

# IST-Africa 2015

## Final Programme

*Lilongwe, Malawi*

06 - 08 May 2015

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# ISTAfrica

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# Introduction

**IST-Africa 2015** Conference takes place 06 - 08 May 2015 in Lilongwe, as part of **IST-Africa Week 2015**. 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 2015** is the tenth 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 Malawi through the National Commission for Science and Technology and Technically Co-Sponsored by IEEE, **IST-Africa 2015** 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, eInfrastructures, eAgriculture, Societal Implications of Technology, International Cooperation, ICT4D and eGovernment. **IST-Africa 2015** 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 2015** will also provide an opportunity to identify potential partners for future proposals under Horizon 2020.

**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 2015** Conference 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 2015** Conference 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 2015** Conference takes place in Bingu International Conference Centre (Capital Hill/Presidential Way) Lilongwe, which is 25 km 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 35 thematically focused parallel sessions featuring different aspects of International Cooperation, ICT4D, eHealth, eInfrastructures, Technology Enhanced Learning and ICT Skills, Digital Libraries, Mobile Applications, ICT for Environmental Sustainability and eAgriculture, Cyber Security, Societal Implications of Technology and eGovernment. 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 06 May features a high level dialogue on Implementation of the Information Society in Africa. The Closing Plenary on Friday 08 May focuses on Initiatives Supporting Development of Regional S&T.

The programme is subject to change and the **IST-Africa 2015** Organising Committee reserves the right to alter the contents, venue and/or speakers. This Programme is accurate as at 23 April '15.

## 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 and lunch 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, 05 May

IST-Africa is organising the fifth Annual Living Lab Thematic Working Group Meeting on Tuesday 05 May 2014.

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 Mauritius (2014), Nairobi (2013), Dar es Salaam (2012) and Gaborone (2011). This participatory working group meeting will continue building a 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 2015** delegates are invited to pre-register for this participatory working group meeting as part of online registration.

## Conference Proceedings

The **IST-Africa 2015** 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.

Papers that are physically presented during the event will also have the option after the event for their paper to be included in the **IST-Africa 2015** Conference Proceedings will 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 Lilongwe. Any special needs or requirements should be notified to the Conference Secretariat as far in advance of the event as possible.

## Hotel Accommodation

Delegates can book accommodation in the President Walmont Hotel (new hotel within the conference centre complex) at discounted rates through online registration for **IST-Africa 2015**, based on payment in advance.

The President Walmont Hotel is the first 5 star hotel in Malawi. It has a large reception area, a beautiful lobby bar, a relaxing lounge and Wild Orchid Restaurant. Facilities include a gym, spa facility and the Afroma Terrace Bar. Bedrooms have Air conditioning; Bath and shower; Flat screen LCD television; Selected satellite TV channels; Tea and coffee station; Writing desk and Laptop safe.

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

[www.IST-Africa.org/Conference2015](http://www.IST-Africa.org/Conference2015)

## How to get there

Lilongwe is the capital of Malawi. There are flights to Lilongwe with Air Malawi, Emirates, Ethiopian Airlines, Kenya Airways, South African Airways and Zambezi Airlines. Delegates are advised to book flights and accommodation as early as possible.

Bingu International Conference Centre is located in Capital Hill area of the city, 25km from the airport.

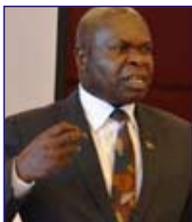
## Sponsors

**IST-Africa 2015** 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 2015** is hosted by the Government of Malawi through National Commission for Science and Technology.

Sponsors include MACRA (Malawi Communications Regulatory Authority), Skyband and Malawi Telecommunications Ltd.

## Plenary Session Speakers



Hon. Emmanuel Fabiano  
Minister of Education, Science  
and Technology, Malawi



Mrs Lonely Magreta  
Permanent Secretary for  
Education, Science and  
Technology, Malawi



Mr Anthony Muyepa-Phiri  
Director General,  
NCST, Malawi



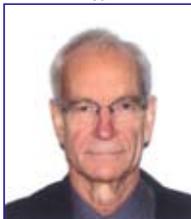
Mr Andrew Kumbatira  
Director General,  
MACRA, Malawi



Mr Victor Malewa  
Deputy Director  
eGovernment Dept.



Dr Paulos Nyirenda  
CEO  
SDNP



Mr Morten Møller  
DG CONNECT  
European Commission



Dr Harry Gombachika  
CEO  
Malawi Telecommunications



Dr Pascal Hoba  
CEO  
UbuntuNet Alliance



Mrs Bessie Nyirenda  
Management Consultant  
Malawi Institute of Management

Plenary Speakers as at 23 April 2015 include:

- **Hon. Dr. Emmanuel Fabiano, M.P.**, Minister of Education, Science and Technology, Malawi
- **Mrs Lonely Magreta**, Permanent Secretary for Education, Science and Technology, Malawi
- **Mr Anthony Muyepa-Phiri**, Director General, National Commission for Science and Technology, Malawi
- **Mr Andrew Kumbatira**, Director General, Malawi Communications Regulatory Authority
- **Mr Victor Malewa**, Deputy Director, Department of e-Government, Ministry of Information
- **Mr Adil Sulieman**, African Union Commission, Ethiopia
- **Mr Kasirim Nwuke**, Chief, New Technologies and Innovation Section, UNECA
- **Mr Morten Møller**, Programme Coordination, DG CONNECT, European Commission, Belgium
- **Dr Harry Gombachika**, Chief Executive Officer, Malawi Telecommunications Limited
- **Dr Pascal Hoba**, CEO, UbuntuNet Alliance
- **Dr Paulos Nyirenda**, CEO, SDNP
- **Mrs Bessie Nyirenda**, Management Consultant, Malawi Institute of Management
- **Prof. John D. Kalenga Saka**, Vice Chancellor, University of Malawi
- **Dr. Robert Ridley**, Vice Chancellor, Mzuzu University
- **Prof. George Kanyama Phiri**, Vice Chancellor, LUANAR
- **Martin B. Thawani**, Malawi University of Science and Technology
- **Dr Charles Mwansambo**, Principal Secretary, Ministry of Health
- **Stella Kamkwamba**, Director of Agriculture Extension Services, Ministry of Agriculture and Food Security

## 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 2015** International Programme Committee includes

- **Paul Cunningham** (Conference Chair), IIMC International Information Management Corporation Ltd, Ireland
- **Tiwonge Msulira Banda**, Ubuntunet Alliance, Malawi
- **Laurens Cloete**, Meraka Institute, CSIR, South Africa
- **Miriam Cunningham**, IIMC International Information Management Corporation Ltd, Ireland
- **Kim Davis**, Research Council of Norway, Norway
- **Prof. Love Ekenberg**, DSV, University of Stockholm, Sweden
- **Dr. Mike Joy**, University of Warwick, United Kingdom
- **Dr. Chipo Kanjo**, Department of Computer Science, Chancellor College, University of Malawi, Malawi
- **Mr. Gift Khangamwa**, Computing & IT Department, The Polytechnic, University of Malawi, Malawi
- **Vasilis Koulolias**, eGovLab, Stockholm University, Sweden
- **Kristiina Lahde**, TANZICT Programme, Tanzania
- **Prof. Maurice Mars**, University of KwaZulu-Natal, South Africa
- **Alinafe Mbendera**, Lilongwe University of Agriculture and Natural Resources, Malawi
- **Dr. Chomora Mikeka**, Department of Physics, Chancellor College, University of Malawi, Malawi
- **Lloyd Momba**, Director of Telecommunications, Malawi Communications Regulatory Authority, Malawi
- **Anthony Muyepa**, DG, National Commission for Science and Technology, Malawi
- **Loi Namugenyi**, Uganda National Council for Science & Technology, Uganda
- **Seyani Nayeja**, Director of ICT, Mzuzu University, Malawi
- **Mrs Bessie Nyirenda**, Malawi Institute of Management, Malawi
- **Dr. Sue Pendell**, Colorado State University, United States
- **Sameerchand Pudaruth**, University of Mauritius, Mauritius
- **Matti Sinko**, Finland

- **Bernard Stevenot**, SpaceBel, Belgium
- **Richard Stevens**, Stevens Consultants, Italy
- **Dr Marita Turpin**, Department of Informatics, University of Pretoria, South Africa
- **Prof. Darelle Van Greunen**, Nelson Mandela Metropolitan University/LLISA, South Africa

## Organising Committee

- **Miriam Cunningham**, IIMC, Ireland
- **Paul Cunningham**, IIMC, Ireland
- **Gift Kadzamira**, National Commission for Science and Technology, Malawi
- **Ebony Msikwanthu**, National Commission for Science and Technology, Malawi



## Conference Secretariat

IIMC Ltd  
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Dublin 3, Ireland  
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e-mail: [secretariat@IST-Africa.org](mailto:secretariat@IST-Africa.org)  
[www.IST-Africa.org/Conference2015](http://www.IST-Africa.org/Conference2015)



# Wednesday, May 06, 2015

08:00

Registration

09:00 Opening Plenary 1a: [Opening Plenary](#)**Opening Remarks**

Anthony Muyepa-Phiri, Director General, National Commission for Science and Technology, Malawi

**European Commission Address**

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

**African Union Commission Address**

Adil Sulieman, African Union Commission, Ethiopia

**Welcome Address**

Lonely Magreta, Permanent Secretary for Education, Science and Technology, Malawi

**Official Opening Speech**

Hon. Emmanuel Fabiano, M.P., Minister of Education, Science and Technology, Malawi

10:30

Coffee Break

11:00 Plenary Session 2a: [High-level Roundtable on Implementation of the Information Society in Africa](#)Moderator: [Paul Cunningham, IIMC, Ireland](#)

Lonely Magreta, Permanent Secretary for Education, Science and Technology

Anthony Muyepa-Phiri, Director General, NCST / CTO MAREN

Andrew Kumbatira, Director General, Malawi Communications Regulatory Authority (MACRA)

Victor Malewa, Deputy Director, Department of e-Government, Ministry of Information

Adil Sulieman, Senior Policy Officer, Infrastructure and Energy Department, African Union Commission

Kasirim Nwuke, Chief, New Technologies and Innovation Section, UNECA

Dr Pascal Hoba, CEO, UbuntuNet Alliance

Dr Harry Gombachika, Chief Executive Officer, Malawi Telecommunications Limited

Dr Paulos Nyirenda, CEO, SDNP

Bessie Nyirenda, Management Consultant, Malawi Institute of Management

12:30

Lunch

14:00 Workshop 3a: [IST-Africa - Research Capacities & Priorities I](#)Chair: [Paul Cunningham, IIMC, Ireland](#)**ICT Initiatives and Research Capacity in Malawi**

Gift Kadzamira, National Commission for Science and Technology, Malawi

**ICT Initiatives and Research Capacity in Mozambique**

Zauria Saifodine, National Institute for ICT, Mozambique

**ICT Initiatives and Research Capacity in Namibia**

Ebenhezer Kauhonina, National Commission on Research, Science and Technology, Namibia

**ICT Initiatives and Research Capacity in Botswana**

Phodiso Potesh Phole, Ministry of Transport and Communications, Botswana

**ICT Initiatives and Research Capacity in South Africa**

Peacemaker Dlamini, Department of Science and Technology, South Africa

**ICT Initiatives and Research Capacity in Mauritius**

Iqbal Agowun, National Computer Board, Mauritius

14:00 Session 3b: [eHealth I](#)Chair: [Chipo Kanjo, University of Malawi, Chancellor College](#)**Towards an ICT Framework to Support a Patient-Centric Approach in Public Healthcare: A Case Study of Malawi**

Richard Pankomera, Nelson Mandela Metropolitan University, South Africa

**Practicing Evidence-Based Medicine in Developing Countries**

Juha Puustjärvi, University of Helsinki, Finland

**An Approach for a National eHealth Implementation – the Case of Modular Interactive Tiles for Rehabilitation**

Henrik Hautop Lund, Technical University of Denmark, Denmark

**SIEMA: A System to Improve the Access to Medical Emergency Services**

Mateus Calado, Faculdade de Ciências - Universidade Agostinho Neto, Angola

14:00 Session 3c: [Technology-enhanced Learning I](#)Chair: [Gift Khangamwa, The Polytechnic, University of Malawi](#)**Evaluating Preparedness for Social Networks Integration into Learning: A Case Study of Inoorero University**

Elyjoy Micheni, The Technical University of Kenya, Kenya

**Social Media in Higher Learning: Is it a tool for Social or Academic Purpose? A Comparative Study between MoCU, Tanzania and LUANAR, Malawi**

George Matto, Moshi Co-operative University, Tanzania

**Gamifying a PhD Taught Module: A Journey to Phobos and Deimos**

Laurie Butgereit, Nelson Mandela Metropolitan University, South Africa

14:00 Session 3d: [eGovernment I](#)Chair: [Bessie Nyirenda, Malawi Institute of Management](#)**E-identity: Basic Building Block of e-Government**

Jiri Prusa, CZ.NIC Association, Czech Republic

**Methodology for Improving Data Quality Management in South African Government Departments**

Stanley Ndivhuho Malange, Tshwane University of Technology, South Africa

**A Structural Equation Model for Data Warehouse Adoption in a Government Department**

Edzai Kademeteme, Tshwane University of Technology, South Africa

**Mobile Visualisation Techniques for Large Datasets**

Ingrid Sieborger, Rhodes University, South Africa

15:30

Coffee Break

16:00 Workshop 4a: [IST-Africa - Research Capacities & Priorities II](#)Chair: [Paul Cunningham, IIMC, Ireland](#)**Defining Joint EU-Africa Priorities – An Opportunity for ICT Collaboration?**

Stephane Hogan, European Commission, Ethiopia

**ICT Initiatives and Research Capacity in Swaziland**

Vumile Dlamini, Ministry of Information Communication Technology, Swaziland

**ICT Initiatives and Research Capacity in Lesotho**

Lieketseng Tjokotsi, Department of Science and Technology, Lesotho

**ICT Initiatives and Research Capacity in Tunisia**

Noureddine Hamdi, Ministère de l'Enseignement Supérieur et de la Recherche Scientifique, Tunisia

**ICT Initiatives and Research Capacity in Egypt**

Haitham Hamza, Information Technology Industry Development Agency (ITIDA), Egypt

**ICT Initiatives and Research Capacity in Senegal**

Toumane Doumbouya, Ministère de l'Enseignement Supérieur et de la Recherche, Senegal

16:00 Session 4b: [eHealth II](#)

Chair: [Seyani Nayeja, Mzuzu University, Malawi](#)

**The Development of an e-Health System for Health Awareness Campaigns in Poor Areas**

Chikumbutso Gremu, Office of the Vice President, Malawi

**Mobile Health App to Improve the Quality of Care in Community Case Management in Malawi**

Chris Kulanga, D-tree International, Malawi

**Use of Data Mining to Check the Prevalence of Prostate Cancer: Case of Nairobi County**

Njeri Ngaruiya, University of Nairobi, Kenya

**Nationwide Health Education Using Mobile Technology**

Sam Kampondeni, Moyo Wanga Private Clinic, Malawi

16:00 Session 4c: [Technology-enhanced Learning II](#)

Chair: [Kristiina Lahde, TanzICT Programme, Tanzania](#)

**Transforming Africa into a Knowledge-based society: Concretizing the case for Digital Literacies and Revision of ICT Strategies in the Education Sector in the Region**

Joseph M. Kavulya, The Catholic University of Eastern Africa, Kenya

**e-Education Adoption in Emerging Economy Countries: Case of Malawi**

Marian Mtingwi, Department of eGovernment, Malawi

**Mobile E-Learning: The Choice between Responsive/Mobile Websites and Mobile Applications for Virtual Learning Environments for increasing access to Higher Education in Malawi**

Chifundo Chilivumbo, The University of Malawi: The Polytechnic, Malawi

**Support Given to Lecturers when Providing Mobile Centric Services in Teaching and Learning: A Policy Analysis Perspective**

Baldreck Chipangura, Unisa, South Africa

16:00 Session 4d: [eGovernment II](#)

Chair: [Vasilis Koulolias, eGovlab, Sweden](#)

**Mobile Government in African Least Developed Countries (LDCs): Proposed Implementing Framework**

John Mtingwi, Office of the President and Cabinet, Malawi

**Using Mobile Phones for Public Participation with Local Government in Cape Town**

Jean-Paul Van Belle, University of Cape Town, South Africa

**Citizen-Centric Critical Success Factors for the Implementation of E-government: A Case Study of Kenya Huduma Centers**

Ibrahim Otieno, University of Nairobi, Kenya

**Towards Addressing the Requirements for Coordination in the Distributed South African Public Sector from a Virtual Community-Centric Collaboration Process Lifecycle Perspective**

Godwin Thomas, Nelson Mandela Metropolitan University, South Africa

17:30

End of Parallel Sessions



Thursday,  
May 07, 2015

09:00 Workshop 5a: [IST-Africa - Research Capacities & Priorities III](#)

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

**ICT Initiatives and Research Capacity in Cameroon**

Njei Check, National Agency for Information and Communication Technologies (ANTIC), Cameroon

**ICT Initiatives and Research Capacity in Kenya**

Jacob Njagih, Ministry of Education, Science and Technology, Kenya

**ICT Initiatives and Research Capacity in Uganda**

Loi Namugenyi, Uganda National Council for Science & Technology, Uganda

**ICT Initiatives and Research Capacity in Burundi**

Augustin Nsabyumva, Ministry of Higher Education and Scientific Research, Burundi

**ICT Initiatives and Research Capacity in Tanzania**

Mauridi Abubakari, COSTECH, Tanzania

**ICT Initiatives and Research Capacity in Ethiopia**

Leulseged Alemie, Ministry of Communications and Information Technology, Ethiopia

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

Chair: [Darelle Van Greunen, Nelson Mandela Metropolitan University, South Africa](#)

**Developing Capacity for Maintenance of HIS in the Context of Loosely Coordinated Project Support Arrangements**

Tiwonge Manda, University of Malawi, Chancellor College, Malawi

**A Framework for the Acceptance Process of District Health Information System for Vertical Health Programmes**

Achilles Kiwanuka, Health Marc Limited, Uganda

**From User Training Courses and Central Support to Creating Local User Competence for Mentoring Colleagues: A Preliminary Study in Malawi**

Ellen Bjoerge, University of Oslo, Norway

09:00 Session 5c: [Technology Enhanced Learning III](#)

Chair: [Noureddine Hamdi, Ministere de l'Enseignement Supérieur et de la Recherche Scientifique, Tunisia](#)

**Using TV White Spaces and e-Learning in South African Rural Schools**

Albert Lysko, Meraka Institute (CSIR), South Africa

**Knowledge Sharing Framework for Educators in Southern Africa: A Case Study of Secondary Schools in Tshwane South District**

Lovemore Motsi, Tshwane University of Technology, South Africa

**The Integration of ICTs into the Learning Activities of the College of Medicine Undergraduate Students**

Felix Majawa, Mzuzu University, Malawi

**A Preliminary Classification of eLearning Models**

Zebiba Abegaz, Wollo University, Ethiopia

09:00 Session 5d: [eGovernment III](#)

Chair: [Zauria Saifodine, National Institute for ICT, Mozambique](#)

**An Exploration of Critical Success Factors for e-Governance Project Initiation: A Preliminary Framework**

Sylvester Hatsu, Accra Polytechnic, Ghana

**Assessing Benefits and Impact Creation in IST Research Projects**

Kim Jansson, Technical Research Centre of Finland VTT Ltd., Finland

**Evaluating the Public Value of E-government Services**

Gabriel Kamau, Murang'a University College, Kenya

09:00 Workshop 5e: [Identity Federation and Shared Services for Research and Education](#)

Chair: [Omo Oaiya, WACREN, Nigeria](#)

**Overview of Identity Federation and Shared Services – A Global Perspective**

Sabine Jaume-Rajaonia, CIRAD, France

**Status of Identity Federations in Africa**

Tiwonge Msulira Banda, UbuntuNet Alliance for Research and Education Networking, Malawi

**Service Providers, Shared Services and NREN Clouds**

Ognjen Prnjat, GRNET S.A, Greece

**Panel discussion - Panelists include:**

Joseph Kimaili (UbuntuNet Alliance), Boubakar Barry (WACREN), Bruce Becker (SAGrid), DamienAlline (IRD), Carmen-GloriaLabbe (RedCLARA)

10:30 Coffee Break

11:00 Session 6a: [ICT4D](#)

Chair: [Haitham Hamza, Information Technology Industry Development Agency \(ITIDA\), Egypt](#)

**Knowledge Sharing in Africa: Perspectives on the Future**

Jon Gregson, Development Dreamers Ltd, United Kingdom

**Designing for Sustainability: Involving Communities in Developing ICT Interventions to Support Water Resource Management**

Fiona Ssozi - Mugarura, University of Cape Town, South Africa

**Towards a Sustainability Criteria Model for ICT4D Projects and Living Labs Initiatives: A Siyakhula Living Lab Observation**

Shadreck Mudziwepasi, Siyakhula Living Lab Project, South Africa

**How Lessons Learnt informed the Development of an Implementation Framework in an ICT4D Initiative**

Marlien Herselman, Meraka Institute, CSIR, South Africa

**A Lightweight Mobile E-Procurement Solution for Rural Small Scale Traders Implemented Using a Living Lab Approach**

Felix Ntawanga, University of South Africa, South Africa

11:00 Session 6b: [eHealth - Health Information Systems II](#)

Chair: [Jacob Njagih, Ministry of Education, Science and Technology, Kenya](#)

**A Demographics Data Exchange for Continuity of Care: Is it Feasible in Low-Resource Settings?**

Ronald Manjomo, Baobab Health Trust, Malawi

**Strengthening Health Management Information Systems in Malawi: Gaps and Opportunities**

Maganizo Monawe, I-TECH Malawi, Malawi

**A Socio-Technical Approach to Understanding Data Quality in Health Information Systems: Data Quality Intervention in Kenya**

Ayub Many, Ministry of Health, Kenya

**Applications of Data Mining in the Health Sector in Lesotho: A Preliminary Study**

Lebeko Poulo, Limkokwing University of Creative Technology, Lesotho

11:00 Session 6c: [Technology Enhanced Learning IV](#)

Chair: [Lieketseng Tjokotsi, Department of Science and Technology, Lesotho](#)

**An Internet Mediated PhD Program in Computer Science and Information Technology**

Izzeldin Osman, Sudan University of Science and Technology, Sudan

**Sentiment Analysis of the ICT4Rural Education Teacher Professional Development Course**

Coral Featherstone, Meraka Institute, South Africa

**MOOCs for Pre-Service Teachers: Their Notions of 21st Century Learning Design**

Jameson Goto, University of Johannesburg, South Africa

**Cultivating Lifelong Learning: Pre-Service Teachers and their MOOCs**

Jacqueline Batchelor, University of Johannesburg, South Africa

11:00 Session 6d: [eGovernment IV](#)

Chair: [Peacemaker Dlamini, Department of Science and Technology, South Africa](#)

**The Value of Information - Assessing ICT requirements in Local Government**

Bianca Forlee, University of Cape Town, South Africa

**College Electronic Voting Environment (CEVE)**

Emily Bagarukayo, Makerere University, Uganda

**Local procurement in Mozambique: the case of InBid**

Albertina Oliveira, Pandora Box, Lda., Mozambique

11:00 Workshop 6e: [Synergy for Global Collaboration in Science Powered by R&E networks](#)

Chair: [Boubakar Barry, WACREN, Senegal](#)

**TANDEM - Strengthening the WACREN Community and Promoting Global Research Collaboration**

Damien Alline, IRD, France

**Sci-GaIA - The next iteration of Infrastructure and Services for e-Science in Africa**

Bruce Becker, Meraka Institute, CSIR, South Africa

**MAGIC - Collaboration Tools and Agreements for Global Communities**

Carmen Gloria Labbe, RedCLARA, Chile

12:30 Lunch

14:00 Workshop 7a: [Impact Assessment of ICT4D projects](#)

Facilitators: [Darelle van Greunen & Alida Veldsman, Nelson Mandela Metropolitan University, South Africa](#)

**Introduction**

**Impact Assessment Terms**

**Definition of Impact Assessment**

**When to do an Impact Assessment**

**Impact Assessment Overview**

**Types and Combination of Impact Assessments Methods**

**Practical exercise focussing on a specific intervention**

14:00 Workshop 7b: [Supporting Life](#)

Chair: [Seyani Nayeja, Mzuzu University, Malawi, Joseph Wu, Luke International, Malawi](#)

**An Assessment on the Impact of introducing Electronic based Community Case Management (e-CCM) over paper based Community Case Management in the Management of Childhood Illnesses in Rural Northern Malawi**

Griphin Baxter Chirambo, Mzuzu University, Malawi

**Applying WHO guideline for National Health Information System Architecture Design to Malawi - from Community to Globe**

Joseph Wu, Luke International, Malawi

**Designing an electronic Community Case Management decision aid for the management of childhood illnesses in village clinics in Malawi- a demo of Supporting LIFE application**

Jenny Hsieh, Luke International, Malawi

**A Blueprint for Integrated Community Disease Management and Surveillance through the Use of eHealth Applications**

Duke Caesar, Luke International, Malawi

14:00 Session 7c: [Technology Enhanced Learning V](#)

Chair: [Alinafe Mbendera, LUANAR, Malawi](#)

**Preparing Teachers to Integrate Tablet Computers into Teaching and Learning**

Eunice Eyitayo Olakanmi, University of Johannesburg, South Africa

**Use of Tablets in Blended Learning: A Case Study of an Institution of Higher Learning in Kenya**

Elizaphan Maina, Kenyatta University, Kenya

**Student's Experiences in Using Chat Rooms as Virtual Classrooms: A Case of Kenyatta University Distant Learning Students**

Rhoda Gitonga, Kenyatta University, Kenya

**Heuristics for Evaluating Usability of Learning Management Systems in Africa**

Joel Mtebe, University of Dar es Salaam, Tanzania

14:00 Session 7d: [Regulatory Frameworks](#)

Chair: [Francis Bisika, Malawi Communications Regulatory Authority, Malawi](#)

**Supporting Regulators in becoming more beneficial for society**

Nils Jensen, Stockholm University, Sweden

**On Bringing Governance into Technology: Case of Internet Governance and Implications for Africa**

Chipo Kanjo, University of Malawi, Chancellor College, Malawi

**Good Corporate Governance of ICT in Municipalities**  
Petrus Delpont, Nelson Mandela Metropolitan University, South Africa  
**Improved Service Continuity in Municipalities**  
Ruan Koen, Nelson Mandela Metropolitan University, South Africa

15:30 Coffee Break

16:00 Workshop 8a: **ICT Initiatives in Malawi**

Chair: **Anthony Muyepa-Phiri, Director General, National Commission for Science and Technology, Malawi**

**Regulatory Initiatives to Increase ICT Penetration in Malawi**  
Francis Bisika, Malawi Communications Regulatory Authority, Malawi  
**Software Defined Radios and Internet Independent Broadband Links Using Tailor-Made Android Apps**  
Stanley Mlatho, Chancellor College - University of Malawi, Malawi  
**Overview of Digital Migration in Malawi**  
Denis Chirwa, Ministry of Information, Tourism & Culture, Malawi  
**eInfrastructure Development for Malawi**  
Chimwemwe Khonje, Malawi Telecommunication Limited, Malawi  
**Enabling eHealth in Resource Constrained Settings**  
Oliver Gadabu, Baobab Health Trust, Malawi  
**Leveraging ICT Initiatives for Development in Africa**  
Thandikile Mvundula, Nico Technologies, Malawi

16:00 Session 8b: **mHealth**

Chair: **Iqbal Agowun, National Computer Board, Mauritius**

**A Model for Mobile Phone Adoption in Maternal Healthcare**  
Gilbert Maiga, Makerere University, Uganda  
**Leveraging Health through Early Warning Systems Using Mobile and Service Oriented Technology**  
Silvester Namuye, USIU, Kenya  
**Assessing the Use of Mobile Technology to improve Timeliness of HMIS Reports in Malawi**  
Christon Moyo, Ministry of Health, Malawi  
**Re-engineering School Healthcare Services Using Mobile Technologies, in the Eastern Cape**  
Darelle Van Greunen, Nelson Mandela Metropolitan University, South Africa  
**Adoption and Use of mHealth System for Livestock Farmers in Karura village in Kenya**  
David Gichoya, Moi University, Kenya

16:00 Workshop 8c: **Mobile GraphoGame Solution to Global Illiteracy Crisis**

Chair: **Heikki Lyytinen, University of Jyväskylä, Finland**

**GraphoWorld Solution to Global Illiteracy Crisis**  
Heikki Lyytinen, University of Jyväskylä, Finland  
**Mobile Solution for Better Reading Instruction in Rural Africa**  
Christopher Kyakukaisha Yalukanda, Zambia National Union of Teachers/University of Jyväskylä, Zambia  
**Ensuring Sufficient Literacy Practice with Tablet Technology in Zambian Schools**  
Gabriel Walubita, University of Zambia, Zambia

16:00 Session 8d: **Cyber Security**

Chair: **Njei Check, National Agency for Information and Communication Technologies (ANTIC), Cameroon**

**Improving South Africa's Cyber Security by Cyber Securing its Small Companies**  
Basie von Solms, University of Johannesburg, South Africa  
**Digital Forensics in the Cloud: The State of the Art**  
George Sibiya, CSIR, South Africa  
**Digital Forensic Readiness for Branchless Banking**  
Yusuf Mitha, University of Pretoria, South Africa  
**Better Information Security Management in Municipalities**  
Joshua de Lange, Nelson Mandela Metropolitan University, South Africa  
**An Integrated Internet of Things Based System for Tracking and Monitoring Assets – the case of the Central University of Technology**  
Muthoni Masinde, Central University of Technology, South Africa

17:30 End of Parallel Sessions



Friday,  
May 08, 2015

09:00 Session 9a: **eAgriculture**

Chair: **Loi Namugenyi, Uganda National Council for Science & Technology, Uganda**

**Electronic Voucher System: Leveraging Efficiency in Farm Input Subsidy Programme Implementation**  
Chrispin Namwera, African Institute of Corporate Citizenship, Malawi  
**Utilization of ICT for Agriculture: A Case Study of Kakamega County, Kenya**  
Moses Thiga, Kabarak University, Kenya  
**Bioacoustic Approaches to Biodiversity Monitoring and Conservation in Kenya**  
Ciira Maina, Dedan Kimathi University of Technology, Kenya

09:00 Session 9b: **ICT Supporting Innovation**

Chair: **Leulseged Alemie, Ministry of Communications and Information Technology, Ethiopia**

**Rethinking Girl Data: The Girl Impact Map**  
Kecia Bertermann, Girl Hub Rwanda, Rwanda  
**Leveraging FIWARE to Develop Innovative Applications**  
Pierre-Yves Danet, Orange Labs, France  
**Business Process Adoption in Organisations: A Case Study from an Insurance Company in South Africa**  
Judy Van Biljon, University of South Africa, South Africa  
**The Adoption of Crowdsourcing Platforms in South Africa**  
Jabu Mtsweni, CSIR, South Africa

09:00 Session 9c: **Digital Libraries**

Chair: **Gift Kadzamira, National Commission for Science and Technology, Malawi**

**Physical Security Measures for Computer-Based Information Systems: a Case Study of Selected Academic Libraries in Kenya**  
Rose Njoroge, Kenyatta University, Kenya  
**Design of an Open ICT4D Knowledge Repository**  
Melanie Platz, University of Koblenz Landau, Campus Landau, Germany  
**Utilization of Digital Spaces in Information Management Work - A Case of Kenya Human Rights Commission Resource Centre**  
Grace Were, Kenya Human Rights Commission, Kenya

09:00 Session 9d: **eInfrastructures**

Chair: **Tiwonge Msulira Banda, UbuntuNet Alliance for Research and Education Networking, Malawi**

**Enabling Intercontinental e-Infrastructures – a Case for Africa**  
Ognjen Prnjat, GRNET S.A, Greece  
**Surveying Clouds in a Global Environment**  
Bruce Becker, Meraka Institute, CSIR, South Africa  
**eInfrastructure: Next Generation Wireless Broadband Networks for Uganda 2020**  
Geoffrey Mark Kagarura, Makerere University, Uganda  
**Modeling the Exposure of Services within Next Generation Telecommunication Networks**  
Mosiuoa Tsietsi, Rhodes University, South Africa  
**Design of a Low Cost Television White Space Z Antenna**  
Jonathan Pinifolo, Malawi Communications Regulatory Authority, Malawi

10:30

Coffee Break

11:00 Session 10a: **eAgriculture & Environmental Sustainability**

Chair: **Ebony Msikawanthu, National Commission for Science and Technology, Malawi**

**Heterogeneous Wireless Network Based on Wi-Fi and ZigBee for Cattle Monitoring**

Patrick Nkwari, University of Johannesburg, South Africa

**Scientific Verification of Weather Lore for Drought Forecasting – The Role of Fuzzy Cognitive Mapping**

Solomon Mwachha, Central University of Technology, South Africa

**Weather Observation via Stratospheric Platform Stations**

Sihle Sibiyi, Durban University of Technology, South Africa

11:00 Session 10b: **eInclusion**

Chair: **Ebenhezer Kauhonina, National Commission on Research, Science and Technology, Namibia**

**Factors Determining Digital Divide in Ghana's Basic Schools**

James Sunney Quaiicoe, Tallinn University, Estonia

**Rethinking Network Connectivity in Rural Communities in Cameroon**

Jean Louis Fendji Kedieng Ebongue, University of Ngaoundéré, Cameroon

**The e-Services Provisioning as Part of the Millennium Developmental Goals (MDGs): Initiative of Addressing Digital Divide in Rural and Marginalized Communities**

Mfundo Shakes Scott, University of Fort Hare, South Africa

**An Analysis of Current ICT Trends for Sustainable Strategic Plan for Southern Africa**

Nobert Jere, Polytechnic of Namibia, Namibia

11:00 Session 10c: **Next Generation Computing**

Chair: **Jonathan Pinifolo, Malawi Communications Regulatory Authority, Malawi**

**Social Things: Now We Can**

Bruno Apolloni, University of Milano - Italy, Italy

**A Maker-Community-Friendly Implementation of a Smart and Green Office Environment: Lessons Learned**

Andrew Cyrus Smith, CSIR Meraka Institute, South Africa

**A Conceptual Framework for Cloud-Computing Management: An End-user Environment Perspective**

Likhwa Mlotshwa, University of Pretoria, South Africa

**Using Artificial Neural Networks to Predict Winners in Horseraces: A Case Study at the Champs de Mars**

Sameerchand Pudaruth, University of Mauritius, Mauritius

**Interdependent Enterprise Resource Planning risks in Small and Medium-Sized Enterprises in developing countries**

Carrington Mugove Mukwasi, University of Cape Town, South Africa

12:30

Lunch

13:30 Closing Plenary 11: **Innovation and Research Capacity Building in Malawi**

**Panelists include:**

Prof. John D. Kalenga Saka, Vice Chancellor, University of Malawi

Dr. Robert Ridley, Vice Chancellor, Mzuzu University

Prof. George Kanyama Phiri, Vice Chancellor, LUANAR

Martin B. Thawani, Malawi University of Science and Technology

Dr Charles Mwansambo, Principal Secretary, Ministry of Health

Stella Kamkwamba, Director of Agriculture Extension Services, Ministry of Agriculture and Food Security

**Best Paper Award**

## Registration Information

It is necessary for all **IST-Africa 2015** delegates to register online. Each delegate should be registered separately.

## Conference Fees

### Authors Fees (Due by 10 March)

- Authors - African States €100
- Authors - EU New Member States, EU Candidate & 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 - Early Bird up to 31 March

- Delegate Early Bird - African States €200
- Delegate Early Bird - EU New Member States, EU Candidate Countries and Developing Countries €300
- Delegate Early Bird - All countries except above €400

### Delegates' Fees - Full Fee from 01 April

- Delegate Full Price - African States €250
- Delegate Full Price - EU New Member States, EU Candidate & 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

## Terms & Conditions

1. All authors who are presenting a paper at **IST-Africa 2015** must complete their payment registration by **10 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.
6. There are **no refunds for cancellations** but substitutions may be made at any time prior to the event by contacting the Conference Secretariat.
7. Each individual must be registered separately on the IST-Africa Conference 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 2015 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.
11. Letters of invitation can only be issued following delegate registration online and receipt of payment.
12. The registration desk will open on Tuesday 05 May from 16:30 to 19:00 and will remain open during normal conference hours from 08:00 on Wednesday.

## Major Places of Interest

Lilongwe is a green city with a lot of trees and grassland throughout the city. The Capital Hill district where the conference centre is located is primarily the home of government Ministries and Embassies. Souvenirs can be purchased in the Old Town Mall and Lilongwe Craft Market near the Old Post Office. The Lilongwe Nature Sanctuary is located between the Old and new parts of Lilongwe and includes the Lilongwe Wildlife Centre.

While in southern Malawi, delegates should visit Lake Malawi, Monkey Bay, Mulanje Mountain and Likoma Island.

## Climate

Malawi has a moderate climate during May with average temperatures of 15 - 25 degrees Celsius during the day. Rains are possible during May and delegates should bring rain wear.

## Visa Information

Conference delegates should contact the Malawi Embassy in your Country of Residence six to eight weeks prior to travelling, to determine if you require a visa, can secure a visa on arrival or must apply for a visa in advance.

African countries whose nationals do not require a visa for Malawi include: Botswana, Gambia, Ghana, Kenya, Lesotho, Madagascar, Mauritius, Mozambique, Namibia, Seychelles, Sierra Leone, South Africa, Swaziland, Tanzania, Uganda, Zambia, Zimbabwe. Other African countries require a visa.

European countries whose nationals do not require a visa for Malawi include: Belgium, Cyprus, Denmark, Finland, France, Germany, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Northern Ireland, Norway, Portugal, San Marino, Spain, Sweden and United Kingdom. Other European countries require a visa.

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

The **IST-Africa 2015** 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 Malawi are recommended to have up to date Tetanus, Hepatitis A, Typhoid vaccines and bring malaria tablets with you. Whatever tablets you use, remember to complete the course as directed after leaving the malaria area.

Proof of Yellow Fever vaccine (Yellow Book) is required for those arriving from a yellow-fever-infected area in Africa.

Please engage with your personal physician or travel

health clinic four to six weeks prior to travelling, outlining where in Malawi you intend to visit.

## IST-Africa Initiative

Supported by the European Commission (EC) and African Union Commission (AUC), and Co-Funded under FP7 (Contract 611795), **IST-Africa** facilitates and supports:

- International Innovation, Research and Policy Cooperation
- Knowledge Sharing and Skills Transfer between IST-Africa Partners
- Collaborative Innovation, Entrepreneurship & Adoption of Living Labs
- Africa – EU Strategic Partnership (Information Society, ICT, Innovation)

**IST-Africa** Activities include:

- Annual IST-Africa Week Hosted by IST-Africa Partner Governments
- Analysis of African Adoption, Implementation, Policy and Research Priorities
- Analysis of African Innovation Spaces, Living Labs and Research Capacity of HEIs
- Horizon 2020 and Living Labs Training Workshops in IST-Africa Partner Countries to Support Research
- Capacity Building and Accelerate Information Society Development and ICT Adoption across Africa
- Participation in Information Society, ICT and Innovation related International Cooperation (including
- Africa - EU Strategic Partnership, EU - AUC Living Labs Taskforce for Africa, CODIST - UNECA and WSIS)
- Horizon 2020 Help Desk supporting African - European Research Collaboration

**IST-Africa** is a collaborative initiative between IIMC International Information Management Corporation Limited (Ireland, Coordinator), Ministerio da Ciencia e Tecnologia (Angola), 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), Ministère de l'Enseignement Supérieur 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), Ministère de l'Enseignement Supérieur et de la Recherche Scientifique (Tunisia) and Information Technology Industry Development Agency (Egypt).

## Horizon 2020

Horizon 2020 commenced in January 2014 as the new Framework Programme to implement the Innovation Union with research and innovation funds of €80 billion from 2014 - 2020.

Horizon 2020 addresses all research and innovation funding that was previously provided through the Framework Programmes for Research and Technical Development (e.g. FP7), Competitiveness and Innovation Programme (CIP) and European Institute of Innovation and Technology.

Three main priorities include:

- Excellence Science – Research Infrastructures, Marie Curie (Mobility Grants), Future and Emerging Technologies
- Leadership in Enabling and Industrial Technologies (LEIT) – Components & Systems, Advanced Computing, Future Internet, Content Technologies and Information Management, Robotics, Micro and Nano-electronics and photonics
- Societal Challenges – Health, Food Security & Agriculture, Energy, Transport, Climate action and Environment, Innovation and Reflective Societies and Secure Societies

Updated Work Programmes for 2015 for each thematic area were published on July 2014.

ICT is a horizontal activity that is included across a number of Work Programmes within LEIT and within Societal Challenges.

The IST-Africa Guide to 2015 Calls for Proposals within Horizon 2020 provides an overview of Calls, themes and deadlines within the Marie Curie, eInfrastructures, Leadership in Enabling and Industrial Technologies (LEIT - Components and Systems, Advanced Computing, Future Internet, Content Technologies and Information Management, Robotics and Key enabling Technologies (Micro-nano-electronics and photonics)) and each of the Societal Challenges (Health, Food Security and Agriculture, Energy, Transport, Environment, Inclusive and Reflective Societies, Secure Societies) Work Programmes.

Please visit

[www.ist-africa.org/home/default.asp?page=horizon2020](http://www.ist-africa.org/home/default.asp?page=horizon2020)

to download the individual Work Programmes and IST-Africa Guide to 2015 Calls for Proposals