Introduction

**IST-Africa 2013** Conference & Exhibition takes place 29 - 31 May 2013 in Nairobi, Kenya, as part of **IST-Africa Week 2013**. An activity of **IST-Africa**, which is supported by the European Commission and African Union Commission and co-funded under the EU Framework Programme, **IST-Africa 2013** is the eighth in an Annual Conference Series bringing together senior representatives from leading public, private, education & research organisations, to discuss ICT policy, showcase research results and share knowledge.

European research activities are structured around consecutive multi-annual programmes, or so-called Framework Programmes. Horizon 2020 sets out the Priorities and thematic areas, including ICT, for 2014 - 2020. Horizon 2020 is fully open to international co-operation with the aim to jointly address major challenges where significant added value is expected to be gained from a world-wide R&D cooperation. In this context, the European Commission has co-funded **IST-Africa** since 2006, to promote African - European research cooperation and support Information Society and ICT aspects of the Africa-EU Strategic Partnership.

Hosted by the Government of Kenya through the Ministry of Education Science and Technology and Technically Co-Sponsored by IEEE, **IST-Africa 2013** focuses on the Role of ICT for Africa's Development and specifically on Applied ICT research in the areas of eHealth, Technology Enhanced Learning and ICT Skills, Digital Libraries, Open Source Software, ICT for eInclusion and eAccessibility, eInfrastructures, RFID and ICT for Networked Enterprise and eGovernment and eDemocracy. **IST-Africa 2013** will provide a collegiate setting for presentations and discussions of national & regional developments, issues of concern & good practice models, and networking with peers. **IST-Africa 2013** will also provide an opportunity to identify potential partners for future proposals under Horizon 2020, the follow on programme to FP7, which will commence from 2014.

**IST-Africa** directly supports Information Society, Innovation and ICT aspects of the Africa-EU Strategic Partnership, the African Ministerial Council on Science and Technology (AMCOST) and the Consolidated Plan of Action for the African Regional Action Plan on the Knowledge Economy (ARAPKE).

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.

Who will you meet?

**IST-Africa 2013** Conference & Exhibition attracts policy makers, practitioners, and researchers from leading commercial, government and research organisations around the world. Unlike many research conferences, **IST-Africa** provides an opportunity to meet with 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 2013** Conference & Exhibition also provides the unique opportunity to identify partners and opportunities to co-operate in international ICT research projects co-funded by the European Commission under Horizon 2020. Much of the European research results presented in this year’s conference were co-funded under the FP7 ICT Programme (2007 - 2013).

The Venue

**IST-Africa 2013** Conference & Exhibition takes place in the Safari Park Hotel, Nairobi. The hotel is located on Nairobi Thika Road, 25 mins by car from the city centre and 40 mins by car from the airport.

The Programme

The 3-day programme features 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 may participate in 44 thematically focused parallel sessions featuring different aspects of International Cooperation, eHealth, eInfrastructures, Technology Enhanced Learning and ICT Skills, Living Labs, Digital Libraries, eInclusion, Mobile Applications, ICT for Environmental Sustainability, eAgriculture and eGovernment and eDemocracy. Session Chairs will ensure active discussion and facilitate delegate participation.

In the context of focusing on the Role of ICT for Africa's Development, the Opening Plenary on Wednesday 29 May features a high level dialogue on Implementation of the 8th Africa-EU Strategic Partnership on Science, Information Society and Space. The Closing Plenary on Friday 31 May focuses on Initiatives Supporting Development of Regional S&T.

The programme is subject to change and the **IST-Africa 2013** Organising Committee reserves the right to alter the contents, venue and/or speakers. This Programme is accurate as at 23 May 2013.
Networking

Networking is a key feature of the IST-Africa Conference Series. Paper and workshop sessions are designed to maximise knowledge sharing by providing time for interactive discussions during the conference programme itself. Coffee breaks will take place in the Exhibition area to maximise exposure for technology demonstrations and posters and to facilitate informal one-on-one and small group discussions following paper or workshop sessions.

The Delegate Showcase on the Conference Portal allows registered delegates, speakers and exhibitors to publish their own short profile and research interests to facilitate networking before, during and after the conference. Leverage this functionality to contact potential partners in advance and arrange to meet during the conference.

Living Labs Workshop, 28 May

IST-Africa is organising the third Annual Living Lab Thematic Working Group Meeting on Tuesday 28 May 2013.

This workshop will facilitate knowledge sharing and collaboration between Innovation Stakeholders and operators of Living Labs and Innovation Spaces, building on progress achieved at previous Working Group Meetings in Dar es Salaam (2012) and Gaborone (2011). This participatory working group meeting will continue building the network of experts, public, private, education and research and societal stakeholders and entrepreneurs committed to Collaborative Innovation as a mechanism to support sustainable socio-economic development in Africa.

IST-Africa 2013 delegates are invited to pre-register for this participatory working group meeting as part of online registration.

Conference Proceedings

The IST-Africa 2013 conference proceedings will be published on CD-ROM and on the Conference Portal. Each delegate will receive a free copy of the conference proceedings at Registration.

Following the conference, registered delegates will have access to all PowerPoint presentations, which will be published on the Conference Portal. The IST-Africa 2013 Conference Proceedings will also be submitted for publication in IEEE Xplore.

Security, Health and Safety

Please wear your name badge for all IST-Africa activities, as it is your identification and allows you access to the facilities on offer. While the conference area is on a secure site and not open to the general public, it is still necessary to take care of bags, personal computers and other personal belongings.

The organisers cannot accept any responsibility for losses incurred or for personal health and safety. Delegates should ensure that they have personal health insurance and take due care when exploring the city of Nairobi. Any special needs or requirements should be notified to the Conference Secretariat as far in advance of the event as possible.

Hotel Accommodation

Conference rates have been negotiated for delegates and accompanying persons at Safari Park Hotel (conference venue). The Safari Park is located 25 minutes drive from the city centre.

Conference hotel accommodation should be booked online on the IST-Africa Conference portal as part of conference registration.

Delegates are strongly recommended to book their accommodation early as it will be allocated on a first-come, first-served basis. Hotel accommodation can only be confirmed upon receipt of the associated payment. For further information, please visit:

www.IST-Africa.org/Conference2013

How to get there

Nairobi is located eight to nine hours by air from Europe with direct flights from a number of European Capitals, and just over four hours by air from Johannesburg.

Delegates are advised to book flights and accommodation as early as possible.

Sponsors

IST-Africa 2013 offers a variety of Sponsorship Opportunities to enhance your organisation’s image & standing with the international IST research community. Prominent notice will be given to sponsors on the conference portal, in press releases, together with other benefits and promotional opportunities.

IST-Africa 2013 is hosted by the Government of Kenya through the Ministry of Education, Science and Technology. KENET is providing the Internet connectivity during the event. SPIDER is contributing towards a dinner for delegates.

For further information, please contact the Conference Secretariat at secretariat@IST-Africa.org
Keynote Speakers as at 23 May 2013 include:

- Cabinet Secretary, Ministry of Education, Science and Technology, Kenya (tbc)
- Cabinet Secretary, Ministry of ICT, Kenya (tbc)
- Prof Crispus Kiamba, Permanent Secretary, Ministry of Education, Science and Technology, Kenya
- Dr Bitange Ndemo, Permanent Secretary, Ministry of Information Communication Technology, Kenya
- Mr. Francis Wangusi, Director General, Communications Commission of Kenya
- Dr Katherine Getao, ICT Secretary, eGovernment Directorate, Kenya
- Mr Moctar Yedaly, Head of Information Society Division, African Union Commission
- Mr Morton Moller, Programme Coordination, DG CONNECT, European Commission, Belgium
- Dr Rached Hamza, JEG8 Co-chair, Tunisia
- Prof. Meoli Kashorda, Executive Director, KENET, Kenya
- Prof. Koi Muchira Tirima, Deputy Vice Chancellor-ARS, Inoorero University / LIWA, Kenya
- Mr Jerome Morrissey, CEO, GESCI, Kenya
- Mr Stéphane Hogan, Science Counsellor at the EU Delegation to the African Union, Addis Ababa
- Mr Moses Bayingana, ICT Expert, Information Society Division, African Union Commission
- Prof. Shaukat Abdulrazak, CEO, National Council for Science and Technology, Kenya
- Loi Miremba Namugenyi, Uganda National Council for Science & Technology, Uganda
- Dr Joseph Sevilla, @LabAfrica, Strathmore University, Kenya
- Matti Sinko, Aalto University, Finland
- Bernard Stevenot, SpaceBel, Belgium
- Richard Stevens, Stevens Consultants, Italy
- Daan du Toit, Senior Science and Technology Representative in Europe, Department of Science and Technology, South Africa
- Darelle Van Greumen, Nelson Mandela Metropolitan University/Computer Society of South Africa, South Africa

The **IST-Africa 2013** International Programme Committee includes:

- Paul Cunningham (Conference Chair), IIMC International Information Management Corporation Ltd, Ireland
- Professor Jorn Braa, Department of Informatics, Oslo University, Norway
- Dr Bruce Becker, Meraka Institute, CSIR / South Africa National Grid, South Africa
- Laurens Cloete, Meraka Institute, CSIR, South Africa
- Miriam Cunningham, IIMC International Information Management Corporation Ltd, Ireland
- Kim Davis, Research Council of Norway
- Prof. Love Ekenberg, University of Stockholm, Sweden
- Razvi Doorn, University of Mauritius, Mauritius
- Prof. Marlien Herselman, Living Labs of Southern Africa Network, South Africa
- Dr. Mike Joy, University of Warwick, United Kingdom
- Dr. Bernhard R. Katzy, CeTIM, The Netherlands
- Vincent Kaabunga, IEEE Kenya Section, Kenya
- Vasilis Koulolias, Gov2U, Belgium
- Kristiina Lahde, TANZICT Programme, Tanzania
- Ilari Lindy, World Bank Institute, United States
- Gareth MacNaughton, CISCO, United Kingdom
- Dr Ayub Manya, Ministry of Health, Kenya
- Prof. Maurice Mars, University of Kwazulu-Natal, South Africa
- Dr. Raphael Mmasi, Tanzania Commission for Science and Technology (COSTECH), Tanzania
- Prof. Meoli Kashorda, Executive Director, KENET, Kenya
- Prof Koi Muchira Tirima, Deputy Vice Chancellor-ARS, Inoorero University / LIWA, Kenya
- Mr Jerome Morrissey, CEO, GESCI, Kenya
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- Richard Stevens, Stevens Consultants, Italy
- Daan du Toit, Senior Science and Technology Representative in Europe, Department of Science and Technology, South Africa
- Darelle Van Greumen, Nelson Mandela Metropolitan University/Computer Society of South Africa, South Africa

**Organising Committee**

- Miriam Cunningham, IIMC, Ireland
- Paul Cunningham, IIMC, Ireland
- Prof Crispus Kiamba, Permanent Secretary, Ministry of Education, Science and Technology, Kenya
- Dr Eric Mwangi, Ministry of Education, Science and Technology, Kenya

**Conference Secretariat**

IIMC Ltd
13 Docklands Innovation Park, 128 East Wall Road, Dublin 3, Ireland
Tel: +353 (0) 1 8170607, Fax: +353 (0) 1 8170606

E-mail: secretariat@IST-Africa.org

[www.IST-Africa.org/Conference2013](http://www.IST-Africa.org/Conference2013)
Wednesday, May 29, 2013

08:00 Registration

09:00 Opening Plenary 1a: Opening Plenary
Moderator: Prof. Crispus Kiambu, Ministry of Education, Science and Technology, Kenya

Brief Remarks
Prof. Harry Kaane, Higher Education, Science and Technology Secretary, Kenya

Welcome Address
Prof. Crispus Kiambu, Permanent Secretary, Ministry of Education, Science and Technology, Kenya

European Commission Address
Morten Møller, Programme Coordination, DG CONNECT, European Commission, Belgium

African Union Commission Address
Moctar Yedaly, Head of Information Society Division, African Union Commission

Official Opening Speech
Prof. Jacob Kaimenyi, Cabinet Secretary, Ministry of Education, Higher Education Commission

Welcome Address
Prof. Harry Kaane, Higher Education, Science and Technology Secretary, Kenya

Official Opening Speech
Prof. Jacob Kaimenyi, Cabinet Secretary, Ministry of Education, Science and Technology, Kenya

Coffee Break: Networking & Exhibition

11:00 Plenary Session 2a: ICT Initiatives and Research Capacity in Ethiopia
Moderator: Abdissa Yilma Tiky, Ministry of Science and Technology, Ethiopia

ICT Initiatives and Research Capacity in Ethiopia
Abdissa Yilma Tiky, Ministry of Science and Technology, Ethiopia

11:00 Plenary Session 2a: ICT Initiatives and Research Capacity in Burundi
Moderator: Augustin Naabiyumva, Ministry of Higher Education and Scientific Research, Burundi

ICT Initiatives and Research Capacity in Burundi
Augustin Naabiyumva, Ministry of Higher Education and Scientific Research, Burundi

11:00 High-level Roundtable: ICT Initiatives and Research Capacity in Tanzania
Moderator: Loi Namugenyi, Uganda National Council for Science and Technology

ICT Initiatives and Research Capacity in Tanzania
Loi Namugenyi, Uganda National Council for Science and Technology

11:00 High-level Roundtable: ICT Initiatives and Research Capacity in Uganda
Moderator: Dr. Rached Hamza, JEG8 Co-chair, Tunisia

ICT Initiatives and Research Capacity in Uganda
Dr. Rached Hamza, JEG8 Co-chair, Tunisia

11:00 High-level Roundtable: ICT Initiatives and Research Capacity in Kenya
Moderator: Julia Korongo, Moi University, Kenya

ICT Initiatives and Research Capacity in Kenya
Julia Korongo, Moi University, Kenya

11:30 Lunch: Networking & Exhibition

12:30 Session 3a: mLearning
Chair: Njie Check, ANTIC, Cameroon

- Can Micro-Volunteering Help in Africa?
  Laurie Buttgeir, Meraka Institute, South Africa

- 3-Category Pedagogical Frame Work For context based Ambient Learning
  Simon Mwendia, University of Nairobi, Kenya

- Social Studies Teachers’ Intention to Use Mobile Phone as a Support and Tutorial Tool for Teaching
  Gloria Amedoja, University of Ibadan, Nigeria

- Use of Swarm Intelligence to Improve Interactions in mLearning Collaborative Concept Mapping
  Stephen Njenga & Elijah Omwenga, University of Nairobi, Kenya

14:00 Session 3a: mLearning
Chair: Katherine Getao, ICT Secretary, eGovernment Directorate, Kenya

- An Information Security Model for E-government Services Adoption in Uganda
  Gilbert Maiga, Makerere University, Uganda

- Bottom-Up eGovernment Environmental Factors (BUEF): Facilitated Building and Implementation of eGovernment Systems in the SADC Region
  Jameson Mbane, University of Namibia, Namibia

- Factors Affecting the Use of Data Mining in Mozambique
  Constantino Solomane, Ministry of Science and Technology, Mozambique

- eSecurity Solution for African ICT Developments
  Innocentia Dlamini, CSIR, South Africa

14:00 Session 3d: ICT for Environmental Sustainability
Chair: Richard Liahona, Ministry of Education, Science and Technology, Kenya

- The Potentials of ICTs in Enhancing Environmental Sustainability in Tanzania
  Resty Mushi, University of KwaZulu-Natal, South Africa

- ICT for Flood Risk Management Strategies A GIS-based MCDM(A) approach
  Avelino Mondlane, Stockholm University, Sweden

- SenseWeather: Sensor-Based Weather Monitoring System for Kenya
  Muthoni Masinde, University of Nairobi, Kenya

- E-infrastructure for Climate Adaptation Policies: the UNDP/AAP Activities
  Stefano Cozzini, CNR/IOM Democritos, Italy

14:00 Session 3e: ICT for Environmental Sustainability
Chair: Ashwin Seegolam, National Computer Board, Mauritius

- Cloud Computing for Development – Improving the Health Information System in Ghana
  Jarn Braa, University of Oslo, Norway

- Adoption of Cloud Computing for Digital Libraries in Public Universities: Challenges and Opportunities
  James Kimutai, Moi University, Kenya

- The Viability of Cloud Computing Adoption in SMME’s in Namibia
  Ricardo Tjikongo, University of the Western Cape, South Africa

- Cloud Computing: an Emerging Trend for Small and Medium Enterprises
  Julia Korongo, Moi University, Kenya

  Tabitha Kihara, Moi University, Kenya

14:00 Panel Session 3f: The Role of Linkages in Leveraging the Information Society for Africa
Chair: Koi Muchira Tirima, Inoorero University, Kenya

- 3-Category Pedagogical Frame Work For context based Ambient Learning
  Simon Mwendia, University of Nairobi, Kenya

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  Simon Mwendia, University of Nairobi, Kenya

15:30 Coffee Break: Networking & Exhibition

16:00 Session 4a: ICT Initiatives and Research Capacities and Priorities II
Chair: Paul Cunningham, IIMC, Ireland

- ICT Initiatives and Research Capacity in Tunisia
  Noureddine Hamdi, Ministry of Higher Education and Scientific Research, Tunisia

- ICT Initiatives and Research Capacity in Egypt
  Inas Fateem, Ministry of Communications & IT, Egypt
09:00 Session 5a: IST-Africa – Research Capacities and Priorities III
Chair: Paul Cunningham, IMIC Ltd, Ireland

ICT Initiatives and Research Capacity in South Africa
Peacemaker Dlamini, Department of Science and Technology, South Africa
ICT Initiatives and Research Capacity in Botswana
Phodiso Phoile, Ministry of Transport and Communications, Botswana
ICT Initiatives and Research Capacity in Swaziland
Moses Zungu, Ministry of ICT, Swaziland
ICT Initiatives and Research Capacity in Malawi
Ebony Mkewanna, National Commission for Science & Technology, Malawi
ICT Initiatives and Research Capacity in Lesotho
Lieketseng Tloukotsi, Department of Science and Technology, Lesotho
ICT Initiatives and Research Capacity in Mozambique
Zauria Saifodine, National Institute for ICT, Mozambique

09:00 Session 5b: Technology-enhanced Learning - Case Studies
Chair: Jacob Njagi, Ministry of Education, Science & Technology, Kenya

Teaching and Learning Mathematics and Sciences Through Creative Computing Cycles
Vincent Ochieng, Teachers Service Commission, Kenya
Smart Running in Kenya: Kenyan Runners’ Improvement in Training, Informal Learning and Economic Opportunities Using Smartphones
Vasilis Koulolias, eGovLab, Greece
Evidence Based Medicine in HIV/AIDS and Reproductive Health Research: Piloting Two Distance Learning Courses in Low-Resource Settings
Maria Zolfo, Institute of Tropical Medicine, Belgium
The Reality and Rhetoric of eLearning in Higher Education in Kenya
Harriet Kidoombo, University of Nairobi, Kenya
Experiences of Designing an eLearning Training Program in a Collaborative Way
Paula Linna, Aalto University, Finland

09:00 Session 5c: eHealth - Supporting Telemedicine
Chair: Loi Namugenyi, Uganda National Council for Science & Technology

Designing a Cloud-Based Multinational Telemedicine Ecosystem for Developing Countries
Juhu Puustjärvi, University of Helsinki, Finland
Managing Health Systems in a Globalized World: Telemedicine Service Improves Access to Pediatric Cardiology in Cape Verde
Luis Velez Lapao, Instituto de Medicina e Higiene Tropical, Portugal
An eHealth Tele-Media Application for Patient Management
Vincent Ochieng, Teachers Service Commission, Kenya
Creative Computing Cycles
Teaching and Learning Mathematics and Sciences Through Informal Learning and Economic Opportunities Using Smartphones
Fredrerik Hattingh, Tshwane University of Technology, South Africa

09:00 Session 5d: ICT initiatives in Kenya
Chair: Daniel Obam, Ministry of ICT, Kenya

Providing ICT Infrastructure for the Public Service
Thomas Odhiambo, eGovernment Directorate, Kenya
Konga Techno City
Presenter to be confirmed
Challenges of Implementing eVoting in Africa
Diemars Ongond, Independent Electoral and Boundaries Commission, Kenya
Status and Progress of eLearning and eWaste in the Environment Sector
Vicky Onder, National Environmental Management Authority, Kenya
eAgriulture Extension in Kenya
Richard Kedem, Kenya Agricultural Research Institute, Kenya

09:00 Session 5e: Mobile Applications
Chair: Bruce Becker, Meraka Institute, CSIR, South Africa

Study of SMS Air Interface Delay in Strong and Weak Signal Environments
Martin Saint, Carnegie Mellon University in Rwanda, Rwanda
11:00 Workshop 6d: ICT for Sustainable Agriculture in Africa
Chair: Lishan Adam, ICT in Development, Ethiopia
AfricaConnect Extension - Preliminary Survey Results & Scenarios
Sabine Jaume-Rajaonia, RENATER, France
NRENs – The Case of RENATER and SnRER
Examples of Collaboration between the African and European
Allan Hanbury, Vienna University of Technology, Austria
Josephine Karuri, University of Nairobi, Kenya
Developing Countries – Contextualizing UTAUT
Adoption of Health Information Systems by Health Workers in
Orlando Zacarias, Stockholm University, Sweden
Strengthening the Health Information System in Mozambique
System To Enhance Data Management In Public Health
Open Data Kit, A Solution Implementing a Mobile Health Information
Josephat O. Oroma, Tumaini University - Aringa, Tanzania
Tanzania, Uganda and Kenya
Perspectives on Underutilisation of ICT in Education in
Alida Veldsman, Nelson Mandela Metropolitan University, South Africa
Using Technology in Living Labs to Transform Health, Wellness
Vincent Grèzes, University of Applied Sciences Western Switzerland
Innovation in African Living Labs
Embedding Business Model for Sustainable Collaborative
Science and Technology, Kenya
Dr. Salome Gichura, Director Higher Education, Ministry of Education,
Dr. Kamau Gachigi, Director, University of Nairobi Science Park
Dr. Edwin Ataro, Head of Electrical and Communication Engineering
Department, Moi University
Dr. Karau Machigi, Director, University of Nairobi Science Park
Dr. Salome Gichura, Director Higher Education, Ministry of Education,
Science and Technology, Kenya
14:00 Session 7b: Living Labs
Chair: Marlien Herselman, Meraka Institute, CSIR, South Africa
Panelists include:
Prof. Ogembo Kachinjiga, DVC for Research, Technical University of Kenya
Prof. Izael Da´Silva, DVC, Academic Affairs, Strathmore University
Prof. Ddeab Dieudonne, Dean, Faculty of ICT, KCA University
Prof. William Okello-Odongo, Director, School of Computing and
Informatics, University of Nairobi
Dr. Waweru Mwangi, Director, Institute for Computer Science and IT,
Jomo Kenyatta University of Agriculture and Technology
Dr. Edwin Ataro, Head of Electrical and Communication Engineering
Department, Moi University
The Importance of IT in Agriculture and Necessity of Agro-ICT
Infrastructures
Lucy Muchoki, Pan African Agribusiness and Agroindustry Consortium, Kenya
Worldclass Agribusiness Practice: What is the Role of Executive
Management Education?
David Mugun, Strathmore University, Kenya
Automatic Nationwide Real time Weatherstation Networks to
Forecast Diseases, Pest Developments, Irrigation Management
run Risk Management Systems and Reduce Damages for
Smallholder Agriculture in Africa
Gottfried Fessl, Pessl Instruments GmbH
12:30 Lunch: Networking & Exhibition
14:00 Session 7a: Senior University Leadership Roundtable on ICT Education,
Research and Innovation
Moderators: Prof. Harry Kaane, Ministry of Education, Science and
Technology & Paul Cunningham, IIMC, Ireland
Panelists include:
Dr. Salome Gichura, Director Higher Education, Ministry of Education,
Science and Technology, Kenya
Prof. Izael Da´Silva, DVC, Academic Affairs, Strathmore University
Prof. William Okello-Odongo, Director, School of Computing and
Informatics, University of Nairobi
Dr. Waweru Mwangi, Director, Institute for Computer Science and IT,
Jomo Kenyatta University of Agriculture and Technology
Dr. Edwin Ataro, Head of Electrical and Communication Engineering
Department, Moi University
Dr. Kamau Machigi, Director, University of Nairobi Science Park
Dr. Salome Gichura, Director Higher Education, Ministry of Education,
Science and Technology, Kenya
Content Hosting and Distribution Framework for Wireless Mesh
Networks
Thomas Gone, Cape Peninsula University of Technology, Kenya
11:00 Workshop 6f: ICT for Sustainable Agriculture in Africa
Chair: Walter Mayer, Progis Software GmbH, Austria
The Challenges of Implementing EDUROAM in Kenyan
University Campus Wireless LANs
Maureen Njue, Kenya Education Network, Kenya
Wireless Sensor Networks Testbed: ASNTbed
Angeline Gcina Dludla, CSIR, South Africa
Building a Sustainable Research & Hcd Eco-system: Case Study of
Two Wireless Communication Eco Systems
Fisseha Mekuria, CSIR Meraka ICT Institute, South Africa
11:00 Session 6e: Wireless Networks
Chair: Vincent Kaabunga, IEEE Kenya Section, Kenya
The Lasting Effects of the Information Literacy Training Among
Undergraduate Students: a Case Study of MUHAS
Edda Lwoga, Muhimbili University of Health & Allied Sciences, Tanzania
A Study of the Sudanese Students’ Use of Collaborative Tools
within Moodle Learning Management System
Izzeldin Osman, Sudan university of Science and Technology, Sudan
Developing the Health Information System in Mozambique
through Multi-purpose Monitoring Networks
Senthil Kumar, GESCI, Kenya
African Knowledge Exchange
Mathis Antonsen, GESCI, Kenya
12:30 Lunch: Networking & Exhibition
10:30 Coffee Break: Networking & Exhibition
11:00 Workshop 6a: Supporting Skills Development in Africa
Chair: Helena Tapper, GESCI, Kenya
African Leadership in ICT (ALICT) Framework
Helena Tapper, GESCI, Kenya
African Leadership in ICT: Implementation Experience
Josephat O. Oroma, Tumaini University - Aringa, Tanzania
Josephat O. Oroma, Tumaini University - Aringa, Tanzania
10:30 Workshop 5f: ICT for Sustainable Agriculture in Africa
Chair: Ayub Manya, Ministry of Public Health and Sanitation, Kenya
Open Data Kit, A Solution Implementing a Mobile Health Information
System To Enhance Data Management In Public Health
Paul Macharia, National AIDS/STIs Control Programme, Kenya
Strengthening the Health Information System in Mozambique
through Malaria Incidence Prediction
Orlando Zacarias, Stockholm University, Sweden
Adoption of Health Information Systems by Health Workers in
Developing Countries – Contextualizing UTAUT
Josephine Karuri, University of Nairobi, Kenya
Adapting Mobile Medical Information Search to Low-Resource Areas
Allan Hanbury, Vienna University of Technology, Austria
11:00 Workshop 6d: AfricaConnect Extension
Chair: Lishan Adam, ICT in Development, Ethiopia
Examples of Collaboration between the African and European
NRENs – The Case of RENATER and SnRER
Sabine Jaume-Rajaonia, RENATER, France
AfricaConnect Extension - Preliminary Survey Results & Scenarios
Lishan Adam, ICT in Development, Ethiopia
11:00 Session 6c: ICT for Sustainable Agriculture in Africa
Chair: Lishan Adam, ICT in Development, Ethiopia
Improving Path Loss Prediction in WCDMA Network Using
Principal Component Analysis
Ashagrie Getnet, Ethio Telekom, Ethiopia

Programme
29 - 31 May 2013
**Living Lab Approach**

Improving Student Achievement in Science and Maths -- A
Pietro Benedetto Molini, Fondazione Bruno Kessler, Italy
Sibukele Gumbo, University of Fort Hare, South Africa

**Activator of Personal Use of Mobile Internet**

E-Skills Training on Communal, Fixed Infrastructure as an
Paul Johannes Retief, Tshwane University of Technology, South Africa

**Developing Educational Assessment Tools for ICT Education**

Ulza Wassermann, Tshwane University of Technology, South Africa

**Utilising Living Lab Principles to Model and Create a Collaborative**

Education Environment – The CAT Schools Programme

Elza Gichina, Gifu University, Kenya

**Leveraging Participation in Entrepreneurship through Mobile Technology**

Benjamin Mwama, Technology Development Centre, Kenya

**The Role of the Mobile Applications in Social and Economic**

Development in East Africa

Siegfried Mwama, Ministry of Science & Technology, Kenya

**Utilising Living Lab Models to Model and Create a Collaborative**

Education Environment – The CAT Schools Programme

Paul Johannes Retief, Tshwane University of Technology, South Africa

**Value Proposition for mHealth Monitoring Solution of Diabetes**

Suzana Brown, Carnegie Mellon University in Rwanda, Rwanda

**Bridging the IT Divide - Case Study on the Botswana Livestock Industry**

Jenny de Boer, TNO, Netherlands

**The Role of ICT in Exchange of Agricultural Information and**

Knowledge in Kenya: the Case of Kenya Agricultural Research
Institute (KARI)

Thambo Nyati, National University of Science and Technology, Zimbabwe

**The Role of ICT in Exchange of Agricultural Information and**

Knowledge in Kenya: the Case of Kenya Agricultural Research
Institute (KARI)

Thambo Nyati, National University of Science and Technology, Zimbabwe

**Value Proposition for mHealth Monitoring Solution of Diabetes**

Suzana Brown, Carnegie Mellon University in Rwanda, Rwanda

**Bridging the IT Divide - Case Study on the Botswana Livestock Industry**

Jenny de Boer, TNO, Netherlands

**The Knowledge Base of Open Access Document Repositories**

(OADRs) and How African Libraries can Contribute to it

Margaret Ngwira, UbuntuNet Alliance, Malawi

**Demonstration of iMentor Platform**

Louis Papiemanuel, eGOVLAB, Belgium

**Chair:**

[ 8 - 9 ] Advance
Friday, May 31, 2013

09:00 Workshop 9a: mutually beneficial Africa-EU ICT Research
Chair: Karin Valin, Sigma Orionis, France
- Strengthening ICT Research and Policy links under the 8th Africa-EU Strategic Partnership
  - Karine Valin, Sigma Orionis, France
  - ICT Research and Innovation for Socio-economic Impact - Focus Areas and Futures Thinking
  - Barend Taute, CSIR, South Africa
- Lessons from Innovation Success Stories
  - Eunice Kariuki, Kenya ICT Board, Kenya
- Innovation Policy Considerations in Africa
  - Inas Fateem, Ministry of Communications and IT, Egypt
- Practical Research Collaboration - Demonstrator Projects
  - Bjorn Pfersson, KTH, Sweden

09:00 Session 9b: Transformation of Research Results into Local Innovation
Chair: Marleen Herselman, Meraka Institute, CSIR, South Africa
- Authentic Assessment of Programming Skills in Kenyan Universities
  - Joseph Sevilla, Strathmore University, Kenya
- Defining the African Tech-Innovation System & Innovation Index
  - Chrysostom Mwairamba, iHub Research, Kenya
- Assessment of Business Process Outsourcing (BPO) in Nairobi County
  - Joseph Kavulya, Catholic University of Eastern Africa, Kenya
- A Three Level Research Gateway for African Renewable Energy Collaboration
  - Kim Jansson, VTT, Finland
- Utilization of Knowledge Management Tools in Software Development
  - Samuel Kamunya, JKUAT, Kenya

09:00 Session 9c: Leveraging Open Source Software
Chair: Moses Rugutt, Ministry of Education, Science and Technology, Kenya
- Managing Open Source, Open Access Digital Libraries: Case of Pwani University Library, Kenya
  - Wanyenda Chilimo-Muoki, Pwani University, Kenya
- Motivation for the Adoption of Open Source Software in Kenyan Universities
  - Alastair Culham, University of Reading, United Kingdom
- Open Source Software Adoption in Mauritius
  - Michael Maua, Pwani University, Kenya
- Surveying National Systems of Innovation (NSI) Using Free Open Source Software (FOSS): The Case of Ghana
  - Ritin Koria, UNIDO, Austria
  - George S. Onoku, TIRDO, Tanzania

10:30 Coffee Break: Networking & Exhibition

11:00 Session 10a: Strengthening Democracy in East Africa through ICTs - Challenges and Opportunities
Chair: David Isaksson, Swedish Program for ICT in Developing Regions
- CIPESA: ICTs for Participatory Civic Engagement
  - Ashnah Kalemera, CIPESA, Uganda
- KHRC: How can We Fight Impunity?
  - Grace Were, Kenya Human Rights Commission, Kenya
- CHIRAG: New Technology for Reporting Human Rights Abuse
  - Wilfred Waithera, Commission for Human Rights & Good Governance, Tanzania
- ToroDev: ICT4D tools as a Leapfrogging Process for Gender Equality
  - Johnstone Baguma, Toro Development Network (ToroDev), Uganda
- Wougnet: Empowering Women in Democratic Processes through ICT
  - Gorreti Zavuga, Women of Uganda Network, Uganda
- iHub, Mobile Technology in Water Governance
  - Simon Peter Owgwa, Transparency International Uganda, Uganda

11:00 Session 10b: eInclusion
Chair: Enock Mpemwa, Ministry of Communications, Science and Technology, Tanzania
- Auto-Configuration Through Cloud: Initial Case Studies for Universal and Personalised Access for All
  - Evangelos Bekiaris, Centre for Research and Technology Hellas, Greece
- Making ICT Accessible for the Deaf
  - Darelle Van Greunen, Nelson Mandela Metropolitan University, South Africa
- Evidence of Dyslexia in Special School in South Africa
  - Johnstone Baguma, Toro Development Network (ToroDev), Uganda
- ICTs and Survival Tactics for the Day-Labour Workers: Implications for Design
  - Christopher Chepken, University of Nairobi, Kenya

11:00 Session 10c: Digital Libraries
Chair: Toumame Diallo, Ministère de l’Enseignement Supérieur et de la Recherche, Senegal
- i4Life: Cataloguing the World’s Biodiversity
  - Alastair Culham, University of Reading, United Kingdom
- Towards Digital Libraries in Kenyan Universities: Concretizing the Prospects
  - Joseph Kavulya, Catholic University of Eastern Africa, Kenya
- The Development of a Community-generated Digital Library: the Case of the Ulwazi Programme
  - Niall McNulty, McNulty Consulting, South Africa
The Role of ICT in Appreciating Tri-axis Efforts of Research, Publications and Library Services in Higher Education
Richard Omollo, Jaramogi Oginga Odinga University of Science and Technology, Kenya

Developing Digital Content and Services: Experiences from the Library of the University of Eastern Africa, Baraton, Kenya
Margaret Adeogun, University of Eastern Africa, Kenya

11:00  Session 10d: Probe-IT: The Internet of Things in Africa
Chair: Sofiene Sghaier, CERT, Tunisia
- Current IoT landscape in Africa: Hend Ben Hajji, CERT, Tunisia
- IoT Demos from South Africa: Louis Coetzee, Meraka Institute, CSIR, South Africa
- Birds of a Feather

11:00  Session 10e: mBanking
Chair: Phodiso Phole, Ministry of Transport and Communications, Botswana
- Organizing Innovation to Deliver Financial Services to the Base of the Pyramid: Bineke Posthumus, TNO, Netherlands
- ICT and Financial Inclusion: Adoption of Mobile Phone Banking Among Small Business Owners at Iringa, Tanzania: Hosea Mpogole, Iringa University College, Tanzania
- Mobile Banking Influence on Wealth Creation and Poverty Reduction for the Unbanked: Jimmy Macharia, USIU, Kenya
- Artificial Neural Network Based Expert System: A Case Study of Kenya Commercial Bank: Jane Juma, Great Lakes University of Kismu, Kenya

12:30  Lunch: Networking & Exhibition

13:30  Closing Plenary 11: Closing Plenary
Moderator: Prof. Harry Kaane, Higher Education Science and Technology Secretary, Kenya
- Horizon 2020: Stephane Hogan, Science Counsellor at the EU Delegation to the African Union, Ethiopia
- IEEE’s Information Society Activities in Africa: Vincent Kaabunga, IEEE Kenya Section, Kenya
- Future of Innovation and ICT Research in Kenya: Prof. Shaukat Abdulrazak, National Council for Science and Technology, Kenya
- Vision 2030: Presenter to be confirmed

Awards and Formal Closing of IST-Africa 2013

Registration Information
It is necessary for all IST-Africa 2013 delegates to register online. Each delegate should be registered separately.

Conference Fees

Authors Fees (Due by 08 March)
- Authors - African States: €100
- Authors - EU New Member States, EU Candidate Countries and Developing Countries: €200
- Authors - All countries except above: €300

Please note that the author fee is only available to accepted presenters in the Programme (one presenter per paper). Co-authors who wish to participate should register as Delegates.

Delegates’ Fees - Full Fee from 17 March
- Delegate Full Price - African States: €250
- Delegate Full Price - EU New Member States, EU Candidate Countries and Developing Countries: €400
- Delegate Full Price - All countries except above: €500

The Conference Fee includes:
- Entrance to all plenary and parallel sessions
- Documentation with proceedings on CD-Rom
- Three luncheons and refreshments at morning and afternoon breaks
- Cyber Café facilities

Terms & Conditions
1. All authors who are presenting a paper at IST-Africa 2013 must complete their payment registration by 08 March at the latest, prior to publication of the Final Programme.
2. In the case where a paper is jointly authored, the presenter of the paper is considered to be the author/presenter from a payment registration point of view. All co-authors are considered to be delegates.
3. Each presenter will present one paper in the Programme.
4. Delegates’ fees must be paid before admission to the Conference.
5. IEEE Members are entitled to apply for a 10% discount on the appropriate fee. Please provide Membership No. as part of online registration and fax a copy of valid Membership card to +353-1-8170606.
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7. Each individual must be registered separately on the IST-Africa 2013 portal.
8. Payment may be made by bank transfer or credit card (with some restrictions). Payments made by bank transfer must be net of any bank charges and the payment instruction should refer to "IST-Africa 2013 Conference", your name, organisation and invoice number (if relevant).
9. Receipts are automatically issued electronically upon receipt of payment. If your organisation requires an invoice to process payment registration by bank transfer, please contact the Conference Secretariat.
10. Conference registration or hotel accommodation is not confirmed until full payment is received.
Major Places of Interest

Nairobi is the capital of Kenya with over 3 million people. The conference is located outside the city centre. It is necessary to take care when visiting Nairobi city centre as in any large city.

While in Nairobi, delegates should visit the National Museum, National Park, Bomas of Kenya and the City Market.

Climate

Nairobi has a moderate climate average temperatures of 22 degrees Celsius. It is cooler in the evening. Rains are possible during May and delegates should bring rain wear.

Visa Information

Conference delegates should contact the Kenyan Embassy in your country of residence six to eight weeks prior to travelling to determine if it is necessary for you to apply for a visa in advance. For some countries it is possible to secure a visa at the airport in Nairobi upon arrival but there may be long queues. A single entry visa for most countries is $50.

The countries whose nationals require visa for Kenya are: Albania; Algeria; Andorra; Angola; Argentina; Australia; Austria; Bahrain; Bangladesh; Belarus; Belgium; Benin; Bhutan; Bolivia; Bosnia-Herzegovina; Brazil; Bulgaria; Burkina Faso; Cambodia; Canada; Cape Verde; Central African Rep.; Chad; Chile (Nationalist); China (China Peoples Republic); Columbia; Comoros; Congo Brazzaville; Costa Rica; Cote d’ Ivoire/ Ivory Coast; Croatia; Cuba; Czech Republic; Denmark; Djibouti; Dominican Rep; DRC; East Timor; Egypt; El Salvador; Ecuador; Equatorial Guinea; Estonia; Finland; France; French Guyana; Gabon; Georgia; Germany; Greece; Greenland; Guatemala; Guinea; Guinea Bissau; Haiti; Holders of Hong Kong Special Administrative Region (HKSAR); Honduras; Hungary; Iceland; India; Indonesia; Iran; Ireland; Israel; Italy; Japan; Jordan; Kampuchea Kazakhstan; Kirghistan; Korea (South); Kuwait; Laos; Latvia; Liberia; Liechtenstein; Lithuania; Luxembourg; Macedonia Madagascar; Malagasy; Malta; Mauritania; Mexico; Moldavia; Monaco; Mongolia; Morocco; Mozambique; Myanmar (formally Burma); Nepal; Netherlands; Nicaragua; Niger; Nigeria; Norway; Oman; Pakistan; Palau Pacific Isles; Panama; Paraguay; Peru; Philippines; Poland; Portugal; Qatar; Reunion; Romania; Russia; Salvador; Sao Tome and Principe; Saudi Arabia; Serbia and Montenegro; Slovakia; Slovenia; Spain; Sri Lanka; St.Christopher Cape; Sudan; Surinam; Sweden; Switzerland; Taiwan; Thailand; Togo; Tunisia; Turkey; Turkmenistan; U.S.A.; Ukraine; United Arab Emirates; United Kingdom; Uruguay; Uzbekistan; Vatican City; Venezuela; Vietnam; Yemen; Yugoslavia and also Former States of Yugoslavia.

If you are travelling through other countries to get to Kenya, it is necessary to check if you also require transit visas.

The IST-Africa 2013 Organising Committee can only issue Letters of Invitation for visa purposes to delegates after payment for their conference registration has been received.

Vaccinations

Conference delegates travelling to Africa for the first time are recommended to have up to date Tetanus, Hepatitis A and Typhoid vaccines.

It is necessary to have proof of Yellow Fever vaccine (Yellow Book). It is a good idea to check with your personal physician or travel health clinic four to six weeks prior to travelling, outlining where in Kenya you intend to visit.

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, strengthening the research dimension of Information Society policy dialogues between the European Commission and African countries and key regional organisations, analysing African research priorities, Supporting the 8th Africa-EU Partnership, promoting participation of African organizations in the ICT Theme of FP7 and identifying 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), Department of Science and Technology (South Africa), Ministry of Infrastructure, Science and Technology (Botswana), Ministry of Communications, Science and Technology (Lesotho), Ministry of Education (Namibia), ICT Policy Implementation Technical Unit (Mozambique), National Computer Board (Mauritius), Ministry of Information Communication Technology (Swaziland), National Commission for Science and Technology (Malawi), COSTECH - Tanzania Commission for Science and Technology, Uganda National Council for Science and Technology, Ministry of Higher Education, Science and Technology (Kenya), Ministere de l’Enseignement Superieur et de la Recherche Scientifique (Burundi), Ministry of Science and Technology (Ethiopia), Agence Nationale des Technologies de l’Information et de la Communication (Cameroon), Ministère de l’Enseignement Supérieur, des Universités et de la Recherche (Senegal), Ministry of Environment, Science and Technology (Ghana), Ministere de l’Enseignement Superieur et de la Recherche Scientifique (Tunisia) and Ministry of Communications and Information Technology (Egypt).