

Conference Summary Report

2010 Euro-Africa e-Infrastructures Conference December 9-10, 2010 - Helsinki, Finland

Introduction

The “2010 Euro-Africa e-Infrastructures Conference” was organised in order to facilitate the exchange of information between a wide variety of stakeholders from the e-Infrastructures domains of Europe and Africa. The event took place at the Scandic Marina Congress Center in Helsinki, Finland on December 9-10, 2010, within the framework of the “2010 Euro-Africa Week on ICT Research & e-Infrastructures” (December 7-10, 2010) and was co-located with the “3rd Euro-Africa Cooperation Forum on ICT Research” (December 7-8, 2010), held in Helsinki at the same venue.

The format of the conference comprised:

Plenary sessions:

These featured officials from the European Commission, the African Union Commission, Governments, and internationally acknowledged e-Infrastructures experts.

Presentation sessions:

These were organised around the main conference themes:

- Research Infrastructures and e-Infrastructures for Science
- From Research Networking to Global Virtual Research Collaboration
- Creating and sustaining regional infrastructure networks and services in Africa
- Interconnecting the African NRENs to each other and to global research and education resources via GEANT
- Cables - Status and Perspectives
- Shaping the NRENs landscape in Africa. Harnessing on European National Research and Education Networks (NRENs): Best Practices
- Linking Policies to Applications - Overview and Existing Synergies
- Exploiting e-Infrastructures Potential for Boosting Research and Innovation in Africa and for Fostering Euro-Africa Cooperation Investigating Best Practices for e-Infrastructure Application Development

Discussions and debates sessions:

- International Cooperation – Donor Partners
- Linking Policies to Applications – Recommendations and Action Plan

These offered participants the opportunity to actively contribute to the conference outputs through open discussions on many of the e-Infrastructures related topics.

Networking sessions:

These aimed at facilitating additional and informal networking opportunities.

The timeliness of this conference was confirmed by some of the recent occurrences that support the cooperation between Europe and Africa in the e-Infrastructures field:

- The signature in October 2007 in Addis Ababa, Ethiopia, of the “EU-Africa Partnership on Infrastructure” (“creating and sustaining regional infrastructure networks and services”) aiming at interconnecting the African continent (in transport, water, energy, and ICT),
- The EASSy (Eastern Africa Submarine Cable System) supported by the creation of the EU-Africa Infrastructure Trust Fund,
- The quick development of African National Research and Education Networks (NRENs) and of their interconnection, a momentum supported by the African UbuntuNet Alliance,
- The launch of the EU-funded FEAST study, coordinated by the Swedish Royal Institute of Technology (KTH), supported by DANTE and the TERENA forum and aiming at providing the EC with recommendations concerning the implementation of a NREN backbone in sub-Saharan Africa,
- The AfricaConnect project supporting the development of NRENs in sub-Saharan Africa and their interconnection with Europe’s GÉANT network.

Despite the strike by Finnair and some of the worst weather ever experienced at this time of year in the region, the conference attracted an impressive 230 delegates (125 of which were from Africa). In total, 55 countries were represented.

Overall Summary

A clear conclusion from the conference was that e-Infrastructures are crucial for enabling virtual global research communities, which are drivers for social and economic well-being. Furthermore, the combination of ICT-based resources and associated tools and services allow new ways of collaborating and sharing resources independently of the researcher’s geographical location.

As **Kostantinos Glinos**, Head of Unit for GÉANT and e-Infrastructures in the Directorate-General Information Society and Media (DG INFSO) of the European Commission wrote in the conference Foreword: “e-Infrastructures are definitely changing the way that science is carried out!”.

These messages - and the benefits of sharing the costs of providing broadband infrastructures, rather than everyone building their own - were recurring themes throughout the conference.

Issues that were identified by many of the presenters as causes of severe constraint to economic growth and human and social development on the African continent were the insufficiency of infrastructures and the low priority given to ICT aspects in general.

Nevertheless, throughout the conference, the conference participants were exposed to exciting examples of how - with the support of e-Infrastructures - research organisations were provided with opportunities to share access to (regional or global) scientific facilities and support the development of their collaborative projects.

The keynote speakers (**Juhapekka Ristola** - Director-General, Communications Policy Department, Ministry of Transport and Communications, Finland, **Vera Brenda Ngosi** - Director, Department of Human Resources, Science & Technology, African Union Commission (AUC) and **Zoran Stancic** - Deputy Director-General in the Directorate-General Information Society and Media, European Commission) stressed the importance of good communications and e-Infrastructures, and the fact that ICT is an enabler for different types of projects on health, transport, education, energy, telecommunications, water, etc.

Similarities were identified between the provision of e-Infrastructures in rural areas of Europe and in Africa. However, whereas European governments give ICT generally - and broadband Internet access, specifically - a high political importance and consider it imperative for economic growth, in many African countries, there are other vital issues to address and ICT does not enjoy the same priority. For example, Finland has the goal is to provide 1 Mbit/s to everyone by 2015, in a scheme costing €200M, whereas in Africa half of the countries do not have an Internet exchange point. The new AfricaConnect project to interconnect the

regional and national backbone networks, and the new submarine cables, were recognised as significant steps in the right direction.

The EU document describing the Digital Agenda for Europe is an illustration of the prominence given to ICT in Europe. This report represents one of the 7 so-called *flagship* areas of the EC's "Europe 2020" vision. It confirms the EC's opinion that research is vital to a country's development and growth, which is why it continues to fund e-Infrastructures as key enablers of collaboration between researchers in virtual research communities. However, this collaboration requires high-speed connectivity with the rest of the world. The European GÉANT e-Infrastructure is interconnected with Internet2 (USA), CANARIE (Canada), CERNET (China), CLARA (Latin America), CAREN (S. Asia), etc. It is now time to bring Africa into this network through initiatives such as AfricaConnect and the UbuntuNet Alliance.

Speakers for ESFRI (**Eeva Ikonen**, Senior Science Advisor, International Relations Unit, Academy of Finland) and e-IRG (**Leif Laaksonen**, Chair, e-Infrastructure Reflection Group) highlighted the need for collaboration and the role, played by open e-Infrastructures in their respective areas.

The need for collaboration was also highlighted by **Kimmo Koski**, Director of the CSC-IT Center for Science and Vice Chairman of the Partnership for Advanced Computing in Europe (PRACE), Finland. He remarked that specific scientific facilities (eg. for weather, climatology, Earth Science, Astrophysics, Elementary Particle Physics, ..), the associated expertise and the necessary computing resources, are distributed throughout the world. e-Infrastructures are therefore needed to enable the collaboration between researchers, but high-quality e-Infrastructures are expensive and therefore must be shared between disciplines. The same reasoning was presented by **Jens Vigen**, Scientific Information Officer, European Organization for Nuclear Research (CERN), Switzerland, who gave the example of CERN as being too expensive for one country to build alone.

It was explained that the NREN scene in Africa is evolving in Eastern and Southern Africa, under the auspices of the UbuntuNet Alliance, and in Western and Central Africa where NRENs, spearheaded by the Association of Africa Universities, are now forming and joining WACREN. As presented by **Frederik Tsubira**, CEO of UbuntuNet, Board Member of TENET, Member of the Advisory Panel to the Research and Education Networking Unit of the AAU, Ghana, UbuntuNet has been working closely with DANTE to prepare the AfricaConnect contract. A frequent discussion point, particularly emphasised by the WACREN presenter, **Mumuni Dakubu**, Director of the University ICT Centre and Dean of the Faculty of Science, University of Ghana, was on how to provide the "last mile" access - which covered both campus networks and wireless technologies.

As guidelines for how African NRENs could operate, different ways that European NRENs are funded and the services that they provide were presented in the session "Shaping the NRENs landscape in Africa: Harnessing on European NRENs Best Practices", chaired by **Karel Vietsch**, Secretary General of Terena, The Netherlands.

A broad assessment was made that sub-Saharan Africa is lagging Europe in e-Infrastructure by 10/15 years. Most universities in Africa have less bandwidth than a typical household in Europe, and as a result students do not have access to the Internet. The Mediterranean region is more advanced; EUMEDConnect allows 2 million users in 700 institutions in North Africa and the Middle East to be linked to 4000 research institutions in Europe and provides a gateway to world research. ASREN (the Arab States Research and Education Network) is aiming to connect the countries currently not in EUMEDConnect (Egypt, Algeria, Morocco, Syria, etc) and could get inspiration from what UbuntuNet has already accomplished.

The integration of Southeast Europe into the GÉANT/NREN/Grid community in the rest of Europe was offered by **Ognjen Prnjat**, Regional and European Grid Management, Greek Research and Technology Network, Greece, as a good example to follow. It was considered that, 10 years ago, Southeast Europe had similar issues to Africa, in terms of high human potential, but minimal e-Infrastructure.

Another experience from Europe that was considered by **Dai Davies**, General Manager, Dante (GEANT), UK to be useful for Africa's e-Infrastructure construction concerned procurement. Cost effective access to the infrastructure is needed, and there can be enormous differences in prices, depending on whether or not there is any competition. This aspect was also addressed in the session regarding the undersea cables (EASSy, SEACOM, WACable, ACE, LION, SEAS, etc.) that are being installed and the different funding and revenue models that they are employing. Noting that most of the cables to Latin America go to North America, the need for a connection between Latin America and Africa was raised - both to encourage collaboration and partnership and also as a means of achieving redundancy.

The donor panel session revealed that there are a number of related projects running in Africa, but that there are instances where there is duplication of efforts as donor partners work on the same topic. There is also no co-ordination between governments, donor organisations and the projects. It is also difficult to discover who is doing what in the region. The meeting therefore recommended to consider developing a portal, showcasing who is doing what and where. **Ahmed Hamdy**, Head of the S&T/ICT Division, Department of Human Resources, Science and Technology, at the African Union Commission (AUC), concluded that there is need for the donor community and the implementing agencies to sit together and share notes.

Simon Taylor, Coordinator of the ERINA4Africa EU-funded Project, Brunel University, UK explained that they had collected many examples of successful ICT projects in Africa in areas such as e-government, e-security, education, health, Earth observation and agriculture that utilised available e-Infrastructures. Some were presented in the conference, including:

Nodumo Dhlamini, Program Manager (ICT), presented the Regional Universities Forum for Capacity Building in Agriculture (RUFORUM) in Uganda. This is a regional network of 25 African universities in Eastern, Central and Southern Africa for dissemination information about the weather, markets (both local and global), best practices, etc. and which is also used for agricultural research and supporting the human networking.

Hannu Saarenmaa, Finnish Museum of Natural History & Francis Oguya - National Museums of Kenya explained how e-Infrastructures were being used in the Global Biodiversity Information Facility (GBIF). GBIF is a global science/informatics research infrastructure linking up a global network of participants; enabling online publishing and sharing of biodiversity data; promoting the development of data capture and exchange standards; building an informatics infrastructure; building capacity; catalysing the development of analytical tools.

Cheikh Tidiane Toure, Head of the Surgery Department of the Faculty of Medicine, Odonto-Stomatology at the Cheikh Anta Diop University, Senegal presented some examples of telemedicine for remote diagnosis, training and support during surgical operations.

Many questions from the audience related to the process of getting involved in the Europe-Africa collaboration. In general, it was recommended to:

- Start the dialogue with the Member States,
- Make a priority list of where Europe can use unique facilities only available in African countries,
- Start building up activities between research groups and use human contacts, attend the appropriate meetings. Having a "champion" is often beneficial,
- Conferences can also be useful for bringing people together,
- Look for the Call for Proposals in 2011 that will invite Support Actions for international collaboration.

The session Chairs concluded by stating the need for coordination in implementation of projects in Africa. They observed that Africa is now offering huge opportunities for business and cooperation in research. They encouraged the participants to keep the momentum going after the conference.



The conference was closed with thanks expressed to the AUC for its support and friendship, the European Commission for its support and help and to the Finnish Ministry of Foreign Affairs and Ministry for Employment and Economy.

Thanks were also given to Karine Valin (Sigma-Orionis) and to TWAS.