

Special Projects in Support of Global NREN Development: Senegalese NREN Update

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Agenda

- Goal
- Membership
- History
- 2012-2014 Strategic Plan
- Challenges
- Lessons learned

Goal

Build a national R&E infrastructure to:

- Fostering collaboration between research, education and science institutions in Senegal
- Build a common information system for higher education in the country (statistics)
- Share resources and value added services: grid computing, e-learning, VoIP, videoconference, digital library, e-health, identity federations etc.
- Aggregate and share High Internet Bandwidth

Connect snRER to the global academic world through the regional REN (WACREN) and international REN (GEANT, INTERNET2, etc.)

Membership

Phase 1 (since 2007): 5 public universities

- University Cheikh Anta Diop of Dakar (West)
- University of Thies (Center)
- University of Bambey (Center West)
- University Gaston Berger of Saint-Louis (North)
- University of Ziguinchor (South)

Phase 2 (2015): Other Members

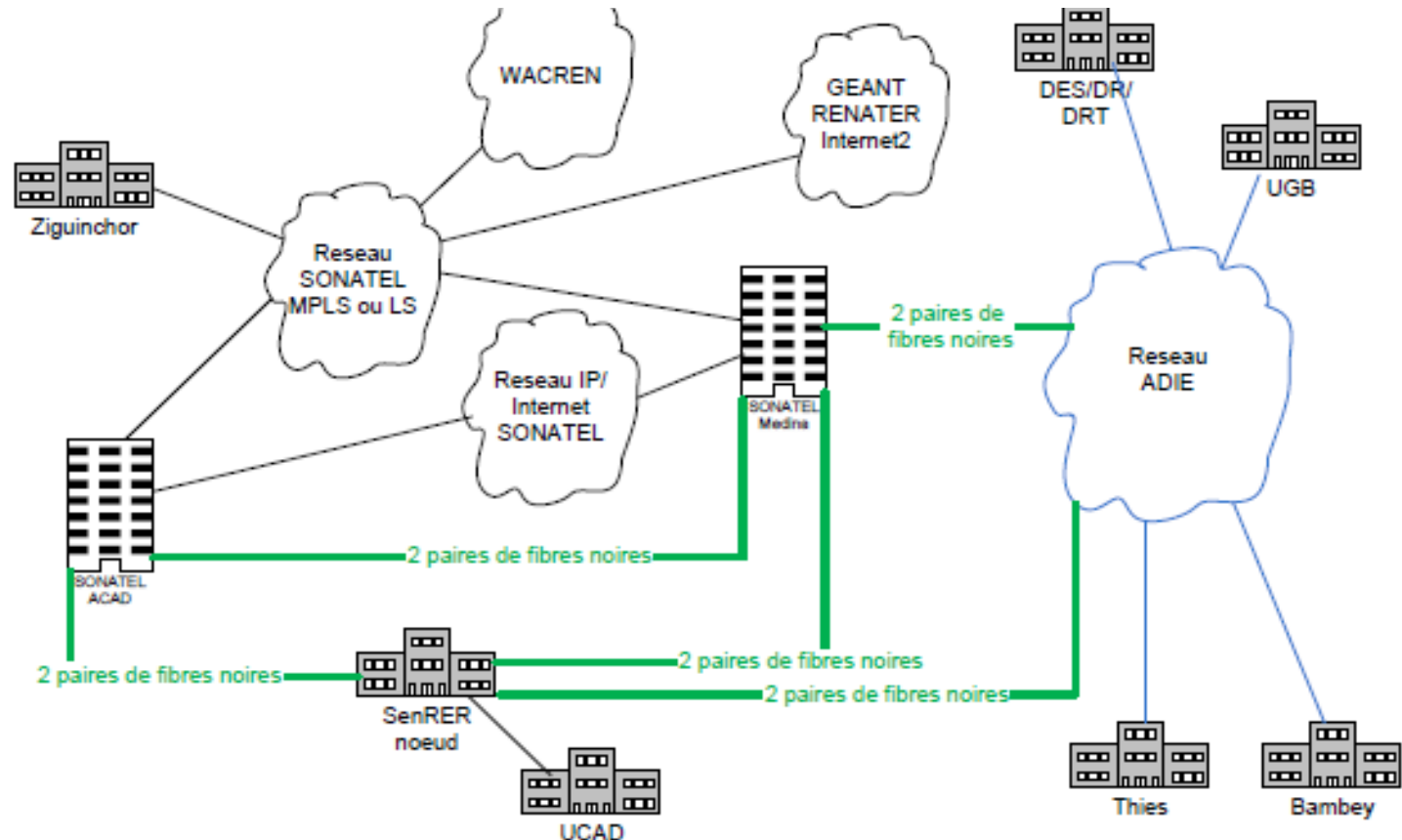
- Private universities/High School Institutions
- National Research Centers (ISRA, IRD, ITA, etc.)

History: key dates

- **January-February 2011 :**
 - the 5 chancellors of public universities has signed the snRER agreement document
- **March 2011:**
 - snRER was launched by the ministry of Higher Education;
 - RENATER-WACREN MOU signed in Dakar;
 - snRER was designated to host the WACREN NOC;
 - RFP sent to SONATEL to have a ½ circuit from Dakar to Paris to connect RENATER to WACREN
- **April 2011:**
 - Training and workshops organized for engineers on CND, BGP with NSRC
 - Equipments donations received from NSRC :87 L2 switchs, 2 L3 Switches and 5 CISCO routers (2901) ISR2
 - Network topology designed with the support of Dale Smith from NSRC campus network for 5 public
- **October 2011:** Workshop on NNM with NSRC
- **June 2013:** Interconnection workshop with partners (ADIE, SONATEL): new topology, equipments,

History: Initial network diagram

- Backhauling
- Internet transit with 155 Mbps
- Dark fiber
- Colocation in SONATEL Backbone



2012-2014 Strategic Plan

High level endorsement from government and the key partners: policy, finances, regulatory

- The Ministry of higher Education and Research
- The Ministry of ICT
- The ADIE
- The network operators (SONATEL and Expresso)
- The Regulatory Agency (ARTP)
- The academic community

2012-2014 Strategic Plan: PGF-Sup

**Build and improve Campus networks with the support of the
World Bank: 1 675 000 \$ US**

Designing and deploying robust campus networks in the 3 new universities and improving and upgrading existing campus networks

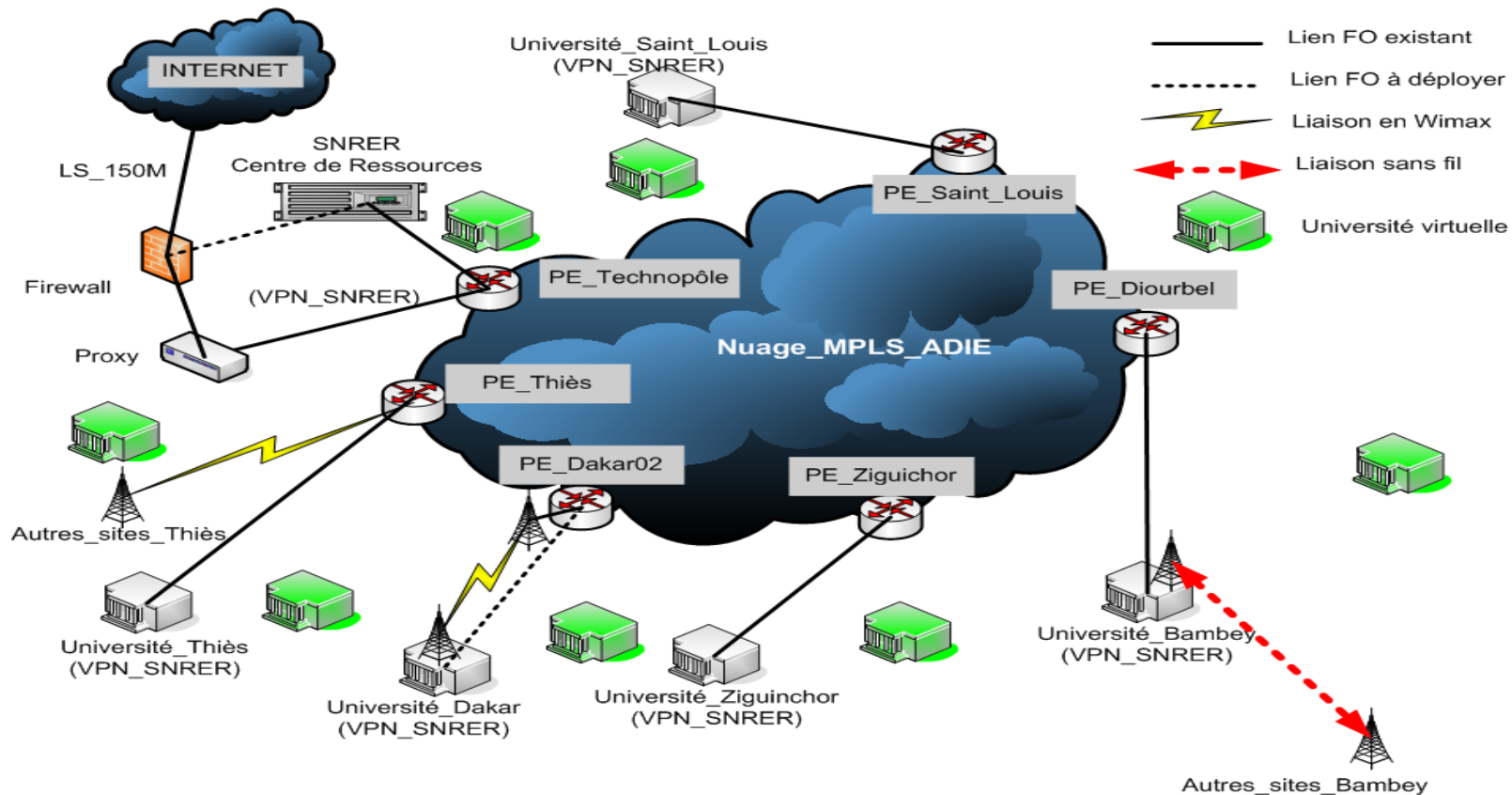
- SM Fiber
- Wi-Fi
- Datacenter
- NOC
- Network equipments education and Build NOC in each university

For more details, please visit <http://snrer.edu.sn>

2012-2014 Strategic Plan:PGF-Sup

- 12.5 kms of SM 48 strands
- 8 kms of SM of 12 strands
- 10 L3 switches
- 100 L2 switches
- 120 SFP modules
- 570 APs indoor
- 380 APs outdoor

2012-2014 Strategic Plan: New Network Diagram



Challenges

- Finalize Wi-Fi project within the 5 universities
- By the end of May 2014: connect UCAD to ADIE backbone
 - using a high speed point to point wireless link
 - equipment available and ready to ship by NSRC
 - request to use the 24 GHz sent to the regulatory agency
- By the end of June 2014: Interconnect the 5 public universities using the ADIE network
- By the end of July 2014: get affordable prices from Sonatel or Expresso to contract a high speed Internet access
- By the end of the year: Host WACREN NOC

Challenges

- By the end of July 2014: formally register snRER
- Secure seed funding to start our NREN Development process, through the community and our partners
- Collect membership fees
- Define a plan to deploy advanced services:
 - Grid Computing
 - E-library
 - Trust and identity services
 - Communication and collaboration tools (video conferencing, voice communication, Extranet, etc.)
- Define a plan to the second phase: add more members

Lessons learned

- Very high prices for academic institutions: no longer preferential rate
- Reluctance of operators to provide dark fiber, colocation, IRU services
- Regulatory framework weaknesses: snRER is not allowed to access directly to high capacity bandwidth available on ACE or other submarine cables
- Insufficient commitment from the policy and decision makers



THANK YOU FOR YOUR ATTENTION

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