



AfricaConnect

Implementing UbuntuNet – the Internet Network for
Research and Education for Sub-Saharan Africa



Connecting Sub-Saharan Africa



This project is funded by the
European Union

A high-speed research and education network for Sub-Saharan Africa

The AfricaConnect project has been instrumental in establishing UbuntuNet, a high-capacity regional data network for research and education in Eastern and Southern Africa, and improved the volume and reliability of connectivity within the region and to the global research and education community.

This has complemented the existing interconnection between the region and GÉANT, the pan-European research and education data network, enabling researchers and academics in Africa to collaborate seamlessly with each other and with research and education institutions in the rest of the world.

AfricaConnect also supports capacity building for the relevant personnel in National Research and Education Networks (NRENs) in Sub-Saharan countries, enabling operational NRENs to improve performance, and those that are not yet operational to get to a level where they can join the network as soon as possible. In its first year the project has provided for the planning and procurement of the network, and a second phase sees the roll out of the regional network.

The progress of this project is shaped both by DANTE's experience of setting up other research and education networks outside Europe such as EUMEDCONNECT in the Southern Mediterranean, TEIN in Asia and RedCLARA in South and Central America; and the UbuntuNet Alliance's knowledge of the regional telecommunications markets and experience in promoting research and education networking in Eastern and Southern Africa. Planning and implementation are grounded in the need to create a self-sustaining research network infrastructure, financed and managed by the regional and national research organisations.

Who are the users of the data network established by AfricaConnect?

The data network, UbuntuNet, supports data-intensive, time-critical applications between collaborating partners, but can equally be used to provide fast access to conventional web-based resources from all over the Southern and Eastern African region and beyond.

There is pent up demand for the use of the network for collaborative applications. UbuntuNet provides Southern and Eastern Africa with a gateway for global collaboration, enabling users at research centres and universities across the region to participate in joint projects with their peers in Europe and other parts of the world.



"With the arrival of AfricaConnect, all researchers working on medicinal plants in Sub-Saharan African countries, members of NAPRECA, will be connected to each other as well as with their colleagues throughout the world; they will build a virtual community, share resources and collaborate in a clever way to speed up phytomedicines' discovery through grid computing."

Dr. Dibungi T. Kalenda, CEO of eb@le, Director of UbuntuNet Alliance, President of NAPRECA (Natural Products Research Network for Eastern and Central Africa) DR Congo

Societal Objectives

While AfricaConnect has helped to establish an operational and sustainable data network, the societal objective supports the fulfilment of the region's Millennium Development Goals. AfricaConnect fosters the development of cooperative research programmes between the African and the European research and education communities. It does this by providing the e-Infrastructure that supports the development and deployment of research exploiting work done in Europe relating to the Information Society.

Although internet penetration in the region is increasing at a rapid rate due to the growing availability of fibre infrastructure, there is a major challenge in the shortage of skilled technical, operational and managerial staff available in this geographical area. Therefore, the project seeks to develop staff capacity at all levels in the existing and emerging African NRENs, duly taking into account their immediate needs.

The project's purpose is to open up the research activities within the region and build cooperation with researchers in the rest of the world. Specific research application areas cover the fields of: Health, Bio-Medical Sciences, Climate, Agriculture, Education and Environment.

AFRICACONNECT IN A NUTSHELL

- AfricaConnect funds the development of UbuntuNet, a high-capacity Internet network for academic and scientific collaboration
- It connects Southern and Eastern African partner countries: DRC, Ethiopia, Kenya, Malawi, Mozambique, Namibia, Rwanda, Somalia, Sudan, South Africa, Tanzania, Uganda and Zambia
- It connects African and European partners via GÉANT, the pan-European network
- It is jointly funded by the European Commission and African partners to reduce the digital disparity between African and European regions



MAREN

RENU



Rwednet



Saving lives in Sub-Saharan Africa

Case Study

Through an international collaboration with the Wellcome Trust Sanger Institute in Cambridge, UK, scientists at the Malawi College of Medicine are investigating a new strain of Salmonella which is having a life-threatening effect on the young and vulnerable in Sub-Saharan Africa. Salmonella is a common worldwide problem, but the disease in Sub-Saharan Africa has unique characteristics which require thorough investigation by scientists.

"Invasive non-typhoidal salmonella is associated with an extremely high mortality rate, with as many as 50% of people who get the disease dying within days of infection. To complicate matters further, ST313 is resistant to many of the front-line drugs used to treat infection."

Dr Robert Kingsley, Senior Scientist at the Wellcome Trust Sanger Institute, UK

The only way to study the strain in detail is through in-depth genome sequence analysis to challenge basic medical assumptions and distinguish closely related viruses. UbuntuNet, the high-speed network for research and education enables scientists to work collaboratively to analyse large DNA data files.



"We have remote access to powerful computers and software at the Sanger Institute which enables us to perform the genomic sequence data analysis. But this access can sometimes be hampered by slow internet connectivity. A high-speed internet connection is key to a quick understanding of the genetic diversity of non-Typhoidal Salmonella strains, which contributes to efforts to develop a vaccine. Our ability to react to and understand new disease dynamics can be transformed by the AfricaConnect initiative."

Dr. Chisomo Msefula, Lecturer, Research Scientist – Pathology Department and Malawi-Liverpool-Wellcome Trust, College of Medicine.

Geographic Scope

While the primary focus of AfricaConnect is to develop the UbuntuNet network that covers Southern and Eastern Africa, the project also fosters the development of NRENS right across Sub-Saharan Africa through capacity building. Thus AfricaConnect stimulates the establishment and growth of new NRENS in West and Central Africa through WACREN, the regional research and education network for West and Central Africa. This will enable WACREN and its members to participate in future regional networking projects.

Funding and Organisation

The total budget for AfricaConnect is €14.75m over a period of four years to 2015, with 80% of funding provided by the EDF (European Development Fund) following an agreement between the African Caribbean Pacific Islands (ACP) Secretariat and the European Commission (DEVCO). The remaining funds (€2.95m) are being provided by the African partners on the basis of a cost-sharing model.



"With the opportunities offered by the AfricaConnect project, this unique regional network transforms our higher education and research, with collaboration being at its core. Access to higher education is expanded. Participation in high-level scientific projects and teams are so much easier. Medical research and healthcare delivery are enhanced."

Honourable Eunice Kazembe, Malawi's Minister of Education, Science and Technology

Which organisations are involved in developing the AfricaConnect project?

The AfricaConnect project is coordinated by DANTE (Delivery of Advanced Network Technology to Europe) and partnered by the UbuntuNet Alliance, representing the NRENs of East and Southern Africa (DRC, Ethiopia, Kenya, Malawi, Mozambique, Namibia, Rwanda, Somalia, Sudan, South Africa, Tanzania, Uganda and Zambia), European NRENs (Germany, Ireland, Italy, the Netherlands and Portugal) and WACREN, the West and Central Africa regional REN representing the emerging west and central African NRENs.

DANTE

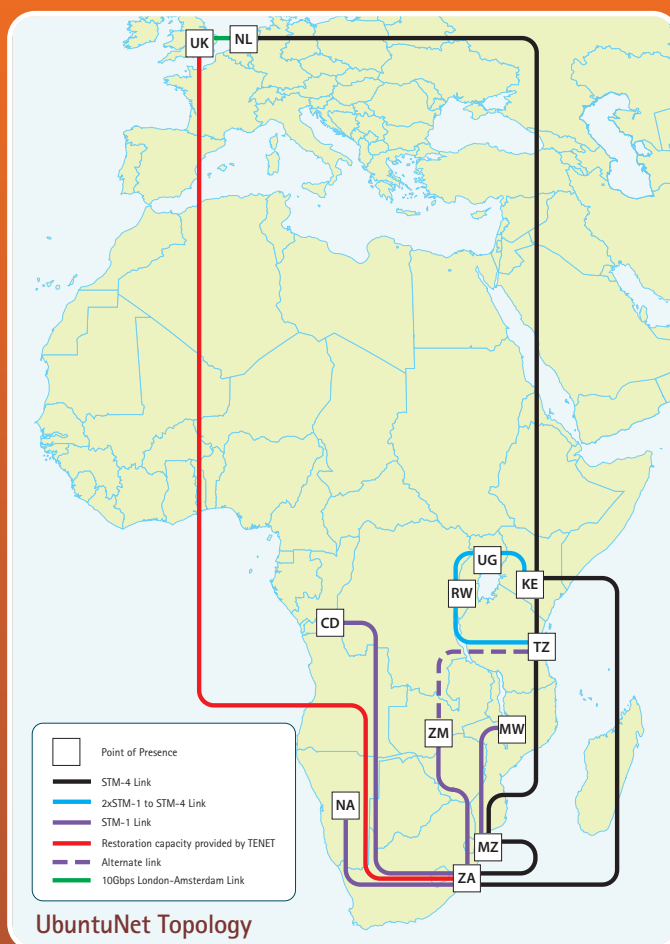
DANTE is a not-for-profit organisation that operates GÉANT, the pan-European research network which provides the data communications infrastructure essential to the success of many research projects in Europe. Established in 1993, DANTE has been fundamental to the success of pan-European research and education networking. DANTE is involved in worldwide initiatives to interconnect countries in the other regions to one another and to GÉANT. DANTE currently manages projects focussed on the Mediterranean, Asia-Pacific and Central Asia regions through the EUMEDCONNECT, TEIN and CAREN projects respectively, and now AfricaConnect.

THE UBUNTUNET ALLIANCE

The UbuntuNet Alliance is a not-for-profit regional association of NRENs in Africa, primarily in Eastern and Southern Africa. It was established in the latter half of 2005 by five established and emerging NRENs in the region and now has a total of thirteen NREN members. The Alliance aims to interconnect African NRENs to each other and connect them to other regional RENs and to the Internet at high speeds to enable researchers, educators and students to collaborate effectively and participate in global research and education networking activities.

WACREN

WACREN is the West and Central African Research and Education Network registered in Ghana in August 2010 as a "non-profit association". It is a regional network for sharing knowledge and promoting the establishment of interconnections between NRENs. WACREN currently has 8 established NREN members: Côte d'Ivoire: RITER, Ghana: GARNET, Gabon: GabonREN, Mali: MaliREN, Niger: NigerREN, Nigeria: ngREN, Senegal: snRER, Togo: TogoREN. An embryo NREN also exists in Cameroon as the Cameroonian Inter-University Network (RIC). The SnRER is the Network Operations Center of WACREN.



'The resource demands for achieving our dreams will be high, but the returns in terms of the development of our people are even higher. We see AfricaConnect as the precursor, the primary explosion that triggers the bigger explosion of investment from both our governments and friends around the world. It is an initiative we welcome and an initiative we must build on.'

Eng Dr FF Tusubira, CEO UbuntuNet Alliance



'The European Commission is pleased to contribute to the development of this important regional higher education and research network. I am confident that African researchers now have an additional instrument to improve communication and exchange information among them and with their colleagues in Europe. Increased connectivity is our common goal. Together with the ACP Secretariat, we are doing our best to succeed.'

Denis Salord, Head of Unit, Regional Programmes Sub-Saharan Africa and ACP wide (Directorate-General for Development and Cooperation – EuropeAid) European Commission

Visit the AfricaConnect Website

Further information can be found on the AfricaConnect project, visit www.africaconnect.eu. Here you can find the latest news on the project as well as links to partner sites.

www.africaconnect.eu | www.ubuntunet.net | www.dante.net | www.geant.net | www.wacren.net