IEEE Circuits and Systems Society
Technical Committee (TC) Review
Wednesday, 7 October 2020
Zoom

Review Committee: YK Chen (Chair), Jennifer Blain Christen, Sara Ghoreishizadeh, Xinmiao Zhang, Amara Amara, Manuel Delgado-Restituto, Yongfu Li

MSA TC: Samson Cheung

NanoGiga TC: Meng-Fan (Marvin) Chang, Antonio Rubio, Georgios Sirakoulis

PECAS TC: Tyrone Fernando, Zhen Li

Staff: Brittian Parkinson

1. Opening – Chen

Chen called the meeting to order at 9:32 AM EDT.

Chen offered details on the operation of the meeting along with the planned agenda.

2. MSA TC Review – Cheung

Cheung offered a summary of the TC Review document.

Cheung offered a brief summary of the history of the TC, commenting that the TC website is hosted through the CASS website and the TC is present on social media platforms and WeChat.

Cheung summarized that the TC is active in offering editorial services to CASS publications and co-sponsored publications. The TC is heavily involved in the IEEE Transaction on Multimedia (TMM) as it is within their scope of interest. The TC also has members involved in the editorial board of the IEEE Transactions on Circuits and Systems for Video Technology (TCSVT).

Cheung offered a summary of the conferences the TC is involved in. The main conferences the TC is involved in are:
- IEEE International Symposium on Circuits and Systems (ISCAS)
- IEEE International Conference on Multimedia and Expo (ICME)
- IEEE International Conference on Visual Communications and Image Processing (VCIP)
- IEEE International Conference on Electronics Circuits and Systems (ICECS)
- IEEE International Conference on Artificial Intelligence Circuits and Systems (AICAS)

The conferences supported by the TC are large in size in paper submission and attendance. Cheung summarized that the TC aims to increase the multimedia involvement in ISCAS.

Cheung offered a summary of the awards received by TC Members. Major IEEE Awards have been given to TC Members as well as conference awards and Fellow elevations.

Cheung provided a summary on the size of the TC. The TC currently has 50 members, 40 are from academia and ten are industry members.

Cheung shared that the TC actively encourages industrial collaboration and participation in its activities, this is currently executed through industrial forums and workshops.

Cheung summarized the TC's future plans. Cheung commented that the strategies set by the Society have been helpful in planning for future TC activities and interests.

Review Committee Discussion:

Blain Christen commented on the lack of regional and gender diversity in the TC membership, it was asked what is being done to improve this skew. Cheung summarized that the TC this year has added four new females to its membership, the TC has explicitly asked its members to increase member nominations of females in the multimedia field. Cheung also offered that the TC is working to improve regional diversity but this has been challenging due to geographical balance of the field – the TC plans to discuss how to improve these diversity points in its upcoming TC meeting. The TC aims to put intentional steps to improve diversity among its membership. Blain Christen encouraged the TC to set measurable goals for membership diversity.

Zhang inquired about the quorum of members at meetings. Cheung replied that quorum is not set by the current number of active members but set by the charter which is reviewed every five years.

Delgado-Restituto shared that only 15 papers were received for the complementary ISCAS track for the MSA TC. Cheung commented that the TC is aiming to find a niche area that ISCAS can provide to the TC membership to encourage submissions.

3. NanoGiga TC Review – Chang, Rubio and Sirakoulis

Chang offered a summary of the TC Review document.

Chang summarized member activities and communication methods.

Chang offered details on membership and how members join the TC. The TC is aiming to increase industrial involvement. Chang offered an illustration summarizing the continental breakdown of the TC membership.

Chang offered a summary of the TC membership's involvement in CASS publications.

Chang offered a summary of the conferences that the TC membership is organizationally involved in.

Chang offered a summary of the awards and recognitions received by the TC membership, these awards and recognitions include Fellow elevations, CASS awards, Distinguished Lecturer appointments, and conference awards.

Chang summarized the future plans of the TC, these include improving the TC website, initiating a special issue in the newly created CASS Open Journal, organizing a Seasonal School and strengthening the link between CASS and the IEEE Nanotechnology Council.

Review Committee Discussion:

Zhang asked for elaboration on the TC's plans to increase industry participation through the Special Issue of OJCAS. Chang clarified that this plan is not intended to increase industry participation. Sirakoulis added that the TC is planning a special session as part of ISCAS 2020.

Chen inquired for a rough estimate on how many members are affiliated with industry, Chang estimated that this count is less than five.

Blain Christen asked about TC representation, specifically Region 9, affiliation (industry vs. academia), and gender. It is recommended that the TC track demographic information of its TC membership and set measurable goals to improve these demographics by intentionally recruiting those areas. Sirakoulis added that the TC is aiming to actively engage females through leadership opportunities and membership.

Delgado-Restituto asked for specific information about the plans for the seasonal school. Chang offered that the 2020 school was canceled due to the COVID-19 pandemic, the TC aims to organize a school in 2021.

Chen commended the TC for its organization of special session in CASS conferences as well as special issues in CASS publications – this initiative encourages new areas for the Society to be involved within.

Chen encouraged the TC to more intentionally recruit and maintain a more diverse membership. There are only three active industry members. Chen recommended that the TC to organize a CASS Industrial Forum to encourage industry membership.

Chen inquired about the TC membership structure; it seems as though members do not have terms but are members in perpetuity. Chen encouraged the TC to consider terms of membership to maintain an active membership, another recommendation was classifying members in voting versus non-voting, active members are voting members.

Chen recommended that the TC consider some sort of social media presence to allow its membership to communicate and remain connected.

4. PECAS TC Review – Fernando and Li

Fernando offered a summary of the TC Review document.

Fernando summarized the TC demographics and identified a potential weakness in its industrial involvement, regional distribution.

Fernando summarize the special sessions organized by the TC in CASS conferences and special issues in CASS publications. Fernando summarized the TC membership's involvement in the editorial boards for CASS publications.

Fernando shared that through member connection and encouragement the member engagement in the TC has grown and encouraged new membership.

Review Committee Discussion:

Delgado-Restituto inquired about membership growth over the past five years. Fernando shared that the conditions for membership include that members must attend annual meetings, add to the TC annual report, or participate by volunteering with the TC – if members do not satisfy these conditions for three consecutive years the members are defined as inactive.

Chen complimented the TC's organization of JETCAS Special Issues and its involvement in ISCAS Special Sessions.

Chen complimented the membership structure between voting and non-voting based on active status with the TC.

Chen inquired about the lack of DL appointment from the PECAS TC. Fernando identified this as a weakness of the current TC, the TC will aim to encourage nomination by the TC membership.

Chen shared the CASS Industrial Forum initiative and encouraged the TC to consider participation and submission of a proposal.

Chen recommended that the TC consider some sort of social media presence to allow its membership to communicate and remain connected.

5. Discussion and Summary – Chen

Chen summarized the TC Reviews highlighting each TC's strengths, weaknesses, suggestions to be made.

Improvement to future TC Reviews were discussed:
- Require a slide presentation for the TC Review meeting – CASS to provide a template for this document
- Analyze membership demographics by region, affiliation and gender
- Offer ten days for review of the report by the Committee

The involvement of the MSA TC in ISCAS was discussed. ICME is held in early July and dominates the paper submission venue for this TC. Discussion was held on encouraging TC's to organize their conferences 4-5 months in advance or after ISCAS.

ACTION ITEM: Brittian Parkinson to create a society demographics page on the IEEE CASS website.

ACTION ITEM: Yen Kuang (YK) Chen to share TC Review summary table with the committee, upon receipt the committee should offer edits and send it back to YK Chen.

ACTION ITEM: Jennifer Blain Christen to share IEEE resource on social media content with the CASS Technical Activities Division.

6. Adjourn – Chen

Chen adjourned the meeting to order at 11:35 AM EDT.

Resources:
Meeting recording available here.

Recommendations:

Improve the TC Review Policies & Procedures (P&P):

Provide membership percentages not only for gender, but also over the regions, industry/academia. These numbers will provide the TCs better targets for new member recruitment. Ask each TC to compare the TC status and demographics since last review through the following charts:

	Current Year (CY)	CY -1	CY -2	CY -3	CY -4
Total number of TCs	%	%	%	%	%
Regions 1 – 6 (U.S.A.)					
Region 7 (Canada)					
Region 8 (Europe/Africa, Middle East)					
Region 9 (Central/South America)					
Region 10 (Asia/Pacific)					

Gender distribution of TC members (percentage of total)

	Current Year (CY)	CY -1	CY -2	CY -3	CY -4
Total number of TCs	%	%	%	%	%
Male					
Female					

Distribution of TC members by affiliation (percentage of total)

	Current Year (CY)	CY -1	CY -2	CY -3	CY -4
Total number of TCs	%	%	%	%	%
Academia					
Industry					
Government					

It will help to better evaluate the TCs' activities if they can include the numbers of submissions and acceptances to relevant tracks in ISCAS and other CASS conferences in the reports, through the following chart:

Contributions by TC members in Conferences (Sub: # Papers submitted, Acc: Accepted papers, Tot: Total number of accepted papers in the Conference)

	Current Year (CY)	CY -1	CY -2	CY -3	CY -4
Main Conferences	Sub/Acc/Tot	Sub/Acc/Tot	Sub/Acc/Tot	Sub/Acc/Tot	Sub/Acc/Tot
ISCAS					
Regional Flagship CASS Conf. (e.g., APCCAS, ICECS)					
Sectorial Conf. fully sponsored by IEEE CASS (e.g., ISSOC, VCIP)					
Other conferences partially sponsored by IEEE CASS (e.g., BioCAS, ICME)					
Conferences not sponsored by IEEE CASS (e.g., ISSCC)					
(add as many rows per category as needed)					

Include a report on the publication volume generated by the TC through the following chart:

Contributions by TC members in Journals (Sub: # Papers published, Tot: Total number of published papers in the Journal) - limited to the 4-5 Journals which are more relevant for the TC members

	Current Year (CY)	CY -1	CY -2	CY -3	CY -4
Main Journals	Sub/Tot	Sub/Tot	Sub/Tot	Sub/Tot	Sub/Tot
CASS Journals (e.g., TCAS-I)					
IEEE Journals partially sponsored by IEEE CASS (e.g., TMM)					
IEEE Journals not sponsored by IEEE CASS (e.g., JSSC)					
Others non-IEEE Journals					
(add as many rows per category as needed)					

Offer ten days review of the reports by the TC Review committee.

Provide TC Chairs with a presentation template for the TC Review meeting.

<u>General Suggestions to all TC's:</u>

Social media can be used to not only link TC members together, but also advertise the activities of TC members. TC members should be encouraged to post their recent achievements and new discoveries. This may help to increase the impact of the TCs and attract more members, especially industry members. I have more academia connections than industry connections in my Linkedin account. However, interestingly, I found that my industry connections read my posting more.

The TCs are encouraged to organize their own conferences, workshops, or other events that promote technical activities, networking, etc. It is suggested that these events are held at least 4-5 months away from ISCAS and do not overlap with other CASS conferences.

<u>Comments to the MSA TC:</u>

The TC has very good participation from industry. Besides recruiting industry members, special workshops and industry forums are organized to attract industry participation. The TC is significantly associated with major journals in CASS, including its own journal, and a journal of the IEEE Signal Processing Society. Besides ISCAS, the TC is also actively participating in the organization of conferences in collaboration with TCs in other societies. However, the TC has low participation in ISCAS and lacks diversity in its members in terms of region.

The TC has been very active in organizing international conferences on multimedia and in supporting CASS sponsored publications both at the editorial level (several members serving as Associated Editors) and at the production level (eight special issues published). Industry engagement is particularly relevant in the MSA TC (much larger than in other CASS TCs) and it is also remarkable the synergies established with TCs from other IEEE Societies (SPS, Computer, and ComSoc).

Some aspects in the Charter of the MSA TC should be clarified.

       1. In Article 4.1 it is stated that: "Any CASS or IEEE member of good standing and willing to perform the duties of membership may seek to be elected as Members of the MSA TC." This seems to indicate that there is no need to be a CASS member in good standing (just IEEE member) to be elected as MSA TC member. Is this correct? If so, it may happen that an MSA member, who eventually takes a representative position in a co-sponsored Journal or Conference on behalf of IEEE CASS, is not actually a CASS member.

       2. In Article 7 it is stated that: "A meeting quorum is Ceiling function of one third of the TC members *attending the meeting*." Following this rule, the quorum could be much lower than the number of active MSA members with voting rights. For instance, only 7/50 members formed a quorum at ISCAS 2019. Some mechanisms for extending the participation of TC members, even if not attending the meeting in person, would be recommendable. Technical solutions for e-participation or e-voting are not only available, but they are indeed becoming popular. The objective (similar to other TCs) should be to define a meeting quorum as the Ceiling function of one third of the *whole census*.

REVIEW COMMITTEE RECOMMENDATIONS:

The TC is recommended to increase the submission and participation in ISCAS. Organizing special sessions in ISCAS, special issues at JETCAS, and new CASS society initiatives is also encouraged. Besides, a large portion of the TC members is from region 10. The TC is encouraged to increase the diversity of the TC and recruit more members in other regions and under-represented groups.

It is strongly recommended that the MSA TC reaches out to work with other CASS TCs for mutual cross-fertilization. Building bridges between communities with a common subject of interest (for instance, Artificial Intelligence) could even trigger more ambitious multidisciplinary initiatives. For this reason, it is important the MSA TC increases its participation at ISCAS, which is the world's premiere networking forum within the CAS Society. In the last ISCAS edition (2020) only 15 papers (10 lectures and 5 posters) submitted to the Multimedia Systems and Applications Track have been finally included in the technical program. This represents about 1.5% of the total accepted submissions. Additionally, the MSA TC should provide mechanisms for a more balanced geographical and gender distribution of TC members.

	MSA TC
Strength	Industrial involvement TC-owned conferences TC-owned journals TC-owned competition LinkedIn/Facebook
Weakness	Low participation in ISCAS Lack diversity in TC members in terms of regions.
Suggestions for the TC	Special session at ISCAS Special issue at JETCAS Society-level new initiatives Quorum of the TC members The TCs are encouraged to organize their own conferences, workshops, or other events that promote technical activities, networking, etc. It is suggested that these events are held at least 4-5 months away from ISCAS and do not overlap with other CASS conferences.
Suggestions for the CASS	1. Bring MSA TC closer to CASS

Comments to the NG TC:

The TC is significantly associated with a large number of journals and is actively participating in the organizations of ISCAS, MWCAS, LACAS, NEWCAS, VLSI-DAT over the years. TC members have also organized a number of special journal issues, special sessions at conferences, and CASS Society initiatives. TC members have received many awards and three members have been elected as DLP in the past three years. Overall, the TC has excellent technical activities. The weaknesses of the TC include lack of diversity in TC members and membership structure.

The NG TC focuses on the use of nano-structures/nano-devices to build nanoelectronic integration systems. Definitively this is one of the hottest engineering topics nowadays and,

consistently with this trend, the TC is developing an increasingly large scientific production both in publications and conferences. The imbrication of the TC in CASS life is satisfactory but perhaps the TC should look for synergies with other IEEE Societies, e.g., Electron Devices Society or the Nanotechnology Council.

REVIEW COMMITTEE RECOMMENDATIONS:
The TC is recommended to increase members from industry and other under-represented groups. Possible methods for increasing the participation of industry include organizing industry forums in conferences and special workshops that meet the interests/needs of industry. The TC also needs to implement better membership structure and specify the number of years and terms that a member can serve.

The TC should try to increase members from industry. Mini-symposia similar to the IBM IEEE CAS/EDS one-day Forum should be promoted with other high-tech companies, for instance, in the Asia-Pacific area. A more balanced distribution of members in terms of geographical and gender diversity should be pursued.

	NG TC
Strength	Special sessions at ISCAS Special issue at JETCAS
Weakness	Industrial members TC-owned conferences & journals
Suggestions for the TC	Membership structure (termed, voting vs. non-voting) Society-level new initiatives Social media can be used to not only link TC members together, but also advertise the activities of TC members. The TCs are encouraged to organize their own conferences, workshops, or other events that promote technical activities, networking, etc. It is suggested that these events are held at least 4-5 months away from ISCAS and do not overlap with other CASS conferences.

Comments to the PECAS TC:

The TC has a good membership structure and voting/non-voting members are clearly defined. The TC is associated with three CASS journals and is actively participating in ISCAS. TC members have received quite a few conference paper awards and organized two new CASS society initiatives recently. However, the TC does not have any DLP.

The TC should be the spearhead of the CAS society to settle synergies with other IEEE O/Us such as the IEEE Power & Energy Society or the IEEE Power Electronics Society and also to advance in collaborations with relevant industries in the power/energy sector. Jointly organized mini-symposia similar to the IBM IEEE CAS/EDS AI compute forum should be explored addressing subject areas such as renewable energy, battery energy storage or smart grids.

REVIEW COMMITTEE RECOMMENDATIONS:
The TC is recommended to organize more society initiatives and nominate DLPs. A large portion of the TC members is from region 10. The TC is encouraged to increase the diversity and recruit more members in other regions. The TC is also encouraged to organize forums, workshops, and other events to increase the participation of industry and facilitate technical idea exchange and networking. Besides, social media can be utilized to increase the impacts of the TC.

The TC is encouraged to increase the diversity of the members and seek for a more balanced geographical and gender distribution. The PECAS TC is a valued community with the CASS family and should take a more active presence in CASS initiatives.

	PECAS TC
Strength	Voting vs. non-voting members Special issue at JETCAS Special session at ISCAS
Weakness	TC-owned conferences & journals
Suggestions for the TC	DL Society-level new initiatives Social media can be used to not only link TC members together, but also advertise the activities of TC members. The TCs are encouraged to organize their own conferences, workshops, or other events that promote technical activities, networking, etc. It is suggested that these events are held at least 4-5 months away from ISCAS and do not overlap with other CASS conferences.