

Shared Responsibility for Reviewing Papers

Drastic times sometimes call for drastic measures, but has the recent policy imposed by the IEEE Information Theory Society (ITS) gone too far?

With the continued growth in the number of journals, and paper submissions to journals and conferences increasing, there has been an associated increase in the demand of a reviewer's time and effort to ensure that high-quality standards are met. Associated with this, some journals have seen many potential reviewers refusing to respond, reviewers not completing the reviews, or long increases in the review time.

As a result, the ITS Board of Governors (BoG) passed the following resolution at its July 1, 2012 meeting [1]: "In view of its concerns about excessive reviewing delays in the IT Transactions, the BoG authorizes the editor-in-chief (EIC) in his sole judgment to delay publication of papers by authors who are derelict in their reviewing duties." Reviewers may be considered to be derelict if they habitually decline or fail to respond to review requests, if they accept but then drop out, or if they habitually submit perfunctory and/or excessively delayed reviews. In applying this rule, the EIC will take into account the authors' overall record of service to the transactions. This policy is effective immediately. The EIC will inform authors prior to imposing penalties.

While some papers are genuinely interesting, there are many that are difficult to read and laborious to check in

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detail. Obtaining good reviews takes time and effort for which there can be little perceived reward. The challenge is how to convince researchers to contribute their fair share of community service. Other than a sense of civic duty and the honor of reviewing and improving the quality of a publication, there are no checks and balances in the current system. With that in mind, the ITS policy makes a lot of sense. However, a problem with this policy is that it does not incentivize insightful and thorough reviewing and may actually breed a culture of contempt (as opposed simple idleness) around the process.

George Hazelrigg, program manager and acting director for the Civil, Mechanical, and Manufacturing Innovation Division at the National Science Foundation (NSF), recently tried an experiment to address a similar issue [2]. The new process required each submitter of an NSF proposal to commit to reviewing seven other proposals. To avoid the conflict of interest issues with reviewers downgrading competitor's proposals, the scoring system gave submitters bonus points when their assessments closely matched the other reviewers. A similar process could be tried for journal and conference pa-

per submitters, but what could be the equivalent bonus?

The imposition of this policy also raises many other interesting questions. Is it fair? In particular, does it enable the EIC to distinguish between different types of service to the community? For example, are there standards available that compare the various levels of contribution to a society (for example, associate editor of another journal or chair of a conference). How are contributions to the overall community through similar roles in different societies [for example, International Federation of Automatic Control (IFAC)] or administrative roles in academic institutions (such as department chair) factored in? Furthermore, are appeals possible, and how would that be performed and on what basis? If this policy is thought to be fair and necessary for one journal, then should it be considered for all IEEE journals?

What are the alternatives? As discussed above, the policy imposes penalties that may be counterproductive. An alternative is to provide a reward structure that enables reviewers to better account for the time and/or effort spent. For example, the EIC for *AIAA Journal of Guidance, Control, and Dynamics* not only acknowledges reviewers in a published

list but also identifies excellent reviewers, as graded by the associate editors. Excellent and double excellent reviewers receive an e-mail acknowledgement from the EIC. The EIC of the IFAC journal *Automatica* has a similar process. Some IEEE journals send private notices, and others make public announcements, for example, *IEEE Transactions on Control of Network Systems* [3], but a few actually use journal page space to provide a formal acknowledgement with pictures [4]. If similar public announcements were done for all journals and large conferences, and these were raised to the level of a significant award

that could be highlighted on a CV, then perhaps that would serve as an incentive that is more productive than imposing a penalty.

It is unlikely that the future demand for reviewers' time will decrease, so the issue faced by ITS is not likely to go away and, in fact, could be faced by many other journals and conferences. Only time will tell if the approach taken by IEEE ITS BoG will be successful and should be adopted or if the alternatives can be put into practice. In the meantime, I recommend that all researchers carefully evaluate their levels of contribution to the review process and redouble

our efforts to make this a strong and vibrant research community.

REFERENCES

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Count Riccati

Count Jacopo Francesco Riccati (1676-1754) was an Italian savant who wrote on mathematics, physics, and philosophy. He was chiefly responsible for introducing the ideas of Newton to Italy. At one point he was offered the presidency of the St. Petersburg Academy of Sciences but understandably he preferred the leisure and comfort of his aristocratic life in Italy to administrative responsibilities in Russia. Though widely known in scientific circles of his time, he now survives only through the differential equation bearing his name. Even this was an accident of history, for Riccati merely discussed special cases of this equation without offering any solutions, and most of these special cases were successfully treated by various members of the Bernoulli family.

—George F. Simmons, *Differential Equations with Applications and Historical Notes*, McGraw-Hill, New York, 1972

Many Points of Signal Data

Sampled-data systems are characterized by the fact that the signal data appear at one or more points in the system as a sequence of pulses or numbers. A central problem in the theory of such systems is that of describing the response of linear continuous elements, or pulsed filters, as they are sometimes called, to pulse sequences applied to their input. The use of the z transformation and the all-important pulse transfer function of the pulsed filter makes this problem relatively straightforward. A unique component found in sampled-data control systems is the digital controller, which is a computer that accepts a sequence of numbers at its input, processes it in accordance with some logical program, and applies the resultant sequence to the controlled element.

—John R. Ragazzini and Gene F. Franklin, *Sampled-Data Control Systems*, McGraw-Hill, New York, 1958