### An experience of trying to submit a paper in LaTeX in an XML-first world

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The publishing world is increasingly using an XML-first work flow wherein the source manuscript is first converted to XML, editing is likely done in XML, and output formats are created from what comes out of XML.[1] This note describes some recent author experience with a publisher that was moving in that direction.

The IEEE Computer Society is one of almost 40 IEEE societies. For decades, it had a strong in-house editing/publishing organization in southern California producing 13 peer-reviewed magazines and more than 30 transactions for various research areas. The Computer Society has been under financial pressure for a number of years as, like other professional societies, the Society (and the IEEE more generally) lost members. As one way of dealing with financial issues, since 2015 the Computer Society has been squeezing its editing/publishing organization through staff layoffs, out-sourcing, and so on. Simultaneously, the Society has felt the need to publish HTML, Epub, etc., versions of its magazines in addition to PDF versions and has been pushing toward non-print publication. In our current digital era, societies also have the expense of maintaining digital archives of the journal issues (e.g., `computer.org/csdl/magazine/an`). For 2018 the Society moved to largely highly hands-off editing and prepress operation. Authors were expected to use a Word template[2] to lay out their own papers for print publication which would have minimal staff copy editing.

### 1 Our article, part 1

In the second half of 2017 Barbara Beeton, Karl Berry, and I researched and wrote a paper on the history of TeX and its community for submission to the *IEEE Annals of the History of Computing*, a magazine of the IEEE Computer Society. The paper was to be part of a pair of special issues on desktop publishing. At the request of the special issue guest editors, we split our 17,000 word draft into two parts so one part could go in each of the pair of special issues.

Early in 2018 we began the process of submission for peer review, revision, and publication. The 2018 rules for submission for peer review required that papers be submitted in the Word template format. There was also a hint that the Society was working on a path to be able to handle LaTeX submissions.

We had drafted our paper's parts in LaTeX, and we begged to be able to submit a pair of PDFs out of LaTeX for peer review and not to have to use the Word template unless the paper was accepted for publication. We were given permission to submit the PDFs. But before submission, deciding I had to learn the new Word template anyway for other *Annals* work, I converted the paper's two parts to Word using the Society's `.dotx` Word template.[3] The template style, as shown in the example,[3] was single column ragged right that I assume was to simplify layout.

The paper was tentatively accepted, pending something between a minor and major revision. One of the reviewers strongly made the point that a paper on (LA)TeX should be published looking like TeX rather than word processor output. We revised our LaTeX source that I had converted to Word for peer review, and we then volunteered to be a test case for the Society's effort to develop a LaTeX class that matched the format of the Word template.

We were told to go ahead with being a LaTeX test case, but there was no promise the class would be done in time for publication. We iterated several times with the class developer, first converting to his draft class, and then changing things in our LaTeX file as he refined the class; we also helped by testing our paper against his backend use of Pandoc to go to HTML, Epub, etc. We were then allowed to submit our paper's parts in LaTeX for copy editing. We polished parts 1 and 2 of the paper using the new class, sent them to the copy editor, and part 1 was published in *Annals* issue 2018-3.[4] Part 2 was to be published in 2019.

### 2 Our article, part 2

However, by the fourth quarter of 2018, more of the Computer Society editing and publications staff had been let go, and the IEEE publications staff in New Jersey took over the editing and prepress work of the Society's magazines. (The Computer Society's transactions journals had been transferred to the IEEE a few years earlier.)

We understood (incorrectly, it turned out) that a new IEEE Word template was being created for the *Annals* going forward in 2019 and work was beginning modifying an existing IEEE LaTeX class to match the style of the Word template being developed. We understood correctly that the IEEE editors accepted LaTeX input.

We converted our part 2 file from the 2018 LaTeX class to the `IEEEtran` class[5] (`ctan.org/pkg/ieeetran`) which we thought we were told would be close to the final 2019 *Annals* LaTeX class. We passed this to the IEEE editors, and we volunteered once again to be a test case as the developing *Annals*

LaTeX class was refined, but we received no response to our offer.

Then we received a proof for part 2 of our paper which was, unfortunately, unpublishable, especially for a paper on the history of TeX and LaTeX.[6] It didn't look like LaTeX output, and we couldn't elicit an explanation of how the proof had been created from our LaTeX submission. Their response was "mark up the proof and we will work with that". A next proof came, which was better but still unsatisfactory from our point of view. By this time, we had been told that they accepted LaTeX but converted it to XML and all editing after that was of the XML. We gave up on a couple of things their system seemed unable to handle, such as the TeX family of logos, and we lowered our expectations for good line breaking and inter-word spacing. A third proof was acceptable enough. The paper was published in the second 2019 issue of the *Annals*.[7,8]

## 3   Summary

We were unlucky that the two special *Annals* issues on desktop publishing, a year apart, spanned the time when there was a big discontinuity in the journal's staffing and style. On the other hand, this is the sort of thing that can happen with publishers trying to deal with the pressures of today's world.

If you use LaTeX because you like its beautiful output: be aware that that is not what many publishers are working on; they are working on a common path to all the desired output formats, some of which are inherently not pretty. Try to ascertain if the journal to which you submit will process your LaTeX source with LaTeX. If the journal has an XML-first publication workflow, moderate your expectations for the result.[9]

Personally, I will continue to compose papers in LaTeX because I enjoy using it (and my WinEdt editor) more than I enjoy using Word. It will be convenient if a journal to which I submit accepts the LaTeX input even if it will not be processed by LaTeX. If necessary I can convert from LaTeX to Word for submission.

## 4   Notes on the workflow IEEE uses for *Annals*

As I understand things, the IEEE Computer Society editors used Word — the submission format of most authors — to lay out papers for print. I believe they output to PDFs for print publication and somehow also moved from Word to HTML and Epub.

As noted above, we learned that the IEEE editors have everything converted to XML and from there papers go to print, HTML, and Epub. I was told the conversion is done by outside vendors, and the conversion methods are proprietary to the vendors. The editors also do not give out the vendors' names.[10]

## References and notes

[1] Jonathan McGlone, Preserving and Publishing Digital Content Using XML Workflows, `tinyurl.com/xml-mcglone`

[2] `walden-family.com/texland/tex-xml/e1.pdf`

[3] `walden-family.com/texland/tex-xml/e7.pdf`

[4] `walden-family.com/texland/tex-xml/e6.pdf`

[5] `walden-family.com/texland/tex-xml/e3.pdf`

[6] `walden-family.com/texland/tex-xml/e4.pdf`

[7] `walden-family.com/texland/tex-xml/e5.pdf`

[8] The two parts of our peer-reviewed accepted TeX-history paper before publication are at `walden-family.com/ieee/texhistory.html`. If you would like a copy of the two parts as published, please ask me: `dave.walden.family@gmail.com`

[9] Stefan Moser, in the context of writing for the *IEEE Transactions on Information Theory*, has some guidance on submitting LaTeX which will be converted to XML: Stefan M. Moser, Author Information: How to Avoid Common Conversion Problems LaTeX — XML, August 10, 2016, `ece.umd.edu/trans-it/TIT-FinalSubmissions.pdf`

[10] Also, in the publishing process we saw, it appears that the outside vendors are not using methods with state-of-the-art line breaking and hyphenation. Also the process makes a paper's author feel distant from the copy editor(s) as they don't communicate directly.

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