CLOSING PLENARY

Chaesub Lee
Director, Telecommunication Standardization Bureau, ITU

Alessia Magliarditi
ITU Kaleidoscope Coordinator
• 63 papers submitted for review from 22 countries
• 23 papers (17 Lecture/6 Poster) accepted for publication and presentation from 14 countries (almost all from academic institutions)
• Acceptance ratio: 35%
• 1 Invited paper
• 3 Keynote speakers
• 2 special sessions
• 1 tutorial
• 302 participants from 26 countries
• 20 remote participants
Local Universities Exhibit

Showcase of academic research, special projects, and literature on innovative approaches to data management and analysis, encouraging the development of data-driven applications and services of benefit to society.

• Exhibitors:
  o Nanjing University of Posts and Telecommunications (NJUPT), China
  o Competition Law Center, University of International Business and Economics (UIBE), China
Proceedings
Selected and presented papers
Kaleidoscope features in the IEEE Communications Magazine
Challenges for a data-driven society

This issue contains updated versions of presentations from the eighth International Telecommunication Union (ITU) Kaleidoscope Academic Conference. The conference took place in Bangkok, Thailand from 14-16 November 2016, in parallel with ITU Telecom World 2016. The topic of the conference was “ICTs for a Sustainable World” and the event was technically co-sponsored by the Institute of Electrical and Electronics Engineers (IEEE) and the IEEE Communication Society (ComSoc). Representatives from 31 countries participated in the conference.

The ITU Kaleidoscope series of academic conferences was started in 2000 to provide a forum for universities, industry and research institutes of different fields to share knowledge about emerging ICT developments. Participants include researchers, academics, students, engineers, policy-makers, regulators, innovators and more. The theme of the new Kaleidoscope conference is “Challenges for a Data-Driven Society,” and will take place in Nanning, China from 27-29 November 2017.

The first paper is an update of a keynote by Mr. Simon Tuff, from the British Broadcasting Corporation (BBC), with the title “Important Considerations for Environmentally Sustainable Broadcasting.” The British Broadcasting Corporation’s (BBC) Mr. Tuff describes the various ways the BBC has approached the task of reducing the carbon footprint of its television broadcasting.

Three winning entries shared a total of 6000 CHF. The first prize of 3000 CHF was awarded to Bhaskar Shankar et al., from the Asian Institute of Technology, Thailand, and the Sahara Software Foundation, United States, for their work described in “Efficiencies of Implementing an ITU-T X.1303 Cross-Carrying Services-Awareness Platform in Mobile, Myanmar, and the Philippines.” The paper presents a broker system, based on the Convergence Aware Protocol (CAP) of Recommendation ITU-T X.1303, that coordinates early warning on natural disasters in the three-mentioned countries. The broker takes into account the redundancy of the communication service data and the dependencies of various organizations. Currently, this paper is still in the review process, but interested readers can access the version presented at the conference at http://www.itu.int/en/publications/Documents/ftp/2016/ITU-Kaleidoscope/index.html.

The second prize of 2000 CHF was to “Toward Authenticated Carrier ID Transmissions: The Need for a Standardized Authentication Scheme in Q.7331 Calling Line Identification Presentation” by Huahong Liu, Adam Doucet, Ziming Zhao and Gail-Joon Ahn from Arizona State University. The authors review some of the techniques for hacking the Internet Protocol (IP) to spoof the caller number in telephony. The solution they propose requires modification to Recommendation ITU-T Q.7331-1, the current protocol for identifying the calling line in Signalling System No. 7 (SS7).

Koichiro Nakagawa, Makoto Masuzawa, and Hiroshi Arakawa from NTT Corporation, Japan, were awarded the third prize of 1000 CHF for their paper “Spatial Division Multiplexing/Time-division Multiplexing Hybrid (SDM/TM) in overcoming the capacity limitations of traditional single-mode fibers in Recommendation ITU-T G.652. They describe the geometry and the technology of 125-μm cladding of optical fibers for 100G using multi-mode fibers.”

The program included two invited papers, updated versions of which are also in this issue. The first, by Nathalie Devillez, Centre École de Management, France, is titled “Aging, Well-Being and Technology: From Quality of Life Improvements to Digital Rights Management – A French Perspective.” The author uses examples from the French legislation on the quality of life of the elderly to argue that a legal framework is necessary for balancing technical aspects with fundamental rights. The main point is that legal requirements and international standards and specifications have an important role in ICT applications and services, such as health, digital rights, and identity management.

The second article, by Luca Chiaraviglio et al., is a report by an international team from Europe, Africa, South America, and Australia on a 5G network to serve rural and low-income areas. The design includes remote radio heads (RRHs) mounted on top of unmanned aerial vehicles (UAVs), large cells (LCs) to increase the coverage range and 5G-nodes powered by solar panels. The paper contains preliminary results from applications in Italy, the Cook Islands, and Zimbabwe. Two more articles are included in this selection. The first article, “Scalable Directory Service for IoT Applications,” is by Ved Kafle, Yusuke Ishikawara, Pedro Martinez-Julia, and Hiroshi Hata from the Network System Research Institute, Japan. Their contribution concerns high-performance and scalable directory service that can manage arbitrary information associated with the Internet of Things (IoT). Their solution is aligned with the ITU-T guidelines for future 5G scenarios and may also be helpful to the IETF constrained RESTful Environments Working Group on service/resource discovery of IoT or machine-to-machine (M2M) applications.
Kaleidoscope 2017
special edition
in the IEEE Communications Standards Magazine

For submissions:

1. Please read the guidelines:
   http://www.comsoc.org/commag/author-guidelines

2. Please go to
   https://mc.manuscriptcentral.com/m-comstd
Extended versions of selected papers can be considered for publication in the following Journals:

- International Journal of Technology Marketing
- International Journal of Standardization Research
- Journal of ICT Standardization
Our sincere thanks goes to.....
• **Steering Committee**
  - Christoph Dosch, ITU-R Study Group 6 Vice-Chairman; IRT GmbH, Germany
  - Kai Jakobs, RWTH Aachen University, Germany – **TPC Chair**
  - Mitsuji Matsumoto, Waseda University, Professor Emeritus, Japan
  - Mostafa Hashem Sherif (AT&T, USA)

• **Almost 80 Technical Programme Committee (TPC) members**
  
Host University
General Chairman
Prof. Zhen Yang, President of Nanjing University of Posts and Telecommunications (NJUPT), China

Host Committee
- Prof. Chen Liu, Chairman of NJUPT
- Prof. Guoping Jiang, Vice President of NJUPT
- Prof. Zhihua Zhang, Vice President of NJUPT, in charge of international affairs
- Prof. Lianhui Wang, Vice President of NJUPT
Sponsors
Technical co-sponsors
Partners
Nine ITU Kaleidoscope conferences have been organized worldwide
**10th Kaleidoscope**

- **Hosted by** Universidad Tecnológica Nacional
- **Venue:** Santa Fé de la Vera Cruz, Argentina
- **Dates:** 26-28 November 2018
- **Theme:** Machine Learning for Future Networks including 5G
University leaders

- **Mr. Yanfei Sun**, Executive Vice Director of Scientific and Research Department, Director of Natural Sciences Management Office
- **Ms. Ying Wang**, Director of Department of International Cooperation and Exchanges
- **Ms. Su Zhao**, Vice Director of Scientific and Research Department
- **Mr. Jinlong Zhu**, Vice Director of Scientific and Research Department
- **Ms. Xiefei Ge**, Vice Director of Department of International Cooperation and Exchanges
- **Ms. Meng’e Li**, Staff of Scientific and Research Department
- **Ms. Julia Zhu**, Staff of Department of International Cooperation and Exchanges
- **Mr. Yulong Zou**, Professor of School of Telecommunication and Information Engineering
- **Ms. Kejia Chen**, Associate Professor of School of Computer Science and Technology
Nanjing, China
27-29 November 2017

ITU staff

Alessia Magliarditi
ITU Kaleidoscope Coordinator

Erica Campilongo
Collaborator and Coordinator of Jules Verne’s corner and Local Universities Exhibit

Stefano Polidori
ITU-T SG Counselor and K-2017 Technical Adviser

Emer Windsor
Administrative Assistant

Pascal Borde
Promotional support

Gent Bajrami
IT Manager
THANK YOU!