

Summary:

1. Revise five year plan due to award/proposed difference
  2. Negotiated Contract with Global Crossing for fiber purchase
  3. Negotiated Contract with Latin American Nautilus for capacity lease
  4. Established communication channels
  5. Began collaborative peering design
  6. Shared funding model with group
  7. Established sub contract funds transfer
  8. Outreach and Participation
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1. The difference between the annual award amount and the originally proposed budget was nearly \$1 Million dollars. After a series of conversations with the partners, it was decided that the proposed leased circuit from Santiago to Tijuana would be omitted. This was decided because the planned exchange in Chile did not materialize, with only the Chilean network present. At both the Sao Paulo and Tijuana exchanges there were multiple networks that could utilize LILA. Additionally Sao Paulo-Santiago lease rates were reasonable so that it would not be an insurmountable obstacle for peering. CLARA would be used to connect the general research and education traffic from Chile to the U.S. through either a South Eastern (Sao Paulo) or South Western (Tijuana) open exchange. In the first year FAPESP agreed to fund the Miami-SP link at higher than previously agreed upon level due to the budget short fall. This meant that FAPESP would be paying 85% of the first year lease cost, and then in subsequent years the amount would return to 50/50. Mechanically, FAPESP would cover the full cost of the first three quarters of the year, and then return to the planned equity for the fourth quarter allowing us to move the remainder of an existing lease contract with Global Crossing to Latin American Nautilus.
  2. In the planning for the proposal, various vendors were asked to provide a quote for 20-25 year right to use on fiber across the border between San Diego and Tijuana. The only company that was willing to sell such a product was Global Crossing. During the planning of the proposal Global Crossing offered the fiber at \$500,000. Subsequent to the proposal being awarded, Global Crossing decided to raise its price. After lengthy negotiations, Global Crossing returned to \$520,000. The WHREN/LILA award paid \$480,000 for this, and the WHREN/LILA awardees paid the difference.

3. The partner for the leased circuits was Latin American Nautilus. To begin the project, an existing FAPESP Global Crossing contract had to be bought out. LAN arranged this and we established the following schedule:

Date	Capacity activated	Payments due (USD)	Note
Dec 30, 2004	1 x STM-4	305,671	
Feb 1, 2005	1 x STM-4	483,000	
Aug 15, 2005	1 x STM-4	724,968	
Oct 15, 2005	1 x STM-4	414,000	
Dec 15, 2005	2 x STM-4	414,000	2 <sup>nd</sup> STM-4 Activation
Aug 15, 2006	2 x STM-4	724,968	
Oct 15, 2006	3 x STM-4	500,000	3 <sup>rd</sup> STM-4 Activation
Dec 15, 2006	3 x STM-4	500,000	
Aug 15, 2007	3 x STM-4	724,968	
Oct 15, 2007	3 x STM-4	500,000	
Dec 15, 2007	3 x STM-4	500,000	
Aug 15, 2008	3 x STM-4	724,968	
Oct 15, 2008	3 x STM-4	500,000	
Dec 15, 2008	4 x STM-4	500,000	STM-16 Activation
Aug 15, 2009	4 x STM-4		End of Contract

The contract allowed for broad renegotiation. Of particular interest was moving from protected (the only technically available circuit on the cable now) to unprotected circuits as soon as it would be possible. The WHREN/LILA team engaged LAN in both technical and business plan discussions. It is anticipated that by the end of the year this contract would be renegotiated to match the IRNC funding period.

4. To support effective communication of the project several mail lists were created. The lists were pre-populated with the following names:

f

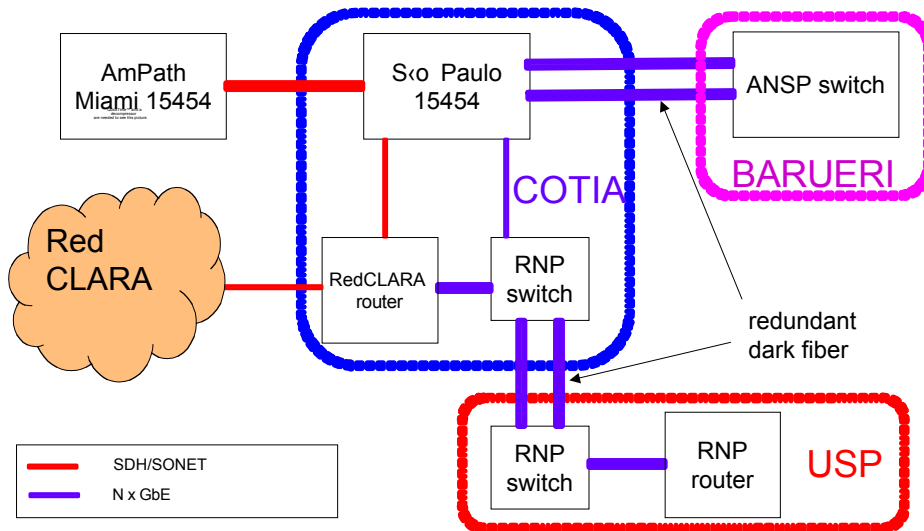
WHREN-TODAY ( Newsletter )	WHREN-LILA-ENG:	WHREN-LILA-STEERING:	WHREN-LIST
anne@aldea.com ccasasus@cudi.edu.mx celestea@usc.edu chip@fiu.edu cnewton@ufg.edu.sv concordia@aldea.com corbato@internet2.edu ernesto@cs.fiu.edu futreras@reuna.cl gscott@cenic.org heather@internet2.edu heidi@fiu.edu julio@fiu.edu jdogonas@cenic.org lopez@dim.fm.usp.br nelson@na-df.rnp.br sestrada@aldea.com silvester@usc.edu stgeorge@unm.edu	alex@rnp.br algold@rnp.br bac@cenic.org ccosta@cenic.org chip@fiu.edu dave@cenic.org eporto@rnp.br ernesto@cs.fiu.edu esj@cs.fiu.edu florencio.utreras@redclara.net gcicileo@retina.ar guilherme@rnp.br hans@noc.redclara.net heidi@fiu.edu jdogonas@cenic.org jrgmrcs@ansp.br jsilvest@usc.edu julio@fiu.edu lopez@dim.fm.usp.br michael@rnp.br mmurom@cudi.edu.mx rliope@usp.br xsu@hep.caltech.edu yamamoto@ansp.br	ccasasus@cudi.edu.mx chip@fiu.edu dave@cenic.org eporto@rnp.br florencio.utreras@redclara.net hans@noc.redclara.net heidi@fiu.edu ileana@fiu.edu jdogonas@cenic.org jsilvest@usc.edu julio@fiu.edu kthompso@nsf.gov lopez@dim.fm.usp.br michael@rnp.br mmurom@cudi.edu.mx nelson@na-df.rnp.br	avery@phys.ufl.edu awhitney@haystack.mit.edu bill.st.arnaud@canarie.ca ccasasus@cudi.edu.mx chip@fiu.edu delaat@uva.nl dlapsley@haystack.mit.edu futreras@reuna.cl heidi@fiu.edu jsilvest@fiu.edu julio@fiu.edu kennedy@gemini.edu lconrad@mailier.fsu.edu lopez@dim.fm.usp.br ismarr@ucsd.edu maidique@fiu.edu nelson@na-df.rnp.br newman@cac.caltech.edu nlock@gemini.edu novaes@fnal.gov Robert.N.Bradford@msfc.nasa.gov ronj@cac.washington.edu santoro@uerj.br tom@uic.edu twest@cenic.org uose.hisao@lab.ntt.co.jp

The WHREN-LILA Steering group would meet by phone and video-conference every other Wednesday. A newsletter would be sent out to the list and to news sources every quarter. The newsletters and general information is made available at [www.whren-lila.org](http://www.whren-lila.org).

5. Discussion of peering in Sao Paulo

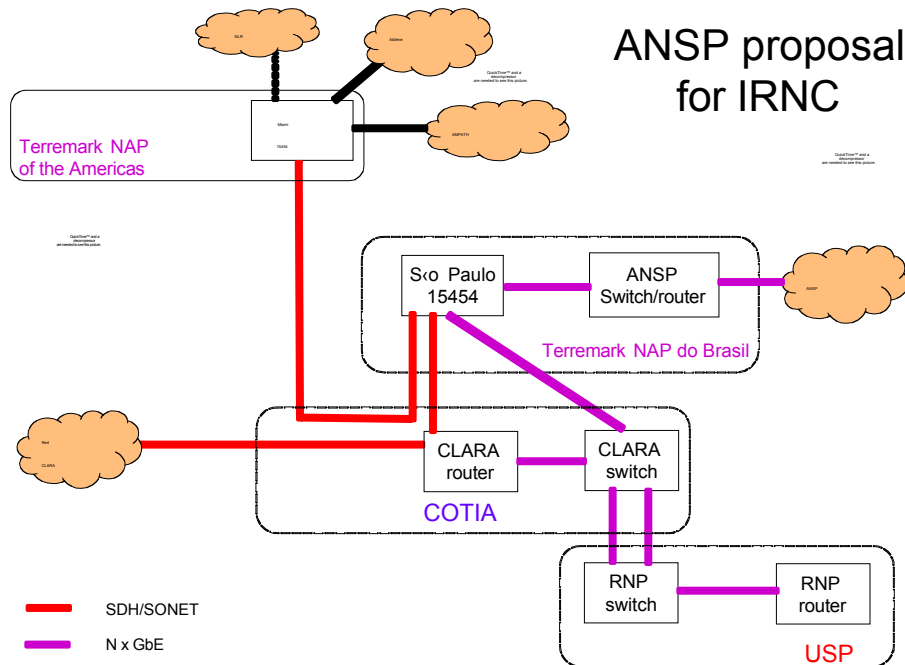
Two topologies were discussed, shown below as Figure 1 and Figure 2. These diagrams are from the PowerPoint presentation with filename RedCLARA\_IRNC-en3.ppt

## CLARA proposal for IRNC



**Figure 1 COTIA collocation facility option**

Figure 1 shows the NSF-funded CHEPREO project Cisco optical mux located in the CLARA PoP in the COTIA collo facility. Florencio and Michael explained that the collocation space of the CLARA PoP in COTIA is paid for by the ALICE project and leased for 24 months.



**Figure 2 Terremark NAP do Brasil option**

Figure 2 shows the NSF-funded CHEPREO project Cisco optical mux located in the Terremark NAP do Brasil. The WHREN-LILA steering group agreed that both options were topologically equivalent. FAPESP funding requires an open and neutral facility. So the first model was adopted on the insistence that the exchange would be open.

6. The funding model was for WHREN/LILA was shared with the WHREN/LILA steering group. In the first year \$1,000,000 of NSF funds would be spent with \$480,000 for the TJ-San Diego Fiber Purchase, \$140,000 for Engineering and Operations at both FIU and CENIC, and the remaining \$240,000 would go to the Miami-SP lease. In subsequent years \$760,000 would go towards the lease. FAPESP's budget of \$1,000,000 would contribute \$840,000 to the lease, and \$160,000 to engineering and in Sao Paulo. FIU and CENIC would each contribute all the necessary equipment from other funding sources. Regional networking would be provided by CLARA which would spend approximately \$2,500,000 a year on networking, with DANTE/ALICE providing \$2,100,000 and the 13 members of CLARA each paying a pro-rated amount weighted by the capacity they received on the STM-1 backbone totaling \$400,000 a year.
7. WHREN/LILA awardees participated in the following meetings with NSF support:
  - a. Participation in IRNC kick off meeting