Agenda

- 1 Welcome
- 2 Report from Chair (Part 1)
  - Membership Structure
  - Awards
- 3 Conference and Workshop Reports
  - ICASSP 2020 (SAM TC Area)
  - CAMSAP 2019, Guadeloupe
    (David Brie, Jean-Yves Tourneret)
  - SAM 2020, Hangzhou goes virtual
    (Zhiguo Shi, Martin Haardt)
  - CAMSAP 2021, Costa Rica ramp up
    (Martin Haardt, André L.F. de Almeida, Rémy Boyer)
- 4 Proposals requested for
  - SAM 2022
  - CAMSAP 2023
- 5 SPS Activities
  - TWG Synthetic Aperture Channel Sounding (Peter Vouras)
  - Data Science Initiative
  - Data Collections and Challenges
  - Unified EDICS
- 6 Report from Chair (Part 2)
  - TC status
  - Archiving initiative
- 7 Subcommittee Reports
- 8 Miscellaneous
# 2: SAM Membership 2020

## New Members
- Rémy Boyer, University of Lille, France (R8, Ac, M)
- Yao Xie, Georgia Institute of Technology, Atlanta (GA), USA (R3, Ac, M)
- Hassan Mansour, Mitsubishi Electric Research Laboratories, Cambridge (MA), USA (R1, Ac, M)
- Henry Arguello, Universidad Industrial de Santander, Colombia (R9, Ac, M)
- Usman Khan, Tufts University, Medford (MA), USA (R1, Ac, M)
- Bin Liao, Shenzhen University, Shenzhen, China (R10, Ac, M)

## Retiring Members (Dec 2019)
- Monica Bugallo (R1, Ac, F)
- Yonina Eldar (R8, Ac, F)
- Braham Himed (R2, In, M)
- Jian Li (R3, Ac, M)
- Chong Meng Samson See (R10, In, M)
- Milica Stojanovic (R1, Ac, F)
- Martin Haardt (Past Chair) (R8, Ac, M)

## Returning / Re-Elected
- Vincenzo Matta, 2nd term
- Antonio Napolitano, 2nd term
- Pascal Chevalier, 2nd term
- Kerain Abed-Merain, 2nd term
- Yongwei Huang, 2nd term
- Lei Huang, 2nd term

## Statistics
- 13 R1-6, 1 R7, 16 R8, 2 R9, 7 R10
- 6 Industry/Lab, 34 Academic
- 8 female, 32 male
2: SAM Membership 2019

New Members
- Elias Aboutanios (Univ. New South Wales, Australia)
- Adel Belouchrani (Ecole National Polytechnique, Algeria)
- Yuejie Chi (Carnegie Mellon University, USA)
- Walter Kellermann (Friedrich Alexander University, Germany)
- Xiao-Ping (Steven) Zhang (Ryerson University, Canada)

Retiring Members (Dec 2018)
- Chong Yung Chi
- Xavier Mestre
- Phil Schniter
- Ami Wiesel
- Kainam Thomas Wong

Returning / Re-Elected
- Maria Sabrina Greco
- Fauzia Ahmad
- Waheed U. Bajwa
- André L.F. de Almeida
- Qian He
- Hongbin Li
- Gonzalo Mateos Buckstein
- Piya Pal
- Ashish Pandharipande

Statistics
- 14 R1-6, 1 R7, 17 R8, 1 R9, 7 R10
- 8 Industry/Lab, 34 Academic
- 10 female, 32 male
New SPS rules demand changes in the TC membership structure

Specifically:

- the number of associate TC members is bounded by $\frac{1}{2}$ of the number of (regular) TC members

- The terms of the associate TC members are tied to the term of the TC chair

This will become effective January 2021
Norbert Wiener Society Award awarded to Georgios Giannakis for fundamental contributions to statistical signal processing, especially for networking and communications, and for outstanding mentoring of young researchers.

Carl Friedrich Gauss Education Award awarded to Peter Stoica for sustained contributions to education in the area of image and video processing and understanding.

Signal Processing Magazine Best Column Award awarded to Emil Björnson, Mats Bengtsson, and Björn Ottersten
Optimal Multiuser Transmit Beamforming: A Difficult Problem with a Simple Solution Structure,

IEEE SPS Young Author Best Paper Award awarded to Mianzhi Wang and Arye Nehorai
Coarrays, MUSIC, and the Cramer–Rao Bound
IEEE Transactions on Signal Processing, Vol. 65, No. 4, February 2017
2: 2020 Distinguished Lecturers of the IEEE SPS and their Topics

<table>
<thead>
<tr>
<th>2020 Distinguished Lecturers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Andrea Cavallaro</td>
</tr>
<tr>
<td>Gaurav Sharma</td>
</tr>
<tr>
<td>Ami Wiesel</td>
</tr>
<tr>
<td>Xiao-Ping (Steven) Zhang</td>
</tr>
<tr>
<td>Qing Zhao</td>
</tr>
</tbody>
</table>

https://signalprocessingsociety.org/professional-development/distinguished-lecturers
2: 2020 Distinguished Lecturers of the IEEE SPS and their Topics

- Ami Wiesel (nominated by SAM TC)
  - Binary optimizations in signal processing
  - Multitask regressions and flood forecasting
  - Structured and robust covariance estimation

- Xiao-Ping (Steven) Zhang
  - Signal processing, AI and big data for finance, economics, and business
  - Passive localization and tracking for internet of things
  - Graphical probabilistic modeling, machine learning and signal processing on graph with applications in multimedia
ICASSP is growing:

Virtual ICASSP 2020 Barcelona versus last year:

With 3951 (3510) submissions, 1881 (1725) accepted papers, at an acceptance rate of 47.6% (49.1%), and 67 (41) presentations of journal articles recently published in Society’s Transactions and Letters, this is again the biggest ICASSP in the history of this conference series.

This task requires the whole IEEE SPS to be mobilised, and indeed 97.5% (97%) of submitted papers received three or more reviews, a whopping total of 13557 (10500) reviews submitted.

2625 reviewers (Note: 13557/2625 = 5 avg)
SAM Area: 189 submission x 4 reviews = 756 requested
3: SAM TC Workshop Reports

- **CAMSAP 2019**
  -> Guadeloupe, French West Indies (David Brie, Jean-Yves Tourneret)

- **SAM 2020**
  -> Hangzhou, China (Zhiguo Shi)

- **CAMSAP 2021**
  -> Costa Rica (Martin Haardt, André L.F. de Almeida, Rémy Boyer et al.)
Organizing Committee

• General Co-Chairs
  David Brie, University of Lorraine, France
  Jean-Yves Tourneret, University of Toulouse, France

• Technical Co-Chairs
  Geert Leus, TU Delft, Netherlands
  Antonio Marques, King Juan Carlos University, Spain

• Local Chairs
  Cédric Richard, Nice Sophia-Antipolis University, France
  Guillaume Ginolhac, University of Savoie, France

• Special Sessions
  Romain Couillet, Centrale Supélec, France
  Yoann Altmann, Heriot-Watt University, UK
Organizing Committee

- **Finance Chairs**
  - Mónica F. Bugallo, Stony Brook University, USA
  - Jordi Vilà-Valls, CTTC, Spain

- **Publications**
  - Nicolas Gillis, University of Mons, Belgium
  - Yannick Berthoumieu, University of Bordeaux, France

- **Student Chair**
  - Fauzia Ahmad, Temple University, USA

CAMSAP 2019
Technical program in a glance

• Journey that started 1.5 years ago!

• 5 invited speakers
  • A. Swami, M. Elad, R. Vidal, P. Abry, K. Ma
  • Nice and diverse collection of topics
  • Right after, SS associated with the plenary talk

• 2 tutorials
  • E. Bjornson & L. Sanguinetti, G. Mateos & S. Segarra
  • Comms vs. Data-science oriented

• 27 oral and poster sessions: 18 invited and 9 regular

• 1 student paper contest: 8 finalists and 3 awards
Paper stats and budget

• Papers - Registrations
  • 165 submissions (72 regular, 93 invited)
  • 3.75 reviews per paper, all of them at least 3
  • Good quality: 65% received a score of 3.0/4.0 or more, 70% acceptance rate
  • 186 registrations

• Budget
  • Total Receipts (pre-loan): 136.820,00
  • Total Expenses (pre-loan): 112.788,70
  • Surplus/Loss: 24.031,30
  • Surplus Percentage: 21%
IEEE SAM 2020

Hangzhou, China
(Fully Virtual Conference)
June 8–11, 2020
### Organizing Committee

#### General Co-Chairs
- Martin Haardt (TU Ilmenau, Germany)
- Zhiguo Shi (Zhejiang U, China)

#### Technical Co-Chairs
- André L. F. De Almeida (Federal U Ceará, Brazil)
- Qian He (UESTC, China)

#### Special Session Chairs
- Lei Huang (Shenzhen U, China)
- Yujie Gu (Temple U, USA)

#### Publicity Chair
- Antonio De Maio (University of Naples Federico II, Italy)

#### Finance Chair
- Xiaopeng Yang (BIT, China)

#### Publication Chair
- Bo Chen (Xidian Univ., China)
- Junfeng Wu
- Chengwei Zhou (Zhejiang Univ., China)

#### Local Chair
- Chengwei Zhou (Zhejiang Univ., China)
Zhejiang University (Host)

- Top tier university in China
- 23,302 undergraduates
- 22,376 postgraduates
- 8,222 faculty and staff members

Our research group can provide enough volunteers.
Virtual Conference Platform

• Software: Zoom
  • Popular online meeting solution during COVID-19 pandemic
• Service Provider: Conference Catalysts, LLC
  • World-class conference, operations, and web management solutions
• Support for SPAWC, ICME of the IEEE SPS
Tutorial Speaker

Zhi-Quan (Tom) Luo
Department of Electrical and Computer Engineering
University of Minnesota, Twin Cities
Tutorial Speaker

Marius Pesavento
Technische Universität Darmstadt
Germany

Minh Trinh Hoang

Mats Viberg
Blekinge Institute of Technology
Sweden
Keynote Speakers

Ami Wiesel  
The Hebrew University of Jerusalem

Anna Scaglione  
University of Arizona

A. Lee Swindlehurst  
University of California, Irvine

Georgios Giannakis  
University of Minnesota

Lieven De Lathauwer  
KU Leuven

Wen Tong  
Huawei Technologies Co., Ltd.
## Special Sessions

<table>
<thead>
<tr>
<th>No.</th>
<th>Organizers</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Xiaohuan Wu, Hua Chen &amp; Qing Wang</td>
<td>Robust Super-Resolution DOA Estimation and its Applications</td>
</tr>
<tr>
<td>2</td>
<td>Jun Fang &amp; Hongbin Li</td>
<td>Sparse and Low-Rank Signal Processing for Millimeter Wave Communications</td>
</tr>
<tr>
<td>3</td>
<td>Yulong Huang &amp; Liang Zhang</td>
<td>Multi-Sensor Data Fusion for Underwater Application</td>
</tr>
<tr>
<td>4</td>
<td>Guoqiong Cui, Biniao &amp; Yong Jia</td>
<td>Cognitive Waveform Diversity Design and Signal Processing</td>
</tr>
<tr>
<td>5</td>
<td>Cheng Qian, Xiao Fu &amp; Kejun Huang</td>
<td>Structured Tensor and Matrix Methods for Sensing, Communications, and Machine Learning</td>
</tr>
<tr>
<td>6</td>
<td>Jingwei Xu, Hing Cheung So &amp; Wen-Qin Wang</td>
<td>Waveform Diverse Array Radar</td>
</tr>
<tr>
<td>7</td>
<td>Jun Liu &amp; Danilo Orlando</td>
<td>Advanced Techniques in Radar Detection, Localization, and Electronic Counter-Measures</td>
</tr>
<tr>
<td>8</td>
<td>Yongping Huang, Himal Sarawara &amp; Alessio Zappone</td>
<td>Intelligent Antenna Arrays and Surfaces for Future Communications</td>
</tr>
<tr>
<td>9</td>
<td>Wei Liu &amp; Yinmin D. Zhang</td>
<td>Aperture Extension and Synthetic Techniques for High-Resolution Detection and Estimation</td>
</tr>
<tr>
<td>10</td>
<td>Pu (Perry) Wang &amp; Ting Yuan</td>
<td>Automotive Radar Sensing</td>
</tr>
<tr>
<td>11</td>
<td>Lei Cheng &amp; Yik-Chung Wu</td>
<td>Structured Matrix/Tensor Decompositions: Models, Applications and Fast Algorithms</td>
</tr>
<tr>
<td>12</td>
<td>Elias Aboutanios &amp; Xiangrong Wang</td>
<td>Recent Advances in Beamforming Techniques and Applications</td>
</tr>
<tr>
<td>13</td>
<td>Chong-Yung Chi &amp; Chia-Hsiang Lin</td>
<td>Unsupervised Computing and Large-Scale Optimization for Multi-dimensional Data Processing</td>
</tr>
<tr>
<td>14</td>
<td>Karim Abed-Meraim &amp; Adeel Belouchrani</td>
<td>Dependent Source Separation</td>
</tr>
<tr>
<td>15</td>
<td>Xianpeng Wang, Liangfian Wan &amp; Fangqing Wen</td>
<td>Array Signal Processing with Imperfect Scenarios</td>
</tr>
<tr>
<td>16</td>
<td>Xiaofei Zhang &amp; Junpeng Shi</td>
<td>Sparse Array Configuration for Improved Spectrum Estimation and its Applications</td>
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<tr>
<td>17</td>
<td>Xue Jiang &amp; Zhongfu Ye</td>
<td>Robust Beamforming Based on Convex/Nonconvex Optimization</td>
</tr>
<tr>
<td>18</td>
<td>Lei Huang &amp; Mohamed Rihan</td>
<td>Integrated Radar-Communication Systems and Networks: Advancements, Challenges, and Opportunities</td>
</tr>
<tr>
<td>19</td>
<td>Gang Li &amp; Xiaolan Gao</td>
<td>Advanced Methods of Synthetic Aperture Radar Imaging</td>
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</tbody>
</table>
Statistics

**Expected number of authors means** the expected number of authors who would pay the author registration rate subject to that each registration can cover up to four papers. This is a much lower number than the previous average number of attendees, i.e. 165. This leads to the high registration fee.

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>Number of submitted papers</td>
<td>257 (highest submissions in SAM history)</td>
</tr>
<tr>
<td>Number of accepted papers</td>
<td>167</td>
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<tr>
<td>Expected number of authors</td>
<td>74</td>
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<tr>
<td>Average number of attendees for past 5 years</td>
<td>165</td>
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# Program – Tutorials

<table>
<thead>
<tr>
<th>June 8, 2020</th>
<th>Tutorial 1</th>
</tr>
</thead>
</table>
| Asia/Shanghai | Optimization Techniques for Beamforming  
| 4:30 - 7:30 PM | *(Tom Luo)* |
| CET | |
| 10:30 – 1:30 PM |
| EST | |
| 4:30 – 7:30 AM |

<table>
<thead>
<tr>
<th>June 8, 2020</th>
<th>Tutorial 2</th>
</tr>
</thead>
</table>
| Asia/Shanghai | Four Decades of Array Signal Processing Research:  
| 8:00 - 11:00 PM | An Optimization Relaxation Technique Perspective  
| | *(Marius Pesavento, Minh Trinh Hoang, Mats Viberg)* |
| CET | |
| 2:00 – 5:00 PM |
| EST | |
| 8:00 – 11:00 AM |

Live + Q&A session
# Approved Budget Overview

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<th>Category</th>
<th>Amount</th>
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<tr>
<td>Promotion/Advertisement</td>
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<td>Professional Service</td>
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<tr>
<td>Conference Service</td>
<td>$13769.00</td>
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<tr>
<td>Speaker Expenses &amp; Honorariums</td>
<td>$4496.00</td>
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<td>Grants &amp; Conference Awards</td>
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<td>Administrative Fee</td>
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<td>Contingency</td>
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<td><strong>Total</strong></td>
<td><strong>$34126.05</strong></td>
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# Budget Details

<table>
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<td>Promotion</td>
<td>Advertisements</td>
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<tr>
<td>Conference Service</td>
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<td>Virtual Platform</td>
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<td>Registration Services</td>
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<td>Paper Management Services</td>
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<td>Accepted Paper Service</td>
<td>281.00</td>
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<tr>
<td>Grants &amp; Awards</td>
<td>Grants Awarded</td>
<td>1405.00</td>
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<tr>
<td>Speaker Expenses</td>
<td>Keynote/Tutorial Speaker Fee</td>
<td>4496.00</td>
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## Registration Rate

<table>
<thead>
<tr>
<th>Rates for Membership Level</th>
<th>Author Rate</th>
<th>Non-Author Rate</th>
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<tr>
<td></td>
<td>USD</td>
<td>RMB</td>
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<tr>
<td>SPS Member</td>
<td>$435.55</td>
<td>¥3085</td>
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<tr>
<td>IEEE Member</td>
<td>$505.80</td>
<td>¥3583</td>
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<tr>
<td>Non-Member</td>
<td>$590.10</td>
<td>¥4180</td>
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<tr>
<td>SPS Student Member</td>
<td>N/A</td>
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<tr>
<td>IEEE Student Member</td>
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<tr>
<td>Student Non-Member</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>IEEE Life Member</td>
<td>N/A</td>
<td>N/A</td>
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</table>

- Each registration includes admission to the technical sessions, exhibits, and one copy of the electronic proceedings.
- Each author registration can cover up to **Four papers**
9th IEEE International Workshop on Computational Advances in Multi-Sensor Adaptive Processing

Costa-Rica, December 12-15, 2021
Organizing committee

GENERAL CO-CHAIRS
- Martin Haardt
  Ilmenau Univ. of Techn.
  Germany
- André L.F. De Almeida
  Federal Univ. of Ceará
  Brazil
- Rémy Boyer
  University of Lille
  France

TECHNICAL CO-CHAIRS
- Maria Sabrina Greco
  University of Pisa
  Italy
- Sergiy Vorobyov
  University of Alberta
  Canada
- Christoph Mecklenbrauker
  Vienna Univ. of Technology
  Austria

PUBLICITY AND PUBLICATION CHAIR
- Piya Pal
  University of California
  USA

STUDENT CHAIR
- Charles Soussen
  Centrale Supelec
  France

FINANCE CHAIR
- Wei Liu
  University of Sheffield
  UK

LOCAL CO-CHAIRS
- Nuria Gonzalez-Prelcic
  University of Vigo
  Spain
- David Brie
  University of Lorraine
  France

SPECIAL SESSION CHAIRS
- Ken Ma
  The Chinese Univ.
  of Hong Kong
  Hong Kong
- Piya Pal
  University of California
  USA
Location: **Costa Rica**

Capital: San José  
Official language: Spanish  
51,000 sq. km for a population of 5 millions  
Time zone: UTC - 6 h  
1 $ = 561 CRC (Costa Rican Colon)  

Costa Rica is the **most industrialized** country in Central America  
Costa Rica is a **largely safe** country, but petty crime can occur  

CAMSAP 2021
The climate is tropical year round.

SJO is the primary airport serving San José, the capital of Costa Rica (around 5 million of passengers).

3 all-inclusive resorts are considered (Dreams Las Mareas, Westin Golf Resort and Spa, Riu Guanacaste)

CAMSAP 2021
## Suggested schedule

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>December 2020</td>
<td>First announcement and call for papers</td>
</tr>
<tr>
<td>March 2021</td>
<td>Special session proposals</td>
</tr>
<tr>
<td>July 2021</td>
<td>Full paper submission</td>
</tr>
<tr>
<td>September 2021</td>
<td>Notification of acceptance</td>
</tr>
<tr>
<td>October 2021</td>
<td>Camera-ready paper and tentative program</td>
</tr>
<tr>
<td>November 2021</td>
<td>Early registration due date</td>
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</tbody>
</table>
4: SAM TC Workshop Proposals

- SAM 2022
  - Preparation of proposals is encouraged

- CAMSAP 2023
  - Preparation of proposals is encouraged
5: SPS Activities

- **SPS Data Science Initiative**
  - André de Almeida, Wei Liu

- **Data Collections and Challenges**
  - Christoph Mecklenbräuker, TBD

- **Unification of EDICS within the SPS**
  - Christoph Mecklenbräuker
5: Unified EDICS

Overall goal is alignment of EDICS for all IEEE SPS publications and conferences.

IEEE SPS Publications Board started this 2018.

Request by Tulay Adali in April 2019 to SAM TC to review and comment

https://signalprocessingsociety.org/publications-resources/unified-edics
## 5: Unified EDICS

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>SAM-APPL</td>
<td>Applications of sensor &amp; array multichannel processing</td>
</tr>
<tr>
<td>SAM-BEAM</td>
<td>Beamforming</td>
</tr>
<tr>
<td>SAM-CALB</td>
<td>Array calibration</td>
</tr>
<tr>
<td>SAM-CSSM</td>
<td>Compressed sensing and sparse modeling</td>
</tr>
<tr>
<td>SAM-DOAE</td>
<td>Direction of arrival estimation</td>
</tr>
<tr>
<td>SAM-GSSP</td>
<td>Geophysical and seismic signal processing</td>
</tr>
<tr>
<td>SAM-IMGA</td>
<td>Inverse methods and imaging with array data</td>
</tr>
<tr>
<td>SAM-LRNM</td>
<td>Learning models and methods for multi-sensor systems</td>
</tr>
<tr>
<td>SAM-MCHI</td>
<td>Multichannel processing, identification, and modelling</td>
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<tr>
<td>SAM-MAPR</td>
<td>Microphone array processing</td>
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<tr>
<td>SAM-NWAV</td>
<td>Non-wave based array processing</td>
</tr>
<tr>
<td>SAM-PERF</td>
<td>Performance analysis and bounds</td>
</tr>
<tr>
<td>SAM-SDET</td>
<td>Source detection and separation</td>
</tr>
<tr>
<td>SAM-SENS</td>
<td>Multi-sensor remote sensing</td>
</tr>
<tr>
<td>SAM-STAP</td>
<td>Space-time adaptive methods</td>
</tr>
<tr>
<td>SAM-TNSR</td>
<td>Tensor-based signal processing for multi-sensor systems</td>
</tr>
<tr>
<td>SAM-MUCN</td>
<td>Multi-user and cooperative networks</td>
</tr>
<tr>
<td>SAM-CAMS</td>
<td>Computational advances for multi-sensor systems</td>
</tr>
</tbody>
</table>
## 5: Unified EDICS

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
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<tbody>
<tr>
<td>RAS-DTCL</td>
<td>Target detection, classification, localization</td>
</tr>
<tr>
<td>RAS-LCLZ</td>
<td>Source localization</td>
</tr>
<tr>
<td>RAS-MIMO</td>
<td>MIMO Radar and waveform design</td>
</tr>
<tr>
<td>RAS-SARI</td>
<td>Synthetic aperture radar/sonar and imaging</td>
</tr>
<tr>
<td>RAS-SONR</td>
<td>Sonar and underwater signal processing</td>
</tr>
<tr>
<td>RAS-TRCK</td>
<td>Target tracking</td>
</tr>
<tr>
<td>BIO-SENS</td>
<td>Sensor arrays for medical signal and image processing</td>
</tr>
<tr>
<td>SPC-MIMO</td>
<td>Multiple-input multiple-output communication systems</td>
</tr>
<tr>
<td>SPC-MMIMO</td>
<td>Massive MIMO communication systems</td>
</tr>
</tbody>
</table>
5: Unified EDICS – Update Procedure

Procedure for continuous updating the unified EDICS is established:

- Either an EiC or a TC Chair can initiate request for a change in EDICS: modification, addition or deletion.
- Requested changes should reflect the ongoing changes in the field. It is desirable to have the proposals supported by data.
- If this is an EiC contacts the VP-Pub and if a TC Chair, contacts VP-TD and the VP makes the connection with the corresponding (most relevant) EiC or TC Chair accordingly working with the corresponding VP. Here, multiple EiCs or TC chairs might be involved if needed.
- Once the EiC(s) and TC Chair(s) reach a decision, they send their suggested change to the VP-Pub and VP-TD who together bring the requested change to ExCom for approval.
5: Unified EDICS for 2020 and beyond

- Unified EDICS List
  [https://signalprocessingsociety.org/publications-resources/unified-edics](https://signalprocessingsociety.org/publications-resources/unified-edics)
SPS Technical Working Groups
(approved by the SPS BoG in Oct 2019)

- Technical Subgroups redefined as Technical Working Groups (TWG).
- TWG resides under a primary TC
- TWG covers a specific topic within SPS Field of Interest.
- Breadth of activities much larger than that of a Technical Subgroup as defined previously.
TWG Synthetic Aperture Channel Sounding

Final approval by IEEE SPS on 15 April 2020
TWG resides under SAM TC

TWG Chair: Peter Vouras (NIST)
**Background Information**

- Synthetic Aperture Technical Working Group (TWG) received final approval on April 15, 2020.
- First virtual meeting scheduled for May 19.
- Roster includes representatives from:
  - Rensselear Polytechnic Institute
  - University of Rochester
  - University of Melbourne
  - Air Force Research Laboratory
  - Temple University
  - University of Pisa
  - National Institute of Standards and Technology

**Scope**

- The purpose of this TWG is to unify the theoretical framework for synthetic aperture estimation techniques across a wide range of frequencies and propagation media.
- Synthetic aperture applications of interest include:
  - Wireless channel sounding
  - Synthetic aperture radar
  - Sonar
  - Medical Ultrasound
  - Seismic Imaging
  - Phased array and wireless device testbeds
- Relevant technical challenges include:
  - Robust hardware designs
  - Wideband implementations
  - Joint delay-angle estimation
  - Super-resolution techniques
  - Impact of position errors and measurement uncertainties
  - Real-time processing
TWG Synthetic Aperture Channel Sounding

Sample Output: NIST Synthetic Aperture

Dense Multipath Environment in Central Utility Plant Boulder Campus
Initiatives

- Archiving of SAM Workshop Websites
  - Responsible: Waheed U. Bajwa
  - Past workshops are often housed on University servers, and eventually are removed.
  - Lost TC memory (and memories).
  - IEEE is willing to house them, link from web page.
  - Presently the following workshops have been archived:
    - SAM 2018
    - CAMSAP 2017
    - SAM 2016
    - CAMSAP 2015
    - SAM 2014
    - CAMSAP 2013
    - CAMSAP 2011
    - SAM 2010
    - CAMSAP 2009
    - CAMSAP 2007
    - CAMSAP 2005
    - SAM 2002
  - To Do: CAMSAP 2019,
6: History of ICASSP SAM Area Submissions

- Annual figures for SAM submissions as a fraction of total ICASSP submissions:
  - 2020: 189 / 3951 = 4.8% Barcelona, Spain
  - 2019: 140 / 3510 = 4.0% Brighton, UK
  - 2018: 147 / 2738 = 5.4% Calgary, Canada
  - 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

It seems that the number of SAM submissions is increasing again after five years of decline.

Some key issues in this matter are:
  - Unified EDICS
  - Role of Special Sessions
6: ICASSP Submissions 2017-2020

The diagram shows the number of submissions in various categories from 2017 to 2020. The categories include:

- Computational Imaging
- Signal Processing (SP) Education
- Signal Processing for Internet of Things
- Signal Processing for Big Data
- Human Language Technology
- Speech Processing
- Signal Processing Theory and Methods
- Signal Processing for Communications and Networking
- Sensor Array and Multichannel Signal Processing
- Multimedia Signal Processing
- Machine Learning for Signal Processing
- Industry DSP Technology
- Information Forensics and Security
- Image, Video, and Multidimensional Signal Processing
- Design and Implementation of Signal Processing Systems
- Bio Imaging and Signal Processing
- Audio and Acoustic Signal Processing

The graph indicates the trend over the years, with specific categories highlighted for emphasis.
189 papers submitted (of which 2 were transferred in from other tracks before the review)

86 accepted regular submissions. This means a 45.5% acceptance rate.

Additionally there are 5 Signal Processing Letters presented in SAM sessions.

Four 6-paper lecture sessions, six poster sessions with up to 12 papers each.

L1 – Direction of Arrival Estimation
L2 – MIMO Systems and MIMO Radar
L3 – Sparse Arrays and Sparse Sensing
L4 – Learning models and methods for multi-sensor systems
P1 - Radar and Acoustic Array Processing
P2 – Beamforming, Relaying, and Source Separation
P3 – Localization and Tracking
P4 – Detection, Estimation and Classification
P5 – Sparsity, Super-Resolution, and Imaging
P6 – Robustness, Decompositions, Calibration, and Bounds
7: Subcommittee 2020 Reports

- **Technical Directions** (Maria Sabrina Greco, Gonzalo Seco-Granados, Birsen Yazici)
- **Awards** (Antonio Napolitano, Jarvis Haupt, Lei Huang, Walter Kellermann)
- **Nominations and Elections** (Fulvio Gini, Yimin Daniel Zhang, Vincenzo Matta, Xiao-Ping (Steven) Zhang)
- **Workshops** (André L. F. de Almeida, Wei Liu, Frederic Pascal)
- **Webmaster** (Waheed U. Bajwa, Alexander Bertrand)
- **Newsletter** (Hongbin Li, Yao Xie, Nuria González Prelcic)
- **Membership** (Piya Pal, Yongwei Huang)
- **Industry/Government** (Braham Himed, Chong Meng Samson-See, Pascal Chevalier)
- **Education** (Adel Belouchrani, Henry Arguello)
- **EDICS** (Christoph Mecklenbräuker, Wei Liu, Usman Khan)
- **Student** (Herbert Groll, Christoph Mecklenbräuker)

(underline means chair)
7: Subcommittee 2020 Reports

Area Chairs

- Applications of SAM processing: Brian Sadler
- Beamforming and space-time processing: Gonzalo Seco-Granados
- Detection, estimation, and source separation: Karim Abed-Meraim
- Multi-antenna and multi-channel comm.: Eduard Jorswieck
- Radar array processing: Fauzia Ahmad
- Sensor array processing: Rémy Boyer
- Sensor networks: Ashish Pandharipande

Four Regional Representatives

- 1. USA (1-6): Gonzalo Mateos Buckstein
- 2. Canada/Latin America (7/9): Xiao-Ping (Steven) Zhang
- 3. Europe/Mid East/Africa (8): Frederic Pascal
- 4. Asia/Pacific (10): Qian He
8: Discussion topics

- **SP Cup 2020**
  
  *Unsupervised abnormality detection by using intelligent and heterogeneous autonomous systems*
  
  [https://2020.ieeeicassp.org/authors/sp-cup-2020/](https://2020.ieeeicassp.org/authors/sp-cup-2020/)

- **SP Cup proposal for 2021**
  
  ⇒ For undergraduate students
  
  ⇒ Should be organized by the Student Subcommittee
  
  ⇒ All TC members can provide input (yes! indeed!)
  
  ⇒ A playful story seems to be important for acceptance
  
  ⇒ New suggestion?
    
    - Tbd
    
    - Proposal deadline in September 2020
Task List 2020-2021 (1/3)

- **May 31, 2020:**
  Nominations for Distinguished Lecturers  
  (Responsibility: TC chair, Awards subcommittee)

- **June 15, 2020:**
  Newsletter issue with report from ICASSP 2020 and SAM 2020, awards, first announcement of CAMSAP 2021  
  (Responsibility: Newsletter Subcommittee)

- **June 30, 2019:**
  Review the current list of associate and affiliate members  
  (Responsibility: Membership Subcommittee)

- **September 1, 2019:**
  Nominations for Paper Awards: BPA, YABPA, MBPA, LBPA, OPA, SIPA  
  (Responsibility: TC Vice-Chair, Awards subcommittee)  
  Nominations for Society Award, Technical Achievement Award  
  (Responsibility: TC Chair, Awards subcommittee)
Task List 2020-2021 (2/3)

September 2020:
Proposal submission for SP Cup 2021
Proposals for SAM 2022 to be submitted to SAM TC Chairs

November 15, 2020:
Membership election completed (Responsibility: Elections and nominations subcommittee)

November – December 2020:
ICASSP 2021 Paper Reviews and Decisions (Responsibility: TC-chair)
Paper acceptance communicated to authors January xx, 2021
Task List 2020-2021 (3/3)

- **January 15, 2021:**
  Five-Minute Video Clip Contest (5-MICC)

- **January 31, 2021:**
  Update of IEEE SAM TC Website: Membership 2021
  Assignment of new members to subcommittees
  Make sure that mailing lists reflect updated membership

- **March 2021:**
  SP Cup Submission Deadline March xx, 2021
  Unsupervised abnormality detection by using intelligent and heterogeneous autonomous systems
  [https://2020.ieeeicassp.org/authors/sp-cup-2020/](https://2020.ieeeicassp.org/authors/sp-cup-2020/)

- **January - April 2021:**
  Preparation of proposals for SAM 2022 and CAMSAP 2023 submission to chairs
CUAGN

at **virtual** IEEE SAM Workshop 2020 in Hangzhou

and

at next IEEE ICASSP 2021 in Toronto

with the next SAM TC meeting