Responses by Susan K (Kathy) Land

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Questions for president elect Candidates

1. President Moura has done a great job of focusing IEEE on members and he has started the organization on a path of greater transparency.
   a. How do you propose to carry on the excellent work started by our current President and how would you improve on his efforts?

I am definitely for a transparent organization, in contrast with others who now may be paying lip service to transparency; I have proactively been involved with the efforts for a transparent organization since they began back in 2013 or 2014.

As Past VP for Technical Activities, I have worked closely with President Jose Moura, and others within the IEEE, (for many years) on increasing transparency. This includes open meetings, transparency in our financials, transparency across the IEEE operations, and in our elections and nominations. I am not going to pass judgement on the work currently in progress by President Moura. When the proposals are released for final consideration that would be the appropriate time for an evaluation.
I know personally that our current President is committed to openness, transparency and diversity.

I have been a longtime supporter, and proponent, for financial transparency. This simply means that I have been one, among others within TAB, who have been doggedly pushing for Gross-to-Net reporting and more clarity in the ledgers so that the Societies and Councils have better insight into their budgeting process. In 2013, as a member of the IEEE Board of Directors (BOD), I presented a motion from TAB requiring reporting of the corporate recovery (IP tax) on a Gross basis. As a member of the BOD, worked with IEEE Executive staff and other senior volunteer leaders to track status and report progress back to TAB until completion in 2017. I am still a member of a group of active volunteers who continue to work for clarity and transparency in IEEE financial reporting.

At the January 2018 BOD retreat, I organized the IEEE Operating Unit Cooperative Group (OUCO-OP). This group was created to provide a venue where executive representatives (the Vice Presidents from MGA, TAB, USA, SA, PSPB, EAB and executive staff), from the IEEE Operating Units (OU) could come together to discuss their activities and collaborate, thereby strengthening partnerships and emphasizing joint activities. Ultimately driving improved performance across the units, and better experiences for the many constituencies (members, volunteers, non-members, customers, partners, etc.) the organizational units are designed to serve and providing more transparency across the organization.

The nominations and appointments process can be both frustrating and confusing. The requirements for positions and availabilities vary. During 2017, lead the TAB N&A committee in an attempt to provide improved clarity for both Technical Activities and IEEE positions by providing a consolidated list of all available positions for both TAB and the IEEE, with details including term, criteria, nominee slate and appointment information, timeframe, committee/position description and responsibilities and meetings. This information is available on the TA Ops web site. Furthermore, in 2019 I continue to work with members of MGA to make this a complete list of all IEEE volunteer leadership positions so that every position available will be included and the N&A process will be as transparent as possible.

You do not move an organization forward without true transparency. IEEE as an organization may have issues, but it is important that we are open and honest about any organizational struggle so that individuals might understand the rationales behind the decision-making. It is important that we

communicate as openly as possible with the most accurate data so that we operate on a foundation built on mutual trust.

> b. How do you feel about what President Moura has done?

An open discussion about strategic change causes an organization to look forward and to think about where they might want to position themselves in the future. President Moura is trying to move the IEEE toward a more effective and efficient engagement model. Where we engage first and then think about membership. Where we do not focus primarily on individuals as members/$.[1] This way of thinking is revolutionary. It puts the member first.

To some his message has become somewhat warped in translation. The opponents of change are messaging that IEEE and the BOD are forgetting about the core membership. This is not the case. President Moura, and his Ad Hoc committees, are simply looking for ways to increase engagement.

All President Moura, and others, are suggesting is that we listen to the membership surveys. The top three items consistently reported from our membership surveys year after year are that our members tell us that they want to: 1) remain technically current, 2) engage with others in their fields of interest, 3) and enhance their professional careers. If we can deliver what our members tell us they want, it would make sense that our non-members would want the same thing.

We have data that shows us that we touch, through our products & services over 4 million individuals annually. The current exploration is around how to engage those individuals so that we might really empower IEEE. President Moura has issued a challenge to focus on membership and non-membership engagement, products and services that support career development, and associated low cost delivery mechanisms. I am very interested to see the ad hocs currently exploring these issues respond to this challenge.

However, I do know that many of our members, and volunteers, are extremely frustrated by what they see as an organization where the funding does not sufficiently support local section and chapter activities. I have worked in Region 3 and support the Huntsville Section and I agree. I have worked this year, supported by President Jose Moura, VP Ray Liu and VP Francis Grosz to charter an ad hoc to look into what we might do better. How we can support our local activities more effectively. We do not provide enough financial support to our local programs and volunteers. We need to change this. If elected I commit to work to enable and empower our local sections and chapter volunteers.

> 2. In 2020 the number of academic members is going to surpass the number of industry members, even while industry members as a whole is a much larger group. What do you intend to do to reverse this trend, if anything?

Advisory Boards

When I was President of the IEEE Computer Society, I chartered the Computer Society Industry Advisory Board (IAB). The IEEE IAB is very similar, and although IABs are good, they are put in place to give industry advice to active standing Boards. This is their role. It is important to understand that engagement with key industry leaders at the Board-level is important to understanding trends – that their

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[1] Higher-grade member dues are about $33M ($US). However, if assessments, society membership dues, conference registrations for MGA meetings are also included, then you get to $80M.

influence and their engagement is limited. I would continue to support this type of engagement. There is a missing piece and that is the advice that the IEEE Board of Directors might receive from the most senior leaders in academia. I would explore the possibility of putting an Academic Advisory Board in place.

Corporate Partnerships

The Computer Society, conducted two industry engagement experiments. These previous prototypes were called Corporate Package Training and Corporate Affiliate Membership. For the first, a portfolio of customized training was developed for Boeing Corporation. The second, a number of electronic memberships were bundled with a set of member benefits for Northrop Grumman to make available to their employees for a single bulk contract. In both cases the companies were engaged with IEEE and it allowed the companies to incentivize their employees using IEEE as the incentive. A win-win. In 2018, the IEEE started a Corporate Partnership Pilot Program. This pilot aims to do much of the same things conducted under these previous prototypes conducted by the Computer Society. I support this IEEE-level program and think we should continue to explore how to best work with our industry partners to further the IEEE mission and vision. We can also think about leveraging Industry engagement and corporate sponsorship to support our IEEExtreme competitions, in the areas where IEEE is engaged in at the local level in STEM like our Future Cities competitions, and in support of our SIGHT humanitarian activities.

Government Communities of Interest

As a US Government employee I think that we are missing engagement with a very vital and important sector. Our lowest engagements, across the globe tend to be with technologists that work in government sectors. This can be improved. In 2018, I worked with IEEE USA to conduct a prototype, setting up a US Government Community of Interest (USGOI). Reaching out to specifically try to engage individuals working in the US Government in technology fields. Recognizing that these individuals are a unique community with unique engagement requirements. I would support these continued types of engagement experiments.

Something additionally that I would propose for implementation is an internship matchmaking network. Where Industry partners can post internship opportunities with IEEE and IEEE student members can apply.

We need to understand that people simply want to be connected and engaged. They want the connection from their employer to IEEE and they also want connections at the local levels. We just need to identify and provide for these engagement opportunities.

3. 78% of new graduates that are IEEE members while in school drop their membership in two years after graduation. What do you intend to do to stop this trend?

There are a number of contributing factors to this dramatic drop out rate:

1) students move upon graduation and IEEE loses touch with them, 2) they were very engaged as students - not so much as YPs, and 3) they are hit at year 2 with the full membership fee just about the same time their student loans are due.

It is a wonder any of them stick with us!

We must focus on the next generation of technologists. In 2018, one of my strategic priorities was the revitalization of the TA Young Professionals (YP) program. Collaborating with Celia Desmond, we began with a campaign to engage the leadership of all the Societies and Councils to support and promote this program within their organizations, to include the appointment of a representative to TA sponsored activities. We kicked off the year with a TAB sponsored YP summit and we continued to focus energies and continue the momentum during the year. I personally fought for the funding to support the required YP activities and used part of my personal discretionary budget as well to ensure that there was adequate support for these activities within TA for 2018.

We need to do a better job of tracking our students upon graduation and reporting them to their local section upon their relocation. Not just reporting them, but also getting them engaged in local section or chapter activities! I cannot tell you how many emails I receive from recently graduated students who are looking for engagement opportunities. One thing I would propose to set up is a student volunteer network. It would provide for students, and recently graduated students, the opportunity to volunteer for posted chapter, section, society, council, (any IEEE) volunteer opportunity allowing them to build experience and connections within the organization. For example, if they know they are moving to a certain city, they can already be volunteering and building those relationships by volunteering for some activities they might support remotely.

Now, let me first discuss our current membership renewal process, which is the traditional – you sign up year-to-year annual renewal model. This is fine, but does not fit with today's global 'membership economy'. What I mean by this is today we see an ever-increasing popularity of the subscription-based business, which is primarily tied to millennials, who appear to prefer to pay incrementally for ongoing access to services. We should provide, with online and automatic payment, an almost effortless way for our members to spread out the yearly cost of their membership. The data from these types of programs shows that when members join, they do not consider the monthly transactions – they become automatic parts of their budgets. This would also allow for IEEE to plan and execute larger, longer-term programs because of the associated sizable recurring revenue. As it currently stands, we watch and wait for the annual renewal numbers to arrive to inform the budgeting process.

There is no single magic bullet to solve the student attrition problem. I have spoken to many of them. It is different across the world, no situation is the same, but the three broad issues I describe above are what I commonly hear. I can tell you that I remain committed to helping our IEEE Students and YPs prepare for professional and volunteer success.

4. Papers, patents and society memberships are great, but what is your experience with:
   a. Leading a large organization?

This is from my professional resume:

MDA/BC/BCD, Huntsville, AL; October 2010 – Current

Ms. Land is the Program Manager for Spiral 8.2-3 Product Development for the Missile Defense Agency (MDA) Command, Control, Battle Management, & Communications (C2BMC), Huntsville, AL. This is a 3-year $120M development effort. She was previously the Chief Engineer and Deputy Program Manager

for Spiral 8.2-1 C2BMC, a 7-year $1.2B effort successfully fielding in 2016. She leads and manages organizational interactions of over 150 Contractor, UARC and FFRDC team members.

MITRE, Huntsville, AL; June 2007 – October 2010

Principle Software Systems Engineer providing technical leadership to senior government sponsors in the strategic planning, acquisition and engineering of software intensive systems, enterprise systems, system of systems and/or complex systems. MITRE is a not-for-profit organization chartered to operate in the public interest managing three Federally Funded Research and Development Centers (FFRDCs) for the U.S. government. She supported multiple projects for MITRE's Software Engineering and Computing Department. Working primarily to support the Missile Defense Agency (MDA) Ballistic Missile Defense Systems (BMDS) Concurrent Test Training and Operations (CTTO) (BCX) effort as independent technical lead for software and simulations, the Department of the Navy's SPII (Software Process Improvement Initiative), and software engineering support to the Undersecretary of Defense for Acquisition, Technology, and Logistics (AT&L).

Northrop Grumman Information Technology/TASC, Huntsville, AL; May 2003 – June 2007

Technical Director, Huntsville Operations office. Responsibilities include the business development, growth, and technical mentoring of multiple project teams in all aspects relating to software engineering. Lead on development of technical mentoring program for Northrop Grumman Information Technology Sector. Program Manager Software and Systems Engineering providing senior software engineering program management support to the AMRDEC Software Engineering Directorate, Redstone Arsenal, AL in support of the America's Army Project Office responsible for production of both the public game and DoD training applications. Ms. Land led the successful development of a software engineering section that concluded with growth of over $20M in revenue and additional of 16 software engineering professionals within two years. Responsibilities included the business development, growth, supervision, and technical mentoring of multiple project teams in all aspects relating to software engineering.

        b.   Driving change in an organization?

Yes, I have been responsible for managing change, called a change agent, both within IEEE and my various jobs. You do not implement change alone. It is important to understand that you cannot just bull doze your way into an organization trying to implement change. You must understand the people, processes and procedures that must be changed – without changing the supporting infrastructure, you can make change impossible.

Here are some examples from jobs, many IEEE examples are available on my web site www.susankathyland.com:

As the Principal Scientist for the United States Missile Defense Agency (MDA) Concurrent Test, Training, and Operations (CTTO) Program I delivered technology that provided Combatant Commanders with the ability to maintain their operational capability, participate in exercises, training, test and rehearse mission scenarios while the system is in an operational state or "on alert". No capability previously existed to concurrently maintain the Ballistic Missile Defense System (BMDS) full operational capability while enabling continued BMDS incremental and spiral development, test and training. The successful architectural technologies behind the CTTO concepts field in 2017 with the Command, Control, Battle Management & Communications (C2BMC) Spiral 8.2 architecture saving the United States Department

of Defense an estimated $4.5 Billion annually with efficiencies associated with the reuse and reallocation of fielded missile defense assets while maintaining operational readiness.

As Program Manager Software and Systems Engineering providing senior software engineering program management support to the AMRDEC Software Engineering Directorate, Redstone Arsenal, AL in support of the America's Army Project Office responsible for production of both the public game and DoD training applications. She delivered Overmatch release, first successful release, of America's Army pubic game.

Supporting Eglin AFB, 46th Test Wing, I was responsible for the integration and initial baseline development of a suite of software programs, which laid the foundation for what is today the 46 test squadron's command and control (C2) structure. In the early 1990s, I established the interfaces between disparate software-based systems to enable the support for mission planning and real time mission execution. When I arrived at the 46th each program was separate and distinct. I developed the initial interface structures (e.g., code) and standards that provided for communication between programs such as Combat Stores Loading Software (CSLS), Combat Flight Performance Software (CFPS), and Combat Weapons Delivery Software (CWDS). The software interface concepts used to develop this initial baseline are still employed and are what continue to support 46th Test Wing C2 mission planning and execution.

While supporting BTG/Delta Research and TYBRIN, I was responsible for program CMM software process improvement external audit Level 3 accreditations. Taking multiple programs at both companies from chaos to repeatable and assessed within a year.

c.   Relating to the special needs of volunteers?

There have been a number of things that I have worked on specifically to support Volunteer leaders and their needs. Here are a two:

I am dedicated to the fair and ethical treatment of volunteers and staff. If you go to my website, on my photos page you will see a photo of a button, that says 'Don't yell at me, I am a volunteer!' It is posted in humor, but too many times volunteers and staff take the brunt of the anger or frustration dealt out and we lose good people as a result. In 2018, I helped to form a TA Sub-committee to examine the issues and associated policies around bullying and harassment. I remain committed, as do many of our volunteers, to the fair and ethical treatment of all volunteers and staff. Our mission should not allow for these types of distractions.

In response to increasing volunteer frustration with the complexities associated with the IEEE contracts approval process, I established a volunteer led/staff partnered communication forum, led by Moura Moran, which was held during the 2018 TAB meeting series to discuss rationales and possible improvements to current contracts approval processes. The primary purpose of this forum was to explore issues related to the IEEE contracts, which included decision authority, workflow transparency, risk management, efficiency of execution, and change management. The outputs from this forum included documented rationale for the existing rules and risk avoidance measures, a set of recommendations and templates for improvement, and a revision to the IEEE Finance Operations Manual to increase the threshold contract value for legal review of contracts from USD 5,000 to USD 25,000. This revision both streamlined and expedited the contract review process for not only TAB but all of IEEE, was approved by the IEEE Board of Directors at its November 2018 meeting.

5. What are the three biggest issues that IEEE faces as an organization?

Relevancy to an Increasingly Diverse Demographic

Associations today face challenges with membership declines. This problem is not unique to IEEE as many associations see these drops in membership, as many professionals do not find value in membership. Yet, as evidenced by the rise and growth of social networking – they do seek connection – more than ever. Social networks provide easy and convenient ways for people to network, and the proliferation of free online content has led to immediate access of the types of information that professionals used to be able to access only through association membership and industry conferences.

We need to rethink our role, instead of conceiving of ourselves as pseudo-club with annual meetings, perhaps we might consider broader communities that organize year-round around common technologies, values and goals. We already see this happening organically within some of our technical activities, publications and standards. However, this needs significant expansion to include things like micro-volunteering opportunities, techno-humanitarian volunteerism, and pop-up virtual technical communities. While we continue to remain technically relevant, and our content is cutting-edge, our delivery and outreach is not relevant to our broader target demographic.

Content Delivery

We need to increase the value proposition for our IEEE membership and make IEEE personally relevant. For many years, I have listened to people talk about the need for 'tailored tools, products and services'. I have seen time and again as much effort and funding have been spent trying to tailor what we think a certain target demographic might want, only to see these efforts fail.

We should focus on knowledge delivery – delivering technically relevant content that will support the individuals working in technology – it is simple. This should be our priority. Having the best technical content is what has made the IEEE brand strong – it will keep us moving forward. What we need to focus on is how to keep up and make improvements to our delivery mechanisms that meet the pace with which technology is changing. We are being challenged by new publishing mechanisms, like Open Source, and we need to be able to integrate social networking and collaboration tools so that more rapid peer review to publication might be supported.

Business Process Modernization and Integration

We have come a long way from the days when the IEEE conferences business was an offline spreadsheet-based business. However, there are still many areas within the IEEE business infrastructure that we need to improve and integrate. We currently have separate systems that provide support for conferences, publications, contracts management and volunteer reimbursements. Each of these systems currently provides varying levels of access to centralized data management and support for extensibility. We need a centralized data management system that will continue to enable our strength… our multi-level federated system.

It is critical that we move forward and provide all who are touched by our IEEE business processes with up-to-date modern systems that provide support for today's compliance, financial and audit requirements and most importantly that meet our user needs. I feel this is one of our most urgent strategic priorities.

6. In 2018 we started the IEEE Presidents Forum in an effort to help connect top leadership with the membership. Something that was really needed. Do you support the continuation of yearly President's Forum? What would you do to help support this grass roots effort?

I do support continuation. This year it was very poorly attended and I think this was partially due to when it was scheduled during the specific conference (where it was placed on the agenda), as well as the time of year. Scheduling it during a meeting or conference earlier in the calendar year, would provide members with an earlier opportunity to meet their newly elected President, as well as to provide input into the President's term. Additionally, questions should be taken from the audience. I think not allowing for any audience participation really cut down on the motivation for individuals to attend.

7. Attached is the summary slide from the 2018 President's Forum. Comment on the statements from our membership.

IEEE does need to deliver value to its members. As I have already discussed, President Moura and his Ad Hocs that have been employed are looking at how this might be accomplished. Both for non-members and members. The key is IEEE must look to meeting member engagement needs - focus on member development rather than membership development (as described in the slide).

I would not agree with the statement that IEEE does a poor job of promoting the profession. We have many Technical Societies which do a great job of promoting their individual associated professions (e.g., Computer Society, Power and Energy Society, etc.). IEEE also has a PLETHORA of products and services for the professional member. They just have to look for them. What IEEE does a TERRIBLE job of is value chain management. Let me tell you what I mean. IEEE, and volunteers, develop products and services – someone gets a great idea. Then it is not marketed, it is not sustained. It sits on a website (if that) somewhere and digitally rots. IEEE must get much better at managing their product lines, marketing, and information/portfolio management.

Although I appreciate the statement "Members joined IEEE as a professional organization, not a social service organization", I do not agree with it. Currently Humanitarian activities are #8 out of 11 in what are members are telling us they want to support as strategic initiatives (from the Ernst and Young activity I mentioned earlier). IEEE does have this multimillion-dollar OU called the Foundation, and its role is to sponsor Humanitarian activities. The foundation is currently in the middle of its fundraising activity and is 70%/~$20M toward reaching its 2019 goal.

I do know that there are members in IEEE who would not be here if it were not for activities like the Region 3 MOVE Truck, which provides hurricane relief. For them, this is what being a volunteer within IEEE means to them. To some people being an IEEE volunteer means they want to coordinate a conference, to others chair a standards working group. However, to these individuals they want to drive to a disaster aftermath and deliver telecommunications technology to hurricane or tornado survivors and show the world the 'boots on the ground' vision of the IEEE Foundation "transforming lives through the power of technology."

I do appreciate all the comments received from the members of the 2018 President's forum and think these comments were drivers to the 2019 IEEE Committee on Strategy & Alignment. I serve on this committee, which is led by Jim Jefferies. This committee is working to make recommendations to the IEEE BOD regarding the IEEE strategic direction. As a committee, we did not want to set this direction, but wanted this input driven by the membership. However, the 2018 feedback was a much too small

sample set. As a result, Ernst and Young were hired to help and they used a methodology to conduct extensive surveys (+16K) and interview. These covered all grades of membership, non-members, all regions and over 2500 respondents. The committee is actively working to develop a set of recommendations to the BOD.