Blog Article: The Power of a Name

The IEEE Signal Processing Society is the premier international society for signal processing scientists and engineers. Its origins trace back within the activities of the Professional Group on Audio of the Institute of Radio Engineers (IRE), which was formed in 1948. The IEEE Global History Network http://www.ieeeghn.org/wiki/index.php/IEEE_Signal_Processing_Society_History provides a "Brief Timeline of Events" where one can track the evolution of the Society and the changes of its name. Its main events of formation were. - June 1948 - IRE Audio Group

- March 22, 1951 - IRE Professional Group on Audio

- March 26, 1963 - IEEE Professional Technical Group on Audio

- October 20, 1964 - IEEE Group on Audio

- October 13, 1965 - IEEE Audio & Electro-Acoustics Group

- January 1, 1974 - IEEE Group on Acoustics, Speech, & Signal Processing

- 1976 - IEEE Acoustics, Speech & Signal Processing Society

- October 6, 1989 – IEEE Signal Processing Society

Thus, the history shows that the current name Signal Processing Society has stuck for a quarter of a century. Has the time come for another change of name?

For more than a decade, the leadership of the Society has addressed the problem of the Society's visibility and its perceived lack of recognition by the wide public. Many members of the Society find that the reason for this is in the term "Signal Processing" because it carries very little public comprehension. Many who hold the purse strings for research do not have much appreciation for what we do because of the name of the field. Even some of our technical colleagues in other disciplines such as Computer Science often view our work too narrowly. Three columns on this issue by our recent Presidents (Moura, Kaveh, and Liu) and a colleague (Li) published in the IEEE Signal Processing Magazine can be found at http://ieeexplore.ieee.org/stamp/stamp.jsp?arnumber=05230869&tag=1 (Moura, Nov. 2009), http://online.qmags.com/SIPR0114/Default.aspx#pg159&mode2 (Kaveh and Li, Jan. 2014), and http://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=6678228 (Liu. Jan. 2014).

In the past 25 years, technology has continued to advance relentlessly. To keep pace with those advances, the Society has modified its field of interest twice (in 1994 and 2010). Furthermore, new technical committees within the Society have sprouted and old ones have changed their names:

- Audio and Electroacoustics (AE) became Audio and Acoustic Signal Processing (AASP).

- Speech became Speech and Language Processing (SLP).

- Statistical Signal and Array Processing (SSAP) and Underwater Acoustic Signal Processing (UASP) became Sensor Array and Multichannel (SAM).

- Digital Signal Processing (DSP) became Signal Processing Theory and Methods (SPTM).

- Very Large Scale Integration (VLSI) became Design and Implementation of Signal Processing Systems (DISPS).

- Neural Networks for Signal Processing (NNSP) became Machine Learning for Signal Processing (MLSP).

- Multidimensional Signal Processing (MSP) became Image and Multidimensional Signal

Processing (IMDSP) and then Image, Video, and Multidimensional Signal Processing (IVMSP).

- Bio Imaging and Signal Processing (BISP), Information Forensics and Security (IFS), Multimedia Signal Processing (MMSP), and Signal Processing for Communications and Networking (SPCOM) were formed.

Our conferences have also changed and many new workshops have been introduced. In 1994, ICIP was just launching. At that time, our publications were:

- IEEE Transactions on Acoustics, Speech, and Signal Processing

- IEEE Transactions on Image Processing (in only its second year)

- IEEE Signal Processing Magazine

- IEEE Transactions on Speech and Audio Processing

- IEEE Signal Processing Letters

Today, our wholly-owned publications have grown to include:

- IEEE Transactions on Audio, Speech, and Language Processing

- IEEE Transactions on Image Processing

- IEEE Transactions on Information Forensics and Security

- IEEE Transactions on Signal Processing

- IEEE Signal Processing Magazine

- IEEE Signal Processing Letters

- IEEE Journal of Selected Topics in Signal Processing

 These are in addition to a new journal (Computational Imaging to be launched on 1/1/15) and numerous jointly owned periodicals on topics such as Cloud Computing, Big Data, Smart Grid, the Internet of Things, Medical Imaging, Biometrics, Biomedical and Health Informatics, Biomedical Engineering, Life Sciences, Sensors, Remote Sensing, Multimedia, Security and Privacy, Affective Computing, Computational Social Systems, Engineering Management, Mobile Computing, Network Science, Wireless Communications, Communications and Networking, and Molecular, Biological, and Multi-Scale Communications.

There is no doubt that our Society's interests continue to grow with astounding pace. So, 25 years after the name Signal Processing was adopted, it is timely to reflect on whether it continues to portray a true image of the Society's activities. And if not, is there a name that can capture the Society's scope better while at the same time improving its visibility?

At the last Board of Governors meeting of the Society in Austin, TX (December 2013), it was decided to form a committee (P. Chou, P. M. Djurić (chair), W. Kellermann, A. Kuh, and A. Scaglione) to explore the question of the Society's change of name. The purpose of this communication is to spur discussion on this issue so that the committee members obtain valuable feedback from our members.

We are particularly interested in comments related to the following questions:

1. Is the term "Signal Processing" well understood in the wide public and if not, is it important to change the name of the Society?

2. Does the name of the Society continue to provide a good description of the scope of its activities?

3. What are the pros of changing the name?

4. What are the cons of changing the name?

5. If the Society changes its name, what should it be? Some names that have been circulated include a) Society on Signal Science and Engineering, b) Society on Signal Processing and Data Science, c) Society on Signal and Data Science, d) Society on Signal Science and Processing, e) Society on Data Science and Processing (DSP), f) Society on Data and Signal Processing (DSP), g) Signal and Information Processing Society, h) Society for Data Science, and i) Data Science Society.

We thank you in advance for your feedback.

On behalf of the committee,

Petar M. Djurić

Comments:

Simon: I am also in favor of option (g), "Signal and Information Processing Society."

Muhammad Zubair Ahmad: I would like to praise the arguments presented above and agree that the term Signal Processing ,as mentioned previously, is not well understood in the society. But, based on this should we change the name. I would like to differ with this suggestion. I think that a better way to enlighten the society would be to bring the subject to them rather than confining it to the researchers alone. I am not against the highly formal and mathematical nature of the work being carried out, but we require people who would explain these things to the general public in a language they understand.I am talking of work similar to that of Feynman in physics. We need to fascinate people,to grab their attention by presenting our ideas in a form digestible to common public. If we do not do this we will always remain a bunch of people doing "signal processing" or what ever the new name we choose.Moreover our current name is the most general name encompassing every avenue we work in but this is not the case with our suggested names or some of the past ones.

Norbert Goertz: I am not in favour of a change of name. The name "Signal Processing Society" is a well-established brand and rather concise. I don't think we will find any better naming of similar length, so a new name would necessarily be longer (a disadvantage as such), more restrictive, and (given, e.g., the popular proposal "Signal and Information Processing") a new name is still likely to contain the word "signal" to which something is added by the word "and": this sounds clumsy to me and creates the impression that a clear decision on a new name could not be taken. Moreover, "Data" and "Information" are terms also "occupied" by other IEEE societies, so how is our treatment of "data" or "information" different from what others to? In contrast, the term "signal" is fully "owned" by our society, so why give up a strong brand and dilute it?

I'm sure anyway that, no matter what new name is "officially" chosen, the old name would stay on forever, as it is shorter and we are all so much used to it. From a technical perspective, my view is that "Signal" and "Information" are rather redundant terms (at least in the given context): I have never processed a signal that would not have contained any information -- why do any processing otherwise?

Moreover, "signal processing" can be seen as a means to make information in a signal available in a convenient format. It is not clear to me what additional positive thing we are going to add by "information processing": if we understand "information" in the Shannon-sense (what else?), we should recall the data(!) processing theorem of information theory which states that by any processing we will usually destroy parts of the information (in the best case we keep the information that is contained in the unprocessed signal): so why make ourselves vulnerable with the term "information" in the name, when we have to admit that our "processing" of information is in fact "destruction"? A qualifier like "science" should in my opinion be avoided in a name altogether, as the translation of such a term means something different in a different language or cultural context.

Teddy: Whatever the new name of the society, I will still say that I am a Signal Processing guy. Signal Processing is what is written on my diplomas, on the covers of my Master and Ph. D theses. Signal Processing is my culture, my background. Colleagues or collaborators know what it does mean and this is what matters (rather than the opinion of a taxi driver). Signal processing is what my father explained me when I was a curious kid wondering how (analog) TV worked. Today, I have in my hands vectors, images, tensors, binary sequences, data ... but what I have doesn't define me. What defines

me is my culture, my background, what I am... and I am a signal processing guy.

Patrick Bas: IMHO the SPS has to stay the SPS. The identity of our society relies on the fact that we work on "Signals". Of course it is a bit more complicated to understand than other items such as "HTML codes" or "CARS". However its generality implies also that it can be used for diverses things, which is also a strength.

Karthikeyan Natesan Ramamurthy: Very thoughtful comments! People who are not knowledgeable about the field narrowly seem to associate it to Fourier analysis and the likes alone, whereas it is truly about understanding the structure of signals and data (both geometric and probabilistic) and hence forms the backbone of so many other application areas. I would like that we change it to "Signal and Information Processing" society.

Dan Marshall: I prefer the current name. But if a change is made, it should not include the word 'science'. We are not scientists; scientists are not engineers (Jerry Bauck said it all in a previous comment). I don't think that 'data' is very accurate either. Regarding data and 'big data', information forensics, security - some of these new areas are getting to be far from what signal processing originally consisted of. At some point it might be considered whether the Society should split into two or more. If instead it continues to expand into new areas, it will lose focus and become unable to remain relevant to all of its members.

Kush Varshney: At the IBM T. J. Watson Research Center, I am part of a group whose members did PhDs and postdocs under the likes of A. Spanias, S.-F. Chang, A. Willsky, D. Gamarnik, A. Oppenheim, and A. Hero, all of whom are central figures in the signal processing community. We are led by a former associate editor of the IEEE Transactions on Signal Processing, IEEE Transactions on Image Processing, and IEEE Signal Processing Magazine who also won the Signal Processing Society Young Author Best Paper Award. We conduct basic research in a variety of signal processing and related areas, but also contribute to analytics projects related to workforce management, salesforce management, and healthcare.

Just this past week, the name of our group changed from "Predictive Modeling and Optimization" to "Data Science."

I am sure everyone has heard by now that "data scientist" is the sexiest job for the twenty-first century, and I do not think it is a bad idea to ride the hype. I just have a few words of caution and a few suggestions.

The term data science as I see it encompasses several fields or domains, including several that I do not view as core parts of the Signal Processing Society's purview:
--- data munging, scraping, parsing, formatting, and general "hacking";
--- computer infrastructures and architectures for handling very large data volumes;
--- data visualization, communication, journalism, and presentation.

The parts of data science that are core to signal processing are of course the applied mathematics and statistics parts.

It is recognized that no single person can become an expert in all parts of data science mentioned above plus being a subject matter expert for a particular problem area. As discussed by O'Neil and

Schutt in "Doing Data Science," individual people have varying levels of competency in the categories "Data Viz," "Machine Learning," "Mathematics," "Statistics," "Computer Science," "Communication," and "Domain Expertise." Similarly, in "Analyzing the Analyzers," Harris, Murphy and Vaisman put forth the categories "Business," "ML/Big Data," "Math/OR," "Programming," and "Statistics." I do not feel that the Signal Processing Society should try to incorporate things like "Computer Science," "Communication," "Data Viz," "Business," and "Programming." My concern is that signal processing does not appear among the lists with "Machine Learning," "Mathematics," "Math/OR," and "Statistics." The goal should be to get signal processing the attention it deserves so that it starts making it onto such lists.

The term "analytics" gained much currency in the last few years and INFORMS was able to catch that wave and take a leadership role by developing certifications for analytics professionals, including analytics tracks in their conferences and journals, and even having an entire Analytics Conference, all while keeping the INFORMS name.

"Data processing," "knowledge and data engineering," "information science," "information theory," and other similar names are already taken.

The name change to data science made sense for our research group in an industrial setting because we do do the other parts of data science besides the signal processing when we are engaged in projects.

However, I feel that the IEEE Signal Processing Society should follow the example of INFORMS with analytics and similarly catch the data science wave without changing its name, or keep the name change minimal with "Signal and Information Processing."

Andres Kwasinski: I feel pleasantly surprised by the number and depth of comments. To me, it shows that the task of this committee is timely and of interest to our community. Being in the position of serving our community as Area Editor for Columns and Forum in our Signal Processing Magazine, I frequently come across issues related to the bigger and deeper questions related with our Society's name.

Being the Magazine the only publication reaching all our members, we work very hard for it to be inclusive for all of them. My work for the Magazine presents me with a treasured opportunity to be in contact with the very rich breadth of disciplines and areas of work that today we collect under the umbrella and name of a "Signal Processing" society. Particularly over the past decade or so, our community has been hard at work and contributing to disciplines that I often worried are not clearly encompassed by the term "Signal Processing". Examples of these are Computational Social Systems, Information Forensics and Security, Cyber-Physical Systems (or Smart-Systems if you prefer) and even, in my opinion, many instances of Machine Learning (think, for example, about game-theoretic approaches).

In this regard, I feel that the current Society name is not representing and is not inclusive of many colleagues working in these areas. In my opinion, this is by itself an important consideration beyond that of our discipline external recognition because, by definition, a society should strive to be inclusive of all its members. On the issue of the external recognition of our Society, I would agree with some comments that changing the Society name will not, by itself, solve the issue, but I would also counter that it would be an important contribution to help in increasing our Society's visibility. The

committee, has explored many good possible options. My personal favourite is a name along the suggested "g) Signal and Information Processing Society". I think that the term "signal" needs to be kept, if any, for historical reasons. I know that for many within our community the relation between the concept of "signal" and "information" is clear and direct, but I would contend that in many of the works we do today there is a very blurry presence of "signals" and a strong presence of "information". One example that comes to my mind, which is not even recent, is with work on "multimedia". If we think of "multimedia" in its more pure meaning, as an integration of multiple forms of media, we would need to equally consider in the same box speech, video, image and even text. I think that it's going to be easy to agree on speech, video and image as "signals". Within our community, we may still see text as a "signal", although this would come after a little rationalization based on the link between information and signal.

But, I wonder, how many people, even technical savvy people, outside our community would be willing to accept that text could be a signal? Here lies the issue with external recognition of our Society: it is not about what we perceive and know about "Signal Processing", it is about what those not in our community see as a "Signal". This issue is very challenging because it has come to a point where many people working in signal processing don't even realize they do (some colleagues working in cyber-security or machine learning come to my mind). In essence, the solution is evident, let's just educate the world how a signal is a just a representation of information. The problem is that this is not realistic. Because of this, I see a name as "Signal and Information Processing Society" as being inclusive for the many lines of work within our Society members, potentially help include new members and activities, and succinctly bridging the gap that exists with the world outside our community. Finally, on the possible use of the word "Science" in a new name, while I personally would like to be able to call myself a "scientist", I think that the word should be reserved for those disciplines based on the scientific method of (question-hypothesis-experiment).

Gwenael Doerr: Well, that is a tricky question with no easy answer. Should you ask any random passerby in the street about signal processing, most likely she will reply that she has no clue what you are talking about. Now, should you shadow this very same person for a full day, you will most likely be able to point at dozens of use of signal processing technologies. That is the paradox of our technical field. On one hand, signal processing is ubiquitous i.e. it is present in nearly all the trendy mobile devices. On the other hand, the general public is completely oblivious to the concept. Is this a critical issue? Well, it sure does not help attracting good students, negotiating promotions in multi-domain universities/corporations, or building a visible ecosystem that individuals could envision having a career in. Is there an easy fix for this? Hell, no! And I feel that it will get worse and worse with signal processing getting more and more intangible. In the past, there were boards and circuits that you could claim were the incarnation of our signal processing algorithms. Nowadays, it is more and more software running in the background and being merely seen as a utility to provide a service at the application level. Nobody will ever attempt marketing the subtleties of a denoising algorithm that optimizes some super cool theoretical function. In contrast, showcasing a camera that produces the sharpest image ever seen is likely to be a deal maker. Most people do not care how it is done, they simply want it done.

This being said, would a change of name help raising awareness about what we are doing? Maybe… I am skeptical but I have a very bad history of crystal ball reading. Out of all suggested proposals, my personal inclination would go to 'Signal and Information Processing'. I feel like the keywords 'Information' and 'Data' blur the lines with the Information Theory Society and the Computer Science Society (if those lines have ever been clear). To some extent, it resonates for me with some recent

mergers between CS and EE departments in universities. A key question that has not been asked is: what is the largest common factor shared by all SPS Technical Committees *and* that clearly distinguishes us from other IEEE Societies? Finally, I would definitely refrain from using the word 'science', as it would simply further widen the gap between the signal processing research community and the signal processing practitioners. Despite recent initiatives, my feeling is that there is less participation from the industry in our conferences e.g. by looking at the ratio presenter/attendee that is getting closer to 1 year after year. Sure, big corporations with large research centers do send their shares of delegates. However, where are the signal processing engineers from corporate business units, SMEs, and start-ups that are expected to put our research results into practice? The risk in the long-term is to have a completely self-centered research community focusing on nice mind games that are completely disconnected from real-life problems. Some of you may argue: "well, that is research"! For me, such a situation would be a much bigger problem than having to spend long minutes in any social function (including family dinners) to explain what I am doing on a daily basis. My 2 cents Happy Easter

Prof. Dr. Anderson Rocha: I believe the name has to capture what we do. It's our identity in play here. Therefore, in my humble opinion, the name should expand to Signal and Information Processing Society. Everything we do is related to signal and information. Science is present by construction.

Matthew Teow: Personally I prefer to keep the society name as Signal Processing Society which I found this name is time-invariant :) and it does represent well on topics that relates to signals, data, and information processing.

Joachim Ganseman: I'd be in favor of adding the word "information". Also has a nice ring to it, SIPS. I do sometimes come across people to whom I need to explain that I really don't know anything about morse code or flag signalling when I say I do "signal processing". Adding "information" might clarify, as most people that have ever seriously worked with computers should have some basic grasp of the concept of information. Though we may call the contents of a harddrive a signal for the sake of abstraction, the general public will rather say it just contains information. I'm a bit wary of using the word "data", a term which especially in its form of "big data" seems to be more abused by marketeers for popular effect, rather than properly used in carefully conducted and reproducible science nowadays. I don't consider the issue of a possible name change as very urgent, though.

Rongshan Yu: I am in favour of changing the name as long as the new name better reflects what the people from our society are doing, and it enables better communications with people outside our field. In many cases, the issue of current name is not that it carries very little public comprehension, but the public comprehension that it carries is either very bias or too narrow due to historical reasons, or people just take the name literally. I personally have many cases before where I need to explain to people that what we are doing are more than just "clean up signals" and they are surprised. Apparently for people not in our field they are not aware that over the years our technical scopes and focuses had been dramatically changed to cover many new technical challenges and they have a good reason to doubt it did happen if we don't even bother to change our name to better reflect the changes. Just imaging now we are trying to explain to people what we are doing now if we still call ourselves "professional group on audio".

Vaughan Clarkson: There's value in sticking with a name if it's working. While 'signal processing' may not be thoroughly understood in every household, I think every electrical engineer who graduated

since the 80s has had some contact with the name and recognises it as a discipline within EE. Every major EE dept. teaches subjects with 'signal processing' in the title. Let's not dilute our association with it. That's not to say, however, that we shouldn't make every (other) effort to stake justifiable claims in currently hot topics like data science. What about, instead, IEEE Transactions on Data Science?

Lao-Gan: Let me ask a question: Will the new name "Signal and Information Processing Society" have any harm or negative impact to us? Seems that no one would say "Yes!" The second question: Will the new name "Signal and Information Processing Society" have any help to us? Some one will Yes and Some one will say No. The conclusion is "Why Not Change to to "Signal and Information Processing Society?"

Ali Bilgin: While I applaud all activities that will improve public understanding of the work of our society, it would be naive for us to think that just changing the name of our society from "Signal Processing Society" to, say, "Signal and Information Processing Society" (this applies equally to the other suggestions above) would somehow instantly improve our visibility and the scope of our work would become clear to the general public.

Overall, signal processing provides a good description of the scope of the activities in our society and I would also argue that this term is well-appreciated by the science and engineering community. So if the motivation behind this effort is to raise public awareness, I think this won't make any significant difference. If it is to better reflect the scope of our activities, then adding "Data" or "Information" to our name does not really provide a broader scope. Let's keep the name and improve our outreach and publicity efforts.

Robert E Rouquette, PE: I object to using the word "science" in our society name unless the word "engineering" is prominent. We are the Institute of Electrical and Electronic Engineers.

shuai ding: "signal" is a concept which is more professional and narrow to the public, while "data" seems too demotic and colloquial. So I prefer "Signal and Information Processing Society".

Omer N. Gerek: How do you process information, if it does not induce a "signal" (analog or digital, thereof)? We do process information through signal processing. I find it quite unnecessary to specifically indicate information. What a nice name it is: "Signal Processing"! Oh, yes, and the "Society".

Bayya Yegnanarayana: I am really surprised at the suggestion of finding an alternate name. The name "Signal Processing" is so nice and reflects the activities of the society very well. I am puzzled at the alternative names suggested. Do any of us know the meaning of "science" to attach it to "data" and calling "data science"? Even the use of "Computer Science" is hard to justify, but it happened by mistake. Do we make similar mistakes again. I sincerely hope that we don't make changes in name just for the sake of changing. We can always enlarge the scope by including new areas. Frankly speaking, most of what we do with data or information cannot be called "signal processing" by any stretch of imagination. Incidentally I am proud to be a member of this society from the beginning.

There's a lot of discussion regarding the fact that people may not understand the terms signal processing. I would suggest that a majority of people don't even understand the term engineering,

and thereby attempting to change our society's name to overcome an understanding gap seems futile and ill advised. To anyone involved with the tech end of the spectrum, Signal Processing is obvious, and it is what we do. Using the term science undermines the full gamut of what we do and limits us to a lesser, albeit perhaps more widely understood, realm. Engineers is what we are, and Signal Processing is what we do.

Vasily Khlebnikov: Among the presented alternatives, I would prefer "Signal and Information Processing".

Andrew Reilly: Data processing is what payroll systems do. Data Science is the new shiny used by the "big data" people. If we had to use both words then "Science Data" might be close to what is involved in signal processing, but I think that just shows that "signal processing" was right in the first place. Just don't do it. The public (as a whole) have little awareness of what most professions really involve, or what they're called. That is no reflection on the names or the crafts involved, and very clearly doesn't matter. Regarding the word "information" that has been argued for in the comments above, as a less-unpleasant alternative if a change must be made: the processing is often important even when there is no information present. Just go with the signal. Please don't change the name of the society, at least not to any of the options presented so far.

Salim Bouzerdoum: I prefer a change of name to Signal and Information Processing Society (SIPS). Both the words data and science have different connotations to what we do in signal processing. As mentioned in some comments, data could be associated with data manipulation or processing. The word science suggests the society is not associated with Engineering.

Douglas L Datwyler: I do not think a name change is warranted.
I do signal processing in both the analog and digital worlds. That is what I do: signal processing.

Scott Douglas: A Story: There was a group of us from the SP Society who were involved in the design of a high school engineering course about 15 years ago (it continues to move forward today, in fact). During our formation meetings -- which had two past SP Society presidents, several authors from the Society who were heavily-education-minded, high school teachers, and other advisers -- we talked about what to call the thing we were about to make. Some of the words we argued over were: "Signal", "Information", "Multimedia", "Engineering", and "Digital." We ended up using the words "Engineering" and "Digital" in the end because they had the right mix of past and future and also seemed to have the longest staying power.

But "Signal" and "Information" carried with them almost equal weight, with maybe slightly more given to "Information" (kudos, Don!). Looking at the words being considered now for the Society, I think it is possible to isolate them: "Signal" -- Points to our roots, emphasizes sensors and collection, creates the need for math and science, and still very socially relevant. "Information" -- Definitely describes activity in the society, leverages useful math and science, and very socially relevant. "Data" -- Points to problems we have today, refers much less to solutions, very socially relevant currently. "Processing" -- Points to our roots, leverages useful math and science different from "Information", more obscure. "Engineering" -- Very classic, practical, career-oriented, financial-value-oriented, somewhat isolating. "Science" -- Extremely classic, long-term, viewed as a social good, less practical, more inclusive of outside fields. Looking at all of the words, to me the ones that ring out the most are "Signal", "Information", and "Processing." It would be great to include "Engineering" somehow but

when you use the word "Engineering" with other more modern things it tends to evoke a steampunk style (gears and dirigibles). As others have said, "Data" is very socially-relevant currently but has a mixed connotation, too. It creates problems within itself (storing, organizing) without clear starting points for solutions. "Science" tends to get added to things to make them sound more important, but many of the established sciences (physics, biology, chemistry, medicine) don't use the word. So, I'm less keen on it. TL;DR version: I would go with (g).

D. Lee Fugal: Another strong NO to the name change. I am co-author with Richard Lyons of a new Prentice-Hall book called Essentials of Digital Signal Processing. In this book we refer to Signal Processing as the Phantom Technology because it is so pervasive and yet not well understood. I think that changing the name by adding terms (or appropriating terms from other disciplines) is unwise. In addition, this sets us up for years of "Formerly known as Signal Processing Society". Petronius said it best satirically about 2000 years ago in his "Change brings the illusion of progress" quote: "I was to learn later in life that, perhaps because we are so good at organizing, we tend as a nation to meet any new situation by reorganizing; and a wonderful method it can be for creating the illusion of progress while producing confusion, inefficiency and demoralization" D. Lee Fugal Chairman, San Diego Signal Processing Society.

Gaurav Sharma: The wider public has little or no awareness of what the term ``Signal Processing'' means. However, changing our name alone will not fix this issue. Better outreach and publicity will. Beware, however, that outreach and publicity come at a cost. If these become end goals in themselves, style trounces substance. Our current name has the advantage that a course on ``Signal Processing'' or ``Signals and Systems'' is often the first undergraduate course in Electrical and Computer Engineering (ECE) where students identify that their interests lie in this part of ECE, rather than, say, circuits or VLSI.

This argues for keeping the name as it stands. I also feel that the current name is not unduly limiting. A lot of what I myself work on is not classical signal processing but I don't think that warrants changing the name of the society. I would completely shy away from including the word "Science" in the name of the society because of two reasons. Firstly, as others have also pointed out, it de-emphasizes applications. Secondly, the inclusion of the qualifier ``science'' is more evocative of disciplines that are not actually sciences, e.g. Moral Science, ... The actual sciences usually do not need to spell out the fact that that they are a science. -Gaurav Sharma

Thomas Chappell: Although the term "Signal Processing" is NOT well understood in the wide public, neither are any of the alternative names proposed. Changing from one publicly obscure name to another publicly obscure name accomplishes nothing. Thus, I encouraging sticking with the name that has the most meaning in the field, which is the current name.

June Zhang: I like 7) Signal and Information Processing Society the best. I am wary of all the options that has the word 'data' in it because of the connection with Big Data. While Big Data is a great buzz word and data analysis has great potential in the future. It has been overhyped and now the pendulum is swinging back the other way. There has been several recent articles about how it's overstating it's prowess (http://abcnews.go.com/blogs/politics/2014/04/growing-doubts-about-big-data/).

Tom Medl: Strongly object to taking "signal processing" out of the name. Strongly object to using "DSP" to mean anything other than digital signal processing. Recommend "big data" topics to be married with machine learning/computational intelligence. Is "data science" akin to a "land grab" between the different IEEE societies?

Vladimir Pavlovic: Do not change the name. The question of name existed 25 years ago, and will exist in the future. 25 years ago I had discussion with various control theory, telecom, computer science, etc… professionals, and they all said that signal processing as a name has to be banished, just because it captures part of what they are doing. The name "Signal Processing" exactly denotes the CENTRE OF GRAVITY and core for the wide areas of whatever is understood under that name. In fact, it is the only proper name that I can think about it. I am afraid that this is just a ploy of computer science professionals, who wants to do with the signal processing, what they already did with the telecommunications. My answer is NO to the name change.

Nick Kingsbury: I think Signal Processing Society is a great name, as SP features in so many to the journal titles and conference names. When people ask 'What is SP?', I say it is 'everything that goes on inside a smartphone' and their eyes suddenly light up, so maybe we should include that as a subtitle.

clément DAUGUET: This changing the name is soundless to me before hand, till you explain the real need of the change itself.First of all, what do you mean when you refer to "Public"? Is it general public, technical public or what else? we should be very careful as you announced yourself " The power of the name".

George Freeman: I think "signal processing" has been misunderstood for my whole career, by students, industry, other faculty, university administrators. Most don't appreciate the diversity of mathematics and computing found in the field, let alone the range of applications and career opportunities. I like signal and information processing from the proposed ideas.

Moises Ribeiro: If the purpose is to increase the visibility, then we need to choose a name that bring the attention of people that are not familiar with our society. I believe that the name "Information Processing Society" will definitely bring much more attention to our society because it is broad and cover signal processing.

Cris Luengo: I vote no to 'data', for the reasons already given by others. Adding 'science' seems unnecessary. I do like Michael Wilkinson's suggestion of adding 'analysis', since it represents better than 'processing' a good fraction of the society's interests. I'd vote for "Society on Signal Processing and Analysis", even if it is a little long.

Branimir Reljin: I think the existing name is quite recognized and well defined. Probably I am an "old-fashioned-man" but, it is difficult, unnecessary, and even impossible to put names of all new areas in the name of society.

Carlo Regazzoni: I am in favor of changing name if the name chosen is broadening the domain of interest of SPS members in the sense of representing current (and eventually future) research and professional activities I prefer accordingly Signal and Information Processing Society The word Data in my opinion can be trendy but it has a narrower meaning wrt Information and it could have less time

cycle life.

Gaurav Sharma: The wider public has little or no awareness of what the term ``Signal Processing'' means. However, changing our name alone will not fix this issue. Better outreach and publicity will. Beware, however, that outreach and publicity come at a cost. If these become end goals in themselves, style trounces substance. Our current name has the advantage that a course on ``Signal Processing'' or ``Signals and Systems'' is often the first undergraduate course in Electrical and Computer Engineering (ECE) where students identify that their interests lie in this part of ECE, rather than, say, circuits or VLSI. This argues for keeping the name as it stands. I also feel that the current name is not unduly limiting. A lot of what I myself work on is not classical signal processing but I don't think that warrants changing the name of the society. I would completely shy away from including the word "Science" in the name of the society because of two reasons. Firstly, as others have also pointed out, it de-emphasizes applications. Secondly, the inclusion of the qualifier ``science'' is more evocative of disciplines that are not actually sciences, e.g. Moral Science, ... The actual sciences usually do not need to spell out the fact that that they are a science. -Gaurav Sharma

Cédric Févotte: Adding "data" to the name of our society would feel like an opportunistic move with potentially only short-term impact. Adding "information" feels right and sustainable. I don't mind the term "processing" -- and wouldn't "information science" clash with the already existing "IEEE Information Theory Society" ? In summary, I like option (g) "Signal and Information Processing Society".

Jerry Bauck: Getting the layman to understand what we do is probably hopeless and changing the name of the society is probably a fruitless attempt. People don't know what signals are, let alone why they should be processed, whatever that means. If we want the public to notice us, we should go with Green Energy and Signals Society. I like the name Signal Processing just fine. However, the purview of the field has enlarged a lot in the intervening years and the name Signal and Information Processing has a nice descriptive ring to it but at the cost of efficiency, four words rather than two. Some may also worry that this would encroach on our Information Theory friends' society. Most of the suggested names include the word "Science." This is wrong, wrong, wrong. We are not scientists—we are engineers and I for one am damn proud to call myself an engineer. Scientists take things apart; engineers put things together. Not only are these fields different, they are polar opposites.

Furthermore, I strongly object to trying to glamorize engineering by calling it science. Since World War II, the teaching and practice of engineering has met and in many cases exceeded many fields of science in rigor and sophistication. Calling engineering "science" is an unnecessary and embarrassing cry for legitimacy. "Data" is an extremely broad term (I enter data into my tax return) with a boring, dry connotation that reflects data processing which sounds like something from the 1950s. Thumbs down. And "big data" is a narrow slice of what we do and in five years nobody will be using the term. If anyone has a name problem, it is electrical engineering. Virtually none of us who call ourselves electrical engineers have anything to do with engines, and the relationship that most of us have to electricity is tenuous at best. I would leave this 19th century concept behind. The IEEE does allow a partial improvement in its middle "E" and I nowadays tell people that I am an electronics engineer. I made the switch after having told someone that I am an electrical engineer, a request was promptly made that I help install a ceiling fan. I like the name electrotechnologist and the IEEE has used that in the past. It's a mouthful but more important it is descriptive. Back to the topic at hand: I would vote to leave the name the same, but if change is inevitable, add "Information."

Aaron Clarke: I prefer the current name. If a new name is chosen, the use of 'DSP' as an abbreviation name will be confusing to many. I don't believe there is a recognition problem. Changing the name will have the opposite effect with engineers, signal processing is a well-respected society and field of study.

Michael Wilkinson: I do like the addition of "Information" in Signal and Information Processing. Processing itself does (wrongly) conjure up the image of low-level stages only, so adding "Analysis" somewhere might be welcome.

Mike Davies: At a recent event a radar industrialist pointed out to me that there is some confusion between industry and academia on what signal processing means. He felt that industry still saw it as dealing with hard signals at the acquisition stage and processing these with real time constraints. So it is not just society as a whole that doesn't understand us. While we still do some of the above, much of what we do does not fall into this category. I therefore think the term "Signal and Information Processing" is a better description of the extent of what we do.

Marco LUISE: Admittedly, "Signal Processing" is aging a bit. As well as it does NOT represent sufficiently well what we do in the layman's understanding. On the other hand, none of the proposed new names is considerably better than the current one, most of them being on the contrary considerably worse than. The only significant change might be IMHO adding "Information", which represents the trend of change on what we are actually doing – still, I'm afraid it would not add that much in terms of understanding of our activity by the general public. "Data" is too generic and, to me, too computer-science related, otherwise we could also introduce "applied mathematics" (that, after all, is what we actually do). I'm over 50, and probably a bit biased, but from what I said it should be pretty clear that my vote is: don't change it.

Douglas O'Shaughnessy: Several members of the Speech and Language Technical Committee think that "Signal and Information Processing Society" would be suitable, but others think we should stay with our original name. As one member states: "Signal" already indicates an information-bearing phenomenon, and the meaning of "signal processing" already encompasses the decoding/encoding of any kind of information. It's not necessary to spell it out any further, and it risks diluting the brand name.

Mats Viberg: I think this is a good initiative. It is time for a change. The terminology Signal Processing is still a mystery to many of our peers, and it does not really reflect the current activities. Of the presented alternatives, I prefer "Signal and Information Processing".

Jean-Marc Jot: I am also in favor of option (g), "Signal and Information Processing Society."

T.V. Sreenivas: Signal is such a nice term, no wonder it has stayed on. The term data has such a wide implication, it may even mis represent. So, "processing" is the term that is rather old, although it sounds nice as we have grown up with that term. Instead, technology is a stronger word and better representative of what all we do with signals. So, something like Signals Technology Society (STS)?

Alin Achim: I still believe that Signal Processing is the best definition of what we are doing. If the understanding of the outside world is the problem I would rather go out there and explain it. Second to that, if a change must be made, the only one that I would personally favour is Information

Processing Society. Ideally the new name should stay for another 25 years at least so I surely wouldn't go for some "opportunistic" change.

S. Sanei: I think signal and information processing has already openned its space amoung the SP workers. Although, I still prefer SP, but if it is to change, then SIP is probably the most inclusive one.

Jennifer Trelewicz: I find myself explaining the word "signal" too often - it is often construed as meaning physical signals, rather than including sampled and digital data. Personally I like the move to something along the lines of "big data". It is opportunistic, yes, but it is also a phrase that is widespread, understandable (in many different languages, including Russian), and which better describes much of what we do, which is (very roughly speaking) connected to various aspects of finding something sensible in a stream of data.

Dan Ellis: The main argument for changing the name seems to be that outsiders don't know what signal processing is. But at least it's something we own. Trying to catch the coat tails of "big data" might have some short-term funding payoff, but it strikes me as opportunistic and unworthy. There is a new genre of "data scientists" out there who take a few courses in statistics, databases, distributed computation, and web programming. We are not them.

Malcolm Slaney: I didn't see any reason to change, until I saw the suggestion to add "data." That makes sense, especially since "big" data is such a big part of much commercial success (speech, image processing, recommendations, etc.)

Mounir Ghogho: To outsiders, the processing of a signal may not include what is done with the signal after it has been processed! Information processing captures better what we do, but I would be in favor of replacing Processing by Science and Engineering, i.e. I'd go for option a)

João Sanches: 1) I agree with changing the name 2) I prefer g). Perhaps, in the future it will change to "Information Processing Society" - this is what the society does - "information processing".

Paulo S R Diniz: I feel that the words "data" and "signal" mean somewhat the same thing. Signal must be kept since it represents the human instinct to communicate since prehistoric age.

Andreas Stolcke: Speaking of data: what IS the actual scope of activities sponsored by the SPS? There must be statistics available from society conferences, using the IEEE topic classification hierarchy.

Todd K Moon: I appreciate the thoughtful discussion that has gone in to this. I do agree that the society's technical scope has broadened, and that society as a whole does not understand what we do. With regard to the suggested names, I have some reservations about the use of the word "data," because I fear that the name would be associated with "data processing," which brings images of tax forms, accounting, and boring things like that. (Or perhaps I am just too old-fashioned in my viewpoint.) Among the options you list, I prefer (g) most highly, followed by (a). Information processing is very general, and carries more mathematical connotations (I think) than data processing. However, the information theory society may be somewhat troubled. "Signal science" captures well what we do, because this is a very scientific, as opposed to merely technological, society.