



WACREN – History, Structure, Status

SLREN Stakeholders Workshop

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Outline

- What are, and why NRENS
- WACREN – History
- WACREN activities
- H2020 Projects
- Other collaboration activities
- AfricaConnect2

What are, and Why NRENs?

- REN: Research and Education Network
- Closed user groups with specific needs
 - e.g. huge bandwidth requirements during specific periods
- Platform for collaboration and local, regional and global level
- Dedicated to research and education
- Infrastructure either owned or leased from telecom and cable operators
- Different from commodity (commercial) Internet, but use same technologies
 - But RENs generally also provide commodity Internet to their members
- Various organisational and funding models
 - Business model: resources from members only, from government only or hybrid funding models

WACREN - Brief history (1)

- May 2006 in Nairobi: AfNOG 2006
 - First thoughts on establishment of a RREN in West and Central Africa
- November 2006 in Accra: Regional workshop on R&E networking
 - Establishment of a group of stakeholders
 - No formal organisation
- November 2009 in Accra: Open Access Conference
 - Setup of a Task Team
- August 2010: Incorporation of WACREN in Ghana (with AAU support)
- March 2011 in Dakar: Retreat on WACREN Strategic Plan
 - Election of Executive Board
- July 2013 in Abuja: First General Assembly
 - Election of non-Executive Board
 - Appointment of CEO

WACREN - Brief history (2)

- March 2014 in Lomé: First annual Conference and Second AGM
- April 2014: Signature of DANTE-WACREN Agreement in the framework of the AfricaConnect Project (EC funding)
- May 2014: Appointment of a Chief Technology Officer (CTO)
- March 2015: Cancellation of Second Annual Conference scheduled to be held in Abuja - due to geopolitical reasons
- June 2015: Official start of the AfricaConnect2 project
 - GEANT and WACREN to jointly manage Cluster 2 of the project
- June 2015: Third AGM held in Tunis during AIS 2015
- February 2016: Appointment of a Senior Network Engineer (SNE)
- March 2016 in Dakar: WACREN 2016
 - Second Annual Conference and Fourth AGM
 - Renewal of the 3-year term of the tenure of the Board

WACREN – Region covered



WACREN - Current Membership

- Currently 10 established NRENs
 - RerBenin – Benin
 - Cameroon – RIC
 - RITER (Côte d’Ivoire)
 - GabonREN – Gabon
 - GARNET – Ghana
 - MaliREN – Mali
 - Niger-REN – Niger
 - NgREN – Nigeria
 - snRER – Senegal
 - TogoRER – Togo
- Associate members: RENATER (FR), Eko-Konnect (NG)
- Initiatives in Burkina Faso, Chad, Sierra Leone
- Contacts with stakeholders in Liberia and The Gambia

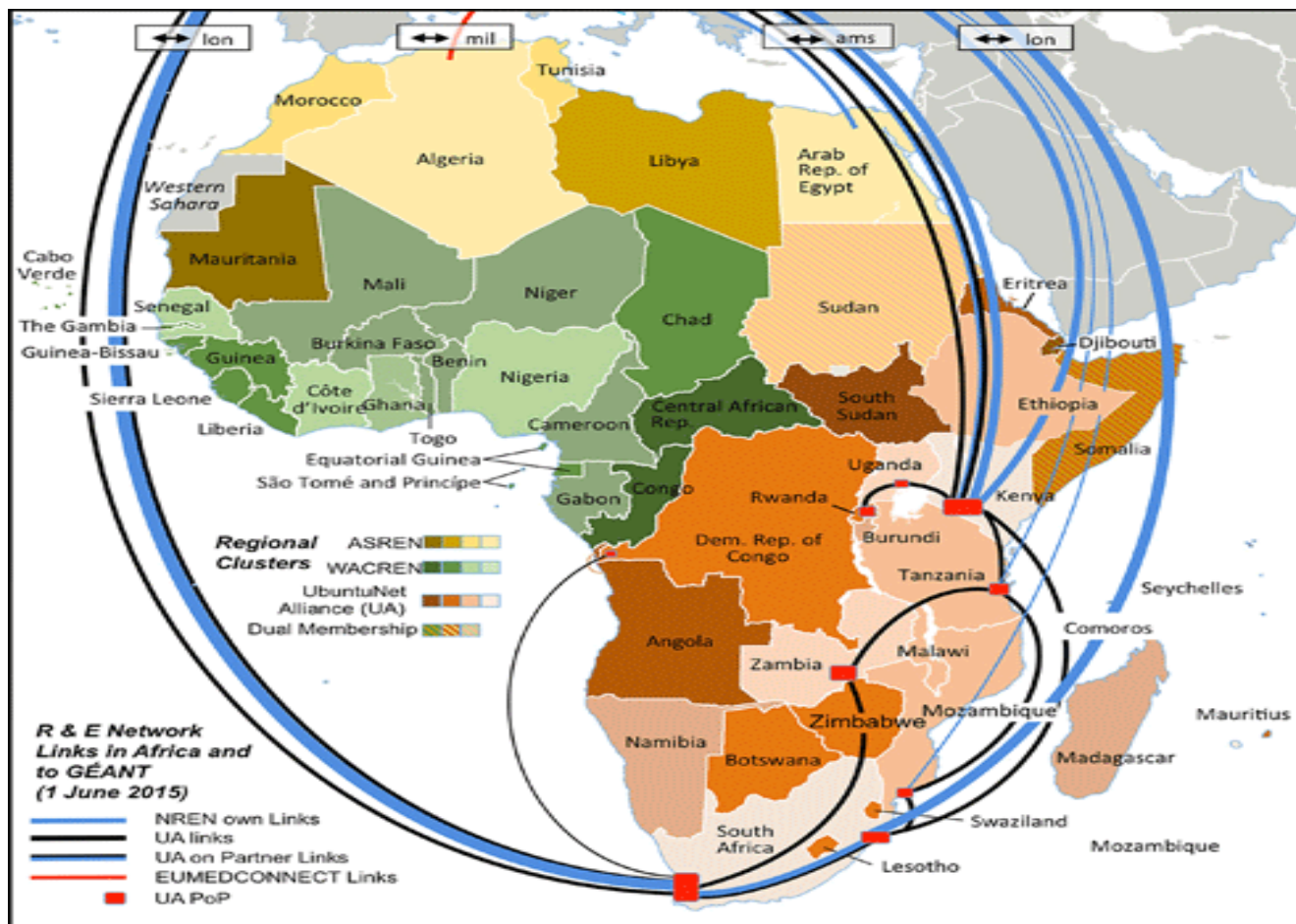
NREN Readiness (1)

- NgREN (Nigeria)
 - Has legal status
 - More than 2 dozens institutions interconnected
- snRER (Senegal)
 - Legal status still pending (currently under Ministry of HE & Research)
 - All public universities interconnected
- RITER (Côte d'Ivoire)
 - Legal status still pending (currently under Ministry of HE & Research)
 - 4 public universities interconnected
- TogoRER (Togo)
 - Has legal status
 - The two public universities interconnected, but no service provided
- GARNET (Ghana)
 - Has legal status
 - Interconnections yet to be established

NREN Readiness (2)

- Niger-REN (Niger)
 - Has legal status
 - Universities and research institutions yet to be interconnected
- RIC (Cameroon)
 - Legal status still pending (currently under Ministry of HE & Research)
 - Some interconnections between public HE institutions
- MaliREN (Mali)
 - Has legal status
 - Universities and research institutions yet to be interconnected
- RerBenin (Benin)
 - Legal status still pending
 - No interconnections so far
- GabonREN (Gabon)
 - Legal status still pending
 - No interconnections so far

NREN Readiness (3)



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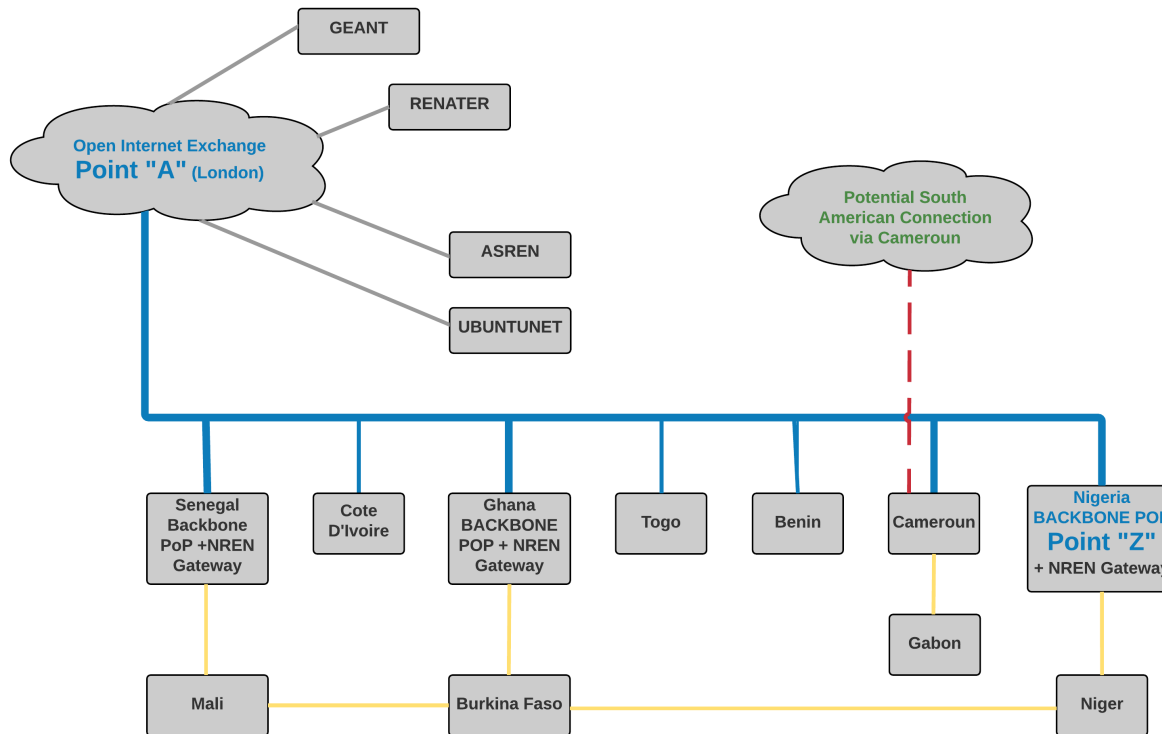
Partners

- AAU
- UbuntuNet Alliance
- ASREN
- AfNOG
- AfriNIC
- AfricaCERT
- GEANT
- NSRC
- ISOC
- ICANN
- Other partners include: ECOWAS, UEMOA, WATRA

Proposed WACREN network topology (1)

- Core + Access
 - 10G+ Core
 - 1G+ Access
- 3-4 main hubs: Cameroon, Côte d'Ivoire, Ghana, Nigeria, Senegal
 - Final decision on hubs dependent on variety of connection options and cost
- Redundant links from hubs to NRENs
- At least 2 intl. links: to London and Paris (GEANT POPs)
- Multiple Submarine Cable Access
- Peering at Open Internet Exchange Points

Proposed WACREN network topology (2)



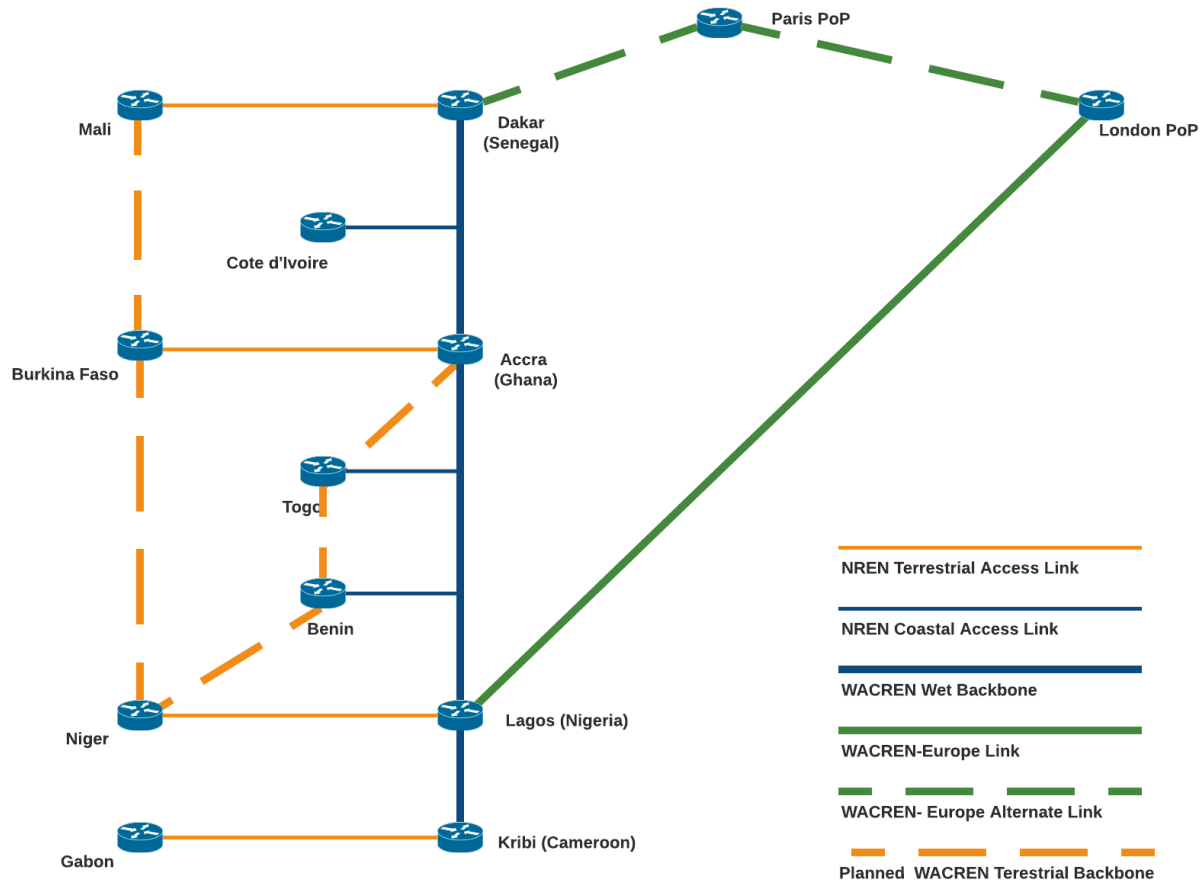
10GE Wet Backbone

1GE NREN Access

Terrestrial Link

Submarine link from Point "A" to Point "Z" with option to land in every country of presence

Proposed WACREN network topology (3)



Activities - Advocacy

- AfricaConnect2 high on WACREN's agenda
- Several authorities approached for sensitization
 - ECOWAS
 - UEMOA
 - AfDB
 - World Bank
 - WATRA
 - Governments
 - Côte d'Ivoire
 - Sénégal
 - Nigeria
 - Niger
 - Togo
- Other issues being addressed with the authorities
 - Legal status of the NREs
 - Full-time staffing

Activities – Capacity building

- Several capacity building workshops completed successfully
- All workshop over-subscribed
- Collaboration with partners such as NSRC and GEANT
- Train the trainer programme with a pool of resource persons from the region
- Recent signature of an agreement with ISOC for a capacity building programme (in collaboration with ASREN and the UbuntuNet Alliance)
- Capacity building to be extended to NREN managers and policy makers
 - First workshop held on Authentication and Authorisation Infrastructure in Dakar in March 2016 (in collaboration with GEANT, NSRC and the AfricaConnect2 project)
 - Possibility of a workshop for NREN CEOs during AIS 2016 is being explored

Activities - H2020 Projects (1)

- WACREN is Consortium Member in three (3) projects funded in the framework of European Commission Horizon 2020 Programme
- Projects from May 2015 – April 2017
- **TANDEM** (TransAfrican Network Development)
 - Aimed at creating the favourable conditions for WACREN to benefit maximally from AfricaConnect2
 - To facilitate WACREN integration into the global Research and Education networking community and long-term sustainability
- Ongoing user needs survey
- Project site - <http://www.tandem-wacren.eu/>

Activities - H2020 Projects (2)

- **Sci-GaIA** (Energising Scientific Endeavour through Science Gateways and e-Infrastructures in Africa)
 - Aimed at producing clearly structured guides and educational documents for training NREN representatives, Communities of Practice (CoPs), and, importantly, to get universities to develop Science Gateways and e-Infrastructures in Africa
 - Participation requires federated access
- Project website - <http://www.sci-gaia.eu/>
- **MAGIC** (Middleware for collaborative Apps and Global virtual Communities)
 - Aims at establishing a set of agreements for participating world regions – Africa
 - Consolidate middleware for a marketplace of services and real-time applications to benefit global science communities
- Project website - <http://magic-project.eu>

Other projects

- PADTICE (completed in December 2015)
 - In collaboration with UNESCO and UEMOA
 - Maybe opportunity in second phase of PAES
- Internet2-WACREN collaboration program
 - Goal: Create sustainable and robust cyberinfrastructure to support collaboration between and US West & Central African

Main project: AfricaConnect 2

- Main project WACREN is currently involved in
- Second phase of the AfricaConnect Project
- EC Funding (26.6 M€)
- Project started in June 2015
- Project duration: 2015 - 2018
- Objective: Support RENS in Africa and interconnect with GEANT
- Three clusters
 - Cluster 1: UbuntuNet Alliance
 - Cluster 2: WACREN
 - Cluster 3: ASREN
- 80:20% funding scheme
- Budget for Cluster 2: 12.25 M€ (2.5 M€ counter-funding by WACREN)
- Implementation of Cluster 2 component: GEANT and WACREN

AC2 implementation

- Guiding principle: inclusiveness
 - 6 countries expressed - at ministerial level - interest for participation
 - All WACREN members likely to join the project at one stage or the other
- First activities:
 - Capacity building workshop – Abuja, Sept./Oct. 2015
 - AC2 Cluster 2 kick-off meeting – Montpellier, Dec. 2015
 - Retreat on WACREN network design – Gorée, Feb. 2016
 - Second AC2 Cluster 2 meeting (March 2016 in Dakar)
 - Information day for suppliers (March 2016 in Dakar)
 - Coming next: capacity building workshop in Ouagadougou (planned for July 2016)

AC2 – How to join?

- Each NREN to contribute for ca. 275,000 €
- Challenges to be addressed in most countries
 - Most NRENS in nascent stage
 - No internal resources yet
 - Need for government support
- But opportunities to secure counter-funding through other sources, e.g.:
 - World Bank projects
 - AfDB
 - UEMOA
- Project is a good opportunity for Sierra Leone, Liberia to bootstrap NREN establishment process
 - Potential support from development partners
 - ACE submarine cable

Contacting WACREN ...

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THANK YOU

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