



IEEE Data Storage Technical Committee

Update

Bane Vasić

Chair, IEEE Data Storage Technical Committee

Agenda



- Committee Mission
- Updates on conference support from DSTC:
 - Globecom 2014, Austin, Texas
 - Chair: Lara Dolecek
 - ICNC 2014, Honolulu, Hawaii
 - Co-Chairs: Haitao (Tony) Xia and Yiran Chen
 - ICC 2015, London, UK
 - Chair: Xinde Hu
 - Globecom 2015, San Diego
 - Chair: Haitao (Tony) Xia
 - ICC 2016, Kuala Lumpur, Malaysia
 - Chair: Edward Au
 - Globecom 2016, Washington, DC
 - Chair: Sedat Olcer
 - ICC 2017, Paris, France
 - Chair: Ozan Koyluoglu
- Awards updates:
 - New awards committee

IEEE DSTC



▪ Goals and activities:

- Technical committee under IEEE Communications Society to promote data storage related technologies and their applications.
- The Data Storage Technical Committee (DSTC) promotes advances in state-of-the-art communications, signal processing and coding technologies to enhance data storage systems, in order to achieve high storage densities, fast access, and low error rates.
- Activities: sponsoring / co-sponsoring technical sessions at major conferences, organizing workshops and tutorials, and organizing special issues of IEEE journals and magazines.
- Bridge between storage industry and universities to engage research collaboration

▪ Join us:

- Website: <http://committees.comsoc.org/spfs/>
- Contact us through Prof. Brian M. Kurkoski (kurkoski@jaist.ac.jp)

Officers



Chair

Professor Bane Vasić
The University of Arizona

Vice-Chair -Industry

Dr. Xinde Hu
SanDisk Corporation

Vice-Chair - Academia

Dr. Kui Cai
Singapore University of
Technology and Design

Secretary

Prof. Brian M. Kurkoski
School of Information
Science
Japan Advanced
Institute of Science and
Technology (JAIST)

Treasurer

Dr. Qi Qi
Avago Technologies

ICC 2015 - London

- **Data Storage and Cloud Computing (DSCC) track is selected as part of the Selected Areas in Communications (SAC) Symposium**
- The decision of combining the DS and CC is proposed by Nathan Gomes (July, 2013)
- Total 76 members of TPC (requested by the ICC committee)
 - Total about 91 papers (several is withdrawn)
 - 63 papers on Cloud computing (several is withdrawn)
 - 14 papers on Non- volatile memory (Flash/Phase-change etc.)
 - 4 papers on magnetic recording
 - 8 papers on general ECC
- **6 Sessions**
 - 2 oral sessions on DS & 2 oral sessions on Cloud computing
 - 2 poster sessions combined DS & CC
- **Session Chairs**
 - Prof. Euseok Hwang; Prof. Cai Kui; Dr. Naveen Kumar, Dr. Susana Sargento, Dr. Borja Peleato, Prof. Liang Chen, Prof. Francesco Chiti

GC 2015 – San Diego

- Haitao (Tony) Xia, Track Chair
- Paper submission and review status
 - 18 submissions in the areas of signal processing and coding for HDD/SSD, cloud storage
 - 7 papers got accepted, one oral session and one paper in poster session
- TPC members
 - Haitao Xia, Victor Krachkovsky, Shaohua Yang, Qi Qi, Yu Zheng, Baohua Sun, Avago Technologies, USA
 - Xinde Hu, Xinmiao Zhang, SanDisk, USA
 - Kui Cai, Kheong Sann Chan, DSI, Singapore
 - Brian Kurkoski, JAIST, Japan
 - John Barry, Georgia Tech, USA
 - Qiuju Diao, CNEX LABS, USA
 - Fang Cai, Marvell, USA
 - Richard Todd, University of Oklahoma, USA
 - Lara Dolecek, UCLA
 - Bane Vasic, University of Arizona
 - Shayan Garani, India
 - Wei Wang, University of Shandong, China
- One problem observed for Data Storage Track in GC2015
 - Data storage track has very high quality papers, the average score of papers are much higher than the rest of tracks/sessions. However, the conference acceptance rate is a fix percentage which makes the number of accepted papers for Data Storage Track is less. Some authors have complained about this, and they may choose not to submit to Data Storage Track in future.

Report: Haitao (Tony) Xia

ICC 2016 – Kuala Lumpur

- Edward Au, Track Chair

- Confirmed timeline and status
 - 2015/02:
 - Data storage track in Selected Areas Symposium is confirmed
 - 2015/04:
 - Draft Call-for-paper submitted to Organizing Committee
 - 2015/06:
 - TPC formation is complete
 - 13 members
 - 2015/10: Paper submission deadline is past
 - 24 papers
 - Table shows the topics related to these papers
 - 2015/11: TPC review assignment is complete
 - Deadline: December 15

Topics by count	Count
Signal processing and detection methods for storage channels	6
Signal processing for shingled writing and bit-patterned media recording	3
Channel and noise characterization for magnetic recording, flash memories and emerging memory technologies	2
Error correcting and modulation codes for storage	9
Two-dimensional intersymbol-interference channels for storage	4
Information theory for storage	10
Circuit design for coding, detection, and read/write channels	1
Error-correcting codes for storage channels and distributed storage networks	13
Network coding techniques for distributed storage networks	7
Security and data compression for cloud storage and storage devices	3
Novel and emerging storage media: optical, holography, PCM, MRAM, RRAM, etc.	1
Energy-efficient designs for storage	2
Architecture and design of large-scale storage subsystems based on new non-volatile memories	1

2014 Best Paper Award

- We had 10 nominations.
 - The papers are categorized into two pools: (a) classical storage (b) cloud storage and applications.
 - The evaluation forms and other details were created and sent to the juries handling Pools A and B.
 - We expect to get the reviews by Dec 2nd week 2015 and make decisions by end of this year to announce the winners early part of the New Year 2016 considering the overall recommendations and impact..
 - The jury comprises of seven members balancing the areas between physical and distributed data storage.

Jury Panel A: John Barry, Simon Litsyn, Haris Pozidis, Shayan Garani (Classical)

Jury Panel B: Vijay Kumar, Erich Haratsch, Alex Dimakis (Cloud and Applications)

Chairs: Shayan Garani and Alex Dimakis

Technical Activities Council

- **Awards**
 - **Achievement award nominations, Sept. 20 (education award – new)**
 - **Last year 300 nominated papers**
- **Educational activities**
 - **ABET accreditation of Telecommunications engineering**
 - **Education and training at ICC and Globecom**
 - **Portal on educational activities**
- **Continuing professional education and training**
- **Summer school for graduate students**
- **IEEE Fellow committee: Dakash Agrawal, ibm research, robert Heath, Texas austin, ...**
- **88 nominations, 34 new fellows**

DSTC Web Site

- Brian Kurkoski

- **Current Policies and Procedures**
 - 1) Membership Requirements
 - 2) Elected and Appointed Officers
 - 3) Nomination and Election Procedures
 - 4) Conduction of Meetings
 - 5) Budget & Expenses
 - 6) Supporting Activities
 - 7) TC Information Dissemination The TC will maintain an Internet Web page.
 - 8) ICC and GLOBECOM Organization