



Report of the Fifth ITU Kaleidoscope Academic Conference

Building Sustainable Communities

Kyoto, Japan, 22-24 April 2013

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“Building Sustainable Communities”
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1. ITU Kaleidoscope 2013 overview

The [ITU Kaleidoscope conference 2013](#) (K-2013), technically co-sponsored by IEEE and the Institute of Electronics and Information and Communication Engineers of Japan (IEICE), was held at the kind invitation of the Ministry of Internal Affairs and Communications (MIC), Japan, and hosted by Kyoto University, Kyoto, Japan. This year's theme was "*Building Sustainable Communities*", in recognition of the tremendous response in Japan to the tragic consequences on the Great East Japan Earthquake.

Over 180 delegates from 22 countries participated in the conference. About 20 people used the remote participation facilities. The archived webcast and photos of the event will be available shortly at the Kaleidoscope [webpage](#).

Kaleidoscope 2013 was supported by NICT, NTT, KDDI, Hitachi, OKI, Fujitsu, Mitsubishi Electric, NEC, Huawei Japan, Telkom SA allowing ITU to award cash prizes to the best papers, and Research in Motion which donated two BlackBerry PlayBooks. Special recognition must go to the host, the MIC and to Kyoto University for the excellent logistics provided.

K-2013 partnering organizations supported the promotion of the conference: NICT, MIC, TTC, Waseda University (Japan), the Institute of Image Electronics Engineers of Japan, the ITU Association of Japan, and EURAS.

A 15 month, substantial preparatory process was required for this Kaleidoscope edition. This process involved the efforts and collaboration of TSB staff, a [Steering Committee](#) of 5 members (SC), a [Host Committee](#) of 7 members (HC), and a [Technical Programme Committee](#) of 135 members (TPC), all internationally recognized ICT experts from academia, research institutes and the private sector.

Special thanks go to Prof. [Hiroshi Matsumoto](#) (President, Kyoto University, Japan), General Chairman of Kaleidoscope 2013, and to the Technical Programme Committee Chairman, Dr [Kai Jakobs](#) (RWTH Aachen University, Germany), for ensuring transparency through the double-blind peer-review process.

Ms Alessia Magliarditi (Programme Officer, ITU/TSB), ITU Kaleidoscope Coordinator, chaired the meeting of the Award Committee members which selected the winners of the awards for best papers. The Award Committee was composed of five conference attendees: Kai Jakobs, Mostafa Hashem Sherif (AT&T, USA), Geerten van de Kaa (Delft University of Technology, The Netherlands), Junko Koizumi (ITU/BR) and Martin Adolph (ITU/TSB).

2. Papers

99 papers were submitted for review 30 of which were accepted for publication in Proceedings and IEEE Xplore, and presentation (18 in the lecture sessions, 12 in the poster

sessions). The research results submitted are related to various ITU-T activities, including quality of service (QoS), cybersecurity, future networks, cloud computing, RFID technology, optical wireless network, disaster resilience of telecommunications infrastructure, etc. As in previous editions of the conference, a number of papers address radio-related issues such as hybridcast, radio resource management, and cognitive radio.

The authors of the award winning papers shared the prize fund of 10,000 USD.

- **1st prize** (5,000 USD): *“Sustaining life during the early stages of disaster relief with a Frugal Information System: Learning from the Great East Japan Earthquake”* Mihoko Sakurai, Jiro Kokuryo (Keio University, Japan); Richard Watson (University of Georgia, USA); Chon Abraham (College of William and Mary, USA). The topic is related to work of [ITU-T Focus Group on Disaster Relief Systems, Network Resilience and Recovery \(FG-DR&NRR\)](#) and the ITU-T Study Groups dealing with emergency telecommunications.
- **2nd prize** (3,000 USD): *“Telebiometric Information Security and Safety Management.”* Phillip H Griffin (Booz Allen Hamilton, USA). The topic is related to work of [ITU-T Study Group 17](#).
- **3rd prize** (2,000 USD): *“Innovation Management of Electrical Vehicle Charging Infrastructure Standards in the Sino-European Context”* Martina Gerst, Xudong Gao (Tsinghua University, P.R. China).

Alongside the winners of cash prizes, seven entrants - Mihoko Sakurai, Wei Liu, Hemam Ayed Alshammas, Keisuke Okamoto, Takuya Kato, Muzaffar Djalalov, Dimitar Kolev - received **Young Author Recognition Certificates**. Wei Liu and Hemam Ayed Alshammas received the BlackBerry PlayBooks, the others received books kindly donated by publishers (Auerbach / Taylor and Francis and IGI Global).

All accepted papers are included in the [Conference Proceedings](#), which are freely available for download on the Kaleidoscope 2013 webpage. They will be also listed in the IEEE Xplore digital library.

3. Conference programme

Programme, presentations, abstracts and biographies are available [online](#).

The **opening ceremony** included welcome remarks from the Host: Prof. [Hiroshi Matsumoto](#) (President, Kyoto University, Japan; Kaleidoscope 2013 General Chairman). The opening address was delivered by Mr [Malcolm Johnson](#) (Director, Telecommunication Standardization Bureau, ITU) and the inaugural speech was given by Dr [Hideo Fuseda](#) (Director, Standardization Division, Global ICT Strategy Bureau, Ministry of Internal Affairs and Communications, Japan).

Two **keynote speeches** were delivered by:

- [Makoto Nagao](#) (Kyoto University, Japan): *"Digital Library for Creative and Sustainable Society"* [[presentation](#)]
- [Akihiro Nakao](#) (University of Tokyo, Japan): *"Deeply Programmable Network; Emerging Technologies for Network Virtualization and Software Defined Network (SDN)"* [[abstract](#)] [[presentation](#)]

The three **invited papers** dealt with the following topics:

- *"Visible Light Communication Using Sustainable Led Lights"*. [Shinichiro Haruyama](#) (Keio University, Japan)
- *"Hybridcast: a new media experience by integration of broadcasting and broadband"*. [Hisayuki Ohmata](#), Masaru Takechi, Shigeaki Mitsuya, Kazuhiro Otsuki, Akitsugu Baba, Kinji Matsumura, Keigo Majima, Shunji Sunasaki (NHK, Japan)
- *"Open Standards: a Shrinking Public Space in the Future Network Economy?"* [William Melody](#) (LIRNE.NET, Aalborg University Copenhagen, Denmark)

In the seven **lecture sessions**, 18 papers were presented. Relevant recommendations and conclusions from the technical sessions, as drafted and presented by the Session Chairs, are available online in PDF format on the programme webpage, [Wrap up session](#).

For the second time a short session allowed poster presenters to raise awareness of their work. The session entitled "Fast-forward Poster Preview" took place on 23 April. Each presenter had 2 minutes and not more than 2 PowerPoint slides to present his/her research, and to motivate Kaleidoscope participants to take an interest in his/her work at the following **poster session**. A poster paper only was not presented at the conference.

The event included **two special sessions**: the third edition of the "Jules Verne's corner", and the Workshop on "Responsible innovation, value sensitive design and standardization for smart metering in the context of smart grid". The sessions were well attended and appreciated by Kaleidoscope's participants.

"Technological tsunami: Imagining a world without communications" was the theme for the third [Jules Verne's corner](#) (JVC), held on Wednesday 24 April. JVC is dedicated to those with minds ambitious enough to imagine technology's implications for our future. Its objective is to share thoughts that might aid in the development of communications concepts for the latter half of the 21st century. [Junko Koizumi](#) (ITU/BR) moderated the session, hosting two speakers: [Hideyoshi Tominaga](#) (Waseda University, Japan) and [Mostafa Hashem Sherif](#) (AT&T, USA). [Andy Updegrove](#) (Gesmer Updegrove LLP, USA) was not able to join the conference remotely to present his contribution entitled *"The Devil's in the Cloud: Our Headlong Rush into Ultimate Cyber Vulnerability"*.

A one and a half hour [Workshop](#) on *“Responsible innovation, value sensitive design and standardization for smart metering in the context of smart grid”* was run by Prof Geerten van de Kaa (Delft University of Technology, The Netherlands). The main goal of the workshop was to introduce the topics of value sensitive design and responsible innovation to the standardization community and to discuss with the audience whether and how insights and tools from these two phenomena can be applied to standardization.

All participants received a CD which included an electronic version of the proceedings. In addition, TSB distributed promotional material (flyers, brochures and CDs on ITU activities).

4. Next Kaleidoscope event

At the [closing session](#) it was announced that the next Kaleidoscope conference will probably take place in Saint Petersburg in June 2014.

The preparation will start in May 2013 and the Call for Papers will be probably issued by June 2013. Additional information will be available at <http://itu-kaleidoscope.org/>.

Annex – Side Events

Showcase (22-23 April)

The National Institute of Information and Communications Technology (NICT), Japan, organized a very successful [Showcase](#) on the latest ICTs research and development products, and services that contribute to "building sustainable communities" through the cooperation of academia, research institutes and industry.

The Showcase took place on 22 and 23 April, at the same venue and in parallel with the ITU Kaleidoscope conference 2013. An introduction to the Showcase was presented by Dr Yasuyuki Koga (Director, Standardization Promotion Office, NICT, Japan) at the Kaleidoscope conference on 23 April.

NICT presented its research outcomes related to sensor networks, big data analysis, security, optical communication and wireless networks.

NTT, Hitachi, Mitsubishi Electric and **OKI** introduced their products and services as well as research outcomes related to optical access network, home energy management system, metropolitan networks and IPTV services to achieve new sustainable communities.

Nagoya Institute of Technology exhibited their 3D display research outcomes.

ITU-T presented an e-health and IPTV application based on its standard.

These technologies, products, and services will help to improve social networking, reduce energy consumption, protect personal information, mitigate disaster damages and provide new communications services including healthcare, education and entertainment with big data analysis, ultra high speed networks and optical access services.

Joint ITU-IEICE-CTIF-GISFI Workshop on Education about Standardization (25 April)

Jointly organized by the ITU, the Institute of Electronics, Information and Communication Engineers ([IEICE](#)), Aalborg University's Center for TeleInfrastruktur ([CTIF](#)), and the Global ICT Standardization Forum for India ([GISFI](#)), this Workshop on Education about Standardization was held at Kyoto University on 25 April 2013. 45 participants from 11 countries joined the event.

Recognizing the important role international standards play in the Information and Communication Technology (ICT) field, and the key contribution academia makes by producing standards-minded graduates, Prof. [Tetsuya Miki](#), representing the IEICE, Japan, and Prof. [Ramjee Prasad](#), representing both CTIF and GISFI, delivered some welcome remarks at the Opening Ceremony.

Mr [Malcolm Johnson](#) gave his inaugural speech mentioning the ITU effort into increasing the participation of academia in the work of the Union. He also mentioned that since the new academia membership category was introduced in 2011, 38 academic institutes have joined the work of the Standardization Sector and 55 across the three sectors of ITU.

In parallel to gaining greater participation, another challenge is to produce standards-minded graduates, business leaders and policy makers. With that in mind and with the aim of advancing standards education worldwide, this workshop was organized and others are planned.

The objective of the workshop was to collect elements to assist in the creation of guidelines for a Syllabus on Education about Standardization.

Initiatives from Japan, Korea, Macedonia, and India were presented. The attendees from government, business, standardization, and research communities also heard from organizations supporting education on standardization including ICES, IEEE, EURAS, and the Korean Standards Association.

2nd meeting of TSB Director's Ad hoc Group on Education about Standardization (25 April)

The programme for the Workshop incorporated the second meeting of the [TSB Director's Ad hoc Group on Education about Standardization](#) (AHG-SE).

Mr [Malcolm Johnson](#), Chairman of the Group, stressed the importance of and need for coordination among all relevant stakeholders that would greatly assist in the development of consistent, high-quality curricula for education on standardization. Isolated initiatives and experiments abound in this field, and it is clear that the AHG-SE was created as an inclusive platform to facilitate these discussions.

The Final [Report](#) of this meeting is available online at the Group's webpage: <http://itu.int/go/standardseducation>

