AN IMPROVED EDITORIAL SYSTEM FOR THE IEEE TRANSACTIONS ON INFORMATION THEORY

A. Grant, A. Nosratinia, G. Taricco and A. van Wijngaarden.

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Background

The following is a wish-list of requirements that the Associate Editors of the *IEEE Transactions on Information Theory* would like to see implemented in a web-based paper handling system.

This document was prepared at the request of Editor in Chief Ezio Biglieri by (in alphabetical order) A. Grant, A. Nosratinia, G. Taricco and A. van Wijngaarden.

The guiding principle in the preparation of this document was to simply list all new features and improvements identified by Associate Editors. During the preparation of this document, it became apparent that some features are controversial (e.g. automatic reminders). In fact, it seems that such features polarize the AE community. The decision about which features to include in a new system is deferred for later discussion. Such considerations were deliberately set aside for the formulation of this document.

The Appendix lists a representative sample of the preliminary discussion (centered around Pareja versus Manuscript Central), which led to the preparation of this document.

Paper Handling

Global View

1. The AE should be able to easily see a global view of their papers, along with their details of their status. This view should contain compact records of all papers handled by the associate editor organized by status, highlighting any actions required by AE. For example:
    a. Assign Reviewers
    b. Under Review
    c. Awaiting Decision
    d. Rejected
    e. Revise - Awaiting revision (upon receipt of revision, paper moves to “Awaiting Decision”)
    f. Accepted – Awaiting final manuscript (upon receipt, moves to “Awaiting Decision”)
    g. Forwarded to PE
2. Every compact record in the global view should contain the following information:
    a. ID number, Authors and Title
    b. Status, e.g. number of reviews requested/returned/days reviews overdue/days decision overdue/days revision overdue/days final manuscript overdue. The emphasis is on the action required by the AE.
3. Each compact record on the global view should link to an page for that manuscript where the Associate Editor can easily
    a. Manage Reviewers (search/add/delete/rescind/update/contact/score reviewers)
    b. View/Edit History (manuscript versions/authors responses/notes/correspondence)

c. Contact Authors (several templates, including blank)
d. Make Decision
e. Send reminders (if in semi-automatic mode – see Reminders below)

4. An "Action Required" page (or filter of the global view) narrows focus to manuscripts requiring attention (reviewer assignments needed, decision required or anything overdue)
5. A "Send Reminders" page lists all overdue items (reviews/revisions) with easy one-click edit & sending (for semi-automatic reminders – see Reminders below).

Email Correspondence

The current system has no centralized correspondence trail. It relies on editors to send emails using their own email client, and to maintain their own email archive. There are several problems with the current implementation, which cause templates to break with certain clients (necessitating editors to switch clients, or even computers, for this purpose).

Lack of central email archives is not transparent in case of disputes, or when papers need to be transferred to new editors for whatever reason.

6. The system should handle all email correspondence independently of the editor's and author's email clients.
7. Email correspondence should be easily sent within the system (e.g. links to contact authors/editors/reviewers) on the appropriate pages.
8. All user-triggered template emails (e.g. author accept/revise/reject notifications) should be editable immediately prior to sending. The editable text should be the actual human-readable generated text (not macro codes or similar).
9. All emails should be chronologically archived. Email history for each paper should be easily viewable.
10. It should be possible to attach files (e.g. review comments) to certain emails.
11. It should be easy for an AE to file an email received outside of the system (e.g. emails directly received from reviewers or authors). Similarly it should be easy for an AE to file a review received outside the system, without having to "log in" as the reviewer (as required by Pareja)

Email Templates

There are currently no standard email templates. Each new AE writes their own, or inherits templates from colleagues. While this allows for a great deal of personal customization, it also requires the AE to master a non-standard set of tags to insert dynamic content, such as names, titles etc. Furthermore, there is standard text (e.g. concerning IEEE review procedural requirements) that may be overlooked by a new AE. Finally, templates are broken in the current implementation. There are several cases that cause the system to fail, and generate an empty email.

12. Standard templates for every kind of email should be provided
13. Templates should be easily customizable by the AE

Reminders

The current system has no provision for automated reminders. Reminders are required for Editors (letting them know when various actions are due), Reviewers (letting them know when their review is due), and Authors (when their revision or final manuscript is due). Manual reminders are a time consuming, repetitive and generic task that is well served by automation.

Reminders for Editors may be particularly time-saving, since they remove the need to continually scan all assigned papers.

Several AEs commented that manually reminding reviewers is very cumbersome, consumes a lot of their time, and that they would welcome automatic reminders. Other AEs vehemently disagreed with the idea of automatic reminders. A representative sample of comments, for and against, is provided:

> *"Many of my authors wait 6 months or more to submit revisions or final papers. We are all so overloaded that automated reminders to reviewer and authors would, I believe, be quite effective since I rarely get reviews without sending one and sometimes many reminders"*
>
> *"... as many other colleagues already mentioned, I do not like the automated messages and the reminders sent by MC. I consider it very important to have the communication with the authors be through personalized emails"*

The current "deadline" system in Pareja is broken. For example, once a review deadline has passed, the link to remind a potential reviewer creates a "review reminder" rather than a "reminder to accept/decline review".

14. The system should be capable of sending automatic reminders of the following kinds:
    a. Potential reviewers, to indicate whether they will do the review
    b. Reviewers, when their review is almost due (courtesy reminder)
    c. Reviewers, when their review is overdue (with a one-click link to specify a new deadline)
    d. Associate Editors, when confirmation of handling paper is due
    e. Associate Editors, when reviewer selection is due/overdue
    f. Associate Editors, when decision is due/overdue
    g. Authors, when revision is due (with a one-click link to specify a new deadline)
    h. Authors, when final manuscript is due (with a one-click link to specify a new deadline)
15. Templates for reminders should be customizable
16. Timing and repetition of reminders should be customizable
17. Automatic reminders should have some degree of control. Some ideas include
    a. Ability of AE to turn off automatic reminders to reviewers and/or authors
    b. Ability of reviewers/authors to "opt-out" of automatic reminders, either per-paper, or by default for all papers (should be visible to AE prior to selecting a reviewer). For such reviewers/authors, system should default to semi-automatic, described below.

c. Semi-automatic reminders: the system creates a single page with a list of outstanding reminders that require individual approval (one-click), by the AE before they are sent (with a chance to edit each email).

Notes

Several AEs commented on the usefulness of keeping notes in the system.

18. The system should provide ability for the AE to make notes for each paper. These notes should be time-stamped and a complete history of notes kept with the record of the manuscript.

Paper History

The system does not save every revised version of the manuscript. This admits the possibility of priority disputes. It also potentially allows the author to slip unreviewed material in at the last minute. It is currently up to each editor to keep track of revised versions (problematic when papers need to be transferred from one AE to another). Reviewers typically do not think to keep past versions of papers that they reviewed, and they often request previous versions so they can check author's modifications.

The current system handling of reviewer comments is broken. Links to review comments expire after some period of time. When this happens, authors (and reviewers) can no longer access the reviews, even for the current round of reviews on an active paper. Other aspects of Pareja are broken. One AE reported:

> *"They submit the revised paper which I want to send back to reviewers for a quick check, so I go back in the pipeline to "under review" state and then things often break down (e.g. access codes stop working, reviewers cannot post additional comments, etc.)"*

19. The system should keep a history of every revision of a manuscript (along with its correspondence, review history and editor notes)
20. Editors, authors and reviewers should all be able to easily access every revision of a manuscript and the associated reviewer comments etc.
21. Competed papers should not "disappear" from the system. Editors, authors and reviewers should be able to access all authorized information for papers, even after the final decision is made.

Author Status Check

Authors cannot currently check on the progress of their manuscript without directly contacting the AE.

22. Authors should be able to check the general status of their submission. Optionally, authors could see the number of days spent in each stage. Detailed information (e.g. how many active reviewers, which reviewers are overdue) should not be made available. Suggested categories are:
    a. Awaiting reviewer selection (i.e. assigned to AE, but no reviewers assigned yet)
    b. In review (reviewers assigned, but not all returned yet).

c. Awaiting Editorial decision (reviews complete but no AE decision yet)
d. Decision made (accept/revise/reject)

23. Authors should be able to see all their submissions and status from a single summary page
24. Authors should be able to access all of their papers, and reviews, even after the final decision is made.

Confidentiality

In the current system, potential reviewers can download a manuscript prior to agreeing to the review. Papers are provided "as is" with no identification as a manuscript under review.

Review documents are similarly provided to the authors "as is". It is not uncommon that personal information is embedded in PDF and Word files, which identifies the reviewer. Removing such information should not be left to the reviewers (who have varying levels of technical expertise with computers).

25. Potential reviewers must not be able to download the papers unless they have accepted to do the review.
26. Downloaded manuscripts must contain a watermark on every page identifying the paper as under confidential and under review for the IEEE Transactions on Information Theory.
27. Optionally, the watermark could be reviewer-specific. Reviewers must be informed of this and must be reminded of IEEE requirements for confidentiality of the review process.
28. Review documents should be automatically stripped of properties that identify the reviewer.

Reviewer/Author Database

Database Fields & Statistics

The current database holds only name and contact information. There are many additional ways the database can be improved.

29. The reviewer/author database should be expanded to include fields that aid reviewer search functionality. Possible additions include
    a. Technical areas of interest (entered by authors/reviewers)
    b. Keywords (automatically mined from published Trans. IT papers)
    c. Co-authors (automatically mined from published Trans. IT papers)
    d. Links to published Trans. IT papers
    e. Reviewer load (currently assigned/assigned in last 12 months)
    f. Average review time
    g. Number of review declines
    h. Average reviewer score (provided by AEs)
30. Records could be linked to itsoc.org profiles?

Search

Pareja provides only the most primitive search function, and is quite cumbersome (you have to enter first name, last name, and email, after which the system identifies some possible matches). Improved reviewer search capability was one of the most often requested features during the AE discussions leading to this document.

31. The reviewer database shall be easily searchable by any combination of fields (see database fields & statistics above)
32. Optionally, search filters could be applied, e.g. Return only reviewers with load less than XYZ
33. Search results shall be compact: listing name, institution and reviewer statistics (load, average time & score). It should indicate if the reviewer is unavailable (blackout period).
34. Search results should flag obvious reviewer conflicts that can be determined from the database:
    a. Same person
    b. Same institution
    c. Previous co-author

Database Maintenance

A well-maintained database with few duplications, and well-populated fields will be of great help to the Associate Editors. Updating reviewer data is currently very difficult. AEs report having to delete and re-add reviewers in order to change their data:

The biggest headache is that email addresses cannot be updated and old ones cannot be phased out except via the administrator or the author/reviewer.

35. Associate Editors shall be able to easily update reviewer data
36. Associate Editors should be able to optionally "score" reviewers
37. System shall provide easy links for reviewers to update their profile in any reviewer email
38. Reviewers should be able to enter "black-out" periods, when they are unavailable
39. Database shall identify possible duplications at the time of new record creation (typically by an AE or by a co-author).
40. Individuals should always be notified by email of a new record creation (with a chance to check for duplication, and to update profile).
41. System shall regularly and automatically search for duplicate records. There are a number of ways this could be handled. E.g. every time an author or reviewer logs on, it can ask the user confirm whether a possible duplicate is real (and merge record), or to flag it as distinct (and do not ask again). Alternatively, the record creator could be asked to review the duplication.
42. The system shall regularly check for broken email addresses (many mailing lists do this)

System Aspects

User Accounts

Currently Pareja requires reviewers and authors to enter the "CLN" and a unique access code for each paper. In contrast, Associate Editors access the system via a username and password.

43. Authors and reviewers should have their own username and password. Once logged in, they should be able to see a list of all their own submitted and published papers, and any papers they are reviewing (or have reviewed in the past).

Client Neutrality

44. The only software required to use the system should be a web browser.
45. The system should support a reasonable number of modern web clients (e.g. Explorer, Firefox, Safari) on major operating systems (e.g. Windows, OS X, Linux).
46. Preferably the system built from open-source components.

Robustness

The current system is not robust. It is served from a single computer with limited storage. Currently, the online editor has to regularly perform system maintenance to keep the server running.

47. The system must reside on a high availability server, with server redundancy
48. There must be regular off-site backup and archiving
49. The systems must be professionally maintained, with guaranteed on-going development, support and maintenance

Interface to IEEE

There are possibilities to connect the reviewing system to the IEEE publications process, which would simplify the work of the publication editors (for example, the IEEE generates XML files with the page count of the published papers - something the PEs currently have to count and enter by hand).

Appendix: An Overview of the discussion

This activity emerged out of a discussion between the Associate Editors contrasting the relative merits of Pareja and Manuscript Central. No consensus emerged from this discussion. Some representative comments are given below:

Clearly MC is the better and better-supported system, and will continue to be going forward. There is no reason for our small society to reinvent, test, and maintain a wheel that is already well-designed, well-tested, and has significant technical support.

The handling of manuscripts and reviews in manuscript central is much more crisp. I've had at least one instance of difficulty with Pareja on this front, but never with manuscript central.

I've been using Elsevier editorial system for about two years. It's quite good. Pareja is also not bad, but it should be substantially upgraded. I have fairly long list of problems with Pareja. I notified Kevin Quirk of some of them already. If we stay with Pareja we should perhaps invest some resources into upgrading it and we should come up with a list of improvements which need to be made.

I was an Assoc. Editor at Trans. Comm. before joining Trans. IT, so I have a couple of years' worth of experience with Manuscript Central (MC). I think it has some advantages: It is easier to search for a reviewer in MC than in Pareja. You don't have to have your mailer (outlook, thurderbird, etc.) on, the emails go directly from their server as opposed to your mailer, which makes it easier to use when you are on travel. MC has better book-keeping and warning system, i.e., it automatically sends emails to reviewers when their review is due (these messages can be edited to look like they come from you as opposed to from a machine), and also it has a better system of reminding the editor when a review comes in, when it is time to make a decision, etc. However, I think MC has some serious disadvantages also: Once you make a decision on a paper in MC (whether it is an accept, reject or revise decision), the paper just disappears from your screen, and it is very hard to find previous versions of the papers. With Pareja, on the other hand, you have a nice view of what is accepted/rejected/revised, etc.

I have been using Manuscript Central both as an author, reviewer and more importantly as an Associate Editor for TCOM. I find it much more efficient compared to Pareja. All communication with the authors, reviewers etc are documented. It is easy to go back and forth between the submitted paper and revised version, and between different reviewer reports. MC sends automated reminders (which can be adjusted if necessary). I don't know how the interface to the Publication Editor is, but assuming we could streamline publications to the PE as well, I would prefer MC over Pareja.

The poor feature set of Pareja means that our Associate Editors (speaking from experience) spend far more time than necessary on their … I am also AE for Trans. Wireless Comms, which uses Manuscript Central, so I have the experience of a direct comparison.

It is annoying that with Pareja that previous versions of manuscripts, reviewer comments and response letters get lost.

In summary, Manuscript Central can save time for the AE's and can be helpful in reducing the review cycle. It is also a better tool in terms of enforcing timeliness on associate editors. But it is more mechanical than Pareja.

I think that the main problem of Pareja is that it is not designed to for AEs to easily handle large number (>10-20) of papers, that is when an automated system like MC really helps.

The main disadvantage of Manuscript Central is lack of flexibility for associate editors (although the EiC may consider it an advantage). Manuscript Central is built to enforce uniformity more than flexibility

I am on the Editorial Board of ACM Tran. Algorithms which uses Manuscript Central. Everybody complains about it, and I agree. I do not recommend to move to it.

I've had only limited experience with Manuscript Central, and I can't say I'd prefer it.

I am quite happy with Pareja. I do not know Manuscript Central as an AE, but as I reviewer, I do not like its evaluation forms and its automatic messages.

For all of its imperfections, there is one thing I like about Pareja, and it is that it allows the right mix between the automated and the personal.

I am not very familiar with Manuscript Central but I am perfectly happy with Pareja.

I have used Manuscript Central as an AE and like most of the responses do not see a compelling reason to switch. In particular, I also do not like the automatic emails in Manuscript Central (but there may be a way to disable this?). I do agree … that there are a few features that would nice to have in Pareja. For example, in Manuscript central it is easy to see a global view of all your papers with more details about what state they are in (i.e. number of reviews requested/returned/overdue, etc.).

Pareja allows me to automate virtually everything that I want to and is flexible enough to accept all manual changes I need. In particular, my e-mails are based on both the templates and specific comments made by the referees. So I would stick with Pareja if possible.

I have been using Manuscript Central (MC) as Editor for a couple of years and now got used to Pareja as well. As indicated by several other AEs, I do not see any compelling reason to switch to MC.

I have used MC for several years as an AE for Trans. SP. I am sure the system has evolved since I last used it as an AE so that my statements may be based on outdated information. However, as many other colleagues already mentioned, I do not like the automated messages and the reminders sent by MC. I consider it very important to have the communication with the authors be through personalized emails. I find Pareja quite efficient (also in terms of the layout of the web page and the way information is displayed), although there is certainly room for improvement. My suggestion would be to stick to Pareja, but to put together a wish list for changes to Pareja.

It seems we are solving a band-limited problems where MC is at one end of the spectrum and Pareja at the other. We should shoot for the middle … either MC-like system with a human touch or boosted Pareja.

Given the tremendously high load of our editors, and the very large sub-to-pub time of our journal which we must reduce before the IEEE forces us to, I believe it is an excellent source of society resources to spend money on migrating to a system that makes our job easier and has features to help reduce sub-to-pub time.