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## **AFRICAN INTERCONNECTION**

**Value proposition:  
Ubuntunet Alliance**

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**Rwanda Education and Research Network**



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## Background

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- Fast and affordable fibre -based connectivity is vital to permit Africa to harvest the many capacity building and research opportunities available on other continents
- Until 2005, Africa lacked regional RENs to bring together national academic and research communities to build technical capacity and provide infrastructure interconnecting to surrounding countries
- UbuntuNet Alliance is one vehicle for integrating the academic and research communities of the continent!



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## Question

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- What is needed to facilitate the participation of the African research and education community on equal terms in knowledge development, sharing and value addition?

Research Hypothesis is :

*Improved and affordable connectivity will enable African researchers to produce proportionate intellectual output and generate a proportionate amount of intellectual property goods” (UbuntuNet Corena Proposal)*

What will it take to test this hypothesis?

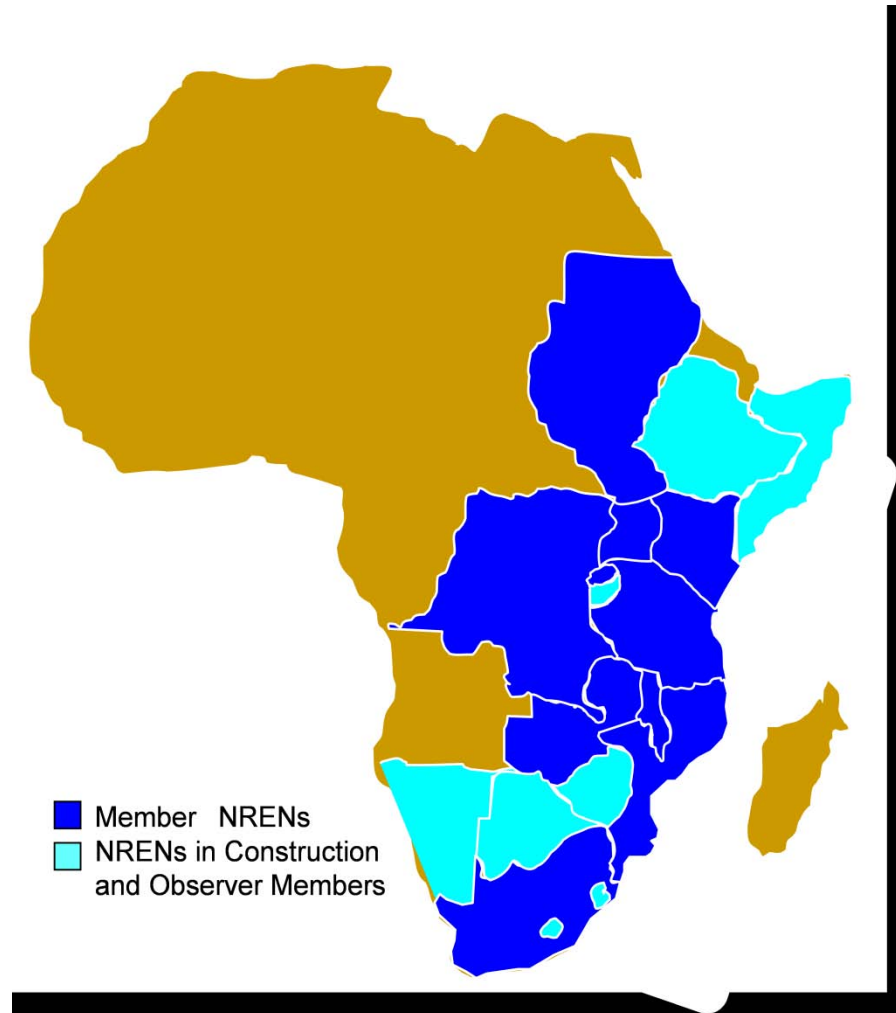
1. Functioning NRENs in member countries interconnected and working together within a framework :UbuntuNet Alliance for Research and Education Networking
2. Open Access pricing model for submarine fibre connectivity
3. Access to or ownership of terrestrial Fibre infrastructure
4. A regulatory environment that eliminates barriers to interconnection of NRENs
5. Collaborative purchasing of VSAT Bandwidth to bring down costs in the interim, and bandwidth management strategies in place

## Research and Education Networking regionally

Alliance Member NRENS Apr 2008

1. Eb@le DRC
2. KENET Kenya
3. MAREN Malawi
4. MoRENet Mozambique
5. RENU Uganda
6. RWEDNET Rwanda
7. SUIN Sudan
8. TENET South Africa
9. TERNET Tanzania
10. ZAMREN Zambia

NRENS in construction :Botswana,  
Ethiopia,Somalia and Namibia.



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## Objectives

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- Develop and improve the interconnectivity between RENs in Africa and their connectivity with RENs worldwide and with the Internet generally;
- Develop the knowledge and skills of ICT practitioners in member institutions; and
- Provide related auxiliary services to RENs

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## Strategy and Business Model

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UbuntuNet Alliance's sustainable business model :

- Infrastructure investments and associated costs are born as much as possible from Donations
- Access to fibre cables as a spin-off from general infrastructure development
- Overhead Operating Costs through membership fees and service-related fees



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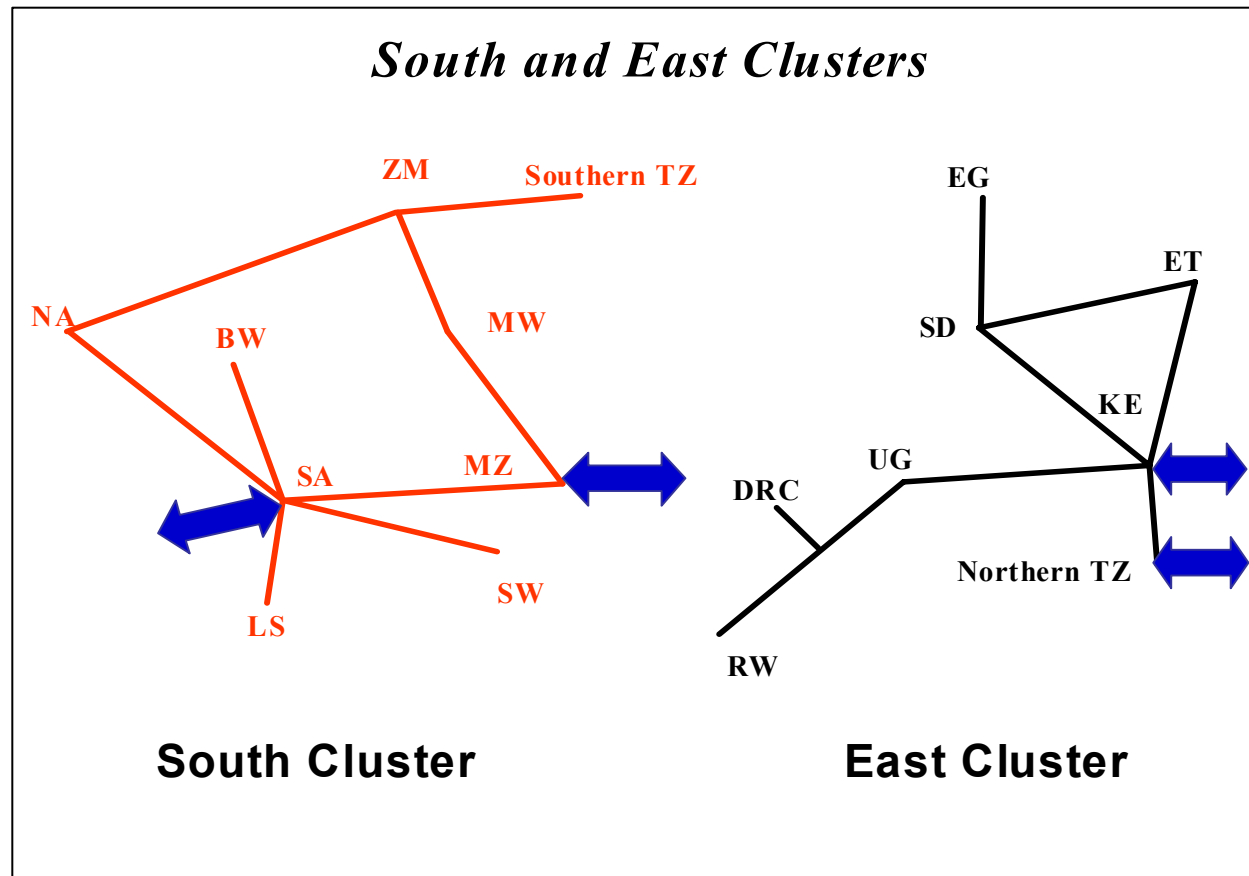
## Planned Methodology: Cluster Development

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### **Planned Methodology: Cluster Development**

- A cluster approach has been developed as a strategy for building the network.
- Countries have been grouped into clusters based on existing and future fiber infrastructure opportunities.
- Two initial clusters are UbuntuNet South and UbuntuNet East
- As opportunities arise and development progresses, the clusters will be modified, new ones will be identified and existing ones merged

# UbuntuNet South and East Backbone Development Clusters



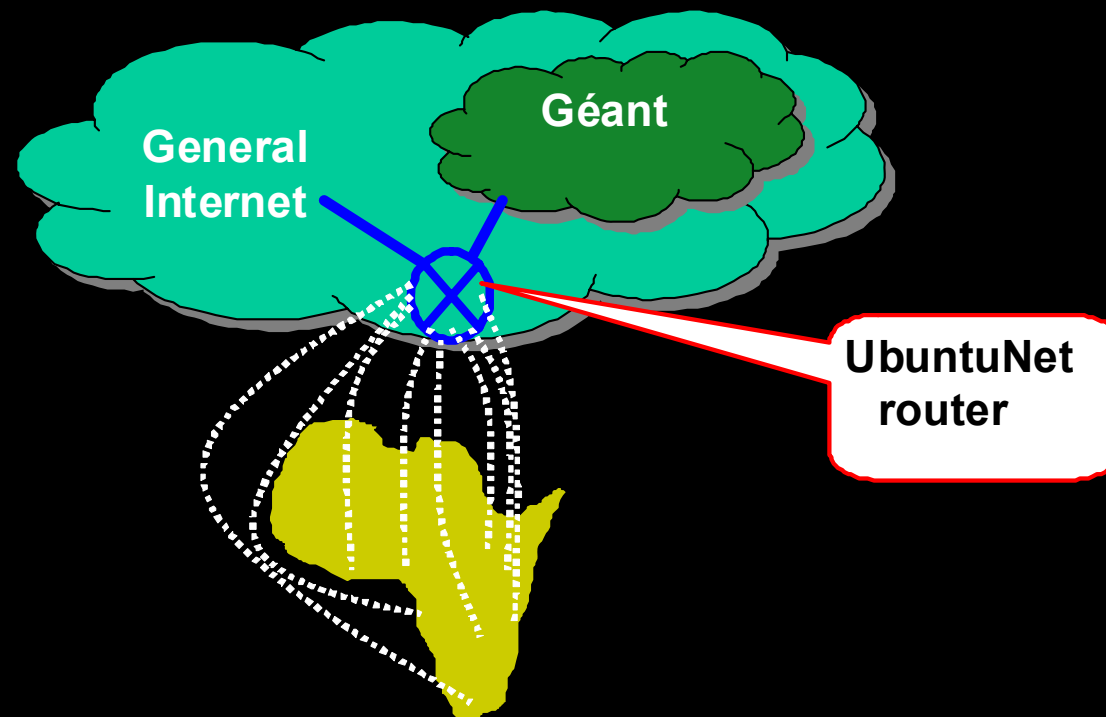
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## Network development Approach

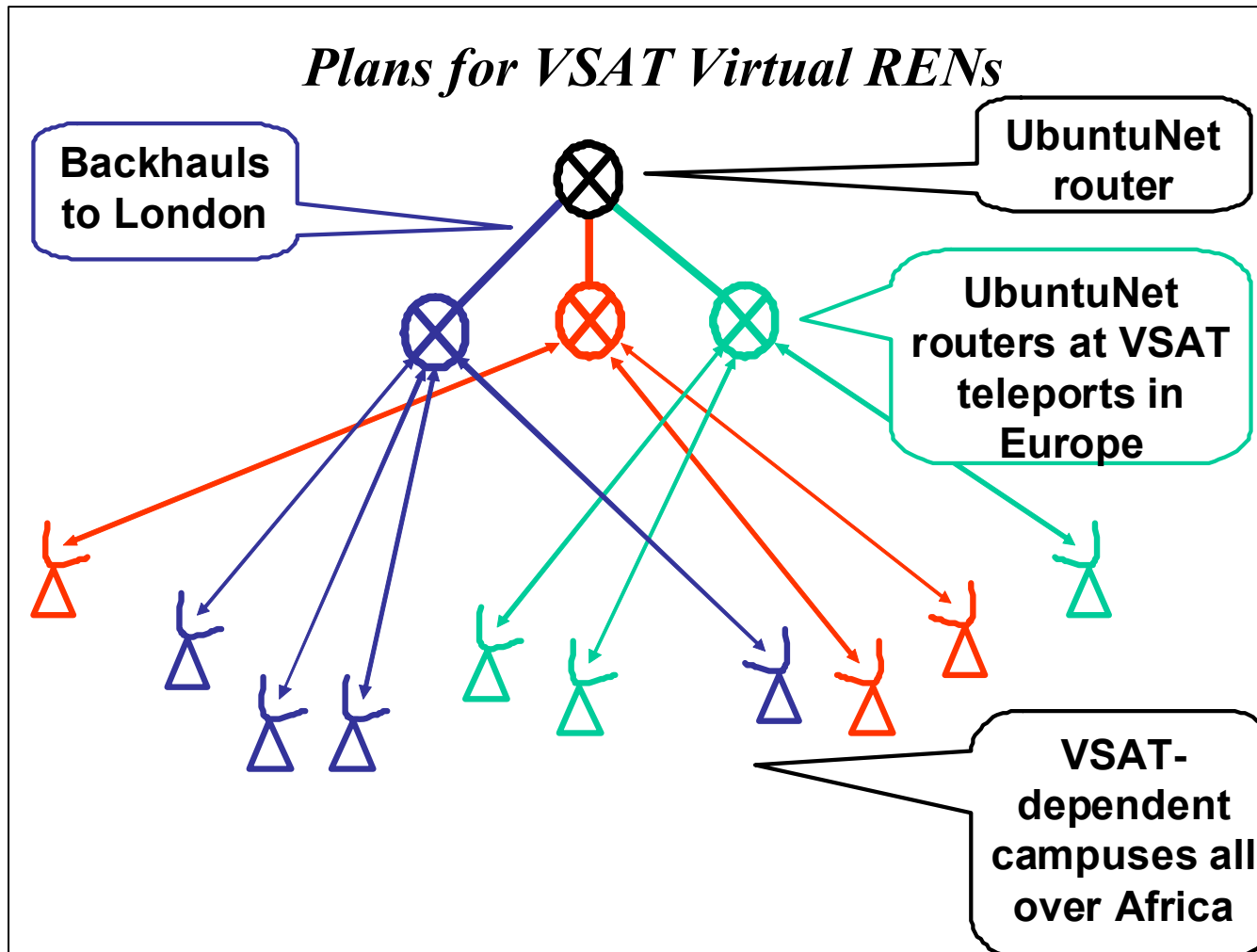
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- Cluster based approach, but using common architecture so that clusters will connect seamlessly
- Data centres and network operations centres in Nairobi and Cape Town (when clusters link, these will serve each other as back-up and disaster recovery).
- Enabling networking and access for institutions that use VSAT.
- Linking to other regional and international REN networks.

### *Connection to Géant and the world of research (1)*



# Incorporating VSAT Campuses



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## Conclusion and outlook

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- UbuntuNet Alliance will play its part along with RENs on other continents within the next 2 – 3 years, with help from major partners
- West Africa is now looking seriously to develop NRENs
- Submarine cable access is almost solved
- Terrestrial fiber access remains a challenge
- Some regulatory victories – e.g. IGL for MAREN
- Now is the time to pursue the quality relevant content to fill the bandwidth
- Measurement of intellectual property goods needs to start in order to have measurable data to support the research hypothesis:
- *Improved and affordable connectivity will enable African researchers to produce proportionate intellectual output and generate a proportionate amount of intellectual property goods”*

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## Supporters in various ways

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- IDRC and Connectivity Africa
- Cisco
- KTH (Sweden)
- EU
- DANTE
- Open Society Institute and Open Society Initiative for Southern Africa
- FRENIA (Fostering Research and Education Networking in Africa) Programme.
- University of Malawi
- AAU REN Unit
- USAID
- IEEAF and University of Washington