



**IEEE Signal Processing Society
Sensor Array and Multichannel (SAM) Technical Committee
Minutes of the ICASSP 2017 Meeting
New Orleans (LA), USA – Tuesday, March 7, 2017; 07:00 AM - 08:30 AM
Hilton New Orleans Riverside / Room: Commerce, 3rd floor.**

Present TC Members: Waheed U. Bajwa, Mónica Bugallo, Chong-Yung Chi, André L.F. de Almeida, Yonina Eldar, Martin Haardt (Chair), Geert Leus, Wei Liu, Hongbin Li, Jian Li, Gonzalo Mateos-Buckstein, Christoph Mecklenbräuker (Vice-Chair), Xavier Mestre, Piya Pal, Marius Pesavento, Athena Petropulo, Peter Willett (Past Chair), Yimin Zhang.

Guests: Julie Jackson (Affiliate SAM TC Member, Air Force Institute of Technology, OH), Sher Ali Cheema (Ilmenau Univ. of Technol., Ilmenau, Germany), Cihan Tepedelenlioglu (Arizona State University Tempe, AZ), Mats Viberg (Chalmers University of Technology, Göteborg, Sweden), Peter Gerstoft (UCSD, San Diego, CA).

§1. Welcome of New TC Members and Short Introduction

- The chair welcomed the 7 newly-elected SAM TC members Pascal Chevalier, Lei Juang, Yongwei Huang, Wei Liu, Vincenzo Matta, Karim Abed-Meraim, Antonio Napolitano of whom Wei Liu was present at the meeting.
- Moreover, Mónica Bugallo, Yonina Eldar, Braham Himed, Jian Li, Chong Meng Samson See, and Milica Stojanovic have been reelected for a second term.
- Furthermore, the chair thanked the outgoing members Antonio de Maio, Jean-Pierre Delmas, Shawn Kraut, Pascal Larzabal, Ali H. Sayed, and Erchin Serpedin for their service in the SAM TC.
- Currently, the SAM TC has 8 female and 33 male members. Out of these members, 6 work in industry or research labs and 35 members work in academic institutions. The regional distribution is as follows: 14 R1-R6, 1 R7, 17 R8, 1 R9, 8 R10.

§2. Report from the Chair

§2.1 Awards

- The Chair announced that 2016 was, again, a successful year for award nominations. The following nominations were successful. Note that a co-author of the first award is a SAM TC member. Hence although the SAM TC awards “vetting” procedure recommended these awards, SAM itself was precluded from initiating the nomination process. In fact, the nomination was from the 2016 TC-Chair personally.
 - **Young Author Best Paper Award:**
 - Ahmed Alkhateeb and Omar El Ayach, for the paper co-authored with Geert Leus and Robert W. Heath, Jr., for “Channel Estimation and Hybrid Precoding for Millimeter Wave Cellular Systems”, IEEE Journal of Selected Topics in Signal Processing, Volume 8, No. 5, October 2014.

- **Signal Processing Letters Best Paper Award:**
 - Ye Yang, Qiang Li, Wing-Kin Ma, Jianhua Ge and P. C. Ching, for “Cooperative Secure Beamforming for AF Relay Networks With Multiple Eavesdroppers“, IEEE Signal Processing Letters, Volume 20, No. 1, January 2013.
- **Signal Processing Magazine Best Paper Award:**
 - David I. Shuman, Sunil K. Narang, Pascal Frossard, Antonio Ortega and Pierre Vandergheynst, for “The Emerging Field of Signal Processing on Graphs [Extending high-dimensional data analysis to networks and other irregular domains]“, IEEE Signal Processing Magazine, Volume 30, No. 3, May 2013.
- **Technical Achievement Award:**
 - Jelena Kovacevic, “for contributions to the theory and practice of signal representations.”

§2.3 Distinguished Lecturers of the IEEE SPS and their Topics

- **Athena P. Petropulu**
 - Sparse Sensing Based MIMO Radars
 - Coexistence of Radar and Communication Systems
 - Cooperative Approaches For Physical Layer Security
 - Cooperative Approaches For Improving The Performance of Wireless Networks
 - Mobile Beamforming
 - Localization of Brain Activations Based on EEG
 - Recordings and Sparse Signal Recovery Theory
- **Brian M. Sadler**
 - Distributed Collaborative Intelligent Systems
 - Human-Autonomy Querying and Interaction
 - Autonomous Networking

Both of them are current members of the SAM TC.

§2.4 ICASSP 2017 Submissions

- SAM received 163 paper submissions (of which 3 were transferred in from other tracks and 3 out to other tracks before the review) and 80 were accepted. This corresponds to a 49 % acceptance rate, as the conference organizers have requested.
- Additionally, 11 Signal Processing Letters were presented in SAM sessions.
- The papers were distributed to four lecture sessions (6 papers each) and seven poster sessions with 9 to 10 papers each.
- Highest numbers paper submissions by EDICS:
 - 9.1.1 Beamforming (9)
 - 9.1.6 Signal Detection and Parameter Estimation (20)
 - 9.1.7 DOA Estimation (40)
 - 9.1.8 Localization, Classification, and Tracking (18)
 - 9.2.3 MIMO Radar and Waveform Diversity (8)
 - 9.6.1 Radar Array Processing (11)
 - other EDICS (5 submissions or less)
- Special Session jointly organized by SAM and AASP: Speaker Localization in Dynamic Real-Life Environments (SS-L2)
- History of ICASSP SAM Submissions

- 2017: 170/2697 = 6.3 % New Orleans, USA
- 2016: 200/2682 = 7.5 % Shanghai, China
- 2015: 212/2322 = 9.1 % Brisbane, Australia
- 2014: 222/3544 = 6.3 % Florence, Italy
- 2013: 216/3362 = 6.4 % Vancouver, Canada
- 2012: 171/2615 = 6.5 % Kyoto, Japan

§2.5 SAM TC Archiving initiative

- Responsible: Waheed U. Bajwa
- Past workshops are often housed on University servers, and eventually are removed.
- Lost TC memory (and memories).
- IEEE is not willing to host the websites, but will archive them at: <http://signalprocessingsociety.org/get-involved/sensor-array-and-multichannel/conferences-workshops>
- Presently the following workshops have been archived:
 - SAM 2016, SAM 2014, SAM 2010, SAM 2002.
 - CAMSAP 2015, CAMSAP 2013, CAMSAP 2011, CAMSAP 2009, CAMSAP 2007, CAMSAP 2005.
- Still missing are: SAM 2012, SAM 2008, SAM 2006, and SAM 2004
 - Xavier Mestre checks for Barcelona SAM 2004
 - Christoph Mecklenbräuker checks for Boston, MA, SAM 2006
 - Marius Pesavento will check for Darmstadt, Germany, SAM 2008
 - Christoph Mecklenbräuker checks for Hoboken, NJ, SAM 2012

§2.6 The SAM TC Review is scheduled on March 9, 2017.

§3. Workshop Reports

§3.1 SAM 2016

- 215 participants. Only one no show, no problems with cancellations.
- 53 % acceptance rate in regular sessions, 220 papers submitted, 88 in regular sessions
- Performance on Budget 24 %, Surplus ~ US\$ 13.653. Some members of the committee felt that there is no reason to achieve a higher surplus than 20 % because this would mean that we are charging too much money from our students and ultimately from the taxpayer. Those in favor of this recommended that we reduce SAM conference registration rates next year.
- See also final report (slides) on SAM 2016 held at the Pontifical Catholic University of Rio de Janeiro.

§3.3 CAMSAP 2017

- André de Almeida presented a report about CAMSAP 2017 (<http://www.cs.huji.ac.il/conferences/CAMSAP17/>) to be held in Curacao, Dutch Antilles, from December 10 – 13, 2017. The web site is already operational.
- The workshop will take place in the Santa Barbara Beach & Golf Resort. It is noted that registration fees are higher than in previous years, but they will include an all-inclusive package (all hotel meals) with unlimited drinks.
- Discussion on the CAMSAP 2017 planned registration fees for non-members: it is felt that these are high compared to those of members. Several SAM TC members request that the difference shall be waived for selected invited speakers. In the past 95 % of the registrants came from SPS.

- Two tutorials are planned by G. Giannakis and J. Nosssek.
- 16 proposals for special sessions with 5 or 6 oral presentations. Decision on these proposals is to be taken in mid March 2017.
- Target date for full paper submission is **June 15, 2017**.

§4. Progress report on planning of future workshops

§4.1 SAM 2018

- The SAM 2018 proposal was officially approved by IEEE in Feb. 2017.
- SAM 2018 will be held in Sheffield, UK, during July 8-11, 2018,
- The planning for SAM 2018 was presented by Wei Liu.
 - Budget plan: Income 97 k US\$, Expenses 80 k US\$, Surplus 17 k US\$ amounting to 21.7 %.
 - Banquet Venue Capacity: 150 which is a rather low capacity. One proposal is that the banquet be not included in the student registration. Cost for Banquet 140 US\$.
- Discussion on CAMSAP 2019. The SAM TC is welcoming proposals for CAMSAP 2019. Prospective organizers please step forward.

§4.2 CAMSAP 2019

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§5. Subcommittees 2017

- The subcommittees of the SAM TC have the following members:
 - **Technical Directions** (A. Petropulu, J. Li, K. M. Wong, P. Willett)
 - **Awards** (G. Leus, Y. Eldar, A. Napolitano, L. Huang)
 - **Nominations and Elections** (F. Gini, E. Jorswieck, Y. Zhang, V. Matta)
 - **Workshops** (M. Bugallo, A. L. F. de Almeida, W. Liu, K. Abed-Meraim)
 - **Webmaster** (W. U. Bajwa, M. Ghogho)
 - **Newsletter** (M. Pesavento, C. Mecklenbräuker, H. Li)
 - **Membership** (P. Pal, Y. Huang)
 - **Industry/Government** (B. Himed, C. M. Samson-See, P. Chevalier)
 - **Education** (A. Wiesel, M. Stojanovic, B.-N. Vo)
 - **Student** (S. A. Cheema, P. Schniter)
 - (underline means chair)
- Area Chairs
 - Applications of SAM processing (B. Sadler)
 - Beamforming and space-time processing (M. Haardt)
 - Detection, estimation, and source separation (V. Cevher)
 - Multi-antenna and multi-channel comm. (C.-Y- Chi)
 - Radar array processing (F. Ahmad)
 - Sensor array processing (X. Mestre)
 - Sensor networks (A. Pandharipanda)
- Four Regional Representatives
 - USA (R1-R6): G. Mateos
 - Canada/Latin America (R7/R9): J. Benesty

- Europe/Mid East/Africa (R8): F. Pascal
- Asia/Pacific (R10): Q. He

§6. Interaction with AASP-TC

Requested by AASP due to several joint interests, especially in microphone array topical area. (IEEE SPS does encourage cooperation among its TCs).

- Near-term initiative:
 - SAM and AASP have organized a special session on “Speaker Localization in Dynamic Real-Life Environments” at ICASSP 2017 ... and possibly again at ICASSP 2018 and beyond.
- Medium-term initiatives:
 - SAM may ask to co-sponsor HSCMA (Hands-Free Communication and Microphone Arrays) Workshop
 - every 3 years
 - the last one in San Francisco, CA, just before ICASSP 2017.
 - not financially sponsored by IEEE
 - Planning of joint special issue in the IEEE Journal of Selected Topics in Signal Processing (JSTSP)
- Long-term thoughts
 - AASP may be interested in co-sponsorship of our SAM workshops and to this end we should define a set of joint EDICs

§7. SPS Data Science Initiative

- First SPS Initiative
 - André de Almeida is our representative
 - Meeting took place on Monday, March 6, 2017.
 - We regard topics in Machine Learning and Big Data as being part of the research topics in the IEEE SAM TC core area of responsibility.

§8. SP Cup Proposal for 2018.

- For undergraduate students
- Should be organized by the Student Subcommittee
- Real-world data set is required
- All TC members are welcome to provide input
- Our previous submission on MIMO radar with public domain data (coordinated by Sabrina Greco) was rejected twice
- New suggestion: We coordinate a proposal for the SP Cup with ASSP TC Chair Sharon Gannot (Faculty of Engineering, Bar Ilan University Ramat-Gan, Israel) for a data set challenge as a joint submission from ASSP TC and SAM TC. This could concern the tracking of a person in an indoor or outdoor environment using antenna measurements and/or a microphone array

§9. Awards Procedures

- SPS Policy 5.7, accepted wording: “TC/SIG’s may not nominate a current elected member of their own TC/SIG for an award. However, current elected members of a TC/SIG may participate as individual nominators for other members of the same TC/SIG.”

- The bottom line is:
 - A TC may make nominations for paper- and personal awards that do not involve (current!) TC members
 - A TC may not make nominations for paper- and personal awards that do involve current TC members, but
 - a TC may nominate or endorse members of other TCs
 - an individual TC member can nominate or endorse another member of that TC
 - We decided to:
 - Include all candidates in the pool of award nominations that the TC will consider.
 - If the TC's selection happens to involve a TC member then the TC Chair will solicit an individual nomination
 - If so, a second non-member selection be pursued.
 - This last was not a concern in the past year.

§10. Voting Procedures

- Last SAM TC Review: increase geographical coverage in R10, gender diversity and the number of members from industry/government.
 - Starting in the 2014 election cycle we implemented a “two step” election procedure to encourage diversity.
 - Illustration: Assume 12 open slots, and say more than 12 candidates who are neither industrial/lab, female nor Region 10 (nor other under- represented region). The first round of election will winnow that list to 12. The second round of election will include those “surviving” 12, plus the remaining (under-represented category) candidates.

§11. Membership Categories

- The SAM TC has considered its membership categories, with special attention to Associate Member list and whether it is of an appropriate size.
- Now, given our review needs (see the previous item for ICASSP numbers) the present list of approximately 75 seems appropriate.
- However, we will examine the Associate Member list to identify “dormant” members.
- Also examine Affiliate Member and Student Affiliate Member roles and membership.
- **Associate members** in SAM are generally past SAM members, or unsuccessful member applicants.
 - Their technical levels are high and they have been giving us big help in reviewing ICASSP papers.
- **Affiliate members** are free to join with no criteria needed, there is no quality control in their technical levels. The application is via the web, and although the TC Chair is free to refuse Affiliate Membership this has not in the past been necessary as far as we are aware.
 - Affiliate members generally join through the website ... the application comes to the SAM-TC Chair who evaluates and adds their names to the lists/logs on a periodic basis.
 - Affiliate status is not a pre-requisite for eventual election. It is however potentially helpful to a TC candidacy, since it evidences interest and engagement.
- In the past, we sent out TC meeting reports and notices of workshop activities and elections / nominations to affiliate members.
 - There was an idea of inviting affiliates to TC meetings during SAM workshop/CAMSAP to make them feel more involved, especially since lunches are included in our workshops, but it has not yet happened.
 - It probably should, and should be part of the workshop budget; but it would make the

budget a bit uncertain.

§12. Close of the Meeting

- We plan to have the next SAM TC meeting during CAMSAP 2017 in Curacao. Hopefully most of the SAM TC members will be able to participate in this meeting.
- The meeting was adjourned at 08:30 AM.