CC-NIE Network Infrastructure, award #1246185
- Enhances support for end-to-end science flows by
  - Enhancing FIU's Science DMZ and connecting researchers' labs to it
  - Leveraging CI resources at AMPATH and AmLight to support end-to-end science flows to resources at the other end (AURA, LHCONE, etc.)
- Collaborators include ANSP, CTIO, RNP, University of Utah, FLR, Internet2, GENI



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**Thank You!**