



PRESS RELEASE

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Americas Lightpaths Express and Protect Activates First US – Latin America 100G Networking Link Enhancing Infrastructure for Research and Education

Miami, Florida, April 26, 2016 – Florida International University’s Center for Internet Augmented Research and Assessment (CIARA) is pleased to announce the first 100G research and education network link between the U.S. and Latin America, a major component of the five-year AmLight ExP (IRNC BACKBONE: Americas Lightpaths Express and Protect) [NSF Award#ACI-1451018](#).

On April 18, 2016 the AmLight Consortium activated the first 100G link of the AmLight-ExP project. It has 106ms delay and it goes via the Atlantic between Miami, FL and Sao Paulo, Brazil. The 100G link is under evaluation for the next 30 days. “To date, we have not seen any packet loss or errors and, to evaluate it, we are using an IXIA 100G packet generator,” said Jeronimo Bezerra AmLight Chief Network Engineer.

The AmLight Consortium is a group of not-for-profit universities, state, national and regional research and education networks including the AmLight ExP project at [Florida International University](#), [RNP](#), [ANSP](#), [RedClara](#), [REUNA](#), [FLR](#), [AURA](#), [Latin American Nautilus](#), and [Internet2](#).

Robert Grillo, Vice President and CIO at Florida International University said, “This milestone for FIU sets new standards for high speed networking and bandwidth in the Americas that will promote new and innovative activities for all education and research institutions. Our vision will continue to advance scientific research and scholarship across the globe in collaboration with all our partners.”

Elias Eldayrie, Vice President and CIO at the University of Florida and Chairman of the Florida LambdaRail Board of Directors said, “FLR and its 12 Partner Institutions are collaboratively working with FIU to determine the resource requirements, timelines and milestones needed to contribute and collectively achieve FIU’s objectives in the NSF IRNC AmLight-ExP, AtlanticWave-SDX through the use of optical spectrum. Utilizing our 100 Gbps network, we look forward to participating in this experiment to connect multiple U.S. locations through Florida to Brazil and Chile, moving forward together.”

Jeffrey Kantor, of the LSST Project Management Office said, “LSST has partnered with FIU AmLight for our high-speed network needs between Chile and multiple locations in the U.S, including a 100 Gbps ring connecting Santiago and Miami. This capability will be critical in connecting LSST’s operational sites and permit us to perform near-real-time transient alert processing at our main archive site at the University of Illinois National Center for Supercomputing Applications in Urbana-Champaign, Illinois.”

David Lambert, President and CEO of Internet2 said, “This 100G implementation is extremely valuable to our members, providing them resilient, scalable, long term bandwidth that connects research and education institutions globally. In this global ecosystem, it pays off in spades when researchers and scientists can lean on sophisticated infrastructure to simplify their work and connect in meaningful ways to propel innovation and discovery. Congratulations to FIU, AMPATH and the NSF for this wonderful accomplishment”

“RNP began to collaborate with AMPATH in 2001, and has been a partner since 2004 in the series of IRNC links, co-supported by NSF and ANSP, which provide Research and Education connectivity between the US and Brazil – the AmLight Consortium. These links have constituted Brazil’s principal support for international collaboration, and have steadily grown in capacity over the years. The adoption of 100G links this year represents an increase in capacity of almost 500%, demonstrating ample support for the growth of important data-intensive international science collaborations”, said Dr. Michael Stanton, Director of Research and Development at Brazil’s National Research and Education Network, RNP.

“The Academic Network of Sao Paulo (ANSP) provides connectivity to more than fifty institutions, which are responsible for more than forty percent of Brazilian science production. The AmLight Consortium implementation of 100G protected capacity on the international links is a milestone in our partnership with RNP and FIU for over a decade,” said Dr. Luis Lopez, Principal Investigator (PI) of ANSP.

The AmLight Consortium works together to provide submarine cable connectivity between Miami, FL and Fortaleza and Sao Paulo, Brazil as well as Santiago, Chile for research & education purposes. The AmLight Consortium needs connectivity in the furtherance of its research and educational goals, to promote the development of advanced network applications, content, and services between the US and Latin America. The networking team is currently working on the activation of a second 100G link, going via the Pacific route. After that, the team will establish a 100G link with Fortaleza, Brazil.

Link evaluation is being performed using OpenFlow, a recent innovation of the previous methodologies such as virtual local area networks (VLANs), route loops and TTL (Time to Live) change. The OpenFlow protocol enables network controllers to determine the path of network packets across a network of switches.

The AmLight Consortium is actively seeking new scientific and educational applications for the new 100G network. Researchers involved with Big Data, Networking and/or Software Defined Networking (SDN) can request a virtual network on the new 100G ring from AmLight SDN by sending email to sdn@amlight.net describing your research, how AmLight could help your research, information about your controller, etc., and we will reach you to discuss next steps.

About CIARA: Florida International University’s Center for Internet Augmented Research and Assessment (CIARA), in the Division of IT, has developed an international, high-performance research connection point in Miami, Florida, called AMPATH (AMericasPATH; www.ampath.net). AMPATH extends participation to underrepresented groups in Latin America and the Caribbean, in science and engineering research and education through the use of high-performance network connections. AMPATH is home to the Americas Lightpaths (AmLight) high-performance network links connecting Latin America to the U.S., funded by the National Science Foundation (NSF), award #ACI-0963053 and the Academic Network of São Paulo (award #2003/13708-0) (<http://ciara.fiu.edu/>)

About ANSP: The Academic Network of São Paulo (ANSP) provides connectivity to the top R&E institutions, facilities and researchers in the State of São Paulo, Brazil, including the University of São Paulo, the largest research university in South America. ANSP directly connects to AmLight in Miami at 20G. ANSP also provides connectivity to Kyatara, a 9-city dark-fiber-based optical network infrastructure linking 20 research institutions in the state and a number of special infrastructure projects like GridUNESP, one of the largest computational clusters in Latin America, supporting interdisciplinary grid-based science (www.ansp.br).

About AURA: The Association of Universities for Research in Astronomy (AURA) is a consortium of 40 US institutions and 4 international affiliates that operates world-class astronomical observatories. AURA’s role is to establish, nurture, and promote public observatories and facilities that advance innovative astronomical research. In addition, AURA is deeply committed to public and educational outreach, and to diversity throughout the astronomical and scientific workforce. AURA carries out its role through its astronomical facilities (www.aura-astronomy.org).

About CANARIE (Canada): Canarie, Canada’s NREN, interconnects with U.S. R&E networks at PacificWave (Seattle), StarLight (Chicago), MANLAN (New York), and peers with Latin American NRENs over AtlanticWave and PacificWave. One million researchers, scientists and students at nearly 2,000 Canadian institutions, including universities, colleges, research institutes, hospitals, and government laboratories have access to the CANARIE Network (www.canarie.ca).

About CLARA: CLARA, the Latin American Cooperation of Advanced Networks (Cooperación Latino Americana de Redes Avanzadas), is a non-profit organization whose members are the NRENs of Latin America, and which is in charge of the management, development and operation of RedCLARA as well as the coordination of Latin America’s research networking activities. RedCLARA directly connects to AmLight links in São Paulo, Santiago, Miami and Tijuana. Latin American NRENs connected to RedCLARA: Argentina (Innova-Red), Brazil (RNP) ,Chile (REUNA), Colombia (RENATA), Costa Rica (RedCONARE), Ecuador (CEDIA), El Salvador (RAICES), Guatemala (RAGIE), México (CUDI), Panamá (RedCYT), Perú (RAAP), Uruguay (RAU) and Venezuela (REACCIUN) (www.redclara.net).

About Florida LambdaRail: Florida LambdaRail (FLR) is Florida’s Research and Education Network. With its 100 Gbps 1,540 mile dark fiber network, FLR provides a cost effective, ultra-high speed, inter-connected, broadband service delivery network that enables Florida’s higher education institutions and partners to collaborate, connect, utilize and develop new

innovative broadband applications and services in support of their scientific research, education, and 21st century economy initiatives. (www.flrnet.org).

About Internet2® • www.internet2.edu Internet2® is a member-owned advanced technology community founded by the nation's leading higher education institutions in 1996. Internet2 provides a collaborative environment for U.S. research and education organizations to solve common technology challenges, and to develop innovative solutions in support of their educational, research, and community service missions.

Internet2 consists of more than 250 U.S. universities, 80 leading corporations, 70 affiliate members and government agencies, 39 regional and state education networks and more than 65 national research and education networking partners representing more than 100 countries. Internet2 offices are located in Ann Arbor, Mich.; Emeryville, Calif.; and Washington, D.C. For more information, visit www.internet2.edu or follow @Internet2 on Twitter.

About REUNA (Chile): Red Universitaria Nacional, REUNA, provides a leading digital platform that articulates, connects, and fosters collaboration between those entities that based in Chile belong to the fields of science, education, and the Chilean local culture, connecting them to the rest of the world throughout innovating services. With over 20 years' experience and currently made up of 31 institutions, REUNA's digital platform covers 13 regions between the northern city of Arica and the southern city of Osorno. (www.reuna.cl/en/).

About RNP: The Brazilian Education and Research Network (RNP), qualified as a Social Organization (OS) by the Brazilian government, is supervised by the Ministry of Science, Technology and Innovation (MCTI), and is maintained through the inter-ministerial RNP program, which also includes the Ministries of Education (MEC), Health (MS) and Culture (MinC). The first Internet provider in Brazil with national coverage, RNP operates a high-performance nationwide network, with points of presence in all 26 states and the national capital, providing service to over 1200 distinct locations. RNP's more than four million users are making use of an advanced network infrastructure for communication, computation and experimentation, which contributes to the integration of the national systems of Science, Technology and Innovation, of Higher Education, of Health and of Culture (www.rnp.br/en)