International Telecommunication Union

The fully networked human?

Innovations for future networks and services

Fourth ITU Kaleidoscope academic conference
Cape Town, South Africa, 12-14 December 2011

Programme

DAY 1 - MONDAY, 12 DECEMBER 2011

09:00 - 10:30	**Opening Plenary** **Plenary chairman:** Mostafa Hashem Sherif (General Chair, Kaleidoscope; AT&T, USA) **Welcome Host:** Francis William Petersen (Dean, Faculty of Engineering & Built Environment, University of Cape Town, South Africa) **Welcome Waseda University**: Mitsuji Matsumoto (Professor, Global Information and Telecommunication Studies, Graduate School of Waseda University, Japan) **Welcome Telkom SA** **Opening address:** Malcolm Johnson (Director, Telecommunication Standardization Bureau, ITU) **Inaugural Speech:** H.E Ms Dina Pule (Minister of Communications, South Africa)
10:30 - 11:00	**Coffee Break supported by the Department of Communications, South Africa**
11:00 - 11:30	**Keynote speech:** 2020: The Ubiquitous Heterogeneous Network - Beyond 4G. Rufus Andrew (Managing Director, Nokia Siemens Networks, South Africa) Connecting the Unconnected - Unleashing the potential of Telecom Networks. Ajay Ranjan Mishra (NSN – India)
11:30 - 13:00	**Session 1 - ICTs helping Africa** **Session chairman:** Alfredo Terzoli (Rhodes University, South Africa) ▪ **S1.1** The Role Of ICTs In Quantifying The Severity and Duration Of Climatic Variations - Kenya's Case*. Muthoni Masinde, Antoine Bagula (University of Cape Town, South Africa) ▪ **S1.2** ICT use in South African Microenterprises: An assessment of Livelihood outcomes. Frank Makoza, Wallace Chigona (University of Cape Town, South Africa) ▪ **S1.3** SM^2: Solar Monitoring System in Malawi. Mayamiko Nkoloma (Malawi Polytechnic, Malawi); Marco Zennaro (ICTP - The Abdus Salam International Centre for Theoretical Physics, Italy); Antoine Bagula (University of Cape Town, South Africa)
13:00 - 14:00	**Lunch supported by the Department of Communications, South Africa**
14:00 - 15:30	**Session 2 - Connecting rural regions** **Session chairman:** Ajay Ranjan Mishra (NSN – India) ▪ **S2.1** Proposal of a Wired Rural Area Network with Optical Submarine Cables. Yoshitoshi Murata (Iwate Prefectural University, Japan); Hiroshi Mano, Hitoshi Morioka (Root Inc., Japan) ▪ **S2.2** Development of an ICT road map for eServices in rural areas. Nobert Jere, Mamello Thinyane (Telkom Centre of Excellence in ICTD, South Africa); Alfredo Terzoli (Rhodes University, South Africa) ▪ **S2.3** Investigating implementation of communication networks for advanced metering infrastructure in South Africa. Mononts'i Nthontho, Simon Winberg, S P Chowdhury (University of Cape Town, South Africa)

An * denotes papers nominated for best paper awards.

15:30 - 16:00	**Coffee Break supported by the Department of Communications, South Africa**
16:00 - 18:00	**Session 3 - Reflections on a fully networked society** **Session chairman:** Yoshikazu Ikeda (Otani University, Japan)

- **S3.1 Invited Paper:** Cooperative Wi-Fi-Sharing: Encouraging Fair Play.
  <u>Hanno Wirtz</u>, René Hummen, Nicolai Viol, Tobias Heer, Mónica Alejandra Lora Girón, Klaus Wehrle (RWTH Aachen University, Germany)
- **S3.2** Making things socialize in the Internet – Does it help our lives?*
  <u>Luigi Atzori</u> (University of Cagliari, Italy); Antonio Iera (University "Mediterranea" of Reggio Calabria, Italy); Giacomo Morabito (University of Catania, Italy)
- **S3.3** Net-Centric World: Lifestyle of the 21st Century.
  Daniel Kharitonov (Juniper Networks Inc, USA)
- **S3.4** Reflexive Standardization of Network Technology.
  Ian Graham (University of Edinburgh, United Kingdom)

DAY 2 - TUESDAY, 13 DECEMBER 2011

09:00 - 09:30	**Keynote speech:** Recovery from the Communication Disturbance by the Tohoku Earthquake and Actions toward the Future. Hirofumi Horikoshi (Technology Planning Department, NTT Corporation, Japan)
09:30 - 09:45	**Fast-Forward Poster Preview** **Session chairman:** Martin Adolph (Telecommunication Standardization Bureau, ITU)
09:45 - 11:15	**Session 4 - Frequency and Spectrum Management** **Session chairman:** Mitsuji Matsumoto (Waseda University, Japan)

- **S4.1** Radio Resource Management in OFDMA-CRN Considering Primary User Activity and Detection Scenario.
  Dhananjay Kumar (Anna University, India); <u>Kanagaraj Nachimuthu Nallasamy</u> (Alcatel-Lucent India Limited, India)
- **S4.2** Optimal Pilot Patterns Considering Optimal Power Loading for Cognitive Radios in the Two Dimensional Scenario.
  <u>Boyan Soubachov</u>, Neco Ventura (University of Cape Town, South Africa)
- **S4.3** Optimal Spectrum Hole Selection and Exploitation in Cognitive Radio Networks.
  <u>Mahdi Pirmoradian</u>, Christos Politis (Kingston University London, United Kingdom)

11:15 - 11:45	**Coffee Break supported by the Department of Communications, South Africa**
11:45 - 13:15	**Poster Session - Showcasing innovations for future networks and services**

- **P.1** A Trust Computing Mechanism for Cloud Computing.
  Mohamed Firdhous, Osman Ghazali, <u>Suhaidi Hassan</u> (Universiti Utara Malaysia, Malaysia)
- **P.2** The Energy Label A Need To Networks And Devices.
  Virgilio Puglia (Italtel, Italy)
- **P.3** A distributed mobility management scheme for future networks.
  <u>Ved P. Kafle</u>, Yasunaga Kobari, Masugi Inoue (National Institute of Information and Communications Technology, Japan)
- **P.4** Toward Global Cybersecurity Collaboration: Cybersecurity Operation Activity Model.
  <u>Takeshi Takahashi</u> (National Institute of Information and Communications Technology, Japan); Youki Kadobayashi (Nara Institute of Science and Technology, Japan); Koji Nakao (KDDI Corporation, Japan)
- **P.5** Context Representation Formalism and Its Integration into Context as a Service in Clouds.
  Boris Moltchanov (Telecom Italia, Italy)
- **P.6** Supporting technically the Continuity of Medical Care: Status report and perspectives.
  <u>Vasileios B. Spyropoulos</u>, Maria Botsivaly, Aris Tzavaras (Technological Education Institute of Athens, Greece)
- **P.7** Coexistence of a TETRA System with a Terrestrial DTV System in White Spaces.
  <u>Heejoong Kim</u>, Hideki Sunahara, Akira Kato (Keio University, Japan)
- **P.8** Mobile cloud computing based on service oriented Architecture: embracing network as a service for 3rd party application service providers.
  <u>Michael Andres Feliu Gutierrez</u>, Neco Ventura (University of Cape Town, South Africa)

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13:15 - 14:15	**Lunch supported by the Department of Communications, South Africa**
14:15 - 15:45	**Session 5 - Optimisation of Layers 1 – 3** **Session chairman:** Tohru Asami (University of Tokyo, Japan) ▪ **S5.1** Transmission Analysis of Digital TV Signals over a Radio-on-FSO Channel.* Chedlia Ben Naila, Kazuhiko Wakamori, Mitsuji Matsumoto (Waseda University, Japan); Katsutoshi Tsukamoto (Osaka University, Japan) ▪ **S5.2** A Hybrid MAC with Intelligent Sleep Scheduling for Wireless Sensor Networks.* Mohammad Arifuzzaman, Mohammad Shah Alam, Mitsuji Matsumoto (Waseda University, Japan) ▪ **S5.3** Route Optimization Based On The Detection of Triangle Inequality Violations. Papa Ousmane Sangharé, Bamba Gueye, Ibrahima Niang (Université Cheikh Anta Diop de Dakar, Senegal)
15:45 - 16:15	**Coffee Break supported by the Department of Communications, South Africa**
16:15 - 18:15	**Session 6 - Architectures to support a fully networked society** **Session chairman:** Ved P. Kafle (National Institute of Information and Communications Technology, Japan) ▪ **S6.1 Invited Paper:** Effective Collaborative Monitoring In Smart Cities: Converging Manet And Wsn For Fast Data Collection. Giuseppe Cardone, Paolo Bellavista, Antonio Corradi, Luca Foschini (University of Bologna, Italy) ▪ **S6.2** SOA Driven Architectures for Service Creation through Enablers in an IMS Testbed.* Mosiuoa Tsietsi, Alfredo Terzoli, George Wells (Rhodes University, South Africa) ▪ **S6.3** A Virtualized Infrastructure for IVR Applications as Services.* Fatna Belqasmi, Christian Azar, Roch Glitho (Concordia University, Canada); Mbarka Soualhia (ETS, University of Quebec, Canada); Nadjia Kara, (École de Technologie Supérieure, Canada) ▪ **S6.4** Seamless Cloud Abstraction, Model and Interfaces. Masum Z. Hasan, Monique Morrow, Lew Tucker (Cisco Systems, USA); Sree Lakshmi D. Gudreddi, Silvia Figueira (Santa Clara University, USA)
18:15 - 19:15	**Special session: Jules Verne's corner** **Session chairman:** Paolo Rosa (Telecommunication Standardization Bureau, ITU) **Panelists:** ▪ The disappearance of Telecommunications and the fading of boundaries among atoms and bits. Roberto Saracco (Telecom Italia, Italy) ▪ Dreaming of future CNS implantable medical micro-devices: Following the innovation patent-trail and appraising relevant ethical issues. Vasileios P. Spyropoulos (Medical Instrumentation Technology Department, Technological Education Institute of Athens, Greece) ▪ Atlas of Technology Advance. Rias J. van Wyk (Technoscan Centre, USA)
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DAY 3 - WEDNESDAY, 14 DECEMBER 2011

09:00 - 09:30	**Keynote speech:** The fully networked human-ity? - Innovations for the un-networked human. Alfredo Terzoli (Rhodes University, South Africa)
09:30 - 11:00	**Session 7: Service Quality for a fully networked society** **Session chairman:** Mostafa Hashem Sherif (General Chair, Kaleidoscope; AT&T, USA) ▪ **S7.1** Regulation of Bearer / Service Flow Selection between Network Domains for Voice over Packet Switched Wireless Networks. Nikesh Nageshar, Rex Van Olst (University of the Witwatersrand, South Africa) ▪ **S7.2** Accessibility support for persons with disabilities by Total Conversation Service Mobility Management in Next Generation Networks.* Leo Lehmann (OFCOM, Switzerland) ▪ **S7.3** LabQoS: A platform for network test environments. Luis Zabala, Armando Ferro, Cristina Perfecto, Eva Ibarrola, Jose Luis Jodra (University of the Basque Country, Spain)
11:00 - 11:30	**Coffee Break supported by the Department of Communications, South Africa**
11:30 - 12:30	**Special session: ITU and academia** **Part I: Strengthening collaboration between ITU and Academia – Interactive panel** **Panelists:** Chris Clark (Head of Sector membership, ITU) Robert Shaw (Head of Innovation, ITU-D) Paolo Rosa (Head of Workshops and Promotion Division, ITU-T) Sabrina Camp (Membership officer, ITU-T) Norifumi Yamaguchi (Engineer, ITU-R) ITU academia member – Eva Ibarrola (University of the Basque Country, Spain)
12:30 - 13:30	**Lunch supported by the Department of Communications, South Africa**
13:30 - 14:30	**Special session: ITU and academia** **Part II: ITU Standards and academia - Breakout session** ▪ The importance of standards and standards education Kai Jakobs (Professor, RWTH Aachen University, Germany) Paolo Rosa (Head of Workshops and Promotion Division, ITU-T) ▪ ITU standards and ICT innovation Robert Shaw (Head of Innovation, ITU-D) Alfredo Terzoli (Rhodes University, South Africa) Martin Adolph (Project Officer, Standardization Policy Division, ITU-T) ▪ ITU academia members and ITU standardization Chris Clark (Head of Sector membership, ITU) Sabrina Camp (Membership officer, ITU-T) Norifumi Yamaguchi (Engineer, ITU-R) Mitsuji Matsumoto (Professor, Waseda University, Japan) **Report back** **Moderator:** Paolo Rosa (Head of Workshops and Promotion Division, ITU-T)
14:30 - 17:30	**Special session: Future Internet Impacts on the Evolution of Next Generation Network Infrastructures and Services** Thomas Magedanz (TU Berlin / Fraunhofer Institute FOKUS, Germany) [including coffee break]
17:30 - 18:00	**Best Paper Awards and Young Author Recognition Ceremony**
18:00 - 18:30	**Wrap Up Session** **Session chairman:** Kai Jakobs (RWTH Aachen University, Germany) Summary of the fourth Kaleidoscope conference (panel with session chairs)
18:30	**Closing** Alessia Magliarditi (Kaleidoscope Coordinator, ITU) Mostafa Hashem Sherif (General Chair, Kaleidoscope; AT&T, USA)

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For more information, please see: **www.itu-kaleidoscope.org/2011**