



AFRICOMM 2014

6th International Conference on e-Infrastructure and e-Services for Developing Countries

Kampala, Uganda

November 24 - 25, 2014

Sponsored by:



Welcome Message



On behalf of the Organizing Committee, it is my honor to welcome you to Kampala, Uganda, at the 6th International Conference on e-Infrastructure and e-Services for Developing Countries (Africomm 2014). Africomm 2014 will be hosted at Makerere University in the College of Computing and Information Sciences.

Makerere University is now ranked the thirteenth University in Africa and in one of the oldest universities on the African continent having been founded in 1922.

Uganda was first called “the Pearl of Africa” by Sir Winston Churchill because of her beautiful nature. Recently Lonely planet (the largest travel guide book and digital media publisher in the world) voted Uganda as the number one tourist destination for 2012. Some top tourist destinations include: Kidepo National Park (listed as the 3rd best park in Africa by CNN Travel); Mt Rwenzori (voted among the top hiking places in Africa and in the world); Queen Elizabeth National Park; and Bwindi Impenetrable Forest.

After the success of Africomm 2013 in Blantyre, Malawi, the conference is on track to establish itself as the premier international annual conference for the presentation of advanced research results on e-infrastructures and e-services for developing countries.

Africomm 2014 will provide attendees with presentations of exciting technical content, now supplemented by installations of prototype services and technology in the exhibition area.

I would like to extend my deepest appreciation to all the members of the Organizing Committee who worked well and hard together to ensure the event's success. Secondly, I thank all the volunteers who have dedicated their time to review papers and assist with organizational logistics. I also express my sincere thanks to the authors from all over the world for their quality contribution. Finally, I heartily thank MTN Uganda for sponsoring this event.

I invite all of you to join me and cordially interact with both experts and newcomers in the e-Infrastructures and e-services fields from over 10 countries. Meanwhile, please do not forget to enjoy the beautiful pearl of Africa.

Once again, welcome to Uganda, and enjoy Africomm 2014!

Dr. Julianne Sansa-Otim
AFRICOMM 2014 General Chair

Keynote Speaker



Dr. Francis Frederick Tusubira

Title: E-services and e-infrastructures for Developing Countries

The presentation will examine some of the challenges developing countries face in implementing and/or adopting e-services, and propose approaches that would improve the chances of success.

Bio

CEO of the UbuntuNet Alliance for Research and Education Networking, holds a PhD (Southampton, UK), an M.Sc.E (New Brunswick, Canada), and a B.Sc. (Engineering) 1st Class Hons (Makerere University, Uganda). He is a Fellow of the Uganda Institution of Professional Engineers and a Registered Engineer in Uganda; and a Member of Institution of Engineering and Technology, and Chartered Engineer, UK. He currently chairs the National Information Technology Agency of Uganda. His main area of research and implementation activity is ICT for development.

Main Track Program

Monday 24 November 2014

Full paper: 20mn (Presentation + Questions)

Short paper: 10mn (Presentation – No question – see poster session)

Keynote: 45mn (Exchange with Public during Presentation?) Coffee break + Poster session: 30mn

7:30-8:30 Registration

8:30-9:05 Welcome & Opening address

- Anthems: *EAC, Uganda and Makerere*
- Welcome by General Chair (**Julianne Sansa Otim**)
- Conference Highlights of Program & Statistics by Program Chair (**Amos Nungu**)
- Industry perspective (**MTN representative**)
- Remarks by VC, Makerere University (**Prof. John Ddumba-Sentamu**)

9:05-9:50 Keynote – Dr. F.F. Tusubira

9:50-10:00 Opening Address by the Executive Director, Uganda Communications Commission (**Eng. Godfrey Mutabazi**)

10:00-10:45 Exhibition Tour + Coffee Break

10:45-12:45 Session #1: Communication Infrastructure – Chair (Amos Nungu)

- *Empirical Path Loss Models for 802.11n Wireless networks at 2.4Ghz in rural regions – Jean Louis, et. al.*
- *Towards centralized spectrum allocation optimization for multi-channel wireless backhauls -- Michael Rademacher, et al.*
- *Towards a Practical Cognitive Channel Allocation Scheme – Dennis Ozhathil, et.al.*
- *Enhancing Performance in Cognitive Radio Networks – Roseline Akol & Solomon Muhumuza*
- *Self-Organized Load Balancing and Interference-Aware Routing for Wireless Mesh Networks – Jilong Li, et.al*
- *Exploiting the benefits of converged satellite and terrestrial access networks – Christian Niephaus, et.al*

12:45-13:45 LUNCH

13:45-15:00 Session #2: Health – Chair (Dirk Elias)

- *Using Participatory Design Technique in the Design of the Mobile Phone-Based Health Application for Patients. The Case of Developing Countries – Richard Ssembatya & Sylvia Zawedde*
- *Adoption and Use of Mobile Phones for Maternal Healthcare Service Delivery – Gorretti Byomire & Gilbert Maiga*
- *Effective E-Health Public Awareness Communication to Fight HIV/AIDS, Malaria, Other Diseases for Effective Healthcare Access in Africa - Wilson Okaka*

- *A Model of e-Health Acceptance and Usage in Uganda: The perspective of Online Social Networks* - **Gilbert Maiga & Edward Miiro**

15:00-15:30 Coffee Break + Poster session

15:30-17:30 Session #3: IoT, Cloud Computing and TVWS – Chair (Kyanda Swaib Kawaase)

- *A Survey of TV White Space Measurements* – **Timothy Brown, et.al**
- *Internet of things technologies in smart cities* – **Nomusa Dlodlo & Andres Cyrus Smith**
- *Addressing Privacy in Cloud Computing Environment* - **Manqoba Shabalala & Paul Tarwireyi**
- *A Cloud Infrastructure for Dynamic Spectrum Networks Using Spectrum Resource as a Service (SaaS)* - **Luzango Mfupe, et.al**
- *Energy Efficient Data Caching in Wireless Sensor Networks: A Case of Precision Agriculture* - **Mutaawe Stephen, et.al**

18:00 – 22:00 Social Event

Tuesday 25 November 2014

8:30-10:30 Session #4: Communication Infrastructure – Chair (Senka Hadzic)

- *Energy Saving in Cognitive Femtocell Wireless Networks* – **Peterson Mwesiga, et.al**
- *A Novel Gateway Location Protocol for Wireless Mesh Networks* – **Giresse Mukadi**
- *Performance Evaluation of Scheduling Algorithms in Fixed WiMAX Network* – **Paul Okus, et.al**
- *Green Communications: Large vs Small Cell Deployment* - **Dorothy Okello, et.al.**
- *Experimental Evaluation Setup for Satellite Communications using Non-Orthogonal Multi-carrier Transmission* – **Johannes Dommel, et.al**
- *Quantifying the Effects of Circuitous Routes on the Latency of Intra-Africa Internet Traffic: A Study of Research and Education Networks* – **Josiah Chavula, et.al**

10:30-11:00 Coffee Break + Poster session

11:00-12:20 Session #5: ICT4D Applications – Chair (Tonny Bulega)

- *ICT4Governance in East Africa* – **Varyanne Sika, et.al**
- *Computer Education and Training: Human Capacity Building for e-Government in Malawi* - **Patrick Chikumba & Martin Msendema**
- *Developing E-Learning Culture at Higher Institutions of Learning for Rapid Diffusion of ICT for Quality Education, Research, and Outreach in Africa* - **Wilson Okaka**
- *Field Testing a Drug Management Application at Ugandan Health Facilities* - **Julianne Sansa Otim, et.al**

12:20-13:20 **Session #6: Access to Information – Chair (Isaac Kasana)**

- *A Comparison of Four End-User Devices as Thin Clients for Public Access to the Internet in Poor Communities – **Kevin Duff, et. al.***
- *Building an argument for Internet expansion in Dwesa - an under-serviced rural community in South Africa – **Sifiso Nkosi, et. al***
- *Availability and Use of ICT in Rural Areas: the Case of Bunda District in Tanzania – **Amos Nungu***

13:20-14:30 **LUNCH**

14:30-16:30 **Session #7: ICT4D Miscellaneous – Chair (Dorothy Okello)**

- *MalariaScope's User Interface Usability Tests: Results Comparison Between European and African Users - **Tiago Devezas, et al***
- *Methodological Approach for Interface Design - **Attlee Munyaradzi Gamundani, et.al***
- *Electricity theft in Kampala and potential ICT solutions - **Ruth Mbabazi Mutebi, et.al***
- *Performance Evaluation of Fingerprint Biometrics Systems for e-Business Access Control - **Omobayo Esan***
- *A Framework for Measuring the Value of Enterprise Architecture in South African Telecommunications Organizations - **Comfort Fiki Lukhele, et.al***
- *Validating a Structured ICT for Development Evaluations Approach - **Florence Kivunike, et.al***
- *Bootstrapping Software Engineering Training in Developing Countries -- Return on experience at the University of Ouagadougou - **Tegawendé F. Bissyandé, et al***

16:30-17:00 **Coffee Break + Poster session**

17:00-17:10 **Awarding of certificates to the Exhibition Participants**

17:10 – 17:20 **Closing Remarks - Principal, College of Computing and Information Sciences**

17:20-18:20 **STEERING COMMITTEE MEETING**

Venue

College of Computing and Information Sciences

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Wandegeya Kampala Makerere University
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Conference Dinner

Carnival Restaurant

Plot 26 - 32 Katalima Crescent
Naguru Hill, Kampala
Phone: +256 414 289 344
Web: www.capitolpalace.ug



The conference dinner will be held at The Carnival Kampala, a theater restaurant with authentic Uganda atmosphere and ambiance for a celebration of Ugandan dining experience in a gracious warm, discerning ambiance and romantic atmosphere, providing a celebration of Uganda's finest dining while you enjoy the ultimate cultural extravaganza, percussion music, afro jazz, comedy and fun.

The European Alliance for Innovation (EAI) is a dynamic ecosystem for fostering ICT enabled innovation to improve European competitiveness for the benefit of society. EAI activities cover the complete spectrum of research to innovation to markets by providing participation opportunities to present ideas at EAI events, to mentor supported idea development and to realization through project acceleration.

As a community-based open organization EAI reaches out to over hundred thousand individuals, from researchers and engineers, to innovators and connects with hundreds of EAI institutional members from start-ups to SMEs, to multinationals, to the largest universities.

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As part of EAI's mission we identify ideas that merit attention, and people who deserve recognition through worldwide events and open publications where people can publish, present, meet, communicate and share.

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With EAI Publications, <http://eai.eu/publications>, authors can publish through its own LNICST proceedings in cooperation with Springer Publishers, and with IEEE and ACM digital libraries in co-sponsored events. All publications appear in the European Union Digital Library (EUDL) in line with the European Commission's Agenda 2020 objectives of providing a comprehensive Open Access publication portfolio in support of innovation. As part of this publication requirement and trend, EAI Publications promotes the EAI Endorsed Transactions series of peer-reviewed research journals covering the latest topics in ICT and related fields – <http://eai.eu/transactions>.

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