



# IST-Africa 2008 Conference Report

Windhoek *Namibia*

**07 - 09 May 2008**

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# Introduction

**IST-Africa 2008** Conference & Exhibition took place 07 - 09 May 2008 in the Windhoek Country Club, in Windhoek, Namibia. Part of the **IST-Africa Initiative**, which is supported by the European Commission under the Information Communications Technologies (ICT) Theme of Framework Programme 7 (FP7), **IST-Africa 2008** was the third in an Annual Conference Series bringing together delegates from leading commercial, government & research organisations, to bridge the Digital Divide by sharing knowledge, experience, lessons learnt & good practice.

European research activities are structured around consecutive multi-annual programmes, or so-called Framework Programmes. FP7 sets out the priorities - including the ICT Theme - for the period 2007 - 2013. ICT is fully open to International Cooperation with the aim to join forces in addressing major challenges where significant added value is expected to be gained from a world-wide R&D cooperation. In this context, the European Commission co-funded the **IST-Africa Initiative** in order to promote the participation of African organisations in FP7-ICT.

Hosted by the Government of Namibia and Technical Co-Sponsored by IEEE, **IST-Africa 2008** focused on Applied ICT research in the areas of eHealth, Technology Enhanced Learning and ICT Skills, Open Source Software, ICT for Inclusion, eInfrastructures, ICT for Environmental Risk Management, ICT for Networked Enterprise and eGovernment and eDemocracy. **IST-Africa 2008** provided a collegiate setting for presentations and discussions of national & regional developments, issues of concern & good practice models, and networking with peers. **IST-Africa 2008** also provided an opportunity to learn more about opportunities to participate in ICT Calls under Framework Programme 7 (FP7) and identify potential partners for future proposals.

The goals of the **IST-Africa** Conference Series are Community Building to facilitate EU-African research cooperation and successful exploitation of research results, to stimulate take-up of RTD results by industry and the public sector, to promote knowledge sharing between commercial, government and research organisations, to exchange experiences about the current state of eAdoption at a sectoral, national or regional level, and to support International Cooperation and open up the European Research Area (ERA) to Africa.

## The Programme

The 3-day programme featured an invigorating mix of business and government case studies, technical and policy papers and interactive workshops. As well as opening and closing plenary sessions, delegates could participate in 36 thematically focused parallel sessions featuring different aspects of International Cooperation, eHealth, eInfrastructures, Technology Enhanced Learning and ICT Skills, ICT for Inclusion, ICT for Networked Enterprise, ICT for Environmental Risk Management, and eGovernment and eDemocracy.

The Conference Programme was complemented by a demonstration and technology exploitation-focused Exhibition, a Networking Reception on Wednesday 07 May 2008 and a Gala Dinner on Thursday 08 May 2008.

## IST-Africa Community

**IST-Africa 2008** Conference & Exhibition attracted policy makers, practitioners, and researchers from leading commercial, government and research organisations in Europe and Africa – and indeed elsewhere in the world, to share knowledge, experience, lessons learnt and good practice and network with their peers,

Unlike many research conferences, **IST-Africa** provides an opportunity to meet with Ministers of ICT and S&T, Director-Generals, Permanent Secretaries, Senior Government officials from Europe and Africa as well as senior managers, practitioners, project managers, software engineers and researchers from

industry, government and research organisations. Delegates and speakers attend to share knowledge, experience and lessons learnt, and network with their peers from around the world.

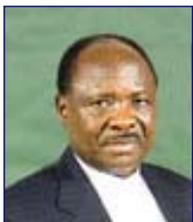
**IST-Africa 2008** Conference & Exhibition also provided the unique opportunity to identify partners and opportunities to co-operate in international research projects co-funded by the European Commission under the FP7 ICT Programme. As a result of each IST-Africa conference, new projects are generated (including African partners) and submitted for consideration for funding under FP7-ICT.

Delegates and presenters should continue to engage with the African and European colleagues that they met during the conference to develop functional partnerships for future projects and joint research.

Much of the European research results presented at this year's conference were co-funded under the FP6 IST Programme & FP7 ICT Programme. Participating FP7 EU-funded projects included IST-Africa (Regional Impact of Information Society Technologies in Africa); CAAST-NET; Digital World Forum; EuroAfriCa-ICT Project; FlossInclude and IRMA (Integrated Risk Management for Africa). Participating FP6 EU-funded projects included: AtGentive (Attentive Agents for Collaborative Learners); BEANISH; C@R; DigitalPreservationEurope (DPE) Coordination Action; ECOLEAD NoE; ESASTAP (European-South African Science and Technology Advancement Programme); HEALTHAGENTS; INSPIRE; iWebCare; LD-CAST; PANDA; PASCAL NoE; QVIZ-project; SEKT IP; ST-EAP, TRIM; wearIT@work and Winsoc.



Hon. Nangolo Mbumba  
Minister of Education  
Republic of Namibia



Hon. Joel Kaapanda  
Minister of ICT  
Republic of Namibia



Hon. Mosibudi Mangena  
Minister of Science and  
Technology, South Africa



Antti Peltomäki  
DG Information Society &  
Media, European Commission



J.M. Silva Rodríguez  
DG Research  
European Commission



Dr Hakim Elwaer  
Director, HRST  
African Union Commission



Aida Opoku-Mensah  
Director, UNECA

**IST-Africa 2008** was opened by **Honourable Nangolo Mbumba**, Minister of Education, Namibia on behalf of **His Excellency, Hifikepunye Pohamba**, President of Republic of Namibia.

Other Keynote Speakers included:

- **Honourable Joel Kaapanda**, Ministry of Information and Communication Technology, Namibia - represented by **Honourable Raphael Dinyando**, Deputy Minister of Information and Communication Technology, Namibia
- **Honourable Dr Shukuru Kawambwa**, Minister for Communications, Science and Technology, Tanzania - represented by **Ms Blandina Mkayula**, Ministry of Communications, Science and Technology, Tanzania
- **Honourable Mosibudi Mangena**, Minister of Science and Technology, South Africa - represented by **Dr Phil Mjwara**, Director-General, Department of Science and Technology, South Africa
- **Honourable Dr. Ham-Mukasa Mulira**, Minister of Information and Communications Technology, Uganda
- **Honourable Dr. Sally Kosgey**, Minister of Higher Education, Science and Technology, Kenya - represented by **Honourable Amos Kamama**, Deputy Minister of Higher Education, Science and Technology, Kenya
- **Dr Hakim Elwaer**, Director, HRST, African Union Commission, Ethiopia
- **Mr. Remigious Makumbe**, Acting Chief Director and Director of Infrastructure & Services, SADC Secretariat
- **Mr Antti Peltomäki**, Deputy Director-General, DG Information Society and Media, European Commission
- **Mr José Manuel Silva Rodríguez**, Director-General, DG Research, European Commission
- **Dr Philippe Mawoko**, NEPAD S&T
- **Ms. Aida Opoku-Mensah**, Director, United Nations Economic Commission for Africa
- **Dr. Shamila Nair-Bedouelle**, Division of Science Policy and Sustainable Development, UNESCO
- **Mr. Thierry Devars**, DG Information Society and Media, European Commission
- **Ms. Magda Berhe**, The Swedish Program for ICT in Developing Regions

### International Programme Committee

A distinguished Programme Committee has been formed to review and provide feedback on papers and presentations, and chair sessions.

The **IST-Africa 2008** International Programme Committee includes

- **Paul Cunningham**, IIMC, Ireland (Conference Chair)
- **Henry Alamango**, COMNET-IT, Malta
- **Prof. Jørn Braa**, Oslo University Norway
- **Dr Elaine Byrne**, University of Pretoria, South Africa
- **Jim Clarke**, Waterford Institute of Technology, Ireland
- **Laurens Cloete**, Meraka Institute, South Africa
- **Prof. Johannes Cronje**, Cape Peninsula University of Technology, South Africa
- **Miriam Cunningham**, IIMC, Ireland
- **Prof. Love Ekenberg**, University of Stockholm, Sweden
- **Dr. Mike Joy**, University of Warwick, UK
- **Prof. Bernhard Katzy**, CeTIM, Germany
- **Ilari Lindy**, European Network and Information Security Agency (ENISA), Greece
- **Gareth MacNaughton**, Lane & Hapiak Consulting, UK
- **Dr. Esselina Macome**, Eduardo Mondlane University, Mozambique
- **Prof. Maurice Mars**, University of KwaZulu-Natal, South Africa
- **Namugenyi Loi Mirembe**, Uganda National Council for Science & Technology, Uganda
- **Maggy Pézeril**, Pôle Universitaire Européen, France
- **Matti Sinko**, Helsinki University of Technology, Finland
- **Dr Vincent Shaw**, HISP, Namibia
- **Prof. Peter Slood**, University of Amsterdam, Netherlands
- **Bernard Stevenot**, SpaceBel, Belgium
- **Richard Stevens**, INSIEL S.p.A, Italy
- **Prof. Erkki Sutinen**, University of Joensuu, Finland
- **Prof. Wallace Taylor**, Cape Peninsula University of Technology, South Africa

- **Daan du Toit**, Senior Science and Technology Representative in Europe, Department of Science & Technology, South Africa
- **Maseqobela Williams**, Ministry of Communications, Science & Technology, Lesotho
- **Stefan Wesner**, High Performance Computing Center of University Stuttgart, Germany
- **Dr. Harold Wesso**, DDG (Policy), Department of Communications, South Africa

### Organising Committee

- **Miriam Cunningham**, IIMC, Ireland
- **Paul Cunningham**, IIMC, Ireland
- **John Sifani**, Ministry of Education, Namibia
- **Johan van Wyk**, Ministry of Education, Namibia



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### Conference Portal & Delegate Showcase

[www.IST-Africa.org/Conference2008](http://www.IST-Africa.org/Conference2008)

# Opening Plenary Session

The Opening Plenary Session was in two parts, starting with a number of high-level presentations from the Host Government, European Commission and African Union Commission to provide an overall political context for the IST-Africa 2008 Conference & Exhibition. Presentations were delivered by the Honourable Nangolo Mbumba, Minister of Education, Namibia, Honourable Joel Kaapanda, Minister of Information Communication and Technology, Namibia, Mr Antti Peltomäki, Deputy Director-General, DG Information Society and Media, European Commission, Dr Abdul-Hakim Elwaer, Director, African Union Commission, Honourable Kamama Asman, Deputy Minister for Higher Education, Science and Technology, Kenya on behalf of the AMCOST Chair, Honourable Sally Kosgey, Minister for Higher Education, Science and Technology, Kenya; Dr Phil Mjwara, Director-General, Department of Science and Technology, South Africa, on behalf of Honourable Mosibudi Mangena, Minister of Science and Technology, South Africa; Honourable Dr. Ham-Mukasa Mulira, Minister of Information and Communications Technology, Uganda; Mr Remigious Makumbe, Acting Chief Director of SADC Secretariat and Ms Blandina Mkayula presented on behalf of Dr Shukuru Kayambwa, Minister of Communications, Science and Technology, Tanzania.

This was then complemented by a High-level Round Table on the Implementation of the Africa-EU Partnership on Science, Information Society and Space, with representation from the Ministry of Higher Education, Science and Technology, Kenya, the European Commission, Ministry for Communications, Science and Technology, Tanzania, Ministry of Information and Communications Technology, Uganda, Southern African Development Community Secretariat, and the Department of Science and Technology, South Africa.

The Master of Ceremonies, Paul Cunningham, acknowledged the participation of the Diplomatic Corps at the Opening Plenary, and in particular Mrs Elizabeth Pape, Head of Delegation of the European Commission to the Government of Namibia.

Before the presentations the University of Namiiba (UNAM) Choir sang the National Anthem of the Republic of Namibia and the African Union Anthem.

## **Welcome by Honourable Nangolo Mbumba, Ministry of Education on behalf of His Excellency, Hifikepunye Pohamba, President of Republic of Namibia**

**Honourable Nangolo Mbumba, Ministry of Education, Namibia**, welcomed the Ministers, Director-Generals, Permanent Secretaries, Directors of African Union Commission and Economic Commission for Africa, and all the conference delegates on behalf of the President of Namibia and the Mayor of the City of Windhoek.

The Minister noted the important role that the IST-Africa Initiative has in facilitating EU-Africa research cooperation and successful exploitation and adoption of ICT and research results by industry and the public sector to achieve socio-economic growth. Critically, he commented on the significant opportunity that the IST-Africa 2008 Conference & Exhibition provides to jump start the EU-Africa Partnership on Science, Technology and Space, which was agreed to at the Lisbon Summit in December 2007. The Minister noted how gratifying it was that so many senior representatives from government, industry and research from both continents had taken the time to participate in the third annual IST-Africa Conference, with the goal of sharing lessons learnt and experiences across borders within Africa as well as with European partners.

The Minister noted the key challenge for many governments in the SADC region posed by the lack of necessary in-house expertise to address structural challenges related to ICT, whether technical, economic, social or political in nature. He also commented on progress being made in gradually narrowing the Digital Divide through the rapid penetration of ICT based on the efforts of both government and the private sector. The general lack of skilled technical staff has led to a continent-wide problem of first recruiting and then retaining sufficiently qualified and competent specialists in both the public sector as well as the private sector.

The Minister noted the strategic importance of IST-Africa 2008 in bringing together policy makers, experts in key areas (e.g. eHealth, eGovernment and Technology Enhanced Learning), entrepreneurs as well as politicians to deliberate on how innovative, out-of-the-box thinking, thoughtful and well considered ICT adoption and strategic investment in collaborative Scientific & Technological research can be leveraged to simultaneously narrow the Digital Divide, enhance global communication and support sustainable socio-economic growth.

Minister Mbumba proceeded to discuss the aspirations behind Namibia's Vision 2030 - a prosperous industrialized nation driven by its human resources enjoying peace and harmony. Education, Science and Technology are seen as key driving forces behind the achievement of this Vision. Since Vision 2030 is a long-term programme, its implementation has been planned as a series of five national development plans. Currently, Namibia is in the process of implementing the Third National Development Plan (NDP3), which emphasizes the importance of technology and innovation in achieving its target goals. This will require the strengthening of national Innovation Systems as well as a total transformation of mindsets in Namibia, to

successfully embrace this new paradigm shift.

Minister Mbumba recalled the challenge issued in 1961 by President Julius Mwalimu Nyerere of Tanzania, when he told his fellow citizens “we must run while they are walking”. He applied this challenge to the response required across Africa as it related to ICT adoption in narrowing the Digital Divide, and referred to the lessons to be learnt from the investment in education and a focus on ICT as a strategic tool by other countries such as Ireland and India to achieve sustainable socio-economic growth and create a dynamic software industry.

Minister Mbumba referred to the importance of the NEPAD Consolidated Plan of Action for Science and Technology that is aimed at enhancing the leveraging and sharing of knowledge through the application, adaptation and usage of new ICT programmes for sustainable development. Progress has already been made in Namibia in recent years to create a people-centered, modern knowledge driven Information Society, through initiatives including Tech/Na! The Minister stressed the importance of rolling out the two stage educational Programme, TechNa!, which aims to integrate ICT in the education system, initially across secondary and vocational education, and later through libraries, primary, adult and continuing education.

Namibia in its strategic outlook (Vision 2030) is envisaging transforming Namibia into a healthy, prosperous and peaceful nation, where people enjoy high living standards and access to quality education; in a dynamic, resource-based industrialized economy driven by technology and innovation.

For the latter to be achieved, a strong National Innovation System that focuses on both the strategic and tactical use of Science and Technology, knowledge and skills is needed to transform the primary resource-based economy into a Knowledge Economy, with globally competitive and sustainable higher value added goods. Investment in education to achieve sustainable socio-economic growth is essential for all of Africa.

The Minister then commented on the importance to ensure strong alignment between the work undertaken at a policy level and its implementation through the Action plan for 2008 - 2010. He noted the significance that so many Ministers of Science and Technology and Ministers of ICT had made the time to participate in IST-Africa 2008 and share their vision across African national borders as well as with European colleagues. Minister Mbumba noted that “By working together we can successfully implement a plan that is both mutually beneficial and sustainable for both continents”.

In concluding, Minister Mbumba, encouraged conference delegates “to remain focused on finding solutions that will curb Africa’s problems of poverty and rural under-development, by using technology, innovation and ICT as driving forces to cap poverty and rural underdevelopment”. Minister Mbumba then declared the IST-Africa 2008 Conference & Exhibition officially open.

***Musical Interlude by UNAM Choir***

## **ICT Initiatives in Namibia**

This Official Welcome was then followed by a presentation by the **Honourable Raphael Dinyando, Deputy Minister of ICT**, on behalf of the Honourable Joel Kaapanda, Minister of Information Communication and Technology, on current initiatives taken by Namibia in promoting Information and Communications Technologies (ICT’s) for development.

The timing of IST-Africa 2008 was very auspicious from the perspective of the Republic of Namibia as the Government created a new and focused Ministry of Information and Communication Technology on 8 April 2008 to leapfrog Namibia into the new Information Society in terms of ICT development by consolidating all ICT related government functions into one Ministry.

Minister Dinyando started his presentation by focusing on the importance of ICT’s in reference to major international developments, namely, the UN Millennium Summit and World Summit on the Information Society (WSIS), and the recognition through the 8 Millennium Development Goals (MDGs) that “ICT’s are essential for a knowledge-based economy as well as important for growth and sustainable development. Goal 8 of the Millennium Goals requires that global partnerships for development be created to, among others things, achieve the following:

- Develop decent and productive work for youth;
- Make the benefits of ICT’s available to all; and
- Cooperate with the private sector (business).”

Minister Dinyando noted that the WSIS created an opportunity for all stakeholders to understand how new opportunities provided by ICT’s can help to bridge the digital divide and achieve the UN Millennium Development Goals of combating poverty, disease, illiteracy, environmental degradation and gender inequality.

He also mentioned the consensus on achieving specific goals by 2015, the plan of action highlighting 8 action lines in respect of the role of governments and all stakeholders in the promotion of ICT's for development.

Minister Dinyando noted the window of opportunity presented by the convergence of ICT's, such as Internet; Information Technology; Telecommunications; Media and Broadcasting, as such rapid technology changes, ICT convergence and accelerated globalization are changing the context for economic development. While offering great promise through increased productivity and access to advanced resources and new markets, Minister Dinyando noted the associated risks of economic dislocation, stagnation and marginalization, and the key role of Government in "bringing the benefits of ICT's to everyone through national and global policies and frameworks to meet the challenges posed by ICT's". Minister Dinyando noted the adoption of two broad policy frameworks in Namibia, in 1999 and 2002 respectively.

Minister Dinyando explained that the 1999 Telecommunications Policy and Regulatory Framework provides for accelerated expansion of infrastructures, separation of functions, introduction of competition and liberalization of the market. In addition, the Policy Framework aims to achieve the socio-economic development of the population and the Namibian business, through:

- The provision of broad, reliable and efficient supply of services that is affordable;
- A national balance to develop infrastructure where its needed;
- Universal access to basic telephone services and advanced technologies at affordable prices;
- The development of the sector to achieve its potential for national growth; and
- Cooperation in regional telecommunications to promote efficiency in economic and industrial cross-border initiatives.

Minister Dinyando noted the importance of the 2002 ICT Policy Framework, which focuses on the following critical areas for effective implementation:

- To enhance rural access to information;
- To grow and stabilize the ICT professional expertise;
- To facilitate ICT public education, especially in schools;
- To foster e-commerce, e-business and e-government; and
- To strengthen and grow the existing ICT infrastructure.

He also mentioned the importance of sector-specific initiatives, such as the ICT Policy for Education which Minister Mbumba had previously discussed. These are complemented by major legislative reforms including the production of a Draft Information and Communications Bill which provides for:

- A new independent regulatory authority;
- The introduction of competition;
- A Universal Service Mechanism; and
- A new approach to categories of licensing.

Minister Dinyando also briefly discussed the importance of the draft Use of Electronic Communications and Transactions Bill, which aims to promote the use of electronic communications and transactions, encourage the use of ICTs, e-government and e-commerce and protect the public from unauthorized use of ICTs. The e-Governance in Namibia Strategy aims to ensure:

- Access to information/ Simplifying access;
- Active citizen participation;
- Transparent administration; and
- Fulfilling needs and widening access.

In conclusion, Minister Dinyando commented that he and Minister Kaapanda wanted to encourage young people, as leading creators and earliest adopters of ICT's, to take a keen interest and study in the ICT's field to fill the gap in expertise that currently exists, to help realize national objectives enumerated under National Development Plans and Vision 2030.

***Musical intervention by the UNAM Choir***

## **Opening Remarks, DG Information Society and Media, European Commission**

In his Opening Remarks, **Mr Antti Peltomäki, Deputy Director-General, DG Information Society and Media, European Commission**, thanked the Namibian government, represented by Honourable Ministers Nangolo Mbumba and Joel Kaapanda for hosting the 3rd IST-Africa Conference.

Noting “the strategic importance the European Commission attaches to this event”, and the objective of “taking stock of current dynamics regarding Africa-EU cooperation, and plan together the immediate next steps in the most concrete and realistic manner”, Antti Peltomäki commented on the sea-change in approach taken by the definition and the adoption of the Joint EU-Africa Strategy and Action Plan, at the EU-Africa Summit in Lisbon, December 2007.

This led to European and African Heads of States and Governments adopting an ambitious framework constituted of 8 Partnerships, moving from the traditional donor-recipient scheme to a genuine cooperation based on mutual interests. One of these 8 pillars is the EU-Africa Partnership on Science, Information Society and Space, which Mr Peltomäki noted offered the opportunity to focus support and cooperation on existing science, ICT and space technologies priorities adopted at pan-African level with the goal of transforming economies in African countries and contributing to the Millennium Development Goals (MDGs). The African Regional Action Plan for the Knowledge Economy (ARAPKE), focuses on ICT, while the AMCOST Consolidated Plan of Action focuses on S&T.

Mr Peltomäki commented on the complementarity with some existing activities, such as the EU-Africa Partnership on Infrastructures that was launched in October 2007, which supports regulatory reforms and definition of e-policies, human resources development, content and e-applications provisioning as well as research and education networks.

Mr Peltomäki also noted that investment in trans-regional infrastructures projects, such as the EASSy cable, and the close engagement with the African Union Commission to jointly identify 5 flagship pan-African projects for direct support to ARAPKE. Mr Peltomäki stressed that actions like IST-Africa are achieving change in the field of ICT research, with more Sub-Saharan participations retained for funding under the first call of FP7, than during the previous five years of FP6. Collaborative research projects as well as technology road mapping initiatives have been launched in various fields including mobile web technologies, wireless access, open source software, language technologies, grid computing and natural disasters management systems.

Mr Peltomäki also briefly discussed the strategic importance of support to the development of African national and regional research and education networks (NRENs), and their interconnection to the European GEANT2 network via the Ubuntunet network. This will help ensure that African scientific community benefit from the latest advances in high-speed networking, Internet and grid technologies, sharing use of instrumentation, computing and data resources across a wide range of technology domains. Mr Peltomäki stressed the commitment by the European Commission and African Union to expand this interconnection to other African countries.

Mr Peltomäki commented on progress made “as illustrated by the recent mobile boom in Africa, with a mobile market growing twice as fast as the global average, and a leap from 16 million subscribers in 2000 to around 300 million today”. He stressed that African organisations are fully eligible to receive Community funding through its research and development programme, where over €1 billion is invested annually in ICT research alone, accounting for around 6% of the total EU public R&D spending.

Mr Peltomäki concluding by emphasising that “Strengthening ICT scientific partnerships through this Programme is a key objective of this IST-Africa Conference”, which has “gathered the best European and African teams” to focus on “mutual interests and priorities”.

## **AUC Keynote Address: Implementation of ARAPKE and AMCOST Consolidated Plan of Action**

In his Opening Remarks, **Dr Abdul-Hakim Elwaer, Director Human Resources, Science and Technology (HRST), African Union Commission** presented the regrets of the African Union Commissioner of HRST, who was unable to attend IST-Africa 2008 due to a scheduling conflict with an Executive Council Meeting of the African Union.

Dr Elwaer expressed his personal satisfaction that the thematic priorities of IST-Africa 2008 were very well aligned with the implementation focus of the African Regional Adoption Plan for the Knowledge Economy (ARAPKE) including ICT Infrastructure, eGovernment, eHealth, Capacity Building, and Research and Technology Development.

Dr Elwaer confirmed that the goals of IST-Africa were in tandem with and consistent with the aims of the African Union to build an integrated and inclusive African Information Society that will enhance the integration of African economies and improve the quality of life of African Citizens. He said that IST-Africa was also in line with the Consolidated Plan of Action of the African Ministerial Council on Science and Technology (AMCOST), which articulates Africa’s common objectives and commitment to use Science and technology to achieve socio-economic transformation of the continent, and the integration of Africa into the world economy.

While growth in the 19th and 20th Century was driven by networks of railways and roads, growth in the 21st Century is being defined and driven by digital highways. In the digital age, what is of utmost importance is not where you are but rather what you do. The ability of ICT to level the global playing field and open human potential as more and more populations have the ability to sell their skills and a wider consumer base, is one of the key reasons to leverage it to achieve wider socio-economic growth.

Information and decision support systems support socio-economic growth and therefore continue to be of utmost importance. As the global economy continues to transform into the Knowledge Economy, it is ever more important for Africa to continue to do everything required to be a part of this global Knowledge Economy.

To ensure that the Continent continues to benefit from ICT, the African Regional Adoption Plan for the Knowledge Economy (ARAPKE) was developed under the aegis of the African Union in collaboration with the United Nations Economic Commission for Africa (UNECA). Flagship projects of ARAPKE have been selected and the African Union Commission is now engaging with partners including the European Commission to mobilise resources so as to start implementation.

In a fully integrated Knowledge Society, each segment of society (government, civil society, private sector, bi-lateral partners and the international community) has a role to play. Dr Elwaer noted that each of these key stakeholder groups were represented at IST-Africa 2008. It has long been recognised at Telecoms and ICT Conferences that the development of mobile and ICT services in Africa requires an enabling environment to attract much needed investment.

Governments have a leading role in generating this enabling environment through comprehensive strategies and ePolicies. Civil Society through its understanding of community, has a key role to play in the implementation of ICT projects. Private sector has an important role in ICT development and usage, while bilateral partners and the international community have a key role in supporting cooperation, sharing expertise and financing.

The African Union Summit of African Heads of States and Governments in Addis Ababa (January 2007) adopted the Declaration on Science, Technology and Scientific Research for Development and the Decision on the Report of the Extraordinary Conference of Ministers of Science and Technology (AMCOST). This includes adoption of Africa's Consolidated Plan of Action (CPA), which evolved from a series of continental and regional meetings of scientists, policy makers and Ministers commencing in February 2003, and culminated in its adoption at a meeting in Khartoum, Sudan in January 2006. The implementation plan was subsequently formally adopted by African Union Commission in January 2007. The CPA spells out how the necessary socio-economic transformation will be enabled by Science and Technology for Africa to be integrated into the global Knowledge Economy.

Just after IST-Africa 2008, African Ministers of ICT were meeting in Cairo (11 - 14 May) to address important issues on implementation and development, and harmonisation of efforts across the continent.

Dr Elwaer confirmed his agreement with statements by Minister Mbumba in relation to the importance of the inspiration of a previous President of Tanzania (Nrere) in relation to Science and Technology, and that post-graduate scholarships have been established by the African Union Commission in his name.

Dr Elwaer confirmed that the African Union Commission is committed to cooperation with all relevant stakeholders during the implementation of the two important regional frameworks, ARAPKE and the AMCOST Consolidated Plan of Action (CPA).

Dr Elwaer concluded by thanking the Government of Namibia and IIMC International Information Management Corporation for organising IST-Africa 2008, as well as the participants who come from far and wide, to ensure the success of this important Conference and Exhibition.

## **AMCOST Chair: Priorities and Challenges Associated with Africa-EU Partnership on Science, Information Society and Space**

**Honourable Kamama Asman, Deputy Minister for Higher Education, Science and Technology, Kenya** presented the regrets of the AMCOST Chair, Honourable Sally Kosgey, Minister for Higher Education, Science and Technology, Kenya, who was unable to attend at short notice.

Minister Asman's presentation focused on the challenges and priorities associated with the Africa-EU Partnership on Science, Information Society and Space. He assured the conference delegates that Kenya is well on its way to recovering from the skirmishes around the election in December 2007 and will soon be back on course, and thanked everyone for their prayers and support received from the African Union and European Union.

The Lisbon Agreement in December 2007 provided a Framework for a renewed relationship between two neighbours (Africa and Europe). The current partnership relates to 8 areas, including the most recent - Science, Technology and Space. Minister Asman briefly presented the three main goals of Priority No 8:

- Challenges facing STI in Africa
- Support S&T capacity building and implementation of CPA
- Enhanced cooperation on space and technology

Minister Asman stressed the problems associated with rural based activities (agriculture, exploitation of wildlife and natural resources). Health is a major problem for rural areas especially related to access to infrastructure (e.g. information and health facilities for key diseases including HIV, Avian Flu, Malaria, Rift Valley fever, cholera), as are environmental issues (e.g. water scarcity, education, famine, drought), rapid increase in rural – urban migration, transport challenges in cities etc.

Minister Asman stressed the importance of identifying short-term, medium-term and long-term challenges for AU-EU Partnership Priority No. 8 for Science, Technology and Space. Medium-term challenges include applications of ICT in energy, infrastructure, improved agro-processing and operations of SMEs. Long-term strategies include inclusion of semantics and language processing technologies in health and telecommunications amongst other key sectors.

Minister Asman noted that the content focus of IST-Africa 2008 is very well aligned with the various ICT related challenges as highlighted in his speech. He sincerely hoped that IST-Africa 2008 will serve to promote accelerated and focused implementation of the AU-EU Partnership Priority No. 8 for Science, Technology and Space.

In conclusion, Minister Asman confirmed that Kenya is committed to promote and leverage Science and Technology, which are of critical importance for the future. Kenya has a Ministry responsible for Higher Education, Science and Technology and 14 institutes focused on teaching ICT related disciplines, with the goal of supplying necessary education in all 8 provinces. One key goal is to establish a University specifically dedicated to teaching Science and Technology, as has been done in Ireland, Singapore and India, to foster STI in Kenyan society.

Financing is a key challenge and partnerships are critical in this regard. The role of the European Union in particular is very much valued as collaboration is critical to success. The Minister noted that the IST-Africa training programme was very much valued. He also commented on the importance to economic success of the fibre optic cable currently being implemented between Faluja to the most urban centres in Kenya. Africa is a giant that needs to wake up and Science and Technology is necessary to achieve this goal. IST-Africa 2008 will help sensitise all participants to the importance of Science and Technology for the Continent of Africa, and thus help make a difference to the lives of all citizens on the Continent.

## Implementation of Africa-EU Strategy: Challenges and Opportunities

**Dr Phil Mjwara, Director-General, Department of Science and Technology, South Africa**, presented remarks on behalf of Honourable Mosibudi Mangena, Minister of Science and Technology, South Africa. Dr Mangena's remarks were focused on challenges and opportunities related to implementation of the Africa-EU Strategy.

Dr Mjwara noted the common awareness of the particular difficulties affecting Africa, currently home to some of the world's poorest people, as well as weak Science and Technology institutions. However, in recent years, several high profile initiatives have been enacted signalling growing awareness of the need for capacity building for Science and Technology. In 2003, the African Ministerial Council on Science and Technology (AMCOST), was established under the auspices of the New Partnership for Africa's Development (NEPAD) and later the African Union. This high-level platform sets priorities and develops policies on Science, Technology and Innovation for African development. It also provides political and policy leadership for the implementation of Africa's Science and Technology Consolidated Plan of Action.

However, Dr Mjwara reminded IST-Africa delegates that Africa still lags behind the rest of the world in providing infrastructure critical to S&T research, economic growth, poverty reduction and attainment of the Millennium Development Goals. This is due to the complicated balancing act required to meet a wide range of needs with extremely limited resources. Africa must renew her aging economic and social infrastructure, provide quality education to her youth and work towards a better future while trying to deal with the threat of starvation facing many of her peoples.

Dr Mjwara stated that the IST-Africa Initiative can help reduce the digital divide through partnerships, noting that it "has been clear that our continent is keen to do so since the first IST-Africa conference was held in South Africa two years ago".

Dr Mjwara reminded conference delegates that the Joint Africa-European Union Strategy, adopted in Lisbon

(December 2007), acknowledges Africa to be the continent where the digital divide is widest. One of the eight EU-Africa collaborations proposed is concerned specifically with Science, Information Society and Space issues. This commits the EU and Africa not only to undertake concrete interventions aimed at ensuring the availability of sustainable, accessible, affordable and effective ICT infrastructure in Africa, but also to joint Research and Innovation partnerships for harnessing Science and Information as instruments for sustainable development.

Dr Mjwara noted that recognition by African Heads of State and Government of the importance of Science and Technology and especially ICT, as one of the cornerstones of the new Africa-EU strategy is significant. Dr Mjwara focused on reinforced the concept that financing is a shared responsibility, and that while European Development Support will continue to be valuable, it will only have a sustainable impact if African countries step up their own investments in S&T. Dr Mjwara reminded IST-Africa 2008 conference delegates that at the AU Heads of State and Government Summit in Ethiopia last year, African leaders pledged to work towards the goal of spending 1% of country GDP's on Research and Development. Investment in Research and Development should form a critical component of our governments' Socio-economic Development Programmes.

Dr Mjwara remarked how important it is for Africa and Europe to more effectively harness joint financing instruments such as the European Development Fund, to direct substantial resources towards the development of Science and Technology at national and regional levels, and for Africans to prioritise Science and Technology. Dr Mjwara called for the allocation of a substantial part of the intra-ACP component of the European Development Fund to support implementation of the AU Science and Technology Consolidated Plan of Action.

Dr Mjwara also invited the private sector to join in this partnership, by contributing knowledge generation and innovation in Africa, noting the responsibility of African governments to create enabling environments for such investment in Science and Technology systems. Successful implementation of the new Science, Information Society and Space partnership will require increased national investments from both continents, better use of our joint instruments, such as the European Development Fund, and innovative partnerships with the private sector.

Dr Mjwara urged all participants at the round-table discussion to do everything necessary to secure resources for the implementation of this new partnership, pledging South Africa's full commitment to this effort on behalf of Minister Mangena. Dr Mjwara noted that a significant portion of South Africa's national Science and Technology budget is devoted to supporting African continental and regional programmes, such as the NEPAD Biosciences Network for Southern Africa and the African Laser Centre, and contributed to the new Science, Technology and Innovation Capacity-Building Programme for the African Caribbean Pacific (ACP) Group.

Dr Mjwara outlined how South Africa is aggressively investing in the capacity to create and diffuse new knowledge as South Africa's contribution towards Africa's globally competitiveness, and to improve the quality of the lives of citizens. He went on to briefly describe South African investment in modernising R&D infrastructure, and establishing new instruments and facilities such as the Centre for High Performance Computing, which are critical in ensuring sufficient capacity to generate new knowledge. The goal is to position South Africa and the continent as attractive destinations for science and technology endeavours and cooperation.

Through the Centre for High Performance Computing, for example, South Africa plans to develop nodes and partnerships with Higher Education and Research institutions, as well as industry in South Africa, Africa and the rest of the world. The Centre will also be crucial for the development of both South African and the Continent's much-needed human capital. It will support the exchange of data with partners, as well as research initiated by bodies such as the Square Kilometre Array, the National Bioinformatics Network and the Global Earth Observation System of Systems.

The Centre for High Performance Computing, which includes key partnerships with private sector actors such as IBM, is an excellent example of the type of investment needed to ensure the Africa-EU Partnership on Science, Information Society and Space thrives. The Centre shows that Africa-EU Science and Technology Cooperation is not only about capacity-building in Africa, critical as this is; it is also about Africa being empowered to make her own unique contribution in addressing global challenges such as climate change, the spread of infectious diseases, food security and the understanding of social dynamics such as migration. It is also about Africa using her geographical advantages to contribute to global scientific endeavours, as Namibia is doing by hosting the HESS gamma-ray telescope, which received the EU's Descartes Price for Science Excellence in 2007. Science knows no frontiers, and already African scientists are participating with success in the European Union's excellence-driven and highly competitive Seventh Framework Programme.

Finally, Dr Mjwara concluded by mentioning the intensification of efforts to facilitate wide dialogue between the role players representing Science and Technology policy, Science communities and industries from both Europe and Africa through CAAST-NET (Network for the Coordination and Advancement of sub-Saharan Africa-EU Science and Technology Cooperation). Funded under FP7, CAAST-NET aims to add particular

value to Africa and Europe's identification of joint research and development priorities, and the development of implementation scenarios linked to the Joint Strategy, in particular with regard to harnessing support for the implementation of Africa's Consolidated Plan of Action.

***Before the morning coffee break, the UNAM Choir sang the African Union Anthem and the National Anthem of the Republic of Namibia.***

## **ICT Challenges to Enhance Socio-economic Development and Regional Integration within SADC**

After the coffee break, **Mr Remigious Makumbe, Acting Chief Director of SADC Secretariat**, focused his contribution on some key ICT Challenges within the Southern African Development Community (SADC) Region related to enhancing socio-economic development and regional integration.

Mr Makumbe started by acknowledging the correlation between investment in Information and Communication Technologies (ICT) and development impact on society in general. This relationship between ICT and development informed the United Nations 'Millennium Development Goals' (MDGs) and adoption of the WSIS declaration of principles, plan of action and Tunis commitments by world leaders. Across Africa, various initiatives have already been undertaken, including the African Information Society Initiative (AISII), the NEPAD ICT framework and the African Regional Action Plan on the Knowledge Economy (ARAPKE).

Mr Makumbe noted that SADC's Regional Indicative Strategic Development Plan (RISDP) singles out ICT as an enabling tool for socio-economic development and regional integration within the SADC region. The RISDP provides strategic direction for implementation of the SADC programme of action over a 15-year time horizon. It identifies priorities and aligns overarching long term integrated development goals and objectives with discrete policies and priority intervention areas. The RISDP also enhances and strengthens inter-sectoral linkages and synergies.

That having been said, Mr Makumbe acknowledged that much work remains to be done to mainstream ICT investment in national development agendas.

Mr Makumbe then outlined SADC's three-pronged strategy to harness the potential of ICT for socio-economic development and regional integration:

- To create a conducive environment and level playing field to attract investment, including a proper regulatory, legislative and policy framework for the ICT sector;
- To deploy relevant infrastructure to enable grass-root access to benefits of ICT;
- To implement ICT applications enhancing socio-economic development and regional integration.

Mr Makumbe explained that the goal is to seamlessly integrate the use of ICT in all spheres of life within the region (e.g. tele-education, tele-medicine, ICT to support business and movement of people, goods and services within the SADC region).

The 'SADC Protocol on Transport, Communications and Meteorology' aims to achieve high quality, efficient and affordable services across the region and enhanced regional and global connectivity. The 'Communications Regulators' Association of Southern Africa (CRASA)' and the 'Southern Africa Telecommunications Association (SATA)' were established to operationalise the Protocol. SATA is coordinating the SADC Regional Information Infrastructure (SRII) to support these Protocol goals, leveraging regional fibre terrestrial routes and avoid international transit of SADC originated traffic (voice, data, Internet, TV) for SADC termination.

Mr Makumbe explained that Phase 1 caters for transmission links for the short, medium and long-term requirements, while Phase 2 comprises Intelligent Nodes including Next Generation Networks (NGN) and Internet Protocol (IP) based networks. Backhaul transmission links to connect SADC landlocked countries to the East and West Southern Africa undersea cables are also being implemented.

Mr Makumbe noted that, while most SADC Member States have put universal access/service mechanisms in place at a policy level, usually in the form of a Universal Access Fund, there has been limited implementation. This is usually due to affordability, potential fraud, lack of economic growth and competition from mobile services. Moreover, it has been observed within the SATA membership that once a telecommunications provider is privatised or finds a strategic partner, its commitment to participate in activities of regional agenda such as attending meetings, contributions to the regional body and cooperation in regional projects generally, declines.

Mr Makumbe then proceeded to briefly discuss the five priority areas of action addressed by the SADC ICT Declaration adopted in 2001.

**Priority no. 1:** Regulatory Environment for ICT is focused on creating a favourable regulatory environment, liberalising the telecommunications sector, removing trade barriers and restrictive license fees, reducing ICT related taxes and tariffs and development of a Regional Policy on ICT.

**Priority no. 2:** Infrastructure for ICT Development is focused on developing national ICT infrastructure to facilitate efficient communication at a national, regional, SADC Secretariat and global level, with particular attention to peripheral regions, social disadvantaged, education, healthcare, women, community groups etc.

**Priority no. 3:** Community Participation and Governance in ICT Development is focused on reducing disparities between men and women, rich and poor, rural and urban populations, enabling everyone to participate in the global information society.

**Priority no. 4:** ICT in Business Development is focused on removing barriers to electronic commerce in SADC countries with the goal of increase market access, create economic value from cultural assets, reduce administrative costs, and improve public service delivery.

**Priority no. 5:** Human Resource Capacity for ICT Development is focused on developing a comprehensive ICT oriented human resource development plan to enable the SADC Region to meet its needs and participate in the global economy.

Mr Makumbe noted that while much has been done on infrastructure and regulatory aspects, human capacity constraints and lack of financial resources have impacted on implementation of the SADC ICT Declaration. However, as part of the SADC/United Nations Economic Commission for Africa (UNECA) multi-year programme, the SADC Secretariat have recently embarked on a comprehensive 'e-SADC initiative', starting with consultants preparing an 'e-SADC strategy', whose terms of reference have already been agreed upon at the technical level.

Mr Makumbe concluded by stressing that ICT can make a critical contribution to the sustainable socio-economic development of SADC Member States and Regional Integration. Noting that the SADC ICT-related instruments are aligned with the MDGs, the WSIS Initiative, NEPAD ICT framework and aim to deliver the benefits of ICT to everyone in the SADC region, Mr Makumbe acknowledged that much work remains to be done for SADC to harness the potential of ICT for socio-economic development and regional integration. Finally, Mr Makumbe noted the need to have a coordinated approach to donor funding and project implementation at continental, regional and Member States' levels so as to avoid wastage of scarce resources.

## **The Role of Science and Technology in Attaining the Millenium Development Goals: Tanzania Perspectives**

**Ms Blandina Mkayula** presented on behalf of **Dr Shukuru Kayambwa, Minister of Communications, Science and Technology, Tanzania**. Ms Mkayulu focused on a Tanzanian perspective to the role of Science and Technology as a means to achieving the Millennium Development Goals (MDGs).

Tanzania, like many other African countries, requires the development and strengthening of a Science and Technology infrastructure that encompasses a strong National Innovation System to ensure that available S&T resources and Innovation potential are translated into socio-economic transformation of the society. This is a pre-requisite for attaining the MDGs.

Ms Mkayula noted that the role of Science, Technology and Innovation for socio-economic development is widely acknowledged. However, the development of knowledge (science) and its application (technology) has been uneven and inequitable around the world, resulting in marked socio-economic differences between the "North" and the "South", leading to the classification of "developed" or "less developed" regions. The richest countries, having c. 20% of the world's population, receive about 85% of total global income, whilst the poorest countries, with 80% of the world's population, receive only 1.4% of total global income.

Globalisation, which has been accelerated by ICT, while allowing easier access to knowledge for development, has also further exacerbated socio-economic inequity. There is an urgent need to close the ever-widening gap on the use of S&T as well as Information and Communication Technology (ICT). Key examples include; Biotechnology, ICT, Space Technology and Nuclear Technology. For countries of the South, the market forces that promote particular areas of Science and Technology in developed countries do not exist. Hence, Science and Technology is crucial for addressing critical problems of countries of the South.

In 2000, Tanzania developed its Poverty Reduction Strategy Paper (PRSP), outlining a short-term strategy set in the context of, and seeking to operationalize Vision 2025 and the National Poverty Eradication Strategy (NPES). Major objectives identified include reducing income poverty, improving human capabilities, survival and social well being. It also identifies 6 priority areas: Agriculture, Primary Education, Rural Roads, Water and Sanitation, the Legal and Judicial System, and Health. Several cross-cutting challenges were also identified in the PRSP, including HIV/AIDS, environmental degradation, gender inequality, and governance.

While both public and private sector institutions are involved in various research activities, most of the research is conducted by public R&D Institutes and Universities affiliated to the Tanzania Commission for Science and Technology (COSTECH). While COSTECH established R&D Advisory Committees to advise the Commission on sectoral research priorities, allocation of resources, and review of proposals, the challenge of coordinating institutions under different Ministries remains.

In 1985, Tanzania became one of the first African countries to implement UNESCO's recommendation in the 1960's to establish a National Science and Technology Policy. In 1986, Act No 7 transformed the National Scientific Research Council into the Tanzania Commission for Science and Technology with a wider mandate. In 1990, the Ministry for Science, Technology and Higher Education (precursor to the February 2008 established Ministry of Communications, Science and Technology) was established. In 1996, the National Science and Technology Policy was reviewed, followed in 2003 by the adoption of the Science and Technology Sub-Master Plan and in 2007 by formulation of the Draft National Research Policy. In 2008, the National Science, Technology and Innovation Policy was formulated by reviewing the National Science and Technology Policy of 1996 (Draft).

The Government of the United Republic of Tanzania aims to continue increasing funding for STI and R&D programs to 1% of its GDP, in line with the adopted S&T Sub Master Plan.

Tanzania was chosen by the Advisory Body of the Nelson Mandela African Institute of Science and Technology (NM-AIST) to host one of the four campuses in Sub-Saharan Africa (Abuja, Ouagadougou, Cape Town and Arusha Campus for the Western, Southern and Eastern Africa sub-regions respectively) that will offer academic programs with a focus on education and research in Science and Engineering to train future researchers and entrepreneurs from across Africa.

In conclusion, Ms Mkayula noted the need to encourage consultations, linkages and networking among all stakeholders in S&T, which includes universities, research institutions, industry, multilateral organisations, professional associations, development partners, civil society and government departments and the community to maximize the efficient use of resources in order to attain the Millennium Development Goals.

## **High-level Round Table on the Implementation of the Africa-EU Partnership on Science, Information Society and Space**

The Master of Ceremonies, Paul Cunningham, IIMC (IST-Africa Conference Chair), then introduced the two co-chairs of the Ministerial Roundtable, Dr Hakim Elwaer, Director HRST, African Union Commission and Jose Manuel Silva-Rodriguez, Director-General, DG Research, European Commission. The other Panelists were Mr Antti Peltomäki, Deputy Director-General, DG Information Society, European Commission, Mr Remigious Makumbe, Acting Chief Director of SADC Secretariat, Dr Phil Mjwara, Director-General, Department of Science and Technology, South Africa, Ms Blandina Mkayula, Ministry of Communications, Science and Technology, Tanzania, and Prof. Crispus Kiamba, Permanent Secretary, Ministry of Higher Education, Science and Technology, Kenya.

The Master of Ceremonies, acted as Moderator "in a friendly public forum to share different perspectives, including the African Union, the European Commission, some African Union Member States as well as a regional perspective".

The first question was put to Dr Elwaer.

### **"From the AUC perspective, what are some of the more urgent or critical issues to be addressed to successfully implement the 8th Priority of the EU-African Partnership on Science, Information Society and Space?"**

**Dr Elwaer** noted that the themes of the partnership were based on the CPA for Science and Technology (integrating the previously announced NEPAD and African Union plans). On the ICT side, the ARAPKE has identified the areas of priority and identified 11 flagship projects of which 5 were prioritised in the joint EU – African Partnership at the Lisbon Summit. Dr Elwaer continued by discussing the theme of the 8th partnership. The process is now to open implementation, which he hoped would be discussed by Jose Manuel Silva-Rodriguez, Director-General, DG Research, European Commission.

Before passing to the Director-General, Paul Cunningham called on Anti Peltomäki, Deputy Director-General, DG Information Society and Media, European Commission, to address money and budget issues.

The second question was put to Mr Peltomäki.

### **"How do you respond to issues related to financial resources to actually implement what has been stated as well understood plans?"**

**Mr Peltomäki** highlighted the burning issue that everyone is now ready for action. Priorities are well defined and this was very important in order not to further dilute resources and to avoid fragmentation. It is now up to the African Member States, African Commission and NEPAD.

## **European Commission Perspectives on Implementing the 8th Priority of the EU-African Partnership on Science, Information Society and Space**

Paul Cunningham then asked Jose Manuel Silva-Rodriguez to share some European Commission perspectives.

**Mr Silva-Rodriguez** thanked Paul Cunningham (Conference Chair) and the Government of Namibia for the invitation to attend IST-Africa 2008, noting that it took place at “a very important moment”. In 2007 two big elements were addressed to research. In December 2007 the Lisbon Summit put one priority on Science, Information Society and Space, while in January 2007, the 7th Framework Programme (FP7) to fund research entered into force. FP7 has the ambition to be open to participation from all round the world.

Mr Silva-Rodriguez stressed the necessity of putting together the synergies of these two programmes. Lisbon will support better infrastructure in Africa, while International Cooperation under FP7 will support excellence in research cooperation with Africa. These two programmes have the political support of European Member States.

Mr Silva-Rodriguez explained that Dr Elwaer is essentially his counterpart in the African Union Commission, and that he was very pleased that he was participating at IST-Africa 2008. He stated that it is necessary to put both African Union Commission and European Commission personnel together to obtain excellence, sustainable development, infrastructures, and to obtain the maximum budget possible. It is important not to forget that the 8th priority of the EU-African Partnership is only one priority, and other priorities could develop first and attract funding. It is necessary to have the relevant tools in place to achieve the best projects.

Mr Silva-Rodriguez explained that in each Delegation of the European Commission, there is a representative responsible for FP7, to share knowledge and promote networking in partner countries. He stressed the essential part that networking has to play, and mentioned CAAST-NET’s important role in improving relations between African and European scientists and researchers.

The first element therefore, is having the political decision. Secondly, the necessary tools are in place to work on this. The third element, is to put clear projects on the table, based on excellence, sound infrastructure and will achieve sustainable development. Projects that will be linked to innovation, economic growth and visibility – demonstrating that something good is happening for society.

Mr Silva-Rodriguez stressed that this visibility is important because under the Lisbon Summit there is not any specific allocation of resources for specific projects in Africa. These funds can only be released through a competition for funding between different priorities. It is necessary to show that proposed projects for Africa in the area of Science, Information Society and Space are better than others proposed under other priorities for funding. Mr Silva-Rodriguez indicated that there are three elements he would like to see dealt with during this roundtable: “how we deal with the political decision; how we deal with the tools; and how we establish the priorities”.

Mr Silva-Rodriguez noted the different projects that speakers outlined during the morning, and agreed that it was necessary to make progress, not spend further time doing diagnosis. He quoted the former Director-General of UNESCO who once stated that “The best diagnosis is an autopsy. But unfortunately, this arrives too late.”

Mr Silva-Rodriguez stated that now is the time to act, to put good projects, networking systems and different actors on the table, to ensure strategic ICT related projects for Africa have the necessary credibility.

In conclusion Mr Silva-Rodriguez stated that IST-Africa 2008 was an important contributor to making progress now, and that he was happy that this meeting is part of an important European Commission supported Initiative and that Paul Cunningham was facilitating the round table discussion today. He stressed how important it was that other people do not have the opportunity to take money that could be allocated to Africa under the 8th Priority.

## **Discussion of Ways Forward**

In response to Mr Silva-Rodriguez comments, **Dr Elwaer** agreed that the time was right for action. What had to be remembered however, is that the Lisbon Summit was a follow up to many other such political conferences. A two-year Action Point was agreed at the Summit, based on previous work by key stakeholders working with the African Union Commission and European Commission. The next Summit will be hosted in Tripoli, Libya in 2009, and the main topic of discussion will be progress over the two years since Lisbon on implementation of the two-year action plan.

The European Heads of States and the European Commission have committed themselves to implementation

of the 8th Priority on Science, Information Society and Space. Dr Elwaer agreed with Mr Silva-Rodriguez that it was necessary to compete for funding for this important priority, against other priorities where in many cases no tangible activities have been defined. The key challenge is to come up with concrete areas of cooperation. What is worrying from the African side is no specific allocation or resources to implementation of the joint partnership agreement for the 8th Priority on Science, Information Society and Space. The European Commission is now looking at the possibilities to ensure the agreed projects are funded in a timely fashion.

The ideal situation for a joint partnership is to have a specific allocation of dedicated funding, based on identified projects as defined by the African Union Commission and the Regional Economic Communities (RECs). From the African side, such funding should not be mixed with existing funding programmes such as EDF 9 or FP7. From this funding perspective, the Lisbon Summit does not change much. While in the case of competitive funding, individual African member States can apply for such funding without restriction, Dr Elwaer stated that as a matter of principle the African Union Commission will not compete with its own Member States for such funding. However, if there were a specific allocation of funding for Priority 8, the AUC would apply. Dr Elwaer suggested that it was important to be able to show Heads of States that progress has been made by 2009.

Dr Elwaer understood that DG Information Society and Media and DG Research of the European Commission will campaign with Member States for a specific allocation for funding for Priority 8. As this is a process that can take between one and five years, the African Member States will not be happy to wait, but he knew that his colleagues from the European Commission would do their best.

Dr Elwaer indicated that he was quite disappointed that there is no one from DG Development was present at IST-Africa 2008, as he understood that they held a lot of money on the European Commission side.

Dr Elwaer suggested that it was important the European Commission should act quickly to address the resources allocation for the joint agreement. Dr Elwaer said that specific training may be required to support Member States and RECs to access available funding. Dr Elwaer proposed that existing procedures should be exempted, shortened and/or relaxed to make the joint AU-EU partnership work.

In conclusion Dr Elwaer stated that priorities have already been identified, and he would be hesitant about any need for further discussion about creating a policy and schedule of work. The proposed ARAPKE flagship projects were generated by Ministers of ICT from African Member States, of which 5 of the 11 were shortlisted, with associated plan and budget breakdown and implementation stages. He hoped that it would not be necessary to have much more negotiation to make the joint partnership agreement work.

Paul Cunningham thanked Dr Elwaer, Mr Silva-Rodriguez and Mr Peltomäki for sharing an AUC and European Commission perspective. He noted that Coordination was "the biggest game in town". The roundtable is addressing pan-African issues, as well as those affecting Regional Economic Communities (RECs) and Member States.

### Sharing Perspectives on Benefits of Leveraging European Development Funds at REC Level

Paul Cunningham then reverted to **Mr Remigious Makumbe**, Acting Chief Director of SADC Secretariat, noting that to the best of his knowledge, SADC was the only Regional Economic Community (REC) in Africa yet to adopt a protocol for ICT. Paul noted that it would be very interesting to see other Regional Economic Communities adopting such a protocol themselves. Paul then asked Mr Makumbe to share some perspectives on the benefits of leveraging European Development Funds at REC level.

Mr Makumbe noted that EDF9 was currently winding up and that SADC was currently negotiating EDF10. Within the context of the regional economic integration, most funding is dedicated to facilitate the areas of trade and custom, transport, communications, energy and ICTs. There are two key objectives of such regional economic integration: (1) to facilitate trade within the SADC region (which is likely to increase enormously after signature of the free trade agreement to be signed in August 2008 and the customs union to be launched in August 2010); and (2) poverty reduction, as trade does not necessarily reduce poverty. The SADC Secretariat is looking closely at leveraging ICT projects to reduce poverty across SADC.

EDF10 introduces a competitive nature to project funding in the future, as going forward, only well packaged projects can be funded. Those countries or RECs who can demonstrate the credibility and readiness of specific proposals will stand a better chance of securing funding.

Best practise projects are essential as this allows lessons to be shared across different Member States. Thematic groups have been established in different areas to identify opportunities in specific sectors including ICT and transport for example. These thematic groups will cooperate to identify different funding opportunities. Mr Makumbe hoped that such a system will help inspire confidence in international partners.

The aim is to reach a certain level of synergy in relation to ICT funding with no duplication of funding, but allowing the same project to be funded by several partners or "envelope" type of funding.

The Moderator asked Mr Makumbe to ***briefly discuss what was involved in adopting the protocol for S&T and how important this structure was in giving SADC a competitive advantage in the new EDF-10.***

Mr Makumbe replied that SADC has been working on the protocols since the early 1990s. Today there are 25 protocols signed by Heads of State. The protocol on S&T is one of the most recent. It brings forward the commitment to implement projects on a collective basis, therefore articulating cooperation and recognition and setting specific targets, such as legislative and regulatory issues. Once the protocol is on the ground it determines the strategy based on experience from earlier signed protocols. Developing these protocols into a very specific programme for funding in a very focused manner can be an effective vehicle to achieve objectives. Finally, Mr Makumbe strongly recommended this route to the Members that have not taken it yet.

Paul Cunningham, the Moderator, encouraged senior representatives of other Regional Economic Communities (RECs) attending IST-Africa 2008 to follow up with Mr Makumbe during or after the conference to learn more about SADC's exploitation of protocols for ICT, and how these could be adapted to meet their needs. Paul hoped that other RECs would be in a position to present their experiences at IST-Africa 2009.

## **Sharing an African Member State Perspective on Joint Partnership between Europe and Africa**

The Moderator then asked Dr Phil Mjwara to share a Member State perspective.

**Dr Mjwara** suggested that being involved in a joint partnership between Europe and Africa, it is essential for Member States to provide a suitable environment to support S&T. This requires the development of Science, Technology and Innovation Policies, and South Africa is actively involved in supporting such policies not just in South Africa, but also in other African Member States. He also noted the importance of developing indicators to ensure the country is on the correct path.

While Dr Mjwara noted the importance of having partners ready to provide financial support, he stressed the necessity for all African Member States to put some of their own resources on the table. All African countries have been encouraged to invest 1% of national GDP on Science and Technology. South Africa hopes to achieve this by 2008, and mechanisms have been put in place (including an annual survey) to measure the investment achieved each year. It is important to have the basics in place.

In relation to the protocols for Science and Technology, Ministers were given a document suggesting how pan-SADC cooperation can best be achieved in this domain. The S&T protocol offers the opportunity to identify projects of common interest and cooperate to achieve these goals. Unless Member States comes together to cooperate, nothing happens. Dr Mjwara hoped that the next Heads of State would approve the resources to fund a desk focused on S&T cooperation.

He highlighted the importance of the international funding instruments for shaping the specific programmes, and raised a hope that this will be done hand in hand by the European Commission with African Union Commission HRST Division.

Nowadays the research programmes often address a combination of research and socio-economic issues. To design the funding mechanism for the future projects Dr Mjwara proposed to consider the Intra-African, Caribbean and Pacific (ACP) component of the European Development Fund as an opportunity for financial support, while inviting the Member States to participate as sponsors. Dr Mjwara explained that 150 million euro was allocated to South African research projects included various programmes (Framework 6 and Framework 7 – including 70 million in funding), which are good indicators of South African international capability for research.

The programmes that already take place in South Africa demonstrate a strong continental dimension. The initiative to host the square kilometre ray - the radio-telescope that has a ray distribution all over the African continent is now turned into a plan to connect these dishes through optic fibre so that it will act as a single telescope in the sky. The data that will be collected, processed and analysed is connecting their thematic content of research and letting South Africa build its own capacity in some aspects of ICT. Dr Mjwara described this not as just a South African project, but rather an African project.

Another extremely important pan-African project is a ground station in Kenya with a capacity to download a light image for almost half of the African continent. African countries working together with the EU on the GEMS project for Africa have to start developing a number of applications dealing with such issues as diseases, environmental tasks, global climate change by using this light image. Dr Mjwara suggested it might be a societal benefit and offered it to be a second possible project within the region. However, there are many other projects with a continental dimension, among which are the African Laser Centre, African Institute of Mathematical Sciences and the CAAST-NET project.

Finally, Dr Mjwara stressed the importance of the partnership within the African countries and with the EU and highlighted the necessity to strengthen these connections by allocating some resources from South Africa.

The Moderator thanked Dr Mjwara and before moving to another roundtable speaker highlighted the issue of South Africa setting aside a part of its available research funds to leverage the opportunity for building consortiums with credible South African partners and to support engagements with European researchers, and recommended that a similar policy be adopted by other African Member States.

Dr Mjwara explained that South Africa's success under FP6 was due to supporting individual researchers and groups. He raised a question how would it be the best to start moving towards African consortium and recalled what happened in the health sector when the need to solve some identical problems led to a situation where different institutions were pulled together including the private sector. Finding an angle and focus would be the main point for the African consortiums. While several African countries (Namibia, South Africa, Mozambique) already have a pool of similar activities and show interest in working together, this interaction may become a model that can be explored in the few next months.

### **Role of Kenya as Champion for ICT in the context of AMCOST**

The Moderator, Paul Cunningham, thanked Dr Mjwara and invited **Prof Kiamba** to share what Kenya sees as its role as a champion for ICT in the context of currently being chair of AMCOST.

Prof Kiamba explained the AMCOST acronym (African Ministerial Committee on Science and Technology), formed in 2003 with South Africa as the first chair, followed by Senegal in 2005. Kenya assumed the chair in 2007 following the conference in Mombassa. The main aim of AMCOST is to implement the Consolidated Plan of Action (CPA) on African S&T.

The conferences are held once every 2 years and the Bureau represents 5 countries with 5 Ministers of 5 economic blocks: North, South, West, East and Central. The chair of the Committee is also the chair of the Bureau.

The conference is to implement the CPA, working closely with the Member States supported by Department of Human Resource Science and Technology, African Union Commission, headed by Dr Elwaer. Kenya has only been head of AMCOST for a year so what has been achieved to date is not significant. However, Prof Kiamba noted Kenya's determination to make a significant impact over its two-year term.

### **Forecasts for Next 2 years**

The Moderator asked panellists to share their thoughts about forecasts for the next 2 years, starting with Dr Elwaer.

Recapturing what had been said earlier by other speakers, **Dr Elwaer** highlighted the need for a very clear policy and strategy on S&T for the African countries. AMCOST is placing each Member State's R&D as a priority. Regional Networks together with associated Economic groupings is very important, especially for those countries that do not possess enough capacity to develop and maintain research projects. In the next 2 years the main goal would be to share the experience of successful regional networks between African countries, particularly in terms of advancing the cause of S&T in Africa.

**Prof Kiamba** paid special attention to funding. He suggested that African countries are able to contribute towards the cost of S&T and supported the opinion that at least 1% of each Member State's GDP must be allocated towards funding. Attracting African private sector participation was mentioned as an opportunity to raise funds. The other pivotal point for successful S&T development is the partnership between the African States and collaboration with the EU generally as a continent as well as interaction between the Member States. As Kenya is current AMCOST chair, Prof Kiamba suggested these various types of partnerships must be aggressively enhanced.

### **Final Remarks from African Union Commission and European Commission**

The Moderator thanked Prof Kiamba and offered Dr Elwaer and Mr Silva-Rodriguez the opportunity to add some final remarks.

**Mr Silva-Rodriguez** stressed that the question of the budget allocation for Priority 8 not being fixed is due to the nature of different meetings that determine the allocation of funds. The project credibility defines the possibility to get financial support from the European Commission and actual amount of this support, with priority given to high impact projects. Mr Silva-Rodriguez praised the proposed pan-African projects as being well defined, which will raise their credibility and shows a good example to others.

The other important question raised by Mr. Silva-Rodriguez was the engagement of African Union Member States. The willingness to support good ideas with some level of funding was described as a winning

opportunity for the Member States. He stressed the importance of interaction between African Member States and the EU, highlighting the importance of the collective EU Member States aid to Africa, being much higher than that provided by the European Commission.

Mr Silva-Rodriguez announced the upcoming International Cooperation Programme for the Member States to be proposed at the end of 2008. As a part of this new programme, International Cooperation with Africa is established to provide a high possibility to facilitate the networking and initiatives in Africa. Finally, Mr Silva-Rodriguez advised the African States to get connected to work together and provide credible projects with excellence of the proposal to be the main goal.

The Moderator thanked Mr Silva-Rodriguez and invited Dr Elwaer to make some final comments.

**Dr Elwaer** noted that finding the best use of the available resources before the next EU-Africa Summit would be a necessary strategy for fulfilling the priority requirements.

Dr Elwaer thanked Prof Kiamba for giving a clear definition of AMCOST and explained the role of AMCOST within the AU hierarchy. AMCOST is a policy making body for S&T matters and also the meeting place for the African Ministers of S&T. The main aim of this organisation is the implementation of CPA policies with the Bureau as the follow-up mechanism. Dr Elwaer highlighted that the actual decision policy-making process starts with the Heads of the States.

This process is preceded by the Foreign Ministers with the Sectorial Ministerial Councils (or STCs -Specialised Technical Committees) under their control. AMCOST is the Specialised Technical Committee of S&T and it passes the policies for adoption and endorsement to the Executive Councils and the Heads of States.

Moreover, it exercises a variety of activities in many areas. COMEDAF is the Educational Ministerial Council. In particular, the department takes care of secretariat work and is facilitating Councils (AMCOST, COMEDAF, CRT, COMY).

Dr Elwaer stated that other initiatives such as IST-Africa are very important tools to advise policy makers. The timing of IST-Africa 2008 is a great importance, with the outcomes to be presented to the upcoming CRT (Country Review Team) meeting for any further guidelines and policy development shortly once the agenda is being set up. The outcomes agreed by the CRT meeting can then be presented to the Bureau meeting.

Dr Elwaer stressed that the African Union Commission puts a lot of pressure and hope on the AMCOST chair, mentioning the great job of designing and developing the CPA done by South Africa. This Consolidated Plan of Action then led to the identifying of the various projects by Senegal. Kenya today has the task to integrate and harmonise these projects.

The major outcome of two last AMCOST meetings revealed two main aspects: involvement of the partners, in particular, the UN agencies and the AMCOST as a steering Committee. The Steering Committee and the Bureau of Ministers has agreed that the UN Cluster on S&T (UNESCO) has to represent all the United Nations agencies working on S&T as a permanent member in the Steering Committee of AMCOST. That adds a huge influence of the UN to the policy development in the continent.

The other issue is to establish the African Cluster on S&T (ACST). There are many initiatives coming from different countries that need to be coordinated and harmonised at a Regional and Continental level to avoid duplication and fulfil the requirements. The ACST is an umbrella guided by the African Union Commission where all the players in S&T in ICT field would come as Members and agree to develop a yearly unique and resource-wise plan to Africa. Indeed, the hopes are that Kenya as a major player in the East African region will promote integration and get the CPA domesticated at original and the Member State level.

The Moderator thanked Dr Elwaer and acknowledged the contributions by the other presenters before asking Prof. Crispus Kiamba to present the Conclusion of the Windhoek Round Table on behalf of the AMCOST Chair.

## **IST-Africa 2008: Conclusions of Round Table on Implementation of the Africa – EU Partnership on Science, Information Society and Space**

Professor Crispus Kiamba, Permanent Secretary, Ministry of Higher Education, Science and Technology, Kenya presented the Conclusions to the Round Table.

*Windhoek, Namibia: 7 May 2008*

1. *Ministers from several African countries, with responsibility for Science and Technology or Information Society Policy Development, as well senior office-bearers from the African Union Commission, the Southern African Development Community and the European Commission, participated in a Round Table discussion on the implementation of the Africa – EU Partnership on Science, Information Society and Space, which was adopted as part of the Joint Africa – EU Strategy at the Africa – EU Summit held in Lisbon, Portugal on 8-9 December 2007. The Round Table discussion took place during the Opening Plenary Session of the IST-Africa 2008 Conference, held in Windhoek, Namibia on 7 May 2008.*
2. *The objective of the Round Table discussion was to permit a joint reflection by senior African and European policymakers on the required actions to ensure the early and effective implementation of the Partnership. Within this context the participants considered key challenges and opportunities related to the implementation of the Partnership such as the need for an enabling policy environment and the availability of financing instruments, as well as the role of Science and the Information Society as instruments for sustainable development and vectors for regional cooperation and integration. In order to enrich the discussion participants shared perspectives, informed by their own national or institutional experiences related to these aspects.*
3. *These Conclusions were compiled as a concise summary of the central messages resulting from the discussions, which the participants would like to present to other actors and stakeholders concerned with the implementation of the Partnership.*

We, the undersigned, participants in the Round Table discussion on the Implementation of the Africa – EU Partnership on Science, Information Society and Space, organised at the IST-Africa 2008 Conference, would like to share the following key conclusions of our discussions with all other actors and stakeholders concerned with the implementation of the Partnership, on whom we call to join us in concerted, sustained and coordinated efforts, to ensure the realisation of the objectives set by our Heads of State and Government at the Africa-EU Summit of 2007:

- (a) An enabling policy environment will be essential for the effective implementation of the Partnership, we accordingly call for an enhanced Africa – EU Science and Information Society Policy Dialogue, to permit mutual policy learning and coordination.
- (b) As the availability of appropriate funding instruments will be imperative to achieve the goals of the Partnership, we encourage new, specific and sustained investments from national and regional, public and private, funding sources by all partners concerned with the objectives of the Partnership.
- (c) The need for massive Science and Information Society capacity-building efforts in Africa, especially with regard to human capital, policy, infrastructure and institutional development remains critical. We therefore underline the importance of African capacity-building as one of the key priorities of the Partnership, capacity-building which should be targeted to support the objectives articulated in the African Union / NEPAD Science and Technology Consolidated Plan of Action and in the African Regional Action Plan on the Knowledge Economy. Within the context of the IST-Africa Conference we would also like to draw special attention to the need for investment in research infrastructures, especially research and education networks.
- (d) Whilst capacity-building remains paramount, the important contribution of Africa's knowledge and innovation communities to contribute to international Science and Technology endeavours, especially those related to knowledge generation for shared global challenges, should not be overlooked. We accordingly appeal for stepped-up efforts as part of the Partnership to promote and facilitate improved research cooperation between African and European partners. In this regard we think it is important to better exploit the opportunities presented by the EU Seventh Framework Programme and other European funding mechanisms to support such cooperation and welcome initiatives such as the CAAST-Net network

targeting this objective.

- (e) We share a strong conviction that research and innovation, and the development of the information society, are critical instruments, without which global sustainable development, including poverty alleviation objectives such as the Millennium Development Goals, and equitable and sustained economic growth, would not be attained. Our respective experiences also confirm the invaluable role played by Science and the Information Society as enablers for deepened regional cooperation and integration, as well as in fostering improved understanding between nations on issues of global concern. We therefore strongly appeal for the Partnership on Science, Information Society and Space, to be seen as a paramount priority in the implementation of the Joint Africa – EU Strategy.
- (f) These Conclusions are submitted to inform the Member Countries of the African Ministerial Council on Science and Technology (AMCOST), the Member States of the European Union, as well as the African Union Commission - European Commission Joint Task Force, entrusted with the implementation of the Partnership.

### **List of Participants and Contributors**

Honourable Nangolo Mbumba, Minister of Education, Namibia

Honourable Raphael Dinyando, Deputy Minister of Information and Communication Technology, Namibia

Honourable Amos Kamama, Deputy Minister of Higher Education, Science and Technology, Kenya

Professor Crispus Kiamba, Permanent Secretary, Ministry of Higher Education, Science and Technology, Kenya

Honourable Ham-Mukasa Mulira, Minister of Information Communication Technology, Uganda

Dr Abdul-Hakim Elwaer, Director, HRST, African Union Commission

Mr Jose Manual Silva Rodriguez, Director-General, DG Research, European Commission

Mr Antti Peltomaki, Deputy Director-General, DG Information Society and Media, European Commission

Dr Phil Mjwara, Director-General, Department of Science and Technology, South Africa

Mr Remigious Makumbe, Southern African Development Community Secretariat

Ms Blandina Mkyula, Assistant to the Minister, Ministry of Communications, Science and Technology, Tanzania

## Workshops

Alongside thematic paper sessions, twelve workshops also took place during the Scientific Programme of IST-Africa 2008. These workshops were organised around applied ICT activities currently running in Europe and Africa.

### Workshop 3a [Innovation in Namibia](#)

Chair: [Justin Ellis, Ministry of Education, Namibia](#)

**Namibia Business Innovation Centre**

Tjama Tjivikua, Polytechnic of Namibia

**Namibia Network Information Centre**

Ben Fuller & Eberhard Lisse, Namibia Network Information Centre

**Tech/Na! The Namibian ICT in Education Initiative**

Johan van Wyk, Ministry of Education, Namibia

This 90 minute workshop was organised by the Division of National Research, Science, Technology and Innovation of the Ministry of Education to showcase national innovation in the Host Country.

### Workshop 3b/4b [eHealth - Integrated District Health Information Systems in Africa](#)

Chair: [Jørn Braa, University of Oslo, Norway](#)

**De-fragmenting Health Information Systems in Sierra Leone: Horizontal and Vertical Integration**

Edem Kwame Kossi, University of Oslo, Norway

**Institutionalising the Integration of Health Information Systems through Stakeholder Buy-in: The Case of Malawi**

Anthony Muyepa-Phiri, University of Malawi, Malawi

**Implementing Health Information System in Zanzibar: Using Internet for Communication, Information Sharing and Learning**

Yahya Hamad Sheikh, The State University of Zanzibar / University of Oslo, United Republic of Tanzania

**Scaling HIS in Developing Countries: Case Studies from Ethiopia**

Desalegn Zegeye, University of Gondar, Ethiopia

**Integrating software to monitor HIV/AIDS: The case of eBHRIMS in Botswana**

Johan Saebo, University of Oslo, Norway

**From User Training to In-Service Support**

Jens Kaasbøll, University of Oslo, Norway

**Using Communities of Practice as a Lens for Understanding Organisational Change**

Vincent Shaw, Health Information Systems Programme, Namibia

**South-South Collaboration: Adapting Information Systems Integration Strategies in Namibia**

Louisa Williamson, University of Oslo, South Africa

This 180-minute workshop was organised by the BEANISH FP6 Project coordinator, Jørn Braa of University of Oslo, focusing on the issues of e-HIS (Health Information System) integration and scaling in Africa.

Using the case of Sierra Leone, the first presentation aimed to demonstrate how to take advantage of technology in integrating heterogeneous systems through an integrated data repository approach using flexible software, gateways and data standards between incompatible systems.

The second presentation emphasised the role that stakeholders play in the design and implementation of integrated Health Information Systems in Malawi. Without stakeholder buy-in, there is a great chance of resistance to integrate the fragmented health information systems belonging to different programmes.

The third presentation presented a study in Zanzibar, which recognises the challenges encountered in the implementation process, notably information culture and political and legal e-readiness, and advocates for a participatory approach to the design process whereby the designed tools should aim at increasing information accessibility as an attractor to encouraging information use.

The fourth presentation analysed challenges faced during the scaling of computer systems in Ethiopia.

The fifth presentation described an ongoing project in Botswana to improve monitoring and evaluation of HIV/AIDS programs using a range of different software packages.

The findings in the sixth presentation indicated that initial, interactive training sessions in small groups followed by support provided regularly, embedded in the normal supervision provided by managers or others is likely to improve organisational performance.

The seventh presentation provided a case study, which describes the objections of a group of users to the new

set of procedures and processes associated with the introduction of new software. The presentation suggests that by using the lens of communities of practice the implementation process can be adjusted to accommodate the specific needs of groups of users.

The eighth presentation described the approach adopted to integrate fragmented health information systems within the Namibian health care system. Challenges to integration were explored.

### Workshop 3d **Converging Technical and Non-Technical Consumer Needs in ICT Trust, Security & Dependability across Disciplines**

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Chair: **Ilari Lindy, ENISA, Greece**

#### **ENISA - Fostering the Culture of Network and Information Security**

Ilari Lindy, ENISA, Greece

#### **Challenges for the Protection of Critical ICT-Based Financial Infrastructures**

James Clarke, Waterford Institute of Technology, Ireland (presented by Aljosa Pasic)

#### **Requirements and Potential for Information Security as a Key Capability for Technological Innovation**

Laurens Cloete, Meraka Institute, South Africa

#### **Building a World Class Information Security Governance model**

Marthie Lessing, CSIR, South Africa

#### **Identica project - Leveraging Biometrics**

Aljosa Pasic, ATOS Origin, Spain

#### **Information Security, Access Controls and the Reliability of Intrusion Detection Systems**

Nhlanhla Mlitwa, Cape Peninsula University, South Africa

Discussion

This 180-minute workshop was organised by Jim Clarke of Waterford Institute of Technology, Ireland and Ilari Lindy of ENISA, Greece. It focused on strategic ICT security related issues, and particularly the need for a global framework for trust, security and dependability, which is balanced, effective and efficient. This can be difficult to achieve, as key factors such as information and privacy, strength and robustness of protection; cost and effectiveness; performance; usability; human freedom and civil rights; evolving commercial opportunities and opportunism; social responsibilities; collective security, mandatory basics and discretionary add-ons, tend to conflict with each other.

The first presentation provided a global overview of on-going work on the areas as CERTs, Risk Management for SMEs and Awareness Raising by the responsible European agency. The second presentation focused on the findings of a recent financial services oriented workshop held in Germany. The third presentation concerns the requirements and potential for information security as a key capability for technological innovation in support of the Information Society. The presentation specifically considered the case of South Africa and presented the rationale for local capability in information security and the links this has with innovation potential. The fourth presentation focused on a model for best practice driven Information Security Governance, while the fifth presentation discussed a Spanish national RTD project (IDENTICA) currently looking for African partners for a multimodal biometrics database. The final presentation will focus on Intrusion Detection Systems.

### Workshop 5a/6a **IST-Africa - Linking European & African Researchers**

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Chair: **Paul Cunningham, IIMC, Ireland & Anneline Morgan, DST, South Africa**

#### **Research Capacity and Challenges in Namibia**

John Sifani, Ministry of Education, Namibia

#### **Initiatives Towards Developing ICT Skills in Botswana**

Bambi Vubu, Ministry of Communications, Science and Technology, Botswana

#### **Research Capacity and Challenges in Lesotho**

Maseqobela Williams, Department of Science and Technology, Lesotho

#### **Research Capacity and Challenges in Uganda**

Richard B. Lutalo, Uganda Council for Science and Technology, Uganda

#### **Research Capacity and Challenges in Tanzania**

Hamisi Nguli, COSTECH, Tanzania

#### **e-Governance Objectives and Policy in Uganda**

Honourable Ham-Mukasa Mulira, Minister of Information and Communications Technology (ICT), Republic of Uganda

#### **Research Capacity and Challenges in South Africa**

Cristina Pinto, Wits Enterprise, South Africa

#### **Research Capacity and Challenges in Mozambique**

Zauria Saifodine, ICT Policy Implementation Technical Unit (UTICT), Mozambique

#### **Research Capacity and Challenges in Kenya**

Prof. Crispus Kiamba, Ministry of Science and Technology, Kenya

#### **Discussion and Next Steps**

IST-Africa ("Regional Impact of Information Society Technologies in Africa ") is a Multi-Stakeholder Initiative

focused on reducing the Digital Divide in Sub-Saharan Africa through Training to Reduce the Digital Divide; Skills Transfer to Support Research Capacity Building & Awareness and Community Building to Support EU-African Research Cooperation. IST-Africa 2008 – 2009 is funded as a Specific Support Action by the European Commission under the ICT Programme of Framework Programme 7.

The main objectives of the IST-Africa Initiative are to establish a better understanding of current exploitation of Applied ICT in Africa and opportunities for adaptation of European funded research results and international research collaboration, to establish a collaboration framework for researchers and government officials in European and African States, promote the participation of high potential African research organisations to be included as partners in FP7-ICT Proposals and to create a sustainable community with strong pan-African and pan-European participation, focused on the economic and social impact of Applied ICT in Africa.

The IST-Africa Consortium (which incorporates partners from Ireland, Botswana, Lesotho, Mozambique, Namibia, South Africa, Tanzania, Uganda and Malta) has run FP7 Training Workshops in 7 African countries in Southern and East Africa during late November and December '07. The IST-Africa African partners in Namibia, South Africa, Botswana, Lesotho, Mozambique, Tanzania, Uganda and the Ministry of Higher Education, Science and Technology, Kenya are supporting their national research communities to identify research potential, thematic areas of relevance and challenges for future participation in the ICT theme of FP7.

This 180-minute workshop shared the results of the work to date, outlined some of the high potential organisations in each country who have the capacity to partner with European organisations, and facilitated face to face engagement between African and European organisations to start the process of building functional partnerships. The workshop was very well attended and very interactive. Participants also had a pleasure to hearing from Honourable Ham-Mukasa Mulira, Minister of Information and Communications Technology (ICT), Republic of Uganda in relation to the ICT Environment, Regulation and ICT Initiatives being supported in Uganda.

The next steps for participants is to complete and return their organisational profile to their national IST-Africa partner and continue engagement with the European and African colleagues they met during this workshop and during the conference to build functional partnerships for future collaborative projects and joint research.

#### Workshop 5e/6e/7e/8e [Building a Research Network Infrastructure](#)

African Co-Chairs: [Boubakar Barry, AAU NREN unit](#); [Francis Tusubira, UbuntuNet Alliance](#)

European Co-Chairs: [Bjorn Pehrson, KTH](#); [Cathrin Stöver, DANTE](#)

##### **Introduction**

Bjorn Pehrson, KTH, Sweden

##### **Welcome**

Boubakar Barry, Association of African Universities, Ghana

##### **Policy**

Dr Hakim Elwaer, HRST, African Union Commission

Carmen Mena Abela & Thierry Devars, European Commission

##### **GEANT2 and European Global Research Networking Activities**

Cathrin Stover, DANTE, United Kingdom

##### **UbuntuNet Alliance**

Margaret Ngwira, UbuntuNet Alliance for Research and Education Networking, Malawi

##### **Progress and plans, including updates from the region**

Francis Tusubira, UbuntuNet Alliance, Uganda

Discussion

#### **Session 2: State of the Art of Research Networking in Africa**

##### **Status of the Emerging African Optical Fiber Infrastructure: Prospects for Growth & Policy and Regulatory Challenges**

Francis Tusubira, UbuntuNet Alliance, Uganda

##### **AAU NREN Unit - Updates from the Region**

Boubakar BARRY, Association of African Universities, Ghana

##### **UbuntuNet Alliance - Progress and Plans**

Albert Nsengiyumva, Rwanda Education and Research Network, Rwanda

##### **Research Networking in Western Africa**

Emmanuel Tonye, Cameroon

Discussion

#### **Session 3: Applications**

##### **Digital Libraries**

Margaret Ngwira, UbuntuNet Alliance for Research and Education Networking, Malawi

##### **eLearning Applications in X-WiN**

Gerti Foest, DFN-Verein, Germany

## **Dissemination of Evidence-based Drug Information**

Elisabeth Törnqvist, Karolinska Institutet, Sweden

## **Experiences from Using Open Source Networking Components in Production Networks**

Bjorn Pehrson, KTH, Sweden

Discussion

### **Session 4: Round Table**

#### **Application Introductions**

##### **Wireless Links**

Marco Zennaro, ICTP, Italy

##### **NRENs in Construction - Successes and Plans, MAREN, RENU, TERNET, ZAMREN**

Anthony Muyepa, Ali Ndiwalana, John Kondoro, Jameson Mbale

#### **Round Table Discussion**

This full day workshop was focused on providing an overview and common understanding of activities in Europe and Africa in relation to building Research Network Infrastructure and how Europe and Africa can support these initiatives.

The morning sessions were focused around short presentations to provide a context for discussions later in the day. The European Commission and African Union Commission provided short introductions. This was followed by a presentation on GEANT2 achievements, European regional networking activities and the current status and future plans of the UbuntuNet Alliance in Africa. The Association of African Universities gave an overview of NREN developments in Africa and the key challenges encountered. This was followed by a more detailed overview of developments in Nigeria, Ghana, Senegal and Cameroon.

These presentations initiated discussions in relation to initiatives such as those being undertaken by the Indian government to bring connectivity to African research and education institutions via a planned fibre landing and distribution via VSAT. The African academics present vocalised that VSAT connectivity would not be sufficient for their needs. To move the REN agenda forward, it was agreed that UbuntuNet would follow up with AUC and NEPAD until a level was reached where progress was one of the reporting requirements at Ministerial and Heads of Government level.

During the afternoon session, a number of presentations were given, focused on applications in the area of digital libraries, e-learning and evidence-based drug information, followed by a presentation on the experiences from using open source networking components in production networks.

The final session of the workshop was focused around two main discussion points:

“What should Africa (UbuntuNet Alliance/AUU) do to further R&E networking in Africa?” and

“What should Europe (EC) do to support African R&E networking?”

The thirty participants present at the final session were asked to provide brief written statements around these discussion points. As a result the following main points were highlighted as the next steps to be addressed as a result of this workshop:

- 1) It is essential for the UbuntuNet Alliance and the AAU to increase advocacy and lobbying activities to increase the momentum already created
- 2) African R&E networking activities must study the lessons learnt in some parts of Africa and world-wide
- 3) There is a need for the creation of a strong R&E networks engineering base. The UbuntuNet Alliance should consider the creation of an engineering task force.
- 4) The UbuntuNet Alliance should strive to interconnect at least two African NRENs to showcase to those R&E initiatives that are still hesitant
- 5) There is a need for the production of a bankable proposal for regional connectivity within Africa and towards the world
- 6) The EC/Europe should give Africa/UbuntuNet Alliance the same level of support as CLARA received in Latin America
- 7) The EC/Europe is needed for capacity building activities in the African R&E networking community

Workshop 6d **eInclusion – Leveraging Low Cost Devices and Broadband in Rural Communities**Chair: **Richard Stevens**, European Genetics Foundation, Italy**Outcomes as a Measure of Social Change in the Use of ICTs**

Chris Morris, Meraka Institute, South Africa

**Digital World Forum: Opportunities and Challenges of Low-Cost Technologies for Africa and Latin America**

Segopotso Moshapo, CSIR, South Africa

**DigitalWorld Forum: Low-cost Broadband Access and Infrastructure**

Pierre-Yves Danet, France Telecom/Orange Labs, France

**DigitalWorld Forum: Low Cost Computers: From the \$100 Laptop to the Next Generation**

Roland Burger, Nematrix Research, Italy

**Discussion**

This 90-minute workshop was primarily focused on sharing the objectives and activities of the FP7 funded Digital World Forum project. The first presentation shared research results from an IDRC funded project in Southern Africa focused on the technological and social consequences of introducing low-cost ICTs into rural areas of Africa. The second presentation provided an overview of the Digital World Forum project and planned activities over the coming two years. The third presentation focused on how to take advantage of the new paradigm of low-cost technologies in broadband infrastructure and devices, and the explosion of mobile telephony to bridge the digital divide and connect the unconnected. The fourth presentation focused on low cost computers and activities in this domain.

The workshop was well attended and interactive by nature. Most of the questions from the audience were about clarifications on presented material. Participants were particularly interested in knowing how the Meraka Institute managed to establish useful partnerships with stakeholders in the communities where it has rolled out the broadband infrastructure in the IDRC funded project and how they could participate in the Digital World Forum activities. Participants were encouraged to visit the project website ([www.digitalworldforum.eu](http://www.digitalworldforum.eu)), where they will be able to contribute ideas with regard to the direction of EU-Africa collaborative research into low ICT solutions.

Workshop 7d/8d **African Network of Living Labs**Chair: **Adam Turowiec**, ITTI, Poland**Living Lab Methodology Concept and Development of the European Network of Living Labs**

Adam Turowiec, ITTI, Poland

**Stimulating the Development of Networked Enterprises: the Added Value of Collaborative Procurement in Rural South Africa**

Christian Merz, SAP AG, Germany

**Open SOA Value Add for Collaborative Services Delivery to Rural SMMEs**

Rudi de Louw, SAP Research CEC PTA, South Africa

**Development of Rural Areas Through Inclusive Education and Research on the Example of the Soshanguve L**

J. Zaaiman, Tshwane University of Technology, South Africa

**ERP Process Modelling for Rural e-Governance - A Living Lab Approach**

Potjie van der Walt, Tshwane University of Technology, South Africa

**Presenting a Knowledge Support Portlet as part of a collaborative Educational Community Learning Area**

Bertie Buitendag, Tshwane University of Technology, South Africa

This 180-minute workshop shared insight from European and African experts in the domain of Living Labs, and brought both a theoretical and practical aspect to bear. A number of papers associated with this workshop directly report the results from the C@R FP6 project.

This workshop constituted a preparatory meeting of organizations and individuals interested in establishment of the African Network of Living Labs (ANoLL), which will build on and extend the concept of the European Network of Living Labs (ENoLL) into Africa. As such, the workshop constituted a major milestone on the path towards the development of human-centric and collaborative research infrastructures on the continent. It brought together the representatives of the existing South African Living Labs, the stakeholders from a number of sub-Saharan countries that are key for creation of further Living Labs, and experts from ENoLL.

#### Workshop 8b **eHealth Systems in Low Resource Settings: Proven Practise**

Chair: **Ulrike Rivett, University of Cape Town, South Africa**

##### **Telemedicine for HIV/AIDS Care in Low Resource Settings: Proven Practises**

Maria Zolfo, Institute of Tropical Medicine, Belgium

##### **ICT-systems for HIV/AIDS management: Plug and Play?**

Ulrike Rivett, University of Cape Town, South Africa

##### **Establishment of Sustainable Broadband Services in Developing Regions by Integrating Development and Capacity Building**

Bjorn Pehrson, KTH, Sweden

This 90-minute workshop was organised by the Norwegian Centre for Telemedicine in its function as a WHO Collaborating Centre for Telemedicine and e-Health, in collaboration with The University of Cape Town / Cell Life in South Africa and the Institute of Tropical Medicine in Belgium. The projected outcome of this workshop is to develop a joint African-European project on e-health for low resource settings.

The first presentation shared the results of a global telemedicine network, which has been managed by the Institute of Tropical Medicine for the past four years to support the introduction of antiretroviral therapy for patients affected by HIV/AIDS in developing countries. The second presentation summarized the findings from a pre-study conducted in the Western Cape of South Africa during 2006 focused on assessing the needs of ICT-based services for HIV/AIDS management and Anti-Retroviral Treatment in public, primary health care. The third presentation focused on discussing models for the establishment of sustainable broadband services in rural communities in developing countries

#### Workshop 8c **FlossInclude**

Chair: **Karsten Gerloff, UNU-MERIT, Netherlands**

##### **Free Software as a Tool for Social and Economic Development - the FLOSSInclude Project**

Karsten Gerloff, UNU-MERIT, Netherlands

##### **From ICT Policy to Effective Implementation; What Role for Civil Society in Cross-sectoral Collaborations**

Joris Komen, SchoolNet Namibia, Namibia

##### **Capacity Building in Software Engineering through FOSS in Africa**

Prof. Derek W. Keats, The University of the Western Cape, South Africa

This 90-minute workshop was organised by the FP7 FlossInclude project to highlight initiatives and activities in the Open Source domain in Europe and Africa.

#### Workshop 9c **CAAST-Net: Coordination and Advancement of Africa-EU Science & Technology Cooperation**

Chair: **Andrew Cherry, Association of Commonwealth Universities, UK**

##### **CAAST-Net: Network for the Coordination and Advancement of sub-Saharan Africa-EU Science & Technology Cooperation**

Eric Mwangi, Directorate of Research Development, Kenya

##### **Perspective from Africa of a Preliminary Analysis of S&T Cooperation between Africa and Europe under the Framework Programme**

Mmboneni Muofhe, Department of Science & Technology, South Africa

##### **Enhancing EU-Africa S&T Cooperation through a Joint Policy Dialogue**

Nadia Meyer, German Aerospace Center (DLR), Germany

##### **Practical Approaches to Identifying Areas of Potential Cooperation in S&T between Africa and Europe under the EU Framework Programme**

Jean Albergel, IRD, France

##### **Discussion**

This 90-minute workshop was organised by the CAAST-Net FP7 Co-ordination Action project to raise awareness of project activities and receive feedback from the wider community in relation to planned activities going forward. The workshop was lively and well attended. Consortium members provided four presentations providing an introduction to CAAST-Net and a general overview of activities currently running and planned in the context of work packages 1, 3 and 4.

CAAST-Net also took the opportunity of meeting with Dr Hakim Elwaer, Director, Human Resources, Science and Technology (HRST), African Union Commission and Moses Bayingana (Senior ICT Policy Officer) during IST-Africa 2008 to raise awareness and discuss possible scenarios for the policy dialogue platform foreseen in the project

Workshop 10c **Challenges and Opportunities for African-European ICT Partnerships in FP7**

Chair: **Mmboneni Muofhe**, Department of Science & Technology, South Africa

**The START/EuroAfrica-ICT Initiative**

Tshepang Mosiea, Meraka Institute, South Africa

**Advancing Science and Technology through Partnerships**

Mmboneni Muofhe, Department of Science and Technology, South Africa

**ST-EAP (Science Technology-Europe Africa Project)**

Zethu Mkhondo, CSIR, South Africa

**Discussion**

This 90-minute workshop focused on presenting and raising awareness of three European funded Support Action projects (ESASTAP, ST-EAP, START/EuroAfriC-ICT) focused on sharing European research results in Africa and facilitating African-European research cooperation under FP7.

## Networking Events

The Ministry of Education kindly hosted a Networking Reception in the Exhibition area on Wednesday 07 May. This was very well received and allowed delegates to engage with exhibitors and discuss further with delegates and presenters they had met in Sessions during the day.

The Ministry of Education kindly hosted a Gala Dinner at Windhoek Country Club on Thursday 08 May. This was one of the highlights of the conference, facilitating delegates to enjoy both Namibian culture and hospitality.

Minister Nangolo Mbumba, Minister of Education, Republic of Namibia welcomed delegates to the Gala Dinner and hoped that they enjoyed the various cultural performances, which incorporated national singing and dancing prepared by his colleagues.

Delegates thoroughly enjoyed the dinner and entertainment and actively participated in the dancing at the end of the Dinner. This was a very productive networking event allowing delegates to engage with old and new friends.



# Closing Plenary

The Closing Plenary Session focused on showcasing ICT Initiatives and Programmes in the Region. It featured presentations by Dr Hakim Elwaer, Director HRST, African Union Commission; Thierry Devars, DG Information Society and Media, European Commission; Dr Philippe Mawoko, NEPAD Office of Science & Technology; Ms. Aida Opoku-Mensah, Director, United Nations Economic Commission for Africa; Dr. Shamila Nair-Bedouelle, UNESCO; Ms. Magda Berhe, Swedish Programme for ICT in Developing Regions and Minister Nangolo Mbumba, Minister of Education, Republic of Namibia.



The Closing Plenary was attended by Hon Minister Joel Kaapanda, Minister of ICT; Hon Minister Willem Konjore, Minister of Youth, National Service, Sport & Culture and Hon Minister Abraham Iyambo, Minister of Fisheries & Marine Resources as well as Members of the Diplomatic Corp.

## The African Regional Action Plan on a Knowledge Economy & The AU-EU Partnership on Information Society

**Dr Hakim Elwaer** presented "The African Regional Action Plan on a Knowledge Economy & The AU-EU Partnership on Information Society", which focused on providing an overview on the ARAPKE Flagship Projects, the AU-EU Partnership on Information Society and briefly described some of the projects jointly identified for implementation under the Partnership.

Dr Elwaer briefly explained that ARAPKE (African Regional Action Plan on a Knowledge Economy), which aims to build a continent fully benefiting from ICT services by 2015, was adopted through several fora, under the aegis of the African Union (AU) Commission and the technical coordination of the Economic Commission for Africa (ECA). Based on criteria adopted by the ARAPKE Steering Committee, Eleven Flagship Projects were selected of which nine have been reformulated and defined to include their scope, budget breakdown and performance indicators.

Two projects proposed by NEPAD e-Africa Commission are currently being reformulated and defined in order to be included in the resource mobilization process:

- **The NEPAD ICT Broadband Project** (Uhuru-Net & Umoja-Net) has the goal of providing high speed, high bandwidth connectivity to Africa and reduce unit costs for regional and international connectivity.
- **The NEPAD e-Schools Project** aims to achieve rapid dissemination of ICT skills across the Africa population, enabling ICT literacy to be brought to bear on the workforce as well as on social, political and cultural activities.

Dr Elwaer then briefly described the other Flagship Projects.

- **The African Leadership ICT Program** aims to leverage the individual experiences and capacities of young promising mid-career potential leaders in African countries to become change agents in the ICT sector.
- **The African Internet Exchange System** aims to support the establishment of a robust and fully redundant African Internet backbone infrastructure with exchange points at the core through provision of policy & regulatory reform, capacity building, technical assistance to Internet Service Provider Associations and Internet Exchange Points in Africa.
- **Harnessing Information & Knowledge For Youth Development** aims to harness the potential of knowledge and technology, and to find effective and innovative ways to put this potential at the service of African Youth development.
- **Women's Mediated Capacity Building Centers in Rural Africa** aims to provide women's mediated access and capacity building centres in rural Africa.
- **E-Learning Mode of Distance Education** (Pilot) aims to implement an ICT based distance education learning model for selected undergraduate and graduate programs of the Addis Ababa University (AAU)
- **E-Learning Network** aims to use ICT to increase access to education, production of local content in local languages, use of ICT as tools for education and school administration
- **African Digital Initiatives and Financing Agency** aims to facilitate the institutional mechanism to

consolidate the gains that have already been achieved in the continent in terms of ICT policy development, by assisting in the quest to outreaching financing from the donor community

- **Multi-Lingual EDUCational Software and Dictionary** aims to develop Multilingual Educational Software and Dictionary
- **Virtual Preparatory Classes for High School Students** aims to sensitize young people to Information and Communication Technologies (ICT) as well as to scientific and technological studies.

The AU-EU Partnership on Information Society is a component of the AU-EU Action Plan and Joint Strategy that was adopted by the AU-EU Summit held in Portugal on 9th December 2007. The Partnership aims at "Supporting the Development of an Inclusive Information Society in Africa". The overall objective is to bridge the digital divide and to enhance the use of Information and Communication Technologies (ICTs) as key enablers for poverty reduction, growth and socio-economic development.

The following five projects, which have been jointly identified for implementation under the AU-EU Partnership on Information Society, are consistent with ARAPKE.

- **The African Leadership ICT Program** aims to leverage the individual experiences and capacities of young promising mid-career potential leaders in African countries to become change agents in the ICT sector.
- **The African Internet Exchange System** aims to support the establishment of a robust and fully redundant African Internet backbone infrastructure with exchange points at the core through provision of policy & regulatory reform, capacity building, technical assistance to Internet Service Provider Associations and Internet Exchange Points in Africa.
- **Harnessing Information & Knowledge For Youth Development** aims to harness the potential of knowledge and technology, and to find effective and innovative ways to put this potential at the service of African Youth development.
- **The Africa Connect Project** aims to contribute to the modernization and development of education and research in Sub-Saharan countries.
- Finally, the **African Virtual Campus Project** aims to establish an online African Virtual Campus Network for Science & Technology Education

Dr Elwaer concluded by assuring the IST-Africa 2008 Conference delegates that "The Human Resources, Science and Technology Department of the African Union Commission looks forward to continue partnering with all key stakeholders as we strive towards building an integrated and inclusive African Information Society by implementing the ARAPKE framework."



### Overview of the ICT Activities supported by NEPAD S&T and Flagship Projects

**Dr Philippe Mawoko**, NEPAD Office of Science & Technology provided an overview of ICT Activities supported by NEPAD S&T.

### UNECA's ICT and Science & Technology Programme

**Ms. Aida Opoku-Mensah**, Director, ICTs, Science & Technology Division (ISTD) United Nations Economic Commission for Africa (UNECA) focused her presentation on "UNECA's ICT and Science & Technology Programme: Supporting the Development of ICT National Strategies".

Ms Opoku-Mensah noted an increased realisation that the digital gap in Africa represents a development gap. ICTs are an important tool to address Millenium Development Goals, as well as key socio-economic sectors, including health, education and agriculture.

Ms Opoku-Mensah briefly described the African Information Society Initiative (AIS) focus areas (eStrategies, Information and Knowledge Development, Outreach and Communication, Partnership and Networking). AISI

has the following Universal Access targets for 2010: "Every Woman, school child, village, government office and business can access information and knowledge resources through computer and telecommunications. Information and Knowledge are disseminated and used by business, the public at large and disenfranchised groups, such as women and the poor, enabling them to make rational choices".

Ms Opoku-Mensah outlined the interactive cycle behind the National Information and Communication Infrastructure (NICI) as well as the deliverables of the policy process (in terms of Framework, Policy Document and Plan for translating policy commitments into concrete programmes).

Currently 37 countries possess ICT policies: Algeria, Benin, Burkina Faso, Burundi, Botswana, Cape Verde, Comoros, Congo, Cote d'Ivoire, Djibouti, Egypt, Ethiopia, Gambia, Ghana, Guinea, Kenya, Madagascar, Malawi, Mali, Mauritania, Mauritius, Morocco, Mozambique, Namibia, Niger, Nigeria, Rwanda, Senegal, Seychelles, South Africa, Sudan, Tanzania, Tunisia, Sierra Leone, Swaziland, Cameroon and Zambia.

Nine countries undertook to develop ICT policies (Angola, Central African Republic, Chad, Democratic Republic of Congo, Gabon, Lesotho, Uganda, Zimbabwe and Togo), while 8 countries have not yet initiated the process in the formulation of ICT policies (Equatorial Guinea, Eritrea, Guinea Bissau, Liberia, Libya, Sao Tome and Principe and Somalia).

Ms Opoku-Mensah noted the difficult challenges facing countries undertaking reform measures to strengthen infrastructure and provide an enabling environment. This requires institutional reform of the telecommunication sector, separating Telecommunication services from the Postal services, granting total customs exemption on all computer hardware and equipment, reducing internet communication tariffs, reforming private sector support institutions, providing tax relief, reforming public and parastatal enterprises by adopting effective legal texts allowing for privatisation, measures to improve telephone, electricity, water and transport, and major investments in the fixed networks, mobile and Internet to increase coverage.

Key focus areas for NICIs include developing an appropriate digital infrastructure to promote universal access to all and everywhere, reducing poverty, developing human resources of technology producers and users through training and education, developing a strong domestic sector through private sector development, putting appropriate institutional and legal frameworks in place to develop ICT and eGovernment.

Ms Opoku-Mensah then briefly described the NICI Pillars of National Strategy - ICT industry - private sector development, developing and facilitating the private sector, ICT Infrastructure Development, Foreign Direct Investment in ICTs, Legal Regulatory. Institutional Provisions and Standards, ICT in Health, Education, Agriculture and Environment, Facilitating Government Administration and Service Delivery and Human Research Development.

Ms Opoku-Mensah discussed the NICI eStrategies: Best Practices and Lessons Learnt publication which was launched at the Science with Africa Conference in Addis Ababa in March and distributed in limited quantities during IST-Africa 2008. The publication is available at [www.uneca.org/aisi/NICI/Documents/NICI-Book.pdf](http://www.uneca.org/aisi/NICI/Documents/NICI-Book.pdf)

Having outlined critical success factors in implementing NIC, Ms Opoku-Mensah described the impact of implementing AISI at a country level in developing national eStrategies. These range from awareness raising of the importance of ICT, integration of ICT in existing and planned National Development Plans, mainstreaming ICT in sectoral strategies aimed at specific sectors such as education, health, governance, trade, and linking NICI process with socio-economic development goals. She noted the importance of ensuring the use of indicators for planning and evaluation, building capacity by using African expertise where possible, supporting team work through NICI Committees and creating a sense of ownership through nationwide consultations.

Ms Opoku-Mensah briefly discussed SCAN-ICT, as an Initiative of UNECA and IDRC's Acacia, with support from EU, NORAD, and Finland (2nd Phase). The goal is to build African capacity to collect and manage key information on ICTs, and create a pan-African ICT network - observatory/ research institute. Six countries were involved in the first phase – Ethiopia, Ghana, Mozambique, Morocco, Senegal, Uganda, with Cameroon, Gambia, Ghana, Mauritius, and Rwanda joining Phase 2.

The importance of the role played by ECA in evaluating ICTs and promoting their use in poverty reduction, has been acknowledged by many African leaders, and Ms Opoku-Mensah quoted H.E. Paul Kagame, President of The Republic of Rwanda, H.E. John Agyekum Kufuor, President of the Republic of Ghana, and H.E. The Prime Minister A. T. Dlamini (MP), Swaziland.

Ms Opoku-Mensah then went on to discuss the African Learning Network (ALN), which was created to facilitate the effective use of ICTs in the learning and teaching process, and launched during the first African Development Forum (ADF'99). ALN now encompasses three pillars: SchoolNet Africa, which is currently operational in 31 countries in over 300 schools and supports national and regional school networking activities; OOSYNET, a youth networking initiative focused on national and regional needs of Out-Of-School Youth (OOSY); and VarsityNet, a pilot R&D project implemented by the Addis Ababa University and the Inter-University Council of East Africa (IUCEA). VarsityNet aims to establish connectivity at universities and

research institutions, and stimulate content development and information sharing.

Launched during WSIS I in Geneva (2003), the Academia Research Network (ARN) focused its research activities on ICT and society issues. ARN was created to provide a platform and space for leading African academics and researchers to enhance their role and to reflect on the many intellectual issues related to the Information Society. Key issues being addressed include: African languages and content development; Measuring the impact of the African Information Society; Industrialization of ICTs in Africa; and Creating enabling environment in the Information society

Examples of four projects include the development of local language applications at University of Yaounde, Cameroon, e-Health applications through the Addis Ababa University, Ethiopia, research on industrialisation at Eduardo Mondlane University, Mozambique and work on Information Society Indicators by the Computer School of University of Manouba, Tunisia.

The important role of Science, Technology and Innovation in enhancing economic well being is widely recognized, with an Africa Regional Agenda on S&T driven by the AUC 2004 - 2007 Plan of Actions and the NEPAD 2005 S&T Consolidated Plan of Action. With the Theme: "Science, Technology and Scientific Research for Development", the AU Summit of Heads of State and Government (January 2007, Addis Ababa), declared the year 2007 as the launching year of building constituencies and champions for STI in Africa, Supported the establishment of Pan African Intellectual Property Organization (PAIPO), reiterated its commitment to Khartoum 2006 decision urging Member States to allocate at least 1% of GDP to R&D, and endorsed the need for South- South and North-South cooperation in STI.

Investment in S&T is crucial to the development process and Africa is the only region yet to exploit the potentials of S&T. However, while participation in the Knowledge Economy is important for Africa's future, a high level of scientific skills and know-how is required, and investment in Science and Technology will result in continued economic growth and industrial development.

Some of the key challenges facing Africa include: low Science and Technology capacity; low investment in research and development; inadequate regulatory regimes; poor infrastructural base; and a lack of access to helpful scientific ideas.

While Ms Opoku-Mensah noted that R&D spending in Africa is still below 1% GDP, there are some positive signs worth noting. South Africa, Uganda and Ghana are amongst a number of countries who have committed to increase R&D investment. There were also a number of useful outcomes of the recent "Science With Africa" Conference (3 – 7 March 2008, Addis Ababa), including increased interest in Science Technology and Innovation (STI) policies in Africa, potential funding being made available by the European Commission, discussion of Intellectual Property Rights (IPR), patents and technology transfer related issues, international programmes to support STI in Africa, a very successful R&D Idea factory during the conference, as well as discussion around Energy, water, transport and infrastructure, ICTs and innovation, as well as Agriculture, health and life sciences.

In conclusion, Ms Opoku-Mensah stressed the need to continue ongoing sensitisation of policy/decision makers and stakeholders on ICT4D issues to secure high-level commitments and sustainable implementation of NICI Plans. She also noted the importance of ensuring that ICT4D is mainstreamed across all sectors such as health, trade, commerce, agriculture etc, to contribute to the achievement of the Millennium Development Goals (MDGs) and support socio-economic develop across Africa.

## UNESCO Virtual Campus of Universities for Africa

**Dr. Shamila Nair-Bedouelle**, Division of Science Policy and Sustainable Development, UNESCO provided an overview of the Virtual Campus of Universities for Africa project mentioned by Dr Hakim Elwaer.

## How SPIDER Makes Knowledge More Accessible to Developing Regions

**Magda Berha** presented "Empowering People through ICT4D" on behalf of the Spider Programme. Spider is a national resource center for ICT4D that acts as an Agent for development, combating the digital divide. Spider is funded by the Swedish Government, focused on international cooperation in ICT and acts as an initiator for cooperation between the North and the South (developing countries).

SPIDER supports developing countries in the promotion and deployment of ICT with the aim to help closing the digital divide. Spider supports projects in a number of specific areas including: Education, research and capacity building between Universities in Sweden and Developing Countries; Junior ICT Expert Program; PhD Network; and Computerization of developing countries. It also provides a Helpdesk for Swedish authorities.

Examples of technology projects being supported include:

- Uganda (SMS and GPRS)
- Bangladesh (Virtual Classrooms)
- Honduras (Computerizing universities)
- Tajikistan (Health Care Center)
- Mozambique (MICTI Training Center)

Spider was delighted to support IST-Africa 2008 by funding the travel and subsistence costs of a number of African delegates and presenters from SIDA Programme Countries.

## **Strengthening African - European Cooperation in ICT and S&T**

**Thierry Devars**, DG Information Society and Media, European Commission, focused his presentation on “Africa-EU Cooperation in the ICT/S&T Domains”, noting that the scientific divide can be mapped on an atlas, with the territory size equal to the proportion of published scientific papers per size of population.

In such a Scientific Divide Map, regions such as Europe and North America appear very large, while regions such as Latin America and Africa appear much, much smaller. Similarly, a photograph of the entire earth at night would show much greater use of electricity in the form of light outside Africa.

Mr Devars suggested that the current situation with regard to Development Aid and Research Cooperation is similar to that of the chicken and the egg – which came first? He noted a certain school of thought that what Africa needs right now is development aid. However, Mr Devars also noted the strategic importance of research cooperation to support sustainable socio-economic growth.

Mr Devars noted enormous growth in the mobile area for example, with 16 million subscribers in 2000 compared with 300 million in 2008. This contrasts with very low Internet user penetration (4.8%) and even lower broadband penetration (<1%). These are clearly affected to some degree by interconnection costs, very high tariffs, general weak computer literacy across Africa and the “brain drain”. There is a clear need for hybrid solutions: fibre and broadband wireless (satellite/WIMAX/2,5-3G-HSPA) as well as a comprehensive dedicated approach to these challenges (including infrastructures, regulation and capacities). Resources were committed for such investment at the Connect Africa Summit (Kigali, 29 – 30 October 2007).

Officially launched in October 2007, the EU-Africa Partnership on Infrastructure supports AU/NEPAD plans for infrastructure in four sectors: Energy, Water, Transport, and ICT/trans-border networks. €5.6 billion has been earmarked from the 10th EDF for such investment, but clearly coordination is required between the EU and AUC, NEPAD, Regional Economic Communities, African Development Bank, European Investment Bank etc. The EASSY (East African Submarine Cable) has been identified as a flagship project in this regard.

Mr Devars noted that the EU-Africa Partnership on Science, Information Society and Space provides support to the AMCOST Consolidated Plan of Action focused on regional integration, in the area of Science, the African Regional Action Plan of the Knowledge Economy (ARAKPE) in the area of Information Society, as well as specific projects based on space technologies to achieve regional and global development goals.

For the Information Society Priority in particular, Mr Devars suggested the importance of a dedicated fast-track, public-private implementation mechanism, involving European Commission/African Union Commission Monitoring as well as the EU-Africa Business Forum. Mr Devars briefly mentioned the 5 flagship ARAPKE projects, before going on to describe the nature and size of the European Research Area (ERA) and the comprehensive framework now in place between FP7, EU-Africa Partnership on Infrastructures, EDF Programmes and the EU-Africa Partnership on Science, Information Society and Space. He described the structure, ICT work Programme and International Dimension of Framework Programme 7 (FP7), before focusing on the Research Infrastructures Programme within the Capacities area.

Mr Devars then spent some time describing the logic behind eInfrastructures in terms of providing an infrastructure to support global knowledge sharing, and the role of GEANT and Research and Education Networks in Europe and Africa. He noted that GEANT now links over 3,900 universities and over 30 million students across over 40 countries in Europe, and welcomed the London based link between GEANT and UbuntuNet in January 2008, which is now facilitating access via NreNs across Africa.

At the start of his closing remarks, Mr Devars encouraged all delegates to actively engage with the IST-Africa Initiative Partners ([www.IST-Africa.eu](http://www.IST-Africa.eu)) and to visit CORDIS for more information (<http://cordis.europa.eu/fp7/ict>)

As a follow up to the Lisbon Summit in December 2007, AUC/EC Implementation has already commenced, with €8 million committed under an EC-ITU Agreement to support regulatory reform in Africa, and 5 flagship pan-Africa projects jointly identified with the African Union Commission in direct support of ARAPKE. These were

identified as AXIS (establishment of national IXPs and regional Internet Hubs), ALICT (training programme for IT professionals and policy-makers), AYIN (eSkills for youth), African Virtual Campus (eLearning network) and Africa Connect (GEANT extension to Sub-Saharan Africa). However, he stressed that to achieve a successful outcome to these strategic projects required a critical mass of coordinated effort from the public and private sector, civil society and financial institutions.

Mr Devars reminded all delegates that not just European experts were able to be involved in reviews and evaluations, issuing a welcome for Africans with appropriate track record and expertise to register as Independent Experts for FP7.

In conclusion, Mr Devars thanked the Government of Namibia for Hosting IST-Africa 2009, and thanked Paul Cunningham and Miriam Cunningham of IIMC for organising the conference.

## Closing Remarks

During his closing remarks, **Minister Nangolo Mbumba, Minister of Education, Republic of Namibia** discussed the typical approach of always searching for the “one thing” which will solve all our problems, which will ensure that we can feed all our people, and provide them with peace, prosperity, world class healthcare and education. While the “one thing” does not exist, there are many paths that can be considered to achieve the goal of leveraging applied ICT to support sustainable socio-economic growth across Africa. Minister Mbumba stressed the importance of not just surviving the impact of globalisation, but the need to make globalisation work to Africa’s advantage in the medium to long term by moving in “real time”. This requires the embracing of ICTs as a means to enable national and regional innovation and knowledge sharing and build capacity to cater for different situations.

Minister Mbumba noted the importance of investing in the youth, from whom will emerge the leaders of tomorrow. He said “We need to provide our youth with adequate knowledge, skills, cross-cultural experience and support, to enable them to cope with the challenges and opportunities presented by a rapidly changing scientific and technological world.”

Minister Mbumba acknowledged that the IST-Africa 2008 Conference had provided “Ministers from several African countries with responsibility for research, science, technology and Information Society policy development, senior officials from the African Union Commission, the Southern African Development Community and the European Commission - with the opportunity to deliberate, share perspectives and reflect on how best to implement the Africa-EU Partnership on Science, Information Society and Space which was adopted as part of the Joint Africa-EU Strategy at the Summit held in Lisbon, Portugal in 8-9 December 2007”.

Minister Mbumba referred to the important role of the Roundtable during the Opening Plenary, which provided a forum to allow key stakeholders from Europe and Africa to discuss, reflect and agree on the required actions to ensure the early and effective implementation of the AU-EU Partnership. He noted that the summarizing key conclusions of the roundtable discussions will inform Member Countries of the African Ministerial Council on Science and Technology (AMCOST), Member States of the European Union, as well as the African Union Commission-European Commission Joint Task Force which has been entrusted with implementation of the Partnership.

Minister Mbumba noted the clear commitment “from both Africa and Europe to focus on Action rather than More Talk”, and that IST-Africa 2008 facilitated mutual learning from the valuable experiences that both Africa and Europe have to share and paved the way for Namibia, Africa and Europe to pragmatically address common challenges in securing Digital Inclusion for all Citizens. He stressed the importance of reducing duplication of effort, leveraging applied ICT to secure a better socio-economic future for all, and investing national and donor funding in the development of science and technology.

Successful implementation of the Africa-EU Partnership on Science, Information Society and Space will require increased national investments from both Africa and Europe, better use of joint instruments such as the European Development Fund, and innovative partnerships with the private sector. Better coordination of efforts is essential to avoid wasting precious resources and leverage available resources to maximum impact, whether by adapting existing research results to national or regional requirements, or building on the valuable learning curve of others, allowing us to leapfrog in terms of innovation – thus making it easier for us to run while others walk.

Minister Mbumba invited Captains of industry and friends in the private sector to join this African-EU partnership and contribute to knowledge generation and innovation in Africa. The Minister stated that African governments have the responsibility to create an enabling environment for investment in national and regional science and technology systems.

The Minister reminded delegates that the opening Round Table discussion provided a unique insight

into key strategic challenges associated with implementation of the Africa-EU partnership on Science, Information Society and Space. During the conference, high level exchanges had taken place at a policy and implementation level, sharing expertise in key areas of applied ICT, addressing key challenges for Africa in areas ranging from Public Service delivery (e-Government), e-Health and Technology Enhanced learning.

Minister Mbumba congratulated the conference organizers and all the IST-Africa Partners, and thanked the European Commission and all other key stakeholders for their support for the conference taking place in the Republic of Namibia. He thanked the Ministers and senior government officials from several African states who actively participated at IST-Africa 2008, as well as senior officials of AUC, SADC, UNECA and UNESCO. Minister Mbumba particularly thanked the Swedish Spider Programme for supporting the participation of a group of delegates and presenters from Uganda, Kenya, Tanzania and Mozambique, and Telecom Namibia, for providing free broadband connectivity.

The Minister stated that the Government of the Republic of Namibia, were honoured to have hosted the IST-Africa 2008 Conference & Exhibition, which attracted over 460 delegates from across Africa and Europe representing leading Government (47%), research organizations (44%) and industry (9%).

Minister Mbumba concluded by thanking the members of the Organizing Committee, Paul Cunningham and Miriam Cunningham (IIMC, Ireland), John Sifani, Johan van Wyk and Ferdinand Katire (Ministry of Education, Namibia), and his hope that the partnership behind the IST-Africa Initiative "will grow from strength to strength".

## Conference Proceedings

The IST-Africa Scientific Programme is based on an open Call for Papers, which closes in November each year. Potential authors are requested to submit an 8 page paper using the IST-Africa paper template focusing on lessons learnt, national case studies, technical infrastructure issues or future challenges.

All papers published in the IST-Africa Conference Proceedings have been double blind peer reviewed by at least two Members of the International Programme Committee (IPC). The IPC comprises of experts based in Europe and Africa in the different thematic areas covered by IST-Africa Conference Series.

The purpose of the IST-Africa Conference Proceedings is to disseminate research results, methodologies, business and government case studies and new developments in the following thematic areas: eHealth; Technology Enhanced Learning; ICT for eInclusion & eAccessibility; eInfrastructures; ICT for Environmental Risk Management; Networked Enterprise; e-Government, Digital Content & Knowledge Management.

The IST-Africa 2008 Conference Proceedings, (Paul Cunningham and Miriam Cunningham (Eds), IIMC International Information Management Corporation, 2008, ISBN: 978-1-905824-07-6) are also published online in the IST-Africa Paper Repository with the Conference Proceedings for IST-Africa 2006 and IST-Africa 2007. The repository provides all members of the IST-Africa Community with online access to published papers. Please go to [www.ist-africa.eu/home/default.asp?page=paper-repository](http://www.ist-africa.eu/home/default.asp?page=paper-repository) to access papers of interest.

# Awards

During the Closing Ceremony, the Best Paper, Runner-up Paper and Best Demonstration Stand Awards were presented. A special draw was also undertaken for those in the audience who completed the Feedback Form and a prize was awarded.

## Best Paper Award

### *Semantic Integration of Medicinal Data*

Authored by Juha Puustjärvi, Lappeenranta University of Technology, Finland & Leena Puustjärvi, The Pharmacy of Kaivopuisto, Finland

## Runner-up Paper

### *Mobile Payments: A Comparison between Philippine and Ugandan Contexts*

Authored by Ali Ndiwalana, Makerere University, Kampala, Uganda & Oliver Popov, Mid Sweden University, Sundsvall, Sweden

## Best Demonstration Stand

### *WirelessInfo Rural Living Lab*

Karel Charvat, WirelessInfo, Czech Republic



Best Paper Award presented by Hon Minister Joel Kaapanda, Minister of ICT to Erkki Sutinen on behalf of Juha Puustjärvi and Leena Puustjärvi, Finland



Runner-up Paper Award presented by Hon Minister Willem Konjore, Minister of Youth, National Service, Sport & Culture to Ali Ndiwalana, Uganda



Best Demonstration Stand Award presented by Hon Minister Abraham Iyambo, Ministry of Fisheries & Marine Resources to Karel Charvat, Czech Republic



IST-Africa 2008 Feedback Prize presented by John Sifani, Ministry of Education, Namibia



# Wednesday, May 07, 2008

08:00 Registration

09:00 Opening Plenary 1a

#### Welcome Address

Honourable Nangolo Mbumba, Ministry of Education, Namibia

#### Initiatives in Namibia

Honourable Joel Kaapanda, Minister of Information and Communication Technology, Namibia

#### Opening Remarks

Mr Antti Peltomäki, Deputy Director-General, DG Information Society and Media, European Commission

#### AUC Keynote: ARAPKE Action Plan

Dr Hakim Elwaer, African Union Commission, Ethiopia

09:50 Coffee Break Exhibition & Networking

10:15 Opening Plenary 2a: Round Table on the Implementation of the Africa-EU Partnership on Science, Information Society and Space

Co-Chairs: Dr Hakim Elwaer, Director, HRST, African Union Commission & José Manuel Silva Rodríguez, Director General, DG Research, European Commission

Moderator: Paul Cunningham, IIMC, Ireland

#### EU and African Perceptions on the Africa-EU Partnership on Science, Information Society and Space

Dr Hakim Elwaer, Director, HRST, African Union Commission

Mr José Manuel Silva Rodríguez, Director General, DG Research, European Commission

#### S&T as a Means to Attaining the Millennium Development Goals

Honourable Dr Shukuru Kawambwa, Minister for Communications, Science and Technology, Tanzania

#### Development of S&T/ICT Policies

Honourable Dr. Ham-Mukasa Mulira, Minister of Information and Communications Technology, Uganda

#### ICT Challenges to Enhance Socio-economic Development and Regional Integration within SADC

Mr Remigios Makumbe, Southern African Development Community, Botswana

#### Implementation of Africa-EU Strategy: Challenges and Opportunities

Honourable Mosibudi Mangena, Minister of Science and Technology, South Africa

#### General Discussion

Dr Hakim Elwaer, Director, HRST, African Union Commission

Mr José Manuel Silva Rodríguez, Director General, DG Research, European Commission

Mr Antti Peltomäki, Deputy Director-General, DG Information Society and Media, European Commission

Prof. Crispus Kiamba, Permanent Secretary, Ministry of Higher Education, Science and Technology, Kenya

12:15 Lunch Exhibition & Networking

14:00 Workshop 3a Innovation in Namibia

Chair: Justin Ellis, Ministry of Education, Namibia

#### Namibia Business Innovation Centre

Tjama Tjivikua, Polytechnic of Namibia

#### Namibia Network Information Centre

Ben Fuller & Eberhard Lisse, Namibia Network Information Centre

#### Tech/Na! The Namibian ICT in Education Initiative

Johan van Wyk, Ministry of Education, Namibia

14:00 Workshop 3b eHealth - Integrated District Health Information Systems in Africa I

Chair: Jørn Braa, University of Oslo, Norway

#### De-fragmenting Health Information Systems in Sierra Leone: Horizontal and Vertical Integration

Edem Kwame Kossi, University of Oslo, Norway

#### Institutionalising the Integration of Health Information Systems through Stakeholder Buy-in: The Case of Malawi

Anthony Muyepa-Phiri, University of Malawi, Malawi

#### Implementing Health Information System in Zanzibar: Using Internet for Communication, Information Sharing and Learning

Yahya Hamad Sheikh, The State University of Zanzibar / University of Oslo, United Republic of Tanzania

#### Scaling HIS in Developing Countries: Case Studies from Ethiopia

Desalegn Zegeye, University of Gondar, Ethiopia

14:00 Session 3c Using Mobile Devices & Language to Support Technology Enhanced Learning

Chair: David Cook, Polytechnic of Namibia, Namibia

#### Dr Math Rocks!: Using Instant Messaging to Help Pupils with Mathematics Homework

Laurie Butgereit, Meraka Institute, South Africa

#### More than Mobile

Adele Botha, Meraka Institute, South Africa

#### ME-LEARN: Mobile Devices in the Face-to-Face Classroom

Annette de Jager, meLearn Education, South Africa

#### African Language Technology for Multilingual Local Content Development

Wanjiku Nganga, University of Nairobi, Kenya

14:00 Workshop 3d Converging Technical and Non-Technical Consumer Needs in ICT Trust, Security & Dependability across Disciplines

Chair: Ilari Lindy, ENISA, Greece

#### ENISA - Fostering the Culture of Network and Information Security

Ilari Lindy, ENISA, Greece

#### Challenges for the Protection of Critical ICT-Based Financial Infrastructures

James Clarke, Waterford Institute of Technology, Ireland

#### Requirements and Potential for Information Security as a Key Capability for Technological Innovation

Laurens Cloete, Meraka Institute, South Africa

#### Discussion

15:30 Coffee Break Exhibition & Networking

16:00 Workshop 4a Harnessing ICT within the SADC Region

Chair: Maseqobela Williams, Ministry of Communications, Science & Technology, Lesotho

#### SADC ICT Declaration

Remigios Makumbe, SADC Secretariat, Botswana

#### Research Infrastructures

Carmen Mena Abela, eInfrastructures Unit, DG Information Society & Media, European Commission, Belgium

#### Building Knowledge Capacity in Southern Africa

Helena Tapper, Embassy of Finland, South Africa

#### ICTs in Mozambique: Constraints and Opportunities

Zauria Saifodine, ICT Policy Implementation Technical Unit (UTICT), Mozambique

#### Discussion

16:00 Workshop 4b eHealth - Integrated District Health Information Systems in Africa II

Chair: Jørn Braa, University of Oslo, Norway

#### Integrating software to monitor HIV/AIDS: The case of eBHRIMS in Botswana

Johan Saebo, University of Oslo, Norway

#### From User Training to In-Service Support

Jens Kaasbøll, University of Oslo, Norway

**Using Communities of Practice as a Lens for Understanding Organisational Change**

Vincent Shaw, Health Information Systems Programme, Namibia

**South-South Collaboration: Adapting Information Systems Integration Strategies in Namibia**

Louisa Williamson, University of Oslo, South Africa Discussion

16:00 Session 4c [Technology Enhanced Learning for Adult Learners](#)

Chair: [Johan van Wyk, Ministry of Education, Namibia](#)

**Fostering Open Educational Practices in Cross-Cultural Contexts**

Daisy Mwanza-Simwami, Open University, United Kingdom

**Cross-Cultural Communication in the Online Classroom**

Hylton Villet, GijimaAst, Namibia

**Applications of Open Learning Principles for Improving Market/Mechanic Village Schools in South Eastern Nigeria**

Benjamin Ogwo, Pennsylvania State University, United States

**A Social Network Platform for Vocational Learning in the ITM Worldwide Network**

Thierry Nabeth, INSEAD, France

**Communities and Meaning: Mashmaking in Africa**

June Bam-Hutchison, Museum of London Group, United Kingdom

16:00 Workshop 4d [Converging Technical and Non-Technical Consumer Needs in ICT Trust, Security & Dependability across Disciplines](#)

Chair: [Ilari Lindy, ENISA, Greece](#)

**Building a World Class Information Security Governance model**

Marthie Lessing, CSIR, South Africa

**Identica project - Leveraging Biometrics**

Aljosa Pasic, ATOS Origin, Spain

**Information Security, Access Controls and the Reliability of Intrusion Detection Systems**

Nhlanhla Mlitwa, Cape Peninsula University, South Africa

Discussion

18:00 - 20:00 [Networking Reception](#) [Exhibition & Networking](#)



Thursday,  
May 08, 2008

09:00 Workshop 5a [IST-Africa - Linking European & African Researchers](#)

Chair: [Paul Cunningham, IIMC, Ireland](#)

**Research Capacity and Challenges in Namibia**

John Sifani, Ministry of Education, Namibia

**Initiatives Towards Developing ICT Skills in Botswana**

Samuel Bok, Ministry of Communications, Science and Technology, Botswana

**Research Capacity and Challenges in Lesotho**

Maseqobela Williams, Department of Science and Technology, Lesotho

**Research Capacity and Challenges in Uganda**

Richard B. Lutalo, Uganda Council for Science and Technology

**Research Capacity and Challenges in Tanzania**

Hamisi Nguli, COSTECH, Tanzania

09:00 Session 5b [eHealth - Managing Health Information](#)

Chair: [Vincent Shaw, Health Information Systems Programme, Namibia](#)

**Semantic Integration of Medicinal Data**

Juha Puustjärvi, Lappeenranta University of Technology, Finland

**Understanding the Dynamics of Implementing GIS for Health**

**Management in Mozambique**

Zeferino Saugene, Universidade Eduardo Mondlane, Mozambique

**Implementation Challenges in Rural Communities - Case Study from Bangladesh**

Mannan Mridha, The Royal Institute of Technology, Sweden

**Lessons Learned from Integration of eLearning into Existing**

**Institutionalized Upgrading Courses in Tanzania**

Denis Mazali, Muhimbili University of Health and Allied Sciences, United Republic of Tanzania

09:00 Session 5c [Integrating Technology Enhanced Learning in Tertiary and Educational Training](#)

Chair: [Erkki Sutinen, University of Joensuu, Finland](#)

**Reflections on the Africa Drive Project: Good Practices in Blended Learning and Technology Usage**

Darelle Van Greunen, Nelson Mandela Metropolitan University, South Africa

**The Impact of an Innovative Learning Environment on Student Teachers' Metacognition**

Gudula Naiga Basaza, Uganda Martyrs University, Uganda

**Factors Influencing the Adoption of Technology Enhanced Learning at the University of Namibia**

Tulimevava Mufeti, University of Namibia, Namibia

**Students' Perception of e-Learning, WebCT and Adequacy of ICT Infrastructure at the University of Botswana**

Isaac Obasi, University of Botswana, Botswana

09:00 Session 5d [eInclusion & eAccessibility](#)

Chair: [Richard Stevens, INSIEL, Italy](#)

**Using a Multi-Criteria Tool for Selecting ICT Development Initiatives**

Love Ekenberg, Stockholm University and KTH, Sweden

**UNIDO Business Information Centre Model for e-Inclusion & e-Accessibility in Uganda**

Barbara Kreissler, UNIDO, Austria

**Accessibility Observations of Visually Impaired Users using the South African National Accessibility Portal**

Louis Coetzee, Meraka Institute, South Africa

**Designing Future Technologies for Disabled People in a Developing Country**

Quentin Williams, Meraka Institute, South Africa

09:00 Workshop 5e **Building a Research Network Infrastructure Policy and Infrastructure**

African Co-Chairs: **Boubakar Barry, AAU NREN unit; Francis Tusubira, Ubuntunet Alliance**

European Co-Chairs: **Bjorn Pehrson, KTH; Cathrin Stöver, DANTE**

**Welcome and Introduction**

African Union

European Commission

Co-Chairs

**Policy**

Dr Hakim Elwaer, HRST, African Union Commission

Carmen Mena Abela & Thierry Devars, European Commission

Discussion

**Status of the Emerging African Optical Fiber Infrastructure:**

**Prospects for Growth & Policy and Regulatory Challenges**

Francis Tusubira, UbuntuNet Alliance, Uganda

**GEANT2 and European Global Research Networking Activities**

Cathrin Stover, DANTE, United Kingdom

10:30 Coffee Break **Exhibition & Networking**

11:00 Workshop 6a **IST-Africa - Linking European & African Researchers**

Chair: **Anneline Morgan, Department of Science and Technology, South Africa**

**e-Governance Objectives and Policy in Uganda**

Honourable Ham-Mukasa Mulira, Minister of Information and Communications Technology (ICT), Republic of Uganda

**Research Capacity and Challenges in South Africa**

Cristina Pinto, Wits Enterprise, South Africa

**Research Capacity and Challenges in Mozambique**

Zauria Saifodine, ICT Policy Implementation Technical Unit (UTICT), Mozambique

**Research Capacity and Challenges in Kenya**

Prof. Crispus Kiamba, Ministry of Science and Technology, Kenya

**Discussion and Next Steps**

11:00 Session 6b **eHealth - Evaluating Health Delivery Systems**

Chair: **Jørn Braa, University of Oslo, Norway**

**Policy and Change Management Implications in Building a Continental-wide eHealth Network in Africa: What Can We Learn from NEPAD e-Schools Programme?**

Adesina Iluyemi, University of Portsmouth, United Kingdom

**Evaluating National Health Information Systems for Developing Countries**

Kieran Sharpey-Schafer, University of Cape Town, South Africa

**The Emerging ICT Use Patterns for Health Service Delivery in Africa: Evidence from Rural and Urban Setting in Namibia**

Meke Shivute, Polytechnic of Namibia, Namibia

**Establishing a Biomedical Virtual Organisation through a Portal: Lessons Learned from HEALTHAGENTS**

Horacio Gonzalez-Velez, University of Edinburgh, United Kingdom

**e-Health Development in Europe and its Potential Implications for Africa**

Dusan Soltes, Comenius University, Slovakia

11:00 Session 6c **Technology Enhanced Learning Case Studies**

Chair: **Love Ekenberg, Stockholm University and KTH, Sweden**

**Vision and Challenges of the Information and Learning Resources Centre (ILRC), University of Namibia**

Rakel-Kavena Shalyefu, University of Namibia, Namibia

**Using an Adaptive Technology Enhanced Learning System to Teach Object Oriented Programming - University of Nairobi Case**

Euphraith Muthoni Ireri, University of Nairobi, Kenya

**Experiences using Technology Enhanced Learning at Polytechnic of Namibia**

Bill Torbitt, Polytechnic of Namibia

**Online Educational Video Repository for Knowledge-based Training, Innovation and Scientific Research – A Case Study**

Davor Orlic, Jozef Stefan Institute, Slovenia

**Towards an Affordable Alternative Educational Video Game Input Device**

Andrew Smith, Meraka Institute, South Africa

11:00 Workshop 6d **eInclusion – Leveraging Low Cost Devices and Broadband in Rural Communities**

Chair: **Richard Stevens, European Genetics Foundation, Italy**

**Outcomes as a Measure of Social Change in the Use of ICTs**

Chris Morris, Meraka Institute, South Africa

**Digital World Forum: Opportunities and Challenges of Low-Cost Technologies for Africa and Latin America**

Segopotso Moshapo, CSIR, South Africa

**DigitalWorld Forum: Low-cost Broadband Access and Infrastructure**

Pierre-Yves Danet, France Telecom/Orange Labs, France

**DigitalWorld Forum: Low Cost Computers: From the \$100 Laptop to the Next Generation**

Roland Burger, Nematrix Research, Italy

**Discussion**

11:00 Workshop 6e **Building a Research Network Infrastructure - State of the Art of Research Networking in Africa**

African Co-Chairs: **Boubakar Barry, AAU NREN unit; Francis Tusubira, Ubuntunet Alliance**

European Co-Chairs: **Bjorn Pehrson, KTH; Cathrin Stöver, DANTE**

**AAU NREN Unit - Updates from the Region**

Boubakar BARRY, Association of African Universities, Ghana

**Ubuntunet Alliance - Progress and Plans**

Albert Nsengiyumva, Rwanda Education and Research Network, Rwanda

**Research Networking in Western Africa**

Emmanuel Tonye, Cameroon

**Discussion**

12:30 Lunch **Exhibition & Networking**

14:00 Session 7a

**Digital Content & Digitisation**

Chair: **Paul Cunningham, IIMC, Ireland**

**Crossing the Archival Borders**

Fredrik Palm, Umeå University, Sweden

**An Ontology-based Similarity Method for Semantic Search**

Michele Missikoff, CNR-IASI/LUISS-CeRSI, Italy

**Fostering Collaboration with DigitalPreservationEurope**

Robert Neumayer, Vienna University of Technology, Austria

**A Case for Digitisation of Audiovisual Records in the Uganda Broadcasting Corporation**

Elisam Magara, Makerere University, Uganda

**The Networked Electro Media European Technology Platform: A Vision and a Research Agenda which need to be shared with African Countries**

Pierre-Yves Danet, France Telecom/Orange Labs, France

14:00 Session 7b **eHealth - Telemedicine Applications & Case Studies**

Chair: **Gareth MacNaughton, Lane & Hapiak Consulting, United Kingdom**

**The Role of Outcome Mapping in Developing a Rural Telemedicine System**

Edwin Blake, University of Cape Town, South Africa

**PEDITEL Project: a Step for a Telemedicine Network Solution in Angola Exportable to other African Countries**

Manuel Dinis, PT Inovacao SA, Portugal

**TeleMedISTAN-People Centered Communication Solution for Improving Healthcare Services in Rural Areas of Tajikistan**

Rustam Nabiev, Karolinska University Hospital, Sweden

14:00 Session 7c

**Open Source Software - Applications**

Chair: **Laurens Cloete, Meraka Institute, South Africa**

**The Role of Free and Open Source Software in the Microfinance Sector in Uganda**

Joseph Kasumba Ssewanyana, Makerere University Business School, Uganda

**Secure Virtual Private Network Implementation Using Open Source Software**

Fatuma Simba, University of Dar es Salaam, Tanzania

14:00 Workshop 7d [African Network of Living Labs I](#)

Chair: [Adam Turowiec, ITTI, Poland](#)

**Living Lab Methodology Concept and Development of the European Network of Living Labs**

Adam Turowiec, ITTI, Poland

**Stimulating the Development of Networked Enterprises: the Added Value of Collaborative Procurement in Rural South Africa**

Christian Merz, SAP AG, Germany

**Open SOA Value Add for Collaborative Services Delivery to Rural SMMEs**

Rudi de Louw, SAP Research CEC PTA, South Africa

14:00 Workshop 7e [Building a Research Network Infrastructure - Applications](#)

African Co-Chairs: [Boubakar Barry, AAU NREN unit](#); [Francis Tusubira, Ubuntunet Alliance](#)

European Co-Chairs: [Bjorn Pehrson, KTH](#); [Cathrin Stöver, DANTE](#)

**Digital Libraries**

Margaret Ngwira, UbuntuNet Alliance for Research and Education Networking, Malawi

**eLearning Applications in X-WiN**

Gerti Foest, DFN-Verein, Germany

**Experiences from Using Open Source Networking Components in Production Networks**

Bjorn Pehrson, KTH, Sweden

15:30 Coffee Break [Exhibition & Networking](#)

16:00 Session 8a [Networked Enterprise](#)

Chair: [Richard Stevens, INSIEL, Italy](#)

**Monitoring e-Business Readiness of European Enterprises Using Composite Indicators**

Stefano Tarantola, Joint Research Centre of the European Commission, Italy

**Towards a SOA and Web2.0-Enabled E-Collaboration Business Model**

Ioannis Ignatiadis, Kingston University, United Kingdom

**Mobile Payments: A Comparison between Philippine and Ugandan Contexts**

Ali Ndiwalana, Makerere University, Uganda

**Exploiting Wearable Computing Research Results**

Michael Lawo, TZI Universitaet Bremen, Germany

**Building ICT Entrepreneurs in Mozambique: Constraints and Opportunities**

Jamo Macanze, MICTI - Mozambique Information and Communication Technology, Mozambique

16:00 Workshop 8b [eHealth Systems in Low Resource Settings: Proven Practise](#)

Chair: [Ulrike Rivett, University of Cape Town, South Africa](#)

**Telemedicine for HIV/AIDS Care in Low Resource Settings: Proven Practises**

Maria Zolfo, Institute of Tropical Medicine, Belgium

**ICT-systems for HIV/AIDS management: Plug and Play?**

Ulrike Rivett, University of Cape Town, South Africa

**Establishment of Sustainable Broadband Services in Developing Regions by Integrating Development and Capacity Building**

Bjorn Pehrson, KTH, Sweden

16:00 Workshop 8c [FlossInclude](#)

Chair: [Karsten Gerloff, UNU-MERIT, Netherlands](#)

**Free Software as a Tool for Social and Economic Development - the FLOSSInclude Project**

Karsten Gerloff, UNU-MERIT, Netherlands

**From ICT Policy to Effective Implementation; What Role for Civil Society in Cross-sectoral Collaborations**

Joris Komen, SchoolNet Namibia, Namibia

**Capacity Building in Software Engineering through FOSS in Africa**

Prof. Derek W. Keats, The University of the Western Cape, South Africa

16:00 Workshop 8d [African Network of Living Labs - Future is Here](#)

Chair: [Adam Turowiec, ITTI, Poland](#)

**Development of Rural Areas Through Inclusive Education and Research on the Example of the Soshanguve L**

J. Zaaïman, Tshwane University of Technology, South Africa

**ERP Process Modelling for Rural e-Governance - A Living Lab Approach**

Potjie van der Walt, Tshwane University of Technology, South Africa

**Presenting a Knowledge Support Portlet as part of a collaborative Educational Community Learning Area**

Bertie Buitendag, Tshwane University of Technology, South Africa

16:00 Workshop 8e [Building a Research Network Infrastructure - Round Table](#)

African Co-Chairs: [Boubakar Barry, AAU NREN unit](#); [Francis Tusubira, Ubuntunet Alliance](#)

European Co-Chairs: [Bjorn Pehrson, KTH](#); [Cathrin Stöver, DANTE](#)

**Application Introductions**

**Medicine**

**Dissemination of Evidence-based Drug Information**

Elisabeth Törnqvist, Karolinska Institutet, Sweden

**Biomedical Computation Engineering Design**

**Round Table Discussion**

17:30 - 18:00 [Exhibition & Networking](#)

19:30 - 22:00 [Gala Dinner, Windhoek Country Club](#)



Friday,  
May 09, 2008

09:00 Session 9a [eGovernment - Leveraging ICT for Governance](#)

Chair: [Love Ekenberg, Stockholm University and KTH, Sweden](#)

**Corporate and IT Governance in Local Municipalities - Towards a Best Practice**

Emile Kaselowski, Nelson Mandela Metropolitan University, South Africa

**Arguing for Enhancing Public Service Efficiency and Effectiveness Through e-Government: The Case of Zimbabwe**

Ephias Ruhode, Cape Peninsula University of Technology, South Africa

**eGovernment Experiences in Mauritius**

Sooryanand Kurumchand, State Informatics Limited, Mauritius

**Connecting communities: Creating access to the Citizen**

Paul Rowney, GijimaAst, Namibia

**Mobile Instant Messaging - The "Killer Application" for e(m)Government in Africa?**

Merryl Ford, Meraka Institute, South Africa

09:00 Session 9b [eInfrastructures](#)

Chair: [Carmen Mena Abela, European Commission, Belgium](#)

**Creating and Operating a Regional Grid Infrastructure: a Use Case from Latin America**

Bernard Marechal, Universidade Federal do Rio de Janeiro, Brazil

**South Africa's Investments in eInfrastructure to Support African Participation in Global R&D**

Johan Eksteen, Council for Scientific and Industrial Research, South Africa

**The UbuntuNet Alliance for Research and Education Networking: One More Piece in the Puzzle**

Margaret Ngwira, UbuntuNet Alliance for Research and Education Networking, Malawi

**Digital Divide in Sub-Saharan Africa Universities: Recommendations and Monitoring**

Boubakar Barry, Association of African Universities, Ghana

**Developing the National R&D Information Management System for Science and Technology in Uganda: A Proposal**  
Elisam Magara, Makerere University, Uganda

09:00 Workshop 9c **CAAST-Net: Coordination and Advancement of Africa-EU Science & Technology Cooperation**

Chair: **Andrew Cherry, Association of Commonwealth Universities, UK**

**CAAST-Net: Network for the Coordination and Advancement of sub-Saharan Africa-EU Science & Technology Cooperation**  
Eric Mwangi, Directorate of Research Development, Kenya

**Perspective from Africa of a Preliminary Analysis of S&T Cooperation between Africa and Europe under the Framework Programme**  
Mmboneni Muofhe, Department of Science & Technology, South Africa

**Enhancing EU-Africa S&T Cooperation through a Joint Policy Dialogue**

Nadia Meyer, German Aerospace Center (DLR), Germany

**Practical Approaches to Identifying Areas of Potential Cooperation in S&T between Africa and Europe under the EU Framework Programme**

Jean Albergel, IRD, France

09:00 Session 9d **eInclusion – Using ICT to Support Rural Communities**

Chair: **Ilari Lindy, ENISA, Greece**

**Towards a Modelling Framework for Information and Communication Technology Use in Commercial Agriculture: Significant Factors in a Developing Country**  
Rachael Tembo, Cape Peninsula University of Technology, South Africa

**Using ICTs for Managing Network Genebanks: The Case of SADC Plant Genetic Resources Centre**

Barnabas Kapange, SADC Plant Genetic Resources Centre (SPGRC), Zambia

**Access to Digital Content and Information in Developing Countries: the Case of Agricultural Research and Development in Uganda**

Raphael Aregu, University of Groningen/Gulu University, Netherlands

**ICT as an Enabler for Maximising the Local Economies of Small-town, Rural Africa**

Roger Layton, Roger Layton Associates (Pty) Ltd, South Africa

**Internet in Rural areas of Zambia: A User Study**

Paula van Hoorik, TNO, Netherlands

10:30 Coffee Break

Exhibition & Networking

11:00 Session 10a

eGovernment - Applications

Chair: **Gareth MacNaughton, Lane & Hapiak Consulting, United Kingdom**

**Challenges and Barriers of Introducing ICT to Enhance Functioning of Parliaments**

Vasilis Koulolias, Gov2u, Greece

**Towards the Introduction of PDAs to Support Decision Making Process: Case of MPs in Tanzania**

Zuberi Kironomara, University of Joensuu, Republic of Tanzania

**E-Government in the Public Service of Namibia: A Records Management Perspective**

Cathrine Tambudzai Nengomasha, University of Namibia, Namibia

**A Proposed Implementation of SAML V2.0 in an e Government Setting**

Carina Wangwe, Parastatal Pensions Fund, United Republic of Tanzania

**eGovernment and Sociotechnical Feedback Control System**

Lourino Chemane, ICT Policy Implementation Technical Unit (UTICT), Mozambique

11:00 Session 10b **eInfrastructures 2: Leveraging Telecommunications**

Chair: **Laurens Cloete, Meraka Institute, South Africa**

**Hybrid Satellite-wireless Solutions for Broadband Coverage in Rural and Remote Areas: from TWISTER to NeT-ADDeD**

Maria Zapata Margeli, ASTRIUM SAS, France

**Towards a Viable Broadband Solution in Southern Africa: the Potential of WiMAX Technology**

Maghmuda Ockards, CPUT, South Africa

**6DEPLOY: IPv6 Deployment Support**

Martin Potts, Martel, Switzerland

**To Over-come the Distance and Time Friction**

Theodorus Klein, Telecom Namibia, Namibia

11:00 Workshop 10c **Challenges and Opportunities for African-European ICT Partnerships in FP7**

Chair: **Mmboneni Muofhe, Department of Science & Technology, South Africa**

**The START/EuroAfrica-ICT Initiative**

Tshepang Mosiea, Meraka Institute, South Africa

**Advancing Science and Technology through Partnerships**

Mmboneni Muofhe, Department of Science and Technology, South Africa

**ST-EAP (Science Technology-Europe Africa Project)**

Zethu Mkhondo, CSIR, South Africa

**Discussion**

11:00 Session 10d

ICT for Environmental Risk Management

Chair: **Guy Weets, University of Luxembourg**

**The TALOS Project in Disaster Management and Delivery of Urgent Information**

Manolis Stratakis, FORTHnet, Greece

**Uniform Research Management**

Karel Charvat, Wirelessinfo. Czech Republic

**Humboldt for Forestry Data Harmonisation**

Otakar Cerba, Czech Centre for Science and Societyo. Czech Republic

**Dynamic Geospatial Infrastructure for Forest Fires**

Karel Charvat, Wirelessinfo. Czech Republic

**ICT for ERM - A Sustainable Approach for Africa**

Guy Weets, University of Luxembourg

12:30 Lunch

Exhibition & Networking

13:30 Closing Plenary 12a

**ARAPKE Flagship Projects**

Dr Hakim Elwaer, HRST, African Union Commission

**Overview of the ICT Activities supported by NEPAD S&T and Flagship Projects**

Dr Philippe Mawoko, NEPAD S&T

**UNECA's ICT and Science & Technology Programme: Supporting the Development of ICT National Strategies**

Ms. Aida Opoku-Mensah, United Nations Economic Commission for Africa, Ethiopia

**UNESCO Virtual Campus of Universities for Africa**

Dr Shamila Nair-Bedouelle, Division of Science Policy and Sustainable Development, UNESCO

**How SPIDER Makes Knowledge More Accessible to Developing Regions**

Ms. Magda Berhe, The Swedish Program for ICT in Developing Regions

**Strengthening African - European Cooperation in ICT and S&T**

Thierry Devars, European Commission, Belgium

**Best Paper Awards**

**Best Demonstration Stand Award**

Presented by **Minister Joel Kaapanda, Minister of ICT; Minister Willem Konjore, Minister of Youth, National Service, Sport & Culture and Minister Abraham Iyambo, Minister of Fisheries & Marine Resources**

**Formal Closing of Conference**

Minister Nangolo Mbumba, Minister of Education, Republic of Namibia

## Participating Organisations

Over 460 delegates from Europe and Africa participated in **IST-Africa 2008**.

### European Organisations

- Vienna University of Technology, Austria
- UNIDO, Austria
- European Commission, Belgium
- Institute of Tropical Medicine, Belgium
- SPACEBEL, Belgium
- University of Luxembourg
- Czech Centre for Science and Society, Czech Republic
- Wirelessinfo, Czech Republic
- Lappeenranta University of Technology, Finland
- University of Joensuu, Finland
- ASTRIUM SAS, France
- France Telecom/Orange Labs, France
- INSEAD, France
- IRD, France
- Orionis, France
- UNESCO, France
- DFN-Verein, Germany
- German Aerospace Center (DLR), Germany
- SAP Research, Germany
- TZI Universitaet Bremen, Germany
- ENISA - European Network and Information Security Agency, Greece
- FORTHnet, Greece
- Gov2U, Greece
- IIMC Ltd, Ireland
- CNR-IASI / LUISS-CeRSI, Italy
- INSIEL, Italy
- Nematrix Research, Italy
- The Abdus Salam International Centre for Theoretical Physics, Italy
- UNU-MERIT, Netherlands
- TNO, Netherlands
- University of Oslo, Norway
- ITTI, Poland
- PT Inovacao SA, Portugal
- Comenius University, Slovakia
- Jozef Stefan Institute, Slovenia
- Atos Origin sae, Spain
- CIEMAT, Spain
- Institute for Prospective Technological Studies, Spain
- Karolinska Institutet, Sweden
- Karolinska University Hospital, Sweden
- The Royal Institute of Technology, Sweden
- The Swedish Program for ICT in Developing Regions, Sweden
- Umeå University, Sweden
- Martel, Switzerland
- TASK Women's Health (charity), United Kingdom
- Association of Commonwealth Universities, United Kingdom
- British Publishers Ltd, United Kingdom
- DANTE, United Kingdom
- Kingston University, United Kingdom
- Lane & Hapiak Consulting, United Kingdom
- Museum of London Group, United Kingdom
- The Open University, United Kingdom
- University of Edinburgh, United Kingdom
- University of Portsmouth, United Kingdom

### African Organisations

- Ministry of Communications, Science and Technology, Government of Botswana
- Southern African Development Community (SADC), Botswana

- University of Botswana, Botswana
- Ecole Nationale Supérieure Polytechnique, Cameroon
- Univesity of Yaounde I, Cameroon
- African Union Commission, Ethiopia
- Mekelle University, Ethiopia
- Ministry of Work and Urban Developments, Ethiopia
- UN Economic Commission for Africa, Ethiopia
- University of Gondar, Ethiopia
- Association of African Universities, Ghana
- Forum for Agricultural Research in Africa (FARA), Ghana
- Ghana Information Network for Knowledge Sharing (GINKS), Ghana
- Kofi Annan Centre of Excellence in ICT (AITI), Ghana
- S.W Global Ltd, Ghana
- Directorate of Research Development, Kenya
- Egerton University, Kenya
- Ministry for Higher Education, Science and Technology, Kenya
- University of Nairobi, Kenya
- Ministry of Communications, Science and Technology, Lesotho
- UbuntuNet Alliance for Research and Education Networking, Malawi
- University of Malawi, College of Medicine, Malawi
- State Informatics Limited of Mauritius, Mauritius
- Centro de Informática da Universidade Eduardo Mondlane (CIUEM), Mozambique
- Eduardo Mondlane University, Mozambique
- ICT Policy Implementation Technical Unit (UTICT), Mozambique
- MICTI - Mozambique Information and Communication Technology, Mozambique
- Ministry of Science and Technology, Mozambique
- Pedagogical University, Mozambique
- Universidade Eduardo Mondlane, Mozambique
- University of St. Thomas, Mozambique
- Algeria Embassy, Namibia
- Allgemeine Zeitung, Namibia
- Ambassador to Brazil Embassy, Namibia
- Ambassador, Cuba Embassy, Namibia
- British High Commission, Namibia
- CIO, Ministry of Education, Namibia
- CLDC, Namibia
- Community Education Computer Society, Namibia
- Congo (DRC) Embassy, Namibia
- De Beers Marine Group, Namibia
- Delegation of European Commission to Namibia
- Deputy Ambassador, Libya Embassy, Namibia
- National Planning Commission, Namibia
- Director of ILRC, Univ. of Namibia
- Embassy of Egypt, Namibia
- Embassy of Finland, Namibia
- Embassy of Zimbabwe, Namibia
- Gerhard Fish Enterprises, Namibia
- Ghana High Commission, Namibia
- Gijima AST, Namibia
- Global e-Schools & Communication Initiative, Namibia
- Head of Cooperation, Embassy of Spain, Namibia
- Health Information Systems Programme, Namibia
- High Commission of Republic of Kenya, Namibia
- High Commissioner, British High Commission, Namibia
- High Commissioner, India High Commission, Namibia
- Honorary Consul, Netherlands Consulate Namibia
- ICEMA Project, Namibia
- ICT Alliance of Namibia
- ILRC, University of Namibia
- Indonesia Embassy, Namibia

- Insight Magazine, Namibia
- Joint Consultative Council, Namibia
- Kanaal 7 Radio, Namibia
- Ministry of Agriculture, Water and Forestry, Namibia
- Ministry of Education, Namibia
- Ministry of Environment and Tourism, Namibia
- Ministry of Foreign Affairs, Namibia
- Ministry of Health and Social Services, Namibia
- Ministry of Home Affairs, Namibia
- Ministry of Information Communication Technology, Namibia
- Ministry of Safety & Security, Namibia
- Ministry of Trade & Industry, Namibia
- MultiChoice Namibia
- MWT, Namibia
- Namcor, Namibia
- Namibia Economist, Namibia
- Namibia Network Information Center, Namibia
- Namibia Principals Association, Namibia
- Namibian Telecom, Namibia
- National Archives, Namibia
- National Institute for Educational Developmet (NIED), Namibia
- National Youth Council of Namibia, Namibia
- NBC, Namibia
- NBC Radio, Namibia
- NCHE, Namibia
- NETSS, Namibia
- New Era, Namibia
- NLAS, Namibia
- NPC, Namibia
- Office of the Prime Minister, Namibia
- One Africa TV, Namibia
- OPM, Namibia
- Polytechnic of Namibia
- Republikein, Namibia
- Rundu College of Education, Namibia
- SADC Parliamentary Forum, Namibia
- SchoolNet Namibia, Namibia
- South Africa High Commission, Namibia
- Southern Times, Namibia
- The Namibian, Namibia
- Think Fudge Communications Consultancy CC, Namibia
- University of Namibia, Namibia
- Windhoek College of Education, Namibia
- WorldTeach, Namibia
- XNET, Namibia
- Olabisi Onabanjo University, Nigeria
- Embassy of Nigeria, Nigeria
- Rwanda Education and Research Network, Rwanda
- Cape Peninsula University of Technology (CPUT), South Africa
- COFISA, South Africa
- Council for Scientific and Industrial Research, South Africa
- Department of Economic Affairs, South Africa
- Department of Science and Technology, South Africa
- Embassy of Finland, South Africa
- ForgeAhead, South Africa
- INSPIRE, South Africa
- meLearn Education, South Africa
- Meraka Institute, CSIR, South Africa
- Nelson Mandela Metropolitan University, South Africa
- NEPAD S&T, South Africa
- Office of the Premier, South Africa
- Office of the Premier - Limpopo, South Africa
- Research Africa, South Africa
- Roger Layton Associates (Pty) Ltd, South Africa
- SAP Research CEC Pretoria, South Africa
- SITA, South Africa
- Stellenbosch University, South Africa
- The University of the Western Cape, South Africa
- Tshwane University of Technology, South Africa
- UNISA, South Africa
- University of Cape Town, South Africa
- University of the Witwatersrand, Johannesburg, South Africa
- Dar Es Salaam Institute of Technology, United Republic of Tanzania
- Development Association for Tanzania, United Republic of Tanzania
- Ministry of Communication, Science and Technology, United Republic of Tanzania
- Muhimbili University of Health and Allied Sciences, United Republic of Tanzania
- Open University of Tanzania, United Republic of Tanzania
- Parastatal Pensions Fund, United Republic of Tanzania
- Sokoine University of Agriculture, United Republic of Tanzania
- Tanzania Commission for Science and Technology, United Republic of Tanzania
- Tanzania Communication Regulatory Authority, United Republic of Tanzania
- Tanzania Industrial Research & Development Organisation
- Tumaini University, United Republic of Tanzania
- University of Dar es Salaam, United Republic of Tanzania
- Makerere University, Uganda
- Ministry of Information and Communcations Technology, Uganda
- UbuntuNet Alliance, Uganda
- Uganda Martyrs University, Uganda
- Uganda National Council for Science and Technology, Uganda
- LinkNet, Zambia
- SADC Plant Genetic Resources Centre (SPGRC), Zambia
- UbuntuNet Alliance, Zambia

## IST-Africa Initiative

Regional Impact of Information Society Technologies in Africa (“**IST-Africa**”) is a Multi-Stakeholder Initiative focused on raising wider awareness of African research capacity, promote participation of African organizations in the ICT Theme of FP7 and identify co-operation opportunities in fields of mutual interest. The **IST-Africa Initiative** is supported by the European Commission under FP7-ICT.

**IST-Africa** is a collaborative Initiative between IIMC International Information Management Corporation Limited (Ireland, Coordinator), Ministry of Communications, Science and Technology (Botswana), Ministry of Communications, Science and Technology (Lesotho), Commonwealth Network of Information Technology for Development (Malta), ICT Policy Implementation Technical Unit (Mozambique), Ministry of Education (Namibia), Wits Commercial Enterprise (Pty) Ltd (South Africa), COSTECH - Tanzania Commission for Science and Technology, and Uganda National Council for Science and Technology.

**IST-Africa** has started collaborating with the Kenya Ministry of Higher Education, Science and Technology to support the Kenyan research community.



## Exhibition

**IST-Africa 2008** Exhibition showcases applied ICT research results and applications through technology demonstrations and posters, whether funded commercially, or at a national, regional or European level.

## Demonstration Stands

Stand Name	Organisation	Country
IST-Africa Initiative	IST-Africa Consortium	Sub-Saharan Africa
Ministry of Education	Ministry of Education	Namibia
Ministry of Information and Communication Technology	Ministry of ICT	Namibia
Digital World Forum	W3C	France
WirelessInfo Rural Living Lab	WirelessInfo	Czech Republic
ESASTAP	Department of Science and Technology	South Africa
SAP	SAP	South Africa
Polytechnic of Namibia	Polytechnic of Namibia	Namibia
University of Namibia	University of Namibia	Namibia
Telecom Namibia	Telecom Namibia	Namibia
GijimaAst	GijimaAst	Namibia
MultiChoice Africa	MultiChoice Namibia	Namibia

**Conference Portal & Delegate Showcase**  
[www.IST-Africa.org/Conference2008](http://www.IST-Africa.org/Conference2008)

## IST-Africa 2008 Additional Supporting Organisations



# IST-Africa 2009

## Call for Papers

### Republic of Uganda

6 - 8 May 2009

#### Thematic Priorities

- eHealth – Health Information Systems
- eInfrastructures
- Technology Enhanced Learning and ICT Skills
- Digital Libraries and Intelligent Content
- Open Source Software - Applications
- ICT for eInclusion and eAccessibility
- ICT for Environmental Sustainability
- RFID and Networked Enterprise
- eGovernment – Services to Citizens & Business

#### Deadlines

- Online Submission Deadline: **09 November 2008**
- Provisional Acceptance: **16 January 2009**
- Submission of Final Paper: **20 February 2009**
- Presenter Registration: **9 March 2009**

#### Submission of Papers

- Paper Focus – Technical, Visionary, Business or Government Case Studies
- Papers must highlight Level of Innovation, as well as Actual or Expected Impact
- Papers must present either a Case Study, or Analysis of Initial or Final Research Results
- All Papers must be 4,000 - 5,000 words in length & use the **IST-Africa** Paper Template

#### Supported by

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European Commission  
Information Society and Media



REPUBLIC OF UGANDA

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# ISTAfrica 2009

## Conference Focus

Part of the **IST-Africa Initiative**, which is supported by the European Commission under the Information Communications Technologies (ICT) Theme of Framework Programme 7 (FP7), **IST-Africa 2009** is the fourth in a series of annual technology research conferences that bring together representatives from leading commercial, government and research organisations around the world to bridge the Digital Divide by sharing knowledge, experience, lessons learnt and good practice, and identify opportunities for international research collaboration between Europe and Africa under the ICT Theme and Research Infrastructures (Capacities Programme) of Framework Programme 7 (FP7).

The **IST-Africa Conference Series** provides a platform to strengthen Information Society policy dialogues between Africa and Europe through Plenary Presentations and private bi-lateral and multi-lateral meetings, which complement the rich thematic knowledge exchange facilitated by the Scientific Programme. Each Conference puts a special emphasis on showcasing ICT Adoption, Innovation and Research Capacity in the Host Country (**IST-Africa 2006** - South Africa, **IST-Africa 2007** - Mozambique, **IST-Africa 2008** - Namibia).

## Event Profile

The **IST-Africa Conference Series** has a truly international perspective, attracting Ministerial participation, senior representatives from the European Commission, African Union Commission, NEPAD S&T, SADC Secretariat, UNECA, UNESCO and over 470 delegates from Europe and Africa.

Its reputation is based on high quality papers & interactive workshops showcasing innovative ICT research results and applications, whether funded privately, or at national, regional, international or European level. The participation of industry, government and research in the **IST-Africa Conference Community** ensures a stimulating and high quality networking environment, providing an opportunity to share knowledge and experience with potential research or exploitation partners. Each **IST-Africa Conference** places a special focus on Host Country activities, as well as sectoral and regional initiatives and success stories.

**IST-Africa 2009** will disseminate research results from FP6 and FP7, and focus on International Research Cooperation Opportunities for African organisations under the ICT Theme & Research Infrastructures (FP7). Special thematic tutorials will provide insight into specific European co-funded research opportunities.

## Call for Sponsors

**IST-Africa 2009** is Supported by the European Commission, Hosted by the Government of Uganda and Technical Co-Sponsored by IEEE.

The **IST-Africa Conference Series** is self-funding through delegate registrations and Sponsorship. Your sponsorship funds additional delegate services as well as scholarships for deserving African participants. Register your Sponsorship interest by contacting the Conference Secretariat: [Secretariat@IST-Africa.org](mailto:Secretariat@IST-Africa.org)

**IST-Africa 2008** Major Sponsors included the Ministry of Education (Namibia), Namibia Telecom, SPIDER Programme and SAP, with Technical Co-Sponsorship by IEEE.

## Publishing Schedule

- Draft Final Paper and Workshop Proposals submitted online by **9 November 2008**
- Provisional Acceptance of Draft Final Papers with IPC feedback provided on **16 January 2009**
- Final Papers to be submitted online by **20 February 2009** for editorial review & quality check
- Accepted Presenters must register and pay the Presenter Fee by **9 March 2009**
- The Conference Proceedings will be published on CD-Rom

## International Programme Committee

A distinguished International Programme Committee (IPC) is being formed by Paul Cunningham, the **IST-Africa** Conference Chair. The **IST-Africa 2009** IPC will evaluate and provide feedback on all final draft papers received, provide feedback on final presentations, and chair sessions.

## Conference Portal

For the most up to date information, please visit [www.IST-Africa.eu/Conference2009](http://www.IST-Africa.eu/Conference2009)