152 Patent Practitioners

PTAAARMIGAN

PATENT AND TRADEMARK ATTORNEYS, AGENTS AND APPLICANTS FOR RESTORATION AND MAINTENANCE OF INTEGRITY IN GOVERNMENT

August 7, 2023

Via regulations.gov, and email to InformationCollection@uspto.gov

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Re: *DOCX Submission Requirements*, Information Collection for Control Number 0651-0032, *Initial Patent Applications*, 60-day notice at 88 Fed. Reg. 37039 (Jun. 6, 2023)

Dear Mr. Isaac and Mr. Tamayo:

The facts are undisputed—they are set out plainly in the very documents the PTO purports to rely on, and the PTO has never disagreed with the public's view of those facts. The PTO admits that the DOCX rule will create annual burden of ***over $100 million***, compared to the PTO's claimed savings of $780,000 per year. An information collection that "shifts costs to the public" in a ratio of **130 to one** is not approvable. Earlier public comments estimated burden at ***$200 million***, with extensive analytical support—the PTO does not dispute that, either. An information collection that ***displaces*** a voluntary consensus standard (today's PDF) in favor of a single-company standard (the PTO's proposed DOCX) is not approvable. An ICR that understates true burden by a factor of two—based on no more than two non-experts' guesses pulled out of thin air with no support is not approvable. An ICR that estimates burden based on a temporary waiver of part of the burden of the information collection is not approvable. An ICR that calls for duplicative collection to correct agency error in processing one of the two collections is not approvable.

OMB should grant a two-month clearance, with terms of clearance specifying that the PTO is to conduct an orderly wind-down of its DOCX filing software. During that two months, the PTO may not impose uncleared burden: (a) the PTO seeks only clearance for *regulation*, not burden created by guidance; (b) the PTO does not seek clearance for burden of correcting errors introduced by the PTO's software bugs; no clearance for anything other than wind-down should be granted until the PTO can provide proof that its software has achieved a level of stability commensurate with today's PDF system, so that no corrections will be required.

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The signatories of this letter are 152 users of the Patent and Trademark Office's computer systems, members of several email lists, and other interested persons, and members of PTAAARMIGAN, an organization of Patent and Trademark Attorneys, Agents and Applicants.

I. Bootleg 1: the DOCX information collection.

A. Factual background: patent applications, PDF filing, DOCX filing

This ICR concerns a rule promulgated as a final regulation (37 C.F.R. § 1.16(u)) in 2020.[1] In this rule, PTO imposes a $400 penalty for filing patent applications in portable document format (PDF), the form that has been in use for nearly 20 years without complaint or controversy from the public. When the rule goes into effect, the PTO will demand that applications be submitted in DOCX format—Microsoft's format for Word—even for filers that do not use Word as their authoring tool (which the PTO admits to be about 20% of all filers). Unless, that is, they pay a $400 penalty. The

[1] U.S. Patent and Trademark Office, *Setting and Adjusting Patent Fees During Fiscal Year 2020*, Final Rule, 85 Fed. Reg. 46931 (Aug. 3, 2020).

PTO's DOCX proposal stems from a basic design choice that guarantees ***un***reliability. The PTO has compounded an inherently unreliable technological foundation with unreliable engineering implementation. Patent filers have repeatedly observed, and communicated to the PTO, the resulting unreliability to no avail.

Public commenters estimate the cost of compliance with the PTO's DOCX proposal (proofreading and error correction) at $200 million per year.[2] The Patent Office estimates its savings at about $780,000 per year—a cost-to-benefit/cost ratio of ***250 to one***. More than a few people have speculated that this is simply a way for the Patent Office to raise fees *sub rosa*, without going through the rulemaking process. The PTO's 60-day notice confirms those suspicions—the PTO expects to expropriate ***$49.6 million*** per year in additional fee income from those filers who estimate that the burden of the PTO's rule and risk of error in the PTO's software exceeds $400 per patent application.[3] The filing fee for a patent application is either $320 or $1820, depending on which fees count as "filing fees"—in other words, for about 1/3 of patent applicants, the PTO proposes to impose a penalty of either 125% or 22% for the privilege of filing via the reliable *status quo* PDF system rather than the unreliable DOCX system.

Comment letters estimated burden for extra proofreading and error correction is about $200 million/year.[4] This burden arises from several bad software engineering decisions made by the PTO over the years, which we will explain in the next few paragraphs.

Patent application filings have near-zero tolerance for error. Because everything in the patent system is driven by dates, the law permits almost no correction of errors after filing. 35 U.S.C. § 132. Almost any other legal document can be amended. Not patent applications (in the relevant respect).

PDF (the current filing regime, and the form used by the courts and all other agencies for formal filings, and the form that the public comment letters advocated) was designed from the outset to be "portable," that is, dozens of vendors all commit to treating a document in PDF format identically—the property one would expect for legal documents.

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[2] Comment letter, https://downloads.regulations.gov/PTO-P-2020-0050-0004/attachment_1.pdf at 3-5 and 32-39. Two cost workups are attached to this letter as Exhibit 6 and Exhibit 7.

[3] Earlier, the PTO's Budget request had estimated the misappropriation at $18 million per year. U.S. Patent and Trademark Office, *FY 2023 The President's Budget and Congressional Justification*, March 2022, at https://www.commerce.gov/sites/default/files/2022-03/FY2023-USPTO-Congressional-Budget-Submission.pdf , at pages 154, 156, 158, fee codes 10DX, 20DX, and 40DX

[4] Comment letter, note 2 *supra*, at 3-5 and 32-39.

DOCX is the opposite. Collecting patent applications in DOCX yields very poor "quality, utility, and clarity of the information to be collected." 44 U.S.C. § 3506(c)(2)(A)(iii), § 3506(c)(3)(J). Compared to PDF, DOCX is an unreliable technology subject to considerable machine-specific variance. Documents that appear correct as submitted can appear differently—erroneously—when opened and read on others' computers—including, most pertinently, PTO's computers. Though a standard exists, that standard does ***not*** guarantee portability, and only one vendor (Microsoft) uses DOCX as its internal and preferred form. Instead, by design, every computer that opens a DOCX file is free to handle any given DOCX file differently—it's common to see bugs introduced because of different versions of Microsoft Word, or when a DOCX file (written in English) generated on a Hebrew or Japanese edition of Word is opened on an American edition, or when two computers have different fonts or other ancillary software installed. Moreover, Microsoft changes its internal implementation of the DOCX format, to some extent, to disadvantage interoperability with competing products. DOCX is ***not*** designed for the reproducibility and stability necessary for legal documents (especially complex legal documents like patent applications).

Every computer user that uses two computers has encountered an analogous phenomenon: web pages appear differently depending on whether they are displayed using Google Chrome, Apple Safari, Mozilla Firefox, or Microsoft Edge as their browser, or on different operating systems, or depending on which particular fonts are installed on a given machine. Though "standards" govern internet protocols, those standards do not govern enough variables to require consistency. Because the standards (intentionally) leave many features as "implementation defined" and do not purport to guarantee portability or reproducibility, the ***very same bits*** delivered by a web server can, and routinely do, appear differently on different client computers.[5]

Similarly, the DOCX "standard" only specifies certain minimum requirements that make it possible to save and open documents across different machines and programs. DOCX does not purport to guarantee consistent results, let alone portability or interoperability of those documents when opened. Rather, the DOCX standard

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[5] Another example is the Titan submersible. The Titan was built of carbon fiber in a cylinder. Every freshman engineer learns that carbon fiber is strong in *tension*, but weak in *compression*. Every freshman engineer learns that for pressure vessels, a sphere is twice as strong as a cylinder. Because the very first decision of Titan's engineers was to ignore these basic engineering principles, the Titan was designed to fail—no amount of thickening of a carbon fiber cylinder would ever yield a reliable deep-submersible vessel.

Similarly, DOCX is not designed for portability, reproducibility, or uniformity when the same document is processed on two different computers. Quite literally, when the PTO chose DOCX for its filing system, the PTO's choice guaranteed a system designed to fail. No amount of debugging can ever get around the fundamental flaw in the initial design choice. Text-based PDF was designed to be good at exactly the things the PTO and the public need.

specifically, and intentionally, leaves many dozens of behaviors as "implementation defined," which allows implementers to deal with content however they choose, and, further, allows successive versions of any particular word processor to behave differently.

This machine-to-machine variability is considered a useful feature *in the context of word processors for editing*, because it allows for adapting the rendering of such a file, when opened on a different computer system, with a different screen size, using a different program, with different "add on" programs (especially for mathematical equations, chemical formulas, and the like), or even on the same computer with a different program, or with different national editions of the same program (versions for Hebrew, Japanese, Korean, or Latin alphabets), or with different fonts or printers installed, etc.

As a result, a patent application created on one computer, and stored as a DOCX file using a particular word processing program, is not guaranteed to appear the same when viewed with a different program or on a different computer.

This problem creates risk every time a DOCX file is opened on two different computers. As we and others have explained in many letters to the PTO (our first was in August 2019, see Exhibit 11 (compare pages 1-40 with pages 41-80), Exhibit 2, Exhibit 3, Exhibit 4, which are from December 2022 to March 2023): the very same bits of a DOCX file will appear differently to Andrea running MS Word 2016 on a Windows 10 machine, to Bryan running MS Word on a Mac, to Carl running LibreOffice, to Rick running Word Perfect, to Rich running Google Docs, to David running the same version of Word on two different Windows computers, and to the PTO when it renders the same DOCX on its computers. ***There is no reproducible standard for the rendering of a DOCX***.

Although there are standards that specify the structure and content of a DOCX file, the standards do not precisely specify the behavior of computer software that processes documents stored in DOCX form, either as rendered on-screen or as rendered in printed form. The standards leave many choices as "implementation dependent." The standard documents themselves discuss examples of how different software may treat the same DOCX file differently. We have observed cases where those differences could be the difference between a valuable patent application and a nonviable one. Characters and entire paragraphs drop out. Equations and chemical formulas change. Various members of the public showed multiple examples in our letters of September 2019.

One letter[6] during the Notice of Proposed Rulemaking (August 2019) showed this equation that renders this way on a LibreOffice computer, as intended:

$$f(u)=\cos(u)^3 \exp(0.2u)$$

but that renders this way on the PTO's filing system computer:

$$f(u) = cos(u)^3 exp(10.2u)$$

Note the addition of an extra "1" – a "0.2" changes to "10.2." ***Exactly*** the same "DOCX" generated these two different renderings. This change could be catastrophic.

In the Final Rule notice of July 2020 (nearly a year later), the PTO claims five times "To date, the Office has not received notifications of any issues resulting from the filing of applications in DOCX format." *E.g.*, 85 Fed. Reg. 46956, col. 2:

> To date, the Office has not received notifications of any issues resulting from the filing of applications in DOCX format. If there is an instance in which

The PTO nowhere acknowledges the errors that were pointed out in the comment letters, let alone explains how a potentially-catastrophic alteration of an equation is not "any issues resulting from the filing of application in DOCX format."

The PTO's DOCX filing system does not accept anything that could be characterized as "standard." It only accepts a mongrel and unpredictable subset of the standard. For example:

- A patent application that uses "standard" features of Word—bookmarks, cross-references, fields, IF merge fields, and the like—draws error messages, and the PTO's filing system won't accept the document until those "standard" features are removed.
- The DOCX standard permits plug-in extensions for equations or chemical formulae—but the PTO's DOCX system refuses some of these, and generates incorrect results from others.
- The PTO's filing system sometimes renders Greek letters (among other characters) as a box □--Greek letters are common in the scientific notation used in patent applications.
- If some pages have wide tables, past practice was to put the wide tables on landscape pages, and rotate them by 90° in the PDF. That's easy for PDF submissions, and has been done for years with both patent drawings and wide tables in the specification. Under the PTO's proposal, the PTO's DOCX filing

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[6] Carl Oppedahl, comment letter (August 12, 2019), *available at* https://www.uspto.gov/sites/default/files/documents/Comment_Carl_Oppedahl_081219.pdf

system refuses to accept the document. We have reported this error several times over more than a year. The PTO has not fixed it, and we have not figured out a work-around.

- The PTO has no published document that explains which parts of the "standard" are accepted by the PTO's DOCX filing system, which are rejected, or anything else about the PTO's implementation of DOCX. From an applicant's point of view, the PTO's DOCX filing system is completely random.

Often, patent applications are drafted in part by inventors. We as attorneys and agents don't have control over their use of Word. Inventors are smart people. They use the full range of Word's features, and can't be limited to the PTO's limited subset. When an application is filed in PDF, all of those issues get smoothed out. If the application has to be filed in DOCX, and the attorney has to alter the inventor's document to remove those features, they're malpractice time-bombs.

Beyond this inherent instability, the PTO's DOCX filing system adds another layer of error: it intentionally changes the filed patent applications in the name of enforced uniformity. Many applicants have noticed that both sources of error result in changes to patent applications that could entirely invalidate a resulting issued patent. We attach examples in Exhibits 2-4 (which we provided to the PTO between December 2022 and March 2023).

The PTO identifies a legitimate problem at the symptom level: everyone agrees that the PTO should receive high-reliability input, so that it can generate high reliability output. However, we disagree with the PTO's diagnosis of the underlying disease (and the PTO has offered no evidence in support of its diagnosis, while the public has supplied abundant evidence of its alternative), and we disagree with the treatment plan (and again, the PTO has offered no contest to the public's showings that the PTO's course to date has been engineering nonsense).

The PTO identifies its problem: the need for reliable documents that allow recovery of precise text, and automated analysis to alert filers of impending problems. Many public comment letters proposed a viable solution to those two problems; do what all other federal agencies and the federal courts do. All other legal filing systems permit, and most require, parties to file text-based PDFs. The office or court then maintains the filing *exactly bit-for-bit* in the form that a party uploads, so that the office or court doesn't have to OCR the filing itself. For example, the federal courts' CM/ECF system expressly warns users that uploads must be text searchable PDF, and that the filer is responsible for performing redactions correctly and removing all metadata. That way, the party with most interest in accuracy and most control, generates the PDF in exactly the best form. The office or court relies on the filer's submission, exactly and without change. Our suggestion is that the PTO track all other agencies and the federal courts: the PTO should identify "switches" to set in the various PDF-writer programs that will ensure that filers provide PDFs that the agency can use, and maintain *exactly* the bits that users upload as the official "of record" copy, with *no changes*. This is the proposal that "minimize the burden of the collection of information on those who are to

respond, including through the use of automated collection techniques" 44 U.S.C. § 3506(c)(2)(A)(iv). If the PTO makes that certification for its DOCX collection, that certification will be false.

To reach that end result solution to the PTO's stated problem is quite simple: the PTO should *remove* an unreliable component that, 15 years ago, was inserted into the PTO's IT processing chain when the PDF technology was much less advanced. In the intervening years, much has changed. Today, most applicants upload the text-based PDFs that the PTO could use as is—the PDFs that applicants upload have perfect characters, perfectly differentiating the standard Latin letter "X," the Greek letter "Χ", the Cyrillic letter "Х" and the multiply symbol "×". But the PTO doesn't use the files that applicants upload. Instead, the PTO flattens the text-based PDFs it receives into bitmaps. The PTO receives fully-perfect PDFs with perfect characters, and degrades them into black-and-white photographs of fairly low resolution. The real solution to the PTO's problem is for the PTO to merely require the use of text-based PDFs, remove this component from its processing pipeline, and keep the perfect text-based PDFs that applicants upload in the first place.

In the June 2023 60-day notice, the PTO has given no response, no rebuttal, no explanation for its unique inability to do things the way virtually every other part of the Federal system does with respect to filings, and has offered ***no explanation whatsoever*** for declining our suggestion to remove the degradation component. The PTO cannot (truthfully) certify that its DOCX collection "reduces to the extent practicable and appropriate the burden on persons who shall provide information to or for the agency," § 3506(c)(3)(C), because there is an alternative of far lower burden for the public—text-rich PDF—that the PTO hasn't seriously considered, even though it was suggested in public comment letters.

Likewise, the PTO has never disputed the problems with DOCX as a filing vehicle, the extraordinary bugginess of the PTO's DOCX software, or the likelihood and severity of burden imposed by the multiple classes of error we list above. Instead, in the August 2020 response to comments, 85 Fed. Reg. 46932, the PTO repeatedly reframed the comments to evade answering any comment that raised this issue, and falsely stated "the Office has not received notifications of any issues." The PTO's only response has been to narcissistically explain advantages for itself.[7] The June 6, 2023 60-day notice is the ***first time in four years*** that the PTO has acknowledged that DOCX creates burden for the public, let alone attempted to estimate burden. Instead, the PTO has engaged in a pattern of false denial—for example, "the Office has not received notifications of any issues," 85 Fed. Reg. 46956, col. 2, and "The USPTO is no

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[7] **[FR notices explaining benefit to the PTO itself]** *E.g.*, *Director's Forum: A Blog from USPTO's Leadership, Modernizing patent filing with DOCX* (May 25, 2021) https://www.uspto.gov/blog/director/entry/modernizing-patent-filing-with-docx

longer seeing any errors being reported as a result of filing patent applications in DOCX format when applicants follow the guidance provided by the USPTO."[8] The signatories of this letter circulate bug reports to the PTO and to each other, and maintain a "bug list"[9] that apparently does a better job of tracking "errors" than the PTO does—if the PTO's claim of "no longer seeing any errors" reflects either willful blindness or poor data management of reliability information, not the quality of the PTO's software.

A number of news articles have noted the unreliability of the PTO proposal, and several law firms have noted that they will not accept the malpractice risk:

- Oblon, one of the three largest-filing patent law firms in the U.S., explained that it would not accept the risk of DOCX filing, and would pass on the $400 surcharge. https://www.oblon.com/uspto-docx-transition-update-1
- Julie Burke, *DOCX Plan Risks Patent Quality And USPTO Should Reverse It*, Law360 (Aug. 8, 2022), https://www.law360.com/articles/1518880/docx-plan-risks-patent-quality-and-uspto-should-reverse-it
- Patently-O (one of the two most-read patent law blogs) reports several webinars on malpractice risks and "pants-on-fire lies" by the PTO. *Professional Liability risks of filing in DOCX* (May 1, 2023), https://patentlyo.com/patent/2023/05/professional-liability-filing.html
- Schwegman, Lundberg, Woessner, *DOCX Filing – Submitter Beware*, https://www.slwip.com/resources/39246 -- the slides have several examples of patent applications that were badly mangled by the PTO's software
- In France, the courts ordered the French Patent Office to rescind their similar DOCX filing rule. On December 9, 2022, the French Conseil d'Etat (the French highest administrative court) invalidated the French counterpart to the § 1.16(u) Non-DOCX Penalty Fee. Decision No. 2022:458276.20221209 (*available at* https://www.legifrance.gouv.fr/ceta/id/CETATEXT000046720329, at 8-11). The law firm that successfully brought that case explained their concerns in an article (available at https://www.august-debouzy.com/en/blog/1889-e-filing-of-french-patent-applications-french-pto-inpi-shuffle-its-feet-after-messing-with-plt) and their concerns are largely the same as ours.

In sum, there is a perfectly good, near-zero burden, solution to the problem the PTO identifies—do what every other agency and the Federal Courts do. The PTO should accept filings in text-based PDF, and maintain them in the form they are submitted (without flattening them to bitmaps). The PDF Association developed a subset of the PDF standard tailored for archive documents, called "PDF/A". The public

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[8] *Extension of Period To Allow Submission of a PDF With a Patent Application Filed in DOCX Format*, 87 Fed. Reg. 77812 , 77813, col. 1 (Dec. 20, 2022).

[9] https://patentcenter-tickets.oppedahl.com

comment letters proposed PDF/A; the PTO dismissed the suggestion out of hand with no analysis or explanation. The PTO cannot (truthfully) certify that the DOCX information collection "to the maximum extent practicable, uses information technology to reduce burden and improve data quality, agency efficiency and responsiveness to the public," § 3506(c)(3)(J), because the PTO's DOCX software is ***designed*** to reduce data quality at the first intake step—nothing else the PTO can possibly do will recover the data quality that the PTO throws away in the first few seconds. Perhaps the PTO will argue that it maintains good data quality in later steps of its processing pipeline—but the PTO has thus far refused to recognize, let alone explain, the fundamental ***un***reliability raised by the public's comment letters and demonstrated by a number of bugs reported to the PTO.

In meetings with PTO senior staff in the spring of 2023, signatories to this letter presented the fundamental engineering principles that any competent engineer would use as a starting point (see Exhibit 9), and problems with the PTO's attempts to reduce harm (Exhibit 10). In subsequent meetings with PTO management over these documents, PTO management gave explanations that indicated lack of consideration of any alternative proposal, and lack of understanding of or concern for the burden the PTO was creating. PTO management's explanations at these meetings made clear that the decision to go with DOCX and to not inquire into alternative technologies was already "wired in." For one of these letters, the addressee (Mark Polutta, a PTO lawyer) refused to even open the email, citing a "policy"—when challenged to identify this "policy," Mr. Polutta was unable to do so. To all appearances, the "policy" at the PTO is to make up "policies" out of thin air in order to ignore fact-supported public inputs.

The PTO conducted a "yearlong study" in 2015 that, at that time, concluded that PDF "was the right approach" to collection of patent applications; but the PTO concealed this study during the public comment period in 2019 while misrepresenting its conclusion to the public. When we later obtained the actual "yearlong study" by Freedom of Information Act (see § I.E of this letter, and Exhibit 1), we found that the PTO had reported its conclusions falsely—not subtly, but by 180º opposed to the actual conclusion.

B. The DOCX rule shifts burden to the public 250-to-one relative to the agency's purported savings

An agency may update its software and protocols to reduce costs to itself, "but shall not do so by means of shifting disproportionate costs or burden onto the public." 5 C.F.R. § 1320.5(d)(1)(iii). 130-to-one is "disproportionate."

After four years of denying *any* burden for DOCX, the PTO's June 6, 2023 60-day notice finally tells half the truth—the PTO admits to $103 million/year in burden. (That's the best case—the PTO's estimates are off by a factor of two, see § I.C, next), 88 Fed. Reg. at 37040-41.

TABLE 1—TOTAL BURDEN HOURS AND HOURLY COSTS TO PRIVATE SECTOR RESPONDENTS

Item No.	Item	Estimated annual respondents (a)	Responses per respondent (b)	Estimated annual responses (a) × (b) = (c)	Estimated time for response (hours) (d)	Estimated burden (hour/year) (c) × (d) = (e)	Rate [1] ($/hour) (f)	Estimated annual respondent cost burden (e) × (f) = (g)
1	DOCX submission of Original New Utility Applications.	170,510	1	170,510	0.5	85,255	$435	$37,085,925
2	DOCX submission of Utility Continuation/Divisional of an International Application.	6,049	1	6,049	0.5	3,025	435	1,315,875
3	DOCX submission of Utility Continuation/Divisional Applications.	57,044	1	57,044	0.5	28,522	435	12,407,070
4	DOCX submission of Utility Continuation-in-Part Applications.	6,516	1	6,516	0.5	3,258	435	1,417,230
	Totals	240,119		240,119		120,060		52,226,100

TABLE 2—TOTAL HOURLY BURDEN FOR INDIVIDUAL AND HOUSEHOLD RESPONDENTS

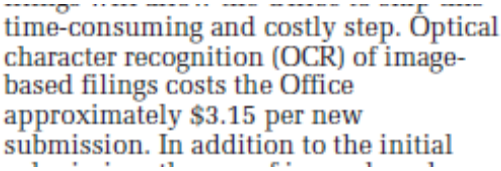
Item No.	Item	Estimated annual respondents (a)	Responses per respondent (b)	Estimated annual responses (a) × (b) = (c)	Estimated time for response (hours) (d)	Estimated burden (hour/year) (c) × (d) = (e)	Rate [2] ($/hour) (f)	Estimated annual respondent cost burden (e) × (f) = (g)
1	DOCX submission of Original New Utility Applications.	5,420	1	5,420	0.5	2,710	$435	$1,178,850
2	DOCX submission of Utility Continuation/Divisional of an International Application.	192	1	192	0.5	96	435	41,760
3	DOCX submission of Utility Continuation/Divisional Applications.	1,813	1	1,813	0.5	907	435	394,545
4	DOCX submission of Utility Continuation-in-Part Applications.	207	1	207	0.5	104	435	45,240
	Totals	7,632		7,632		3,817		1,660,395

The PTO estimates that 60% of filers will bear $52 million in burden simply for reviewing the results of the PTO's software for error. That's $218 each. The PTO estimates that fully **40%** of applicants so distrust the PTO's software that they would rather pay a $400 fee, 88 Fed. Reg. at 37041:

TABLE 3—FILING FEE COSTS TO RESPONDENTS

Item No.	Fee code	Item	Estimated annual responses (a)	Amount (b)	Totals (a) × (b) = (c)
1–4	1054	Non-DOCX Filing Surcharge Fee (undiscounted entity)	102,095	$400	$40,838,000
1–4	2054	Non-DOCX Filing Surcharge Fee (small entity)	47,406	160	7,584,960
1–4	3054	Non-DOCX Filing Surcharge Fee (micro entity)	14,565	80	1,165,200
		Totals	164,066		49,588,160

In contrast, the PTO estimated its savings at $3.15 per patent application, U.S. Patent and Trademark Office, *Setting and Adjusting Patent Fees During Fiscal Year 2020*, Final Rule, 85 Fed. Reg. 46931, 46947, col. 2 (Aug. 3, 2020).


time-consuming and costly step. Optical character recognition (OCR) of image-based filings costs the Office approximately $3.15 per new submission. In addition to the initial

Multiplying by 248,000 annual responses, the PTO estimates its savings at under $780,000 per year.

$103 million in burden, $780,000 in savings. Even on the PTO's faulty assumptions, the ratio of cost to savings is ***130 to 1.***

This information collection should be disapproved.

C. The PTO violated its obligation to support its estimates via an objective record, and offers no basis to discount two well-supported burden estimates that put burden at $200 million per year

To forward this information collection request to OMB, the PTO will be required to certify to "the accuracy of the agency's estimate of the burden," 44 U.S.C. § 3506(c)(2)(A)(ii), and "provide a record supporting such certification." 44 U.S.C. § 3506(c)(3). The PTO's estimates must satisfy the Information Quality Act and the PTO's own *Information Quality Guidelines*.[10] If the PTO certifies its 60-day estimates of $103 million, that certification will be false.

The public has provided two detailed cost workups in the past, both totaling $200 million per year:

- Exhibit 6 is an Affidavit of Bradley Forrest. In his first career, Mr. Forrest was a software engineer. More recently, Mr. Forrest was chair of the Patent Office Relations committee of the American Intellectual Property Law Association (AIPLA), the largest trade association of relevance. Mr. Forrest is also Chairman and General Counsel of one of the larger specialty patent law firms in the Midwest. Mr. Forrest opines that the DOCX collection of information will impose burden of $200 million per year.
- Exhibit 7 is an excerpt from a letter submitted by David Boundy in response to the PTO's 2020 attempt to clear the DOCX rule. Mr. Boundy has expertise both to opine on the PTO's software engineering, and on the burden of the DOCX rule. Mr. Boundy taught software engineering as a discipline during his graduate

[10] PTO, *Information Quality Guidelines*, https://www.uspto.gov/learning-and-resources/information-quality-guidelines

studies at the University of Michigan. Mr. Boundy rose to senior software engineering positions at Hewlett-Packard before a career change into law. Mr. Boundy was invited to lecture at MIT. Today, all three of the three main Intellectual Property organizations—ABA, AIPLA, and NAPP—ask Mr. Boundy to deliver talks, and publish his articles in their flagship magazines. Mr. Boundy likewise estimates burden at $200 million per year (see Exhibit 7, pages 4-5).

In contrast, the PTO estimates burden at $103 million. The PTO's estimates are not credible, and not sufficient to meet the PTO's obligation, tor three reasons:

- The PTO offers ***no basis whatsoever*** for its estimates, except that they are made "out of an abundance of caution for the initial period after the effective date of the non-DOCX filing surcharge fee." Neither of the two PTO persons mentioned in the 60-day notice (Justin Isaac or Raul Tamayo) identify any basis to take their personal and unsupported opinions seriously. Neither is listed at the PTO's list[11] of registered attorneys and agents—apparently neither has a single day of practice of patent law. Numbers pulled out of thin air by non-experts do not satisfy the PTO's statutory obligation for an objective "record" in support of their estimates.
- The PTO offers no basis to disagree with Mr. Forrest's and Mr. Boundy's estimates of $200 million.
- The estimates in the PTO's 60-day notice only cover the cost of error review ***during filing***. Tables 1 and 2, 88 Fed. Reg. at 37040, 37041. The PTO acknowledges that post-filing corrections will be required,[12] but includes no estimates whatsoever for burden of detecting the errors introduced by the PTO's faulty software, no estimates the cost of submitting those post-filing error correction requests, and seeks no clearance for those error correction papers. Both Mr. Forrest and Mr. Boundy estimate burden in the tens of millions of dollars. Exhibit 6, Exhibit 7. The PTO gives no basis for its estimates of zero for cleanup burden.
- The PTO requests a three-year clearance based on temporary facts. In the 60-day notice, the PTO concedes that its estimates are only valid for an "initial period." 88 Fed. Reg. at 37040,.col. 3. But simultaneously with this notice, the PTO published an "extension" of a "temporary period" during which the PTO would waive one of the truly pernicious and overly burdensome features of the DOCX rule.[13]. This *Extension of Option* notice states that the "extension" waiver

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[11] https://oedci.uspto.gov/OEDCI/practitionerSearchEntry

[12] *Extension of the Option*, note 13 *infra*, 88 Fed. Reg. at 37037 col. 1; *Extension of Period*, note 8 *supra*, 87 Fed. Reg. at 77813, col. 1.

[13] *Extension of the Option for Submission of a PDF With a Patent Application Filed in DOCX Format*, 88 Fed. Reg. 37036 (Jun. 6, 2023).

of the burdensome, pernicious aspect of the rule will continue only "until further notice."[14] The PTO admits that it has an obligation under the Federal Records Act to preserve records, but refuses to commit to following that law after the "temporary period."[15] The PTO's June 6 "extension" notice points to an earlier notice of April 2022. That April 2022 Notice states in no uncertain terms that the PTO intends to reinstate the burdensome, pernicious version of the rule as soon as possible, and to resume violation of the Federal Records Act. 87 Fed. Reg. at 25228, col.1.

- The PTO can't have it both ways—if the PTO won't commit to the lower-burden version of the rule permanently, then the PTO must accept Mr. Forrest's and Mr. Boundy's higher burden estimates. And if the PTO will not commit to reducing burden *permanently*, then any certification the PTO offers of "reduces to the extent practicable" will be false.

In sum, the PTO's $103 million estimate has no valid basis. OMB should use the $200 million estimates offered by the public in 2020. As such, the burden-to-savings ratio is about **250-to-1**.

D. The PTO's DOCX rule displaces a voluntary consensus standard with a single-company standard *that no commercial product implements* and that *creates another, bigger problem,* when another voluntary consensus standard *does* solve the PTO's purported problem

The Paperwork Reduction Act requires that the PTO arrange its paperwork collection rules "consistent and compatible, to the maximum extent practicable, with … existing reporting and recordkeeping practices." 44 U.S.C. § 3506(c)(3)(E). The PTO cannot (truthfully) certify that the DOCX information collection does so.

The National Technology Transfer and Advancement Act of 1995 (NTTAA95), Pub. L. 104-113 § 12(d)(1), 110 Stat. 775, 783, codified in notes to 15 U.S.C. ¶ 272 (Feb. 27, 1996) requires as follows:

> (1) In general.-- …all Federal agencies and departments shall use technical standards that are developed or adopted by voluntary consensus standards bodies, using such technical standards as a means to carry out policy objectives or activities determined by the agencies and departments.

OMB's implementing guidance is Circular A-119.[16]

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[14] *Extension of the Option*, note 13 *supra*, 88 Fed. Reg. at 37036 col. 3.

[15] *Extension of the Option*, note 13 *supra*, 88 Fed. Reg. 37037, col. 1-2.

[16] OMB, *Circular No. A-119, Federal Participation in the Development and Use of Voluntary Consensus Standards and in Conformity Assessment Activities (revised Feb. 10, 1998)*, *available at* https://www.whitehouse.gov/wp-content/uploads/2017/11/Circular-119-1.pdf

The PTO rejected PDF and insists that DOCX is better because DOCX is a "standard" (Final Rule, 85 Fed. Reg. at 46957 col. 1-col. 2:

> *Comment 51:* One commenter wrote that PDF files are easier to manage when filing, are better for long-term archival use, can be generated in text-searchable form, will not require fragmented filings using both PDF and DOCX files, carry fewer concerns with respect to malware and viruses, and carry no licensing concerns. The commenter expressed that the DOCX file format is intended for facile editing and by design is not suited for archival purposes, will require fragmented filing with different file formats, will require archiving of files in multiple file formats, carries increased risk of malware and viruses, is no better than other editable file formats, and carries some uncertainty regarding licensing status.
>
> *Response:* DOCX is a word-processing file format that is part of Office Open XML (OOXML), an XML-based open standard approved by the Ecma International® consortium and subsequently by the ISO/IEC joint technical committee.
>
> For more information about the OOXML standard, please see:
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> - ECMA–376 at *http://www.ecma-international.org/publications/standards/Ecma-376.htm*
> - ISO/IEC 29500 at *https://www.iso.org/committee/45374/x/catalogue/*
> - NIST votes for US. Approval of OOXML at *https://www.nist.gov/news-events/news/2008/03/nist-votes-us-approval-modified-office-open-xml-standard*

First, PDF is also a "standard." Asserting that "DOCX is a standard" is irrelevant as a matter of comparison between the two.

Second, PDF (the PTO's incumbent technology) is a voluntary consensus standard adopted through a years-long process that involved many vendors. A specific variant of PDF, PDF/A (for "archival", also adopted as a voluntary consensus standard) could be even better than generic PDF, but the PTO has neglected to consider that better alternative. The PTO's explanation neglects legal obligations:

- The PDF standard has been in use for decades and is implemented by dozens of vendors. Each new update goes through a multi-year, multi-vendor standard-setting process. In contrast, DOCX is a *single company standard* belonging to Microsoft. It was submitted to ISO, but (as the PTO's own cite concedes) under an abbreviated "fast track" process involving minimal vetting. The standards that the PTO relies on are not "voluntary, consensus" standards conforming to NTTAA95 or Circular A-119.[17]

[17] The flawed standardization process was controlled almost exclusively by Microsoft, as explained in Carl Oppedahl, *The Fool's Errand that is DOCX* (December 27, 2022), at https://ssrn.com/abstract=4346907

- The public comment letters observed that PDF/A solves the problems that the PTO identified, at little incremental cost to the public (PDF/A is a standardized subset of the full PDF standard specialized for use in the archiving and long-term preservation of electronic documents—PDF/A prohibits features unsuitable for long-term archiving.[18]). The Final Rule gave not a word of consideration to PDF/A as an alternative—instead, the PTO demonstrated a closed mind approach to its rulemaking.
- The PTO's own internal "yearlong study" document states that PDF is "the right approach." See § I.E starting at page 19 of this letter, and Exhibit 1. But the PTO concealed this document during rulemaking. When we obtained it in early 2023 by Freedom of Information Act, the actual conclusion of the PTO's own study was 180º opposite the conclusion stated in the PTO's final rule and the PTO's representation to OMB in the final pre-publication review of the final rule in July 2020.

Third, the PTO's DOCX proposal violates the law in multiple respects, because the DOCX standard does not meet the PTO's legal obligations:

- A standard nominally directed to DOCX has been in effect since 2008—but in that time ***not a single vendor—not even Microsoft***—has implemented software that conforms to the standard as its default mode of operation.[19] Microsoft has never released external documentation for specifics of its own implementation, and continues to evolve its software without regard to the standard it requested in 2008. At least in part, that constant (and undocumented evolution) appears to be to disadvantage competitors. The ISO DOCX "standard," though it exists on paper, was adopted via a truncated procedure without the vetting that results in a voluntary consensus standard. The PTO did not observe the procedures required by NTTAA95 and Circular A-119, and thus cannot claim "it's a standard" as a rationale.
- The PTO's software further departs from the "standard" the PTO purports to rely on—the PTO implements only a subset, and forbids use of "standard" DOCX features that the public use in their patent applications. This issue has been raised multiple times over the years, and the specific test of "standard" DOCX features (Exhibit 4) was given to the PTO over six months ago. If the PTO has

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[18] ISO Standard 19005, *Document management — Electronic document file format for long-term preservation*, https://pdfa.org/resource/iso-19005-pdfa; https://www.iso.org/standard/71832.html

[19] Microsoft includes a "switch" in Word's "Save As" dialog, but as far as we know, it's almost never used. More importantly, the PTO has never mentioned this switch to its user community—even the PTO doesn't pretend that the standard is important.

any propensity to implement its new software to be "consistent with existing reporting and recordkeeping practices," § 3506(c)(3)(E), that is not visible to us.

- The DOCX standards do not offer the relevant guarantees: reliability, portability, or interoperability. In fact, they guarantee the opposite. The standards for DOCX leave many characteristics "implementation defined" and do not require that DOCX documents provide content fidelity. One of the comment letters gave an extensive list of "implementation defined" and other unreliable features of the two standards cited by the PTO. (Seventy-Three letter, Exhibit 11 at 13-19).
- Though both the ISO and ECMA standard documents for DOCX are over 5000 pages long, neither ever uses the text string "reliab" "interchan" or "interoper" the relevant properties. The string "reliab" appears nowhere. The word "portable" is used three times, none of which are relevant. The string "interchang" is used a few dozen times, none of which are relevant—titles of *other* documents and the like. The word "interoperable" is used only to note that the standard itself **doesn't** provide interoperability. All the DOCX standards offer is recommendations for further parameters that must be defined if interoperability is desired.
- Most important, *Microsoft does not implement the DOCX standards*, except to users that investigate and locate a hidden checkbox. Microsoft's web page, https://learn.microsoft.com/en-us/openspecs/office_standards/ms-oi29500/1fd4a662-8623-49c0-82f0-18fa91b413b8 states that Microsoft Word "is known to vary from or extend the specification."
- Microsoft Corp. discontinued new versions of Microsoft Office for desktops, and has announced that it will end support for all versions of Microsoft Office by 2025. https://learn.microsoft.com/en-us/lifecycle/end-of-support/end-of-support-2025 Instead, Microsoft will offer Office 365, a "subscription-based software as a service" (Internet based service that interacts with a user's PC by communicating with the PC over the Internet). Users have no control—indeed no visibility—into Microsoft's updates to Office 365. For third-party vendors (Libre Office, Google Docs, Word Perfect, Apple Pages, and **the Patent Office's** home-grown and undocumented software that attempts to read DOCX files), it will be impossible to necessarily know that changes occurred, let alone make timely changes to their programs to track Microsoft's changes with the precision and fidelity necessary to meet the high reliability necessary for patent applications. **It will be entirely impossible for the Patent Office to maintain the ability for applicants to file applications correctly over any amount of time.**
- The Library of Congress, on its page directed to various different software programs that purport to support the two DOCX standards, warns that "Although simple documents can be effectively converted, a round-trip to an identical document should never be expected." Library of Congress, *DOCX Transitional (Office Open XML), ISO 29500:2008-2016, ECMA-376, Editions 1-5*, https://www.loc.gov/preservation/digital/formats/fdd/fdd000397.shtml . The PTO's claim that DOCX is "supported by" multiple vendors is either intentionally false or willfully blind to practical reality.

- Articles describing the unreliability of content fidelity between different programs' treatment of DOCX files, and even between different versions of Word, were cited during notice and comment, and are generally known to those in the computer arts. These articles include Free Software Foundation, *Interoperability woes with MS-OOXML:…Lack of conformance clause*, https://fsfe.org/activities/msooxml/msooxml-interoperability.pdf; Abhishek Bhatnagar, *Is DOCX really an open standard?,* https://brattahlid.wordpress.com/2012/05/08/is-docx-really-an-open-standard (May 8, 2012); *If DOCX format is open source, why so many word processors have problem* [sic] *decoding this file format?*, comments of Joe Woo, a former program manager for Microsoft Word, https://qr.ae/pv26G5 ("Even with the same data, you cannot match the rendering fidelity of Word."—noting clash between Microsoft Word vs. Google Docs); Joel Madero, *Pointing the Finger – Interoperability and Microsoft's Share of the Blame*, https://joelmadero.wordpress.com/2014/10/23/ (Oct. 23, 2014) (noting incompatibility between Word for Windows and Word for Mac); Markus Feilner, *Complex singularity vs. openness*, letter to European Commission, at https://joinup.ec.europa.eu/sites/default/files/document/2014-06/complex_singularity_vs_openess.pdf (collecting studies and reports of others: the ISO 29500 DOCX standard fails to specify sufficient parameters to allow portability, even Microsoft has never released a strictly conforming implementation, Microsoft's own versions of Word are incompatible with each other, and other vendors cannot track Microsoft's changes. "[The ISO DOCX standard] causes problems when used in public services. For an ISO standard it shows surprising weaknesses: No single product complies with the only acceptable variant of the standard …, nor is there any alternative to Microsoft's products."). The PTO has never contested the showings of any of these articles. Instead, the PTO ignores any information contrary to its predetermined outcome.

PDF, the PTO's incumbent technology, is a voluntary consensus standard. Each variant, and each update (every three to five years) goes though an extensive standard-setting process. The same cannot be said of DOCX.

The PTO has never disputed that the DOCX standards ***do not offer the relevant guarantees*** of uniformity, portability, consistency, and reproducibility. By this silence, the PTO conceded the material point: different programs, and different versions of the same software program, and the same version of the same software program with different installed adjunct software and fonts, will often display the same DOCX file differently. These differences may convey different meanings, sometimes critically different meanings. Instead, in the August 2020 response to comments, 85 Fed. Reg. 46932, the PTO repeatedly reframed the comments to evade answering any comment that raised this issue.

Likewise, the PTO has never explained any problem with PDF/A as a filing vehicle.

In its Federal Register notices and blog posts, the PTO never acknowledges that its proposal creates immense burden for the public. The PTO's only response is to explain advantages for itself, and benefits for the public that the public view as minimal or false.

E. The PTO conducted a "yearlong study" that concluded that PDF is "the right approach"—but the PTO concealed the study from the public and from OMB

Comment letters to the PTO explained the problems with DOCX, and suggested that instead of DOCX, the PTO should accept text-based PDFs, and use the characters as they appear, without flattening to bitmap. The PTO responded with a falsehood, referring to a yearlong study (85 Fed. Reg. 46958 col. 1):

> *Comment 55:* One commenter wrote that instead of DOCX, applicants could upload most of their submissions as text-based PDFs. The commenter further stated that, currently, the USPTO's computer systems degrade files to flatten them to unstructured bitmaps. The commenter contends the problem is caused by the USPTO.
>
> *Response:* The USPTO conducted a yearlong study of the feasibility of processing text in PDF documents. The results showed that searchable text data is available in some PDFs, but the order and accuracy of the content could not be preserved. With DOCX, the Office is able to use the text directly and pass it on to USPTO downstream systems, which results in increased data accuracy and a more streamlined patent process.

The "yearlong study" was concealed from the public during the notice-and-comment period.[20] In early 2023, we obtained the "yearlong study," and the PTO's email of the Final Rule to Mr. Fraser in July 2020 (shortly before publication as a final rule), by Freedom of Information Act. The "yearlong study" is attached as Exhibit 1. The PTO's

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[20] USPTO, *Fee Setting and Adjusting* (version of Oct. 31, 2019), from https://web.archive.org/web/20191031141316/http://www.uspto.gov/about-us/performance-and-planning/fee-setting-and-adjusting.

representations in the Federal Register and to OMB in the July 2020 email differ from the actual conclusions of the study in multiple respects:

- The actual conclusion is 180° opposite the representation in the Federal Register—the study concluded that PDF is "the right approach" as quoted here:

> **5.9 CONCLUSION**
>
> Although the presented solution has some limitations, it takes the right approach towards achieving the objectives. Limitations may be addressed in the long term by extending the Java application and using future releases of PDFxStream to customize / enhance the product to suit USPTO's needs.

- The PTO's representation to OMB in July 2020 and in the August 2020 Final Rule notice was false and misleading.
- The Final Rule claims that the yearlong study shows that "the order … of the content [of PDF documents] could not be preserved." While not literally false, the Final Rule is materially misleading. The yearlong study mentions that the order of *images* cannot be preserved in a PDF, but contains no such finding for *text* content of a PDF. Patent application specifications must contain "Only a single column of text." 37 C.F.R. § 1.52(b)(2)(iii). Any "order" problems for *images* are irrelevant. The yearlong study makes no finding adverse to extracting text from PDFs that contain "Only a single column of text" with no images, like patent specifications, and the implication otherwise is false and misleading. While the June 2020 preamble to the Final Rule is not literally false, the preamble is clearly a violation of the obligation of candor that the PTO has toward OMB.
- Not a word in the study implies that text is difficult or unreliable to extract from text-based PDF documents, or that—for text, the content of patent application specifications—"the order and accuracy cannot be guaranteed." The PTO's representation to OMB in July 2020 was false and materially misleading.
- The Final Rule implies that the yearlong study found that "With DOCX, the Office is able to use the text directly and pass it on to USPTO downstream systems." The yearlong study makes no mention whatsoever of DOCX. The "yearlong study" offers no support for the PTO's claim that DOCX is any better able to "use the text directly and pass it on to USPTO downstream systems" than PDF. The PTO's representation to OMB in July 2020 was false and misleading.
- Neither the PTO's "yearlong study" and record made available to the public offer the slightest evidence in support of any claim that text-based PDF is, in any way, deficient to meet the needs identified by the PTO, and neither offers the slightest support for the PTO's claim that "With DOCX, the Office is able to use the text directly and pass it on to USPTO downstream systems" or to rebut the public's showing that DOCX ***can't***. The PTO's representations to OMB in July 2020 were false and misleading.

F. Terms of Clearance should expressly exclude burden arising under guidance

The PTO's 60-day notice only requests clearance for *regulatory* burden, and nowhere requests clearance for additional burden created by guidance:

> The items in this proposed new information collection relate solely to the impacts of the § 1.16(u) non-DOCX filing surcharge fee on the filing of nonprovisional utility applications under 35 U.S.C. 111, including continuing applications.

The 60-day notice *expressly* disclaims any clearance for additional burden arising from *guidance*. The Paperwork Reduction Act requires that the PTO allow applicants to file patent applications in ways "consistent and compatible, to the maximum extent practicable, with … existing reporting and recordkeeping practices." 44 U.S.C. § 3506(c)(3)(E). The PTO cannot adopt a regulation that appears to permit near-seamless transition, and then impose burden by subregulatory guidance. OMB, *Final Burden on Agency Good Guidance Practices*, 72 Fed. Reg. 3432 (Jan. 25, 2007). Terms of Clearance should expressly limit clearance to only *regulation*. The PTO must be reminded that it is forbidden from changing the rules at whim by flying guidance under the radar of notice-and-comment and in evasion of 5 C.F.R. § 1320.10.

The PTO's guidance imposes additional burden for which the PTO does not seek clearance. Some of this burden is documented in two guidance documents, https://www.uspto.gov/sites/default/files/documents/DOCX_QSG_Final.pdf and https://www.uspto.gov/sites/default/files/documents/DOCX_Feedback_Errors_and_Warnings.pdf. The PTO cannot (truthfully) certify that the DOCX information collection "is written using plain, coherent, and unambiguous terminology and is understandable to those who are to respond," § 3506(c)(3)(D), because further restrictions and burden arise from entirely undocumented restrictions that exist in no written document, but are enforced solely by software that refuses to accept patent applications that use standard—but more sophisticated—features of Word.

- The only regulatory requirement for fonts is "a nonscript type font." 37 C.F.R. § 1.52(b)(2)(ii). In contrast, the PTO's guidance document lists specific permitted fonts. The PTO's DOCX software refuses to accept patent applications written in valid "nonscript type fonts" that are not on the approved list. No clearance should be granted for this burden.
- The PTO's guidance lists "recommended" fonts. The guidance is false. Though there is no documented list of which fonts are permitted and which are not, a test of fonts from the Supreme Court's list of required fonts—Century Schoolbook, Century Expanded—shows that the PTO's DOCX filing system refuses an application that uses even a few characters of such fonts, such as in a page header or footer.
- Clients who write first drafts of their own patent applications don't know about the PTO's lists of permitted and unpermitted fonts. For decades, they've written their applications, sent them to their attorneys, and the attorneys file them. Sometimes the inventor uses different fonts in only a few places—such as in

tables or figure legends. Because of the PTO's guidance and software that set rules that are not stated in any regulation, applicants have to do extra steps of converting these client-authored documents to the PTO's preferred fonts.

- Patent attorneys tend to be fairly sophisticated users of their word processors. A host of features that patent attorneys use—bookmarks, cross-references, numbering, etc. None of these features are regulated by *regulation*. However, the PTO's uncleared guidance blocks any attempt to use them in a patent application.
- In earlier editions of the PTO's DOCX filing software, the PTO insisted on specific section headings, and refused applications with different headings (even though no such requirement existed). We have not evaluated the PTO's current software for all "gotchas" that still exist; we only observe that the software engineering approach has favored enforcing personal tastes of software engineers, with no consultation with knowledgeable users and without regard to regulation or the PTO's existing clearances.

Terms of clearance should remind the PTO that the PTO may not enforce uncleared guidance. This should go into effect immediately, rather than after the two-month delay we recommend for the primary clearance.

G. The PTO's interim remedy calls for unnecessary duplicative collection

To seek an approval, the PTO will have to certify that the information it seeks to collect is not "unnecessarily duplicative." 44 U.S.C. § 3506(c)(3)(B); 5 C.F.R. § 1320.5(d)(1)(ii).

On the very same day as this 60-day notice, the PTO announced its intention to violate this law. Having been forced to concede that DOCX is not a reliable way to collect patent application information, the PTO proposes to collect the information in duplicative form—an "auxiliary" PDF because that is known to be more reliable.[21]

The PTO proposes not only to collect duplicative information, but to shift the cost of correcting the PTO's erroneous processing of DOCX files onto the applicant, by forcing the applicant to file a petition to seek correction.[22] Since the PTO does not acknowledge, let alone request clearance for correcting the costs of its own software errors, Terms of Clearance should require the PTO to prove that no errors arise to be corrected.

PTO management is well aware of the technological and legal problems with its "two duplicative documents" proposal—we fully explained it in a letter after a meeting.

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[21] *Extension of the Option*, note 13 *supra*, 88 Fed. Reg. at 37036-7.

[22] *Extension of the Option*, note 13 *supra*, 88 Fed. Reg. at 37037 col. 1.

See letter of Feb. 14, 2023 (Exhibit 10, page 3). The PTO has never explained how an unreliable DOCX becomes reliable simply because a duplicative document is filed at the same time. If a DOCX is unreliable, the PTO shouldn't ask for it, let alone use it as its primary basis for processing. The solution to unreliable DOCX filing is not duplicative filing; the solution is to replace it with reliable filing.

H. A pattern of procedural breach

The PTO skipped many steps required by the PRA and OMB regulations. The PTO never sought clearance and made several false representations to OMB. For example:

- The PTO made none of the required filings at the required times.[23]
- In the July 2019 NPRM (84 Fed. Reg. at 37431, col. 1), the PTO claimed to have made the requisite filings under the Paperwork Reduction Act and to have obtained approval from the Office of Management and Budget ("OMB"), stating:

> P. Paperwork Reduction Act: The Paperwork Reduction Act of 1995 (44 U.S.C. 3501 *et seq.*) requires that the Office consider the impact of paperwork and other information collection burdens imposed on the public. This proposed rule involves information collection requirements which are subject to review by the OMB under the Paperwork Reduction Act of 1995 (44 U.S.C. 3501–3549). The collection of information involved in this proposed rule has been reviewed and previously approved by OMB under control numbers 0651–0012, 0651–0016, 0651–0020, 0651–0021, 0651–0031, 0651–0032, 0651–0033, 0651–0059, 0651–0063, 0651–0064, 0651–0069, and 0651–0075.

The public comment letters pointed out that there were no relevant filings at the relevant times,[24] including screen shots from the relevant pages of reginfo.gov,

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[23] The "Control Number History" page for 0651-0032 at https://www.reginfo.gov/public/do/PRAOMBHistory?ombControlNumber=0651-0032 shows no relevant filings around the time of the NPRM (July 31, 2019) or the Final Rule (August 3, 2020).

so no such review or approval could possibly exist. Nonetheless, the Final Rule notice repeated the false claim of a "reviewed" and "previously approved" control number (85 Fed. Reg. at 46985, col. 2):

> U.S.C. 3501–3549). The collection of information involved in this Final Rule have been reviewed and previously approved by the OMB under control numbers 0651–0012, 0651–0016, 0651–0020, 0651–0021, 0651–0031, 0651–0032, 0651–0033, 0651–0059, 0651–0063, 0651–0064, 0651–0069, and 0651–0075. In addition, updates to the aforementioned information collections as a result of this Final Rule have been submitted to the OMB as non-substantive change requests.

OMB's web site shows that no such filings were ever made. The PTO's statement in the Final Rule, 85 Fed. Reg. at 46985, that it had OMB approval for § 1.16(u) Non-DOCX Penalty Fee was false. OMB may infer, in view of the notification in the public comment letter, that the falsehood was intentional.

- Documents we received pursuant to a FOIA request[25] include an email conversation from late July 2020, in which the PTO sent Mr. Fraser a draft of the Final Rule requesting approval. The draft Federal Register notice attached to this email represented to Mr. Fraser, "To date, the Office has not received notifications of any issues resulting from the filing of applications in DOCX format." That was a falsehood.
- Many patent applications are written in word processors other than Word—Google Docs, Word Perfect, Libre Office, and the like. Equations are often set in specialized products for mathematics, such as LaTex. The PTO's own "survey" relied on in the Federal Register notice estimated this non-DOCX usage at about **20%**.[26] The entities making up this 20% won't have a choice. They will either

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[24] Letter of Seventy-Three Patent Practitioners to USPTO (Sep. 27, 2019), https://www.uspto.gov/sites/default/files/documents/Comment_Seventy_Three_Patent_Practitioners_092719.pdf at page 26.

[25] Emails to and from PTO personnel and Nicholas Fraser (of OMB) were produced in part in the PTO's production for FOIA Request F-21-00169. Despite the requirements of § 3507(e)(1) to make all written communications available, the PTO heavily redacted the relevant communications from its FOIA production.

[26] NPRM, 84 Fed. Reg. at 37413 col. 2. The PTO violated the Administrative Procedure Act and Information Quality Act by keeping this "survey" secret during public comment. The public requested it by FOIA over two years ago; the PTO has not produced it—three years later, this

have to change the way they prepare applications, which may be onerous, or pay the fee. But in its May 2021 Supporting Statement to OMB, "The USPTO presently estimates that … approximately **10%** of initial submissions made by the public will incur the additional non-DOCX filing surcharge."[27] The PTO offered no support for its estimate of "10%," when its own survey showed 20%.

- The other word processors referenced in the preceding paragraph do ***not*** produce DOCX files that can be reliably imported by the PTO.[28] The public noted the requirement, § 3506(c)(3)(E), that patent application filing be "implemented in ways consistent and compatible, to the maximum extent practicable, with the existing reporting and recordkeeping practices," and asked the PTO to explain (a) the validity of this "study," and (b) to explain how these 20% are to file their applications. The PTO's Final Rule offered only a *non sequitur*, explaining benefit to the PTO itself, and failing to address burden on those who are to respond.[29]
- In the Final Rule, the PTO's stated rationale for insisting on DOCX filing instead of text-based PDF is stated four times in nearly identical language, *e.g.*, 85 Fed. Reg. at 46959 col. 1-2, relying on a "yearlong study:"

"survey" remains a "black box." The PTO has not made available any reason to believe that the PTO's "survey" complied with OMB's guidance for influential statistical information.

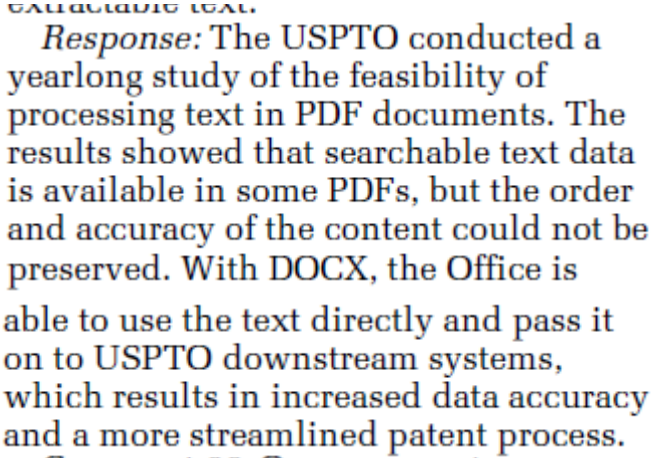
[27] May 25, 2021 Supporting Statement for 0651-0032, ICR 202011-0651-006, at https://www.reginfo.gov/public/do/DownloadDocument?objectID=106619502, at 14. The PTO offered no supporting record, let alone evidence, in support of its claim for "10%."

[28] We attach several examples of changes in Exhibit A to this letter.

[29] Final rule, note 1 *supra*, Response 63 at 46959, col. 1:

receiving DOCX filings properly.

Response: A survey was conducted by the USPTO to obtain this data. An advantage of submitting in DOCX format directly is that submitted files from all applicants are validated and converted to PDF by USPTO systems in a consistent manner. The USPTO continuously performs rigorous testing to ensure that document integrity is preserved.



extractable text.

Response: The USPTO conducted a yearlong study of the feasibility of processing text in PDF documents. The results showed that searchable text data is available in some PDFs, but the order and accuracy of the content could not be preserved. With DOCX, the Office is able to use the text directly and pass it on to USPTO downstream systems, which results in increased data accuracy and a more streamlined patent process.

This "yearlong study" was neither referred to in, nor made available for public vetting with, the NPRM. It was not made available at the time of the Final Rule. We only received it as a result of a FOIA request.[30] Once we obtained it, it became apparent that the PTO's representation in the Final Rule fails "Information Quality" principles. In fact, as noted above multiple times, the conclusion of the "yearlong study: is 180° opposite the PTO's representation to the public and to OMB: PDF is the "right approach." (See. e.g. discussion at See § I.E starting at page 19 of this letter, and Exhibit 1.) The yearlong study says not a single word about DOCX—the PTO's conclusion in the Final Rule that DOCX is suitable is entirely unsupported. The PTO materially misrepresented the evidence it ***did*** have to the public and to OMB.

- In the Supporting Statement of May 25, 2021, the PTO did not dispute the $200 million estimate offered by the public comments—instead, the PTO dodged the issue, asserting that any explanation "would be premature and not meaningful to the cause of estimating public burden."[31]
- The PTO has evaded statutory requirements for rulemaking and information collection clearance by imposing substantial regulatory content and burden via guidance.[32] The PTO issued a guidance document for patent application filing.

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[30] American Environmental and Engineering Consultants (AEEC, LLC), *Text2PTO Proof of Concept White Paper Version 1.0* (24 Mar. 2015), as produced by USPTO under FOIA request F-21-00169 on January 13, 2023.

[31] May 25, 2021 Supporting statement, note 27 *supra*, at 14.

[32] U.S. Patent and Trademark Office, *DOCX Conversion Services Errors and Warnings*, https://www.uspto.gov/sites/default/files/documents/DOCX_Feedback_Errors_and_Warnings.pdf (last updated Nov. 11, 2022). Note that the PTO understands that information it wishes to disseminate reliably must be in PDF, not DOCX. The PTO does not explain the double standard.

This document goes far beyond the regulation, requiring specific fonts, paragraph numbering, section headings, and the like. The PTO updates this guidance document from time to time without public notice, and then applies it retroactively. This violates the APA,[33] the *Good Guidance Bulletin*, and Commerce's regulations governing component agencies' use of guidance (15 C.F.R. § 29.2).

- Rule 0651-AD31 involved ***$4 billion in fees***, and raises user fees by several hundred million dollars. It purported to create this DOCX information collection of $200 million per year, and another new information collection at about $120 million per year.[34] Yet, the PTO claims that the rule is "not significant" for Executive Order 12866. 85 Fed. Reg. at 58283:

> C. *Executive Order 12866 (Regulatory Planning and Review):* This rulemaking has been determined to be not significant for purposes of Executive Order 12866 (Sept. 30, 1993).

- The PTO evaded review under Executive Order 12866 by claiming that this information collection was "expected to involve a transfer payment."[35] There is no transfer payment. The $ 4 billion in fees are used entirely for government consumption.
- The PTO has imposed entirely unnecessary burden through untimely, inconsistent, and selective information dissemination. Since the information collection was published as a final rule, the PTO has issued three notices of delay. One was published **three days** before the information collection was due

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[33] *Appalachian Power Co. v. EPA*, 208 F.3d 1015, 1020 (D.C. Cir. 2000) ("The phenomenon we see in this case is familiar:" agency may not issue broad or vague regulations, and then flesh out the specific binding provisions by guidance); *Hoctor v. Dep't. of Agriculture*, 82 F.3d 165, 169-70 (7th Cir. 1996) (when regulation for zoo fences requires "such strength as appropriate ... [and] to contain the animals," guidance requiring fences to be eight feet is not "interpretive."); *U.S. v. Picciotto*, 875 F.2d 345, 347 (D.C. Cir. 1989) (regulation purported to permit the agency to impose "additional reasonable conditions and … limitations" by guidance and wording on a permit; Court reminded agencies that they cannot grant themselves *ad hoc* substitutes for statutory rulemaking procedure).

[34] We commented on that uncleared $120 million information collection in 2021 at https://www.reginfo.gov/public/do/DownloadDocument?objectID=110309202

[35] NPRM, 84 Fed. Reg. at 37400, col. 3; 37430, col. 2; Final rule, note 1 supra, at 46935, col. 1; 46972, col. 1-2; 46984 col. 3.

to go into effect.[36] On March 27, the PTO issued another notice of delay—but the PTO had "leaked" the delay to a few selected parties as early as March 9. This March 27 notice was only **one week** before the scheduled effective date. This stop-start-stop-start has forced the public to absorb transition costs multiple times, none of which are captured in its estimates in the June 2023 60-day notice.

- The comments on the PTO's May 2021 blog notice indicate a number of other issues with DOCX filing.[37] Some are software bugs and are potentially fixable; some raise questions that are inherent to DOCX and cannot ever be fixed. Exhibit 5 includes the experiences of one person who consolidated comments and bug reports of many other users and submitted them through the PTO's bug reporting system—and reports the PTO's non-response (and apparent indifference) to those comments. The fixable bugs aren't getting fixed. The unfixable ones aren't even acknowledged.
- This is not a free-standing information collection. It only makes sense as an amendment to 0651-0032, "Initial Patent Applications," as the PTO acknowledges. 88 Fed. Reg. at 37040 col. 2. There's something fishy in the designation "0651-New." In its upcoming supporting statement, PTO should fully explain why it attempts to separate this information collection from the underlying 0651-0032 patent applications. Perhaps the PTO is attempting to evade review of a second bootleg, which we discuss in section II of this letter, starting at page 29.

I. The PTO will suffer no prejudice if the ICR is denied: the information collection is not "necessary for the proper function of the agency"

The PTO will be required to certify that DOCX collection is "necessary for the proper performance of the functions of the agency." 44 U.S.C. § § 3506(c)(3)(A). The PTO has already delayed implementation by three years. The public has explained that full text-searchable PDFs offer the same advantages that the PTO hopes to gain from DOCX filing (which is why all courts and other agencies require text-searchable PDF for formal filings)—the PTO has offered no explanation of why text-searchable PDF would

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[36] *Setting and Adjusting Patent Fees During Fiscal Year 2020*, 86 Fed. Reg. 66192 (Nov. 22, 2021) (five weeks before effective date, delay implementation from Jan. 1, 2022 to Jan. 1, 2023); *Setting and Adjusting Patent Fees During Fiscal Year 2020, Final Rule*, 87 Fed. Reg. 80073 (Dec. 29, 2022) (**three days** before rule is to go into effect, delaying from Jan. 1, 2023 to April 3, 2023); *Setting and Adjusting Patent Fees During Fiscal Year 2020, Final Rule*, 87 Fed. Reg. 18052 (Mar. 27, 2023) (**seven days** before rule is to go into effect, delaying from April 3, 2023 to Jun. 30 2023).

[37] See Director's Forum: A Blog from USPTO's Leadership, *Modernizing patent filing with DOCX* (May 25, 2021), https://www.uspto.gov/blog/director/entry/modernizing-patent-filing-with-docx

be meaningfully disadvantageous to the PTO, or any explanation of purported advantages of DOCX over full-text PDFs. At best the PTO has offered only *non sequiturs*. Moreover, the PTO has been successfully receiving applications in PDF format and has been examining them and issuing patents based on them for over 20 years. Further delay merely continues the *status quo* and will not interfere with agency operations.

Nearly identical issues were raised in a previous ICR, 202011-0651-006, concluded in May 2021. This ICR was "Approved with change." Differences between the Supporting Statement filed in December 2020 and the replacement Supporting Statement of May 25, 2021 suggest that this very DOCX information collection was the issue. If OMB did issue terms of clearance, the PTO did not implement them—the PTO has plowed ahead with its plan with no observable change (other than delay). The PTO should be instructed that (a) it is to discontinue collecting applications in DOCX forthwith, until it has a clearance, (b) the PTO is to stop imposing burden by subregulatory guidance, forthwith, and (c) any clearance should be only long enough for the PTO to do an organized decommission of its DOCX filing system.

The PTO will likely find that collecting patent applications in some variant of PDF (PDF/A, "tagged PDF," or PDF/UA) is indeed "the right approach," as its own "yearlong study" concluded. The PTO will suffer no prejudice if this ICR is denied.

II. Bootleg 2: Economically significant effects from a purportedly "minor" change in guidance for 0651-0032

In March 2023, the PTO issued an amendment to the PTO's most significant guidance document, that, in addition to systematically violating procedural requirements of the PRA, imposes paperwork burden exceeding the threshold in Executive Order 12866 § 3(f)(1) for an economically significant rule. This guidance change will raise tens of millions of dollars in fees for the PTO, but at a burden of several hundreds of millions of dollars per year for inventors, and about the same magnitude of costs on competitors who will have much more confusing patent landscapes to navigate. This guidance change is similar in effect to a regulation that was submitted to OMB as a "Change Worksheet"[38] that was later withdrawn at the direction of OMB. It is also remarkably similar to another guidance change that was quashed in February 2009, and almost identical to a guidance change attempted in 2010.[39] Having tried and repeatedly failed to obtain above-board approval, the PTO now publishes the guidance and asks OMB to "catch me if you can."

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[38] https://www.reginfo.gov/public/do/PRAViewDocument?ref_nbr=200703-0651-001

[39] Your former colleague, Dr. Richard Belzer, wrote a comment letter which is at https://www.uspto.gov/sites/default/files/patents/law/comments/belzer13aug2010.pdf It remains applicable, nearly word-for-word, today.

This information collection is a pure money grab by the PTO to raise fee collections. There is no public interest that supports what the PTO attempts here, and indeed several blog posts explain how it is *contrary* to the public interest.[40]

When a patent application claims two "independent and distinct" inventions (for example, a chemical compound, and a new synthesis process whose first known use is to form that compound), statute gives the PTO the authority to require "division" or "restriction" to only one of the inventions; the applicant must file a second patent application to the other invention. 35 U.S.C. § 121. For decades,[41] the PTO has had an extensive guidance document, the *Manual of Patent Examining Procedure*, Chapter 800, that explained detailed criteria for various specific kinds of inventions, specifying when they may be divided from each other and when not. For example, "process of making and product made" or "product and process of using," etc.—how different do these inventions have to be in order to be divided? When does it make sense to split two separate inventions into two separate patents, and when does it make sense to keep them together? These criteria were remarkably stable from the mid-1950s until about 2006.

In 1999 and 2011, Congress tried to make the PTO more "like a business," with more control over its fees. Since 2006, the PTO has attempted to change the rules for "restriction requirements" multiple times. Each of these changes is motivated solely at supplementing PTO's budget. (Senior PTO career staff, in turn, have compensation systems that reflect the PTO's financial performance. 35 U.S.C. § 3(b)(2)(B).) Each change reduces the amount of examination effort per patent application, and forces applicants to file follow-on applications and pay additional fees. Under the radar, the PTO has made a number of small changes purely by changing guidance, with neither APA rulemaking nor PRA compliance.

This time, the PTO is attempting a *very* large change, at nine-figure cost to the public (if the quantity of patent protection is maintained *ceteris paribus*).

First, the PTO's fees escalate with the number of claims. Under this revised guidance, however, the PTO would take away the examination and benefit for which the applicant paid these additional fees.

Second, the statute only authorizes the PTO to restrict between inventions that are "independent and distinct." From the 1950s until now, the PTO's guidance has only allowed restriction where the two inventions are genuinely substantially different. In

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[40] Julie Burke, PhD, *Recent MPEP Changes Complicate the Sticky Wicket of Restriction Thickets*, https://ipwatchdog.com/2023/03/14/recent-mpep-changes-complicate-sticky-wicket-restriction-thickets/id=157729 (March 14, 2023). Dr. Burke previously was a quality analyst at the PTO.

[41] https://www.uspto.gov/web/offices/pac/mpep/old/index.htm

contrast, this new guidance allows examiners to restrict based on technicalities that have no relationship to substantive differences between the two inventions. Under the new guidance, inventions that are legally distinct, but that stem from the same inventive concept and are closely-related technologically (for example, a computer program stored in memory, and the method performed by the program as it executes), can now be divided because of that purely legal difference.

A recent blog article[42] explains how this harms the public: the new guidance will lead to "patent thickets," multiple patents that are very close to each other but that differ slightly from each other. Patent thickets are *much* harder for a prospective competitor to analyze, to evaluate freedom to operate around a patent portfolio. These separate patents cannot use the simplification and organization techniques that are used to confine complexity within a single patent, which leads to additional burden for the applicant, and additional costs for competitors.

Further, the same statute that gives the PTO the power to divide applications has a *quid pro quo*: when the PTO divides an application, that division waives the requirement for co-ownership of closely-related patents. The new guidance will allow the multiple daughter patents to be owned by different entities, who can then act independently, such as by suing the same target for infringement of multiple patents by multiple plaintiffs. This kind of abuse of the patent system has been a concern of both Congress and the Executive branch—but the PTO now encourages the practice because it is in the financial interest of the PTO as an agency, and of senior career staff personally, to set rules that are contrary to the public interest.

Third, the PTO disseminated this new guidance internally in July 2022,[43] yet only published it in the Federal Register on March 3, 2023.[44] But the PTO informs the public that it will be applying this new guidance retroactively.[45] Agencies do not have retroactive rulemaking authority unless Congress explicitly delegates such authority, *Bowen v. Georgetown University Hosp.*, 488 U.S. 204, 208–09 (1988), and the PTO has no such delegation.

This guidance change will raise many tens of millions of dollars in fees for the PTO, but at a burden of several hundreds of millions of dollars per year for the public.

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[42] Burke, *Recent MPEP Changes*, note 40, *supra*.

[43] In March 2023, Dr. Burke phoned the PTO's Office of Patent Legal Administration, and was informed "The MPEP revisions published in February 2023 have a revision indicator of [R-07.2022], meaning that they reflect USPTO patent practice and relevant case law as of July 31, 2022." Burke, *Recent MPEP Changes*, note 40, *supra*.

[44] *Manual of Patent Examining Procedure, Ninth Edition, Revision of July 2022*, 88 Fed. Reg. 13437 (Mar. 3, 2023).

[45] Dr. Burke's report of personal conversation, note 43, *supra*.

The issues here are very similar to RIN 0651-AC00 in 2007. The public comments are at https://www.uspto.gov/patents/laws/comments-public/comments-july-2007-examination-patent-applications-0 and were nearly 100% negative, and are largely applicable here. In 2007, the PTO attempted to sneak this past OMB in a change worksheet, https://www.reginfo.gov/public/do/PRAViewDocument?ref_nbr=200703-0651-001 In 2008, OMB "directed" the PTO to self-rescind this information collection and worksheet, ICR 200707-0651-005, https://www.reginfo.gov/public/do/DownloadDocument?objectID=4405504. The excess burden arises under both 0651-0031 in additional responses directly to the new restriction requirements, and under 0651-0032 for additional new applications filed.

In short, this is a classic case of unintended consequences that arise when an agency amends a significant guidance document in self-interest, without observing the procedures of the *Good Guidance Bulletin*, Executive Order 12866, and the Paperwork Reduction Act.

At the very least, for both control number 0651-0032 and control number 0651-0031, OMB should inform the PTO that its authority to enforce guidance is limited to MPEP Chapter 800 as it stood before June 2022.[46] The PTO should be reminded that: (a) it does not have authority to change the rules without adhering to the APA and PRA, (b) it does not have authority to change rules retroactively, (c) it may not impose burden on the public without the notice-and-comment required by 44 U.S.C. § 3506(c)(2)(A), 5 C.F.R. § 1320.5(a), § 1320.8(d)(1) and § 1320.10(a), and (d) the PTO may not amend a significant guidance document without observing the *Good Guidance Bulletin*.[47]

III. Conclusions

For the DOCX rule, OMB should grant a two-month clearance, with instructions that this clearance is given for the sole purpose of allowing the PTO to perform an orderly wind-down and decommissioning of its DOCX filing software. Clearance should be limited to only *regulatory* burden; Terms of Clearance should exclude burden by *guidance* (whether written document or by software enforcement), and should require the PTO to absorb costs of correcting errors introduced by the PTO's software (the PTO has never requested clearance for the burden of error correction). Terms of Clearance should require the PTO to include a warning on its DOCX filing page:

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[46] By all rights, clearance should be limited to Chapter 800 as it stood in 2006. For dozens of small changes incrementally implemented since then, the PTO has effectively ignored the PRA.

[47] Like dozens of others, this action also meets the definition of an economically significant regulation under Executive Order 12866 §3(f)(1). Neither information collection we discuss in this letter complied with EO 12866.

Filers are cautioned that the USPTO's DOCX filing system has a history of poor data accuracy. Filers choosing to use DOCX and the USPTO's DOCX filing system should upload a PDF auxiliary document to provide a basis for correcting errors that the PTO may introduce in processing of DOCX files, and should carefully review the validated PDF document generated by the USPTO's filing system. Use of DOCX and the USPTO's DOCX filing system is not required. Filers may use the USPTO's other electronic filing systems to file their applications.

From the outset, the project was based on a technological fallacy that can never be, and that will never work with acceptable reliability. The public comment letters have been overwhelmingly negative. Yet the PTO's only response has been to misparaphrase the comments to evade fair answers, entirely skip some comments, and to make objectively false claims about the conclusions of the study that the PTO itself commissioned. The PTO has attempted to evade the Paperwork Reduction Act for years—the day of reckoning has arrived, and it's time to shut it down.

The right technological solution is to do what every other court and agency does: accept text-based PDF filings, and maintain them exactly as they are filed, without downgrading them to image-based bitmap PDF as the PTO does today. The right resolution for both the PTO and the public is to simplify the PTO's software systems, and remove one unnecessary component from the PTO's current filing software, the component that flattens text-based PDFs to bitmaps. If the PTO simply removed this component, and kept the exact files that users submit without degrading them, and required text-based PDFs from those few filers who currently file bitmap PDFs, the PTO would have exactly what it needs, at near-zero burden for the public (relative to today's practice).

By statute, OIRA has a number of obligations, including to "oversee the use of information resources to improve the efficiency and effectiveness of governmental operations to serve agency missions, including burden reduction and service delivery to the public. … [T]he Director shall … provide direction and oversee … the … use of information technology." 44 U.S.C. § 3504. OIRA should investigate to find out who is covering up the problems with this DOCX proposal, and for OIRA to seek accountability for repeated, apparently willful, avoidance of Information Quality principles and of the agency's obligations to use IT "appropriately." Exhibit 9 is a two-page list of imperatives that we as engineers believe to be essential to success. We gave this list to the PTO in January 2023, and the PTO has not replied in any way—certainly not to identify any reason that any item on this list is any less than imperative. We suggest that OMB should present principles 0, 1, 2, 3, and 4 to the PTO as mandatory requirements for any future plan.

As we wrote in our letter of December 2020[48] and section I.H starting at page 23 of this letter, the DOCX information collection has reached this stage because of a series of poor engineering decisions, false representations, and falsified certifications by the PTO to OIRA. A fair inference is that these false statements were given intentionally to evade OIRA review of the PTO's predetermined outcome. If a private sector entity gave similar falsified certifications to a government agency, persons that signed off on the falsification would be subject to criminal prosecution, and any lawyers would be subject to discipline, up to and including disbarment. OIRA should conduct a full investigation to identify the people in the PTO responsible for the pattern of false representations and certifications so that they can be subject to similar consequences.

Point of contact. A single point of contact can refer specific issues to specific authors of various sections of this letter. Please route any questions or further inquiries to David Boundy, DavidBoundyEsq@gmail.com, (646) 472-9737.

Respectfully submitted,

152 Intellectual Property Practitioners

Attachments:

Exhibit 1. The PTO's "yearlong study"

Exhibit 2. Affidavit of Tiffany Monroe

Exhibit 3. Examples of patent applications mangled by the PTO's DOCX filing system

Exhibit 4. Test exhibit showing standard features of Word DOCX that are refused by the PTO's filing software

Exhibit 5. Comments on the PTO's proposal from attorney blogs and email lists

Exhibit 6. Affidavit of Bradley A. Forrest, original at https://downloads.regulations.gov/PTO-P-2020-0050-0004/attachment_1.pdf pages 31-39

[48] https://www.reginfo.gov/public/do/DownloadDocument?objectID=107472702 and https://www.reginfo.gov/public/do/DownloadDocument?objectID=107472802

Exhibit 7. David Boundy, 60-day comment letter, 0651-0032, *Initial Patent Applications* (Nov. 30, 2020), excerpts, full letter at https://downloads.regulations.gov/PTO-P-2020-0050-0004/attachment_1.pdf

Exhibit 8. Letter to Kathi Vidal (Dec. 23, 2022)

Exhibit 9. Design principles, document given to PTO management in January 2023 as an agenda for a meeting of March 2023

Exhibit 10. Letters to Richard Seidel and Mark Polutta of Jan. 25, 2023; Feb. 2, 2023; Feb. 14, 2023; Mar. 2, 2023; and Mar. 23, 2023

Exhibit 11. Excerpt *Seventy Three Patent Practitioners*, our letter in response to the fall 2019 Notice and Comment request (Sept. 27, 2019), full letter at https://www.uspto.gov/sites/default/files/documents/Comment_Seventy_Three_Patent_Practitioners_092719.pdf

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Exhibit 1

The PTO's "yearlong study"

Text2PTO Proof of Concept White Paper

Version 1.0

24 March 2015

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1 Introduction

This white paper presents details about a Text2PTO prototype for extracting text, layout, and formatting information from PDF files that have text behind them. A proof-of-concept (POC) was conducted to design a solution that could accept incoming PDF files and extract text content along with formatting and layout information. This document is presented by AEEC's Application Architecture Software Engineering Team (AASET) to the United States Patent and Trademark Office (USPTO).

1.1 BACKGROUND

USPTO currently accepts patent applications through its Electronic Filing System (EFS). EFS accepts PDF documents during application submission. Applicants can use various tools to create PDFs for EFS submission. More than 45% of these submitted PDFs have text behind them. Due to the differences in the COTS or open source tools used by the applicant to generate the PDFs, the format and structure of the PDFs differ. Currently, USPTO relies on OCR to extract text from TIFF representations of these submitted PDFs. The OCR-extracted text and layout information is used to generate XML4IP documents.

2 Problem and Scope

USPTO's current approach of using OCR to extract text does not produce fully reliable results. There would be great advantages, including an increase in reliability, if it were possible to use the applicant submitted text contained within the PDFs for generating XML4IP documents.

2.1 Requirements for Prototype

USPTO requirements for the proposed Text2PTO prototype are as follows:

- The system shall support monitoring incoming files to the INPUT Folder
- The system shall check if the given input file is a scanned or text based PDF file
- The system shall capture the file metadata that can be used to analyze file formats and identify their success rate for extracting text
- The system shall handle exceptions and capture the cause of exception
- The system shall extract the text and formatting information from the PDF file and generate a valid XML file
- The system shall support batch processing

2.2 Scope and Assumptions

- All PDF files to be extracted will be present in a designated folder.
- Prototype testing will be done on samples provided by the USPTO team.
- Performance and scalability is not a primary concern while designing the prototype
- There is no pre-defined format for the generated output XML. The prototype team can define their own format.
- The prototype team is not responsible for generating XML files in XML4IP format.

2.3 High Level Objective

Research the PDFs from EFSWeb submissions that contain text to determine if the text in the PDFs can be extracted to an XML format that may eventually be converted to XML4IP documents.

Conduct market research and develop a prototype to identify a tool that can extract text, format, and layout information consistently and reliably from PDFs that have text behind them.

3 Solution Analysis

3.1 PDF Brief Introduction

A PDF file encapsulates a complete description of a fixed-layout flat document, including the text, fonts, graphics, and other information needed to display it. The appearance of everything that each page contains is completely specified. The structure of a PDF file does not match the structure of the PDF document it describes. PDF documents are display-oriented and the specification is not built to address text extraction concerns. The underlying structure of a PDF is multi-layered and very complex. Elaborating on the intricacies of extracting text from a PDF is outside the scope of this document. However, additional details can be found by referring to the following articles:

http://partners.adobe.com/public/developer/tips/topic_tip31.html

http://www.planetpdf.com/developer/article.asp?ContentID=navigating_the_internal_struct&page=0

3.2 Selecting a Tool

As discussed in the previous section, text / format extraction from a PDF is a complex task. There are several tools in the market that have sought to solve this problem with varying degrees of success. Most of these tools do a good job extracting text from PDFs, but they lack reliability and consistency in extracting the document's format, layout, and structures. Developing a tool from scratch to extract text, format, and layout information from PDF documents would be a very complex task, and may not produce an acceptable output. Therefore, this prototype effort focuses instead on identifying a tool that could get as close as possible to our objective.

3.3 Solution Overview

We followed a 3-step process to identify and develop a solution:

1. Identify format, layout, and structural elements of PDF documents to be extracted.
2. Conduct market research on tools that can extract the identified elements from PDFs.
3. Develop a Java-based solution around selected tools in order to:
    a. Integrate the tool in the USPTO environment
    b. Support batch processing
    c. Output an XML document
    d. Address shortcomings of the tool

4 Tool Selection

This section discusses the criteria and the process used to select the tool that will be used to extract text, metadata, format, and layout information from PDF files.

4.1 Criteria for Tool Selection

A following set of criteria were defined to compare and select tools for this prototype:

Extraction Capabilities: The primary criterion for tool selection is to extract text along with layout, format, and structure information. With that in mind, the following list of elements that the selected tool needed to extract from PDFs was created and includes:

- Text
- Underlines
- Strikethrough
- Bold and Italics
- Lists
- Tables
- Images
- Mathematical Formulas
- Chemical Formulas
- Indentation

Extensibility: It is very difficult for any of the tools to produce a result that exactly matches USPTO's requirement. Therefore, it is important that the selected tool provide some means of extending / customizing / refining its features.

Maturity: The tool should already be in the market and should be in use by at least a few large customers.

Integration: We should be able to integrate the tool into an existing or custom application built for this purpose. As a result, it should offer an API or a service.

Price: The overall cost of deployment for the tool needs to be considered.

Deployment Environment: The tool should be able to deploy with ease and on different environments.

Support: Support should be available in the form of a license or active user community.

4.2 First Cut

A market research study was conducted to identify tools that could be used for the purpose of this prototype. After market research, 13 tools were selected for further analysis in order to identify the best tool for the prototype. The results of this study comparing each of the 13 tools to our selection criteria are provided in **Table 1**.

Name	API/Tools	Open Source	License	Support	Environment	Features
Acrobat Pro	PDF Library SDK	No	Contact Adobe for price	Yes	Windows, UNIX	- Support for conversion to PDF/X-1a and PDF/X-3 standards - Support for Mac 64-bit platform - PDF Library SDK includes 17 completely functional solution samples - Complete documentation, including an application programming interface (API)
PDFBox	Java Library	Yes	Apache License 2.0	Its own issue tracker. Attach PDF file to get support	Windows, UNIX	More Command Line Tools
JPedal	- jPedal Java Library- Extracts text and images - PDF to HTML5 library	No	Server License Java Library--$699/per year PDF Conversion- $5000+$0.20 per page	Yes (available from IDR Solutions)	Windows, UNIX	- Available as Web Service API - Uses as Swing Application - Integration with Server Applications
jPDFText	Java Library	No	jPDFText CPU-Pair License(s) /$400	Yes (Qoppa Software)	Windows, UNIX	
AbleToExtract	PDF to HTML SDK Developer Tool	No	1 Developer License / $2,500	Yes (Investintech.com)	Windows only (standalone)	Converts PDF file into different formats Excel, MSWord etc.

Name	API/Tools	Open Source	License	Support	Environment	Features
PDF2XML	Command line tools only	Yes	GNU General Public License (GPL), v2	No	Windows, UNIX	- PDF to XML conversion - Text extraction - Vectorial instruction extraction
PoDoFo	Portable C++ library	Yes	GNU Library or Lesser General Public License version 2.0	No	All	Extracts images only. Does not support extraction of text, font and table.
PDF-Parser	Standalone PHP library http://www.pdfparser.org/	Yes	GPLv3 License	No	Requires PHP 5.3	- Extracts metadata - Extracts text from ordered pages
PDFExtract	https://github.com/CrossRef/pdfextract	Yes		No	Requires Ruby 1.9.1 and above	- Open issues with extracting references - It extracts text
veryPDF	Multiple tools available to extract the data	Yes	Commercial License	Yes	All	- User friendly tools - Supports Mac OS
PDFMiner	Command line tools and PDFMiner library supports Python	Yes	MIT/X License	No	All	- Written entirely in python - Supports various fonts - PDF to HTML Conversion - Tagged content extraction
LibreOffice	Java and C++ APIs	Yes	Mozilla Public License v2.0	Community Support & Professional support from Collabora	Windows, Mac, Linux	
PDFxStream	Java Library	No	$5000 per server	$1500 for 2 year support	Windows, Unix, Mac	- Text, Image and Form extraction - Support for Unicodes, embedded and standard fronts - Table extraction utilities - Handlers to customize output format

Table 1: Comparison of PDF Text Extraction Tools

The following five (5) tools were eliminated from further consideration because of their inherent limitations:

jPDFText

- Extracts only text
- Unable to extract font, tables, strikethrough lines, etc.

PDF2XML

- No text format information
- Does not provide Developer Libraries
- Extracts only plain text
- No professional support and community not active

PoDoFo

- Accepts only simple PDF files to extract text
- No Commercial Support available for this product

PDFExtract

- Does not extract all required format information
- Not mature enough
- No product support

PDF-Parser

- Only simple text extraction
- No product support

4.3 SECOND CUT

Each of the eight (8) remaining tools was installed in the development environment and tested against sample PDF documents that contained all the elements needed for extraction. The results of this analysis for the 8 tools are shown in **Table 2**.

Criteria	Acrobat Pro	Libre Office (SVG)	PDFxStream	PDFBox	veryPDF	AbleToExtract	JPedal	PDFMiner
Text	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Underlines	Yes	Yes	Yes	No	Capture as images	Yes	No	No
Strike-throughs	Yes	Yes	Yes	No	Capture as images	No	No	No
Bold and Italics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Lists	No	No	No	No	Yes	Yes	No	No
Tables	Yes	Yes	Yes	No	Yes	Yes	Each cell as table	No
Images	Inconsistent	Inconsistent	Inconsistent	Inconsistent	Inconsistent	Inconsistent	No	No
Mathematical Formulas	No	No	Inconsistent	No	No	No	No	No
Chemical Formulas	No	No	No	As Images	As Images	As Images	No	No
Indentation	Yes	No	Yes	No	Yes	No	No	No

Table 2: Comparison of PDF Text Extraction Tools

Based on the above results, three (3) tools were selected for further analysis: Acrobat Pro, LibreOffice, and PDFxStream.

4.4 Final Cut

In this phase, Acrobat Pro, PDFxStream, and LibreOffice were further analyzed to determine which would be chosen as the final product. A Java application was developed to interface with these tools for further testing.

4.4.1 Acrobat Pro

Prior to this phase, 'Acrobat XI Pro' software was used to test the conversion capabilities of this tool. Acrobat also provides an SDK called 'Adobe PDF Library SDK' which purports to provide

the same programmatic capabilities of the GUI tool. Upon experimenting with the SDK, it was determined that the conversion feature is packaged into another product called 'Adobe Livecycle'. Adobe Livecycle Enterprise Suite is an enterprise document and form platform that helps to capture and process information. One of the modules in the suite is an 'Export Service' that takes PDF as an input and generates HTML.

Limitations:

- The 'Export Service' is only available for the Windows environment.
- Livecycle is a complete suite that comes with an integrated J2EE server, making deployment and maintenance more difficult.
- The 'Export Service' is a very small component of the suite and is not sold independently, resulting in a high licensing cost.
- The service is like a black box and it cannot be customized or extended.
- Results were not consistent.
- It does not provide error notifications when elements are missing in the extracted document. This forces all extracted documents to be compared manually with the original PDFs for errors.
- There is no support for extracting lists.
- Image retrieval is inconsistent and cannot retrieve vector images
- There is no support for mathematical formula retrieval.
- There is no support for chemical formula retrieval.

4.4.2 LibreOffice

LibreOffice is a complete office suite for creating documents, spreadsheets, presentations, drawings, etc. The steps for extracting from text using Libre Office are as follows:

- Open Libre Office Writer
- Use the 'Open' menu option to open up a PDF file
- Use the 'Save As' option to save the PDF file as an '.fodg' document
- The saved '.fodg' document is essentially an Open Document XML-based file format for representing graphics.

Limitations:

- The main drawback of Libre Office is the generated output format. Though '.fodg' files are XML-based, they are more suitable for representing graphics than text content. Parsing and retrieving meaningful content from '.fodg' files would be a challenging task.
- Results were not consistent.
- It does not provide error notifications when elements are missing in extracted documents. This forces all extracted documents to be compared manually with the original PDFs for errors.
- There is no support for extracting lists.
- Image retrieval is inconsistent and cannot retrieve vector images
- There is no support for mathematical formula retrieval.
- There is no support for chemical formula retrieval.

- There is no support for extracting indentations.

4.4.3 PDFxStream

PDFxStream is a Snowtide product. It is written in 100% pure Java and is developed specifically to extract text and metadata from PDF documents.

How PDFxStream works:

Figure 1 shows how PDFxStream can be integrated into our application to extract text and metadata. As shown in the figure, PDFxStream parses the PDF file and generates events. The application output handler can listen to these events and perform an appropriate action (this is similar to XML parsing using a SAX handler). PDFxStream gives the application access to content and related metadata at each stage of PDF processing. This gives the application a lot of flexibility to customize the output at each stage of processing. The application may raise errors when the tool cannot process any of the elements present in the PDF. This can prevent manual inspection of output documents.

Limitations:

- There is no support for extracting lists.
  - PDFxStream can be extended through a custom Java application to extract list information from the original PDF documents.
- Image retrieval is inconsistent and cannot retrieve vector images
  - PDFxStream partially fixed the vector image retrieval issues. PDFxStream is planning to provide a fix for vector image retrieval.
- There is no support for mathematical formula retrieval.
  - Currently PDFxStream can extract a partial set of special characters. They are planning to provide a fix for special characters. The other option would be to extract mathematic formulas as an image by extending the application.
- There is no support for chemical formula retrieval.
  - The application can be extended to extract chemical formulas as an image.

As shown above, there are possible solutions that may resolve PDFxStream's limitations to some extent by extending the application. The capability of PDFxStream to raise errors when it cannot process any of the elements will prevent the need for manual inspection of all extracted documents.

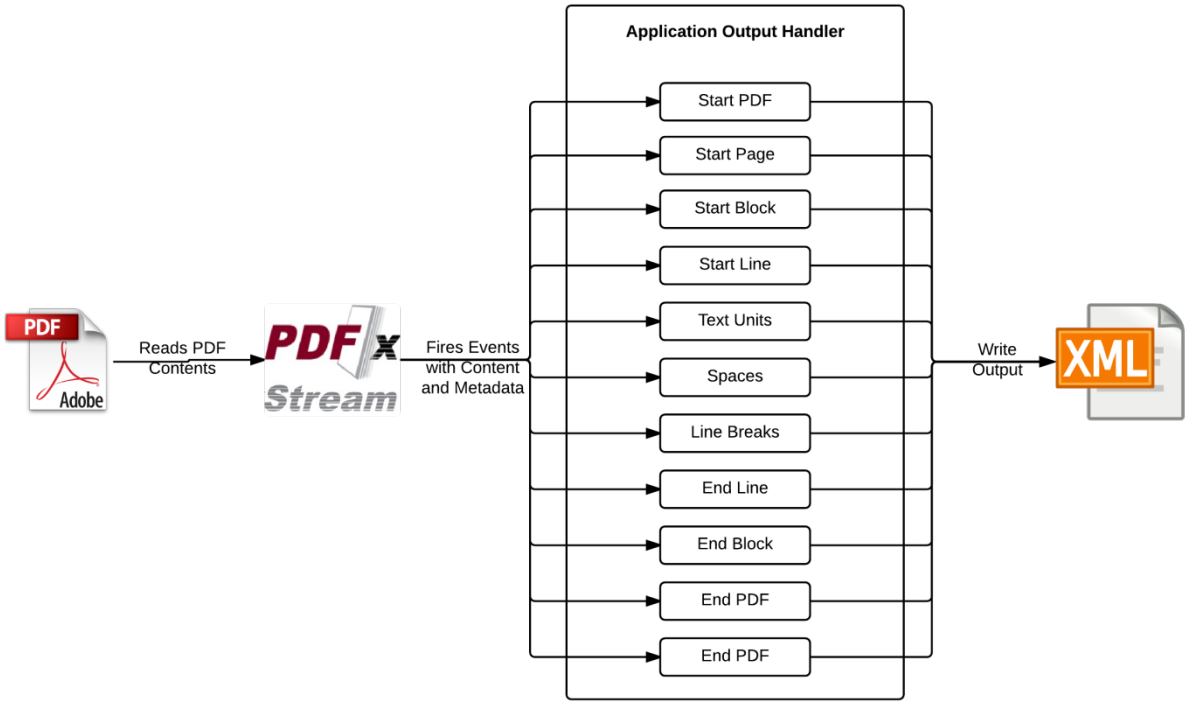


Figure 1: PDFxStream - Content Parsing

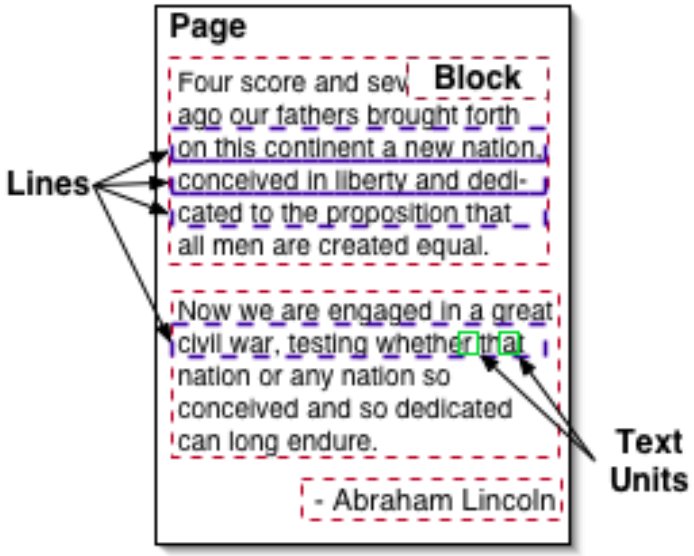


Figure 2: PDFxStream - Data Elements

4.5 RECOMMENDED PRODUCT

After analyzing the features and limitations of the 3 products, PDFxStream was chosen because it brings us closest to achieving USPTO's requirements. PDFxStream is superior for the prototype because it:

- Prevents the need for manual inspection of all output documents
- Consistently extracts elements from PDF documents
- Provides possible alternative solutions to address its limitations

The advertised list of PDFxStream features includes:

- Unicode text extraction, including support for Chinese, Japanese, and Korean (CJK) in both horizontal and vertical writing modes
- Efficiently customizing PDF text extract formatting
- Complete support for embedded and standard fonts and character encodings
- Automated layout processing, providing a traversable PDF document model including inferred block, line, column, and table structure
- Support for extracting text from "searchable image" PDFs
- Support for all varieties of rotated text
- Basic detection and inference of tabular data and a set of table-extraction utilities
- Decompression and decoding of dozens of PDF image types
- Automatic stitching of image tiles and strips

5 Prototype Design

This section talks about the design, limitations, and results of the prototype.

5.1 Components and Flow

Figure 3 shows a high level view of the various components in the prototype and flow of data.

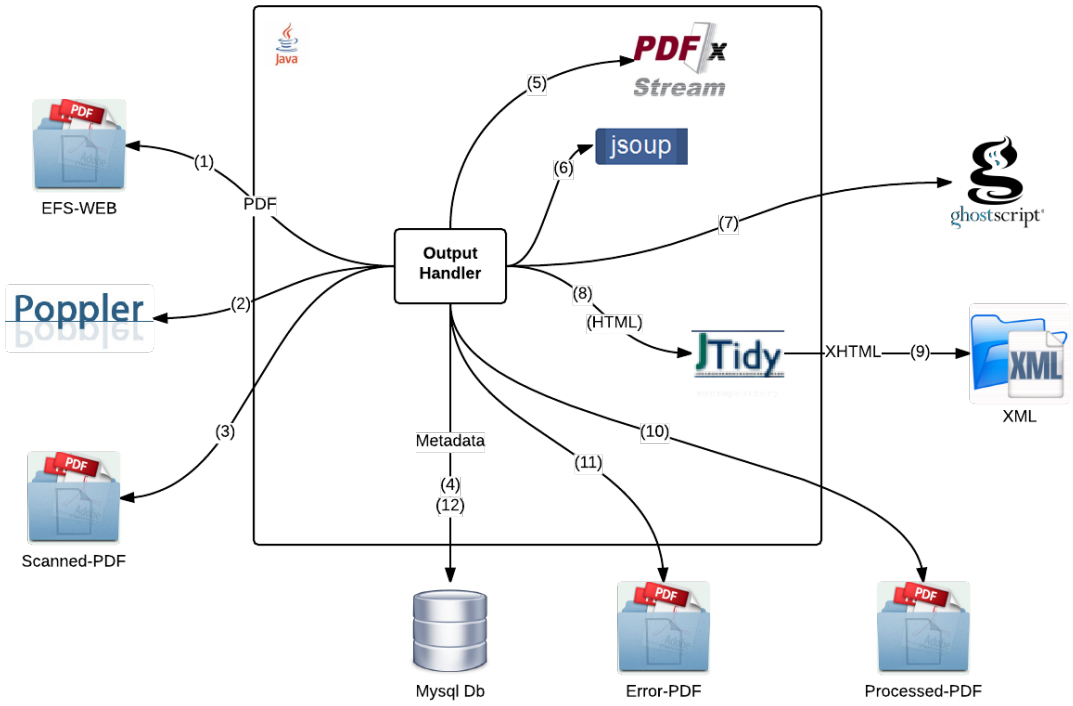


Figure 3: Component and Flow Diagram

The following is an explanation of the various steps in the process:

1. The application continuously monitors the 'EFS_WEB' folder. If a new PDF, the file is placed in the directory and picked up for processing. For prototype purposes, only one PDF file is processed at a time. If multiple PDF files are placed in the EFS-WEB folder, they are processed sequentially. This is because the trial version of 'PDFxStream' limits the application from processing files simultaneously.
2. The files being placed in the EFS-WEB folder could be one of two types:
    a. Scanned PDFs
    b. Text-based PDFs

The prototype is only concerned with PDFs that are text based and does not process scanned PDFs. To detect if a PDF is scanned or text-based, one could open the properties of the PDF file and check for the presence of fonts. If a PDF does not have any fonts, it means it does not contain any text. The application uses a third party open source tool called Poppler to verify if a PDF file has fonts.

3. Scanned PDF files (as determined in step 2) are copied from the 'EFS-Web' folder into the 'Scanned-PDF' folder.
4. During this step, metadata related to the scanned PDF (as identified in step 2) is extracted and stored in a MySQL database. The metadata includes:
    a. File name
    b. Generated By (the tool used to originally create the PDF)
    c. Scanned Flag (set to true)
    d. Created Date
5. In this step, the text-based PDF is parsed using PDFxStream. This generates a stream of events that the application can listen to.
6. This is the step where the bulk of the application logic resides. The application listens to the stream of events generated by PDFxStream and builds an HTML model using the JSoup library. The reasons for using HTML encoding are:
    a. HTML already has pre-defined elements and attributes to represent all the text and metadata that needs to be represented in the output
    b. Being such a ubiquitous language, HTML has several tools and libraries to parse it as needed. This would make it easier to later convert into XML4IP format.
7. Step 7 is an optional step and is used to process formulae. This is discussed in detail in later sections.
8. The HTML generated in step 6 is not a valid XML. In order to generate a valid XML as the final output, a library called jTidy is used. jTidy cleans up malformed and faulty HTML and generates a valid XML. The XML output can then be parsed using either an XML parser or an HTML parser in further stages.
9. The generated XML from step 8 is copied in to 'XML-Output' folder.
10. The processed PDF file is moved to the 'Processed-PDF' folder.
11. If there are any exceptions while processing a PDF file, the file is moved to the 'Error-PDF' folder.
12. During this final step, metadata related to the processed PDF is extracted and stored in a MySQL database. The metadata includes:
    a. File name
    b. Generated By (the tool originally used to create the PDF)
    c. Scanned Flag (set to false)
    d. Message (Holds the exception message in case the PDF failed to process)
    e. Created Date

5.2 Output Format

The following table presents a mapping between the elements in the PDF and the corresponding XHTML tags in the final output

PDF Element	XHTML Elements and Attributes
Textual content	
Underlines	<u>
Strikethrough	<s>
Bold	<b>
Italics	<i>
Table	<table><tr><td>
Images	<img>
Line Breaks	
Page	
Formula	<img class=”formula”>

Table 3: Mapping between PDF and XHTML Elements

5.3 Custom Processing

5.3.1 Image Processing

Support for image extraction has only recently been added in PDFxStream. PDFxStream identifies all images and places them at the start of the page. It does not provide events for identifying images in the order they appear on the page. As a result, if we do not add custom logic, all images in the final output will be placed at the beginning of the page.

As part of the additional logic:

- The application stores the images and their locations when a page starts
- While processing other elements on the page, the application compares the position of an element against the position of the stored image to determine if an image needs to be placed before or after the element.

5.3.2 Table Processing

PDFxStream has partial support for table processing. It identifies tables, the number of rows in each table, and the number of columns in each row. For symmetric tables, where each row has the same number of columns and each column has the same number of rows, this information is good enough.

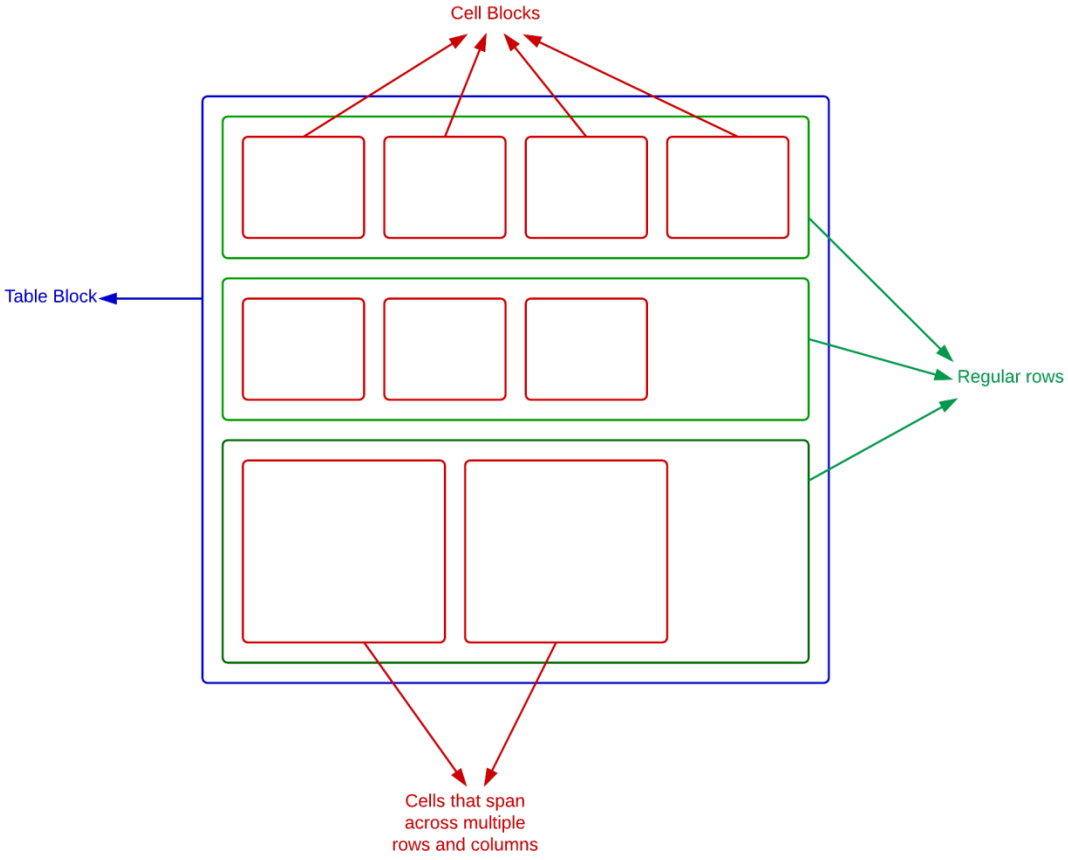


Figure 4: PDFxStream - Table Structure

However, when cells span across multiple rows or columns (as shown in **Figure 4**), the output does not match the input unless some custom logic is added.

To address this situation, the prototype has extra logic built in to determine the column span of each cell. The logic is explained below:

- For each table, identify the row with the maximum number of columns. Make a note of the cell width ('minimum cell width') and the number of columns in this row.
- While processing each row in the table, if the number of columns is less than the maximum (as determined in previous step), for each cell in the current row, calculate the width of the cell as a multiple of the 'minimum cell width'. This multiple gives the column span of the current cell.

Similar logic needs to be applied to calculate row span.

5.3.3 Formula Processing

Mathematical and Chemical formulae are challenging to extract. Formulae could be embedded in PDF documents as text using a mix of regular / special characters and vector graphics as needed to convey the information.

It is challenging to identify formulae because the formula can:

- Span multiple lines
- Have special Unicode characters (which cannot be consistently identified)
- Have graphics

In default mode, the application processes formulae as regular text. As a result, the output does not identify the formulae with any special tags and may sometimes look like garbage text.

The application has to be run by setting a system property called '-Dmode=line' to identify formulae. The following logic is used to identify a formula and extract it when this mode is used. This approach is neither consistent nor complete. However, it is something that could be improved upon in future iterations to achieve consistency and reliability.

- While processing each line, determine the number of special characters in the line. For the purpose of the prototype, any Unicode character with value greater than 256 is considered a special character. (This assumption may not be correct and what should constitute a special character is debatable, but the logic used to identify whether a particular character is special is abstracted and could be adjusted as needed.)
- If the number of special characters in a line compared to the total number of characters in the line is greater than a certain percentage (in our case this percentage is set to 10%), the line is marked as being part of a formula.
- The above logic is applied for successive lines until a non-formula line is detected. At this point, all previous lines are considered part of one single formula.
- Once a formula is identified, the coordinates of the bounding box for all combined lines are calculated.
- The bounding box is then extracted as an image using Ghostscript.
- The extracted image is written to the XHTML output using Base64 encoding and tagged with a class called 'formula' as shown below:
    - <img class='formula' src='…' ></img>

The following table shows snapshots taken under 3 different scenarios:

- Img1: Snapshot from original PDF
- Img2: Shows the output if no processing is applied for formulae
- Img3: Shows the output when a formula is detected and extracted as an image

Img1	$S_{j,K} \equiv max_{k\in[1,K]} \sum_{i=1}^{j-1} x_{i,k}\, v_{(i)} + \sum_{i=j}^{K} x_{i,k}\, v_{(i+1)}$, wherein $\mathbf{x_{j,k}}$ represents a measure
Img2	E ∑E E? Ú E∑EwE ≡ E EEo∈E>Ú,E?w E,EoE:; E,EoE: ,;wherein **x** represents a measure E,Ew E @ Ú @E > Ú **j,k**
Img3	$S_{j,K} \equiv max_{k\in[1,K]} \sum_{i=1}^{j-1} x_{i,k}\, v_{(i)} + \sum_{i=j}^{K} x_{i,k}\, v_{(i+1)}$, wherein $\mathbf{x_{j,k}}$ represents a measure

Table 4: Formula Extraction Comparison

5.4 Exception Handling

Exceptions could happen in the application for several reasons:

- The PDF document is corrupted
- When decrypting an encrypted PDF document
- When the database server is down
- Some unexpected error in code

All the above exceptions and any other unexpected errors are handled by the system and appropriately logged for further investigation. Furthermore, the PDF that failed processing is moved to the error folder.

5.5 Performance

The primary focus of the prototype was to extract data consistently. There was no effort spent on increasing the performance of the system. Also, the trial version provided by PDFxStream allows only synchronous processing, thus preventing us from building a prototype that could be used for benchmarking.

5.6 XML4IP Format

The goal of the prototype was to generate a standard XML document, which could be used in further stages to generate an XML4IP compliant document. In this regard, the prototype generates XHTML output, which is a standard format.

5.7 RESULTS

For testing the prototype, 150 client-provided PDF files were used. The prototype was used to extract XML from all 150 files. The extracted content was manually compared to the original PDF files. Below is a summary of the findings:

Sample Files Tested	150 files
Successful	121 files
Failed	29 files

Table 5: Test Results

Observations:

A failed file is one in which none of the content was extracted or part of the content was not properly extracted.

It should be noted that the 121 successful files were mostly text-based with very limited special characters.

The 29 files that failed had a combination of:

- Special characters
- Vector graphics
- Math and chemical formulae

5.8 LIMITATIONS

The following are some of the limitations of the prototype:

Vector Graphics

Vector Graphics is the use of geometrical shapes (such as points, lines, curves and shapes) to represent images in computer graphics. As of this writing, PDFxStream can extract regular images, but cannot extract vector graphics consistently. Extraction of vector graphics is a complex process and requires advanced processing to extract individual images and stitch them together. According to the team at PDFxStream, they are working on a solution for extracting vector graphics and plan to release a patch in the first quarter of 2015.

Special Characters

PDFxStream extracts the Unicodes that correspond to each of the characters found in a PDF. These Unicodes represent text in the extracted output. However, PDFxStream fails to retrieve the Unicodes consistently for special characters. This could be because the PDF uses:

- Character sets which map to Unicodes from private user area

http://en.wikipedia.org/wiki/Private_Use_Areas

- A custom character set and does not provide mapping between the character codes and Unicodes
  http://blogs.adobe.com/insidepdf/2008/07/text_content_in_pdf_files.html

At this point, it is not clear if there is a resolution for the two scenarios above. The PDFxStream team has been notified about this and they are looking into it.

Math and Chemical Formulae

Though the prototype attempted to detect and extract math and chemical formulae, the solution is not complete. Please refer to section 5.3.3 for details.

List Processing

List detection is not built into PDFxStream and there are no indications it will be supported in the future. This needs to be custom built into the application.

5.9 CONCLUSION

Although the presented solution has some limitations, it takes the right approach towards achieving the objectives. Limitations may be addressed in the long term by extending the Java application and using future releases of PDFxStream to customize / enhance the product to suit USPTO's needs.

Recommendations:

- Obtain support from PDFxStream to fix issues with Vector Images and Special Characters
- Implement additional logic to handle Chemical / Math formula
- Implement custom logic to extract List and Superscript / Subscript information

Exhibit 2

Affidavit of Tiffany Monroe

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF VIRGINIA

Alexandria Division

PTAAARMIGAN LLC Plaintiff, - against - U.S. PATENT AND TRADEMARK OFFICE, et al., Defendants.

_____

AFFIDAVIT OF TIFFANY MONROE

I, Tiffany Monroe, declare, under penalty of perjury, as follows.

I. Personal

1. I am an attorney registered to practice before the United States Patent and Trademark Office, and in the state of Louisiana. I have been admitted to the patent bar, as an attorney, since 2018. I was admitted to the patent bar, as a patent agent, in 2015.

2. I hold the following degrees:

   2(a). J.D., Southern University Law Center, Baton Rouge, Louisiana

   2(b). MS, Electrical and Computer Engineering, Georgia Institute of Technology, Atlanta, Georgia

   2(c). BS, Electrical Engineering, Southern University Agricultural and Mechanical College, Baton Rouge, Louisiana

3. From 2008-2013, I was a fire protection safe shutdown engineer at Southern Nuclear Operating Company, managing and maintaining fire protection safe shutdown systems for nuclear power plants. From 2007-2008, I was a design engineer at Entergy developing long-term replacement plans of obsolete instrumentation and controls equipment for nuclear power plants. These career opportunities gave me experience in engineering high-reliability systems.

4. From 2001-2007, I was a hardware design engineer at Raytheon Systems Company where I developed and tested products in the defense industry that allowed military personnel to navigate terrains worldwide.

5. I have filed about four (4) patent applications. Almost all of them have been filed electronically, using the PTO's PDF filing system. That is, the PTO's infrastructure allowing submission of all parts of patent applications as electronic documents having the PDF format.

II. Test of February 15, 2023

6. On February 15, 2023, I attempted to file a patent application in DOCX form, using the PTO's DOCX filing system. It failed.

7. Because patent applications are confidential, I cannot give a copy of the actual application. I reduced the failing part of the application to a small file that exhibited the same failure. That test excerpt is attached as Exhibit TM-1. It has the original equations, with the text removed to preserve confidentiality of my client's information.

8. Patent Center is the PTO's newer "web-based patent application and document submission tool." See the Patent Center User Guide, page 4, top paragraph. The Guide is available at https://www.uspto.gov/sites/default/files/documents/Patent_Center_User_Guide_Mar.pdf.

9. The original document came from a template provided by the client. Prior to filing the patent application in question, I tested this document template in the Patent Center Training Mode to ensure that I would not encounter any issues. Once my testing of the document template was complete, I drafted the text of the document and added the original equations using the Insert => Equation option in Microsoft Word.

10. I had every reason to believe that the patent application file, as I had prepared it, was a legal, valid DOCX file.

11. When I tried to file this patent application, the USPTO's PatentCenter gave an error message and refused to accept it. Exhibit TM2 is screen captures of the failure error messages.

12. Normally, PatentCenter generates a "validated" DOCX file that is then accepted by the PTO as the filed patent application. In this case, the file that PatentCenter gave me was a zero-byte file.

13. The USPTO has only two relevant regulations. 37 C.F.R. § 1.52 requires paper size and margins, type of "sufficient clarity," 1½ or double spacing, "nonscript type font," and similar conventional requirements for form. 37 C.F.R. § 1.58 governs mathematical formulae. My patent application complies with these regulations. I used Calibri font, a nonscript font.

14. Subsequently, I have learned that the Patent Office has a "Common mistakes and errors" sheet that lists "QUOTE fields" as a feature of Microsoft Word that is not permitted.

15. The "Common mistakes and errors" document has not been published in the Federal Register. I had no prior notice of it. As a practical matter for the way I practice law and inform myself of the PTO's requirements, this "Common mistakes and errors" document amounts to changing the rules on the fly and after the fact.

16. The "Common mistakes and errors" document gives no instructions on how to diagnose a "QUOTE fields" problem (and even after the fact, I have no idea what the problem was or how it originated), no assistance to locate the point in a document that is creating the problem and gives absolutely no advice for how to fix such a problem. The PTO leaves resolution of the problem entirely to the patent attorney.

17. The failures of the PTO's DOCX filing system identified above cost me lost time and delayed the filing of the application. Note that delay of the filing of an original patent application from one day, to a subsequent day, causes irreparable harm. This harm is the existence of additional prior art that legally may come into existence on a daily basis. This additional prior art may defeat an application's claims to patent rights. Specifically, a patent claim that might be patentable in an application with an earlier filing date, may be unpatentable in an application filed on a later date for failing to be novel and nonobvious under 35 USC 102 and 35 USC 103, because of the existence of additional prior art that came into existence between the earlier and later dates.

III. Other irreparable harm

18. In this case, I attempted to file the application relatively early in the day. Eventually I found a workaround by altering the document. But had the problem arisen later in the day, I might not have had time to figure it out. If that had happened, additional prior art available to defeat the novelty and nonobvious requirements for a patent claim, would have come into existence, as explained above.

19. Also, I have an M.S. in Electrical and Computer Engineering from Georgia Tech. I have skills to figure out workarounds for bugs in PatentCenter. My skills are not universally shared among patent attorneys and agents.

20. In my opinion, on slightly different facts, and for an attorney or agent without my skills and presence of mind, the failings of USPTO's PatentCenter could easily have resulted in the inability to file, or at least delay past a legal deadline, and resulted in loss of patent rights.

21. Patent applications have to be right at filing—the law admits no opportunity to add new information, such as fixing an error in the application, after the filing date. In my opinion, the USPTOs DOCX system is not designed around the principles of high-reliability engineering. DOCX creates risks that are not present in PDF filing. No engineer of a high-reliability system would willingly invite failure modes into a system on the hope of being able to backstop them all—high-reliability engineering is about keeping the failure modes out of the design from the beginning. The USPTO provides little to no backup failsafe, which is not what an engineer would do in a high-reliability system.

22. An applicant/practitioner may be prevented from filing on or before a required filing date due to problems with the Patent and Trademark Office's electronic patent application filing systems, e.g., if the uploaded file allegedly fails to meet one or more arbitrary, implementation-defined requirements enforced by the system. If the application is filed later, patent rights may be limited, or no patent may be available at all. An applicant who loses rights because they were unable to file an application on or before a required filing date suffers irreparable harm.

23. I declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. § 1001.

Tiffany Monroe

Date: 03/12/2023

Tiffany Monroe

P O Box 80025
Baton Rouge, Louisiana 70898

Exhibit TM1 to

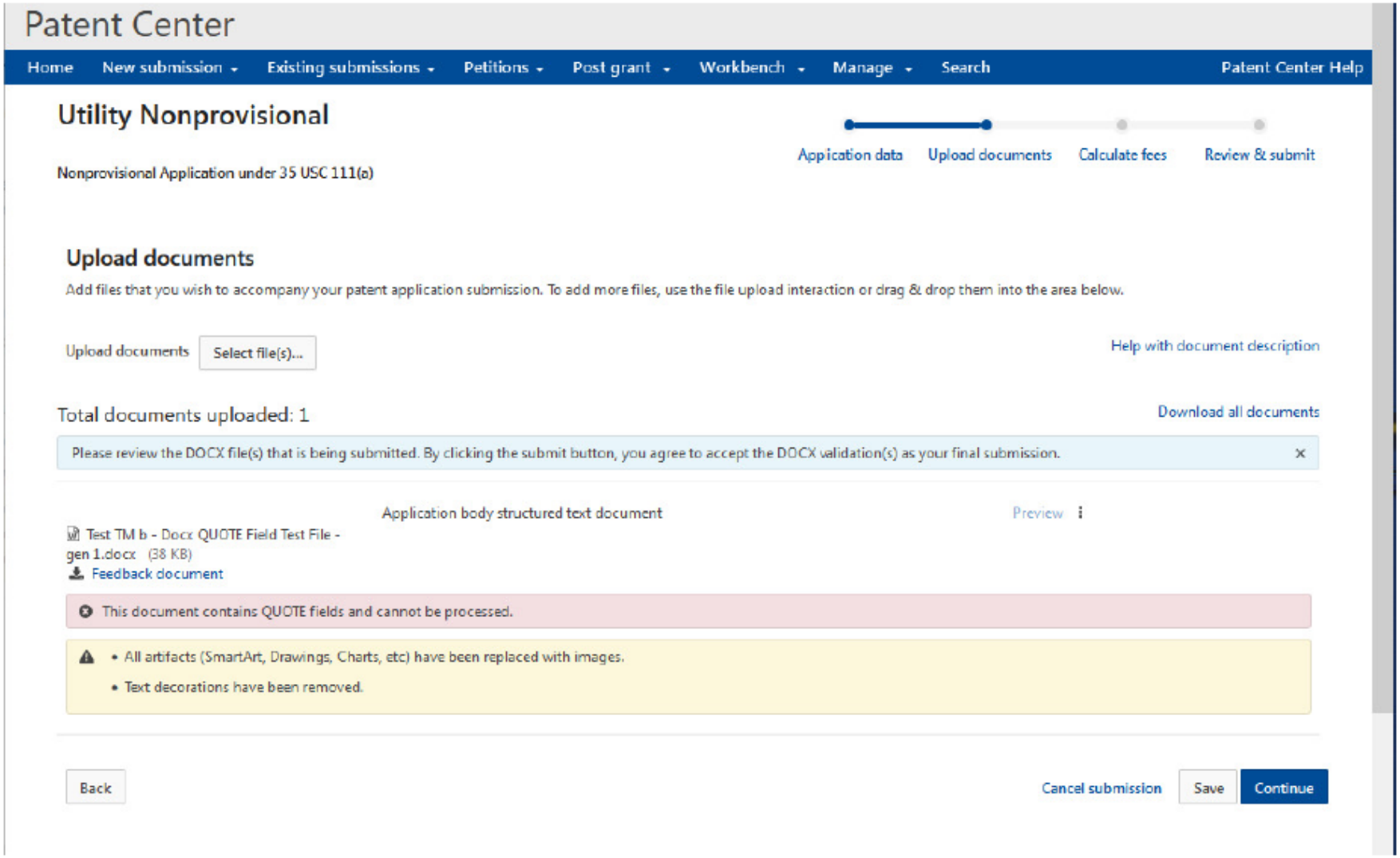
Affidavit of Tiffany Monroe

Docx Quote Field Test File

[0001] Mary had a little lamb whose fleece was white as snow. The equation for Mary is defined as $w_l = \sum_{1}^{n} x \frac{L_n}{F_n}$, where ω_l is whose, L is little lamb, and F is fleece.

Exhibit TM2 to

Affidavit of Tiffany Monroe


Patent Center
Home
New submission
Existing submissions
Petitions
Post grant
Workbench
Manage
Search
Patent Center Help
Utility Nonprovisional
Nonprovisional Application under 35 USC 111(a)
Application data
Upload documents
Calculate fees
Review & submit
Upload documents
Add files that you wish to accompany your patent application submission. To add more files, use the file upload interaction or drag & drop them into the area below.
Upload documents
Select file(s)...
Help with document description
Total documents uploaded: 1
Download all documents
Please review the DOCX file(s) that is being submitted. By clicking the submit button, you agree to accept the DOCX validation(s) as your final submission.
Application body structured text document
Preview
Test TM b - Docx QUOTE Field Test File - gen 1.docx (38 KB)
Feedback document
This document contains QUOTE fields and cannot be processed.
• All artifacts (SmartArt, Drawings, Charts, etc) have been replaced with images.
• Text decorations have been removed.
Back
Cancel submission
Save
Continue

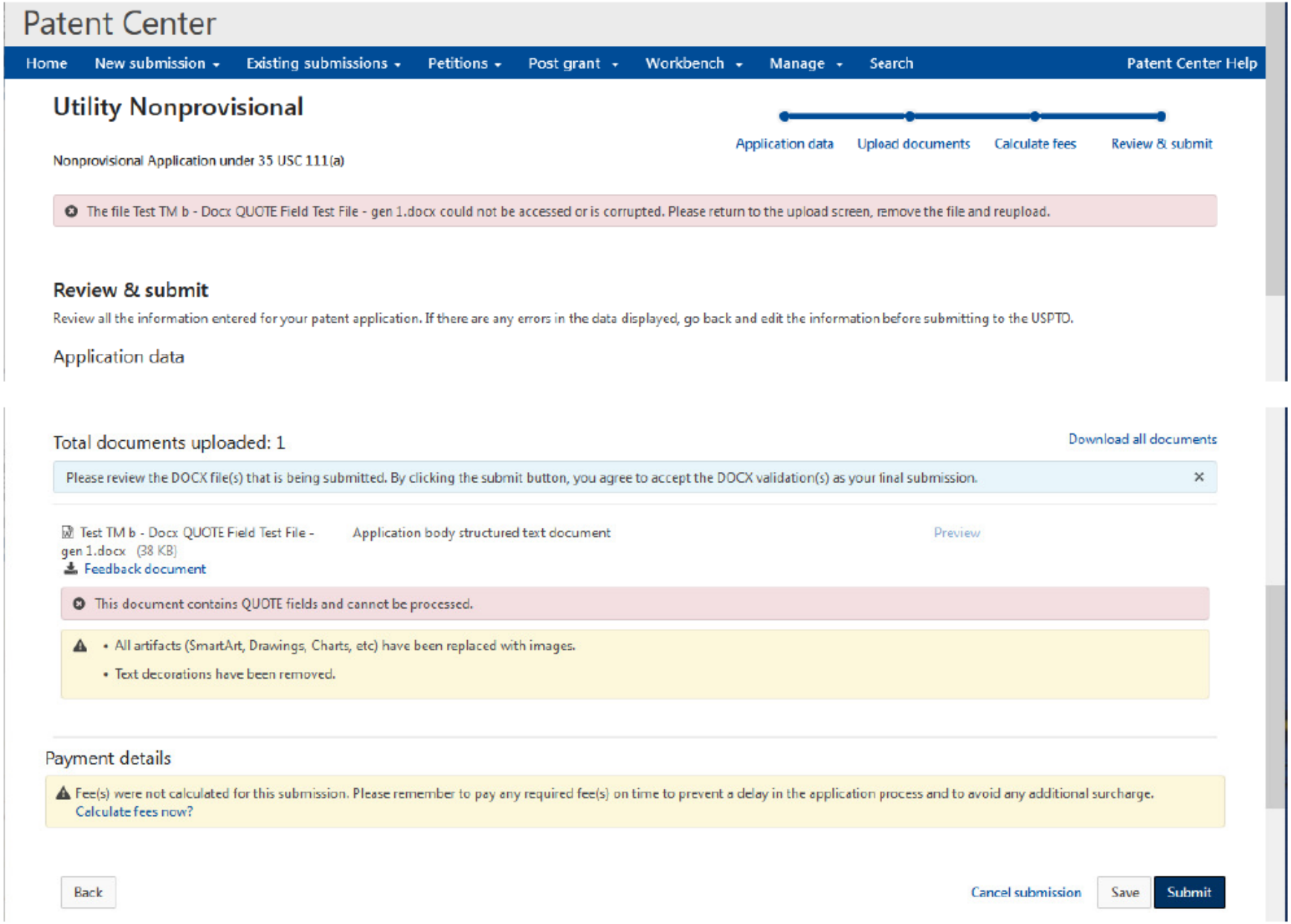

Patent Center
Home
New submission
Existing submissions
Petitions
Post grant
Workbench
Manage
Search
Patent Center Help
Utility Nonprovisional
Application data
Upload documents
Calculate fees
Review & submit
Nonprovisional Application under 35 USC 111(a)
The file Test TM b - Docx QUOTE Field Test File - gen 1.docx could not be accessed or is corrupted. Please return to the upload screen, remove the file and reupload.
Review & submit
Review all the information entered for your patent application. If there are any errors in the data displayed, go back and edit the information before submitting to the USPTO.
Application data
Total documents uploaded: 1
Download all documents
Please review the DOCX file(s) that is being submitted. By clicking the submit button, you agree to accept the DOCX validation(s) as your final submission.
Test TM b - Docx QUOTE Field Test File - gen 1.docx (38 KB)
Application body structured text document
Preview
Feedback document
This document contains QUOTE fields and cannot be processed.
All artifacts (SmartArt, Drawings, Charts, etc) have been replaced with images.
Text decorations have been removed.
Payment details
Fee(s) were not calculated for this submission. Please remember to pay any required fee(s) on time to prevent a delay in the application process and to avoid any additional surcharge.
Calculate fees now?
Back
Cancel submission
Save
Submit

Exhibit 3

Examples of patent applications mangled by the PTO's DOCX filing system

This is a test from December 2022. Patent claims typically have multiple paragraphs, and each claim must be numbered as an integrated whole.

CLAIMS

What is claimed is:

1. A method comprising:

a step that includes doing something that is really wonderful and makes the world a better place.

2. The method of claim 1 further comprising:

a second step that includes doing a second something that is really wonderful and makes the world an additionally better place; and

a third step that includes doing a third something that is really wonderful and makes the world a further better place.

3. The method of claim 1 further comprising making the world a better place after carrying out the step.

The PTO's DOCX filing software mangled the claims by separating them into separate paragraphs and separately numbering each paragraph.

CLAIMS

What is claimed is:

1. A method comprising:

2. a step that includes doing something that is really wonderful and makes the world a better place.

3. The method of claim 1 further comprising:

4. a second step that includes doing a second something that is really wonderful and makes the world an additionally better place; and

5. a third step that includes doing a third something that is really wonderful and makes the world a further better place.

6. The method of claim 1 further comprising making the world a better place after carrying out the step.

System and Method for Application

Brief Description

This is a test from December 2022, the equations extracted from a larger document.

[0001] $P_{\text{PUSCH},b,f,c}(i,j,q_d,l)$

$$P_{\text{PUSCH},b,f,c}(i,j,q_d,l)$$
$$= min\begin{Bmatrix} P_{\text{CMAX},f,c}(i), \\ P_{\text{O\_PUSCH},b,f,c}(j) + 10\,log_{10}(2^{\mu}\cdot M^{\text{PUSCH}}_{\text{RB},b,f,c}(i)) + \alpha_{b,f,c}(j)\cdot PL_{b,f,c}(q_d) + \Delta_{\text{TF},b,f,c}(i) + f_{b,f,c}(i,l) \end{Bmatrix}$$

[0002] $PL_{b,f,c}(q_d))$

[0003] $P_{\text{O\_PUSCH},b,f,c}(j))$

[0004] $\alpha_{b,f,c}(j))$

[0005] $P_{\text{CMAX},f,c}(i)$

[0006] $M^{\text{PUSCH}}_{\text{RB},b,f,c}(i)$

[0007] $f_{b,f,c}(i,l)$

[0008] $P_{\text{PUCCH},b,f,c}(i,q_u,q_d,l)$

[0009] $P_{\text{PUCCH},b,f,c}(i,q_u,q_d,l) =$

$$min\begin{Bmatrix} P_{\text{CMAX},f,c}(i), \\ P_{\text{O\_PUCCH},b,f,c}(q_u) + 10\,log_{10}(2^{\mu}\cdot M^{\text{PUCCH}}_{\text{RB},b,f,c}(i)) + PL_{b,f,c}(q_d) + \Delta_{\text{F\_PUCCH}}(F) + \Delta_{\text{TF},b,f,c}(i) + g_{b,f,c}(i,l) \end{Bmatrix}$$

[010] $PL_{b,f,c}(q_d))$

[011] $P_{\text{O\_PUCCH},b,f,c}(q_u))$

[012] $P_{\text{CMAX},f,c}(i)$

[013] $'\Delta_{\text{F\_PUCCH}}(F), \Delta_{\text{TF},b,f,c}(i))\ P_{\text{PRACH},b,f,c}(i) = min\{P_{\text{CMAX},f,c}(i),\ P_{\text{PRACH,target},f,c} +$

$PL_{b,f,c}\}$

[014] $P_{\text{CMAX},f,c}(i)$

[015] c_j, $N_{c_i} = N_{c_j}$.

[016] N_{c_i}

[017] $c_j \in C$.

[018] $c_j \quad c_i \in C$.

System and Method for Application

Brief Description

The PTO's DOCX filing system mangled the equations.

[0001] $P_{\text{PUSCH},b,f,c}(i,j,q_d,l)$

$P_{\text{PUSCH},b,f,c}(i,j,q_d,l)$

$$= min\begin{Bmatrix} P_{\text{CMAX},f,c}(i), \\ P_{\text{O\_PUSCH},b,f,c}(j) + 10\,log_{10}(2^{\mu}\cdot M_{\text{RB},b,f,c}^{\text{PUSCH}}(i)) + \alpha_{b,f,c}(j)\cdot PL_{b,f,c}(q_d) + \Delta_{\text{TF},b,f,c}(i) + f_{b,f,c}(i,l) \end{Bmatrix}$$

[0002] □□□,□,□(□□))

[0003] □O_PUSCH,□,□,□(j))

[0004] □□,□,□(j))

[0005] $P_{\text{CMAX},f,c}(i)$

[0006] $M_{\text{RB},b,f,c}^{\text{PUSCH}}(i)$

[0007] $f_{b,f,c}(i,l)$

[0008] $P_{\text{PUCCH},b,f,c}(i,q_u,q_d,l)$

[0009] $P_{\text{PUCCH},b,f,c}(i,q_u,q_d,l) =$

$$min\begin{Bmatrix} P_{\text{CMAX},f,c}(i), \\ P_{\text{O\_PUCCH},b,f,c}(q_u) + 10\,log_{10}(2^{\mu}\cdot M_{\text{RB},b,f,c}^{\text{PUCCH}}(i)) + PL_{b,f,c}(q_d) + \Delta_{\text{F\_PUCCH}}(F) + \Delta_{\text{TF},b,f,c}(i) + g_{b,f,c}(i,l) \end{Bmatrix}$$

[010] $PL_{b,f,c}(q_d)$)

[011] $P_{\text{O\_PUCCH},b,f,c}(q_u)$)

[012] $P_{\text{CMAX},f,c}(i)$

[013] ‘$\Delta_{\text{F\_PUCCH}}(F)$, $\Delta_{\text{TF},b,f,c}(i)$) $P_{\text{PRACH},b,f,c}(i) = min\{P_{\text{CMAX},f,c}(i),\ P_{\text{PRACH,target},f,c} +$

$PL_{b,f,c}\}$

[014] $P_{\text{CMAX},f,c}(i)$

[015] c_j, $N_{c_i} = N_{c_j}$.

[016] N_{c_i}

[017] $c_j \in C$.

[018] c_j $c_i \in C$.

A colleague reported this error in March 2023. The PTO's filing system software removed the text from most of the boxes in the figures.

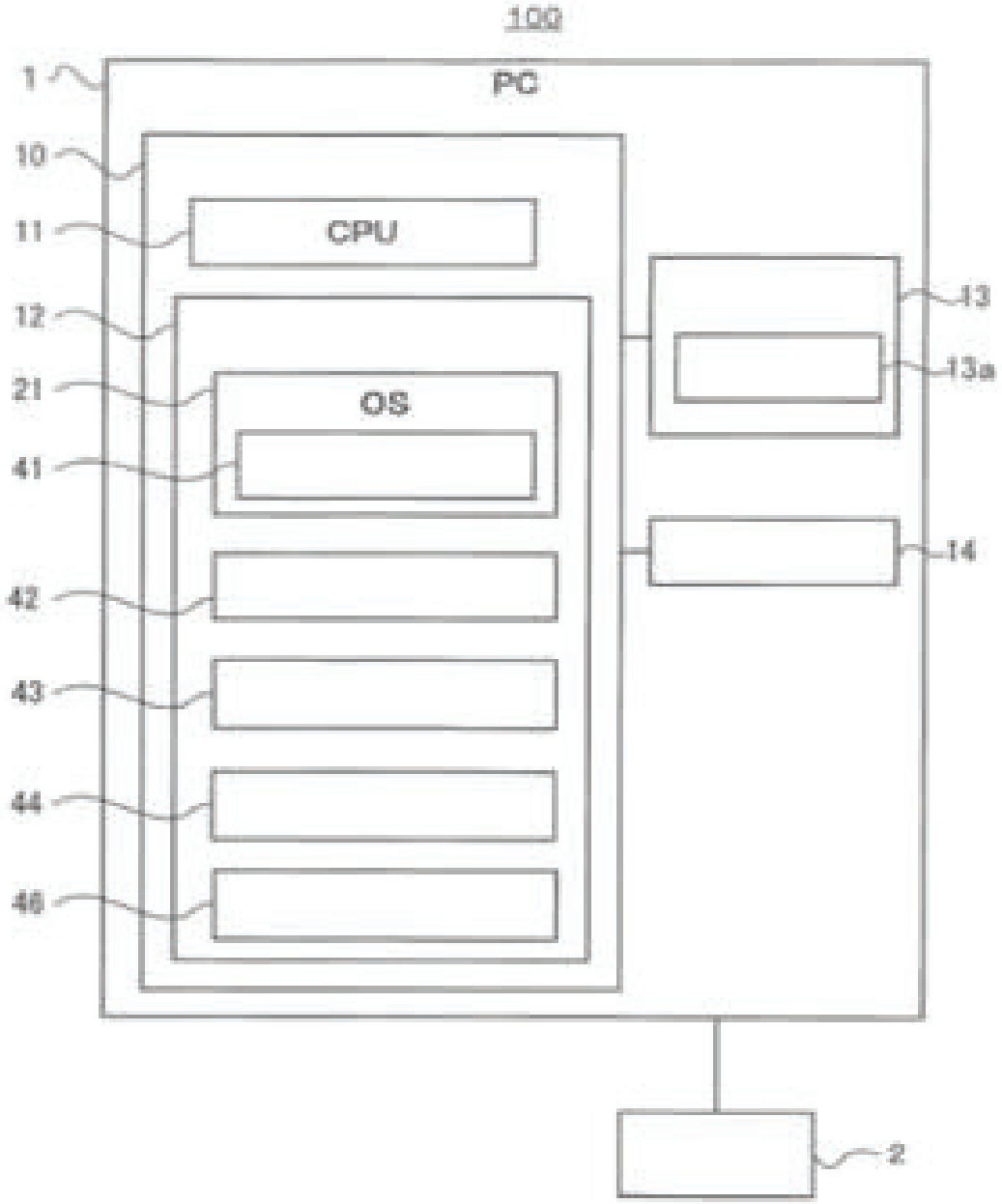


Exhibit 4

Test exhibit showing standard features of Word DOCX that are refused by the PTO's filing software

Test Application

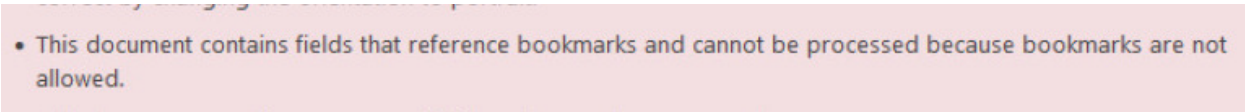
[0001] To see many of the Word features used in this document, go to

- File > Options > Advanced > ½ way down "Show Bookmarks" > set to ☑
- File > Options > Advanced > 2/3 of the way down Field Shading > set to "Always"

[0002] Attorneys use "bookmarks" and "cross-references" in patent applications for many different purposes:

- For example, sometimes we define a specific complex term, bookmark it, and then use cross-references to refer to that bookmark. This allows changing the complex term up to the last minute before filing. If the complex term is changed within the bookmark, then all references self-update to keep track.
- Sometimes we'll "bookmark" a specific piece of text (for example the matter number, the first inventor name, or the Express Mail number back in those days), and cross-reference it everywhere it has to be copied (for example in page headers and footers). This ensures that text that ought to be consistent stays consistent.

But the PTO's DOCX filing system reports an error and refuses to accept a filing when an application uses bookmarks and cross-references.

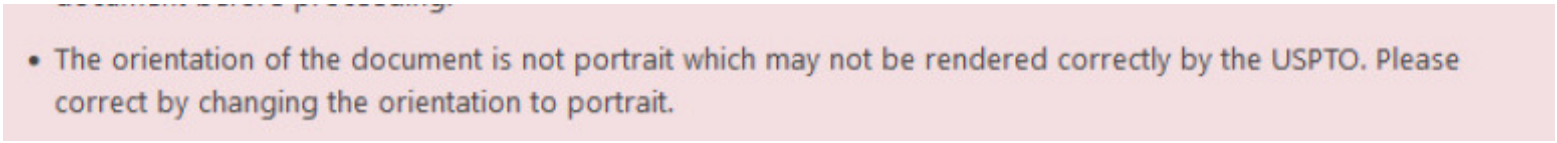


The Paperwork Reduction Act, 44 U.S.C. § 3506(c)(3)(E), 5 C.F.R. § 1320.9(e) requires that all agencies implement their paperwork collection mechanisms "in ways consistent and compatible, ***to the maximum extent practicable***, with the existing reporting and recordkeeping practices of those who are to respond." The PTO cannot ask patent attorneys to abandon features of Word that improve efficiency and reduce errors, and switch to higher-burden, more-error-prone practices—that's unlawful. And especially so if the excuse is that the PTO's software is too unsophisticated to handle "standard" features of Word correctly. Application of that kind of double standard requires an extraordinarily disingenuous, narcissistic turn of mind.

[0003] Sometimes you need a wide table to display data, or a wide page to show a complex chemical or mathematical formula. This is easy in today's PDF filing system — the applicant generates the wide page in landscape mode, and then turns the landscape page 90º to portrait to file. It works easily in a PDF filing world. It's impossible in the PTO's DOCX current implementation.

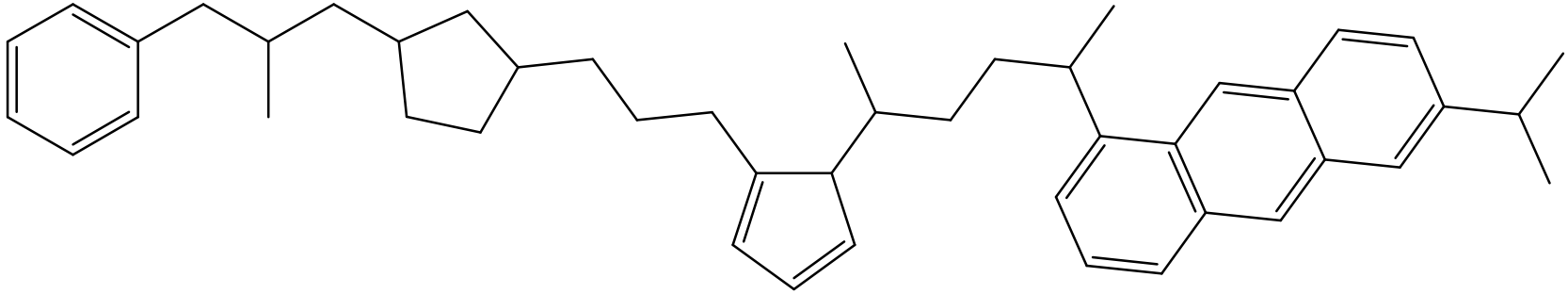
Sometimes	you	need	a	wide	table	to	display
data	.		This	is	easy	in	today's
PDF	filing	system	—	the	applicant	generates	the
table	in	a	wide	table	in	landscape	mode,
and	then	turns	the	landscape	page	90º	to
portrait	to	file.		Easy	in	a	PDF
filing	world;	impossible	in	the	PTO's	DOCX	current
Implementation.							

But the PTO's DOCX filing system refuses to allow it:



[0004] This is a problem that really has no work-around (without going below the regulatory limit on small fonts)—some tables and chemical formulae won't fit on a portrait page, but do fit on a landscape page.

[0005] Similarly, wide chemical formulas need landscape pages:



5

The FIG legend must be the same orientation as the figure. We can't do it under the constraints of the PTO's DOCX filing system.

[0006] Especially in provisional applications, references to page numbers are useful. References to section heading numbers are important in both provisional and nonprovisional applications. Let's test them. 1 (to complex term), page 4 (to Heading I). The PTO's filing system refuses them:

- This document contains PAGEREF fields and cannot be processed.

These are "standard" features of Word. The PTO cannot claim that DOCX is good because it's a "standard" and then not accept the full extent of the standard. That's having things both ways.

[0007] Another way to ensure consistency between two or more copies of text is to define a "Style" and a cross-reference to the style. (This document uses this mechanism to copy the attorney docket number and title to the places they should go.) The PTO's filing system refuses them:

- This document contains STYLEREF fields and cannot be processed.

I. Heading 1

I.A. Heading I(A)

[0008] Sometimes patent applications use numbered lists, like this.

1. One AutoNum
2. Two AutoNum
3. Three AutoNum

But the PTO's filing system balks:

- This document contains AUTONUM fields and cannot be processed.

In the Final Rule, the PTO ***promised*** that the reason that DOCX would be no problem is that the PTO would support the "standard." The PTO does not support the "standard." The PTO implements an undefined, unknowable subset of the standard. That's not "standard." The PTO's entire rationale is disingenuous. The PTO is trying to have things both ways.

[0009] Word provides multiple ways to create numbered lists. Let's test another one.

4. Four AutoNumLgl
5. Five AutoNumLgl.

6. Six AutoNumLgl

Nope, doesn't work.

The PTO cannot claim that it implements the "standard."

[0010] And Word provides a third way to do autonumber lists: "Autonum Outline" is designed for when you have multiple levels, so they'll be arranged in an outline. So let's try a simple list.

7. Seven AutoNumOut
8. Eight AutoNumOut
9. Nine AutoNumOut

Does the system support this standard feature? No.

I.B. Heading level 2 to I(B)

[0011] Text that says nothing just to create a test

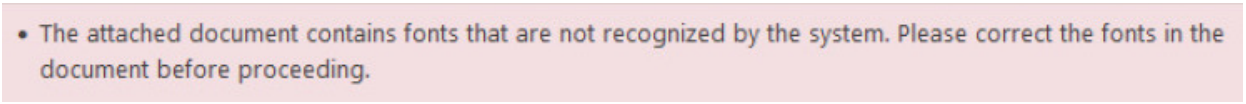
I.C. Heading level 2

I.C.1. Heading level 3

[0012] Sometimes an application has an internal cross reference, for example a cross reference from § I.C.1 referring to I.B

Sometimes an inventor gives the attorney an application in the inventor's choice of font, in this case "Arimo." As a practical matter, sometimes the time deadlines require that we file what the inventor gives us. As a fundamental legal principle, an agency may only enforce against the public rules that have been promulgated with the procedural formalities of a "regulation." 35 U.S.C. § 2(b)(2)(B). For example, on his first day in office President Biden reminded agencies of the boundary between "regulation" vs. "guidance" and instructed agencies not to enforce rules that go beyond their regulations. Executive Office of the President, *Bulletin on Agency Good Guidance*

Practices, https://www.whitehouse.gov/wp-content/uploads/legacy_drupal_files/omb/memoranda/2007/m07-07.pdf (Jan. 18, 2007, reinstated Jan. 20, 2021). Yet the PTO's DOCX system enforces subregulatory guidance rules for fonts.



(a) The PTO cannot enforce font requirements without going through some level of rulemaking. Enforcing a rule via non-regulatory software requirements is unlawful. (b) The PTO's rationale for the DOCX rule was that it's "standard." The PTO can't accept the convenient part of the standard and not others and claim that its rule is supported by a "standard." That isn't unlawful *per se*, but it's certainly disingenuous.

II. Legal infirmities of the DOCX rule

II.A. The PTO evaded proper notice-and-comment for the DOCX rule

[0013] Several parties submitted actual examples in which the PTO's computers had made changes that could render patent applications valueless. For example, Carl Oppedahl's comment letter (https://www.uspto.gov/sites/default/files/documents/Comment_Carl_Oppedahl_080519.pdf) states that he had actually uploaded a test DOCX patent application. An equation that showed on his computer as:

$$f(u)=\cos(u)^3\exp(0.2u)$$

was changed by the PTO's DOCX filing system to this:

$$f(u) = cos(u)^3 exp(10.2u)$$

In a patent application, the change from "0.2" to "10.2" is catastrophic. In some cases, the change from non-italic to italic could be just as significant. This error was introduced by the PTO's DOCX filing system.

[0014] Another public comment letter included two PDFs of the same letter—the results were remarkably different, simply because the letter was moved among computers. https://www.uspto.gov/sites/default/files/documents/Comment_Seventy_Three_Patent_Practitioners_092719.pdf –compare pages 1-34 to pages 48-81)

[0015] In the final rule notice, the PTO stated, "[t]o date, the Office has not received notifications of any issues resulting from the filing of applications in DOCX format." 85 Fed. Reg. 46,956. The Final rule notice offers not a word to even acknowledge either of these two examples (one of which "result[s] from the filing of applications in DOCX format"), let alone respond.

[0016] Perhaps Mr. Oppedahl didn't complete his DOCX filing ***because he caught the error in time***. Perhaps he caught it and abandoned the application. Whatever happened, the incident was unquestionably an "issue resulting from the filing of applications in DOCX format." The statement in the final rule notice was given to both OMB and to the Small Business Administration about a week before the rule went final, for their *ex parte* review. The PTO's lawyers owed these two tribunals "candor." Professional Responsibility Rule 3.3(a). Instead, the PTO's lawyers lied.

[0017] The PTO's "Response to Comment" violates the law. *Lilliputian Systems, Inc. v. Pipeline and Hazardous Materials Safety Admin.*, 741 F.3d 1309, 1313-14 (D.C. Cir. 2014) (where comment letters point out a problem with an agency's rule, and the agencies response is tangential because it recharacterizes the problem rather than responding to the comment, the agency's action is arbitrary and capricious); *Kennecott v. Environmental Protection Agency*, 780 F.2d 445, 449 (4th Cir. 1985) ("The court best acts as a check on agency decisionmaking by scrutinizing process… Whether the agency has provided notice and an opportunity to comment, and has fairly considered all significant data and comments, is the heart of the judicial inquiry."), *Home Box Office Inc. v. Fed Communications Comm'n*, 567 F.2d 9, 35–36 (D.C. Cir. 1977) ("the opportunity to comment is meaningless unless the agency responds to significant points raised by the public.") Reframing comments in order to avoid truthfully and squarely answering the comment is unlawful.

[0018] It also erodes trust. The PTO's refusal even acknowledge that the error occurred destroys any trust that the Patent Bar has in the PTO's good faith efforts. Simply put, the PTO lied. The PTO has some heavy lifting to rebuild trust again before the Patent Bar will believe anything the PTO says.

II.B. The "survey"

[0019] The PTO claimed to have done a "survey" to determine that about 80% of patent filers use Word or other word processors that use DOCX. 84 Fed. Reg. 37,413. However, the PTO has never made that survey available for public comment. The PTO has never disclosed the survey questions, the collection methods, or the analysis.

[0020] The general rule is that when an agency rulemaking relies on surveys, studies, computer models, or the like, the agency must make that information available for public vetting during notice-and-comment. *Solite Corp. v. EPA*, 952 F.2d 473, 484 (D.C. Cir. 1991) ("Integral to the notice requirement is the agency's duty 'to identify and make available technical studies and data that it has employed in reaching the decisions to propose particular rules… An agency commits serious procedural error when it fails to reveal portions of the technical basis for a proposed rule in time to allow for meaningful commentary.'")

[0021] The PTO's reliance on a black box "survey" is a violation of the law of notice and comment.

[0022] Comment letters noted that the PTO had made no provision for the other 20%. (*Seventy Three Practitioner*s, https://www.uspto.gov/sites/default/files/documents/Comment_Seventy_Three_Patent_Practitioners_092719.pdf at page 20). The Paperwork Reduction Act allows that an agency may reduce costs for itself, but "shall not do so by means of shifting disproportionate costs or burdens onto the public." 5 C.F.R. § 1320.5(d)(1)(iii). In the final rule, explains *advantages to the PTO itself*, and offers no response to address the plight of the other 20%. Response 63, 85 Fed. Reg. 46,959 col. 1. Ducking a fair answer to the comment was unlawful, and further erodes the public's trust in the competence and integrity of senior PTO staff.

II.C. The "yearlong study"

The PTO claimed to have conducted a "yearlong study" of PDF vs. DOCX filing. 85 Fed. Reg. at 46,959. The Administrative Procedure Act requires that notice-and-comment can only be informed and meaningful if an agency discloses all underlying assumptions, data, analyses, computer models, etc. for public comment. *Solite*, 952 F.2d at 484. The E-Government Act of 2002 requires agencies to post rulemaking support information on the agency's web site. E-Government Act of 2002, Pub.L. 107-347 § 206(d)(1), 116 Stat. 2916, codified in notes to 44 U.S.C. § 3501 The PTO never mentioned this "yearlong study" in the Notice of Proposed Rulemaking and offered nothing for public vetting. The first mention of the "yearlong study" appeared in the final rule notice, 85 Fed. Reg. 46,957-98—but the PTO offered none of the required supporting documentation. To this day, the PTO has offered no evidence that this "yearlong study" ever existed. (If it ever had, it would be with the rest of the PTO's supporting materials at https://www.uspto.gov/about-us/performance-and-planning/fee-setting-and-adjusting It isn't there.) Especially in light of the PTO's other disingenuous explanations, we have no confidence that this "yearlong study" ever existed, and if it did, we have no confidence that it used analytically-sound methods to reach any result relevant to the PTO's decision-making.

Freedom of Information Act requests F-21-0169 of July 2, 2021 and F-22-00092 of March 28, 2022 both sought the "yearlong study." FOIA gives the agency 20 business days to reply, 5 U.S.C. § 552(a)(6)(A)(i). Over a year later, the PTO has produced *nothing* in one, and nothing relevant in the other, suggesting either that no such study has ever existed or that the "yearlong study" does not show what the PTO claimed in the Federal Register.

CLAIMS

The invention claimed is:

Test Application

ABSTRACT

This is an abstract. The title is repeated above, using a Style reference. No statute or regulation permits the PTO to refuse filing of an application that repeats the title on the Abstract page, or that uses a standard feature of DOCX (Styles and Cross-References) to ensure that two portions of the application are consistent. If the PTO's DOCX filing system balks at the above Cross-reference, the PTO is proceeding in violation of law. It balks:

- This document contains STYLEREF fields and cannot be processed.

Exhibit 5

Comments on the PTO's May 25 proposal, from attorney blogs and email lists

User DT

The only customer who might benefit, IMO, are pro se filers. One of the features touted was advising about errors that might delay processing. Someone provided me with a link listing errors offline, and most were things that practitioners already know, e.g., the documents is missing a specification, claims, or abstract, claims are more than one sentence, claims are missing a period, etc.

I cannot imagine that there are that many pro se filers, however, that justifies this.

User AF

Here is my experience and observations using the DOCX filing system. I am an early beta user of Patent Center. As such, I started using DOCX for at least a year before I lost faith in it.

The last two applications I filed in DOCX were automatically indexed into PDF files incorrectly by the parsing software within Patent Center. The first of the two applications had the first five pages of the specification missing. In the second application, only the first five pages of the Specification were converted to a PDF file. The remaining 26 pages were missing. Because the USPTO uses the automatically generated PDF as the master file, not DOCX, I received a "Notice to File Corrected Application Papers." While almost everyone I spoke with at the AAU and EBU were very helpful and sympathetic, it took up to five phone calls for each application to the AAU and EBC to get things straightened out. Even when it was straightened out, because the "Withdrawal Notice" I received was so vague, generic, and confusing, I had to take it on "faith" from the helpful person at AAU that everything was now in fact ok.

I was told that when the USPTO updated their software that parses the DOCX into PDF files, it no longer recognized "Drawings" as a legitimate title. I was advised to use "Brief Description of the Drawings." That is all fine, I am willing to do that, but it points to some bigger problems.

It is not just DOCX that is a problem. The current system of handling documents and fixing bugs creates extra workload for USPTO support staff and for us patent practitioners, as evidenced by my experience above. In this spirit, the USPTO should modernize, streamline, and overhaul how they handle application documents, how they respond to issues, and how they test new systems. PDF forms are inconsistent and are non-standard. Known bugs are not fixed. There seems to be a culture of work-around rather than real bug fixing. As many of us have commented on this forum, forms are often handled and inspected inconsistently and not in accordance with Office rules.

Here are some suggestions of what the USPTO can do:

- Implement real Demming-style quality management training.
- Implement a "voice of the customer" program. The Ideascale programs for PAIR, EFS, Patent Center, and the MPEP are a good start
- Set up a task force that reviews all documents and procedures for consistency with Office policy and to make sure that they meet the needs of their customers.

- I think the USPTO needs to implement an online bug tracking system. Known problems, like the IDS issue discussed in this forum, should be tracked, assigned priority, and fixed. Problems like mine, that have immediate effect on a pending application, should be given special priority. This should be an online system, available to the public. There should be "program managers" assigned to handle certain areas that are accountable and accessible to the public.
- New software rollout like Patent Center and DOCX should have their own bug tracking system accessible to beta testers. There needs to be a product manager or program manager, accessible to the beta testers, and responsible for making sure that bugs, concerns, and issues are addressed. The system needs to be transparent and public.

User RB

DOCX filing is and will be problematic for all the reasons stated in the referenced DOCX sign-on letter (signed).

However, Scott N. and many others including Carl O., David B, etc. have identified the root cause of so many recurring problems with the USPTO's electronic systems. The USPTO filters / compresses the PDFs that they receive. The USPTO creates hour upon hour of wasted time resulting from this fundamental flaw. Bibliographic characters, drawings, tables, diagrams, formulas, etc. misinterpreted and countless hours wasted year after year correcting avoidable errors.

No less than an hour ago, I asked the AAU to process an application data sheet submitted over two months ago. (A separate USPTO workflow problem that has existed and remains unsolved for over a decade of processing applications electronically.) The ADS included all the required labels and change marks entered via a PDF editor. I was looking at a downloaded version from the electronic record while on the phone and could plainly see a faint underline in several locations in the USPTO filtered / compressed document. However, the AAU representative could not see the underlined text as rendered in the monitor at the USPTO (or wherever the AAU representative is located).

So now I wait for 5-7 more business days for the USPTO to either issue a Corrected Filing Receipt or a Communication informing me that I did not underline text when indeed the text I uploaded to the USPTO was electronically underlined. Both avoidable. Both wasteful for all involved.

I generate enough errors on my own. I do not need further assistance from the USPTO.

User RS

> Is there a bug reporting list that gets an acknowledgement or tracking number? A
> bug list that gets some action? (You know, like with an invention -- a "beta test" is
> only a beta test if the primary purpose is to gather user feedback, and the user is
> required to provide it. You know, patent law.) When I was a software engineer, we
> made it easy for users to report bugs... If the PTO was serious about testing and fixing
> stuff, there could be a "report bugs here" link on the top ribbon of the PatentCenter
> page...

> The PTO has made it hard enough to use, and even harder to report results, so I've

> stopped trying.

The short answer is basically, no.

Unfortunately, the PTO's development process is just about the least transparent process you could imagine. They put up the Ideascale system to encourage people to submit suggestions for improvements and comments on PatentCenter, but as someone once said, Ideascale is where good ideas go to die. Carl had set up a list of problems with PatentCenter as well as a list of feature requests, and I spent a bunch of time uploading all of them into Ideascale, but the PTO has generally ignored all of those postings. At times, the PTO vacillates between encouraging bug reports to be submitted to Ideascale and telling people to submit them to the EBC [Electronic Business Center] instead.

The EBC is another place where bug reports go to die, as far as I can tell. If you insist, you can get a tracking number for your bug report, but don't expect to ever get any follow-up on the problem. Eventually, if you're lucky, the PTO might fix the problem, but you're very unlikely to get any information about that fix unless they happen to mention it on their "known issues" web page, which the PTO silently updates on a seemingly random basis. The EBC staff aren't to blame; they seem to have just as little insight into the development process as we do.

Meanwhile, the PTO continues its quixotic effort to convince people to submit patent applications in DOCX format. I'm more than a bit pessimistic about the outcome of the PatentCenter beta. I suspect one of these days they will simply announce PatenCenter is complete and give a date for the elimination of EFS, regardless of what practitioners tell them.

If someone thinks I'm being overly pessimistic and grumpy this morning, I'd love to be convinced otherwise.

Exhibit 6

Affidavit of Bradley A. Forrest, original at https://downloads.regulations.gov/PTO-P-2020-0050-0004/attachment_1.pdf page 31

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

and

OFFICE OF INFORMATION AND REGULATORY AFFAIRS OFFICE OF MANAGEMENT AND BUDGET

AFFIDAVIT OF BRADLEY A. FORREST

I, Bradley A. Forrest declare that the following is true and correct:

Background and Experience

1. I am a registered patent attorney (Reg. No. 30,837) in private practice. I have been practicing in the field of intellectual property, with emphasis on patent or related matters, for over 38 years. My practice has included work at Rosemount, Inc., IBM Corporation, and at a relatively small law firm that grew into one of the largest patent prosecution boutique law firms in the country. I have also worked with and for in-house practitioners in corporations.

2. I have prosecuted thousands of patent applications for scores of different clients, directly and through oversight of several patent attorneys.

3. I have drafted such patent applications using many different word processing programs, including EasyWriter, DisplayWrite, Word Perfect, and Microsoft Word to name a few.

4. I have written many computer programs prior to becoming a patent attorney, including a computer simulation for detecting targets from a moving air vehicle.

5. I have investigated DOCX standards, tested the Patent Center Beta system with respect to filing applications by submitting DOCX versions of contrived patent applications, discovered errors, and provided direct feedback to USPTO programmers. The contrived applications have included equations, chemical formulas, pseudocode, and other text and images in applications saved in DOCX format.

6. While I am current Chair of the AIPLA Relations with the USPTO Committee, I am not writing on behalf of AIPLA. I am Chairman and General Counsel of Schwegman Lundberg & Woessner, P.A. I am writing on my own behalf and on the behalf of my law firm.

7. I have presented on DOCX filing in multiple national webinars and have had in person and electronic meetings with the USPTO programmers, attorneys, Directors, and the head of the Office of Enrollment and Discipline regarding the operation of the Patent Center DOCX filing functions from technical, legal, and ethical perspectives.

8. The estimates I give below are based on my experience as a patent attorney with different word processors over the years, my observations of the work of lawyers in our firm and where their efficiencies and inefficiencies arise, my observations of how my firm's employees interact with their software tools, and my experience as a programmer.

Opinion: Estimates of costs for using DOCX as filing vehicle for U.S. patents based on personal observation and informed by others within my firm.

9. My investigations have shown that different systems render (display) the same DOCX file differently. The DOCX standard permits different systems to determine how to display DOCX files and display them differently, sometimes in ways that adversely affect expression of technical details of inventive concepts. I have empirically observed occurrences of differences, and differences that affect such expression.

10. Different systems within my firm have displayed the same DOCX file differently.

11. The tendency of different systems to display the same DOCX file differently introduces potential for errors in the drafting and filing of applications that can drastically affect the enforceability and hence value of patents. One wrong word or formula can change a $100M patent into a valueless patent, in fact, a patent that's no more than a malpractice liability.

12. My current process for obtaining inventor signatures on formal documents is to provide a PDF of the application I drafted to the inventor for approval. This PDF is then what is filed electronically, ensuring that what the inventor reviewed is in fact, what was filed.

13. Under today's procedure, I know that the PDF I generate and that I send to my inventor for review is exactly the document that the PTO will receive. In contrast, if DOCX becomes the filing medium, then the following difficulties and burdens will arise:

(a) In some cases, first drafts of patent applications incorporate material written by the inventors. Clients and inventors use all different word processors. Because the DOCX standard allows integration with a variety of third-party tools, some inventors use tools for creating equations and chemical formulas and similar diagrams that are other than the tools on the PTO's approved list for acceptance. Under today's PDF filing regime, this just works. Text, equations, chemical formulas, and diagrams render into a fixed form in a PDF, and the meaning is uniform and reliable to all readers. These applications are filed by a paralegal without change. The PTO accepts them and deals with them reliably. In contrast, under the PTO's proposed DOCX rule, I will have to convert these inventors' applications to the PTO's approved forms, for example to convert equations from the form provided by the inventor into the PTO's selected narrow choice of tools or as images I create by using a snaptshot tool and pasting into a Word document. The selection and pasting creates additional work, substantial risk of error, and significant time for review to detect errors and find workarounds to prevent the error from compounding and compromising rights. I estimate that for about 5% of applications I draft, this will add an hour of inventor and attorney time. I estimate that for 1% of applications, this may not go smoothly, and it will add several hours of inventor and attorney time. For about 1 in 1000 to 10000, the conversions will introduce errors, and the cost of correcting those errors, if error correction is possible at all, will be staggering (see paragraph 13(g) of this Affidavit).

(b) In some cases, inventors send their initial draft of technical description, or their reviews of attorney-prepared drafts, at the last minute. Attorneys have very little time for review. Because DOCX introduces nonuniformity and randomness, there will be additional risks, and attorneys will be left with the untenable choice of accepting risk of error, vs. delaying past an immoveable deadline. Trying to handle unreliable software systems in a hurry is a recipe for error. I estimate that this kind of last-minute crush arises in about 2% or more of applications. I expect that for some small number of inventions per year, the attorney will

inform the client that it's too late, and it's just tough luck, because the attorney won't have time to cover the additional risk, and the inventor will simply be left with nothing. Attorneys that accept the risk of acting in a rush will be a major contributor to the extraordinary burden of attempting error correction.

(c) Sending a DOCX file of the application to the inventor for review may result in the DOCX file rendering differently on the inventor's computer display than it renders on my display. Uploading the DOCX file may result in a different rendering of the DOCX file on the USPTO system and hence a different PDF version being created. I cannot be sure that what the inventor reviewed matches what ends up being filed. The use of different word processing programs may accentuate the likelihood of a mismatch. Implementation of DOCX may render files slightly differently (or sometimes a lot differently). An inventor reviewing a DOCX file may see something different on their screen than I saw on mine. It will take time for the inventor and for me to resolve these differences if we even realize there are differences. I estimate that for up to 2% of applications, this may add an hour of communications between the attorney and inventor, as the two of us try to figure out why we're each seeing different things and try to work out the differences.

(d) The USPTO Patent Center system indicates that by submitting the USPTO rendering I agree that it will become the document of record. I cannot do that without taking significant time to proof the PDF that is created by the USPTO system that will become the document of record. Upon storing the PDF that I proofed, the USPTO may further reduce the resolution of the stored PDF to 300x300 dots per inch. Storing at this reduced resolution can result in elements of the application, such as exponents in an equation, becoming unreadable. I estimate that this will add between 15 minutes and two hours per application for review and changing the draft of the application to remove DOCX features that render differently on the PTO's web site than on my computer. When something doesn't go right on a computer, it's very time consuming to diagnose exactly what the problem is, identify which perfectly-correct use of Word on my computer is leading to an error on the PTO's, and identify a work-around that avoids the problem. In addition, companies that develop and maintain word processing software provide updates that can change the way DOCX files are rendered, injecting unexpected errors that will take time to recognize and fix.

(e) The USPTO has made great strides in increasing the reliability of their software-based systems. However, problems do occur. My firm is regularly confronted with

some PTO subsystem being unavailable. Under today's electronic filing system using PDF files, the PTO's software has minimal opportunities to inject errors into PDF based application. Every additional conversion or complexity introduced using DOCX files adds risk. Adding additional software layers to the PTO's filing workflow will add failures, which adds cost. I estimate that adding additional complexity will add about an hour for up to 5% of patent filings, because of PTO system failures.

(f) Today, under the PDF filing regime, I use a paralegal to electronically file PDFs of applications that I and the inventor(s) have reviewed and signed off on. I can absolutely trust the paralegal's work because a PDF has only one correct rendering and cannot change. In contrast, under a DOCX filing regime, I cannot assume that the USPTO rendering of the DOCX file will match what the inventor(s) approved. Thus, the only alternative would be to have the inventor(s) share screens during the DOCX filling process. This is impractical in many cases due to the number of inventors, the effort of coordinating such real time review, and the time it would take multiple people to review and proof a patent application for a second time. Since we can't trust that the PTO system will render a DOCX file the same way our computers do, we may need to have every application finally reviewed by the inventor personally during the filing process. That will take, on average, 10-30 minutes (depending on the complexity of the application). In many cases, filing may have to be done by me, as the lawyer, rather than by the paralegal. My law firm uses a fixed fee for paralegal time for filing, but I will have to bill my hourly rate if client budgets permit. Such cost will quickly greatly exceed the $400 penalty for not filing using DOCX.

(g) No matter how much care we take, because the PTO's rendering of DOCX's will inevitably occasionally differ from the rendering we see at our law firm. Rendering errors will occur under DOCX that do not occur under our use of PDFs for electronically filing applications. When differences arise between the PTO's rendering and what the lawyer and inventor thought they were submitting, the costs of error correction, if even possible, will be staggering. The problem is that there is no single canonically "correct" rendering of a DOCX file into text or image, and thus no reliable way to referee a disagreement. Many aspects of DOCX are left to individual implementations, and vary depending on whether one is using Word for Windows, Word for Mac, WordPerfect, Libre Office, Google Docs, etc. The standard permits each implementation to do something different, and they all may do so. Because there is no single standard definition of a "correct" rendering, I will argue in a petition to correct the document of record that what I submitted should be accepted by the PTO to read

the way it read on my computer, and the PTO will likely deny the petition and insist that the document should read the way it reads on the PTO's computers. In some cases, we'd have to sue to get a correction—but the outcome of that case is extremely uncertain. I am told that costs for an APA suit against an agency for this kind of issue are between $100,000 and $300,000. I estimate that if DOCX finds wide use, nationally there may be several such petitions and possibly law suits per year.

14. In my role as Chairman and General Counsel of my law firm, I have conferred with our malpractice insurance agents. They are concerned with the use of DOCX files for electronically filing patent applications for many of the reasons described above and have stated that anything that increases risk will result in higher malpractice insurance premiums. Unless I can develop a process that ensures the resulting document of record matches what the inventor(s) signed off on, I cannot recommend adoption of use of the Patent Center DOCX filing process. Though my firm has not made a final decision, we have tentatively concluded that if the PTO goes ahead with requiring DOCX, our firm can't accept the risk, and we will continue to file applications in PDF format. This will result in an increase of $400 per application filed.

15. I have less expertise to predict this from personal knowledge, but I would not be surprised if DOCX filing caused malpractice premiums to rise by up to 5% or more. A single mis-rendering by the PTO of a single valuable patent application could create several million dollars in liability, possibly raising malpractice insurance premiums for all. I expect that DOCX filings may result in erroneous filing for 1 or more in 1000 applications, with more errors likely for attorneys that do not use Word. Some percentage of those errors may substantively impair the application and mature into malpractice claims (including the cost of defending suit) of over $1 million each.

16. In the September 29 ICR Federal Register notice, I observed no line item identifying burden for the DOCX surcharge. Similarly, at Table 8, 85 Fed. Reg. 46946, the PTO estimates that the incremental cost of the DOCX rule is zero. These estimates fail to take into account that not all applicants will likely convert from PDF based electronic filling to DOCX based electronic filling. Those that don't convert will be required to pay the $400 non-DOCX

filing charge. I believe that the PTO's estimate is entirely unrealistic. On the information I have available to me in November 2020, I believe that a significant percentage, such as for example 20% to 70% of applicants will decide that the extra time and malpractice risks of DOCX filing are unacceptable, and will opt to file using PDF and pay the $400 fee rather than accept the costs and risks of DOCX filing. This is between 100,000 and 350,000 applications per year, times $400 each. This totals $40-$140 million per year.

17. In the Notice of Proposed Rulemaking, the PTO estimated that about 20% of patent applicants don't use word processors that generate DOCX. 84 Fed. Reg. at 37413. I am not aware of the PTO having provided an estimate of the burden for those filers in determining how to create a DOCX file from such word processor. In 2020, users that don't already use Microsoft Word today have reasons to not switch, so I estimate that very few will convert to DOCX filing absent their finding a suitable additional conversion program. Therefore about 20% of all applications (that is, almost 100,000 applications per year) may incur the $400 fee. The total cost is approximately $40 million per year.

18. I believe the PTO's statement that "To date, the Office has not received notifications of any issues resulting from the filing of applications in DOCX format." 85 Fed. Reg. 46956, col. 2 is misleading. A great number of issues have been pointed out by beta testers, perhaps while using the beta test mode. Some of these issues were reported before August 3, 2020, and many more since. For example, I communicated errors arising from the testing I performed as described in paragraph 5 of this Affidavit. Thus, the statement gives the false impression that all is well. While PTO programmers are working to fix reported errors, given the nature of the DOCX standard as described above and the potential for word processor updates to create more errors over time, the risk will remain, as does the additional burden.

I declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. § 1001.

Respectfully submitted,

Dated: November 30, 2020

By: /Bradley A Forrest/

Exhibit 7

David Boundy, 60-day comment letter, 0651-0032, *Initial Patent Applications* (Nov. 30, 2020), excerpts, full letter at https://downloads.regulations.gov/PTO-P-2020-0050-0004/attachment_1.pdf

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November 30, 2020

Via Email InformationCollection@uspto.gov

Kimberly Hardy
Office of the Chief Administrative Officer
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450

Re: Comment Request, *Initial Patent Applications* and *Patent Processing*, 0651-0031 and -0032, 85 Fed. Reg. 60967 and 60975 (Sep. 29, 2020)

Dear Ms. Hardy:

Several collections of information should be removed from these two information collection requests before they are submitted to OMB for review. For one collection of information, the PTO estimates its cost savings at about $150,000 per year, while the public estimates burdens at nearly $200 million per year. This collection of information cannot be justified. Further, the PTO acted unlawfully in promulgating the rules calling for several collections of information, and this triennial review is a good time to prune them:

- 37 C.F.R. § 1.16(u) ($400 surcharge for non-DOCX filing): this collection of information creates burden of ***nearly $200 million per year***, that is, over ***1000X*** the PTO's estimated cost savings. In the Final Rule notice,[1] the PTO admitted that its savings is only $3.15 per filing. The Notice and comment letters, and materials provided with this letter, establish that the burden to the public is over $400 per filing. The disproportionate shift of burden renders the DOCX collection of information unapprovable.
- At the time of the July 2019 NPRM, the PTO failed to perform the cost-benefit analysis and make the disclosures for the DOCX collection of information required by the Paperwork Reduction Act. Neither the August 2020 final rule notice nor the September 2020 ICR notice for comment make up for the deficiency. The August 2020 final rule notice doesn't respond to the comment letters as written; instead the public's comments

[1] Patent and Trademark Office, *Setting and Adjusting Patent Fees During Fiscal Year 2020*, 85 Fed. Reg. 46932, 46947 col.2 (Aug. 3, 2020).

are paraphrased into disingenuous parody, so that the PTO can evade its responsibility of direct and fair response to comment. The analysis in the Final Rule notice reflects both a complete lack of understanding of the technological issues involved and a refusal of the PTO to observe the legal requirements for collecting information. The procedural failures underlying the DOCX collection of information render it unapprovable.

- Various collections of information in the MPEP impose burden on the public above the requirements of validly-promulgated regulation (leaving way for valid exercise of the PTO's authority to interpret "genuine ambiguity" in statute or regulation. For example, the June 2020 revision to MPEP § 706.07(b) should be backed out, and MPEP § 706.07(b) should be returned to its 2019 state. If the PTO wishes to impose burden on the public or bind the public, it must act by rulemaking, not by guidance. Executive Order 13891 and a recent Department of Commerce regulation, 15 C.F.R. § 29.2, forbid the PTO from attaching binding weight to guidance. These collections of information should be removed from the ICR request (and from the MPEP).

Exhibit A to this letter is an affidavit of Bradley Forrest, who is Chairman and General Counsel of Schwegman Lundberg & Woessner, P.A., one of the larger patent boutiques in the country, and is current Chair of the AIPLA Relations with the USPTO Committee (though he writes in his personal capacity, not on behalf of AIPLA or the SLW firm). Mr. Forrest writes:

> Though my firm has not made a final decision, we have tentatively concluded that if the PTO goes ahead with requiring DOCX, our firm can't accept the risk, and we will continue to file applications in PDF format. This will result in an increase of $400 per application filed.

TABLE OF CONTENTS

I. The DOCX rule should be removed from the ICR request

A. The burdens are large and unaccounted for

Burdens of the DOCX collection of information (relative to today's PDF filing) include the following:

- Training, adjustment, and transition costs. Training and adjustment burden will be substantial. Not all DOCX documents authored by attorneys can be uploaded into PatentCenter—some just plain fail. Of documents that upload, many are vulnerable to error (see sections I.B.1 and I.B.2, below). I estimate this at 3 hours per attorney, and 10 hours per paralegal. Learning all the pitfalls and work-arounds will take many hours.

This totals to about $5 million in one-time burden for all attorneys, and about $1.5 million per year for training for new attorneys and paralegals that enter the field.

- Interacting with inventors. Often, inventors provide information in forms that won't readily translate to the limited subset of DOCX supported by PatentCenter. For example, the inventor may use an equation software package or chemical structure software package that isn't within the PTO's subset. Today, it's easy to deal with this—we render it as a PDF and file it, and it works. Under the PTO's DOCX proposal, this will take a significant amount of work to get the document into PTO-approved form. I encounter this in about 5% of my applications. I estimate that this will take one to two hours extra for these 5% of applications, and about 8 hours extra for 1% of applications. My estimate comes to $16 million per year. An Affidavit of Bradley Forrest estimates about $16 million in burden per year for applications filed (see Exhibit A ¶ 13(a) and (c)), and many hundreds of millions of dollars of economic value for patent applications that can't be filed (see Exhibit A ¶ 13(b)).
- Word advanced features. Many attorneys (me, for instance) use advanced features of Word, such as bookmarks and cross-references, to ensure that a patent application is correct. Patent Center issues an error message for applications that use these features. It will take the attorney time to remove these features from an application. Each change risks introduction of error. I estimate that about 10% of attorneys use Word the way I do, and that this will add about half an hour to each filing. My estimate is that this will raise about $10 million per year in burden. Mr. Forrest doesn't include this in his estimate.
- Reviewing will require about 15-60 minutes per submission. Under today's PDF filing regime, the WordProcessor-to-screen display and WordProcessor-to-PDF translations are performed by the very same software. Everyone can rely on "what you see is what you get," so there's no review time. In contrast, the PTO's DOCX-to-PDF rendering engine is different, and generates a different PDF, and sometimes erroneous (see section I.B.3 below). I estimate that on average, this will add half an hour, and risk of error—at 500,000 applications, this is $100 million per year. Mr. Forrest estimates this at 15 minutes to two hours (see Exhibit A ¶ 13(d)); using a mean of half an hour gives the same $100 million per year.
- When, despite all care, an error arises because the PTO's system renders a DOCX differently than the attorney's (I estimate ½% of applications), the burden will be in the range of 40 hours to obtain correction, totaling about $40 million per year. In about half of those, no correction will be possible, so the burden will be the value of the patent application. If an average patent application is worth $50,000 at filing, this will be about 50
- Mr. Forrest estimates that adding complexity to the PTO's filing system will raise additional failures and down-time for the PTO's systems, adding an hour to about 5% of applications (see Exhibit A ¶ 13(e)). That's $10 million.

- The big cost will come if the PTO's different rendering into PDF is material to the patent. How can an applicant obtain a correction? The problem with DOCX is that the DOCX standard is a loose standard. It doesn't specify a single correct rendering of a DOCX into text. That means that *both* the one that the attorney expected is correct, *and* the one that the PTO will generate is also correct. If the PTO's is different than the attorney's, which one is more correct? How will an attorney prove what was intended to the PTO's satisfaction and obtain a correction? I estimate that for about 100 patent applications a year, error correction will cost $10,000 to $200,000. Mr. Forrest's estimate is for a smaller number of applications, but higher costs (see Exhibit A ¶ 13(a), (b), and (g)). Averaging our two estimates gives $20 million per year.
- The PTO estimated that 20% of patent applicants don't use word processors that generate DOCX. NPRM, 84 Fed. Reg. 37413. The PTO has never estimated burden for them. 20% × 500,000 ×$400 is $40 million. About 5% of this is double-counting against the above categories; call the total $38 million.
- The first time that a patent application is damaged by the PTO's software, and a malpractice claim is filed, all malpractice coverage will go up by a significant amount. I expect malpractice claims (claims and cost to defend) to average $3 million to $20 million per year (see Exhibit A ¶¶ 14 and 15). Those costs will probably be around $ 4 million per year.

The total burden of the DOCX information collection is about $4,750,000 in one time startup costs, and about $196 million in annual burden.

B. The technological analysis in the final rule notice reflects misunderstanding of the technological basics

The PTO in the Notice of Proposed Rulemaking[2] and Notice of Final Rule[3] proceed from a fundamental misunderstanding of technology and the word "standard." The PDF standard starts with a plain sentence: "The goal of PDF is to enable users to exchange and view electronic documents easily and reliably, independent of the environment in which they were created or the environment in which they are viewed or printed."[4] In contrast, even a brief reading of the two

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[2] Patent and Trademark Office, *Setting and Adjusting Patent Fees During Fiscal Year 2020, Final Rule*, 84 FR 37398, https://www.federalregister.gov/documents/2019/07/31/2019-15727/setting-and-adjusting-patent-fees-during-fiscal-year-2020 (Jul 31, 2019)

[3] Patent and Trademark Office, *Setting and Adjusting Patent Fees During Fiscal Year 2020, Final Rule*, 85 FR 46932, https://www.federalregister.gov/documents/2020/08/03/2020-16559/setting-and-adjusting-patent-fees-during-fiscal-year-2020 (Aug. 3, 2020), corrected at 85 FR 58282, https://www.federalregister.gov/documents/2020/09/18/2020-20634/setting-and-adjusting-patent-fees-during-fiscal-year-2020 (Sep. 18, 2020)

[4] ISO 32000 standard, available at https://www.adobe.com/content/dam/acom/en/devnet/pdf/pdfs/PDF32000_2008.pdf

DOCX standards, ECMA-376 [5]and ISO/IEC 29500, show there is no similar sentence. In fact, the two DOCX standards have a number of sentences to the contrary: the DOCX standards explain that there are no guarantees that a document created on one word processor will appear the same to a user on another word processor, and the standards expressly consent to *inconsistency*.

1. What does the word "standard" mean? What do ECMA-376 and ISO/IEC 29500 mean and guarantee, and what do they not?

The main reason that DOCX is not a suitable form for submitting patent applications is that the DOCX standards are not intended to, and do not, assure interoperability. Like most other standards in computer science, the DOCX standards specify conditions on some parameters, and leave others open to vary in different implementations. Non-interoperable standards are more the rule than the exception in computer science. For example, the FORTRAN language has been "standardized" since 1958. The C programming language has been standardized de facto since the 1950s, and by an ANSI standard since 1990. But in neither case can a programmer take a FORTRAN or C program written for one computer and run it reliably on a computer from a different vendor. There are many dependencies[6] that are left open to implementers. A program may be a "valid" program, in the sense that it will compile on the destination computer, but "valid" and "within the standard" is **no guarantee that it will run correctly**. It's essentially impossible to write a commercially-important program that can be moved from one computer to another without substantial rework. The FORTRAN and C standards only guarantee some things, but not others. A "standard" does not guarantee interoperability. Only a fool assumes otherwise.

Another example is the gasoline octane standard. All gasoline sold in the United States conforms to multiple standards. But that doesn't mean that all gasoline is interchangeable, or that your car will run well if you use gasoline that conforms to the "standard." Like most other standards, the octane standards specify some characteristics of gasoline and not others. A "standard" does not guarantee interchangeability or interoperability. Only a fool assumes otherwise.

ECMA-376 and ISO/IEC 29500 leave many things open to implementation. ECMA-376 expressly states that there is no common set of features that are required to be implemented; all the standard guarantees is that *if* certain features are implemented, they will behave in a certain manner. Some implementations of DOCX are permitted to have features that will cause errors in

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[5] Standard ECMA-376, Office Open XML File Formats, https://www.ecma-international.org/publications/standards/Ecma-376.htm

[6] Issues that are left open by the FORTRAN and C standards include storage layout (big endian vs. little endian), underlying hardware arithmetic (32 or 36 or 64 bit words? IBM 370 floating point, Digital F and G floating point, IEEE 756 floating point, or 80-bit extended floating point)? Character set (ASCII or EBCDIC?) What operating system calls are available? For FORTRAN, does this compiler generate reentrant recursive code or not?

others.[7] ECMA-376 expressly states that a conforming implementation may reverse the characters of a DOCX: "This tool's behavior would be to transform the title "Office Open XML" into "LMX nepO eciffO"."[7] Changing text, up to the point of rendering it unintelligible, is *entirely* within the standard! A Microsoft blog[8] writes "One of the great things about ISO/IEC 29500 is its extensibility mechanisms - implementers can extend the file format while remaining 100% compliant with the standard." That statement admits that while ISO/IEC 29500 is a standard, it's not a standard that guarantees uniform interoperability—Microsoft intends that various vendors may add features that are incompatible with other vendors'. Another Microsoft page describes how extensions can be added to DOCX—with the result that one implementation becomes incompatible with another.[9] Among users, the non-interoperability among different implementations of DOCX is well known.[10]

2. The comment letters pointed out a number of failure points that DOCX will create

DOCX files cannot even be transferred reliably between Microsoft Word for Windows and Microsoft Word for Mac. Users that use Libre Office, Google Docs, or WordPerfect cannot reliably transfer documents to or from Microsoft Word. You have almost certainly observed it yourself: when you use the "previewer" in most email systems or web browsers to view a DOCX document, the document comes up differently than it does in your word processor. That non-uniformity exists between every pair of word processors. The problems are especially pronounced for equations and chemical structure diagrams. Even basic text can have the problem—standard fonts like Times Roman and Helvetica are available from different vendors, each with slight differences that will alter pagination in some cases. For one example, a patent attorney that uses Libre Office had an equation in a patent application:

$$f(u)=\cos(u)^3 \exp(0.2u)$$

Patent Center rendered it as follows.

$$f(u) = cos(u)^3 exp(10.2u)$$

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[7] ECMA standard, Part 1, § 2.4 *Interoperability Guidelines*.

[8] https://blogs.msdn.microsoft.com/chrisrae/2010/10/06/where-is-the-documentation-for-offices-docxxlsxpptx-formats-part-2-office-2010/

[9] https://docs.microsoft.com/en-us/openspecs/office_standards/ms-docx/b839fe1f-e1ca-4fa6-8c26-5954d0abbccd This page claims to be "updated frequently." As retrieved on November 27, 2020, this page was updated on October 15. Any claim that DOCX is a standard

[10] Abishek Batnagar, *Is DOCX really an open standard?* https://brattahlid.wordpress.com/2012/05/08/is-docx-really-an-open-standard attached as Exhibit B.

Note that the PTO's rendering system inserted a spurious digit "1" into the math equation. Because the DOCX standard leaves many behaviors unspecified, this may well be a correct rendering within the DOCX standard, and is almost certainly "correct" from Patent Center's point of view. But it isn't what was shown on the attorney's computer.

One of the notice-and-comment letters[11] gave a number of examples of where a document appears differently when opened in different word processors. This letter pointed to one case where WordPerfect entirely failed to open a DOCX produced on another word processor.[12]

The Affidavit of Bradley Forrest (Exhibit A) explains several situations in which variations among the handling of DOCX among different word processors has been observed to create costs.

On one of the patent law blogs, one person developed a test patent application in Libre Office and explained all the steps that had to be taken to get it to be accepted by Patent Center, as follows:[13]

> I … opened it with the latest version of Libre Office. [Libre Office] doesn't support paragraph numbering with leading 0s, so it automatically collapsed the paragraph numbers to have no leading zeros. …
>
> I saved that as a new file and uploaded it to Patent Center. Patent [C]enter gave me font error. I had to remove the text in an uncommon font … and remove the wingdings. I tried again and got an error about bookmarks. I left the automatic item numbering but had to remove the automatically updating cross reference. With that, Patent center accepted the upload. It warned about paragraph numbering in improper format, figures in the specification, a claim not ending in a period (false error), word count in the abstract over 150 words (false error), document containing figures again, and line spacing not 1.5 or 2ouble spaced (false error).

If this were a real application, the changes that were required in order to get the application to be accepted by Patent Center would be fatal. It's not acceptable that this person had to "remove text," "remove the automatically updating cross reference" and the like! "Automatically updating cross-references" are crucial to correct patent applications; to remove them is to introduce error. And note all the other "false errors:" Patent Center isn't reliable software.

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[11] Seventy-Three Patent Practitioners, *Comments on Setting and Adjusting Patent Fees During Fiscal Year 2020, 84 Fed. Reg. 37398 (Jul. 31, 2019)*, https://www.uspto.gov/sites/default/files/documents/Comment_Seventy_Three_Patent_Practitioners_092719.pdf (Sep. 27, 2019). A host of errors in which other word processors were able to open the document, but changed the document in the process, are discussed at pages 18-19 and 48 to 81.

[12] Seventy-Three Patent Practitioners, note 11 *supra*, at page 19.

[13] https://forum.napp.org/topic/1500-a-patent-center-docx-filing-experience/?tab=comments#comment-8875

A number of the comment letters noted that DOCX simply cannot work for the purpose the PTO ascribes. See excerpts at Exhibit C. Each of these comments tells a consistent story: though DOCX is subject to "standards," that fact alone does nothing to guarantee interoperability, and does nothing to guarantee correct results when a DOCX is moved from one word processor to another.

Many of the comment letters point to objective empirical experience, several have experimental evidence in the letter itself: DOCX files cannot *reliably* be moved from one word processor to another. Any theoretical interoperability that the PTO might have inferred from the existence of standards (but that is not in the text of the standards documents themselves) is erroneous. The Final Rule notice is starkly silent in response.

Essentially all commenters agree that DOCX is covered by standards, and all assume that Patent Center's implementation is compliant with those standards. But the comment letters uniformly observe that "standards" don't guarantee that Patent Center will accept all DOCX files and render them "correctly" from the user's point of view. The PTO can speculate all it wants about the effect of "standards," but the empirical evidence is clear that DOCX doesn't work reliably. The ECMA and ISO/IEC standards are designed to allow a DOCX to appear differently on different computers, to take advantage of efficiencies that differ on different computers—in other words, the standard is designed to *not* work for the PTO's purpose.

3. The Final Rule notice deflects the comments rather than answering them

The Final Rule notice fails to address the comments. The Supreme Court has stated that the notice and comment provisions of 5 U.S.C. § 553 "were designed to assure fairness and mature consideration of rules of general application." *NLRB v. Wyman-Gordon Co.*, 394 U.S. 759, 764 (1969). The process helps ensure "that the agency maintains a flexible and open-minded attitude towards its own rules," thereby ensuring that the opportunity to comment is "a meaningful opportunity." *North Carolina Growers' Ass'n, Inc. v. United Farm Workers*, 702 F.3d 755, 763 (4th Cir. 2012). These provisions afford an opportunity for "the agency promulgating the rule to educate itself before establishing rules and procedures which have a substantial impact on those regulated." *Batterton v. Marshall*, 648 F.2d 694, 704 (D.C. Cir. 1980). Where comment letters point out a problem with an agency's rule, and the agency's response is tangential because it recharacterizes the comment and ducks the problem, rather than responding fairly to the comment, the agency's action is arbitrary and capricious. *Lilliputian Systems, Inc. v. Pipeline and Hazardous Materials Safety Admin.*, 741 F.3d 1309, 1313-14 (D.C. Cir. 2014). Where "The public comments repeatedly draw the agency's attention to the combined adverse effect of the challenged rules" and yet "time and again, the agency sidesteps this fundamental concern" the agency acts unlawfully. *Casa de Maryland, Inc. v. Wolf*, 2020 WL 5500165 at *26 (D. Md. 2020). An agency can't "brush aside important facts." *Non sequiturs* don't meet the agency's legal obligation to fairly respond to public comments. *Casa de Maryland*, at *27.

A typical response to comment is

Comment 59: Two commenters stated that there is no single DOCX standard to which Microsoft Word and the other word processors are all compliant.

Response: DOCX is a word-processing file format that is part of Office Open XML (OOXML), an XML-based open standard approved by the Ecma International® consortium and subsequently by the ISO/IEC joint technical committee.

For more information about the OOXML standard, please see:

- ECMA–376 at *http://www.ecma-international.org/publications/standards/Ecma-376.htm*
- ISO/IEC 29500 at *https://www.iso.org/committee/45374/x/catalogue/*
- NIST votes for U.S. Approval of OOXML at *https://www.nist.gov/news-events/news/2008/03/nist-votes-us-approval-modified-office-open-xml-standard*

The "Comment 59" paraphrase of the "comment" is inaccurate, and therefore the "response" adds nothing useful to the conversation. None of the comments in Exhibit C of this letter challenge the general proposition that DOCX is covered by the ECMA and ISO/IEC standards. Rather, the comments note that the standards don't go far enough to cover the issues required for interoperability. The PTO's "response," that the standards exist and cover DOCX, has nothing to do with the actual comments, and doesn't address the underlying problem. Nowhere in either the NPRM or the Final Rule notice does the PTO ever aver that DOCX is reliably interoperable among DOCX word processors, only that standards exist. That proves nothing. The PTO never suggests it performed a series of experiments to contradict the experiments described in the comment letters. The Final Rule notice communicates neither an understanding of technology nor a good faith and open-minded approach to public comments.

Similarly, at 85 Fed. Reg. 46957, col. 2, the Final Rule notice reads:

DOCX is supported by many popular word-processing applications, such as Microsoft Word, Google Docs, Pages, and LibreOffice.

That comment is irrelevant, and only reflects a pattern of deflection by rewriting comments instead of replying directly to them. I reviewed all the comment letters, and not a single one even alleges that any of these programs cannot *open* a DOCX (though one comment[14] showed an instance in which WordPerfect couldn't open a DOCX that was perfectly acceptable to other word processors). The comments all raise the same relevant question: when the same document is opened in different word processors, different word processors don't reliably show the same content. As the letters in Exhibit C explain, they don't. The Final Rule notice pointedly avoids addressing the relevant issue raised in the comment letters.

This is a pattern in the "response to comments" section of the DOCX section of the Final Rule notice—many of the "comment" paraphrases are no more than a parody of the author's original comment, and thus the "response" only irrelevant evasion.

[14] Seventy-Three Patent Practitioners, note 11 *supra*, at page 19.

C. The Final Rule is contrary to statute: it fails to discuss burden on the public

The Paperwork Reduction Act requires "[a]gencies … to minimize the burden on the public to the extent practicable." "to minimize the burden on the public to the extent practicable. *See* 44 U.S.C. § 3507(a)(1)."[15] By statute, the PTO was required to consult with the public to "evaluate the accuracy of the agency's estimate of the burden" and "minimize the burden of the collection of information on those who are to respond." 44 U.S.C. § 3506(c)(2)(A)(ii) and (iv). An agency must "take[ ] every reasonable step to ensure that the proposed collection of information … [i]s the least burdensome necessary for the proper performance of the agency's functions" 5 C.F.R. § 1320.5(d)(1). An agency may seek to reduce costs to itself, but "shall not do so by means of shifting disproportionate costs or burdens onto the public." 5 C.F.R. § 1320.5(d)(iii).

The Final Rule notice is strikingly silent on burden *on the public*. The Final Rule notice only discusses cost saving for the PTO. For example, 85 Fed. Reg. at 46947, col. 2, and 46957, col. 2, read as follows:

time-consuming and costly step. Optical character recognition (OCR) of image-based filings costs the Office approximately $3.15 per new submission. In addition to the initial submission, the use of image-based PDFs incurs many costs over the lifetime of an application. There are large costs associated with the USPTO's systems and personnel—from pre-examination, examination, and publication—due to the need to apply OCR to convert image-based PDFs into structured text that can be leveraged by downstream systems. The surcharge is applied not only to account for these inefficiencies, but also to address rising expenses. Encouraging text-based filings

Response: The use of image-based PDFs incurs many costs over the lifetime of an application. There are large costs associated with the USPTO's systems and personnel, from pre-examination, examination, and publication, due to the need to apply OCR to convert image-based PDFs into structured text that can be leveraged by downstream systems. The surcharge is applied not only to account for these inefficiencies, but also to address rising expenses.

Reducing costs is good, even if those costs are only $3.15 per application. But reducing costs by $3.15 by raising costs on the public by hundreds of dollars is not only foolish, it's illegal. 44 U.S.C. § 3507(a) ("An agency shall not conduct or sponsor the collection of information unless" it has followed the procedures of the Paperwork Reduction Act, which requires fair response to comments); 5 C.F.R. § 1320.5(d)(iii). The illegality is compounded by the PTO's evasive approach to responding to comments.

[15] *Dole v. United Steelworkers of America*, 494 U.S. 26, 32 (1990).

D. The PTO's pattern of deflection and falsehood suggests and inference of bad faith

As Carl Oppedahl (a patent attorney in Colorado, formerly a member of PPAC) wrote in his comment letter (see Exhibit C), a number of the Patent Office's statements are "disingenuous at best, and border[ ] on falsity." That was the Notice of Proposed Rulemaking. The Final Rule notice is well over the border. When an agency excludes serious consideration of serious alternatives, and instead creates a record that demonstrates a single-minded commitment to a pre-ordained result, the agency rule is void. *Connecticut Light & Power Co. v. Nuclear Regulatory Commission*, 673 F.2d 525, 536 (D.C. Cir. 1982) (requiring an agency to accept alternatives).

For example, at 85 Fed. Reg. 46956, the Final Rule notice states:

> To date, the Office has not received notifications of any issues resulting from the filing of applications in DOCX format. If there is an instance in which

This is a falsehood, and surrounding circumstances support an inference that it's an intentional falsehood. Carl Oppedahl's letter gives an example of an equation that was altered when Patent Center accepted a DOCX. This letter was sent to the Patent Office in August 2019. I am aware of a conference and email discussion between AIPLA and Deputy Director Peter in May 2020 that raised these issues.[16] I contributed several "notifications of issues" that were reported through a group effort into IdeaScale in June and July (before publication of the Final Rule), and many more reported in August and September.[17] For the Federal Register to report on August 3, 2020 to report "the Office has not received notification of any issues" is somewhat beyond reckless disregard for the truth. The goal of the falsehood would be to whitewash the PTO's refusal to address the facts raised in the Notice and Comment letters and various emails.[18]

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[16] Carl Oppedahl reported this conversation in his blog. See Exhibit D.

[17] The non-responsiveness of the PTO and EBC to bug reports is addressed in several of Carl's blog posts. See Exhibit D. Far too often, EBC's response is some variation on "We won't fix it." See his posts, *USPTO's Ideascale — where good ideas go to die* (Jun 16, 2020), *Dozens of bugs in PatentCenter remain unattended-to* (Sep 20, 2020) and *"We're unable to reproduce this issue" say the PatentCenter developers* (Sep. 23, 2020).

[18] The Final Rule notice states:

> format. If there is an instance in which an error occurs, the Electronic Business Center (EBC) should be contacted for investigation at 1–866–217–9197 (toll-free), 571–272–4100 (local), or *ebc@uspto.gov*. The EBC is open from 6:00 a.m. to 12:00 midnight ET, Monday through Friday.

Likewise, the Final Rule notice says (85 Fed. Reg. at 46985, col. 2):

> U.S.C. 3501–3549). The collection of information involved in this Final Rule have been reviewed and previously approved by the OMB under control numbers 0651–0012, 0651–0016, 0651–0020, 0651–0021, 0651–0031, 0651–0032, 0651–0033, 0651–0059, 0651–0063, 0651–0064, 0651–0069, and 0651–0075. In addition, updates to the aforementioned information collections as a result of this Final Rule have been submitted to the OMB as non-substantive change requests.

This is a falsehood. The only two Control Numbers where this DOCX collection of information would have been "reviewed and approved" are 0651-0031 and -0032, and neither has a relevant filing in the relevant time period:[19]

OMB Control Number History

OMB Control Number:**0651-0031**

ICR Ref. No.	Request Type	Date Received By OIRA	Conclusion Date	Conclusion Action
201910-0651-004	No material or nonsubstantive change to a currently approved collection	10/11/2019	10/29/2019	Approved without change
201802-0651-002	No material or nonsubstantive change to a currently approved collection	03/15/2018	04/03/2018	Approved without change
201712-0651-005	No material or nonsubstantive change to a currently approved collection	12/11/2017	12/13/2017	Approved without change
201711-0651-013	Revision of a currently approved collection	11/17/2017	12/11/2017	Improperly submitted and continue

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Many people have "contacted EBC" about DOCX failures of Patent Center. EBC has been very little help. The non-responsiveness of EBC is described in several of Carl Oppedahl's articles (see Exhibit D). The non-responsiveness of EBC means that "contacts" to EBC are collections of information with no "practical utility." "Contacting EBC" is an unapprovable information collection.

[19] Office of Information and Regulatory Affairs, OMB Control Number History for 0651-0031 and -0032, https://www.reginfo.gov/public/do/PRAOMBHistory?ombControlNumber=0651-0031 and https://www.reginfo.gov/public/do/PRAOMBHistory?ombControlNumber=0651-0032 The ICR in 0651-0031 for October 2019 ICR 201910-0651-004 https://www.reginfo.gov/public/do/DownloadDocument?objectID=95682501 was reported to OMB as "no material change or nonsubstantive change" and included only fee adjustments. Just for good measure, I looked at 0651-0043 (financial transactions) too—nothing: None have any mention of "docx" or § 1.16(u).

OMB Control Number History

OMB Control Number:**0651-0032**

ICR Ref. No.	Request Type	Date Received By OIRA	Conclusion Date	Conclusion Action
202003-0651-002	No material or nonsubstantive change to a currently approved collection	07/13/2020	09/16/2020	Approved without change
201908-0651-004	No material or nonsubstantive change to a currently approved collection	10/08/2019	10/29/2019	Approved without change
201712-0651-019	No material or nonsubstantive change to a currently approved collection	12/15/2017	12/21/2017	Approved without change
201712-0651-012	No material or nonsubstantive change to a currently approved collection	12/11/2017	12/13/2017	Approved without change
201711-0651-009	Revision of a currently approved collection	11/17/2017	12/11/2017	Improperly submitted and continue

The falsity of the claim of "reviewed and previously approved" in the NPRM was pointed out in one of the comment letters.[20] Yet it's repeated in the Final Rule. We all make false statements by accident. But when a false statement is repeated after it's pointed out, the fair inference is that the falsehood is intentional. The goal of the intentional falsehood would be to evade oversight by OMB under the Paperwork Reduction Act.

The Final Rule notice reads (85 Fed. Reg. 46956 col. 2):

> examination and maintaining the quality of patents issued. According to surveys conducted by the USPTO, the majority of applicants use word-processing software, such as Microsoft Office and LibreOffice, to author applications in DOCX format. These

There's no obvious way for these parties to avoid the $400 fee. In the NPRM, the PTO acknowledged that the affected population would be about 20% of the total. NPRM, 84 Fed. Reg. 37413. In other words, the PTO knew the cost balance perfectly well: it knew it was raising costs on 20% of the patent filing public by $400 in order to save itself $3.15 per application. An agency rule is invalid when the agency failed to consider total balance of costs and benefits on all parties—agencies can't carve out minorities and not care about effects on them.[21]

Under the Paperwork Reduction Act, the PTO is required to estimate "burden" on the minority that doesn't use DOCX. The PTO was reminded of this in one of the comment letters.[22] Neither Executive Order 12866 nor Executive Order 13771 nor the Paperwork Reduction Act have exceptions for rules invokeable on an agency's say-so, that the rule affects only a minority of members of the public, no matter what the costs are on that minority. The fair inference is

[20] Seventy-Three Patent Practitioners, note 11 *supra*, at pages 12, 22, and 23.

[21] *Public Citizen v. Mineta*, 340 F.3d 39, 57–58 (2d Cir. 2003); *Mid-Tex Electric Cooperative Inc. v. Federal Energy Regulatory Comm'n*, 773 F.2d 327, 357-60 (D.C. Cir. 1985).

[22] Seventy-Three Patent Practitioners, note 11 *supra*, at page 20.

that the PTO used this sleight-of-hand to avoid disclosing roughly $40 million of burden to OMB.

The Final Rule notice reads (Fed. Reg. 46970, col. 1):

> *Response:* Guidance in OMB Circular A–4, Regulatory Analysis, and concerning RIAs provides that fees to government agencies for goods or services are considered transfer payments. The fee adjustments concern increases of fees for USPTO services, which are transfers, not costs. The non-DOCX surcharge fee is based on the services provided by the USPTO to patent applicants and, consequently, qualifies as a transfer payment under OMB's guidance. As noted in response

This is a falsehood. Circular A-4 reads "the revenue collected through a fee, surcharge *in excess of the cost of services provided*, or tax is a transfer payment." First, misquotation from Circular A-4 is hard to explain as anything other than an intentional lie. Second, while $396.85 of the DOCX surcharge is fairly characterized as a "transfer payment," $3.15 isn't. Third, the PTO characterized *the entire DOCX rule* and the entire fee-setting as a "transfer payment." Since the PTO's fees are calibrated to costs of services provided, the fee-setting portion of the rule isn't remotely a transfer payment. The PTO used this lie, apparently, to evade the work required by Executive Orders 12866 and 13771, and to evade oversight by OMB.[23]

Both OMB and SBA review agency rules on an *ex parte* basis—for some reviews, the public has no notice or participative role; in others, the public can file one round of comment letters, but the agency has an ex parte opportunity to change its position and offer alternative explanations and evidence on an entirely *ex parte* basis. All attorneys working on this rule and information collection review should be aware of Rule of Professional Responsibility 3.3:[24]

> Rule 3.3: Candor Toward the Tribunal
>
> (a) A lawyer shall not knowingly:
>
> (1) make a false statement of fact or law to a tribunal or fail to correct a false statement of material fact or law previously made to the tribunal by the lawyer;

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[23] More examples of falsehoods calculated to evade review by OMB and by the Small Business Administration are described in David Boundy, *An Administrative Law View of the PTAB's 'Ordinary Meaning' Rule* (January 30, 2019). Westlaw Journal Intellectual Property 25:21 13-16 (Jan 30 2019), available at https://ssrn.com/abstract=3326827.

[24] American Bar Association, Model Rule of Professional Responsibility 3.3, https://www.americanbar.org/groups/professional_responsibility/publications/model_rules_of_professional_conduct/rule_3_3_candor_toward_the_tribunal

> (2) fail to disclose to the tribunal legal authority in the controlling jurisdiction known to the lawyer to be directly adverse to the position of the client and not disclosed by opposing counsel; or
>
> (3) offer evidence that the lawyer knows to be false. If a lawyer, the lawyer's client, or a witness called by the lawyer, has offered material evidence and the lawyer comes to know of its falsity, the lawyer shall take reasonable remedial measures, including, if necessary, disclosure to the tribunal. A lawyer may refuse to offer evidence, other than the testimony of a defendant in a criminal matter, that the lawyer reasonably believes is false.
>
> (b) A lawyer who represents a client in an adjudicative proceeding and who knows that a person intends to engage, is engaging or has engaged in criminal or fraudulent conduct related to the proceeding shall take reasonable remedial measures, including, if necessary, disclosure to the tribunal.
>
> (c) The duties stated in paragraphs (a) and (b) continue to the conclusion of the proceeding, and apply even if compliance requires disclosure of information otherwise protected by Rule 1.6.
>
> (d) In an ex parte proceeding, a lawyer shall inform the tribunal of all material facts known to the lawyer that will enable the tribunal to make an informed decision, whether or not the facts are adverse.

Lack of candor—merely avoiding the truth—has consequences for the individual lawyers involved. An extended pattern of apparently-intentional falsehood has bigger consequences.

Rule 3.3(b) requires cure. There are two options. (i) If the PTO wishes to proceed further with the DOCX rule, the PTO is required to provide a candid (that is, truthful and complete) disclosure of "all material facts" to OMB (under Executive Orders 12866 and 13771, and the Paperwork Reduction Act) and to the Small Business Administration (under the Regulatory Flexibility Act), and rewind this rule for a "do over" that complies with all requirements of law. Alternatively, (ii) Rule 3.3(c) would be satisfied if the PTO publishes a Federal Register notice stating that the DOCX rule is irrevocably withdrawn, and the PTO will work with the patent bar to identify a better solution that meets both the PTO's needs and the public's.[25] In that case, the proceeding will be "terminated" and Rule 3.3 will be satisfied.

Mistakes happen. While there's no "oops" exception to notice-and-comment requirements, *American Wild Horse Preservation Campaign v. Perdue* 873 F.3d 914, 924 (D.C. Cir. 2017), there's a certain amount of room for human error and differences of judgment. But this Final Rule notice is well outside that bound.

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[25] Such a better solution was suggested in several of the comment letters, for example, Seventy-Three Patent Practitioners, note 11 *supra*, at page 13. Since September 2019, I've done further investigation, and have learned of "accessible PDF" which seems to solve everyone's problem in a consistent and reliable way. I hope we can start a conversation on that. My email address and phone number are in the page footer.

E. Multiple procedural lapses make the DOCX information collection unlawful and ineligible for approval

An agency is required to do the following, for essentially every rule ("rule" in the broad sense of 5 U.S.C. § 551(4), whether a C.F.R. regulation or in guidance, 5 C.F.R. § 1320.3(c)(1), § 1320.3(c)(4)) that calls for the collection of paperwork from the public:[26]

- Before promulgating the rule, confer with members of the public to get a fair assessment of the likely costs and benefits.
- As part of the notice-and-comment process for any C.F.R. regulation, and as part of notice-and-comment for updates to major guidance documents, assemble cost estimates, and disclose them to OMB in a filing, and get OMB approval.
- Every three years, repeat the consultation and OMB filing process.
- If the agency skips these steps, the rule is unenforceable. 44 U.S.C. § 3507(a), § 3512.

The PTO was required to do the following to promulgate the DOCX rule, and didn't:

Before the Notice of Rulemaking, the PTO was to "consult with members of the public"[27] to evaluate the following, so that initial burden estimates could be proposed in the Notice of Proposed Rulemaking:[28] (i) whether the proposed collection of information is necessary for the proper performance of the functions of the agency; (ii) the accuracy of the agency's estimate of the burden; (iii) how to enhance the quality, utility, and clarity of the information to be collected; and (iv) minimize the burden of the collection of information on those who are to respond.	In contacted several of the relevant committee chairmen at ABA, AIPLA, and IPO that that would have been the likely contacts. None remember *ever* being contacted by the PTO concerning the DOCX rule, let alone during the process of formulating the rule.

[26] *Dole v. Steelworkers*, note 15 *supra*, 494 U.S. at 33.

[27] The requirement to "consult with members of the public" before a Notice of Proposed Rule Making (NPRM) is not literally in the text of the statute, but arises out of the interdependencies between required steps, and the practical reality that the PTO has no internal sources of objective compliance cost information, and can only obtain objective cost information by conferring with the public. For information collection requests contained in a proposed rule, 44 U.S.C. § 3507(d)(1)(A), 5 C.F.R. § 1320.5(a)(3) and § 1320.11(b) require that an agency submit an ICR to OMB "as soon as practicable, but no later than the date of publication of a notice of proposed rulemaking in the Federal Register." An agency also is required, by 44 U.S.C. § 3507(a)(1)(D)(ii)(V) and 5 C.F.R. § 1320.5(a)(iv), to publish a notice in the Federal Register "setting forth … an estimate of the burden that shall result from the collection of information." § 3506(c)(1)(A)(iv) and § 1320.8(a)(4) require that any burden estimate submitted to the OMB Director, including those under § 3507(d)(1)(A), be "objectively supported."

[28] 44 U.S.C. § 3506(c)(2) and 5 C.F.R. § 1320.8(d)(1).

The PTO was required to submit this rule to the Director of OIRA, with "objectively supported" estimates, no later than the time of a Notice of Proposed Rulemaking.[29] As part of this submission, the PTO was required to must certify, and provide a record in support of the certification,[30] that: (a) the information to be collected "is necessary for the proper performance of the functions of the agency";[31] (b) the agency is not seeking "unnecessarily duplicative" collection of "information otherwise reasonably accessible to the agency";[32] (c) the agency "has taken every reasonable step to ensure that the proposed collection of information … is the least burdensome necessary";[33] and (d) the regulations are "written using plain, coherent, and unambiguous terminology."[34]	Required disclosure/discussion is not in the NPRM, and nothing is at the OMB web site in the months leading up to the July 2019 Notice of Proposed Rulemaking.
A Notice of Proposed Rulemaking required the following: (e) the Notice must be accompanied by disclosure of the PTO's assumptions, factual data and bases, and analyses;[35] (f) the Notice must present (or be accompanied by) the PTO's burden estimates, and permit a 30- or 60-day comment period for the burden estimates under the Paperwork Reduction Act;[36] (g) the Notice of Proposed Rulemaking must be accompanied by either a certification of "no substantial economic impact" on small entities or an Initial Regulatory Flexibility Analysis;[37] (h) because information disseminated in a Paperwork Reduction Act submission to OMB or a Notice of Proposed Rulemaking is "influential" information, the PTO must observe OMB Information Quality Guidelines and the PTO's own Information Quality Guidelines.[38]	There is no discussion whatsoever of burden in the NPRM, no disclosure of any data relevant to burden in the fee setting web site, and no record of any relevant filing at the OMB web site. No supporting data for the PTO's assertions relative to the DOCX rule is on the web site.

[29] Reading 44 U.S.C. § 3507(d)(1) and § 3506(c)(2)(A) together. Strikingly, several of the PTO's Notices of Proposed or Final Rule Making in 2006–2008 stated that the PTO refused to make a Paperwork filing with OMB, for reasons that have no grounding in any statute or regulation.

[30] 44 U.S.C. § 3506(c)(3) and 5 C.F.R. § 1320.9.

[31] 44 U.S.C. § 3506(c)(3)(A) and 5 C.F.R. § 1320.5(d)(1)(i) (" To obtain OMB approval of a collection of information, an agency shall demonstrate that it has taken every reasonable step to ensure that the proposed collection of information: (i) Is the least burdensome necessary for the proper performance of the agency's functions…").

[32] 44 U.S.C. § 3506(c)(3)(B) and 5 C.F.R. § 1320.5(d)(1)(ii).

[33] 44 U.S.C. § 3506(c)(2)(A)(iv) and 5 C.F.R. § 1320.5(d)(1)(i).

[34] 44 U.S.C. § 3506(c)(3)(D) and 5 C.F.R. § 1320.9(d).

On or before the date of publication of the Federal Register notice of a final rule: (i) the PTO must submit the rule to OMB for another round of review under the Paperwork Reduction Act, with a 30-day public comment period.[39] A wise agency completes this step before publishing a final rule notice for a controversial rule. (j) The PTO must certify "no substantial economic effect" on small entities or provide a Final Regulatory Flexibility Analysis.[40]	The PTO didn't do either of these.
In the Federal Register notice of a final rule: (k) The PTO must explain its response to all comments from OMB or the public, and the reasons any comments were rejected;[41] (l) The final rule notice must include supporting explanation and factual data sufficient to satisfy *State Farm* criteria for "arbitrary and capricious."[42]	

In the Final Rule notice, the word "burden" is not used a single time in a relevant context. The word "cost" is used repeatedly, but only in phrases like "costs to the Office," never (in the

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[35] E-Government Act of 2002, Pub.L. 107-347 (Dec. 17, 2002), § 206(d), codified in notes to 44 U.S.C. § 3501 ("To the extent practicable, as determined by the agency in consultation with the Director [of OMB], agencies shall ensure that a publicly accessible Federal Government website contains electronic dockets for rulemakings under [5 U.S.C. § 553]. … Agency electronic dockets shall make publicly available online …other materials that by agency rule or practice are included in the rulemaking docket under [5 U.S.C. § 553(c)]"); *Owner-Operator Independent Drivers Ass'n v. Fed Motor Co.*, 494 F.3d 188, 199–203 (D.C. Cir. 2007) (rule invalid when agency failed to disclose the data and assumptions on which it based its cost-benefit analyses).

[36] 44 U.S.C. § 3506(c)(2)(B) and 5 C.F.R. § 1320.8(d)(1). Notice of the rule and the agency's estimates must be provided to OMB and published in the Federal Register no later than the Notice of Proposed Rulemaking or other notice of the rule, then the agency must allow 30 days for comments, and then OMB has up to 60 days to approve or disapprove. 5 C.F.R. § 1320.11(b), (c) and (h) (collections of information in proposed rules and final notices).

[37] 5 U.S.C. §§ 603 and 605.

[38] The Information Quality Act is embodied in Public Law 106-554 § 515, codified in notes to 44 U.S.C. §§ 3504 and 3516. The PTO bound itself to this statute in its Information Quality Guidelines, http://www.uspto.gov/web/offices/ac/ido/infoqualityguide.html.

[39] 5 C.F.R. § 1320.11(h).

[40] 5 U.S.C. §§ 604 and 605.

[41] The requirements for fair or robust responses to comments arise under the Paperwork Reduction Act, 44 U.S.C. § 3507(a)(1)(B) and § 3507(d)(2)(A) and (B); 5 C.F.R. § 1320.5(a)(1)(ii) and § 1320.11(f); the Administrative Procedure Act (5 U.S.C. § 553); and the Regulatory Flexibility Act.

[42] *Motor Vehicle Manufacturers' Ass'n of the U.S. v. State Farm Mutual Automobile Insurance Co.*, 463 U.S. 29, 52 (1983).

DOCX section) in a phrase like "costs to applicants." For example, comment 46 was directed to costs and burdens to applicants, response 46 ignores the question and discusses only costs to the Office:

Comment 46: Multiple commenters opposed the $400 surcharge for filing in non-DOCX format, suggesting it was unreasonable given the USPTO's own cost figures, to apply optical character recognition (OCR) to convert a patent application submitted in PDF format. One commenter stated that the proposed benefits do not appear to justify the costs of the rule, and there does not appear to have been consideration of approaches that reduce burdens and maintain flexibility and freedom of choice for the public.

Response: The use of image-based PDFs incurs many costs over the lifetime of an application. There are large costs associated with the USPTO's systems and personnel, from pre-examination, examination, and publication, due to the need to apply OCR to convert image-based PDFs into structured text that can be leveraged by downstream systems. The surcharge is applied not only to account for these inefficiencies, but also to address rising expenses.

The Final Rule notice couldn't be clearer: the PTO violated the Paperwork Reduction Act by entirely ignoring burden on the public. The "disproportionate shift of costs or burdens onto the public," 5 C.F.R. § 1320,5(d)(iii), is facially apparent.

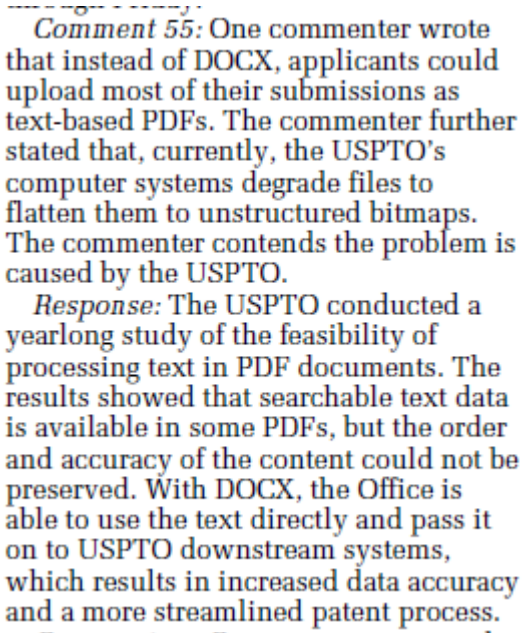
F. The PTO erred hiding its data

An agency errs when it relies on data it kept hidden from the public. One oft-cited decision from the D.C. Circuit explains:

> In order to allow for useful criticism, it is especially important for the agency to identify and make available technical studies and data that it has employed in reaching the decisions to propose particular rules. To allow an agency to play hunt the peanut with technical information, hiding or disguising the information that it employs, is to condone a practice in which the agency treats what should be a genuine interchange as mere bureaucratic sport. An agency commits serious procedural error when it fails to reveal portions of the technical basis for a proposed rule in time to allow for meaningful commentary.

Connecticut Light & Power Co. v. Nuclear Regulatory Commission, 673 F.2d 525, 530 (D.C. Cir. 1982); *also Home Box Office, Inc. v. FCC*, 567 F.2d 9, 54 (D.C.Cir.1977) ("[e]ven the possibility that there is here one administrative record for the public and this court and another for the [agency] and those 'in the know' is intolerable"); *Hanover Potato Products, Inc. v. Shalala*, 989 F.2d 123, 129-130, n.9 (3d Cir. 1993) (agency erred when it denied public access to "the true record" by hiding part of it: "We believe a regulated party automatically suffers prejudice when members of the public who may submit comments are denied access to the complete public record.").

In the Final Rule notice, the PTO admits it relied on a secret "yearlong study:"



Comment 55: One commenter wrote that instead of DOCX, applicants could upload most of their submissions as text-based PDFs. The commenter further stated that, currently, the USPTO's computer systems degrade files to flatten them to unstructured bitmaps. The commenter contends the problem is caused by the USPTO.

Response: The USPTO conducted a yearlong study of the feasibility of processing text in PDF documents. The results showed that searchable text data is available in some PDFs, but the order and accuracy of the content could not be preserved. With DOCX, the Office is able to use the text directly and pass it on to USPTO downstream systems, which results in increased data accuracy and a more streamlined patent process.

This "study" was never mentioned in the July 2019 Notice of Proposed Rulemaking. There's no mention of it on the PTO's rulemaking web site, no disclosure of the study methodology, etc.

First, the existence of this sentence in the Final Rule notice violates multiple laws. If there was any such "yearlong study," the PTO was required to make it public, as part of the materials available during the notice and period:

- The Administrative Procedure Act, 5 U.S.C. § 553, requires fair "notice" of all supporting materials for rules, so that the public's right to comment is more than "bureaucratic sport." *Connecticut Light*, 673 F.2d at 530.
- The E-Government Act of 2002 required disclosure in the agency's electronic docket. See footnote 35.
- The PTO can't rely on a "yearlong study" that it hasn't made available to the public to permit vetting for "quality, objectivity, utility, and integrity." How was the "study" conducted?[43] What alternatives were considered, what variables were studied and formed the basis for any conclusion, what was the null hypothesis, what was the conclusion, at what confidence level? The PTO violated the Information Quality Act[43] and the PTO's own Information Quality Guidelines.[44] The PTO promised not to rely on secret information; the PTO broke both the law and a promise to the public.

[43] Public Law 106-554 § 515, codified in notes to 44 U.S.C.A. §§ 3504 and 3516.

[44] U.S. Patent and Trademark Office, Information Quality Guidelines, http://www.uspto.gov/web/offices/ac/ido/infoqualityguide.html.

Reliance on this secret "yearlong study" was unlawful. Courts invalidate rules that an agency promulgates over this kind of "serious procedural error." *Gerber v. Norton*, 294 F.3d 173, 181-84 (D.C. Cir. 2002); *Hanover Potato*, 989 F.2d at 129-130.

Second, if any such "yearlong study" was actually conducted, it was a really poor study. For all that appears in the Final Rule notice, it may have been a study designed to reach one and only one outcome. Secondly, it appears to have disregarded "accessible PDF," a text-based PDF form that solves the problems mentioned in the Final Rule notice, and solves the problems raised in the public comment letters. The PTO is fully aware of "accessible PDF"—the PTO's web site refers to "accessible PDF" several times,[45] as the PTO's preferred format for documents the PTO submits to courts. If the PTO's "yearlong study" didn't address "accessible PDF," then that study fails Information Quality and may not be relied on.

Third, it appears that the "yearlong study" asked the wrong question, or at least a different question than the PTO asked the public to comment on. The Notice of Proposed rulemaking explained the problems with "image-based" documents, and suggested that "text-based" or "structured text" documents are the solution. E.g., 84 Fed. Reg. 37413-14, col. 1-3. The issue as the PTO framed it was the issue the public commented on, by suggesting text-based PDFs. Now the PTO is changing position—"text-based" submissions aren't good enough, they have to be DOCX text based documents. The Final Rule notice never explains the change of position.

Fourth, Response 55 only discusses is costs to the PTO. There's not a single word of consideration of burden on the public—for example, the word "burden" is never used a single time in any relevant context in the Final Rule notice. Why was there no "yearlong study" of burden on the public? That violates the Paperwork Reduction Act, as discussed in section I.C of this letter. Absence of any study of burden on the public was unlawful.

If the PTO had set out on an Easter egg hunt for falsehoods to tell and laws to break, it's hard to see what more the PTO could have packed into this rule. The collection of information should be removed from the ICR request and 37 C.F.R. § 1.16(u) should recede to its 2019 form.

II. Various provisions of the MPEP that conflict with 15 C.F.R. § 29.2 and Executive Order 13891 should not be included in any request for clearance and should be backed out from the MPEP

In September, the Department of Commerce issued new regulations, 15 C.F.R. part 29, as implementing regulations for Executive Order 13891. Among the new regulations that bind the PTO are the following:

[45] https://e-foia.uspto.gov/Foia/DispatchFCAServlet?SupremeCourtResults=true; https://e-foia.uspto.gov/Foia/DispatchABServlet?RetrieveAll=true

Exhibit 8

Letter to Kathi Vidal (Dec. 23, 2022)

117 Patent Professionals

December 23, 2022

Via Email Kathi.Vidal@uspto.gov; Derek.Brent@uspto.gov; David.Berdan@uspto.gov

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Re: Director's Blog, *Top three helpful tips for filing patent applications as you move to DOCX format* (Dec. 19, 2022) and *Extension of Period To Allow Submission of a PDF With a Patent Application Filed in DOCX Format*, 87 Fed. Reg. 77812 (Dec 20, 2022)

Dear Director Vidal, Deputy Director Brent, and Mr. Berdan:

We write as 117 patent professionals (attorneys, agents, assistants, and paralegals) to reiterate our opposition to the PTO's DOCX rule. The PTO's software is still unacceptably buggy. Your blog post of December 19 and the PTO's Federal Register notice of December 20 compound both the legal problems for the Office, and the practical confusion for practitioners engendered by the DOCX rule. This letter is a heads up that a longer letter is coming, in which we will explain the problems in more detail. We request that you run a further notice extending the *status quo* to June 30—applicants should have the option to file in either DOCX or PDF, entirely at the applicant's choice, with no fee.

Imagine that the Federal Circuit's ECF system had locks that forbad you to use the techniques you use in your day-to-day use of word processors. Imagine that from time to time when you filed a brief at the Federal Circuit, the system unpredictably—rarely, but at a rate well above zero—changed equations, formatting, numbering, and occasionally dropped out an entire sentence, with little or no notice of the change. Imagine that court rules gave no meaningful opportunity to correct errors introduced by ECF. Imagine that these errors were randomly introduced into the single most critical paper of a proceeding.

The reason it can't happen is because the designers of ECF made a sound engineering decision: ECF accepts PDF (PDF was designed to be universally portable), ***exactly*** as uploaded (ECF gives you a warning that the storage will be exact—ECF won't even correct mis-applied redactions). The court requires that the PDF be in text-searchable form. The court does ***not*** throw away useful information by flattening that text-searchable PDF to an image-only bitmap. The only alteration imposed by ECF is a timestamp across the tops of the pages (non-destructively—it can be removed). ECF's choice of text-searchable PDF guarantees that the document contents are unaltered, and will be portable to all computers, and that lawyers are not restricted in use of Word processing features, and all the text is available to the court.

Director Vidal, why are you allowing your staff to force $200 million per year in costs onto the public to save the PTO $2 million? Why are you protecting your staff from the consequences of poor software engineering choices and multiple violations of administrative law?

Our first concern is technological. The May 25, 2021 Director's Blog promised that "We are adopting the ***submitted*** DOCX files as the authoritative document, otherwise referred to as the source or evidentiary copy." DOCX is the wrong form, but the May 2021 promise that the PTO will treat the ***applicant's uploaded file*** as "authoritative" is an absolute, inviolable requirement. Initial patent application filings are special: the law offers no real opportunity to correct errors. We insist that the Office keep its promise: ***the file that the applicant uploads must be the authoritative copy***. No alteration. No "validation" if that validation results in a new or altered version.

In April 2022, you reneged: "the USPTO considers the ***validated*** DOCX file(s) … to be the authoritative document." 87 Fed. Reg. 25226, 25227 col. 2 (Apr. 28, 2022). PatentCenter's validated DOCX file is generated by a "black box" tool that processes the applicant's uploaded file into an on-the-fly "validated" version. The validated DOCX file differs from the "source" DOCX file that the applicant uploaded. This validated DOCX file(s) provides no guarantees: for example, the checksum data for the "validated" files do not match the checksums that appear on the electronic filing acknowledgement. The April 2022 switch from the applicant's uploaded DOCX to PatentCenter's "validated" DOCX is a major violation of reliability-oriented software engineering. And unilaterally reneging on an important promise is a major violation of trust.

History suggests that the PTO can reliably upload a file and store it with no changes. However, because of the low reliability of the PTO's systems, we do not trust them to do anything more. Because the law restricts any meaningful opportunity for error correction, and a mangled patent application will sometimes be a worthless patent application, a 1-in-1000 error rate will be too high for our malpractice insurers—and as we describe below, the PTO's reliability record suggests that errors will be far above that.

In recent days, the importance of the May 2021 "submitted source" promise has been reinforced by the number of failures of the PTO's systems. Among these: (1) On Friday Dec. 16, the PTO's systems were down for over two hours. (2) Also on December 16, the PTO's fee payment system was broken for several hours. (3) On December 13, 2022, at 10:30AM, the patent public search was not working: "Unable to process your request, try again later." (4) On December 11, 2022, most of the PTO's patent systems were giving "502 Bad Gateway." (5) For months, private PAIR has been flaking in and out: often, we get "There are No Available Documents for the Application" (in fact, today, December 23, the PTO's main "display only" systems for applicants to review their own applications (Private PAIR and PatentCenter) are broken). **Those failures arose in the space of just one week**.

Looking back over a few months gives many more examples: (6) Over the last two months, the "foreign filing license" notices on filing receipts were broken. (7) The

PTO mailed notices of publication for provisional applications for which publication does not occur. (8) In October, the PTO's systems broke so that outgoing correspondence was marked in the file to set deadlines, but no actual notices were sent to users. (9) PatentCenter's workbench search breaks regularly, giving users "Internal Server Error" or "Search limit exceeded" messages. (10) The PTO provides a feature that is supposed to allow trademark attorneys to prepare papers for signature by the client—but it breaks about every two weeks and requires the attorney to reconstruct the paper a second time. No one should have confidence in the reliability of the PTO's computer systems and software.

Several of the failures just described are in display-only software--the PTO can't even keep simple database lookup-and-display running reliably. The PTO's implicit claim, that it can ***rewrite*** patent applications reliably, is not credible.

Attached as "Test B – mangle claims" is a set of files that shows a bug that exists as of December 22—PatentCenter separates claims into individual paragraphs, and assigns claim numbers to the individual paragraphs. Anyone with a software engineering background will recognize that error as the product of a fundamental design flaw, not a simple coding error.

To be blunt, we do not trust the USPTO to make modifications to the files we carefully prepare for our clients' patent applications. The DOCX filing system limits us to a few minutes' "review" of the "validated" version. The devious and subtle errors that PatentCenter has given us over several years makes the PTO's approach entirely unacceptable. We cannot get inventor review of the PTO's generated-on-the-fly "validated" DOCX. PatentCenter imposes a time-out a short while after review begins—suppose the phone rings? The DOCX filing system in its present incarnation is completely unreasonable.

Another problem we've observed—if the inventor wrote the first draft using a version of Word for a non-Latin-alphabet market (versions of Word for Israel or Japan), when the document is moved to a US-based Word, Wordremovesinter-wordspacing. PDF prevents—or gives correctable control over—this problem. PatentCenter DOCX filing creates the problem.

This history of pervasive, recurring, and mission-critical problems gives us ***no confidence in the PTO's ability to produce reliable software***. We do not trust the PTO to alter patent applications. For some lifetime points of a patent application, the PTO's low reliability can be worked around at acceptable cost. But for newly filed patent applications, there is no recovery from PTO software errors. The only acceptable engineering approach is to start with an inherently-stable design that targets zero defects (several signatories of this letter did their pre-law engineering in such environments—it's clear that that mindset is not present at the PTO). The PTO's approach, starting with an inherently-unstable initial design and trying to debug it up to production-level quality, never works. Our comment letters (in fall 2019 and in subsequent comment periods to OMB) have suggested the high-reliability alternatives used by the courts and other filing systems; the PTO has evaded answering these comments or addressing the proposed alternatives, either by misparaphrasing the comments or by answering with *non sequiturs*. While today's error rate may be

acceptable to PTO management, to us, for initial patent applications, such flawed engineering practices, unrecoverable software errors, observed errors, and refusals of PatentCenter to accept well-formed patent applications are unacceptable, particularly coming from an organization with the PTO's demonstrated low IT quality level.

The problem is not one or two bugs. The problem is the fundamental engineering approach, and neglect of basic engineering principles of robust design. As the public has explained repeatedly in comment letters, DOCX can ***never*** be bubblegummed-and-bailing-wired one bug fix at a time into a reliable system. The only reliable approach is the one used by the federal courts' ECF—the uploaded file is ***exactly*** the authoritative copy (perhaps with *added* annotation, but no *alteration*), using a format that was designed from the outset to be portable and reproducible. (Those two constraints lead inevitably back to text-based PDF.)

The May 2021 promise to treat the applicant's uploaded ***source*** document as "authoritative" is nonnegotiable. It's the only way to safely bypass the catastrophic consequences of the PTO's less-than-quality software engineering.

Our second concern is legal. Your staff broke the law. **Brazenly. Repeatedly.** The Administrative Procedure Act and e-Government Act required disclosure of certain documents at the time of the Notice of Proposed Rulemaking (July 2019) and final Rule notice (August 2020). Instead, the PTO withheld them. The Paperwork Reduction Act and Executive Order 12866 required certain analyses and filings. The PTO skipped them. The PTO was required to answer public comments candidly; instead the PTO mischaracterized, misdirected, and evaded. The PTO was required to act with candor in *ex parte* regulatory filings to OMB and the Small Business Administration; through documents obtained under the Freedom of Information Act (FOIA), we have now discovered that the PTO left out key facts, mischaracterized the public's comments to evade fair disclosure, and made several false statements to OMB and SBA. Some small technical omissions could be explained as venial (but unlawful) oversight, but when silence, misdirection, mischaracterization, and omission are this repeated and consequential, the only available inference is that the illegal acts were intentional.

In our comment letters, we proposed an alternative that solves the PTO's problem: an applicant would file a ***fully*** reliable PDF, one with perfect structured text, that gives the PTO all the information the PTO wants. That's easy and reliable for applicants to generate, and useable by the PTO with no alteration. The Administrative Procedure Act and Paperwork Reduction Act both required the PTO to give *bona fide* replies to *bona fide* comments and alternatives. To date, the PTO has evaded the comments by mischaracterizing them or simply going silent with no response. That's beyond just rude; **your staff broke the law**.

The Paperwork Reduction Act and Executive Order 12866 require that an agency conduct certain cost-benefit analyses. *E.g.*, "The agency shall also seek to minimize the cost to itself …, but shall not do so by means of shifting disproportionate costs or burdens onto the public." 5 C.F.R. § 1320.5(d)(1)(iii). In our letters, we've repeatedly

pointed out the costs of forbidding standard Word usages in drafting applications, of error-checking the PTO's error-prone computations, and of seeking correction. Two estimates put the cost of that error-checking at ***$200 million per year***.[1] The PTO estimates its cost savings at $3.15 per application, a total of about $2 million per year. $200 million of costs is "disproportionate" to $2 million in savings. The Final Rule notice contained not a word of discussion of cost to the public, only benefit to the Office. The PTO's filings to OMB are similar—they evade the key fact, the cost of error checking and correction that will be forced on the public by the DOCX rule. By this silence, the PTO has admitted that our cost estimates are correct. But the PTO has never explained how DOCX is ***not*** "shifting disproportionate costs to the public." **Your staff broke the law**.

The Paperwork Reduction Act and its implementing regulations require an agency to (a) conduct several cost-benefit analyses and cross-checks to ensure that the agency minimizes paperwork burden on the public, one at the time of a Notice of Proposed Rulemaking (5 U.S.C. § 3507(d)(1)), and a second one before the rule may go into effect (44 U.S.C. § 3507(d)(4)(D)); (b) request notice and comment on several specific topics (§ 3506(c)(2)(A)), (c) make several filings with the Office of Information and Regulatory Affairs in OMB forwarding those comments and the agency's response, and (d) certify that the agency has taken several specific steps to reduce paperwork burden. 44 U.S.C. § 3507; 5 C.F.R. § 1320.9, .10, .11, .12. Before a new rule may go into effect, an agency must request and obtain an approval from OMB. § 3507(a). That approval is called a "control number."

The PTO skipped many steps required by the Paperwork Reduction Act. The list of breaches could go on for several pages—here are a few highlights:

- The PTO made none of the required filings at the required times.
- In the Notice of Proposed Rulemaking, the PTO claimed that the DOCX rule "has been reviewed and previously approved by OMB" (84 Fed Reg. at 37431). The public pointed out that there were no relevant filings at the relevant times, so no such review or approval could possibly exist (Seventy-Three Practitioners letter at 26). Even after the error was pointed out, the PTO repeated the falsehood in the final rule notice. 85 Fed. Reg. at 46985 col. 2. Our FOIA documents show that this false claim of "previous approval" was made to OMB in *ex parte* phases of OMB's review.
- In the last paper exchanged between the PTO and OMB (which is the only part of the conversation that OMB makes visible to the public, and that only after conclusion of an otherwise-*ex parte* negotiation), the PTO concedes that it does not have the required control number, never requested one, and is not requesting one now (PTO to OMB, May 25, 2021, at pages 13-14). In other words, the PTO admitted in its May 2021 letter that its earlier claims, to have a "reviewed and approved" control number, were false.

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[1] https://downloads.regulations.gov/PTO-P-2020-0050-0004/attachment_1.pdf pages 3-5 and 32-39.

- To OMB, in an *ex parte* filing where the PTO had incentive to minimize, the PTO represented that only about 10% of applicants "will incur the additional non-DOCX filing surcharge" (May 25 letter at 14). But the PTO's own "survey" (84 Fed. Reg. 37413 at col. 2) showed that 20% won't have a choice, and will either have to change the way they prepare applications or pay the fee.
- In the May 25 letter at page14, the PTO took no issue with the public's $200 million estimate offered by the public comments—the PTO begged off that any explanation "would be premature and not meaningful to the cause of estimating public burden."
- The PTO promised OMB that "Upon actual implementation of 37 CFR 1.16(u)" the PTO would take necessary steps (PTO to OMB, May 25, 2021, at page 14). The PTO didn't.

Because of staff shortcutting and falsehoods, the PTO has no "control number," and without that, the PTO **has no authority to charge the $400 fee**. 44 U.S.C. §§ 3507, 3512; 5 C.F.R. § 1320.6. (The PTO's Paperwork failure here is almost exactly the same failure that forced the PTO to stand down on the 2008 rule for *ex parte* appeals.)

We could give similar catalogs of document withholding, shortcutting, errors, and false statements to *ex parte* tribunals under the Administrative Procedure Act, the Regulatory Flexibility Act, and Executive Order 12866.

Third, your Director's blog of December 19 and Federal Register notice of December 20 compound the problems. For example, in the Federal Register you state "The USPTO is no longer seeing any errors being reported as a result of filing patent applications in DOCX format when applicants follow the guidance provided by the USPTO." The PTO's guidance purports to forbid any but a few fonts, to forbid a number of features that patent practitioners use to reduce errors, and to forbid use of landscape pages for wide tables, chemical formulas, and equations.

"***Any*** errors?" First, as of your receipt of this letter and our "Test B – mangle claims" example, it's no longer true.

Second, any software engineer knows that, for a system of this complexity, a claim of "no errors" is not remotely credible. That statement tells us more about the PTO's testing, bug tracking, and quality rigor than about software readiness. We conjecture that your staff neglected self-selection bias—when DOCX filing fails, a rational attorney just abandons the effort and files the individual application in PDF, and likely doesn't waste time trying DOCX again. Multiple signatories of this letter have tried DOCX and have given up. There are two reasons that use of PatentCenter is stuck at 10% usage—PatentCenter is unreliable, and the PTO doesn't correct the bugs we report.

Third, your Director's blog is legally faulty: the PTO may not treat guidance, the "DOCX page" and "DOCX FAQs" as requirements for acceptable applications. Guidance is not enforceable. Agencies may use guidance to interpret "genuine ambiguity," but not to fill gaps or add new requirements—courts have long been wise to

agencies that promulgate broad or vague regulations, and then impose all the real obligations by guidance.[2] To impose binding obligations or limit rights of the public, the PTO must act by *regulation*. 35 U.S.C. § 2(b)(2)(B).

- The Administrative Procedure Act has been in effect for 75 years. 5 U.SC. § 553. Requirements of this sort have never been within agency authority to issue by guidance.
- For rules relating to information to be collected by an agency, the agency must observe the procedures of the Paperwork Reduction Act. 44 U.S.C. § 3507; 5 C.F.R. § 1320.3(c)(4)(i) (Paperwork Act applies to any "rule of general applicability"), .10 (procedures for guidance), .11 (procedures for proposed rules), .12 (procedures for current rules). If an agency skips these procedures, the rule cannot be treated as binding, and the agency may not impose any penalty. 44 U.S.C. § 3512; 5 C.F.R. § 1320.6.
- On his first day in office, President Biden reminded agencies of a Presidential Bulletin that sets forth principles for agency use of guidance.[3] The PTO has never implemented this bulletin, despite several reminders from the public.
- The Department of Commerce's regulations for its component agencies remind agencies that they may not treat guidance as binding. 15 C.F.R. § 29.2.

If your staff advised you that the PTO's "guidance" or "DOCX page" can be enforced in the manner suggested in the December 19 blog and December 20 Federal Register notice, or advised you that they have the authority to change the rules on the fly simply because they can't get their software to handle standard Word features that applicants use, your staff were (at best) unaware of the governing law.[4] Regulatory power comes

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[2] *Appalachian Power Co. v. EPA*, 208 F.3d 10`5, 1020 (D.C. Cir. 2000) (agency may not use guidance to flesh out broad statutes or regulations by saving the specifics for guidance); *Hoctor v. US Dept. of Agriculture*, 82 F.3d 165, 169-70 (7th Cir. 1996) (when regulation for zoo fences requires "such strength as appropriate ... [and] to contain the animals," guidance requiring fences to be eight feet is not "interpretive."); *U.S. v. Picciotto*, 875 F.2d 345, 347 (D.C. Cir. 1989) (regulation purported to permit the agency to impose "additional reasonable conditions and … limitations" by guidance and wording on a permit; Court reminded agencies that they cannot create *ad hoc* substitutes for statutory rulemaking procedure) If the PTO were to invoke the "interpretative" exception of § 553(b)(A), the PTO surrenders force of law and any power to enforce. *Perez v. Mortgage Bankers Ass'n*, 575 U.S. 92, 96 (2015).

[3] Executive Office of the President, *Bulletin on Agency Good Guidance Practices*, https://www.whitehouse.gov/wp-content/uploads/legacy_drupal_files/omb/memoranda/2007/m07-07.pdf (Jan. 18, 2007), reinstated by President Biden after suspension by President Trump, E.O. 13992 (Jan. 20, 2021).

[4] Disregard of the law that governs rulemaking pervades Office operations, and imposes ***billions*** of dollars of costs on the public each year. An introduction to that problem is set out in David Boundy, *Agency Bad Guidance Practices at the Patent and Trademark Office: a Billion Dollar Problem*, 2018 Patently-O Patent L.J. 20 (Dec. 6, 2018), available at https://ssrn.com/abstract=3258040 We hope you will take the restoration of the rule of law as one of the core goals of your Directorship, and we look forward to helping you achieve it.

from Congress; your staff can't bootstrap it for themselves to compensate for inept engineering.

PTO staff are trying to have things both ways. In the Final Rule notice, the PTO repeatedly justified DOCX as a "standard." 85 Fed. Reg. 46932, 46957-58 (Aug. 3, 2020). Standards are binding in a two-sided way—an implementer can't implement only part of a "standard" and still claim to be "standard." In adopting the rule, the PTO claimed to be following a "standard"—by doing so, the PTO disclaimed any right to forbid *any* "standard" features available in DOCX. If the PTO wants to impose such limits, it must act by fairly-negotiated regulation, not by unilateral, after-the-fact guidance, or by the use of software that doesn't support the use of the full breadth of features available in the "DOCX format". Nor can the PTO take the view that "we implement the part of the standard that's convenient for us, and forbid the part that's convenient for you" and then claim to be "standard." Your staff is trying to have things both ways. Not only is that disingenuous, your staff **broke the law,** specifically the Paperwork Reduction Act (44 U.S.C. § 3506(c)(3)(A), (C) and (E); 5 C.F.R. § 1320.5(d)(1)(i) and (iii), § 1320.9), the President's Bulletin, and Commerce regulations.

Accompanying this letter is a file "Test C – standard features" to show "standard" Word features that patent practitioners use in patent applications. Many of these have been pointed out in past comment letters—instead of fixing the software, the PTO just adds them to the list of features forbidden by the software (apparently with no advance notice in any written document). This after-the-fact changing the rules on the fly and brazen defiance of the PTO's legal obligations creates deep distrust.

Your December 19 Director's blog and December 20 Federal Register notice fail to consider the cost to the public of detecting and correcting PTO software errors. In the Director's Blog of April 27, 2022, you listed a number of small benefits—but ignored the large costs. By emphasizing benefits to the agency without balancing them against the largest costs to the public, **you broke the law**. *E.g.*, 5 C.F.R. § 1320.5(d)(1)(iii).

Conclusions and asks

We ask that you run a Federal Register notice explaining that the PTO will maintain the *status quo* for another six months: applicants can file in DOCX or PDF, at the applicant's option, with no penalty. You can do the same thing you recently did with the CLE rule: back down, and blame the software. Alternatively, you can do as the PTO did in 2008: note that the PTO didn't get its Paperwork Reduction control number in time, so the PTO will not enforce. We'll give you a longer letter in a few weeks that explains why you should rescind the rule entirely. Today, we're just asking to maintain the *status quo* until we can fully develop that letter.

We'll be happy to discuss a proposal we've offered before: an application submission protocol that achieves the PTO's goals at little cost and no risk to applicants, that should be very inexpensive for the PTO to implement, and *improve* reliability relative to today. It's fully consistent with the PTO's internal design documents that we obtained. The PTO has never responded to this suggestion to explain any

problems with it, so we assume this suggestion is entirely workable. In recent months, we discovered another mechanism—perhaps "Accessible PDF" is even better and works for everyone.

If the PTO proceeds further, $ 200 million in costs and recovery of attorney fees under the Equal Access to Justice Act are strong motivators for suit.

Point of contact. A point of contact can refer specific issues to specific authors of various sections of this letter. Please route any questions or further inquiries to David Boundy, DavidBoundyEsq@gmail.com, (646) 472-9737.

Respectfully submitted,

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Exhibit 9

Design principles, document given to PTO management in January 2023 as an agenda for a meeting of March 2023

Agenda for DOCX discussion

Correctness first. Every computer engineering student is taught that correctness may (nearly) never be compromised for "efficiency" or cost.

a. This is especially true here—the law of new matter makes post-filing correction of errors nearly impossible. A patent application or patent could become worthless because of a textual change (no matter how small) introduced by the filing system.

1. Principle 1: The file that the applicant uploads must be the authoritative document.

a. No wiggle room. No changes, no "validation" if that means change or replacement. The applicant's uploaded bits are authoritative, and must be retained indefinitely.

b. These are legal documents, evidence for litigation. The best evidence rule applies.

c. Humans are not well-equipped to review for small changes—any scheme that changes the input in subtle ways and asks for human review is an inherently flawed design.

d. Inevitably, the best-engineered system will still run into errors. When the same file is uploaded months or years later (either during intra-PTO examination or during litigation), the upload must give exactly the same checksum. No modification on the fly.

e. The system must be designed to minimize the path between file upload and authoritative archival storage, in order to minimize the chance for screw-up.

2. Principle 2: What You See Is What I Get. The file specification (perhaps ISO standard) for the authoritative file must guarantee that anyone, anywhere, any time, that opens or prints the authoritative document will see the same rendering in content and visual layout.

a. Litigation parties must be left with no ambiguity about exactly what was filed—small ambiguities will become big litigation issues.

b. DOCX documents appear different when opened on:

i. Microsoft Word, Libre Office, Google Docs, Mac Pages, the PTO's DOCX filing system, and the PTO's FOIA system.

ii. English text written in non-Latin-alphabet editions of Word (Word for Israel, Japan, etc.) screws up when opened in the American edition of Word.

iii. Microsoft Word for Windows, Word for Mac, different releases of Word, the same version of Word on computers with different plugins and other software installed

c. The PTO estimated that 20% of users use word processors that don't generate DOCX

3. Standards matter—but only if the guarantees of the standard match up to the correctness needs of the application.

a. Principle 2 implies that a usefully-applicable standard is one that is designed to ensure portability and uniform reproducibility. A standard that is designed to adapt the document to each computer it's opened on, that has a great many "implementation defined" parameters, or that is designed to encourage extensions and plug-ins, is not a useful standard for this purpose.

b. If the PTO justifies its choice based on a "standard," the PTO must implement the ***entire*** standard. Standards are two-sided agreements. The PTO can't implement part of a standard that's convenient for the PTO, and forbid the part that's convenient for the public. The PTO can enforce valid *regulations*, *e.g.*, 37 C.F.R. § 1.52(b)(2) (nonscript type fonts, single column, etc.), but may not rule out "standard" features just because they're hard to implement.

Within those three principles, all options are on the table.

4. Legal requirements. Any implementation must meet the requirements of the Paperwork Reduction Act. Rulemaking must observe the procedures of the Administrative Procedure Act, Paperwork Reduction Act, Regulatory Flexibility Act, and Executive Order 12866.

5. For preparation, it will be helpful to review three of the public comment letters. All three explain technological flaws in the PTO's DOCX proposal; the Oppedahl letter is most detailed. The Seventy-Three letter and Boundy letter explain legal process errors.

- Carl Oppedahl, Comment letter (Aug. 12, 2019)—this letter explains several attempts to file patent applications using the PTO's DOCX filing system. In the Final Rule notice in the Federal Register, the PTO stated "To date, the Office has not received notifications of any issues resulting from the filing of applications in DOCX format." This representation was submitted to the Office of Management and Budget and to the Small Business Administration for their *ex parte* proceedings to review the rule just before publication in the Federal Register.
- Seventy-Three Patent Practitioners, Comment letter (Sep. 27, 2019) explains technological failures, costs, and legal process failures.
- David Boundy, comment letter (Nov. 30, 2020), presents two cost workups for the DOCX rule. Both total about $200 million per year. (The PTO was required to generate similar estimates, under Executive Order 12866, the Paperwork Reduction Act, and the Regulatory Flexibility Act—to date, the PTO has not done so for any of the three.) In the PTO's response to OMB of May 25, 2021, the PTO conceded that it had not observed the procedural requirements of the Paperwork Reduction Act, and has no plans to commence compliance.

6. A way forward: Standard ISO 14289-1:2014 appears to be a good starting point for further discussion. It's popularly known as "PDF/UA" for "universal accessibility." To our knowledge, PDF/UA satisfies all criteria for all parties:

a. The document text is presented in logical reading order. The document's logical structure and organization is organized into sections, paragraphs, lists, tables and so on.

b. Problematic content is prohibited, including illogical headings, the use of color/contrast to convey information, inaccessible JavaScript, etc.

c. Our initial investigations suggest that PDF/UA meets Principle 1. PDF/UA has been a feature of free and low-cost PDF writers for many years. Microsoft included an accessible PDF writer in Word 2016.

d. PDF/UA has the portability, and identical appearance guarantee of PDF, thereby satisfying our Principle 2.

e. It's an ISO Standard, an extension layered on top of PDF 1.7. The U.S. Government Access Board (the agency that implements the Rehabilitation Act) recommends PDF/UA-1 as one of several "appropriate standard[s]" for full accessibility. We conjecture that the PTO's needs are largely coextensive with this accessibility and archiving standard.

f. We conjecture that the PTO could contract with the vendors of free or low-cost PDF writers to ensure that their output meets any criteria the PTO needs.

Exhibit 10

Letters to Richard Seidel and Mark Polutta of Jan. 25, 2023; Feb. 2, 2023; Feb. 14, 2023; Mar. 2, 2023; and Mar. 23, 2023

David Boundy, DavidBoundyEsq@gmail.com
Carl Oppedahl, carl@oppedahl.com
Neil R. Ormos, ormos-lists@ormos.org
Brian Siritzky, Brian@siritzkylaw.com
Richard A. Schafer, richard@schafer-ip.com

February 14, 2023

Dear Mr. Seidel:

This letter is a second follow-up to our meeting of February 1. In reviewing our notes and recollections, we realized that one idea was briefly mentioned but did not get sufficient attention because of the meeting time constraints. We think that idea is important and want to address it here.

Near the end of our meeting, you asked whether we thought the filing community would be comfortable if the USPTO were to require the filer to provide, in addition to an authoritative PDF file, the DOCX file that had been used to create that PDF file. You further asked whether we thought the filing community would be comfortable if the USPTO were to further require the filer to certify that the PDF file had been produced from the DOCX file.

While we briefly explained why these proposed requirements would be unacceptable, time constraints prevented our further elucidation.

In our short agenda for our February 2 meeting, we set out two principles that we think are fundamental: (1) The file that the applicant uploads must be the authoritative document for all purposes. (2) What You See Is What I Get. Anyone who opens or prints a filed document, anywhere, at any time, will see the same rendering in content and visual layout. We have no objection to the USPTO providing additional *options* (such as DOCX filing). But it is crucial that at least one option be available that strictly observes the two principles. We strenuously object to any *requirement* that would intrude upon either of the two principles.

The DOCX-as-auxiliary proposal (and as far as we can tell, ***any*** proposal that requires a submission of a DOCX file in ***any*** role) violates these two principles, as we will elaborate below:

- Reading between the lines, it appears that the USPTO has a basic misunderstanding of word processor technology and the ECMA and ISO standards. In this letter, we hope to put those issues to rest. DOCX is an inherently fragile, unreliable format. The ECMA-376 and ISO 29500 standards do not give the relevant and required guarantees. A DOCX document does not become reliable because it is given a name like “auxiliary” instead of “authoritative.”
- There are several practical problems: (a) for some applicants, no DOCX file exists, (b) where a DOCX file exists, it may not be available for filing, and (c) it may be impossible to make any certification

DOCX is Inherently Fragile, No More Reliable as an Auxiliary than as a Primary

We surmise you would not have asked about a “DOCX as auxiliary” approach unless USPTO staff harbored some lingering hope that it is feasible to work around the fundamental unreliability of DOCX. The technology mismatch is irreconcilable, if quality and correctness matter.

First, DOCX ***cannot*** be a reliable vehicle for the purposes the USPTO proposes, even in an auxiliary role. DOCX was designed for an incompatible purpose—from the outset, DOCX was *designed* to adapt the presentation of a document to exploit different resources that exist on different computers. Carl gave several examples in his letter of August 2019. We gave several examples in our Seventy-Three Practitioners letter at pages 13-19, and in the contrast between pages 1-34 vs. pages 48-80. Dozens of articles explain that various implementations of DOCX are not compatible with each other at the level of precision required for legal documents—some written by Microsoft employees (e.g., here, here, here, and here).

Patent attorneys around the world recognize the unreliability of DOCX as an interchange medium. Even where all parties are using Microsoft Word, differences among editions of Word, different hardware, fonts, and software installed on different computers, and the like, result in changes to the appearance of the document. Even if a document is written in English, when it is written in an edition for a non-Latin-alphabet market (*e.g.*, Israel, Japan, China, and Korea) and read in the U.S. edition, characters and paragraphs change, appear, or disappear. Recently, Dr. Siritzky received instructions from a foreign attorney to file a patent application. The foreign attorney sent both a DOCX (in case editing would be required) and a PDF. The cover letter included this sentence:

> **Note 1**. Please kindly take our PDF version into your consideration because of different version of software may result in unpredictable format errors (ex. formula, figures and so on).

In drafting *this very letter*, we had a problem when an entire line dropped out because one tool disagrees with the others—errors arise in different tools' handling of simple text documents.

Second, in the August 2020 Final Rule notice, the USPTO relied heavily on two standards, ECMA-376 and ISO 29500. In our view, the Final Rule's explanation raises grave concerns for USPTO staff's understanding of the role of standards. "Standard" in no way implies "interoperable" or "portable." We obtained all four of the relevant standards (the two DOCX standards and the two PDF standards)—did the USPTO? Even a brief reading of ECMA-376 and ISO 29500 will convince any reader that the two standards are the *problem*; they do not propose a solution. Each of the two DOCX standards leaves many dozens of attributes as "implementation-defined." Both allow an implementation (such as Microsoft Word) to add undocumented extensions. The ECMA-376 and ISO 29500 standards never purported to provide the interoperability or portability necessary for this use.

We block-quoted several problem sentences from these two standards in our Seventy-Three Practitioners letter at pages 14-17. We were deeply troubled that the USPTO chose not to respond to these comments in the Final Rule notice, despite a legal obligation to do so.

In contrast, the two relevant PDF standards, ISO 32000 and 14289, allow ***no*** "implementation-defined" differences in the meaning of a file. The only "implementation-defined" parameters are maximum sizes for certain storage compartments. "P" in "PDF" means "portable."

Third, as Carl explained at length in his *The Fool's errand that is DOCX* (see also an article by the Free Software Foundation), as of 2023, no commercial product implements an interoperable form of ECMA-376 and ISO 29500. First, as of the adoption of these standards in 2008, no company had a conforming implementation. Second, later in 2008 (only months after the ISO issued standard 29500), the standard forked into a "strict" fork (which would have had the

stability and interoperability the USPTO seeks) and a "transitional" fork in which every vendor is free to add new features at will, with no accountability for interoperability. No vendor has ever implemented the "strict" fork. Microsoft chose the "transitional" fork. Third, in almost every release of Word since, Microsoft has added new features that are not "standard," some of which are not back-compatible. Today's Word has diverged incompatibly from the 2008 standards. Fourth, the USPTO will be faced with regular "adds" of undocumented new features to Word that will break the USPTO's intake software, which will be an ongoing cost and headache for the USPTO. More importantly, if the USPTO's computers refuse a filing close to a deadline because of a new internal feature added to Word, the result may be catastrophic for that application and attorney.

The proposal for a DOCX as an auxiliary to the "authoritative" PDF is inherently untenable. The DOCX standard does not promise, and our experience confirms, that text cannot be reliably and identically extracted across any two implementations.

We believe the following statements are not just true; they are indisputable and beyond judgment call. If any member of your team has the *slightest* reservation about any of them, please contact us promptly, so that we can reach agreement on basic facts. We want to save you the effort of chasing illusions that cannot possibly lead to a reliable end result:

a. Opening the same DOCX file on two different computers sometimes yields different results. Those differences are of frequency and severity that cannot be tolerated in a system for legal documents.

b. Even if the DOCX file is offered in an auxiliary role, that still creates proofreading, error correction, and malpractice costs that most practitioners will not accept (and that, under the Paperwork Reduction Act, the USPTO has no legal authority to impose).

c. The two standards cited by the USPTO, ECMA-376 and ISO 29500, do ***not*** guarantee portability in the necessary respects. During their engineering careers, Dr. Siritzky and Mr. Boundy were compiler writers, implementing the standards for FORTRAN 77, FORTRAN 90, ANSI C (1989), and IEEE floating-point numbers. Mr. Boundy was Hewlett-Packard's alternate representative to an ANSI standards committee for multiprocessor extensions to FORTRAN and was one of the key people that coached HP's representative to the ANSI C committee. Those standards do not guarantee portability, and the DOCX standards are similar in this respect. If your team has ***any*** remaining questions that the DOCX standards do ***not*** guarantee the specific properties necessary for patent application filing, we have deep experience to assist.

Our principle 2 is "What You See Is What I Get. The [file uploaded by the applicant] must guarantee that anyone, anywhere, any time, that opens or prints [it] will see the same rendering in content and visual layout." DOCX ***cannot*** meet that requirement. We have confidence, supported by some experimentation and the conclusion of the USPTO's own 2015 "yearlong study," that PDF files—if the USPTO specifies document creation switches—will do a *better* job of delivering ***reliable*** texts that can be extracted, analyzed for feedback and internationalized, than DOCX can. Several technically viable solutions are available to handle specially formatted objects, including those mentioned in the USPTO's study.

We assume that reliability, reproducibility, and unambiguity of the record are as essential to the USPTO as they are to us, and that the USPTO recognizes that any "auxiliary" document must be as reliable as the primary "authoritative" document. In the short agenda we sent you for our

February 1 meeting, the first entry was "Correctness first" before any optimization for efficiency or cost. If the USPTO's quality and reliability targets are different than ours, please explain.

For Many Applications, No DOCX File Ever Existed

According to the USPTO's own survey, for nearly 20% of applications, 20% of applicants use non-DOCX software to author patent specifications. For practitioners who do not use Microsoft Word, a requirement to supply "the DOCX file used to create the PDF" may be impossible because no such DOCX document ***ever existed***. Libre Office, for example, stores its document in a native data format of ODF. WordPerfect uses WPD. Google Docs has a native data storage format (called KIX) that is not accessible to the user. While each has an "export" function, those exported DOCXs were not used to generate the PDF. Further, companies do not have a commercial incentive to make *outbound* exports reliable, so the "export as DOCX" functions in non-Microsoft word processors tend to be even more unreliable than the Word-to-Word issues we discussed above (an example of mangling by "import" and "export" is in our Seventy-Three Practitioners letter in the contrast between pages 1-34 vs. pages 48-80.)

A wide variety of software is used to author patent applications. That diversity of software can be seen even in the five of us:

- One uses LibreOffice and produces files in ODT format.
- One uses a version of Microsoft Word that produces files in Microsoft's older ".DOC" format.
- One uses Word for Mac, which regularly differs from Word for Windows.
- One uses a combination of LibreOffice, plain text editors, and other tools. There may be no single word-processing file that contains the whole text.
- Only one uses Microsoft Word for Windows that produces files in Microsoft's current DOCX format.

The practitioner community is even more diverse. We know of people using Word Perfect, Google Docs, LaTeX, TeX, and troff. None of these natively create files in DOCX format. Some *cannot* create DOCX files.

Finally, if the USPTO wishes to require an "auxiliary" document, then the Paperwork Reduction Act is very clear on this: an agency must track the public's existing recordkeeping practices "to the maximum extent practicable." The USPTO may not discriminate against the 20% of filers that do not use a DOCX-native word processor. Likewise, if the USPTO wants an auxiliary, we assume the USPTO would want the most reliable form. For these two reasons, if the USPTO requires an auxiliary text document, the USPTO will have to implement intake extractors for at least Libre Office ODT, Word Perfect WPD, and Word 2003 DOC, and perhaps others.

Even Where a DOCX File Exists, It May Not Be Available for Filing

Clients and foreign associates often give us instructions and applications to file at the last minute. Often a client or foreign associate provides the filing practitioner with a PDF file with instructions to file it. As discussed above, there may be no DOCX file in existence because whoever produced the application (e.g., the client or foreign associate) did not produce the PDF from a DOCX file. Even if a DOCX file exists that was used to create the PDF file, that DOCX file may be unavailable to the filing practitioner.

Certifying the DOCX File is Often Impossible

The seemingly-innocuous requirement that the filer hand in "the DOCX file that the filer used when the filer created the PDF file" is not technologically feasible, given the variability among the patent application filing community. For a significant fraction of U.S. filers, it is a simple fact that *no DOCX file exists* that was used when the filer created the PDF file. Even where the filer may have a DOCX file, the filer may not know or be able to discover the relationship between that DOCX file and the PDF file. Even if the applicant provides a document with a DOCX extension, that file may not be a DOCX file or satisfy the USPTO's (or Microsoft's) then-current requirements for DOCX.

Even where a DOCX file is provided alongside the PDF, the filing practitioner cannot be sure that the DOCX file was used to create the PDF file. Even the client or foreign associate who provides the files to the filing practitioner may not be sure of that relationship. Thus, practitioners often will not be able to satisfy a requirement to submit a DOCX file from which the also-submitted PDF file was produced because they will lack the knowledge required to sign a submission to the Office. Likewise, filing practitioners often would not be able to certify any particular relationship between a PDF file and the DOCX file from which it was produced if such certification were required.

A requirement that the USPTO knows could not be satisfied by all filers would be arbitrary and capricious.

Any Practical Requirement for a DOCX Auxiliary Document Will Almost Certainly Violate our Principles 1 and 2

We believe that any attempt to require a DOCX file as an "auxiliary" file will recreate the problems of today's DOCX filing. Because of the designed-in fragility of DOCX files, it seems inevitable that the USPTO will be backed into some variation on the approach used today—accept the uploaded DOCX files, alter them for the USPTO's purposes, and present them to the applicant for visual approval. But the visual approval necessarily occurs *on the user's computer*—which provides *no assurance whatsoever* that the *USPTO's computers* will see the same thing. We see no way for the USPTO to accept DOCX files for *any* purpose that does not lead back around to violation of at least one of Principles 1 or 2.

Recordkeeping Costs of Pairing Two Files

The DOCX-as-auxiliary proposal will require the practitioner to pair two files for the life of the patent, out to 26 years. In today's regime, this recordkeeping is easy and straightforward: the usual filing workflow creates one and only one PDF file (any earlier ones are all discarded), so it's easy to identify the one and only one file that should be permanently archived. The DOCX approach requires the practitioner to single out a DOCX file from among the multiple work-in-progress versions that may exist and keep it paired to the PDF for at least twenty-six years. There are no off-the-shelf tools to do this easily. This is impractical and an invitation to a malpractice suit. Under the Paperwork Reduction Act, this requirement to alter recordkeeping practices, the requirement for duplicative filing, and the costs entirely for the convenience of the agency with no benefit to the filer are all unlawful.

Legal hurdles

The Paperwork Reduction Act required the USPTO to "consult with the public" early on so that all the points we raise in this letter would have been well understood before the USPTO committed resources to this project. Despite inquiries, we have been unable to find any record or any consultation with the public before the PPAC presentation in 2018. Many of these issues were raised in notice-and-comment letters. The USPTO evaded answering by mischaracterizing the comment, not answering at all, or in some instances, simply lying ("To date, the Office has not received notifications of any issues resulting from the filing of applications in DOCX format."). Likewise, the USPTO was required to make the "survey" and "yearlong study" available for public vetting at the time of the Notice of Proposed Rulemaking. Neither was disclosed. The USPTO was required to estimate costs on the public, do several cost-benefit analyses, and make them available for public comment; the USPTO has never done so. The USPTO was required to make several filings at OMB; OMB's website shows no such filings ever occurred, and the USPTO's last filing at OMB admitted as much. The USPTO's representation of the findings of the yearlong survey in the August 2020 Federal Register final rule is 180º opposite the "Conclusion" of the study. Each of these incongruities was unlawful.

The Paperwork Reduction Act requires the USPTO to "implement [its information collection practices] in ways consistent and compatible, to the maximum extent practicable, with the existing reporting and recordkeeping practices of those who are to respond." 44 U.S.C. § 3506(c)(3)(E). Requiring 20% of applicants to change word processors would be unlawful.

The USPTO may not require "unnecessarily duplicative" filing. § 3506(c)(3)(B). If the PDF has the information in it (as the USPTO's own "yearlong study" concludes), the USPTO may not require a duplicative DOCX.

An agency should reduce its own costs, but "shall not do so by means of shifting disproportionate costs or burdens onto the public." 5 C.F.R. § 1320.5(d). The USPTO was required to do a cost estimate, and show that the costs on the public are not "disproportionate" to its $3.15 savings. The USPTO never did the cost estimation, let alone the cost-benefit analysis. (The public did—two estimates came in at about $200 million per year.) Costs of duplicate filing and error checking will necessarily be many times the USPTO's cost savings.

It must be deeply frustrating to the USPTO that we're asking you to do additional work in order to accommodate the requirements of a broader cross-section of filers than the USPTO had originally considered. We suggest that these costs are the inevitable consequence of the USPTO's neglect of the law. The Administrative Procedure Act, Paperwork Reduction Act, Regulatory Flexibility Act, Information Quality Act, and Executive Order 12866 required the USPTO to research certain topics, confer with the public, develop certain cost-benefit analyses, publish those cost-benefit analyses in the Notice of Proposed Rulemaking for public vetting, fairly answer public comments (as opposed to unfairly misparaphrasing some comments and entirely skipping others), make filings with OMB, and certify that it has taken certain steps to reduce burden on the public. The USPTO skipped all these steps. These are not just legal requirements; they are sound engineering. Any engineering costs that fall on the USPTO are, we suggest, a consequence of shortcutting sound engineering and legal processes.

Conclusion

As we clarified in our meeting, we accept that some filers have adopted DOCX filing. Nobody speaks for all patent practitioners, and we have no desire for the USPTO to tell those people they cannot file in that format, even though we think doing so is misguided. Nor do we have any objection to the USPTO being willing to accept filings that provide both a DOCX file and PDF file *at the filer's option*, even though we would never want to do so.

As to the two questions you asked at the end of our meeting, for at least the reasons set forth above, we and many others strongly object to any *requirement* that the filer must provide a DOCX file as an auxiliary (regardless of whether the USPTO imposes any financial penalty), particularly if the requirement includes any expectation or requirement that the applicant specifies or certifies any specific relationship among the files.

While this letter repeats many of our issues with DOCX, albeit now within the context of the USPTO's proposed "auxiliary" document with a certification requirement, this letter should also be read in the context of other proposals or endorsement of DOCX proposals the USPTO may be receiving from others.

As we have laid out above, it is evident to us that support for ***any*** proposal that requires a DOCX requires willful blindness to the technological facts, the experience and opinions of the patent procurement community, the content of the ECMA and ISO standard documents, and the governing law. While we don't purport to speak for all filers, we do have the benefit of hundreds of emails exchanged on Carl's email lists—the membership includes many hundreds of attorneys, agents, and paralegals, from small firms, large firms, and in-house, and a few foreign participants. We think our two principles, and the implementation we suggested on February 1, represent a broad consensus of many parts of the filing community.

While the USPTO may have received support for some variant of a DOCX proposal from professional associations such as the AIPLA and the IPO, we note that those associations do not represent even a majority of stakeholders, let alone the full spectrum necessary to meet the USPTO's obligations of fairness and uniform treatment under several statutes. The USPTO should not rely on "approval" from any of these associations to represent approval or agreement from the legally-necessary spectrum of stakeholders.

Time constraints in our meeting prohibited a complete discussion of those ideas. We hope this letter helps you understand why the DOCX-as-auxiliary proposal would be a serious mistake with severe adverse consequences.

We look forward to the follow-up call you offered in our meeting and will be happy to discuss these issues in more detail in that call. If issues of technology or standards arise in the interim, we can discuss them immediately. If you would like suggestions from us about better serving all applicants' needs while still getting the USPTO what it needs, we would be glad to work with you in a two-way discussion.

You can reach me, David Boundy, at 646 472 9737.

David Boundy, DavidBoundyEsq@gmail.com

March 2, 2023

Dear Mr. Seidel:

This is a third follow-up to our meeting of February 1. We left it that we would have a second meeting in a few weeks with results of your research. Would you like to propose some times?

A third test case. Attached is a third failure case. (People have reported two more, which we will forward to you when we've finished verifying them.) Attached is the failing DOCX, and several PDFs-

- One PDF is generated on Microsoft Word 365, showing the correct rendering.
- One PDF is the PDF that we received from PatentCenter when we did our confirmation test. PatentCenter fatally injures equations.
- One PDF is printed from Word 2013. It broke.

There are several implications of this test:

No uniformity. This test illustrates the most crucial point—the DOCX standard does not guarantee portability or interoperability. Various versions of Microsoft Word treat the same file differently. On Libre Office and Word Perfect, the breakage was even more severe. If you or any of your staff have ***any*** remaining questions that DOCX ***cannot*** be relied on as a reliable filing vehicle, please let us know. This is not a fixable single "bug" in Patent Center. It's DOCX's inherent irreproducibility and unreliability.

Likewise, this test confirms the reliability of PDF. Even though the DOCX appears different on different computers (even the errors are different on different computers), the PDF is uniform.

Faulty USPTO software. Along with Word 2013 and Libre, one of the failing software implementations is the USPTO's DOCX intake system. The DOCX intake system doesn't work (and as explained in our past letters, it never can, because DOCX is inherently too variable and fragile).

As we noted in our December 23 letter to Director Vidal, the USPTO's software reliability has been on a downward spiral for the last 18 months, accelerating in the last six. In the last three months, literally every week (and sometimes several times in a single week) the attorney email lists note that some major patent or trademark system has been down for a substantial time. One failure lasted for three weeks, and long-delayed notices are still straggling in. On February 23, PatentCenter locked out many attorneys with the message "Hybrid Web Access Management Application is not responding." In 2020, those kinds of failures were far less common. Any hope that the USPTO can get the DOCX system to work reliably by April 3—or ever, on current trajectory—is not remotely credible.

Inadequate test regime. Since December 20, we've gathered five substantial bug reports, and this is the third we've been able to fully investigate to report to you as a reproducible "hard" failure. In a Federal Register notice of December 20, 2022, the USPTO claimed "The USPTO is no longer seeing any errors being reported as a result of filing patent applications in DOCX format when applicants follow the guidance provided by the USPTO." Volunteers found five in nine weeks. The USPTO claims to have found zero. We suggest that the "no longer seeing any errors" claim is more likely the product of inadequate testing and information management than the quality of the software. At a minimum, the USPTO is in breach of its obligations under the Information Quality Act—agencies are not permitted to rely on or disseminate cherry-picked data, junk science, or findings based on inadequate investigation.

Those of us that had software engineering careers note that the USPTO's testing regime would never be acceptable in a commercial market, let alone for a software product that requires high-reliability. In the private sector, when a company does a serious test, it reaches out to testers to gather feedback. The USPTO passively waits for bugs to be reported. In the private sector, a software vendor that is running a serious test makes it easy to report bugs. The USPTO went out of its way to make bug reporting hard.

Carl explained several failures in his letter of August 2019. We gave several examples in our Seventy-Three Practitioners letter at pages 13-19, and in the contrast between pages 1-34 vs. pages 48-80. In the USPTO's August 2020 final rule notice, the USPTO claimed "To date, the Office has not received notifications of any issues resulting from the filing of applications in DOCX format." That statement was not true in August 2020. And yet the USPTO forwarded that false statement to two *ex parte* reviews, at OMB and SBA. The USPTO's similar claim of December 20, 2022 strains credibility.

Applicants write their own documents. As this example illustrates, applicants often write the first draft of the document that becomes the patent application. Often this first draft is written for a publication—the USPTO is seldom the initial audience. The attorney/agent can't control which word processor the inventor uses for that first draft, let alone which word processing features the author may or may not use. The equations in this test were created by the inventor. They appeared correct on the attorney's computer. The problem wasn't exposed until the attorney's assistant attempted to file in PatentCenter. There's no way to control for it. Fortunately, this alert assistant caught it. But no one can count on that kind of vigilance.

The USPTO's only relevant regulation is that patent applications must be in "nonscript type font" (37 C.F.R. § 1.52(b)(2)(ii)). As a legal matter, that is the only requirement that the USPTO has the authority to enforce. As a practical matter, "nonscript fonts" is the only requirement attorneys can enforce with clients. The Paperwork Reduction Act requires agencies to adapt to the public's "existing … recordkeeping practices" "***to the maximum extent practicable***," 44 U.S.C. § 3506(c)(3)(E). The USPTO lacks authority to force applicants to change the way they use word processors.

Ethical dilemma. One of the country's major patent law firms contacted us with the following dilemma. The firm was considering sending a letter explaining that they would bill all clients the $400 fee, but offering the client the opportunity to avoid that charge by agreeing to accept all liability for failure of the PTO's DOCX filing system. Then it was pointed out that attorney ethics rules all but forbid that kind of limitation of liability. The unreliability of DOCX filing puts law firms in a no-win situation. The PTO should not go forward until it can propose a way to avoid malpractice liability created by DOCX filing.

The USPTO has no Paperwork clearance. As of March 1, 2023, the USPTO has no clearance for the DOCX rule under the Paperwork Reduction Act. The USPTO's last word on the subject (USPTO to OMB, May 25, 2021, at pages 13-14) was to admit that (a) the USPTO did not challenge the public's two estimates of $200 million per year in burden, (b) the USPTO didn't have a clearance, and (c) the USPTO wasn't requesting one. The absolute minimum path to clearance is well over 90 days. It is impossible for the USPTO to get that clearance by April 3.

In the Notice of Proposed Rulemaking, the USPTO claimed that the DOCX rule "has been reviewed and previously approved by OMB" (84 Fed Reg. at 37431). That was false—the USPTO never applied for review or approval. After the error was called out in the public comment letters, the USPTO made the same false claim in the Final Rule notice. 85 Fed. Reg. at 46985 col. 2. If there is a good faith explanation for the second false claim, kindly explain.

Misuse of guidance. In the December 20 Federal Register notice, the USPTO writes that the DOCX system works "when applicants follow the guidance provided by the USPTO." This sentence is unlawful. The Administrative Procedure Act sets procedures agencies must use to bind the public—the PTO's DOCX guidance was not issued under those procedures, and goes well beyond the permissible limits on guidance issued by mere publication. Three years ago, the Department of Commerce instructed component agencies that they are not to treat guidance as binding (15 C.F.R. § 29.2(a)). On President Biden's first day in office, he reinstated an OMB directive to the same effect (after it had been rescinded by President Trump). The USPTO may not (lawfully) rely on guidance to forbid fonts, Word features, etc.

You can reach me, David Boundy, at 646 472 9737.

Agenda

Item 1: Timing: Has the DOCX penalty been delayed until June?

a. Some delay is imperative: the PTO's DOCX system does not have a sufficient history of reliability to warrant mandatory use. See pages 4 to 6 of this document.

b. The PTO has given some indication of delay to the public, including to a representative of AIPLA, see page 2 of this document.

c. Please run a formal Federal Register notice of delay of the $400 surcharge.

Item 2: four fundamental customer requirements (see next page). Think of this part of the meeting as a customer requirements interview, the kind that would have been done on day 0. We believe these four principles are absolute imperatives, as a matter of basic sound engineering and practice of law.

d. These four principles were provided to PTO on January 25, as agenda for meeting with Mr. Seidel and team of February 1.

e. Can we agree that one no-penalty filing path must implement them, with no reservations or qualification? (We have no objection to the PTO providing other options, as long as filers are made aware of the risks—our ask is that the PTO provide one no-risk, no-penalty filing path, among the options.)

f. If PTO can't agree to provide one no-penalty filing path that implements the four principles, what are the specific issues?

Item 3: Questions

g. What percentage of filings in non-DOCX does the PTO expect? What's acceptable?

h. The PTO has not obtained clearance under the Paperwork Reduction Act. The PTO's last word on the topic (a Paperwork Reduction Act filing at OMB relating to other issues, https://www.reginfo.gov/public/do/DownloadDocument?objectID=123048401) was to acknowledge that the PTO had no control number, was not seeking one, and was not contesting the public's estimate that the DOCX rule would create $200 million per year in costs for proofreading and error correction. Does the PTO acknowledge that a control number is required before the PTO may collect DOCX applications, and the PTO doesn't have one? Does the PTO have any evidence-backed reason to question the public's $200 million/year estimate?

Item 4: Alternative solution: text-rich PDFs as (one of the options) for single-upload filing medium.

i. All word processors generate PDF reliably. The PTO's own Federal Register notices acknowledge that nearly 20 percent of the filers don't use DOCX-based word processors. A large fraction of practitioners that that do use DOCX-based word processors recognize the unreliability of the PTO's DOCX filing system, and are not comfortable filing in DOCX.

j. PTO's own *AEEC Text2PTO* year long study concluded that PDF is "the right approach."

k. In meeting of February 1, we urged PTO to investigate switch settings for "Print as PDF" to generate PDF/A or PDF/UA (two ISO standards, which in turn, guarantee natural order presentation of text, and forbid certain objects in the PDF that could create difficulties). Status report on that investigation?

l. The PTO's response to comments in the Final Rule suggests a deeply "dug in" position. What are the issues? If you will share the PTO's lock ins, perhaps we can help.

Messaging relating to implementation delay

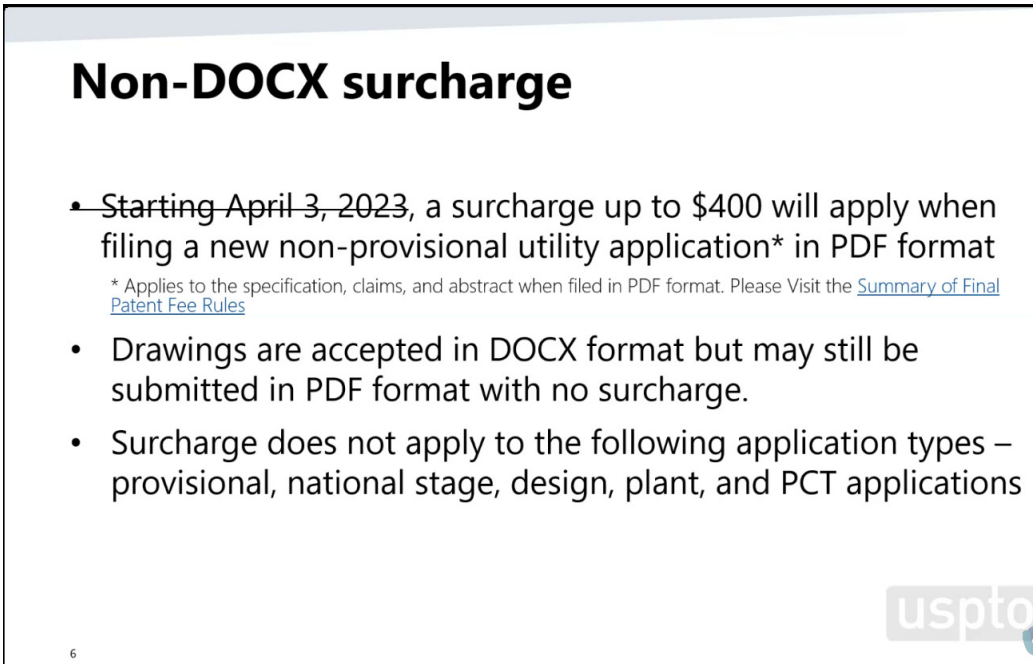
DOCX does not have a sufficient history of reliability to warrant mandatory use. See pages 4 to 6 of this document. (Our view is that because of unsound fundamental design flaws, it can never be reliable. Let's set that aside for now, and look at today.) The $400 surcharge should be delayed.

In the PTO's DOCX webinar of March 10, 2023, the PTO announced a delay of DOCX:

> Starting June 30, 2023, a surcharge up to $400 will apply when filing a new non-provisional utility application* in PDF format

Our colleague Brad Forrest (AIPLA's point person) tells us that Richard Seidel unambigously told him at about the same time (about March 9) that DOCX would be delayed.

The PTO's webinars of March 14 announced a delay:



As of this morning, March 23, there is no Federal Register notice. Inconsistency is creating real costs for the public. Please announce a delay.

Four principles for Patent Filing Systems

0. Correctness first. Every computer engineering student is taught that correctness may (nearly) never be compromised for "efficiency" or cost.

a. This is especially true here—the law of new matter makes post-filing correction of errors nearly impossible. A patent application or patent could become worthless because of a textual change (no matter how small) introduced by the filing system.

1. Principle 1: The file that the applicant uploads must be the authoritative document, bit-for-bit, for all purposes. Any change violates "best evidence" rule, has all the problems of document tampering.

a. No changes, no "validation" if that means change or replacement. The applicant's uploaded bits are authoritative for all purposes, and must be retained indefinitely.

b. A patent application is the property of the applicant, not the PTO. In the event of any harmful change to the application made after the applicant uploads to the PTO's web site, malpractice exposure lies with the applicant's attorney or agent, not the PTO. The PTO *may not change the bits*.

c. These are legal documents, evidence for litigation. The best evidence rule applies.

d. Humans are not well-equipped to review for small changes—any scheme that changes the input in subtle ways and asks for human review is an inherently flawed design.

e. Inevitably, the best-engineered system will still run into errors. When the same file is uploaded months or years later (either during intra-PTO examination or during litigation), the upload must give exactly the same checksum. No modification on the fly.

f. The system must be designed to minimize the path between file upload and authoritative archival storage, in order to minimize the chance for screw-up.

g. The Paperwork Reduction Act forbids agencies from shifting costs to the public. The PTO is not legally permitted to impose the costs of reconciling two different information sources, especially if those costs arise from changes to the data, or two different interpretations of ambiguous data, are introduced by the PTO. Forbidden costs include error checking, proofreading, proving up the appearance of a document on the applicant's computer if it appears differently on the PTO's, and petitioning for correction.

2. Principle 2: What You See Is What I Get. The file specification (perhaps ISO standard) for the authoritative file must guarantee that anyone, anywhere, any time, that opens or prints the authoritative document will see the same rendering in content and visual layout. There is no room for a system in which the PTO will rely (for any purpose) on bits that mean different things on different computers.

a. What the PTO's computers think was received must match what the applicant's computer presented to the applicant for review at the time of filing

b. Litigation parties must be left with no ambiguity about exactly what was filed—small ambiguities will become big litigation issues.

c. DOCX documents appear substantively different when opened on:

i. Microsoft Word, Libre Office, Google Docs, Mac Pages, the PTO's DOCX filing system, and the PTO's FOIA system. (The PTO's own survey estimated that nearly 20% of applicants author patent applications in something other than DOCX. The PTO has published no analysis of the rule's effect on that 20%.)

ii. English text written in non-Latin-alphabet editions of Word (Word for Israel, Japan, etc.) screws up when opened in the American edition of Word.

iii. Microsoft Word for Windows, Word for Mac, different releases of Word, the same version of Word on computers with different plugins and other software installed.

3. Legal requirements. Any rulemaking and implementation must meet the requirements of the Administrative Procedure Act, Paperwork Reduction Act, Regulatory Flexibility Act, and directives from the Executive Office of the President and Department of Commerce.

Example failures

Example 1: new bug March 17. We are aware of at least one new bug introduced in the PTO's DOCX filing system in the March 17 update, resulting in figures being blanked out. The attorney hasn't been willing to let us include it here, for fear of retaliation. The attorney did report it to the PTO, and EBC indicated it won't be fixed until "mid-April."

Example 2: From comment letter of Carl Oppedahl during August 2019 notice and comment (https://www.uspto.gov/sites/default/files/documents/Comment_Carl_Oppedahl_081219.pdf). The following equation from Libre Office:

$$f(u)=\cos(u)^3 \exp(0.2u)$$

was rendered by the PTO's DOCX system—note that "0.2" is changed to "10.2":

$$f(u) = cos(u)^3 exp(10.2u)$$

In the Final Rule notice, *Setting and Adjusting Patent Fees During Fiscal Year 2020*, Final Rule, 85 Fed. Reg. 46931 (Aug. 3, 2020), the PTO claims five times "To date, the Office has not received notifications of any issues resulting from the filing of applications in DOCX format." *E.g.*, 85 Fed. Reg. 46956, col. 2:

> To date, the Office has not received notifications of any issues resulting from the filing of applications in DOCX format. If there is an instance in which

Example 3: February 2023: From a national patent boutique:

[0002] $PL_{b,f,c}(q_d))$

[0003] $P_{O\_PUSCH,b,f,c}(j))$

[0004] $\alpha_{b,f,c}(j))$

As rendered by the PTO's DOCX system

[0002] □□□,□,□(□□))

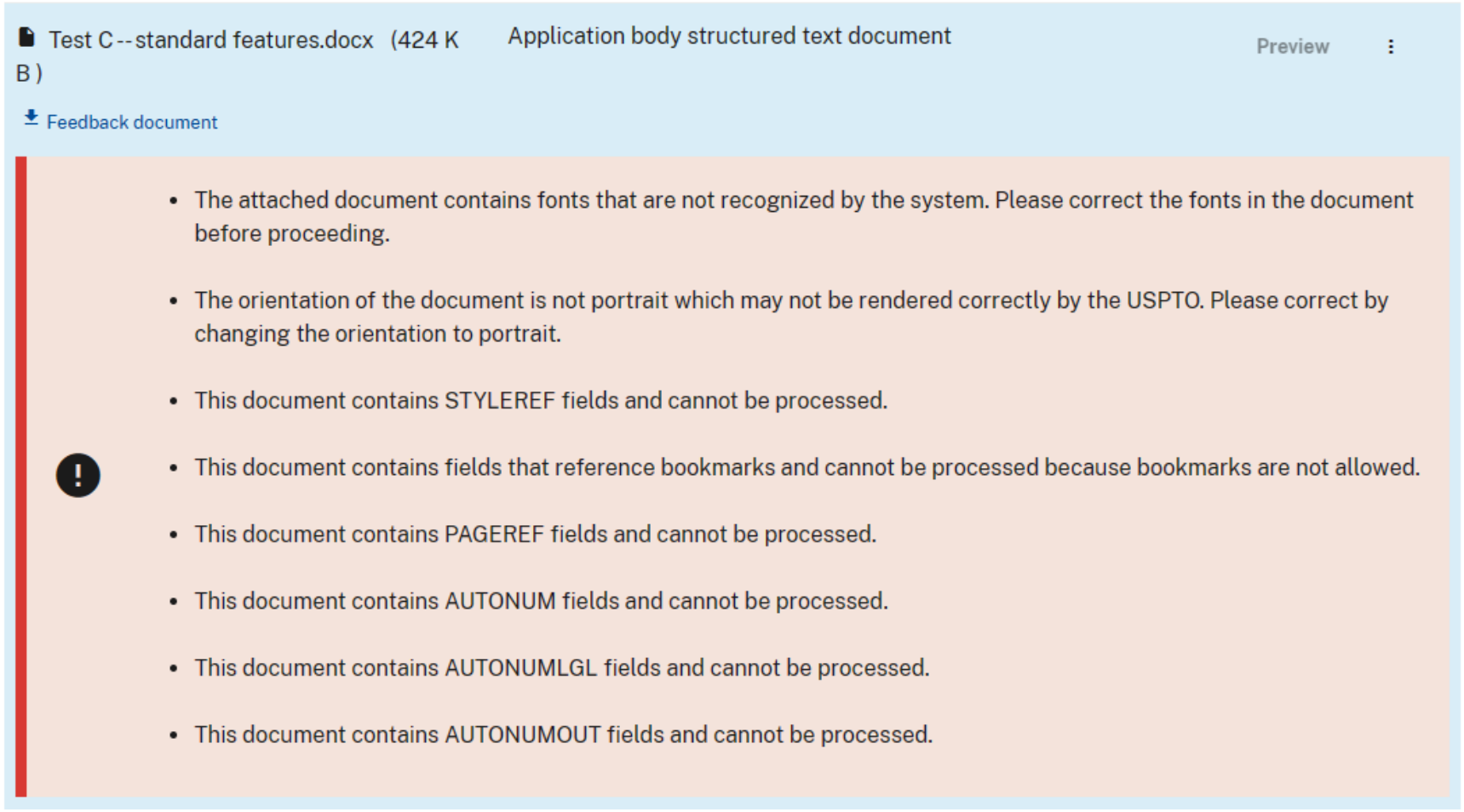
[0003] □O_PUSCH,□,□,□(□))

[0004] □□,□,□(□))

Fixed by March 17 update—but given the history, it's far too soon to conclude that this is the last bug.

Example 4, March 17, 2023 (after most-recent update to Patent Center): In December 2022, we gave the PTO a test suite that uses features of Word that are in actual use by actual attorneys or actual clients. As of March 17, these failures are unaddressed.

- For wide tables and wide chemical formulae, we often use landscape-mode pages in our word-processing document, which get rotated into portrait in the final PDF. It all just works. In contrast, the PTO's DOCX system refuses to accept landscape pages. There's no work-around.
- Patent attorneys use bookmarks and cross-references to ensure consistency in different places of a patent application. When converted to PDF, it all just works. In contrast, the PTO's DOCX system refuses to accept patent applications that use word processor features that go beyond a naïve typewriter.
- Clients write their own documents. Practitioners can't police the fonts, word processing features, etc. that clients use. If the client's choices are clear, use non-script fonts, and comply with regulations, the PTO lacks authority to refuse them. The PTO's stated rationale is that DOCX is a "standard"—the PTO can't pick and choose which part of the standard to accept and which to refuse, and still claim to be "standard."



Example 5, December 2022: From one of our colleagues on the email lists. As rendered by the PTO's DOCX system:

> What is claimed is:
>
> 1. A method comprising:
>
> 2. a step that includes doing something that is really wonderful and makes the world a better place.
>
> 3. The method of claim 1 further comprising:
>
> 4. a second step that includes doing a second something that is really wonderful and makes the world an additionally better place; and

Example 6, March 17, 2023: A number of new bugs in Patent Center (not directly relevant to DOCX filing, but indicative of the low reliability of PTO software. This leads to our distrust of DOCX. A catalog at:

> *March 17 version of Patentcenter breaks things that worked in previous version*, https://blog.oppedahl.com/?p=9203

Example 7, March 10. 2023: Brad Forrest gave a webinar with other example failures over the last two years, *DOCX Filing – Submitter Beware*, at https://www.slwip.com/resources/39246

By US Postal Service 9470103699300070667498

Mark Polutta
USPTO
P O Box 1450
Alexandria, VA 22313-1450

March 2, 2023

Dear Mr. Polutta:

I wrote to you by email on February 3, 2023 asking you to place the attached document *The Fool's Errand that is DOCX* into the rulemaking record as a response to the notice *Setting and Adjusting Patent Fees During Fiscal Year 2020*, 87 FR 80073 (Dec. 29, 2022). You wrote back to me on February 3 saying this:

> Thank you for your message.
> In accordance with Office Policy, I have not opened the attachment.

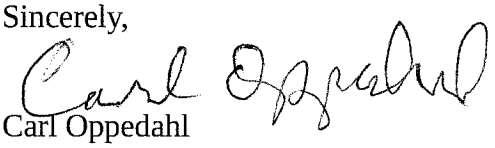
I wrote back to you on February 3:

> Dear Mr Polutta --
> You mention an "Office Policy." Could you please provide a cite or URL where it's published?

I have not heard back from you in response. I take this to be your refusal to put the document into the rulemaking record despite my having asked you by email to do so.

I am thus sending the document to you today on paper, by Priority Mail Express, with my renewed request that you place this letter, and the attached document, into the rulemaking record.

Sincerely,



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The Fool's Errand That Is DOCX

Version: 2022-12-27

By: Carl Oppedahl

Table of Contents

Executive summary: Nearly everything that the USPTO has ever said about DOCX is false. To the extent that any word processor format actually satisfies USPTO's stated requirements, it is ODF (OpenDocument text) format. DOCX actually fails to satisfy any of USPTO's stated requirements.

Almost everything about USPTO's DOCX filing process is offensive to patent applicants and practitioners. USPTO's DOCX filing process, if carried out and perpetuated, would expose practitioners to substantial malpractice risks.

There is no “DOCX standard”. There is an “ODF standard”. There is an international industry standard for a type of PDF file that would actually provide everything that the USPTO says it needs.

The USPTO’s “yearlong study” that supposedly showed that PDF was not a good way for filers to file patent applications (from USPTO’s point of view) showed no such thing. In the associated Federal Register notice, the USPTO profoundly mischaracterized the conclusions of the study.

The USPTO has gone out of its way to ignore and mischaracterize comments and suggestions of practitioners about this DOCX problem.

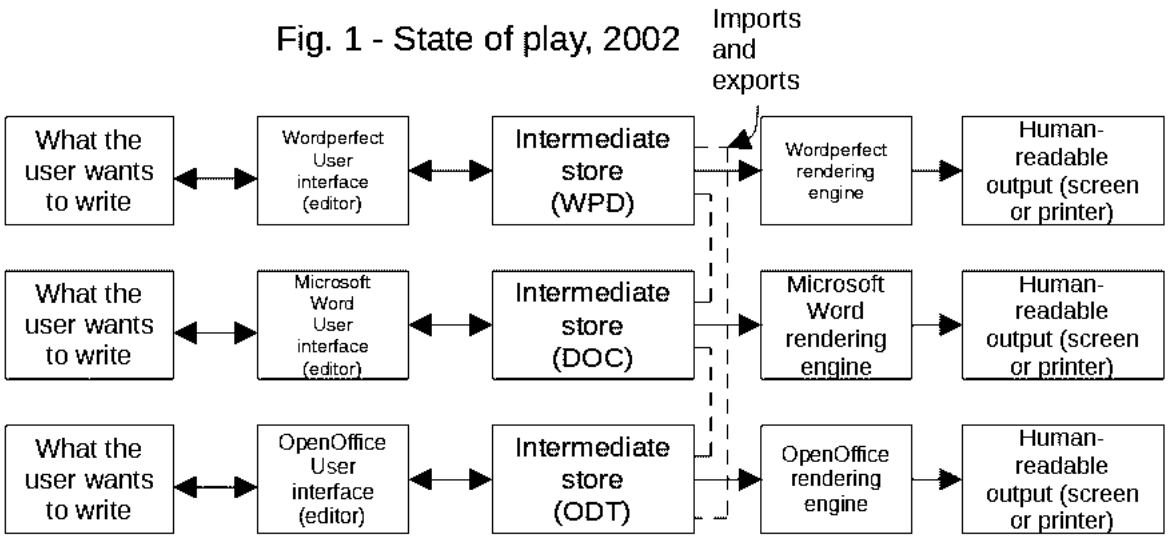
There are two decent ways to fix USPTO’s mess:

- scrap the DOCX program and ask for ODF files instead of DOCX files; or
- scrap the DOCX program and ask for accessible PDF files, along with incentivizing the filer to provide a DOCX file if the USPTO feels it needs the DOCX file.

I am providing this *Fool’s Errand* document to the USPTO (and to the practitioner community) in December of 2022, the timing of which was driven by the USPTO’s doubling down on a January 1, 2023 start date for USPTO’s $400 penalty for failing to comply with USPTO’s requirement that patent applications be filed in Microsoft Word DOCX format. But I remind the USPTO that every individual point made in this *Fool’s Errand* document is a point that I made to USPTO decisionmakers in the past. Nothing in this *Fool’s Errand* document should be news to the many USPTO decisionmakers that I have been trying to talk sense with during the past several years. This document merely collects all in one place the many points that I have been trying (with apparently limited success) to make to the USPTO for the past several years.

Details: In this document I have a goal of helping the reader understand a bit about how word processors work inside. I have a goal of helping the reader understand what it means for a word processor to store a data file in a particular format, and what assumptions if any a third party (such as a government agency) may reasonably make about that format. I have a goal of helping the USPTO to be smart, or at least to avoid being stupid, about how to receive patent applications in character-based format in a way that could attract cooperation and even buy-in from its customers (the applicants and practitioners who file patent applications).

State of play in 2002. We will begin the discussion by looking at Figure 1, and I will describe the “state of play” as it stood in the year 2002.



The way that it worked in 2002 is that there were two word processors with large market share, namely WordPerfect and Microsoft Word. There was also a distant-third-place word processor called OpenOffice which was nonprofit and open-source. Let's look at the first row to see the workflow and functional parts of a word processor.

The starting point with any word processor is that which is in the mind of the user. The user wants to write something. The user communicates this to the word processor (here, WordPerfect) through the user interface (UI) of the WordPerfect software. The software stores the work in a file on the hard disk of the computer, and for our discussion I will call this the "intermediate store". In 2002, the default filename extension used by WordPerfect for its "intermediate store" was "WPD". (This stood for "WordPerfect Document".) When the time came to print the document on a printer, or to view it on a computer screen, this task was carried out by means of what is called a "rendering engine". The rendering engine has the task of receiving as its input the intermediate store file and "rendering" the document in a human-readable form, for the purpose of putting ink on the page (if the target is a printer) or putting pixels on a screen (if the target is a screen). It is of great importance for the reader to understand that in 2002, with WordPerfect, the way this worked is that the rendering engine was a proprietary piece of software. The source code for this rendering engine was maintained in secrecy by the WordPerfect company, and the only code released to the user was executable code.

In this Figure 1, there are in fact *four boxes* that represent software that was released to the user only as executable code – the WordPerfect UI (editor), the WordPerfect rendering engine, the Microsoft Word UI (editor), and the Microsoft Word rendering engine. As for each of these four boxes, the corresponding source code was maintained in secrecy by its maker. The alert reader will of course know exactly where I am going with this -- the disruptor was OpenOffice, which provided its UI (editor) and rendering engine in both open-source code and in executable code. (I was an early adopter of OpenOffice.)

It is now of similarly great importance for the reader to join me in paying close attention to the standardized or non-standardized status of the three intermediate storage formats – WPD format, DOC format, and ODF (OpenDocument text) format. The state of play in 2002 was that the WPD format and DOC format were each a proprietary format. (The filename extension "DOC" is simply the first three letters of the word "document".) Of course enormous amounts of effort were expended by the maker of each word processor to try to reverse-engineer the proprietary formats of the other word processors. It was, after all, a matter of consumer survival for any word processor that was in second or third place to somehow accomplish interoperability with the dominant word processor. It was thus a matter of consumer survival for, say, WordPerfect to try as best it could to somehow export its intermediate-format files into DOC format. It was likewise a matter of consumer survival for WordPerfect to try as best it could to somehow import DOC-formatted files into the WordPerfect intermediate format. This was a never-ending game of cat and mouse. From time to time after WordPerfect had made progress in the reverse engineering, Microsoft would release another version of Microsoft Word in which a few more formatting codes were used to encode a few more kinds of rendered text according to some proprietary internal Microsoft standard. It is as if Microsoft had had a goal of defeating or at least impeding the reverse-engineering efforts at WordPerfect.

WordPerfect would then struggle to reverse-engineer the most recent DOC format so that it could hopefully import such files into WordPerfect while preserving such formatting within the WordPerfect environment, and so that it could hopefully successfully export such formatting from WordPerfect into the most recent version of the DOC format.

The breath of fresh air was OpenOffice and its OpenDocument format. (The "odt" filename extension stands for "Open Document text" format.) The OpenDocument format was explicitly established from the outset as a format based upon open published standards, administered by a neutral standards-setting body. The makers of OpenOffice also faced the same survival problem that WordPerfect faced, namely that there was no choice but to try as best they could to reverse-engineer the ever-shifting DOC format so that they could import DOC files and export DOC files. They also needed to be able to reverse-engineer the WPD format for similar reasons. (There came a time when this last need became less pressing for OpenOffice because eventually WordPerfect was driven off the market and ceased to be a meaningful competitor to Microsoft.)

The prospect of imports and exports of intermediate file formats is denoted in Figure 1 by the dashed lines labeled "Imports and exports". I use the dashed lines to signal to the reader that the imports and exports are very imperfect, with significant formatting errors and losses incurred in most of the imports and exports.

What have we learned (or reviewed) thus far? In about 2002, there were several proprietary intermediate storage formats, of which the two leading examples were WPD and DOC. Makers of word processor software had reached varying levels of success at reverse-engineering the various competing proprietary intermediate storage formats. There was an upstart open-source effort (OpenOffice) that threatened to disrupt the dominant market position of Microsoft. This

effort, had it succeeded, would have set into place an open-standards-based format for the intermediate storage of word processor documents, namely ODF.

What, in 2002, were Microsoft's goals in response to the then-recent entrance of OpenOffice and the OpenDocument format upon the word processor scene? The last thing Microsoft would want to see is all of the other word processor makers "ganging up" on Microsoft and migrating to a single commonly employed intermediate storage format, which format would be administered by some neutral standards-setting body. From the point of view of Microsoft, if such a migration were to happen, this would present the danger of competing word processors not only surviving against Microsoft but even perhaps thriving. One can see that Microsoft would benefit greatly if it could somehow derail the OpenDocument Text movement.

It was at this time that Microsoft devised a competing and supposedly "open" standard which it called DOCX, which was supposedly going to be administered by a different supposedly neutral standards-setting body.

Long-time Microsoft watchers predicted, correctly, the course of development. Microsoft managed to convince many players who had previously given their time and energy to the OpenDocument standard to stop supporting that effort, and instead to give their time and energy to the supposedly better DOCX "standard". (I put the term "standard" in quotation marks for reasons that will presently become clear.) Previous efforts to develop the OpenDocument standard to provide industry-wide open-source support for math formulas and chemical formulas lost momentum. Microsoft then engineered a "fork" in the development of the DOCX "standard" defining two branches. One branch (called "strict") would be the "open standards" branch that would be henceforth administered by the neutral standards-setting body, and the other branch (called "transitional") would be the branch actually supported by Microsoft Word going forward. The open-standards branch would then eventually go nowhere and would get resource-starved. The branch actually supported by Microsoft Word in an ongoing way would not be controlled by any neutral body but would be controlled by Microsoft, with changes to the format being made at whatever times Microsoft saw fit, and with limited publicly released documentation to whatever extent Microsoft saw fit to establish.

State of play in 2010. On a practical level the result was the state of play set forth in Figure 2, a state of play that largely persists to this day. WordPerfect is no longer a meaningful player. OpenOffice has been succeeded by an open-source fork called Libre Office. (I am a happy user of Libre Office.) The third major word processor in recent years has been Google Docs.

Figure 2.
State of play in 2010

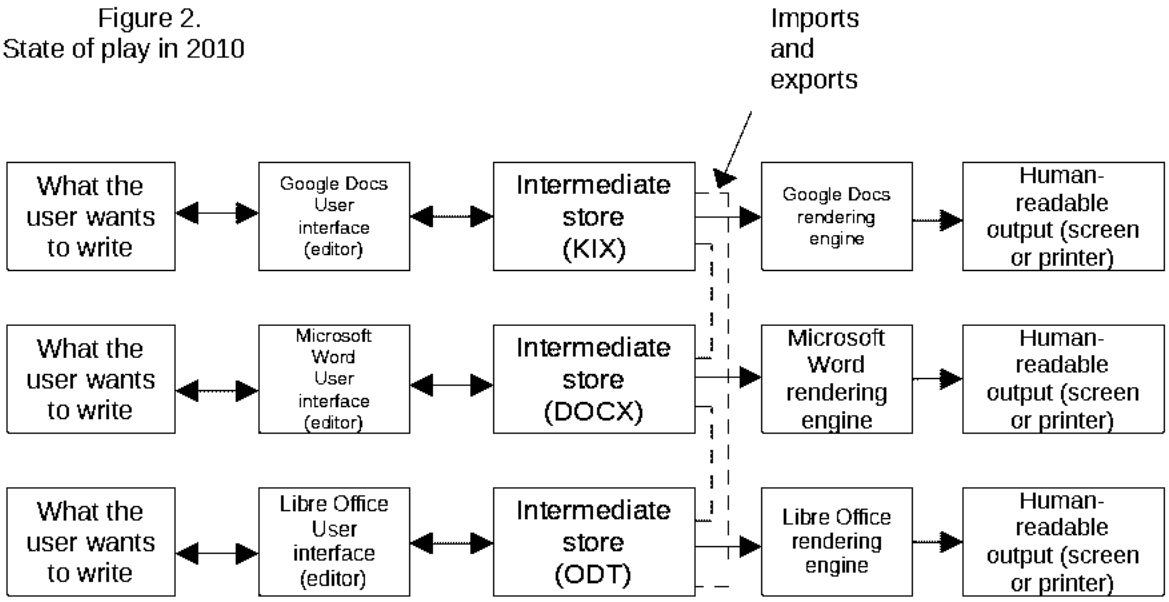


Figure 2 shows results that greatly favored Microsoft. A competitor (WordPerfect) is out of the market. The danger that two or more competing word processors might have migrated to make use of a single open-source intermediate format, administered by a neutral standard-setting body, has been averted.

The OpenDocument format (which continues to be denoted by the "odt" filename extension) continues to be completely "open". Part of the openness of the ODF ("odt") format flows automatically from the open-source nature of the present-day *UI* (editor) of Libre Office, together with the open-source nature of the UI (editor) of its ancestor, OpenOffice. Another part of the openness of the ODF format flows automatically from the open-source nature of the *rendering engine* of Libre Office, together with the open-source nature of the rendering engine of its ancestor, OpenOffice. All of the collaborators who participate in any way in versions or forks of OpenOffice or Libre Office publish information about any and all extensions and feature-adds that they incorporate into the ODF format.

A first consequence of this complete openness of the ODF format is that any other word processor maker (for example Microsoft or Google Docs) that chooses to try to ***export*** its own internal intermediate storage format (here, DOCX or KIX) into ODF is always able to do so with complete success and with no errors or artifacts or formatting failures. The only exception to such success would be the special case where some highly specialized or exotic type of formatting simply does not exist yet in ODF, in which case it is understandable that there would not be a way to make it happen in the export of a document into ODF format.

A second consequence of this complete openness of the ODF format is that any other word processor maker (for example Microsoft or Google Docs) that chooses to try to ***import*** an ODF file into its own internal intermediate storage format (here, DOCX or KIX) is always able to do

so with complete success and with no errors or artifacts or formatting failures. What never happens is that the programmer, parsing some ODF file, runs into some coding or string of characters that "makes no sense" or that the programmer "cannot figure out". There is always a clear and unambiguous way to make sense of every bit of content in an ODF file, drawing upon readily available publicly available information.

This last point bears emphasis. If there were ever some initially baffling data element in some ODF file where it appeared, at least superficially, that somehow the published standards documents somehow did not quite make completely clear how to interpret the data element, there is always a completely clear fallback position. The programmer can, if necessary, simply inspect the (publicly available!) source code of the word processor's rendering engine, and follow step by step exactly how the rendering engine renders the initially baffling data element into human-readable format. At this point, it will be clear simply by looking at how the data element got rendered into ink on the page, or by looking at how the data element got rendered into pixels on the screen, how the data element may be understood.

Another way to say this is that there is never a need for anyone to "reverse engineer" anything about the ODF format or the ODF standard. It is all open and open-source and it takes place according to published standards.

To reinforce the point of the previous paragraph in different words, what we have is that in Figure 1, the OpenOffice rendering engine is open-source, and in Figure 2, the Libre Office rendering engine is open-source, and this fact, together with the ODF community's shared values of documenting the standard, leads to a situation where there is never any lasting puzzlement about any detail of formatting. Any programmer who is connected with some other word processor, for example Google Docs or Microsoft Word, can always achieve an import or export to or from ODF with absolute and complete assurance of success and accuracy.

It is important to keep in mind that anyone can say that anything is supposedly "standards-based". Saying it does not make it so. As it turns out there are objectively measurable things that make it easy to determine whether someone is telling the truth or not when they say something is "standards-based", as I will discuss.

The presence of standards. Yes, this is part of how you know whether somebody is lying or telling the truth when they say something like a device or a data format is standards-based.

A first step for anyone to show that they are telling the truth when they claim that a device or a data format is standards-based is to point to some repository where the standards may be seen. If they cannot point to such a repository, or cannot point to the actual standards within the repository, this reveals the claim to be a lie.

Let's suppose the person points to some purported repository and the supposed standards within the repository. The second step for anyone to show that they are telling the truth when they claim that a device or a data format is standards-based is to point to various numbered and dated

versions of the standard that may be seen within the repository. If they cannot point to such numbered and dated versions of the standard, this reveals the claim to be a lie.

Let's suppose the person points to some purported repository and the supposed standards within the repository, and also points to various numbered and dated versions of the standard that may be seen within the repository. The third step for anyone to show that they are telling the truth when they claim that a device or a data format is standards-based is to point to evidence of recent standards-maintaining activity that has taken place. If the date of the most recent so-called "standard" is years or decades in the past, and if it is well known to users of the device or the data format that many changes have somehow happened in recent years, then this is a telltale that the device or data format is not in fact standards-based. This reveals the claim to be a lie.

There is a fourth thing that someone must do if they hope to show that they are telling the truth when they claim that a device or a data format is standards-based. They must point to some actual existing standard-setting body that maintains the repository and somehow facilitates ongoing standards-setting activity. Ideally the standard-setting body is an industry neutral, at arm's length from any for-profit participant. Failure to point to such an existing standards-setting body reveals the claim to be a lie.

It is easy enough to see that the OpenDocument format ("ODF") is standards-based. A moment or two of mouse-clicking in Wikipedia or Google quickly reveals that this standard is organized by the *Organization for the Advancement of Structured Information Standards* (OASIS) consortium. There is actually a most recent version of the standard, and it is version 1.3 which was adopted in January of 2020. There is a place (a repository) where you can click and view and download the standard.

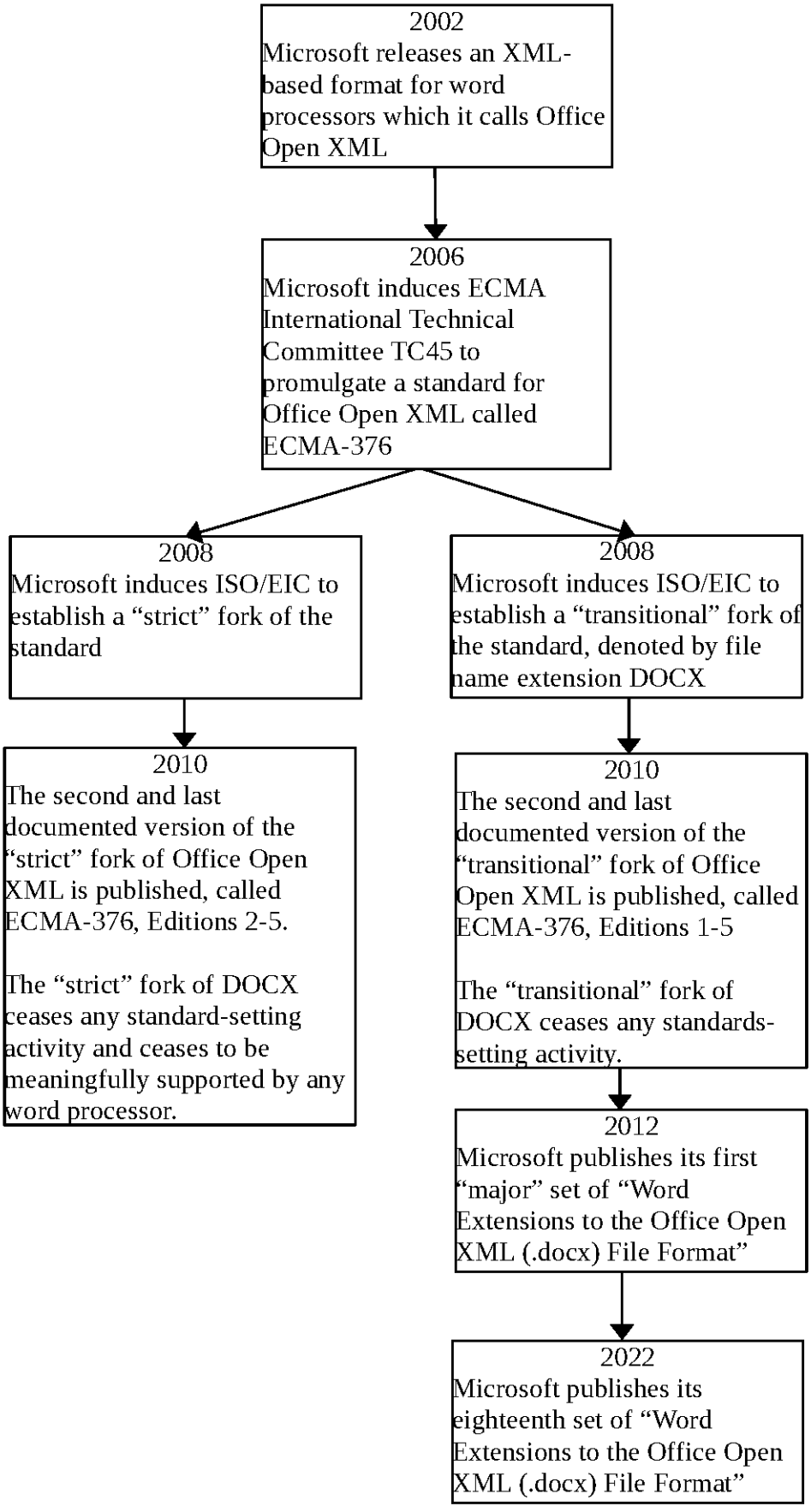
The USPTO surely knows perfectly well that the DOCX format as employed by Microsoft Word is not at all standards-based. Conspicuous by its absence in any USPTO documents or communications is any identification of a standard-setting entity for what the USPTO calls "the DOCX format". Conspicuous by its absence in any USPTO documents or communications is any identification of a repository for numbered and dated standards for what the USPTO calls "the DOCX format". The USPTO has not pointed, and cannot point, to any recent "version" of a supposed "standard" for what it calls "the DOCX format".

The history of the DOCX "standard". It is true that Microsoft's initial efforts to derail ODF and to set up a supposedly standards-based DOCX format did lead to standard-setting activity. One body called ECMA participated for a while, as did ISO. By 2008, there was a "fork" in the standard, a fork engineered by Microsoft, with one branch called "Strict" and the other called "Transitional". Only the "Strict" fork continued to have anything that remotely resembled an open standard-setting environment. The way it eventually worked out is that Microsoft Word, from about 2009 to the present, has supported only the "Transitional" fork which is not standards-based in any way. The "Strict" fork eventually became inactive. The most recent purported "release" of a new version of the "Strict" fork of DOCX was a "fourth edition"

released in 2016. No commercial software follows this “Strict” fork. No open-source software follows this “Strict” fork.

Figure 3 shows the history of the DOCX “standard”. It is recalled that in about 2002, some members of the word processing community established the OpenDocument standard for word processor files. As may be seen in Figure 3, Microsoft’s response was to create a competing “standard” in 2002 called Office Open XML, with a file name extension of DOCX. Microsoft induced two standards-setting bodies to lend authenticity to this “standard”, with ECMA promulgating a standard (long since fallen out of use) called ECMA-376 in 2006 and ISO promulgating a standard (also long since fallen out of use) ISO/IEC standard 29500:2008 in 2008. This standard embodies two variants or “forks”, a “strict” variant that had the support of the non-Microsoft participants and a “transitional” variant that was only supported by Microsoft.

Fig. 3. History of the DOCX “standard”



The variant of DOCX used in Microsoft Word (which has its origins in the "Transitional" fork of DOCX) last had a purported "standard" published in 2009 and 2010. Microsoft has not even pretended to conduct standard-setting activity for its fork of DOCX since 2010. There are no numbered or dated standards for its fork of DOCX (not since 2010). There is no standard-setting or standard-maintaining entity for standards for its fork of DOCX, at least, not a neutral party or a party at arm's length from Microsoft.

What Microsoft does publish is opaque documents called "Word Extensions to the Office Open XML (.docx) file format". There have now been more than eighteen of these "extensions" to the DOCX standard as it existed in 2008 and 2010.

To be clear about this, the so-called DOCX standard ceased to have any standard-setting activity by 2010. What has happened since 2010 is "extensions" unilaterally imposed by Microsoft, with no participation by any other entity. The flavor of DOCX now in use in Microsoft Word is and continues to be a "moving target" for any word processor provided by anyone other than Microsoft.

Let's return now to false and disingenuous statements on the USPTO web site. For example the USPTO says this on its web site:

> The DOCX format is an international standard defined under ECMA-376 and ISO/IEC 29500 and approved by the Library of Congress.

If you look at Figure 3, you can see that the last time any standard-setting took place under ECMA-376 was twelve years ago. No present-day word processor follows that ECMA-376 standard from 12 years ago.

If you fact-check the USPTO about the ISO/IEC 29500, you find that the last time any standard-setting activity took place under that standard was in 2016 (more than six years ago). No present-day word processor follows that ISO/IEC 29500 standard from more than six years ago. Instead, Microsoft has "extended" its flavor of DOCX some eighteen times since then.

The USPTO is using the existence of those old standards from six years ago and older, which no one follows nowadays, to try to legitimize its present-day efforts to force patent applicants to use its present-day proprietary PDF rendering engine and proprietary DOCX validating and processing software. This is deceptive on the USPTO's part, and is intellectually dishonest.

The USPTO's citation to the Library of Congress is amusing for what it fails to say. The Library of Congress also approved the ODF format! See https://www.loc.gov/preservation/digital/formats/fdd/fdd000247.shtml .

To be thorough about all of this we must now remind ourselves which boxes in Figure 2 are proprietary. Although it is not particularly important to the things that we are discussing in this

article, it happens that Google does publish details of its internal storage format (KIX). Google also goes to extraordinary lengths to use some of its best and brightest people to achieve the highest possible levels of interoperability between Google Docs and all of the non-Microsoft word processors that remain in business. The ODF exports from Google Docs, for example, are nearly always nearly a complete success when a Libre Office user opens them in Libre Office, with vanishingly few formatting mistakes or losses. Similarly, when a Google Docs user imports an ODF file that had previously been created by a Libre Office user, the result in Google Docs is nearly always nearly a complete success, with vanishingly few formatting mistakes or losses.

These interoperability successes as between Google Docs and Libre Office (and other word processors with even smaller present-day market shares) are something to feel good about in a world where a dominant player (here, Microsoft) might consider interoperability to be a bug rather than a feature. This successful interoperability between non-Microsoft word processors is due in large part to the simple fact that the OpenDocument text format is a published and open standard.

As we work our way through Figure 2 in our review of which boxes are proprietary and which are not, our gaze focuses on two boxes which now require clear-eyed study because this bears on USPTO's recent choices about how to receive patent applications.

A first important box is the Microsoft Word rendering engine which renders its DOCX internal format into human-readable ink on the page or renders its DOCX internal format into human-readable pixels on a screen. This rendering engine is provided to users only as executable code. The source code for this rendering engine is closely guarded source code within Microsoft.

A second important box is the "intermediate store (DOCX)" box. What this box represents is the fork of DOCX that Microsoft ended up choosing to "extend" (by now eighteen times) in its present-day Microsoft Word software. This is a fork of DOCX that, importantly, is not administered by any neutral standard-setting body. The internal structure of a DOCX file, if it got created by Microsoft Word, is a moving target. It might have gotten created by a version of Microsoft Word from a year ago, running on a version of Microsoft Windows. If so, it might have a first internal structure. It might, on the other hand, gotten created by a version of Microsoft Word from a month ago, running on a version of an Apple Mac operating system. If so, it might have a second internal structure. Microsoft provides some level of documentation of the various DOCX "extensions" that it employs, but Microsoft does not document any of the DOCX formats thoroughly. Importantly, Microsoft does not promise to give any particular warning or advance notice when it chooses to make yet another "extension" to its flavor of DOCX format.

Related to this is the reality that Microsoft can, and often does, make version changes to its Microsoft Word rendering engines from time to time. When Microsoft makes a version change to one of its rendering engines (for example in an Apple Mac or in a Windows environment), an external observer is not in a position to know exactly what may have changed in the function of the rendering engine.

Even now in 2022, any maker of a word processor that is not Microsoft Word, that sets a goal of ***exporting*** an intermediate-storage file into a DOCX format with the goal that it will be opened by a user of Microsoft Word, faces challenges in implementing such a goal. Even now in 2022 there is sometimes a need to carry out reverse engineering on the DOCX-formatted files that are generated by Microsoft Word in an effort to work out how to construct a DOCX file that will work as desired when it gets opened by Microsoft Word. Importantly, an export that worked in January of a given year might not work in February of that year because of some change that Microsoft made between January and February in its proprietary UI (editor) or in its proprietary rendering engine. Because Microsoft does not give advance notice of such changes, it frequently happens that the maker of the non-Microsoft word processor finds out about the change "the hard way" simply by finding out that in February the export failed even though it had worked in January.

Even now in 2022, any maker of a word processor that is not Microsoft Word, that sets a goal of ***importing*** an intermediate-storage file into its own internal storage format, drawing upon a DOCX file that had been created by a user of Microsoft Word, faces challenges in implementing such a goal. Even now in 2022 there is sometimes a need to carry out reverse engineering on the DOCX-formatted files that are generated by Microsoft Word in an effort to work out how to parse a DOCX file so as to make sense of it during the import process. Importantly, an import that worked in January of a given year might not work in February of that year because of some change that Microsoft made between January and February in its proprietary UI (editor) or in its proprietary rendering engine. Because Microsoft does not give advance notice of such changes, it frequently happens that the maker of the non-Microsoft word processor finds out about the change "the hard way" simply by finding out that in February the import failed even though it had worked in January.

It is true that every maker of a non-Microsoft word processor has no choice, as a matter of survival, but to try as best it can to ***export*** its own files into Microsoft's version of the DOCX format. Google Docs does so as best it can. Libre Office does so as best it can. Such exports are, however, rarely a complete success except when the word processing file is very simple. If there is anything at all complicated about the word processing file being exported, it nearly always turns out that some formatting is corrupted or lost. It nearly always turns out that page breaks are in different places and math and chemical formulas look at least slightly different. Strikingly often, some seemingly small and simple bit of formatting will look astonishingly different when viewed in Microsoft Word as compared to the seemingly identical bit of formatting in the original non-Microsoft word processor.

It is likewise true that every maker of a non-Microsoft word processor has no choice, as a matter of survival, but to try as best it can to ***import*** files that were created in Microsoft Word (files that are formatted in Microsoft's version of the DOCX format). Google Docs does so as best it can. Libre Office does so as best it can. Such imports are, however, rarely a complete success except when the word processing file is very simple. If there is anything at all complicated about the word processing file being imported, it nearly always turns out that some formatting is corrupted

or lost. It nearly always turns out that page breaks are in different places and math and chemical formulas look at least slightly different. Strikingly often, some seemingly small and simple bit of formatting will look astonishingly different when viewed in the new non-Microsoft word processor as compared to the seemingly identical bit of formatting in the original Microsoft Word word processor.

What USPTO says falsely about DOCX. With the benefit of the above discussion, we can now assess a statement on the USPTO web site. The USPTO says:

> **What is DOCX?**
>
> DOCX is a word processing file format based on open standards, including Extensible Markup Language (XML). DOCX is supported by many popular word processing applications, such as Microsoft Word 2007 or higher, Google Docs, Office Online, LibreOffice and Pages for Mac. As an open standard format, DOCX offers a safe and stable basis for authoring and processing intellectual property documents.

Pretty much everything in this quoted paragraph is pants-on-fire false. The most charitable way to characterize this quoted paragraph would be to say that everything in it is disingenuous in the extreme. Let's take the false statements in this paragraph one by one.

> DOCX is a word processing file format based on open standards, including Extensible Markup Language (XML).

One of the falsehoods (or charitably, misleading aspects) in this sentence is the use of the singular "a". There is no single "DOCX word processing file format". There is the fork that ended up going nowhere (called "Strict"), which arguably was based on open standards. There is the fork that ended up actually remaining in commercial use (called "Transitional" as modified by Microsoft's by now eighteen "extensions" to the DOCX format), and it is not now an open standard.

It might be possible to edit this sentence until, eventually, it became a true statement. One way to do it would be to say something like:

> One of the forks of DOCX is the fork that is a word processing file format used by Microsoft Word. Although the Microsoft Word fork of DOCX is not now an open standard, it did historically draw upon open standards, including Extensible Markup Language (XML). Microsoft has "extended" its version of DOCX eighteen times by now and bears little resemblance to the most recent actual DOCX standard, which was promulgated twelve years ago.

Now we can work on the second sentence:

> DOCX is supported by many popular word processing applications, such as Microsoft Word 2007 or higher, Google Docs, Office Online, LibreOffice and Pages for Mac.

Probably the chief evil in this sentence is the attempt to force-fit the word “supported” into a dual role, with that single word on the one hand characterizing the connection between DOCX and Microsoft Word, and on the other hand characterizing the connection between DOCX and all of the other word processors.

Google Docs does not in any meaningful sense “support” the Microsoft Word DOCX format, except in the limited sense that as a matter of survival it has no choice but to try as best it can to *import* Microsoft Word DOCX files and *export* its files into Microsoft Word DOCX format.

Libre Office does not in any meaningful sense “support” the Microsoft Word DOCX format, except in the limited sense that as a matter of survival it has no choice but to try as best it can to *import* Microsoft Word DOCX files and *export* its files into Microsoft Word DOCX format.

On the other hand, of course Microsoft Word “supports” its own DOCX format! The proprietary UI (editor) of Microsoft Word exists specifically so as to create files in its own DOCX format. The proprietary Microsoft Word rendering engine exists specifically so as to render its own DOCX-formatted files into human-readable pixels on a screen, and to render its own DOCX-formatted files into ink on the page.

One way to edit that sentence into a non-false sentence would be like this:

> DOCX is the internal storage format used by Microsoft Word. Many popular non-Microsoft word processing applications, including Google Docs, Office Online, LibreOffice and Pages for Mac, try to *export* their own internal storage formats into DOCX files which can then be opened by users of Microsoft Word with varying degrees of success. These non-Microsoft word processing applications likewise try as best they can to *import* files created by Microsoft Word (in its DOCX format) into their own respective internal storage formats. For very simple files containing only the very simplest formatting, the imports and exports are often generally fairly successful. When the file being imported or exported contains formatting of any complexity, it is rare that the import or export is completely successful. The DOCX internal storage format used by Microsoft Word changes from time to time due to ongoing “extensions”, and thus as a consequence an import or export to or from a non-Microsoft word processor that worked on some particular date might not work a month later.

We can now return to the third sentence in the USPTO paragraph:

> As an open standard format, DOCX offers a safe and stable basis for authoring and processing intellectual property documents.

Everything about this sentence is pants-on-fire false. First, to the extent that one makes use of DOCX as a practical term, it is false to say that it is "an open standard format". One can talk about "the DOCX-formatted files that get created by Microsoft Word". One can talk about "the DOCX-formatted files that you get when you export from Google Docs". One can talk about "the DOCX-formatted files that you get when you export from Libre Office". Each of these three sets of files is formatted in its own way. There is no single "open standard" that defines how the three sets of files are formatted. There was an open standard for DOCX in 2010. Twelve years, however, have passed since the last time there was an "open standard" for DOCX.

Part of the disingenuousness of this sentence flows from the fact that the only way to get meaning from an intermediate storage file of a word processor is to render it into human-readable form. Only when the file has been rendered into human-readable form (for example as a patent application visible by a human being as pixels on a screen, or for example as a patent appication visible by a human being as ink on a page) is anyone able to know what is communicated in, say, claim 1 of the patent application.

How exactly does the rendering take place? For example, suppose the patent application has been stored on the hard drive of a computer with a filename extension of DOCX. How may we render it into human-readable form, for example as ink on the page on a printer?

Returning to Figure 2, we can easily work out three possible workflow paths for rendering the DOCX file into human-readable form on a printer. We need to be methodical about enumerating the three workflow paths:

- Use Google Docs.
  - For this path, we start by going to Google Docs and we carry out an "import" of the DOCX file into the internal storage format of Google Docs. (As mentioned above, it is called "KIX" but for our purposes of this discussion the name of the internal format is not important.)
  - Having imported the DOCX file into the internal storage format of Google Docs, we then run the Google Docs rendering engine to render the KIX document into human-readable form on the printer.
  - We end up with ink on the page.
- Use Microsoft Word.
  - For this path, we run the Microsoft Word rendering engine to render the DOCX file into human-readable form on the printer.
  - We end up with ink on the page.
- Use Libre Office.
  - For this path, we start by going to Libre Office and we carry out an "import" of the DOCX file into the internal storage format of Libre Office, namely ODF format.
  - We then run the Libre Office rendering engine to render the ODF document into human-readable form on the printer.
  - We end up with ink on the page.

We can reflect upon these three paths to consider what there is about the three paths that is proprietary in nature, and where (if at all) we might encounter sources of error or formatting loss.

Let's start with the third path (Libre Office). Most of this path is rather predictable in the sense that the software itself is open-source. The "import" gets carried out by open-source software. The rendering engine is open-source software. The chief source of error and formatting loss is the unpredictable behavior of Microsoft. By this we mean that even if the programmers of Libre Office had somehow successfully done all of the reverse engineering needed to get all of this to work successfully, say, a month ago, what might have happened during the past month is that Microsoft may have made yet another "extension" to its flavor of DOCX. If Microsoft happens to have done so, then it is unlikely to have documented the format change in any methodical or thorough way. Even if Microsoft did document the format change to some extent, Microsoft is unlikely to have communicated the documentation change to others in any thorough way.

Now let's turn to the first path (Google Docs). Just as with Libre Office, an important source of error and formatting loss is the unpredictable behavior of Microsoft. Just as with Libre Office, even if the programmers of Google Docs had somehow successfully done all of the reverse engineering needed to get all of this to work successfully, say, a month ago, what might have happened during the past month is that Microsoft may have changed something about how it formats its DOCX files. This would trip up the Google Docs file import just as it would trip up the Libre Office file import.

A second source of possible unpredictability in this path, from the end user point of view, is that the import software that imports the DOCX file into the internal Google Docs format is proprietary. Google might carry out a version change to its import software on some particular date and the end user might not know that this version change had happened. It cannot be ruled out that some change in the import software might change something about how the DOCX file gets converted into the Google Docs format, which would necessarily change how the file gets rendered into human readable form on the printer.

A third source of possible unpredictability in this path, from the end user point of view, is that the Google Docs rendering engine is proprietary. Google might carry out a version change to its Google Docs rendering engine on some particular date and the end user might not know that this version change had happened. It cannot be ruled out that some change in the Google Docs rendering engine might change something about how a word processor file gets rendered into human readable form on the printer.

Now we can turn to the remaining flow path (the second path, using Microsoft Word). The idea here, simply put, is that we are using a document that probably got created using Microsoft Word, and we are, oddly enough, using Microsoft Word to render the document into human-readable form, for example on a printer. The alert reader will be able to guess where I am going with this. If there were ever a flow path that is *unlikely* to blow up in the user's face, it is the flow path in which you use the same word processor to print the file that had previously been employed to create the file.

The discussion of the preceding four paragraphs focuses on the part where someone has a DOCX file and they are going to try to send it to a printer. What no one at the USPTO has paid any attention to is that if you try these three paths to send any single DOCX file to a printer, you will absolutely never get identical results from the three paths. Hyphenations of words will happen in different places. Superscripts and subscripts will lead to non-identical variations in line spacings. Page breaks will happen in non-identical places. These kinds of differences might not seem to be material, but they vividly remind the user that if these kinds of things do not come out identically, then other more subtle things like mathematical equations or chemical formulas or tabular presentations of data, or special characters or Greek letters, would very likely also not come out identically. Users have seen differences in DOCX rendering across various word processors that lead to a need for character-by-character proofreading that takes hours.

Now let's return to the quoted USPTO sentence:

> As an open standard format, DOCX offers a safe and stable basis for authoring and processing intellectual property documents.

The only word processor in which a user can "author" a DOCX file is Microsoft Word. Let's focus on the "authoring" claim. Let's suppose you want to "author" a DOCX file in Libre Office. What the USPTO is in seeming denial about here is that it is impossible to "author" a document in DOCX format with any word processor that is not Microsoft Word. This by itself makes that USPTO sentence false.

Suppose you set a goal of "authoring" a DOCX file in any word processor that is not Microsoft Word. The way you do this is by "authoring" the document in whatever internal storage format the word processor uses (for example KIX or ODF). And then you run the "export" function so that the word processor will do its best at generating a word processor file that ends in the letters "docx" and will hopefully be more or less successful when opened by Microsoft Word.

This bears emphasis and repetition:

> *The only word processor in which a user can "author" a DOCX file is Microsoft Word. If you are using a word processor that is not Microsoft Word, you cannot "author" a DOCX file. The closest you can get to this is "authoring" the document in whatever internal storage format the word processor actually uses and then "exporting" the file as best you can into a format that is intended to work when opened in Microsoft Word.*

Anyone who works at the USPTO and who has some connection with this DOCX disaster should read the preceding paragraph over and over again until they understand it clearly.

The risk factors and sources of unpredictability in attempting to "author" a DOCX file when using a non-Microsoft word processor are rather similar to those that we discussed for the printing of the DOCX file in Libre Office, *mutatis mutandis.* To "author" a DOCX file in Libre

Office, we start by using the UI (editor) to capture our thoughts and to store them in ODF format. This uses software for which the open-source code may be viewed. Nothing about it is unpredictable. We then carry out the *export* into the Microsoft Word (DOCX) format. This, too, uses software for which the open-source code may be viewed. Nothing about it is unpredictable, other than in the sense that Microsoft may have fiddled with ("extended") its DOCX format in the weeks or months that passed since the last time that the Libre Office programmers did their reverse engineering to see what the latest changes had been in the Microsoft Word DOCX formatting. Importantly, the resulting DOCX file is meaningless when taken by itself in isolation. It means something only when we realise that to do something with it, somebody is going to need to pass the DOCX file through the Microsoft Word proprietary rendering engine. Here, too, we are at the mercy of unpredictable Microsoft behavior. Microsoft may well have fiddled with its rendering engine since the last time that people outside of Microsoft had an opportunity to explore the behavior of the rendering engine. All of these things lead to a less than completely predictable authoring process for the Libre Office user that decides to take a chance and try to author a DOCX file.

It is simply pants-on-fire false for USPTO to characterize this as "safe and stable". The Libre Office user who sets a goal of "authoring" a DOCX file for use as a patent application at the USPTO has neither safety nor stability, given that the fork of DOCX being used by Microsoft Word is not standardized in any public way and could change at any time, and given that the USPTO's own proprietary rendering engine for rendering DOCX files into PDF could change at any time. The same is true for the Google Docs user who sets such a goal; it is neither safe nor stable.

So we return again to the USPTO sentence:

> As an open standard format, DOCX offers a safe and stable basis for authoring and processing intellectual property documents.

The sentence is false, and as it relates to "authoring" for any user of a word processor that is not Microsoft Word, the sentence is a howler. How might we edit the sentence to make it into a true statement about authoring? Some options include:

> Microsoft Word offers a safe and stable basis for authoring and processing intellectual property documents in USPTO's DOCX e-filing initiative, except of course for the problem that the USPTO's own proprietary DOCX rendering engine changes from time to time without warning.
>
> DOCX fails to offer a safe or stable basis for authoring and processing intellectual property documents with respect to word processors other than Microsoft Word.

The non-standard status of Microsoft's version of DOCX is well known. See for example *Complex singularity vs. openness,* at https://joinup.ec.europa.eu/sites/default/files/document/2014-06/complex_singularity_vs_openes

s.pdf . This document describes Microsoft's manipulation of the standards-setting process and the present-day consequences.

> When it comes to office documents, public administrations can choose from two ISO/IEC standards. Only one of these, ODF (ISO/IEC 26300), is vendor-neutral, open and reliable across a span of years and software versions, and supported by a variety of software products.
>
> The later OOXML standard (ISO/IEC 29500), originally developed by a single proprietary software vendor [Microsoft], is implemented in three different versions ('ECMA', 'Transitional' and 'Strict') that are not compatible with each other. Although the 'ECMA' and 'Transitional' versions are outdated – 'Transitional' had only been accepted as a temporary solution to give the software vendor [Microsoft] time to implement 'Strict' in its products – they both continue to be used in practice. This is because older versions of the vendor's office suite (MS Office) cannot read or write OOXML Strict and are unlikely ever to gain such abilities.
>
> … to date there are no free and open source solutions that fully support OOXML.
>
> Experts have shown that public administrations should not rely on ISO 29500 when exchanging documents, as this is likely to create ambiguities when using office tools that do not fully support ISO 29500 ...
>
> Many of the features in ISO 29500 are tied to versions of the proprietary office suite [Microsoft Word], reflecting this software's history and development decisions.
>
> ... since the 'Strict' [OOXML] standard used by Microsoft is still neither fully documented nor open (it contains references to Microsoft websites, some of which no longer exist), data loss on conversion is a widespread and well-documented phenomenon.
>
> By establishing its Markup Compatibility and Extensibility (MCE) technology in ISO 29500 Microsoft has gained the right to make changes to the document format simply by adding their own extensions, almost without limits. That makes it hard for any other company or open source project to be fully compatible.

It is well known within the word processor standards community that Microsoft's actions thwarted any meaningful standards-setting. See *Norwegian standards body implodes over OOXML controversy*, October 3, 2008, Ars Technica (https://arstechnica.com/uncategorized/2008/10/norwegian-standards-body-implodes-over-ooxml-controversy/):

> Standards Norway, the organization that manages technical standards for the Scandinavian country, took a serious blow last week when key members resigned in

> protest over procedural irregularities in the approval process for Microsoft's Office Open XML (OOXML) format. The 23-person technical committee has lost 13 of its members.
>
> The standardization process for Microsoft's office format has been plagued with controversy. Critics have challenged the validity of its ISO approval and allege that procedural irregularities and outright misconduct marred the voting process in national standards bodies around the world. Norway has faced particularly close scrutiny because the country reversed its vote against approval despite strong opposition to the format by a majority of the members who participated in the technical committee.

Wikipedia lists multiple controversies that arose during Microsoft's manipulation of the international standards-setting process for DOCX (https://en.wikipedia.org/wiki/Standardization_of_Office_Open_XML#Complaints_about_the_national_bodies_process). There are reports of Microsoft allegedly improperly influencing the portions of the standards-setting process that took place in 2008 in several countries:

- Portugal
- Sweden
- Finland
- Switzerland
- Australia
- Germany
- Netherlands
- Poland

It is embarrassing to see the USPTO pointing to the very tainted OOXML standards-setting process for DOCX format in 2008 as somehow legitimizing the USPTO's present plan of forcing patent applicants to use a present-day Microsoft variant of the DOCX format for the filing of patent applications.

The lie in the August 3, 2020 Federal Register notice. In the August 3, 2020 FR notice, the USPTO said this in its response to Comment 59.

> *Comment 59:* Two commenters stated that there is no single DOCX standard to which Microsoft Word and the other word processors are all compliant.
>
> *Response:* DOCX is a word-processing file format that is part of Office Open XML (OOXML), an XML-based open standard approved by the Ecma International® consortium and subsequently by the ISO/IEC joint technical committee. For more information about the OOXML standard, please see:
>
> - ECMA–376 at http://www.ecmainternational.org/publications/standards/Ecma-376.htm
> - ISO/IEC 29500 at https://www.iso.org/committee/45374/x/catalogue/

- NIST votes for U.S. Approval of OOXML at https://www.nist.gov/news-events/news/2008/03/nist-votesus-approval-modified-office-openxml-standard

Fact-checking these claims reveals the following:

- The ECMA standard ECMA-376 is more than six years old, and no current word processor follows that standard. Microsoft has "extended" its flavor of DOCX some eighteen times since the last time any standards-setting activity took place for the ECMA-376 standard.
- The ISO/IEC 29500 standard is more than six years old, and no current word processor follows that standard. Microsoft has "extended" its flavor of DOCX some eighteen times since the last time any standards-setting activity took place for the ISO/IEC 29500 standard.
- The NIST vote happened fourteen years ago. The version of the standard that NIST voted for is fourteen years old. No current word processor follows the standard that NIST voted for fourteen years ago. The variant of the standard that NIST voted for was what eventually became the "strict" fork of the standard, which never got implemented in any word processor.

The truthful USPTO response to Comment 59 would have been "yes, you are right, there is no single DOCX standard to which Microsoft Word and the other word processors are all compliant." Saying this differently, everything in the USPTO's response to Comment 59 was a lie.

Everybody knows there is no single DOCX format. Everybody except the USPTO, I guess. (I think the USPTO knows this too but cannot admit it because this would expose previous USPTO statements about this to be lies.) Every user of Libre Office, for example, encounters daily reminders that there is no single DOCX format. You can take a DOCX file that was created using, say, Microsoft Word, and when printed on a printer using Microsoft Word, it is, say, sixteen pages long. That exact same DOCX file, opened in Libre Office and printed to the exact same printer, might be fifteen pages long or seventeen pages long.

The same is true for Google Docs and DOCX. It is rare that any particular DOCX file that has more than ten pages will yield the exact same page count, when printed using all three commonly used word processors.

From these simple and objectively confirmable results, it is clear to any thinking person that it must be a lie to say that there is some single "DOCX standard" or some single "DOCX format".

You can take a multipage document created in any one of these three word processors, and then open the document in either of the other two word processors, and what you will see is that line breaks happen in non-identical places and page breaks happen in non-identical places. Hyphenations at ends of lines of text will happen in non-identical places.

From such simple and objectively confirmable results, any thinking person would say that there is no single “DOCX standard” or some single “DOCX format”.

USPTO has failed to publish the source code for its PDF rendering engine, or to explain its provenance. Practitioners who have used USPTO’s DOCX e-filing system are familiar with the process. The practitioner uploads a word processor file whose file name ends with the letters “docx”. The USPTO does not trust that file to be the authoritative file, but instead runs that file through USPTO’s proprietary PDF rendering engine. The resulting PDF file is presented to the practitioner. It is up to the practitioner, in the remaining minutes between now and midnight, to attempt to detect the ways that the USPTO rendering engine may have damaged the word processor file. Maybe a Greek letter μ got changed to an m. Maybe a mathematical equation got corrupted. Maybe a chemistry formula got corrupted. To be granted a filing date, the practitioner is required to check a box agreeing to an adhesion contract providing that the USPTO-generated PDF file “controls”.

It is more than two years ago that I first asked high-up USPTO people to publish the source code for its PDF rendering engine. If USPTO had done so, then this would have gone a long way toward legitimizing the USPTO’s adhesion-contract approach.

Yet another question is the provenance of the code for USPTO’s PDF rendering engine. Some practitioners suspect that the code for USPTO’s PDF rendering engine came from Microsoft. It is further suspected that this transaction was not at arm’s length. I have asked high-up USPTO people over and over again where exactly they got their PDF rendering engine, and have never gotten an answer.

A related problem is that in the most recent version of USPTO’s e-filing workflow for DOCX patent applications, the DOCX file gets “processed” by a proprietary USPTO DOCX validation engine. The filer uploads a DOCX file, and the USPTO passes the DOCX file through its proprietary USPTO validation engine, and a modified version of the DOCX file results. The USPTO then lies in the Acknowledgment Receipt and falsely indicates that the modified DOCX file is what the filer uploaded initially. (There is no softer word than “lies” that accurately characterizes this part of the DOCX e-filing process.)

I have asked USPTO people to publish the source code for USPTO’s DOCX validation engine. USPTO has declined to do so. The Director says that this DOCX validation engine is now in “version 18”, as if this were a good thing. It is of course a profound source of continued uncertainty and anxiety for filers, given that there will inevitably be a version 19 and a version 20, and they will get placed into service without advance warning and without a public change log.

Does the USPTO really believe its own stated position that there is a present-day DOCX standard? Actions speak louder than words. The *words* from the USPTO are:

> As an open standard format, DOCX offers a safe and stable basis for authoring and processing intellectual property documents.

Those are USPTO's *words*. But let's look at the *actions* of the USPTO. When the USPTO initially rolled out its program for e-filing of patent applications, the program that uses the initialism "DOCX" over and over again, did the USPTO's actual actions show that the USPTO believed this? The clear answer is "no". The USPTO did not, for example, set up the DOCX pilot program like this:

- Applicant e-files a DOCX file.
- USPTO trusts that the DOCX file will work for the USPTO's purposes.

Instead, the way that the USPTO initially set up the DOCX pilot program was:

- The filer e-files a DOCX file.
- The USPTO absolutely does not trust the DOCX file for any purposes.
- The USPTO, in real time, during the e-filing process, runs the DOCX file that the applicant e-filed through a proprietary, black-box USPTO rendering engine into a PDF file.
- The filer is required to try to figure out whether or not the rendering engine caused harm to the document when it generated the PDF.
- To get a filing date for the filing, the filer is required to click to agree to an adhesion contract saying that "the PDF file controls".

What we see in the actions of the USPTO was a tacit admission that DOCX *does not* offer a safe and stable basis for authoring patent applications, because the only thing the USPTO trusts is what comes out of the PDF rendering engine, not the DOCX file itself.

A polite way to put this would be to say that the USPTO was and is being extremely disingenuous about whether or not there is "a DOCX standard". When it is convenient to pretend that there is "a DOCX standard", for example in USPTO's webinars that try to convince filers to use the DOCX pilot program, then USPTO says it believes that there is "a DOCX standard". But in USPTO's own actions, which again speak louder than words, it is revealed that the USPTO does not actually believe what it says about this. The only thing that the USPTO trusts is the PDF that gets spit out from the USPTO's own proprietary validation and rendering engine.

A more direct way to put this is that from USPTO's own actions, it is clear that the USPTO knows perfectly well it is lying when it says things like:

> As an open standard format, DOCX offers a safe and stable basis for authoring and processing intellectual property documents.

USPTO does not even pretend to follow any "DOCX standard". Let's suppose there were "a DOCX standard" in 2022 (which there is not, but let's pretend the USPTO is telling the truth when it claims that there is "a DOCX standard" in 2022). Does the USPTO allow the filer to rely upon that present-day DOCX standard? The answer is no, the USPTO actually requires the filer to comply with a poorly defined USPTO variant of "the DOCX standard". The poorly defined variant is what you get if you start with this (nonexistent) "DOCX standard" and graft onto it some additional requirements imposed by the USPTO. These include for example that t*he filer is only permitted to make use of a short list of 28 permitted fonts. (*Offensively, the document from the USPTO that enumerates the 28 permitted fonts also says the list of permitted fonts "may be subject to change without notice".) The poorly defined variant also includes a requirement that the filer craft the DOCX file to avoid any of a range of validation errors in a proprietary (not open-source) validation engine inside the USPTO's e-filing system. In the Director's Blog, she states with some pride that the validation engine "is now at a very advanced stage (version 18)." This is actually something to apologize for, rather than to brag about. It means that by now the actual required non-standard variant of DOCX is *eighteen times removed* from whatever the supposedly industry-standardized DOCX format was when this DOCX initiative began.

And we must assume that there will some day be a version 19 of this proprietary DOCX validation engine, and after that, a version 20. The variant of (supposedly industry-standard) DOCX that USPTO will accept from filers will change again, and it will change again after that.

A chief purpose of USPTO's DOCX validation engine. Any time a filer uploads a DOCX patent application, the USPTO system runs the file through its proprietary DOCX validation engine. The system then presents the "validated" DOCX file to the filer and it is then up to the filer to try to guess what harm has been visited upon the word processor document.

It looks to me as though a chief purpose of USPTO's DOCX validation engine is to test whether the DOCX patent application was created using Microsoft Word (which is of course what the USPTO wants but cannot say openly) or was instead exported from some non-Microsoft word processor (which is of course what the USPTO does not want but cannot say openly).

When a practitioner uses Microsoft Word, and keeps the patent application simple (no math equations, no tables, no chemistry formulas, no Greek letters), it is commplace for the "validated" DOCX file to announce that there are "no errors".

In contrast, when a practitioner uses a non-Microsoft word processor and exports the document into DOCX format, the usual result of "validation" by the USPTO validation engine is a string of error reports with as many errors as there are paragraphs in the document.

A chief purpose of the USPTO DOCX validation engine appears to be a not-so-subtle nudge that the practitioner should spend the money to purchase Microsoft Word.

Selecting a word processor intermediate-storage format for USPTO patent application filing. It is instructive at this point to return to Figure 2 and to remind ourselves of USPTO's stated goal in designing its word-processor based initiative for receiving US patent applications in a character-based format. Let's suppose we take the USPTO at its word on what its selection criteria were. What we see is that what USPTO said is that it was trying to figure out if there is an intermediate-storage word processor format that satisfies several requirements:

- the format is actually standards-based right now
- the standard is really an open standard
- every word processor is able to either save in that format or export into that format
- the saving or exporting is stable (likely to work the same way tomorrow that it works today)

What happened next is that the USPTO said that DOCX is the answer. The pesky problem with this is that this is false, four times over. DOCX actually fails all four conditions.

The fork of DOCX actually in use now (in Microsoft Word) is a divergence from the "Strict" standards-based fork of DOCX. It is also eighteen times (by now) removed even from the "Transitional" fork of the standards-based DOCX standard. The Microsoft Word fork of DOCX ceased to be standards-based many years ago.

To the extent there is any standard now for the fork of DOCX that is actually in use in Microsoft Word, it is an internal, proprietary standard of Microsoft.

Every word processor that is not Microsoft Word has the problem that it is never completely successful in *exporting* into the DOCX format used by Microsoft Word. Only the simplest documents ever have fully successful exports into Microsoft Word.

For any word processor that is not Microsoft Word, there is no reason to have any confidence that an export into DOCX format that works today will work tomorrow. Microsoft changes ("extends") its DOCX format from time to time, without warning. Contributing to uncertainty and instability and professional liability risks, the USPTO also changes its own proprietary DOCX-to-PDF rendering engine from time to time, without warning.

Now let's return to USPTO's quest. USPTO said it was trying to figure out if there is an intermediate-storage word processor format that satisfies several requirements:

- the format is actually standards-based right now
- the standard is really an open standard
- every word processor is able to either save in that format or export into that format
- the saving or exporting is stable (likely to work the same way tomorrow that it works today)

As it turns out, there is such a format. The format is ODF -- OpenDocument Text. ODF is (try to guess from the name!) a standards-based format. Every word processor is able to save or export the ODF format. Everything about ODF is stable – there is no Microsoft making changes ("extensions") at undisclosed times. There are open-source rendering engines for rendering ODF into PDF.

If USPTO really feels that what it must do, going forward, is receive US patent applications using some word processor intermediate storage format, the correct answer is not DOCX, it is ODF.

As mentioned above, the Library of Congress has approved ODF format. See https://www.loc.gov/preservation/digital/formats/fdd/fdd000247.shtml . The Library of Congress says:

> As of 2020, office software suites using ODF as native file format include: LibreOffice, Collabora, Apache OpenOffice, and Calligra.

The Library of Congress enumerates several examples of governmental policy documents that mandate ODF among editable documents, including:

- The ***United Kingdom***. Sharing or collaborating with government documents, which mandates ODF 1.2. The UK government announced format choices in July 2014. See also Open standards for government, which is updated in place.
- In 2012, ***Portugal*** issued a regulation incorporating a list of mandatory formats. The only editable format for documents listed was ODF 1.1. See regulation in Portuguese and the list as presented in Computer Weekly.
- In 2009, ***Norway*** adopted a new set of obligatory information technology standards, mandating ODF as the only editable format for exchanging documents between the government and users by email. See announcement and summary in English.
- ***Brazil***'s ePING (Standards for Interoperability for Electronic Government) includes ODF 1.2 and ISO/IEC 26300: 2008 as the only editable formats for office documents. Several other South American nations appear to have similar regulations.

The European Commission recommends supporting OpenDocument format (https://joinup.ec.europa.eu/collection/open-source-observatory-osor/news/ec-recommends-supporting-open):

> All European institutes should be able to use the Open Document Format (ODF) in exchanges with citizens and national administrations, says Vice-President of the European Commission Maroš Šefčovič, in response to questions by member of the European Parliament Amelia Andersdotter. "There is no lock-in effect whatsoever, and no contradiction with the Commission's strategy on interoperability."

If the USPTO were to do the right thing and adopt ODF as the open-source format for filing of patent applications, it would find itself in good company.

The yearlong study. We now turn to the USPTO's mysterious "yearlong study" that supposedly concluded that no version of PDF can be used or trusted for filing of patent applications at the USPTO. Members of the patent filing community first heard about this mysterious "yearlong study" in 2020, when the USPTO published a Federal Register notice entitled *Setting and Adjusting Patent Fees during Fiscal Year 2020*, dated August 2, 2020 (85 FR 46932). This is the FR notice that communicates the USPTO's conclusion that if the USPTO is going to force applicants to change from what they were doing in the past, and in particular if the USPTO is going to force applicants henceforth to hand in some particular format for US patent applications, then those at the USPTO know what's best, and what's best is not some particular flavor of PDF. What's best (according to the USPTO) is Microsoft Word DOCX format.

The Federal Register notice said, in four places:

> The USPTO conducted a yearlong study of the feasibility of processing text in PDF documents. The results showed that searchable text data is available in some PDFs, but the order and accuracy of the content could not be preserved.

Practitioners tried to make sense of these two sentences. The impression that the authors of the FR Notice gave is that the yearlong study somehow worked out that there was no PDF variant that would serve the USPTO's needs, and thus that there was no choice but to force filers to use Microsoft Word (that is, DOCX).

The Acting Commissioner for Patents provided a copy of the "yearlong study" to me a few months ago, and I have reviewed it and have blogged about it. (A copy of the yearlong study is available at https://www.oplf.com/AEEC-AASET-Text2PTO-POC%20WhitePaper-v1.0%20FINAL.pdf .) As it turns out, the yearlong study tried to answer a very different question, a question that no one actually needed the answer to.

What the study tried to figure out was whether, in 2018, there existed some off-the-shelf commercial product that could take as its input a random sampling of the actual PDF files that filers had been filing at the USPTO, and could consistently extract usable text from most or all of those PDF files. Anyone who was even passingly familiar with PDF formats in 2018, and who had even passing familiarity with the word processors and PDF tools actually used by filers in 2018, could have provided the answer to this question to the USPTO for free. The answer was "of course not!" The authors of the study probably likewise knew perfectly well that the answer was "of course not!" but had no incentive to tell this to the USPTO before commencing the "yearlong study". Only by carrying out the yearlong study would the authors of the study be able to send out a bill and get paid.

It seems clear that USPTO carefully avoided conducting a good-faith study of PDF formats to see if any PDF format was in fact well suited to the USPTO's needs. It seems the USPTO

carefully avoided, in particular, ever learning of the existence of two PDF variants called *PDF/A Level A (accessible)* and *PDF/UA*. *PDF/A Level A (accessible)* is an ISO standard which, among other things:

- requires that all resources (images, graphics, typographic characters) must be embedded within the PDF/A document itself, and
- requires that text be extractable and the logical structure must match the natural reading order.

I was able to learn of these two PDF variants, and their usability for delivering characters to the USPTO, in a mere fifteen minutes of mouse clicking. The USPTO seems to have gone out of its way to carefully avoid ever doing the fifteen minutes of mouse clicking that would have been needed for the USPTO to learn that there is a PDF format that is ideally suited to USPTO's needs.

One of the members of the EFS-Web listserv (David Boundy) summarized USPTO's mistake in a succinct way that I will paraphrase here:

- The PDF standards such as *PDF/A Level A (accessible)* or *PDF/UA*, for good or for ill, are designed to solve the relevant problem of providing characters to someone like the USPTO.
- The Microsoft Word DOCX format is designed for editing and intermediate storage, not for interchange.

Understanding PDF/A Level A (accessible) and PDF/UA formats. Enormous amounts of time and energy have been spent on standards-setting work to define PDF formats that assure a blind person that he or she will be able to have the content of the PDF file read aloud. The effort has succeeded. Unlike the ill-fated DOCX standard-setting activity that came under Microsoft's control and then ceased to be a standard more than six years ago, the standard-setting work for PDF files that can be read aloud (that is, PDF files that are "accessible"), has not been controlled by any single industry player. This work has led, for example, to an international industry standard called ISO 14289-1:2014. This standard provides that the textual content is provided in "logical reading order". Tags permit the "reader" of the PDF to make perfect sense of headings, lists and tables. All fonts are embedded, and text is mapped to Unicode. Such PDF files are trusted by applicants. The USPTO ought to accept such PDF files as a way to provide characters to the USPTO.

This brings us back around to the all-important "yearlong study" which the USPTO carried out, and which supposedly led to the conclusion that PDF was not the right way to go for providing character-based information to the USPTO. We recall that in *four places*, the related Federal Register notice said

> The USPTO conducted a yearlong study of the feasibility of processing text in PDF documents. The results showed that searchable text data is available in some PDFs, but the order and accuracy of the content could not be preserved.

This is simply a lie, when these words are applied to real-life options for filing of patent applications. At the time the study was carried out, the "accessible" PDF formats were available, and they were industry standards, and they insured not only that searchable text data is available, but also that its "order" and accuracy were preserved.

USPTO's DOCX program is incompatible with USPTO's own rules about signing of inventor declarations. If a practitioner wishes to avoid getting dinged with the USPTO fee for handing in a signed inventor declaration later than filing day, then the USPTO rules require the practitioner to follow particular steps in a particular workflow. Basically the practitioner must do these things:

1. Prepare a patent application in a word processor;
2. print out the patent application to be a PDF file;
3. show the PDF file to the inventor;
4. obtain the inventor's signature on the inventor declaration; and
5. e-file the PDF file and the signed inventor declaration.

Note that steps 3 and 4 can often be done in a comfortable, leisurely way, at a time and place that works for the inventor.

This workflow is, of course, impossible within USPTO's DOCX program. To satisfy the USPTO's DOCX program, the practitioner must follow very different steps:

1. Prepare a patent application in a word processor;
2. export the document in one or another of the many variants of DOCX;
3. upload the DOCX file to the USPTO e-filing system;
4. find out in real time how the USPTO will modify the document for USPTO's systems;
5. capture this USPTO-modified version of the patent application as a PDF;
6. show the PDF file to the inventor;
7. obtain the inventor's signature on the inventor declaration; and
8. e-file the patent application, including the signed inventor declaration.

Note that steps 5, 6 and 7 are required to be done *at the time of filing the patent application.* Thus, for example, if the patent application is being filed at 11 PM on some particular day, then the only way to accomplish this filing path is to *force the inventor to stand by at 11PM and participate in the e-filing process at 11PM.*

Note that step 4 is based on which version of USPTO's DOCX validation engine is being used. Recall that in the Director's blog, she states with some pride that this validation engine is now up to "version 18". This reminds us that it will be of no use to do a validation process on a

Wednesday if the actual e-filing is planned for the subsequent Thursday. The USPTO might, after all, change to version 19 on that Thursday morning.

It will not do even to try to rely upon a *same-day* validation process. The validation performed on, say, the Thursday morning might make use of version 19 of USPTO's (proprietary, undocumented, black-box) DOCX validation engine, and then if the e-filing is actually carried out on Thursday evening, the USPTO might have slipped version 20 of its DOCX validation engine into service.

From all of this, it is clear that if USPTO wishes to be respectful to applicants and practitioners in this area of inventor declarations, then the USPTO simply must permit a PDF file to be the authoritative document for the filing of the patent application. Or to say this in a different way, USPTO's insistence on forcing the file to file a DOCX file, which is then subject to the vagaries of a moving-target validation engine, is profoundly disrespectful to applicants and practitioners in this area of inventor declarations.

Why are decisionmakers within the USPTO being so stubborn about all of this? From the point of view of patent practitioners who are external of the USPTO, it is baffling why the decisionmakers within the USPTO are being so stubborn about all of this. It is likewise baffling why USPTO people write so many false things in their web sites and customer training materials. What is the perceived upside to lying about there supposedly being a present-day "standard" for DOCX when the truth is that the standards are six to twelve years old and no present-day word processor follows those old standards? What is the perceived upside to the USPTO's *actions* making clear that the USPTO does not actually trust a DOCX-formatted document (given that what the USPTO trusts is only a PDF or modified DOCX file generated by USPTO's black-box engines), while stating to customers that it supposedly believes that "as an open standard format, DOCX offers a safe and stable basis for authoring and processing intellectual property documents"?

The anecdotal experience of practitioners in the filing community is that USPTO's (black-box) DOCX validation engine springs fewer surprises on the filer if the DOCX file was created using Microsoft Word. Filers who export DOCX files from other non-Microsoft word processors seem to encounter far more surprises with USPTO's (black-box) DOCX validation engine.

The patent practitioner community has been baffled by this stubbornness and disingenuousness by USPTO people. Why do they do it? There are four prevailing guesses about this.

- *Guess 1.* Maybe some years ago, some USPTO person signed a contract with a USPTO contractor that locked in some sweetheart price for printing of US patents, and the contract promises that the USPTO will provide (Microsoft-Word formatted) DOCX files to the contractor to get that sweetheart price.
- *Guess 2.* Maybe Microsoft somehow directly or indirectly influenced the thinking of the decisionmakers within the USPTO to set up its systems to "reward" USPTO customers

who purchase and use Microsoft Word and to “punish” USPTO customers who use other non-Microsoft word processors.

- *Guess 3.* Maybe the place where the USPTO got its DOCX validation engine was Microsoft.
- *Guess 4.* Maybe some high-up person (or group of people) within the USPTO stuck his or her neck out several years ago, and said “DOCX is the only and best way to go” even though that was not true, and in the years since then this person (or people) has been absolutely unwilling and unable to admit error.

How to fix USPTO’s mess? Assuming the USPTO really refuses to accept PDF, and assuming that the USPTO sticks with its idea that an intermediate-storage word processor format is the right way to go for patent applications, then the only defensible way to fix USPTO’s mess is to adopt OpenDocument Text (ODF) as the filing format. Only ODF satisfies USPTO’s stated requirements:

- the standard is really an open standard,
- every word processor is able to either save in that format or export into that format, and
- the saving or exporting is stable (likely to work the same way tomorrow that it works today).

DOCX does not satisfy the first or third conditions, and only roughly satisfies the second condition.

I have to assume that ODF is out of the question for the USPTO. Suppose for example that Guess 1 is the correct guess for USPTO’s stubbornness. If so, then the simple fact is that ODF is not the same thing as Microsoft Word’s variant of DOCX. If Guess 2 is the correct guess, then the adoption of ODF would be unacceptable because it fails to reward Microsoft Word purchasers and fails to punish those who use non-Microsoft word processors. If Guess 3 is the correct guess, then the adoption of ODF is unacceptable because the USPTO has already locked in its use of the Microsoft-provided validation engine. If Guess 4 is the correct guess, then once again adoption of ODF is out of the question because this would be admitting past error in picking DOCX.

So on the assumption that ODF is out of the question, what can possibly be done by the USPTO to clean up the mess, that is not hostile and offensive to the filing community?

As a first step, USPTO should suck it up and admit to the fool's errand of DOCX, given that there is no present-day standard for it, and should instead make use of a document format for which there is an actual published industry standard. ODF being assumed to be out of the question, then the one remaining choice is Accessible PDF.

Let's suppose that in response to this, the USPTO says "oh but we can't get absolutely everything we want from the word processor information that is embedded in the Accessible PDF". This is almost certainly not true, but let’s assume it to be true for sake of discussion. Then let the USPTO simply announce:

- Filers are required to e-file in Accessible PDF.
- If the filer hands in a PDF that fails to comply with the "Accessible PDF" published industry standard, the filer will have to pay a $400 penalty.
- The filer is invited to hand in, in addition to the PDF file, a word processor file with a file name ending in the four letters "DOCX" that the filer certifies to be content-identical given whatever word processor the filer used to author or export the word processor file. The filer gets to use any word processor they like. The only requirement is that in the word processor that they used, this is the DOCX file that the word processor generated or exported, and the PDF that they actually uploaded matches a PDF that was exported from the word processor that they used.
- If the filer hands in the word processor file as just described, they get a $3.15 filing fee reduction.
- Note that this gives the USPTO everything that it says it wants, and more.
- If the USPTO challenges the content-identicality of the DOCX file that the filer employed to get the $3.15 filing fee reduction, then it is up to the filer to say which word processor they used, and it is up to the filer to prove that that word processor exported both that PDF and that DOCX file.

I picked $3.15 because that is USPTO's admission of how much money it presently spends to do the OCR on an image-based PDF. Obviously no practitioner is going to spend the time to hand in the DOCX file to save a mere $3.15. But that is apparently the correct price for the USPTO to pay to avoid having to do the OCR. Of course the USPTO could voluntarily increase its reward for handing in the DOCX file to a bigger amount of money, let's say $400.

Given that no two word processors actually generate the same DOCX file content even for the same "what you see on the screen" (given that there is no industry standard), this will mean the USPTO will from time to time receive a DOCX file (say from my Libre Office or from somebody's Google Docs) that does not serve USPTO’s wishes as well as a Microsoft Word file would have. The USPTO will then be very annoyed that it paid $400 for this non-Microsoft DOCX file. USPTO will have buyer's remorse. But USPTO will not be heard to complain, because for five years now they have been telling anyone who will listen that "DOCX is a standard".

The PDF file will, of course, be the authoritative document for all later purposes. The USPTO will preserve this PDF file for as long as it maintains any official application file. This PDF file will then be available at litigation time if any question ever arises about what the applicant filed.

The USPTO can probably get everything that it really needs from the “accessible” content in the PDF file. But to the limited extent that the USPTO finds some real or imagined deficiency in the “accessible” content of the PDF, the USPTO could offer a suitable incentive to the filer to hand in the DOCX file that the USPTO seems to so desperately require. As I say, if $3.15 is not a big enough incentive, then the USPTO could name some higher price.

There are several very important things about the approach just described.

1. USPTO absolutely must permit filers to file PDF patent applications under circumstances where the PDF file "controls."
2. The "controlling" PDF file needs to be preserved by the USPTO intact, without modifications, for the life of the patent plus a statute of limitations period.
3. It will be acceptable to filers, I believe, for the USPTO to require that the PDF file be "accessible". This is an industry-standard term with clear and unambiguous meaning. All present-day word processors can generate "accessible" PDF files, either directly through native export function or by readily available add-ons.
4. If the USPTO were to choose to *require* each filer to provide not only a PDF but also a "DOCX" file, then the only requirement for the format of the DOCX file that the USPTO should be able to impose is that *some word processor* yielded that DOCX file and that PDF file. The filer gets to pick whatever word processor the filer wishes to use. The USPTO is not allowed to "reject" the DOCX file or require the user to review or "accept" any USPTO validation or modification of that DOCX file. The only permitted grounds for "rejecting" the DOCX file would be that the filer was unable to prove that the filer's word processor yielded both that DOCX file and PDF file.

Note that the USPTO should not be heard to make any objection to item 4. After all, if the USPTO is telling the truth about DOCX when the USPTO says that there is a present-day "DOCX standard", then that is the end of it. Some random word processor selected by the filer generated both that DOCX file and that PDF file. That is the end of it.

To emphasize this point, USPTO says, to anyone who will listen:

> DOCX is a safe and stable open source format supported by many popular word processing applications, including Microsoft Word 2007 and higher, Google Docs, Office Online, LibreOffice and Pages for Mac.

So if a filer files some PDF, and later hands in a file from Google Docs or Libre Office or Pages for Mac that ends in the letters "DOCX", and if the filer is able to show that Google Docs or Libre Office or Pages for Mac generated both that PDF and that DOCX file, then that should be the end of it. USPTO should accept that DOCX file and should not be permitted to impose any further requirement like reviewing or accepting any USPTO validation or modification of that DOCX file.

The fool's errand. We return now to the title of this essay -- *The Fool's Errand That Is DOCX*. The reward, such as it is, for the valiant reader who has somehow found a way to stay awake through this lengthy discussion, is that I will now explain what I mean by the title.

It might be thought that when I selected this title, perhaps I was trying to communicate that it is a fool's errand for the USPTO to have tried to make DOCX work for the filing of US patent applications. And it probably was and is a fool's errand that the USPTO tried to do this. But that

is not what I was trying to communicate in this title. I was trying to communicate my near-certain feeling that it is a fool's errand to try to use reason and logic to engage the USPTO in a meaningful discussion of how the USPTO could gain the cooperation of practitioners in obtaining e-filed character-based US patent applications.

When I see that the most prominent paragraph on the USPTO's DOCX web page is a paragraph containing three pants-on-fire false statements about DOCX, I despair of any hope of even reaching a shared understanding with the USPTO about what is true and what is false in the world of word processor formats and open standards.

When I see the USPTO setting forth its supposed criteria for selecting a word processor intermediate storage format that would work well (open standards, stable, nonproprietary), and the one correct answer is ODF, but the USPTO fails to get that answer, I despair. When I see the USPTO wrongly stating that the DOCX format supposedly satisfies all those criteria, when in fact it satisfies none of them, I despair.

When I see the USPTO claiming that it spent an entire year conducting a study that was supposedly directed to understanding PDF, and when the USPTO said the conclusion was that PDF could not be used … when text-rich versions do exist (*PDF/A Level A (accessible)* and *PDF/UA*) and I was able to find them in a mere fifteen minutes of clicking around in Google … I despair.

When I see the USPTO in its August 2, 2020 Federal Register notice, completely misrepresenting the findings of that "year-long study" … I despair.

The fool's errand is my wish that I could use reason and logic in a meaningful discussion with the USPTO as to whether DOCX is the answer, or whether perhaps DOCX is not at all the answer, and maybe ODF or *PDF/A Level A (accessible)* or *PDF/UA* is the answer.

Exhibit 11

Excerpt from our letter in response to the Notice and Comment request, full letter at https://www.uspto.gov/sites/default/files/documents/Comment_Seventy_Three_Patent_Practitioners_092719.pdf (Sept. 27, 2019)

SEVENTY THREE PATENT PRACTITIONERS

September 27, 2019

Via Email fee.setting@uspto.gov

Brendan Hourigan, Director of the Office of Planning and Budget
Mail Stop—Office of the Chief Financial Officer
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313–1450

Re: Setting and Adjusting Patent Fees During Fiscal Year 2020, 84 Fed. Reg. 37398 (Jul. 31, 2019)

Dear Mr. Hourigan:

We write as patent practitioners to comment on a Notice of Proposed Rulemaking (NPRM), *Setting and Adjusting Patent Fees During Fiscal Year 2020*.[1] The signatories are members of several email listserv groups, a community of patent practitioners. The signatories taken together filed about 20,000 patent applications at the PTO during the past ten years, and paid about $50 million dollars in fees to the PTO in the past ten years.

We are deeply troubled by several aspects of this proposal:

- The PTO is an executive branch agency, not a private-sector company. The PTO is subject to many laws that are not recognized in the proposal. Various elements of this proposal violate laws that are not discussed.
- There are a number of plain errors in the factual statements and rationale for the DOCX proposal, the annual practitioner fee proposal, and several of the "Rulemaking Considerations" sections.
- The costs of several of the proposed rules are substantial; yet the only discussion is "The Office did not identify any monetized costs and benefits of the proposed rule, but found that the proposed rule has … no identified costs." This sentence implies more about the quality of the Office's analysis than it does about the merits of the proposed rules. This letter identifies *dozens* of costs that were not accounted for as required by various statutes.

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[1] U.S. Patent and Trademark Office, *Setting and Adjusting Patent Fees During Fiscal Year 2020*, Notice of Proposed Rulemaking, 84 Fed. Reg. 37378 (Jul. 31, 2019).

I. Laws that govern fee-setting

A. Two different laws clarify that the PTO may not use fee-setting as a policy lever to "encourage," "discourage," "incentivize," or "disincentivize"

The legislative history of the AIA makes abundantly clear that the PTO may not use fee-setting as a policy lever. Fee setting may be used ***only*** to recover aggregate costs. Likewise, the United States Constitution denies agencies the authority to set fees for anything other than cost recovery—setting fee levels to "encourage or discourage" is a "tax," and agencies do not have authority to tax.

Assembling all the relevant laws yields the following algorithm that the PTO must use to set fees:

1. Start with the statutory fee numbers in 35 U.S.C. § 41(a), (b), (d), and (h). The PTO may increase all fees in proportional lockstep to a level that "recovers the aggregate estimated costs." Congress exercised its policy-setting authority when it embedded various cross-subsidy levels into § 41. Once Congress has done so, the PTO cannot raise one fee or lower another to incentivize or disincentivize applicant conduct, to "encourage innovation," or any of the other policy-based rationales stated in the NPRM. This is discussed in §§ I.B.1 and I.C.
2. The PTO has authority to break out of this proportional lockstep on the following conditions:
    a. For any service or processing activities where the PTO performs some affirmative act or delivers some material object, that are not covered by the specific enumerated fees of § 41, the PTO may price the service at cost.
    b. The Patent Act gives the Director unfettered discretion to set a few fees, with no criteria. For example, §§ 311(a) and 321(a) give the Director authority to set fees for IPRs and PGRs with essentially no constraint, other than that they be "reasonable" after "considering … aggregate costs." This is discussed at § I.D.
    c. When the Patent Act authorizes fee-setting exempt from cost recovery. Examples include § 2(b)(2)(G) for prioritized examination, § 312(a)(1) for IPR petitions, and § 322(a)(1) for PGR petitions. These three statutes grant exemptions from cost recovery or the § 41 schedule.
    d. Where the PTO has specific line-item data showing that a specific line item's costs have risen at a rate faster or slower than general costs (it would be the *rate of change* that matters, not the cost itself). In that case, the PTO could exercise the "cost of providing the service" authority of the Independent Offices Appropriations Act (IOAA) to break that line item out of the proportional lockstep, by the degree of the faster or slower cost rise.

3. However, there are things the PTO cannot do:

   e. The PTO may not set fees to encourage or discourage any activity (see §§ I.B.1 and I.C).

   f. The PTO may not create new fees where no fees are "***established, authorized, or charged***" in Title 35, and there is no affirmative material, service, or processing provided.

   g. The PTO may not re-allocate fees among the categories specified in § 41; new fees may be created only where the PTO has a specific statutory authorization (see § I.B.2).

   h. The PTO may not set fees without a benefit-cost analysis under the Paperwork Reduction Act and Executive Order 12866—for example, the PTO may not reduce its own costs if that would increase costs on the public disproportionately (see § I.F).

The NPRM explains four "key fee-setting policy factors" (84 Fed. Reg. at 37402 col. 1-2):

- promoting innovation strategies;
- aligning fees with the full cost of products and services;
- facilitating the effective administration of the U.S. patent system; and
- offering patent processing options to applicants.

If it's "policy," it's not within the PTO's power to address by fees.[2] Bullet 2 is within the PTO's § 10 authority. Bullets 1 and 3 are not. Bullet 4 may be authorized when the PTO has a specific authorization such as § 2(b)(2)(G) (prioritization) or § 41(d)(2)(A) first sentence (requiring cost recovery and only cost recovery for services not otherwise covered in § 41), but not otherwise.

The NPRM concedes that fees are being set to incentivize, disincentivize, and to "set fees to facilitate the effective administration of the patent and trademark systems." That is not within the PTO's authority. It is contrary to statute, and unconstitutional.

B. Section 10 of the America Invents Act

1. The AIA legislative history is clear: PTO may set fees *only* to recover aggregate cost—Congress specifically *removed* any implication of authority to use fees as a policy lever

The relevant section of the AIA reads as follows (emphasis added):

> (a) FEE SETTING.—
>
> (1) IN GENERAL.—The Director may set or adjust by rule ***any fee established, authorized, or charged under title 35***, United States Code, or the Trademark Act of 1946

[2] The broadest grant of "policy" authority is in 35 U.S.C. § 2(a)(2)(A)—the Director has authority to "provide policy direction … for the Office" but not for the public or patent system.

> (15 U.S.C. 1051 et seq.), ***for any services performed by or materials furnished by***, the Office, subject to paragraph (2).
>
> (2) FEES TO RECOVER COSTS.—Fees may be set or adjusted under paragraph (1) ***only to recover the aggregate estimated costs*** to the Office for processing, activities, services, and materials relating to patents (in the case of patent fees) and trademarks (in the case of trademark fees), including administrative costs of the Office with respect to such patent or trademark fees (as the case may be).

Section 10 as originally introduced in 2011 read as follows (2011 Cong. Rec. Sen. S139-S140 (Jan. 25, 2011), see also version as presented for Senate floor debate, Cong. Rec., at S945 (Feb. 28, 2011) (emphasis added):

> SEC. 9. FEE SETTING AUTHORITY.
>
> (a) FEE SETTING.—
>
> (1) IN GENERAL.—The Director shall have authority to set or adjust by rule any fee established or charged by the Office under sections 41 and 376 of title 35, United States Code, or under section 31 of the Trademark Act of 1946 (15 U.S.C. 1113), ***or any other fee established or charged by the Office under any other provision of law***, ***notwithstanding the fee amounts established or charged thereunder***, for the filing or processing of any submission to, and for all other services performed by or materials furnished by, the Office, provided that patent and trademark fee amounts are in the aggregate set to recover the estimated cost to the Office for processing, activities, services and materials relating to patents and trademarks, respectively, including proportionate shares of the administrative costs of the Office.

Note that the January-through-March Senate version arguably allows the PTO to move fee income around as it likes, "notwithstanding the fee amounts established or charged [by § 41]," so long as "fee amounts are in the aggregate set to recover the estimated cost."

This language was slightly amended by Sen. Leahy's floor debate manager's amendment (Cong. Rec. at S950 (Feb. 28, 2011), and at S1037 (Mar. 1, 2011)), though the broad "notwithstanding" discretion remained in the bill through Senate passage on March 8, 2011 (Cong. Rec. S1389 (Mar. 8, 2011)).

When the bill moved to the House, the bill had the final-passage language (H.R. Rep. No. 112-98, at 23 (Jun. 1, 2011)):

- The "notwithstanding" clause was removed.
- The "any other provision of law" clause was removed.
- The word "only" was added as a qualifier on "to recover the aggregate estimated costs."

The section-by-section in the House Report makes clear that these changes, and their effect, was fully intentional (H.R. Rep. No. 112-98, at 49-50) (emphasis added):

> *Fee-setting authority*
>
> **a) Agency fee setting authority**
>
> … The USPTO has argued for years that it must have fee-setting authority to administer properly the agency and its growing workload. The Act allows the USPTO to set or adjust all of its fees, including those related to patents and trademarks, ***so long as***

> ***they do no more than reasonably compensate the USPTO for the services performed***.
> …

The House report continues, at page 78:

> *Section 11. Fees for patent services.*
>
> The Act includes the current patent fee schedule in the text [now § 41]. This schedule represents a reference point for any future adjustments to the fee schedule by the Director.

The addition of the word "only" was entirely intentional, and intended to remove the PTO's discretion to use fees as a policy lever to "incentivize" or "encourage" or to accomplish any goal other than "to recover the aggregate estimated costs"—that is the ***only*** "policy lever" the PTO has. The language is not "the PTO shall charge no more than necessary to reasonably compensate;" the language is that fees shall "***do no more than*** reasonably compensate." Likewise, the legislative history makes abundantly clear that the removal of the "***notwithstanding the fee amounts established or charged thereunder***" is entirely intentional, and is a directive to the PTO to track § 41 as a "reference point."

Both the January introduction and the September final-passage versions of the statute make clear that the PTO has discretion to include general and administrative fees in its user fee recovery base (unlike other agencies, see § I.D). However, the June House bill and its discussion in the House Report makes clear that the PTO has *only* that authority, and does *not* have discretion to use user fees as a policy lever.

2. AIA § 10 sets limits on fee setting authority.

AIA § 10 only permits setting fees "*established, authorized, or charged under title 35*," and within that, only "*for any services performed by or materials furnished*" by the PTO, but nowhere authorizes creating new fees or restructuring existing fees. The legislative history, specifically the removal of the "notwithstanding" clause from § 10, makes clear that the PTO must work with the § 41 fee schedule, and cannot willy-nilly create new fees without a specific statutory authorization (see § I.B.3 and the text that was *not* enacted, at page 5). For most fees, the legislative history (see page 6) states that Congress intended the PTO to use the existing § 41 as a "reference point."

There are exceptions, including:

- § 2(b)(2)(G) for prioritized examination;
- § 41(d)(2)(A) first sentence, fees for services not otherwise covered in § 41;
- § 376(a) and (b) for PCT national stage entry; and
- § 382 and § 389(c) for Hague convention design applications.

These contrasting exceptions prove the rule—if § 41 covers a fee area, that is the "reference point," and the PTO lacks discretion to substitute its policy judgement for Congress'.

3. What are the fees "established, authorized, or charged under title 35"?

Because AIA § 10(a)(1) only authorizes fee setting for "any fee *established, authorized, or charged under title 35*," and even in that case, only for "for any services performed by or materials furnished by, the Office" it is essential to understand which fees fit in which pigeonhole. As discussed in § I.B.1 above, Congress made abundantly clear that the authority of Section 10 is constrained by the various fees scheduled throughout titles 35 and 15:

- 35 U.S.C. § 41(a), (b), (d), and (h) "establish" most fees, and set baseline amounts.
- § 41(d)(2)(A), first sentence, authorizes the PTO to create new fee items for "other processing, services, or materials relating to patents *not specified in this section*."
- § 122(e)(1) (third party submissions) authorizes "such fee as the Director may prescribe."
- § 132(b) (RCEs) authorizes "The Director may establish appropriate fees for such continued examination."
- § 156(h) (patent term extension) authorizes that "The Director may establish such fees as the Director determines appropriate to cover the costs to the Office."
- § 257(d)(1) (supplemental examination) directs "The Director shall, by regulation, establish fees for the submission of a request for supplemental examination of a patent."
- § 261 (recording of assignments) authorizes (but does not require) a fee.
- § 311(a) and § 321(a) require the Director to establish a fee for IPR and PGR petitions.
- § 376(a) and (b) (PCT national stage entry) and § 382 and § 389(c) (Hague convention design applications) are unique: these are the only delegations of authority to the Director to choose what items are fee-bearing *and* what amount.

Other fees are not subject to AIA § 10.

C. The Constitution and the Supreme Court's definition of "tax"

The current proposal is a "tax," not a user fee. The Supreme Court and D.C. Circuit explain that the line between "taxes" and "user fees" lies with agency purpose. A "user fee" is a fee set for reasons of neutral cost-recovery. On the other hand, any fee set for any policy reason, "public interest," to "encourage or discourage a particular activity," etc. is a "tax." The PTO overstepped its authority in 2013, and propagates the error in this fee-setting proposal.

The AIA *does* waive a statutory constraint that applies to all other agencies—other agencies may set user fees only to cover costs *to a specific party*, and not to cover general administrative costs, and costs of providing benefits to the public (see § I.D). The AIA waived that, and allows the PTO to recover all costs of patent operations.

BUT—the constraint of law that the AIA did *not* waive—and could not possibly waive because it is a constitutional constraint on the executive branch—is that the PTO may not "tax." And that means that even with the AIA, the PTO may *not* "adjust assessments to encourage or discourage a particular activity."

The United States Constitution provides in Article I sec. 8 clause 1 provides that the power to "lay and collect Taxes" lies with Congress, not the executive branch. Art. I sec. 7

clause 1 provides that "All Bills for raising Revenue shall originate in the House of Representatives."

The Supreme Court and D.C. Circuit have interpreted the constitutional taxing power in a series of agency user fee cases. The current state of constitutional limits on agency use of fees to incentivize or disincentivizes behavior is summed up in a D.C. Circuit case:

> Such policy decisions, whereby an agency could, for example, adjust assessments to encourage or discourage a particular activity, would, according to the [Supreme] Court, 'carr[y] an agency far from its customary orbit' and infringe on Congress's exclusive power to levy taxes.[3]

A much more detailed explanation of the constitutional limits on fee-setting can be found in an article by Ron Katznelson, which we have attached as an exhibit.[4]

D. The Independent Offices Appropriations Act (IOAA) and Circular A-25

The Independent Offices Appropriations Act of 1952, 31 U.S.C. § 9710, is the basic set of guiding principles for agency user fees. OMB Circular A-25[5] is the OMB guidance for implementation, which the Supreme Court has cited as an authoritative interpretation. The Supreme Court and D.C. Circuit have interpreted the IOAA to impose several constraints:

1. Congress may lay taxes to "encourage" or "discourage," as discussed in § I.C, but not agencies.[6]
2. Most agencies may set fees only for specific services to a specific "identifiable recipient," at the cost of providing that service or the value to the recipient, but may not recover agency general operating costs.[7]
3. Most agencies may set user fees to cover the lesser of agency cost of providing services and things that the agency provides, or "value to the recipient," but the agency may not charge for benefits to the general public or other societal benefits.[8]

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[3] *Seafarers International Union v. U.S. Coast Guard*, 81 F.3d 179, 183, 185 n.4 (D.C. Cir. 1996), *quoting National Cable Television Association Inc. v. United States*, 415 U.S. 336 (1974); *cf. National Federation of Independent Businesses v. Sebelius*, 567 U.S. 519, __, 132 S.Ct. 2566, 2594-95 (2012) (because the Affordable Care Act has an exaction designed to incentivize behavior, it is a "tax" and a valid exercise of Congress' taxing authority).

[4] Ron D. Katznelson, *The U.S. Patent Office's Proposed Fees Under the America Invents Act—Part I: The Scope of the Office's Fee-Setting Authority*, 85 BNA PAT. TM & COPYRIGHT J. 206 (Dec. 7, 2012), attached as an exhibit, available at https://works.bepress.com/rkatznelson/70.

[5] https://www.whitehouse.gov/wp-content/uploads/2017/11/Circular-025.pdf

[6] *National Cable Television Association Inc. v. United States*, 415 U.S. 336, 340-41 (1974) (*NCTA*); *Seafarers International Union v. U.S. Coast Guard*, 81 F.3d 179, 183, 185 n.4 (D.C. Cir. 1996); *see also Federal Power Commission v. New England Power Co.*, 415 U.S. 345, 351 (1974) ("*NEPCO*") (fees set to reflect "economic climate" are "taxes," and thus impermissible).

[7] *NCTA*, 415 U.S. at 343; *Seafarers*, 81 F.3d at 183.

[8] *NEPCO*, 415 U.S. at 349.

4. Where the agency has specific line item data to show both the "value of the service to the recipient" and the "reasonable cost incurred" to provide that service, an agency may charge the lesser of those two amounts.

The PTO is special in this respect—AIA § 10(a)(2) gives the PTO a carve-out from one of the provisions of the IOAA, in the form of authority to recover general and administrative costs. However, of the constraints set by the IOAA, AIA § 10 waives only bullet 2. The explicit wording of AIA § 10(a)(1) waives bullet 2 only for those fees "*established, authorized, or charged under title 35*," but the legislative history makes clear that the PTO is to be entirely self-funding, so that would likely be sufficient authorization to build general operating costs into other fees as well.

The prioritized examination statute, § 2(b)(2)(G), and IPR and PGR petitions statutes, § 311(a) and § 321(a), specifically exempt these fees from bullet 2—these fees can be set at something other than cost recovery. "Value to the recipient" may be a good measure under bullet 3.

Fees without statutory grounding are not within § 10, and thus are either barred outright, or are subject to the four constraints of the IOAA.

E. Executive Order 12866 and OMB Circular A-4

Executive Order 12866 is the basic benefit-cost executive order. In his first weeks in office, President Trump reminded all agencies of E.O. 12866 and one of its important implementing guidance documents, the *Bulletin on Agency Good Guidance Practices*.[9] These two provide important guidance to the PTO. In relevant part, E.O. 12866 reads:

> **Section 1.** *Statement of Regulatory Philosophy and Principles.*
>
> (a) *The Regulatory Philosophy*. Federal agencies should promulgate only such regulations as are required by law, are necessary to interpret the law, or are made necessary by compelling public need, such as material failures of private markets to protect or improve the health and safety of the public, the environment, or the well-being of the American people. In deciding whether and how to regulate, agencies should assess all costs and benefits of available regulatory alternatives, including the alternative of not regulating. Costs and benefits shall be understood to include both quantifiable measures (to the fullest extent that these can be usefully estimated) and qualitative measures of costs and benefits that are difficult to quantify, but nevertheless essential to consider.

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[9] See Office of Management and Budget, *Guidance Implementing Executive Order 13771, Titled 'Reducing Regulation and Controlling Regulatory Costs'*." M-17-21, § 1 (Apr. 5, 2017) ("[A]gencies must continue to assess and consider both the benefits and costs of regulatory actions, including deregulatory actions, when making regulatory decisions, and issue regulations *only upon* a reasoned determination that benefits justify costs" (emphasis added); Office of Management and Budget, Memorandum, *Interim Guidance Implementing Section 2 of the Executive Order of January 30, 2017, Titled "Reducing Regulation and Controlling Regulatory Costs"*, https://www.whitehouse.gov/sites/whitehouse.gov/files/briefing-room/presidential-actions/related-omb-material/eo_iterim_guidance_reducing_regulations_controlling_regulatory_costs.pdf (Feb. 2, 2017) ("Agencies should continue to adhere to OMB's 2007 Memorandum on Good Guidance Practices.").

> Further, in choosing among alternative regulatory approaches, agencies should select those approaches that maximize net benefits (including potential economic, environmental, public health and safety, and other advantages; distributive impacts; and equity), unless a statute requires another regulatory approach.
>
> (b) *The Principles of Regulation.* To ensure that the agencies' regulatory programs are consistent with the philosophy set forth above, agencies should adhere to the following principles, to the extent permitted by law and where applicable:
>
> (1) Each agency shall identify the problem that it intends to address (including, where applicable, the failures of private markets or public institutions that warrant new agency action) as well as assess the significance of that problem.
>
> (2) Each agency shall examine whether existing regulations (or other law) have created, or contributed to, the problem that a new regulation is intended to correct and whether those regulations (or other law) should be modified to achieve the intended goal of regulation more effectively.
>
> …
>
> (5) When an agency determines that a regulation is the best available method of achieving the regulatory objective, it shall design its regulations in the most cost-effective manner to achieve the regulatory objective. In doing so, each agency shall consider incentives for innovation, consistency, predictability, the costs of enforcement and compliance (to the government, regulated entities, and the public), flexibility, distributive impacts, and equity.
>
> (6) Each agency shall assess both the costs and the benefits of the intended regulation and, recognizing that some costs and benefits are difficult to quantify, propose or adopt a regulation only upon a reasoned determination that the benefits of the intended regulation justify its costs.
>
> …
>
> (8) Each agency shall identify and assess alternative forms of regulation and shall, to the extent feasible, specify performance objectives, rather than specifying the behavior or manner of compliance that regulated entities must adopt.
>
> …
>
> (11) Each agency shall tailor its regulations to impose the least burden on society, including individuals, businesses of differing sizes, and other entities (including small communities and governmental entities), consistent with obtaining the regulatory objectives, taking into account, among other things, and to the extent practicable, the costs of cumulative regulations.
>
> …

The Office of Management and Budget elaborated on the economic analysis required by E.O. 12866 for any regulation that may reasonably be expected to "have an annual effect on the economy of $100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities." Guidance and methodological implementation of

E.O. 12866 are provided in OMB Circular A-4.[10] Some of the required components in a Regulatory Impact Analysis include:

- Identify a range of regulatory approaches.[11]
- Estimate the benefits and costs—both quantitative and qualitative—of the proposed regulatory action and its alternatives
- Identify the Consequences of Regulatory Alternatives
- Quantify and Monetize the Benefits and Costs
- Evaluate Non-quantified and Non-monetized Benefits and Costs
- Characterize uncertainty in benefits, costs, and net benefits.

E.O. 12866 § 1(b)(2) requires the PTO to "examine whether existing regulations (or other law) have created, or contributed to, the problem that a new regulation is intended to correct." Most of the policy goals of the fee schedule could be addressed by internal reforms to reduce costs, as an alternative to raised fees. For example, IEEE-USA gave an extensive set of comments on how internal PTO processes and incentives could be restructured to reduce costs to the PTO and to applicants.[12] The NPRM identifies no exemption from E.O. 12866 that permits the PTO to forego this examination.

F. The Paperwork Reduction Act

The Paperwork Reduction Act, 44 U.S.C. § 3506(c)(2) has its own notice-and-comment requirement, which most agencies run in parallel with the APA comment period:

> (c) With respect to the collection of information and the control of paperwork, each agency shall—
>
> (A) … provide 60-day notice in the Federal Register, and otherwise consult with members of the public and affected agencies concerning each proposed collection of information, to solicit comment to—

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[10] https://www.whitehouse.gov/sites/whitehouse.gov/files/omb/circulars/A4/a-4.pdf Those that prefer a smaller typeface can find a version at the Federal Register web site https://www.gpo.gov/fdsys/pkg/FR-2003-10-09/pdf/03-25606.pdf A 16-page "condensed books" primer is at OMB's web site, https://www.reginfo.gov/public/jsp/Utilities/circular-a-4_regulatory-impact-analysis-a-primer.pdf

Note that since the total national budget for patent applications and prosecution is about $5 billion per year, this requirement for an economic analysis is triggered by any regulation that covers 2% of all patent prosecution. It's striking that the PTO has never undertaken a Regulatory Impact Analysis for any regulation other than its fee-setting rules.

[11] Other suggestion letters from well-informed commentators abound. Ron Katznelson, *Patent Reforms Must Focus on the U.S. Patent Office*, Medical Innovations & Business Journal at 77 (Summer 2010), https://www.uspto.gov/sites/default/files/documents/2015quality_f_katznelson2_19may2015.pdf

[12] Comment letter under Paperwork Reduction Act (29 May 2012), at https://www.uspto.gov/sites/default/files/news/fedreg/comments/0651-0031_IEEE_Comment.pdf

> (i) evaluate whether the proposed collection of information is necessary for the proper performance of the functions of the agency, including whether the information shall have practical utility;
>
> (ii) evaluate the accuracy of the agency's estimate of the burden of the proposed collection of information;
>
> (iii) enhance the quality, utility, and clarity of the information to be collected; and
>
> (iv) minimize the burden of the collection of information on those who are to respond, including through the use of automated collection techniques or other forms of information technology; and
>
> (B) for any proposed collection of information contained in a proposed rule (to be reviewed by the Director under section 3507(d)), provide notice and comment through the notice of proposed rulemaking for the proposed rule and such notice shall have the same purposes specified under subparagraph (A)(i) through (iv);
>
> (3) certify (and provide a record supporting such certification, including public comments received by the agency) that each collection of information submitted to the Director for review under section 3507—
>
> (A) is necessary for the proper performance of the functions of the agency, including that the information has practical utility;
>
> (B) is not unnecessarily duplicative of information otherwise reasonably accessible to the agency;
>
> (C) reduces to the extent practicable and appropriate the burden on persons who shall provide information to or for the agency, including with respect to small entities, as defined under section 601(6) of title 5, the use of such techniques as—
>
> (i) establishing differing compliance or reporting requirements or timetables that take into account the resources available to those who are to respond;
>
> (ii) the clarification, consolidation, or simplification of compliance and reporting requirements; or
>
> (iii) an exemption from coverage of the collection of information, or any part thereof;
>
> (D) is written using plain, coherent, and unambiguous terminology and is understandable to those who are to respond;
>
> (E) is to be implemented in ways consistent and compatible, to the maximum extent practicable, with the existing reporting and recordkeeping practices of those who are to respond. …

Several components of this rulemaking implicate the Paperwork Reduction Act (e.g., the DOCX proposal and the annual practitioner fee). The NPRM asserts that the PTO has obtained Paperwork clearance. This assertion is plainly false—the PTO has never even *applied* for clearance. See §§ II.A.5 and II.B below.

G. The PTO has not acknowledged, let alone addressed, the legal constraints

Despite multiple challenges,[13] there is apparently no document in which the PTO discusses:

- The AIA legislative history, particularly in the removal of the earlier text, "notwithstanding the fee amounts established or charged," or the discussion in the House report (see page 5). It is deeply puzzling to us that the PTO has never issued any legal analysis of legislative history.
- The effect of the word "only" in the phrase "*only* to recover the aggregate estimated costs." Why would that mean "only" in amount rather than "only" in purpose? If Congress had meant "only" amount, that's the words they would have used. (The legislative history makes clear that Congress intended "only" to apply to purpose as well as amount, see page 5.) It is also deeply puzzling to us that the PTO has never issued any legal analysis of *that* part of the legislative history.
- The Constitutional taxing power.
- The relevant Supreme Court or D.C. Circuit case law, even though the holdings (especially *Seafarers*) are 180º opposite the position the PTO takes in this NPRM.

II. Specific examples of unlawful or unwise fees

A. The proposal to charge a premium fee for PDF, and discount DOCX

As we explain below, the factual assumptions in the NPRM are entirely incorrect. There are a number of problems with DOCX that are apparent to us, and that were explained in the letters to PPAC. It is troubling that the NPRM fails to respond to the issues raised in the earlier comment letters, and instead offers a number of unsupported and counterfactual rationales.

There is a much better way to solve the problems the PTO identifies in the NPRM. Applicants upload most of their submissions as text-based PDFs. ***Then the PTO's computer systems degrade them*** to flatten them to unstructured bitmaps. The problem is ***caused by the PTO***.

We recommend an alternative—follow the lead of WIPO's ePCT and the federal courts' CM/ECF system. Both ePCT and CM/ECF accept text-based PDFs. Unlike the PTO's system, both ePCT and CM/ECF remove metadata, but otherwise leave documents intact, in the form that they are submitted. Neither ePCT nor CM/ECF flattens text-based PDFs to bitmaps.

1. Any standard for an electronic filing system must be portable and consistent across all implementations

The most basic requirement for any form of legal archiving is that it be portable and consistent. Page cites must be consistent—even small changes that move a word or line from one page to the next are simply not acceptable. Special characters, equations, and chemical

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[13] E.g., Katznelson, *The U.S. Patent Office's Proposed Fees*, note 4, *supra*; letter of David Boundy to PPAC, Sept. 12, 2018, https://www.uspto.gov/sites/default/files/documents/David_Boundy.pdf

formulae must render *exactly*. If a system does not *absolutely* guarantee that "What you see is what you get," it is not acceptable.

DOCX does not satisfy that basic criterion. The NPRM proceeds from a false understanding of the word "standard." There are two fundamentally-different kinds of standards: most standards are "minimum conforming implementation" standards.[14] Only a few are "interoperability" standards.[15] DOCX is not itself a "standard," and ECMA-376 and ISO/IEC 29500 are only "minimum conforming implementation" standards. DOCX implements a standard—just like car parts implement the metric system standard. Even though the measurements in today's cars are all metric, that does not mean that any two alternators from different manufacturers are interchangeable. ECMA-376 and ISO/IEC 29500 are relatively "loose" standards—they leave a lot of room for implementations to differ (after all, Microsoft, the sponsor of the standard, did not want the choices it made in 2007 to be permanent lock-ins). DOCX files cannot even be transferred reliably between Microsoft Word for Windows and Microsoft Word for Mac. Users that use LibreOffice, or WordPerfect cannot reliably transfer documents to or from Microsoft Word. The problems are especially pronounced for equations and formulas. Even basic text can have the problem—standard fonts like Times Roman and Helvetica are available from different vendors, each with slight differences that will alter pagination in some cases. Even in an environment where all software is provided by Microsoft, the result is not reliable in this respect—using different versions of Word *on the same computer*, this letter changed in length by half a page (See Exhibit B).

On the other hand, PDF maintains all this consistency. That is what Adobe designed it to do, and why they named it "portable."[16] Portability and consistency is the reason that the WIPO's ePCT and courts' CM/ECF use PDF—the pagination and rendering are always consistent.

Another fundamental requirement in the design of a system like PTO's system for e-filing patent applications is that the system should not force applicants or attorneys to purchase any particular proprietary software as a precondition of use of the system. For PDF, there are a number of free and freely-available tools that create and display PDF files. Not so for DOCX—to be consistent with whatever the PTO has in mind, applicants will be locked into purchasing a specific tool.

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[14] Most programming language standards are "minimum conforming implementation" standards. For example, the FORTRAN standard permits each implementer to include extension features, and no computer manufacturer's extensions are compatible with any other's. Similarly, the FORTRAN standard leaves some rules for arithmetic unspecified—basic arithmetic expressions may give different results on different computers, or even different results on the same computer depending on which software it's used with.

[15] Examples include the WiFi and IEEE cell phone standards: every implementation is interoperable with every other.

[16] "Portable Document Format (PDF) is a file format used to present and exchange documents reliably, independent of software, hardware, or operating system." Adobe, *What is PDF?*, https://acrobat.adobe.com/us/en/acrobat/about-adobe-pdf.html

It appears that the PTO is unaware of the technology of word processors and documents. The rendering from DOCX to a visible form (either on screen, paper, or PDF) is done by the word processor. That rendering may vary based on various software components installed on a given computer. The same DOCX file can be rendered differently depending on the word processor, fonts installed, which font vendor supplied the font, whether the word processor chooses a vector form or bitmap form for the font, and add-ins for the word processor (especially for equations, pictures and drawings, and chemical formulae). Because a single word processor's rendering engine is used to display on screen, print on paper, and print-as-PDF, the applicant has a trustworthy what-you-see-is-what-you-get. But if that same DOCX is transmitted to the PTO, for the PTO to render using unidentified software and unidentified environment, the results will be different.

2. The factual representations in the NPRM relating to two standards and portability of DOCX are incorrect

The PTO does not tell us what rendering engine will be used within the PTO. Will it be MS Word or some other rendering engine? The "viewer" software in Firefox, Internet Explorer, or Chrome, or the viewer in Google gmail, Word 2003, 2013, or 2016? For Mac or Windows? All behave differently. With DOCX, no amount of care by a practitioner can possibly ensure how the document will be interpreted by the PTO's rendering or conversion software. It is unreasonable to expect the filer to undertake to proofread, carefully, word-by-word, any specimen of the conversion result the PTO may provide just before the filing is finally submitted. Indeed, the very requirement to proofread the rendering (noted below in red text) is an admission by the PTO that it recognizes that DOCX is a shaky foundation for a legal document filing system (there's no such warning in today's system). For lengthy, complex specifications, the 60-minute timeout in EFS would preclude effective review. In the case of a timeout, the subsequent re-submission would still require the filer to review the entire conversion result from the beginning.

Standards ECMA-376 and ISO/IEC 29500 themselves disclaim the kind of interoperability that the PTO assumes. Some example sentences:

- "a software application should be accompanied by documentation that describes what subset of ECMA-376 it supports" ECMA-376 expressly states that there is no common set of features that are required to be implemented; all the standard guarantees is that *if* certain features are implemented, they will behave in a certain manner. A standard useful for an electronic filing system cannot rely on features that are optional in some implementations and unimplemented in others.
- "The application need not implement operations on all XML elements defined in ECMA-376." Some implementations of DOCX are permitted to have features that will cause errors in others.
- "A batch tool that reads a word-processing document and reverses the order of text characters in every paragraph with 'Title' style before saving it can be conforming even though ECMA-376 does not recommend this behavior. [A conforming word processor may] transform the title 'Office Open XML' into 'LMX nepO eciffO'. Its documentation

should declare its effect on such paragraphs." The ECMA standard *expressly allows* for entirely different renderings, so long as it's documented.

- "These application descriptions should not be taken as limiting the ability of an application provider to create innovative applications. They are intended as a mechanism for labelling applications rather than for restricting their capabilities." A standard useful for an electronic filing system can't rely on features that are optional in some implementations and unimplemented in others.
- "[*Note*: A possible application description would be a 'standard' application description for a wordprocessing application. This could be created by taking the intersection of the features available in common wordprocessing applications such as Word 2000, OpenOffice 2, WordPerfect, and iWork Pages. … *end note*]" ECMA-376 expressly states that there is no common set of features that are required to be implemented; all ECMA-376 guarantees is that *if* an implementer wants to implement a given feature, there is a format in which to implement it. There are very few behavioral guarantees.
- ECMA-376 leaves a number of features "implementation defined," including whether and how to save any element that is under the control of a plug-in, how dates are rendered, how embedded pictures are rendered, whether numerical values are rendered with a "." or a "," as a decimal point, how fonts are chosen in rendering, line number spacing, and other characteristics. Documents copied from one DOCX program to another have no guarantee of being rendered consistently.
- A Microsoft blog[17] writes "One of the great things about ISO/IEC 29500 is its extensibility mechanisms - implementers can extend the file format while remaining 100% compliant with the standard." That statement is the admission—there is no uniform interoperability standard. ISO/IEC 29500 is a baseline, minimum functionality standard, not an interoperability standard that guarantees bilateral consistency between any two implementations. That may be a good feature for software developers, but it's catastrophic for the use that the PTO contemplates. That bilateral interoperability is the whole point of the PDF standard.

As technically-trained lawyers, we don't understand how any person could read ECMA-376 and not have immediately noticed the glaring deficiencies as a "standard" for legal documents.

One of the signatories of this letter was among the very first of the beta-testers of PTO's system for DOCX filings. As implemented by the PTO, the practitioner would upload a DOCX file, and PTO would render the DOCX file in a human-readable PDF image format. As part of the e-filing process, the practitioner was expected to proofread the rendered image as provided by the PTO's e-filing system. The notion was that the practitioner would be obliged to catch any instances of PTO's system rendering the DOCX file differently from the way the practitioner's word processor had rendered that same DOCX file. If, for example, some math equation or chemical formula had gotten corrupted in PTO's system, the practitioner would expected to catch this ***prior to*** clicking "submit."

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[17] https://blogs.msdn.microsoft.com/chrisrae/2010/10/06/where-is-the-documentation-for-offices-docxxlsxpptx-formats-part-2-office-2010/

There is no single unambiguous thing called "DOCX" format. The history may be seen in the Wikipedia article on "Office Open XML," at https://en.wikipedia.org/wiki/Office_Open_XML . One key sentence is:

> The Office Open XML specification exists in a number of versions.

Five, to be precise. https://www.ecma-international.org/publications/standards/Ecma-376.htm ***To the extent there is a standard at all, it is too lax to be useful for the purpose the PTO proposes***. DOCX exists in many variants, and Microsoft has a history of making poorly documented changes over time to the ways that Microsoft Word implements DOCX formatting of documents.

The PTO's web site, https://www.uspto.gov/patent/docx inaccurately characterizes DOCX as if one could be sure that any word processor will implement DOCX in the same way as any other word processor. For example, PTO says:

> There are several word processors that can create and save in DOCX format, including Google Docs, Microsoft Word 2007 or higher, Office Online, LibreOffice, and Pages for Mac.

That statement is misleadingly incomplete, conveying a clearly erroneous impression, disingenuous at best, and borders upon falsity given that there is no single unambiguous DOCX format. A more accurate statement would be:

> There are several word processors that can create and save documents in variants of DOCX formats, including Google Docs, Microsoft Word 2007 or higher, Office Online, LibreOffice, and Pages for Mac.

PTO also says (https://www.uspto.gov/patent/docx):

> DOCX is stable and governed by two international standards (ECMA-376 and ISO/IEC 29500).

This statement is simply false. There is no single DOCX standard to which Microsoft Word and the other word processors are all compliant.

To give a simple example, consider this math equation in a patent application recently filed as a PDF-based PCT application using Libre Office:

$$f(u)=\cos(u)^3 \exp(0.2u)$$

As an experiment, this Libre Office DOCX file was uploaded as a DOCX to EFS-Web as if filing a domestic US patent application. The way the PTO has designed EFS-Web, what happens next is that the practitioner sees this message in red letters:

> **The PDF(s) have been generated from the docx file(s). Please review the PDF(s) for accuracy. By clicking the continue button, you agree to accept any changes made by the conversion and that it will become the final submission.**

It is easy to see that this filing procedure, as contemplated by the PTO, imposes an enormous professional liability risk on the practitioner. The practitioner is obligated to proofread the entire

patent application, from top to bottom, for any corruption introduced by the PTO's rendering system.

Here is how the PTO rendered this math equation:

$$f(u) = cos(u)^3 exp(10.2u)$$

Note that the PTO's rendering system inserted a spurious digit "1" into the math equation. Had the practitioner overlooked this corruption of the document by the PTO, the practitioner might then have clicked "continue", at which point it would have been PTO's position that the practitioner had agreed to accept PTO's change of "0.2" to "10.2".

In other cases, the PTO's system changes fonts.

Let's assume that the practitioner catches a situation where the PTO's rendering engine has changed the result relative to what the practitioner saw on his/her word processor. Let's say some characters are showing up as boxes, question marks, or just the wrong character, or changed fonts. The practitioner has been diligent and noted that the PDF does not match the DOCX. Now what? Does that guarantee that the practitioner knows how to fix the problem? No. Most of these problems are deep in the guts of two different software systems. With deadlines looming, how is a practitioner going to change either the practitioner's word processor or the PTO's rendering software so that the two agree? Which one should change? How will the practitioner get that software change implemented in the next few hours so that the application can get its filing date? Knowing that there is a problem, and being able to fix the problem in a timely manner, may be two completely different things.

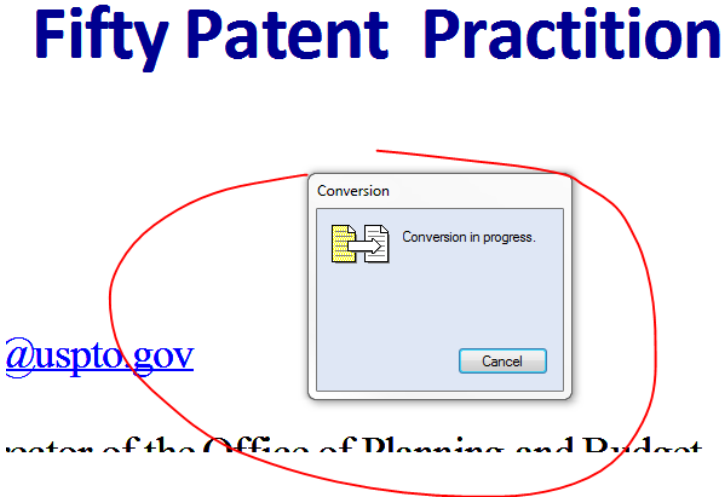
Signatories of this letter that have used the PTO's DOCX system opt out (and use PDF) if there is any math equation or chemical formula, or anything other than very simple alphanumerical characters.

But this proposed DOCX rule would put every practitioner in the untenable position of having to pay a $400 penalty tax for every case filed electronically using EFSWeb.

Exhibit B to this letter is a copy of this letter as rendered after copying from Word 2013 to several of the applications that the PTO claims to be "compatible" (https://www.uspto.gov/patent/docx). Exhibit B started out as exactly this letter—this paragraph, the change from Fifty" to "Seventy Three" practitioners in the page header, the application counts and fees in the opening paragraph, and the signature page are the only portions of this letter that was edited after we snapshotted it to create Exhibit B. We copied that snapshot from Word to LibreOffice to Google Docs to Word for Macintosh and back to Word. At each stage, merely opening the document and using "Save As" changed the document. The changes could well be fatal to any patent application:

- On page 1, the font for the letterhead is changed, even though Copperplate Gothic Bold is a relatively common font. If this were, for example a special font for Greek letters, special symbols such as ①②③, or the like, a change to font would be fatal.
- On page 1, the format for the bullet list is changed
- In the page header, the alignment of the components of the header was changed.

- Throughout, the format for footnotes is changed. At the very least, this will make page citing (*e.g.*, for appeal briefs) unreliable.
- On pages 2-4, the format of the Table of Contents is changed—text is turned into colored hyperlinks
- On pages 4-5, the numbering for the list items changed—instead of "1, 2, 3," the items are numbered "1, 1, 1"
- On pages 5 to 10, all footnotes are garbled, with tags like REF _Ref523926138 2 \w \h * MERGEFORMAT,
- Throughout, the outline section numbers reset to "A" or "1" rather than counting up as they should.
- At pages 18 and 27, figures are completely blanked out.
- From page 17 to 23, the text is changed from 12 point to 10 point.
- At pages 19-21, the table formatting is altered.
- When we tried WordPerfect as the first word processor in the chain, it opened the document, but made a number of changes. In producing the final edition of Exhibit B, WordPerfect was to be late in the chain. But in that position, Word Perfect failed completely—Word Perfect simply hung while trying to convert the document:



It certainly appears that no one at the PTO did any experimentation to confirm the factual representations at the PTO's "docx" page or the NPRM. There is no basis whatsoever for the PTO's claim that other word processors are "compatible" with Word, at least not in any practical sense.

3. The rationales stated in the NPRM are faulty

The following table responds to the PTO's factual assertions and rationales. The PTO's claims for the "Non-DOCX Filing Surcharge Fee" are in the left column. The actual facts and observations of attorneys and agents with experience are in the right column:[18]

[18] NPRM, 84 Fed. Reg. at 37413.

Rationale from 84 Fed. Reg. 37413	Our observations
Based on a USPTO survey, over 80 percent of applicants author their patent applications in DOCX in the normal course of business.	Even if this is true (the PTO neglects to make its data or methodology available, in violation of the PTO's obligations under its own Information Quality Guidelines), it ignores two key facts: • 20% don't. The costs on those parties to *reliably* file based on DOCX from their word processors—and reviewing the PTO's rendering of the document as received—will be immense. The PTO fails to consider that cost. • That 80% includes users of many different word processors, and document rendering across those word processors is *not* portable
Filing in structured text allows applicants to submit their specifications, claims, and abstracts in text-based format, and eliminates the need to convert structured text into a PDF for filing.	Applicants already submit most documents in a "text-based format," PDF. • The PTO did not measure the cost of *not* converting word processor documents to PDF, or compare that cost. • The PTO did not measure the cost of splitting one DOCX file into three for filing. • The PTO did not consider costs of DOCX features that might be in a practitioner's word processor but not accepted by the PTO's system.
Applicants can access examiner Office actions in text-based format which makes it easy to copy and paste when drafting responses.	The format for Office Actions has no relevance whatsoever to the format of applicant submissions. In a system that accepts PDFs, applicants are responsible for generating a correct PDF. Under current practice, that generation is readily predictable and controllable. If the PTO does it, with an undisclosed tool, the process is unpredictable. It certainly appears that the PTO intends to shift responsibility for the PTO's unpredictable data transcription errors onto applicants. In downloaded Office actions, much information can be gained by seeing what information is form or template data. The Office has not considered the impact of similar accessibility of application edit history data even if "metadata" is scrubbed.

The availability of structured text also improves accessibility for sight-impaired customers, who use screen reading technology.	These advantages are available to exactly the same extent for the text-based PDFs that applicants submit today, if only the PTO's systems did not degrade them to flat bitmaps.
It enables development of software to provide automated initial reviews of applicant submissions to help reduce effort required by the Office.	
The automated reviews can tell applicants up-front if potential problems exist and allow them to make changes prior to or at the time of submission.	
This also improves validation based on content, such as claims validation for missing claim numbering or abstract validation for word count and paragraph count.	
DOCX filing also improves document identification by automatic detection, allows for greater reuse of content, and provides improved searching for patent applications and submissions.	
Increased DOCX filing will also lead to higher data quality, by reducing system conversion errors.	This is false. DOCX will *increase* data conversion errors, because DOCX does not, and was not intended to, provide reliable or portable "what you see is what you get" uniformity. The supposed benefits are available to a *greater degree* with the text-based PDFs that applicants submit today, if only the PTO would stop degrading them.
It provides a flexible format with no template constraints.	To the degree this sentence has any meaning (which is not apparent), this is available to exactly the same extent for the text-based PDFs that applicants submit today, if only the PTO would stop degrading them. To the contrary, the three-document requirement is a template constraint. But this also highlights the potential loss to applicants of advanced word processing features.
[DOCX] also improves data quality by supporting original formats for chemical formulas, mathematical equations, and tables.	This is false. DOCX will *increase* data conversion errors. Various word processors use several different third-party plug-in packages for chemical formulas and mathematical equations, and they differ. However, as rendered in a PDF, they are all consistent. The supposed benefits are available to a *greater degree* with the text-based PDFs that applicants submit today.

The originally submitted structured text document is available within Private PAIR, allowing easy retrieval of original DOCX files after transfer of cases between users.	It is very rare that when a case moves from one practitioner to another, that the old practitioner won't do the courtesy of transferring original working documents. Of the "costs" and "benefits" imagined in the NPRM, this is the only one that a value in the PTO's direction, but it's vanishingly small.

This is a failure of the obligation to disclose rationale. If there is any sound cause-and-effect between the proposal and the asserted benefits, they are not explained in the NPRM. That is arbitrary and capricious under the Administrative Procedure Act.

4. Alternative suggestions

Our preferred solution is to change nothing on the applicant's side—applicants should continue to file text-based PDFs. Instead, the PTO should change—discontinue degrading those text-based PDFs into flattened bitmap PDFs.

Another option to consider is the example of WIPO: WIPO permits the applicant, at the time of filing an international patent application, to provide not only the character-based version of the patent application (XML, in the case of PCT), but also the "pre-conversion format" of the document. This is explained in the PCT Administrative Instructions § 706, at https://www.wipo.int/pct/en/texts/ai/s706.html. The idea is that if later it turns out that some flaw arose in the generation of the XML file, or some flaw in the way the XML got rendered into human-readable form, the applicant would be able to point to what the application looked like in its "pre-conversion format".

As a precondition to imposing a $400 penalty for non-DOCX filings, the PTO should provide the practitioner the option to provide a PDF version of the patent application being filed, along with the DOCX file. This PDF version would serve as the controlling version in the event that (for example) the PTO rendered the DOCX incorrectly.

It is clear that the PTO never actually tested its DOCX e-filing system with any word processor other than Microsoft Word. And the software in the PTO's e-filing system fails to handle correctly even a very simple DOCX file created using Libre Office. It is recalled (see above) that Libre Office is one of the word processors that the PTO points to as (supposedly) being supported by the PTO in its patent e-filing system.

DOCX files are more prone to viruses and malicious code.

5. Legal deficiencies in the DOCX proposal

The PTO's materials state that the fee is intended to "encourage" applicants to do something. That violates the limits of § 10(b)(2), and it is an unconstitutional "tax." See §§ I.B.1 and I.C.

The PTO's current DOCX system requires that a single document be split into three, the specification, claims, and abstract. But that breaks page numbering and other automatic formatting features provided by Word. The PTO's Paperwork Reduction Act analysis fails to consider this and similar costs.

How will shifting from PDF to DOCX affect applicants' recordkeeping requirements and costs? There is a lot of benefit to PDF's—with a PDF, it is always clear *exactly* which version was submitted to the PTO, even if there were many versions of the DOCX. A PDF *always* looks exactly the same, no matter what computer it is opened on, no matter what font cartridge happens to be loaded in a given printer. The same cannot be said for DOCX files. We have had situations where a Word document printed on one printer has one more line per page than when printed on another printer—trying to page-cite to a document that is in the PTO's IFW will be unreliable. The PTO will have to estimate the recordkeeping costs of this randomness, costs of reviewing every submission before hitting "submit," and the costs of developing and changing recordkeeping practices, under the Paperwork Reduction Act. And all transition costs.

Drawing submissions are generally in PDF file format and generally cannot easily be made in the DOCX format, so the Office will receive PDF submissions anyway. This is particularly true for provisional applications, where drawings embedded in the text are especially common. The PTO will have to confer with the public to estimate those costs.

The NPRM states that this rule is a "transfer payment from one group to another." This is false. The operative definition of "transfer payment" is in OMB Circular A-4;[19] the original definition involved cash payments to private sector actors (such as social security, poverty and food assistance programs, and other social benefit programs), and the definition has grown to cover other direct cash transfers among private sector entities (for example, prices set at supracompetitive levels). In contrast, the NPRM is calls for funds to be paid from private sector persons to government for government consumption. The NPRM discusses no monetary payout to any private sector party, the essential characteristic of a "transfer payment."

The PTO cannot legally go forward with the annual practitioner fee from this NPRM. If the PTO wants to impose such a fee, it must re-propose with a new NPRM, which contains a complete and truthful Regulatory Flexibility Analysis, Paperwork Reduction Act certification, and E.O. 12866 Regulatory Impact Analysis, and E.O. 13771 statement, each discussing the factors we raise below, and showing positive benefit-cost.

B. The "annual practitioner fee" and CLE discount

The proposal proposes to create new fees for "Annual Active Patent Practitioner Fee … without certifying continuing legal education (CLE) completion" and "…with certifying continuing legal education (CLE) completion."

At PPAC stage, the PTO was completely silent on rationale for creating the annual fee (there were a few sentences of rationale for the CLE discount, but not for the fee). The rationale offered in the NPRM is (84 Fed. Reg. at 37415):

> Currently, the costs of OED's disciplinary and other functions are paid by patent applicants and owners. The Office proposes these fees so that practitioners, who directly benefit from registration, should bear the costs associated with maintaining the integrity of their profession, including the costs of OED's register maintenance and disciplinary

[19] OMB Circular A-4, *Regulatory Analysis*, at 38 (Sept. 17, 2003), https://www.whitehouse.gov/sites/whitehouse.gov/files/omb/circulars/A4/a-4.pdf

> functions. This parallels the way many state bars operate where the services of maintaining the bar are often paid by the attorneys who are members of that bar. Accordingly, these fee collections are proposed to shift the costs of the services OED provides practitioners in administering the disciplinary system and register maintenance from patent applicants and owners to the practitioners.
>
> … The fees would also serve to fund the Patent Pro Bono Program and the Law School Clinic Certification Program, which increase public access to competent legal representation in IP matters, help enhance the IP legal profession for its members, and serve to make the patent examination process more efficient by decreasing the number of pro se applicants. In addition, the fee would help to cover the costs of increased outreach efforts, including speaking engagements and providing additional training opportunities to help patent practitioners receive the CLE discount…

In addition, PPAC stated that the annual fee would "make certain that the roll of registered practitioners is up-to date and to defray the patent related costs of operating the Office of Enrollment and Discipline (OED)." These rationales confess that the "annual practitioner fee" is beyond the PTO's authority under § 10, and violates the IOAA:

- For maintaining a current roll of active practitioners, the Paperwork Reduction Act requires that the PTO seek the lowest-burden alternative. What's the matter with an annual paper survey, an email ping, or a reminder to any practitioner that hasn't logged into his/her myuspto account for a year?
- For "defraying operating cost," where's the statutory authorization?
- The IOAA limits agency user fees to cover specific services to a specific "identifiable recipient," at the cost of providing that service or the value to the recipient, but may not recover agency general operating costs (see § I.D and note 7 of this letter). The NPRM never mentions the IOAA, let alone any exception.

The NPRM is entirely silent on several legally-required issues relating to the annual practitioner fee proposal:

- The materials identify no statutory authorization. § 41(d)(2)(A) permits the Director to "establish fees for all other processing, services, or materials." One of the comment letters to the PPAC directly challenged the PTO to identify a specific "processing, service or material" that is provided;[20] by silence, the NPRM concedes there is none. § 2(a)(2)(D) authorizes the Director to "govern recognition and conduct of agents [and] attorneys," but no fee is authorized as part of § 2(a)(2)(D).
- AIA § 10(a)(1) only authorizes the Director to "adjust by rule any fee *established, authorized, or charged under title 35*." § 10 does not authorize creating new fees, only adjusting existing fees (see § I.B.2). Because this is not a fee within the AIA § 10, the Independent Offices Appropriations Act applies. The IOAA and its implementing case law limit the PTO's ability to set levels of new user fees—the PTO may charge fees to

[20] letter of David Boundy to PPAC, Sept. 12, 2018, https://www.uspto.gov/sites/default/files/documents/David_Boundy.pdf at page ___.

cover actual cost, but not to create cross-subsidies, or to influence behavior.[21] Thus, at highest, an annual practitioner fee can be at cost-recovery *for the services provided to the specific "identified recipient."*

- The NPRM identifies no legally-permissible reason for it. E.O. 12866 § 3(f)(1) requires that the PTO "identify the problem that it intends to address (including, where applicable, the failures of private markets or public institutions that warrant new agency action) as well as assess the significance of that problem." The Administrative Procedure Act also requires a statement of rationale at proposal stage. The only explanations of either need or benefit for an annual practitioner fee, at the level required by E.O. 12866, are both illegal.
- E.O. 12866 § 3(f)(1) requires that the PTO "assess both the costs and the benefits of the intended regulation and, recognizing that some costs and benefits are difficult to quantify, propose or adopt a regulation only upon a reasoned determination that the benefits of the intended regulation justify its costs." There is no estimate of either costs or benefits, and thus no balancing against the *status quo*.
- The Paperwork Reduction Act requires the PTO to account for costs for reporting, recordkeeping, and other compliance costs. The NPRM is silent.
- The PTO must analyze costs for all patent agents, who are not admitted to the bar of any state, and thus have no existing CLE requirement that would overlap with any Patent Office Requirement.
- The PTO must analyze costs for all patent attorneys who are admitted to the bars of any state that does not impose an existing CLE requirement that would overlap with any Patent Office Requirement.
- A great fraction of all practitioners work for small entities. Thus, the Regulatory Flexibility Analysis (84 Fed. Reg. 37425-30) must analyze the effect of the annual practitioner fee on these small entities. It does not. It would be unlawful for the PTO to proceed further with this proposal without an Initial Regulatory Flexibility Analysis.
- The PTO must be able to *certify* that the requirement is "*necessary* for the proper performance of the functions of the agency." 44 U.S.C. § 3506(c)(3)(A). The PTO has run a practitioner registration program for the better part of a century without an annual practitioner fee or CLE requirement—why have they suddenly become "*necessary*?"
- The PTO must be able to *certify* that the requirement is implemented in ways "consistent and compatible, to the maximum extent practicable, with the existing reporting and recordkeeping practices of those who are to respond," including for those attorneys in states that do not have existing CLE requirements, and for all agents.
- "The USPTO proposes to add paragraph (d) to § 11.8 to establish a new fee to be paid annually by practitioners." 84 Fed. Reg. 37422 at col. 1. The E.O. 13771 certification, at 84 Fed. Reg. 37430, states "this proposed rule is expected to involve a transfer payment." These two sentences cannot both be true. The latter is a falsehood: the annual

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[21] *See* §§ I.B.1 (legislative history), I.C (constitutional taxing power), and I.D (IOAA) above, and Katznelson, *Scope of Fee-Setting Authority*, note 4, *supra*.

practitioner fee does not fit any of the applicable definitions of "transfer payment" (see § IV.C).

- The PTO proposes that "[T]hrough the encouragement of practitioner CLE by offering a $100 annual fee discount as well as recognition on OED's public practitioner search page, the patent system should benefit greatly." NPRM, 84 Fed. Reg. at 37415. If it's about "encouraging," it's an unconstitutional tax.
- The PTO proposes that "Encouraging CLE, by offering a discount, will improve the quality of the bar and therefore of the resulting patents." *Detailed Appendix* slide 65. If it is about "encouraging," it is an unconstitutional tax.
- This fee would raise about $5 million per year for the PTO. The Paperwork Reduction Act requires that the PTO estimate *all* costs—searching for appropriate CLE courses, travel, attendance, fees for the courses, tracking the paperwork, recordkeeping, submitting it to the PTO, docketing the annual act of paying the fee, firm administration to ensure that all practitioners are up to date, and the like. Multiplying out some estimated numbers, it seems that added costs would lie in the range of $40-$100 million per year. Before proceeding, the PTO will have to show public benefit in the same range, and that the annual fee is the least costly way to achieve the benefit. (The burden of proof is on the agency.) OED gets its current funding out of the general patent fund—no paperwork muss, no fuss. What's wrong with that?
- The NPRM states "The collection of information involved in this proposed rule has been reviewed and previously approved by OMB under control numbers 0651–0012, 0651–0016, 0651–0020, 0651–0021, 0651–0031, 0651–0032, 0651–0033, 0651–0059, 0651–0063, 0651–0064, 0651–0069, and 0651–0075." This is false. If there were any such approval, it would be under control number 0651-0012 "Admission to Practice and Roster of Registered Patent Attorneys and Agents" and it is not in the current inventory.[22] The PTO has made no filing seeking any substantive change to 0651-0012 since 2014.[23]

Circular A-4 then requires that the agency "Quantify and monetize the benefits and Costs" and "evaluate non-quantified and non-monetized benefits and costs." The PTO has not done so, except to state "The Office … found that the proposed rule has significant qualitative benefits with no identified costs" (84 Fed. Reg. 37401). The NPRM does not specify what those "qualitative benefits" are for the practitioner fee. The absence of "identified costs" tells more about the quality of the Office's analysis than about costs.

The laws that govern regulatory analysis required the PTO to perform a benefit-cost analysis, and make the analysis public so that the public could meaningfully participate in the PPAC hearing. Maybe an annual practitioner fee is a good idea. Maybe not. Maybe it would be counterproductive to the PTO's budget—maybe the costs of administration would nearly eat up the revenue. Regulatory analysis is mandatory precisely to ensure that agencies do not leap before they look, and benefits the agency when the agency can show the public that it is acting for public benefit, not for agency benefit.

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[22] https://www.reginfo.gov/public/do/PRAICList?ref_nbr=201712-0651-022

[23] https://www.reginfo.gov/public/do/PRAOMBHistory?ombControlNumber=0651-0012

Regulatory analysis is not just something that agencies get around to when they feel like it; it is something that law-abiding agencies do for every regulation that "that is likely to result in a rule that may … have an annual effect on the economy of $100 million or more or adversely affect in a material way the economy,"[24] under the Executive Order 12866 and Circular A-4. It is something agencies do for any regulation that requires the public to submit paperwork to the agency, under the Paperwork Reduction Act.[25] Because a high fraction of patent practitioners are employed by small entities, analysis under the Regulatory Flexibility Act is also required.

C. The proposal to increase fees for second RCEs

1. The selective disclosure of factual information is problematic

Fees for RCEs are authorized to be set by the Director. They are not specifically scheduled in § 41, but they are "authorized." Therefore, § 10 allows the PTO to set those fees. However, § 10 only supersedes one requirement of the IOAA, and leaves all other fee-setting laws in place (see § I.D of this letter). The PTO may not set fees to "encourage" or "discourage," (see §§ I.B.1 and I.C), and must honor the provisions of the IOAA that are not waived by § 10(a)(2), and must honor the non-waivable constitutional limits against executive branch "taxation."

The cost materials provided to the PPAC showed unit costs for "RCE—1st request" and "RCE—2nd and subsequent."[26]

	proposed fee	unit cost FY 2017
Request for Continued Examination (RCE) - 1st Request (see 37 CFR 1.114)	$1,360	$2,235
Request for Continued Examination (RCE) - 2nd and Subsequent Request (see 37 CFR 1.114)	$2,000	$1,654

If "RCE 2nd request" is ***lower*** in unit cost, then how can the PTO justify setting the "2nd and subsequent request" fee ***higher***? The PTO's 2013 and 2016 rule notices *have* offered justification for this fee—an illegal justification. The PTO's very own words make clear that the "2nd and subsequent" fee is a tax, and therefore unlawful.

At NPRM stage, how does the PTO handle this anomaly? By excising the "inconvenient" information. The "USPTO Section 10 Fee Setting – Activity-Based Information and Costing Methodology" document[27] simply omits any discussion of "2nd and subsequent request"—note how each line only discusses "1st request:"

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[24] Executive Order 12866 § 2(f)(1).

[25] 44 U.S.C. § 3506.

[26] Table of Patent Fees – Current, Proposed and Unit Cost, https://www.uspto.gov/sites/default/files/documents/Table_of_Patent_Fees_-_Current_Proposed_and_Unit_Cost.xlsx (Sept. 22, 2019)

[27] https://www.uspto.gov/sites/default/files/documents/ABI_Methodology_July2019.docx

1312/2312/3312	Design Examination Fee	II
[redacted]		
1801/2801/3801	Request for continued examination (RCE) (1st Request) (see 37 CFR 1.114)	III

1312/2312/3312	Design Examination Fee	$ 380	$ 317	$ 387
1801/2801/3801	Request for continued examination (RCE) (1st Request) (see 37 CFR 1.114)	$ 1,553	$ 1,329	$ 1,533

Contributing Activity Unit Cost Adjusted for Frequency of Occurrence approach. However, this approach is applied to two scenarios: (1) the cost of a single application with no request for continued examination, and (2) the cost of a single application with one request for continued examination. For some activities, different frequency factors are applied for each scenario

TABLE 12 –FY 2011 Cost for Single Application with One Request for Continued Examination

TABLE 13 –FY 2011 Cost for Single Application with No Request for Continued Examination

TABLE 14 –FY 2010 Cost for Single Application with One Request for Continued Examination

TABLE 15 –FY 2010 Cost for Single Application with No Request for Continued Examination

TABLE 16 –FY 2009 Cost for Single Application with One Request for Continued Examination

TABLE 17 –FY 2009 Cost for Single Application with No Request for Continued Examination

The omission, after including it in previous documents, certainly appears to be entirely intentional. Omission of information that is known to the PTO and that known to be contrary to a position stated by the PTO is deeply problematic.

2. The higher fee for "2nd and subsequent RCE" is unlawful

- The 2019 NPRM does not state any rationale for the "2nd and subsequent RCE fee" to be different than the 1st, let alone higher. Without an explanation, this is "arbitrary and capricious."
- RCE fees are governed by the IOAA, except for the one requirement that is carved out by AIA § 10 (see § I.D of this letter). Thus, the PTO may charge its actual cost, plus a proportional share of general administrative costs, reduced by a proportional share of issue and maintenance fees. But no more than that. The excess charge for second RCEs is unlawful.
- The 2012 NPRM explained that the "2nd and subsequent RCE fee" was intended to "Multipart RCE fees demonstrate how the Office seeks to facilitate the effective administration of the patent system and offer patent prosecution options to applicants." That admission makes the 2nd-and-subsequent RCE fee an unconstitutional "tax" (see § I.C of this letter).

- This tends to hurt small entity applicants, and small entity law firms. Small entity applicants' applications. The Initial Regulatory Flexibility Analysis offers no explanation justifying that differential effect on small entities.
- More-innovative inventions tend to take longer prosecution times than small incremental inventions—inventors are less willing to compromise to just "take a weak patent and run." The higher charge for "2nd and subsequent RCEs" penalizes exactly the more-inventive inventions that the patent system is supposed to encourage. E.O. 12866 § 1(b)(5) requires that the PTO explain any regulation that impairs "incentives for innovation." The NPRM fails to do so.
- E.O. 12866 § 1(b)(2) directs agencies to "examine whether existing regulations (or other law) have created, or contributed to, the problem that a new regulation is intended to correct " In 2012, the PTO requested comment on RCE practice.[28] Several of the comment letters[29] noted that at least in part, extended RCE practice was driven by a breakdown of "compact prosecution"—Office Actions were less complete, less careful, less responsive to applicants' arguments. We have not observed any effort by the PTO to address its "existing regulation" half of the problem—for example, the PTO has not recalibrated the count system to remove incentives for gaming by examiners, or provided sound supervision to ensure completeness of Office Actions. E.O. 12866 suggests that it's inappropriate to shift costs to the public for a failure of the PTO to implement its own self-regulatory obligations.

D. The restructuring of appeal fees exceeds the PTO's authority under AIA § 10

The change from "notice of appeal" and "filing a brief in support of an appeal" of § 41(a)(6) was restructured into "notice of appeal" and "forwarding an appeal to the Board" as in 37 C.F.R. § 41.20(b)(1) and (4). That is unlawful, and needs to be backed out.

The proposed fees are entirely out of line with the statutory fees. This is especially concerning, given the high rate of reversal (when reversals at pre-Appeal stage, Appeal Brief stage, and final decision stage are added together, the reversal rate is well over 50%, and last

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[28] https://www.uspto.gov/patent/laws-and-regulations/comments-public/comments-request-comments-request-continued-examination

[29] IEEE-USA, https://www.uspto.gov/sites/default/files/patents/law/comments/ieee_20130204.pdf ("the PTO's current compensation system provides examiners with considerable incentives to *delay*."); ABA-IPS, https://www.uspto.gov/sites/default/files/patents/law/comments/aba-ipl_20130201.pdf ("reducing the number of RCE applications requires increasing education of … examiners, with appropriate incentives"); Kenneth Fagin, https://www.uspto.gov/sites/default/files/patents/law/comments/fagin_20130311.pdf ("I believe the primary causes for the growing RCE backlog lie with the PTO"); Bruce Hayden https://www.uspto.gov/sites/default/files/patents/law/comments/hayden_20130308.pdf ("Better enforcement of MPEP requirements for proper examination and for marking OA as final"); Mark Levine, https://www.uspto.gov/sites/default/files/patents/law/comments/levine_20130212.pdf ("[T]he most significant factor contributing to the need to file an RCE … is the poor and improper examination practices in first actions. … Another possible factor contributing to the need to file an RCE is the tendency for examiner's to improperly make second actions final. This is so because the current count system at the USPTO incentivizes such practices.")

time all the data were assembled, was in the mid-80% range. Appeal is a cost largely created by poor examination quality, not a cost created at the instance of applicants). In drafting § 41, Congress had the PTO's data in hand to understand the PTO's cost structure. Congress set the fees for appeal at a fraction of the actual cost. Congress could easily have had in mind that appeal fees should not penalize applicants for examiners' mistakes. Instead, Congress might well have believed that the PTO should have financial incentives and supervisory oversight to ensure that unfounded rejections are withdrawn before the PTO bears the cost of an appeal. The PTO's fee structure interferes with those (inferable) Congressional concerns.

	§ 41 fee	proposed fee	unit cost FY 2017
Notice of Appeal	540	800	17
Filing a Brief in Support of an Appeal	540	0	n/a
Forwarding an Appeal to the Board	unauthorized	2240	5147
Request for Oral Hearing	1080	1300	1566

And at any rate, for reasons discussed §§ I.B.1 and I.C, the PTO lacks statutory and constitutional authority to second guess Congress' policy balances encoded in the appeal fee line items.

E. Other specific examples of unlawful fees

A number of line items in the proposed fee schedule are problematic:

- **Maintenance fees.** The "Detailed Appendix" slides (slide 64) propose that the PTO wants to "restructure issue and maintenance fees," to rebalance the ratio between "back-end" maintenance fees vs. "front-end" processing fees. Congress already made the policy choice: initial filings should be cross-subsidized by maintenance fees, at approximately 50%.[30] Congress (by inference) felt it important to encourage filing, and allow successful patentees to cross-subsidize filing. Constitutionally, it is beyond the PTO's authority to second-guess Congress' policy balance and "tax" to effect the PTO's preference. Under the APA, this is rulemaking relying on "factors which Congress has not intended [the agency] to consider," one of the categories of agency action that is arbitrary and capricious nearly *per se*.[31] The PTO departed from Congress' intent in 2013, and should move back.

- **Raising the late surcharge for maintenance fees** to "encourage" earlier payment. Congress determined that the public should have clear notice of abandonment on the 4th, 8th, and 12th anniversaries. The PTO disagrees, and thinks the public should know on the 3½, 7½. and 11½ anniversaries. The PTO identifies no statutory delegation of

[30] That is not just the statutory language; it's in the legislative history. Pub. L.96-517, 94 Stat 3015 (Dec. 12, 1980); See H. Rep. 96-1307(I),8-9 (1980) (patent applicants should bear the office's patent costs through the payment of fees split in equal amounts between application "processing" fees and post-grant "'maintenance"' fees).

[31] *Motor Vehicle Mfrs. Ass'n v. State Farm Mutual Auto. Ins. Co.*, 463 U.S. 29, 43 (1983).

> authority for it to hold such an opinion, let alone act on it. Nor does the PTO explain how any rational competitor could reasonably rely on a failure to pay a maintenance fee in the first half of the window to commence investment during the second half—no lawyer would advise a client to undertake the risk of commercial exploitation based on such flimsy information. If this is a good idea, then it is a good idea to secure through a proper law, by Congress.

III. The "operating reserve"

We agree in principle with the PTO's operating reserve. But we see no statutory authorization.

The operating reserve is not fairly within the text of AIA § 10, which limits PTO fee collections to "only" aggregate costs. The House report reinforces this reading.[32] Neither the 2012 Notice of Proposed Rulemaking nor the 2013 Final Rule notice discuss statutory authority for the operating reserve.[33] It is inconsistent with the IOAA, which bars agencies from collecting user fees to cover agency priorities, unless Congress grants express authority.

Further, the legislative history suggests that Congress intended that the PTO *not* have an operating reserve. In fall 2011, Sen. Coburn proposed an amendment that would have given the PTO an operating account outside the normal appropriations process, which (arguably) would have given the PTO the authority to raise funds that it could hold for its own future expenditures. That amendment was not adopted, because of constitutional concerns—an agency can only spend when the money is *appropriated*.

Sen. Coons' "Big Data for IP Act" S.2601[34] would have added a statutory authorization for the operating reserve. But that did not become law.

A good idea is only a good idea if it's legal. If the PTO has no statutory authority for the operating reserve, we urge the PTO to consider whether acting outside the law, just because it seems like a good idea, is in fact a good idea. The PTO only succeeds to the extent that the public is confident in the PTO's commitment to the rule of law and its mission. Conversely, a lawless act by senior officials percolates down, and might contribute to a culture of disrespect for the rule of law within the rest of the agency. Respect for the rule of law builds good will with stakeholders outside the agency. Is the operating reserve worth compromising that?

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[32] See excerpts from the House report at § I.B.1 at page 5.

[33] Patent and Trademark Office, *Setting and Adjusting Patent Fees, Final Rule*, 78 Fed. Reg. 4212 (Jan. 18, 2013)

[34] https://www.congress.gov/bill/115th-congress/senate-bill/2601

IV. Procedural violations

A. Independent Offices Appropriations Act and Circular A-25

The Federal Register Notice does not even mention the IOAA and circular A-25, which are the general framework statute and Presidential interpretation for agencies that charge user fees. How can an agency comply with a law that it so pointedly ignores?

B. Executive Order 12866

The NPRM states (84 Fed. Reg. at 37401, col. 1):

> The Office did not identify any monetized costs and benefits of the proposed rule, but found that the proposed rule has significant qualitative benefits with no identified costs.

This statement strains credulity:

- The whole point of the rule is to raise fees, by hundreds of millions of dollars. "No identified costs?"
- The comment letters to PPAC identified substantial costs to the public for the DOCX problem, and additional costs are explained in this letter. "No identified costs?"
- The "annual active practitioner fee"—"no identified costs?"

But why has there never been an analysis of the alternative required by statute and the Constitution, raising all fees proportionally from the baseline set by Congress, with deviations only where the PTO has specific data to support a deviation? After all, that is the constitutionally required alternative—the current fee schedule, with its incentives here and disincentives there, is an unconstitutional "tax." Considering only phony strawmen as "alternatives" is not compliant with the PTO's obligations under the letter of the law,[35] and cannot be reconciled with the "regulatory philosophy" or spirit of the law. Artificially narrowing the options is arbitrary and capricious *per se*.[36] Indeed, developing and vetting alternatives is one of the essential goals of the notice and comment process.[37]

C. Executive Order 13771

The NPRM states (84 Fed. Reg. at 37430 at col. 2):

> This proposed rule is not expected to be subject to the requirements of Executive Order 13771 (Jan. 30, 2017) because this proposed rule is expected to involve a transfer payment.

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[35] An "agency must consider reasonably obvious alternatives and, if it rejects those alternatives, it must give reasons for the rejection…" *Yale-New Haven Hosp. v. Leavitt*, 470 F.3d 71, 80 (2d Cir. 2006).

[36] *Pillai v. Civilian Aeronautics Board*, 485 F.2d 1018, 1027 (D.C. Cir. 1973).

[37] *Owner-Operator Independent Drivers Ass'n v. Fed Motor Co.*, 494 F.3d 188, 199–203 (D.C. Cir. 2007) (rule invalid when agency failed to disclose the data and assumptions on which it based its benefit-cost analyses); *Home Box Office Inc. v. Federal Communications Comm'n*, 567 F.2d 9, 36 (D.C. Cir. 1978) ("an agency proposing informal rule-making has an obligation to make its views known to the public in a concrete and focused form so as to make criticism or formulation of alternatives possible").

The claim to the "transfer payments" exemption is false, for at least three reasons:

- The definition of "transfer payment" is in OMB Circular A-4.[38] Payments from the private sector to government for government consumption are not "transfer payments."
- Any carve out from Executive Order 13771 for "transfer payments" is limited to "Federal ***spendin***g regulatory actions that cause ***only*** income transfers between taxpayers and program beneficiaries" (that is, the side that results in payment to a private sector entity, not the government revenue side of the transaction), and "action that establishes a new fee or changes the existing fee for a service, ***without imposing any new costs***"[39] The "annual practitioner fee" and addition of a PDF surcharge are new fee collections from the private sector for consumption by government. Neither is within any carveout.
- OMB's *Implementing Guidance* states the scope of E.O. 13771 such that E.O. 13771 covers at least the annual practitioner fee and surcharge for PDF filing: "[R]egulatory actions [that] impose requirements apart from transfers … need to be offset to the extent they impose more than *de minimis* costs. Examples of ancillary requirements that may require offsets include *new reporting or recordkeeping requirements* or *new conditions, other than user fees*, for receiving a grant, a loan, or a permit." The fee-setting portion of the rule, and the annual practitioner fee and PDF surcharge are directed to covered payments from the public to government, not transfer payments from one private sector person to another.

At least parts of the NPRM are covered by EO 12866 and 13771. The claim for complete exemption is false.

These statements are directed to OMB review under the Paperwork Reduction Act and Executive Orders 12866 and 13771, and the Small Business Administration under the Regulatory Flexibility Act. In all these proceedings, OMB and SBA act *ex parte*. The PTO is cautioned to observe Virginia Bar Rule 3.3(c).[40]

D. The Regulatory Impact Statement fails to consider mandatory issues

This fee-setting regulation is "likely to result in … annual effect on the economy of $100 million or more," E.O. 12866 § 3(f)(1), and thus requires a full Regulatory Impact Analysis under Circular A-4. The RIA in the NPRM only considers non-starter alternatives like not raising fees at all, setting all fees at actual cost, applying only inflation adjustment. Of course, against these nonstarter strawmen, the PTO's preferred alternative looks really good. But that's

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[38] OMB Circular A-4, *Regulatory Analysis*, at 38 (Sept. 17, 2003), https://www.whitehouse.gov/sites/whitehouse.gov/files/omb/circulars/A4/a-4.pdf

[39] Executive Order 13771, Reducing Regulation and Controlling Regulatory Costs (Jan. 30, 2017), https://www.federalregister.gov/documents/2017/02/03/2017-02451/reducing-regulation-and-controlling-regulatory-costs ; OMB Memorandum M-17-21, *Guidance Implementing Executive Order 13771, Titled "Reducing Regulation and Controlling Regulatory Costs"* Q&A 13 (Apr. 5, 2017), https://www.whitehouse.gov/sites/whitehouse.gov/files/omb/memoranda/2017/M-17-21-OMB.pdf

[40] https://www.vsb.org/pro-guidelines/index.php/rules/advocate/rule3-3/

not the way an RIA is supposed to work. The agency is supposed to compare the good approaches, not one plausible one against several bad ones.

A keyword search in the Regulatory Impact Analysis (both the 2019 RIA and the 2016 and 2013 RIA's) for words that ought to be there under OMB Circular A-4, aren't there. The required analysis is omitted.

The alternatives considered in the Regulatory Impact Analysis are strawmen, chosen to be unrealistic. Why is there no analysis of the proportional lockstep fee hike, relative to § 41 as a baseline?

The factors that an agency is directed to consider under Circular A-4 are designed to assist agencies in considering a range of regulatory alternatives, and to choose from among them to ensure that the agency considers all applicable laws, all applicable economic effects, and balances all regulatory priorities. As we noted in the opening to this letter, the laws are there to ensure that the PTO acts in the public interest. These laws are not "bureaucratic sport" or needless burden to be ignored.

Respectfully submitted,

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Attachments:

Exhibit A: Ron D. Katznelson, *The U.S. Patent Office's Proposed Fees Under the America Invents Act—Part I: The Scope of the Office's Fee-Setting Authority*, 85 BNA PAT. TM & COPYRIGHT J. 206 (Dec. 7, 2012).

Exhibit B: A copy of this letter prepared from the .docx of this letter after processing by "compatible" word processors

Fifty Patent Practitioners

September 27, 2019

Via Email fee.setting@uspto.gov

Brendan Hourigan, Director of the Office of Planning and Budget
Mail Stop—Office of the Chief Financial Officer
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313–1450

Re: Setting and Adjusting Patent Fees During Fiscal Year 2020, 84 Fed. Reg. 37398 (Jul. 31, 2019)

Dear Mr. Hourigan:

We write as patent practitioners to comment on a Notice of Proposed Rulemaking (NPRM), *Setting and Adjusting Patent Fees During Fiscal Year 2020*.[1] REF _Ref523926138 \w \h * MERGEFORMAT The signatories are members of several email listserv groups, a community of patent practitioners. The signatories taken together filed over 14,000 patent applications at the PTO during the past ten years, and taken together they paid over $35 million dollars in fees to the PTO in the past ten years.

We are deeply troubled by several aspects of this proposal:

· The PTO is an executive branch agency, not a private-sector company. The PTO is subject to many laws that are not recognized in the proposal. Various elements of this proposal violate laws that are not discussed.

· There are a number of plain errors in the factual statements and rationale for the DOCX proposal, the annual practitioner fee proposal, and several of the "Rulemaking Considerations" sections.

· The costs of several of the proposed rules are substantial; yet the only discussion is "The Office did not identify any monetized costs and benefits of the proposed rule, but found that the proposed rule has … no identified costs." This sentence implies more about the quality of the Office's analysis than it does about the merits of the proposed rules. This letter identifies *dozens* of costs that were not accounted for as required by various statutes.

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[1] U.S. Patent and Trademark Office, *Setting and Adjusting Patent Fees During Fiscal Year 2020*, Notice of Proposed Rulemaking, 84 Fed. Reg. 37378 (Jul. 31, 2019).

TABLE OF CONTENTS

I. Laws that govern fee-setting

A. Two different laws clarify that the PTO may not use fee-setting as a policy lever to "encourage," "discourage," "incentivize," or "disincentivize"

The legislative history of the AIA makes abundantly clear that the PTO may not use fee-setting as a policy lever. Fee setting may be used ***only*** to recover aggregate costs. Likewise, the United States Constitution denies agencies the authority to set fees for anything other than cost recovery—setting fee levels to "encourage or discourage" is a "tax," and agencies do not have authority to tax.

Assembling all the relevant laws yields the following algorithm that the PTO must use to set fees:

1. Start with the statutory fee numbers in 35 U.S.C. § 41(a), (b), (d), and (h). The PTO may increase all fees in proportional lockstep to a level that "recovers the aggregate estimated costs." Congress exercised its policy-setting authority when it embedded various cross-subsidy levels into § 41. Once Congress has done so, the PTO cannot raise one fee or lower another to incentivize or disincentivize applicant conduct, to "encourage innovation," or any of the other policy-based rationales stated in the NPRM. This is discussed in §§ I.B.1 and I.C.

1. The PTO has authority to break out of this proportional lockstep on the following conditions:

    a. For any service or processing activities where the PTO performs some affirmative act or delivers some material object, that are not covered by the specific enumerated fees of § 41, the PTO may price the service at cost.

    b. The Patent Act gives the Director unfettered discretion to set a few fees, with no criteria. For example, §§ 311(a) and 321(a) give the Director authority to set fees for IPRs and PGRs with essentially no constraint, other than that they be "reasonable" after "considering … aggregate costs." This is discussed at § I.D.

    c. When the Patent Act authorizes fee-setting exempt from cost recovery. Examples include § 2(b)(2)(G) for prioritized examination, § 312(a)(1) for IPR petitions, and § 322(a)(1) for PGR petitions. These three statutes grant exemptions from cost recovery or the § 41 schedule.

    d. Where the PTO has specific line-item data showing that a specific line item's costs have risen at a rate faster or slower than general costs (it would be the *rate of change*

that matters, not the cost itself). In that case, the PTO could exercise the "cost of providing the service" authority of the Independent Offices Appropriations Act (IOAA) to break that line item out of the proportional lockstep, by the degree of the faster or slower cost rise.

1. However, there are things the PTO cannot do:

   e. The PTO may not set fees to encourage or discourage any activity (see §§ I.B.1 and I.C).

   f. The PTO may not create new fees where no fees are "***established, authorized, or charged***" in Title 35, and there is no affirmative material, service, or processing provided.

   g. The PTO may not re-allocate fees among the categories specified in § 41; new fees may be created only where the PTO has a specific statutory authorization (see § I.B.2).

   h. The PTO may not set fees without a benefit-cost analysis under the Paperwork Reduction Act and Executive Order 12866—for example, the PTO may not reduce its own costs if that would increase costs on the public disproportionately (see § I.F).

The NPRM explains four "key fee-setting policy factors" (84 Fed. Reg. at 37402 col. 1-2):

- promoting innovation strategies;
- aligning fees with the full cost of products and services;
- facilitating the effective administration of the U.S. patent system; and
- offering patent processing options to applicants.

If it's "policy," it's not within the PTO's power to address by fees.[2] REF _Ref523926138 \w \h * MERGEFORMAT Bullet 2 is within the PTO's § 10 authority. Bullets 1 and 3 are not. Bullet 4 may be authorized when the PTO has a specific authorization such as § 2(b)(2)(G) (prioritization) or § 41(d)(2)(A) first sentence (requiring cost recovery and only cost recovery for services not otherwise covered in § 41), but not otherwise.

The NPRM concedes that fees are being set to incentivize, disincentivize, and to "set fees to facilitate the effective administration of the patent and trademark systems." That is not within the PTO's authority. It is contrary to statute, and unconstitutional.

A. Section 10 of the America Invents Act

1. The AIA legislative history is clear: PTO may set fees *only* to recover aggregate cost—Congress specifically *removed* any implication of authority to use fees as a policy lever

The relevant section of the AIA reads as follows (emphasis added):

(a) FEE SETTING.—

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[2] The broadest grant of "policy" authority is in 35 U.S.C. § 2(a)(2)(A)—the Director has authority to "provide policy direction … for the Office" but not for the public or patent system.

> (1) IN GENERAL.—The Director may set or adjust by rule ***any fee established, authorized, or charged under title 35***, United States Code, or the Trademark Act of 1946 (15 U.S.C. 1051 et seq.), ***for any services performed by or materials furnished b***y, the Office, subject to paragraph (2).
>
> (2) FEES TO RECOVER COSTS.—Fees may be set or adjusted under paragraph (1) ***only to recover the aggregate estimated costs*** to the Office for processing, activities, services, and materials relating to patents (in the case of patent fees) and trademarks (in the case of trademark fees), including administrative costs of the Office with respect to such patent or trademark fees (as the case may be).

Section 10 as originally introduced in 2011 read as follows (2011 Cong. Rec. Sen. S139-S140 (Jan. 25, 2011), see also version as presented for Senate floor debate, Cong. Rec., at S945 (Feb. 28, 2011) (emphasis added):

> SEC. 9. FEE SETTING AUTHORITY.
>
> (a) FEE SETTING.—
>
> (1) IN GENERAL.—The Director shall have authority to set or adjust by rule any fee established or charged by the Office under sections 41 and 376 of title 35, United States Code, or under section 31 of the Trademark Act of 1946 (15 U.S.C. 1113), ***or any other fee established or charged by the Office under any other provision of law***, ***notwithstanding the fee amounts established or charged thereunder***, for the filing or processing of any submission to, and for all other services performed by or materials furnished by, the Office, provided that patent and trademark fee amounts are in the aggregate set to recover the estimated cost to the Office for processing, activities, services and materials relating to patents and trademarks, respectively, including proportionate shares of the administrative costs of the Office.

Note that the January-through-March Senate version arguably allows the PTO to move fee income around as it likes, "notwithstanding the fee amounts established or charged [by § 41]," so long as "fee amounts are in the aggregate set to recover the estimated cost."

This language was slightly amended by Sen. Leahy's floor debate manager's amendment (Cong. Rec. at S950 (Feb. 28, 2011), and at S1037 (Mar. 1, 2011)), though the broad "notwithstanding" discretion remained in the bill through Senate passage on March 8, 2011 (Cong. Rec. S1389 (Mar. 8, 2011)).

When the bill moved to the House, the bill had the final-passage language (H.R. Rep. No. 112-98, at 23 (Jun. 1, 2011)):

- The "notwithstanding" clause was removed.
- The "any other provision of law" clause was removed.
- The word "only" was added as a qualifier on "to recover the aggregate estimated costs."

The section-by-section in the House Report makes clear that these changes, and their effect, was fully intentional (H.R. Rep. No. 112-98, at 49-50) (emphasis added):

> *Fee-setting authority*
>
> **a) Agency fee setting authority**

> … The USPTO has argued for years that it must have fee-setting authority to administer properly the agency and its growing workload. The Act allows the USPTO to set or adjust all of its fees, including those related to patents and trademarks, ***so long as they do no more than reasonably compensate the USPTO for the services performed***.
> …

The House report continues, at page 78:

> *Section 11. Fees for patent services.*
>
> The Act includes the current patent fee schedule in the text [now § 41]. This schedule represents a reference point for any future adjustments to the fee schedule by the Director.

The addition of the word "only" was entirely intentional, and intended to remove the PTO's discretion to use fees as a policy lever to "incentivize" or "encourage" or to accomplish any goal other than "to recover the aggregate estimated costs"—that is the ***only*** "policy lever" the PTO has. The language is not "the PTO shall charge no more than necessary to reasonably compensate;" the language is that fees shall "***do no more than*** reasonably compensate." Likewise, the legislative history makes abundantly clear that the removal of the "***notwithstanding the fee amounts established or charged thereunder***" is entirely intentional, and is a directive to the PTO to track § 41 as a "reference point."

Both the January introduction and the September final-passage versions of the statute make clear that the PTO has discretion to include general and administrative fees in its user fee recovery base (unlike other agencies, see § I.D). However, the June House bill and its discussion in the House Report makes clear that the PTO has *only* that authority, and does *not* have discretion to use user fees as a policy lever.

1. AIA § 10 sets limits on fee setting authority.

AIA § 10 only permits setting fees "*established, authorized, or charged under title 35*," and within that, only "*for any services performed by or materials furnished*" by the PTO, but nowhere authorizes creating new fees or restructuring existing fees. The legislative history, specifically the removal of the "notwithstanding" clause from § 10, makes clear that the PTO must work with the § 41 fee schedule, and cannot willy-nilly create new fees without a specific statutory authorization (see § I.B.3 and the text that was *not* enacted, at page). For most fees, the legislative history (see page) states that Congress intended the PTO to use the existing § 41 as a "reference point."

There are exceptions, including:

- § 2(b)(2)(G) for prioritized examination;
- § 41(d)(2)(A) first sentence, fees for services not otherwise covered in § 41;
- § 376(a) and (b) for PCT national stage entry; and
- § 382 and § 389(c) for Hague convention design applications.

These contrasting exceptions prove the rule—if § 41 covers a fee area, that is the "reference point," and the PTO lacks discretion to substitute its policy judgement for Congress'.

1. What are the fees "established, authorized, or charged under title 35"?

Because AIA § 10(a)(1) only authorizes fee setting for "any fee *established, authorized, or charged under title 35*," and even in that case, only for "for any services performed by or materials furnished by, the Office" it is essential to understand which fees fit in which pigeonhole. As discussed in § I.B.1 above, Congress made abundantly clear that the authority of Section 10 is constrained by the various fees scheduled throughout titles 35 and 15:

- 35 U.S.C. § 41(a), (b), (d), and (h) "establish" most fees, and set baseline amounts.
- § 41(d)(2)(A), first sentence, authorizes the PTO to create new fee items for "other processing, services, or materials relating to patents *not specified in this section*."
- § 122(e)(1) (third party submissions) authorizes "such fee as the Director may prescribe."
- § 132(b) (RCEs) authorizes "The Director may establish appropriate fees for such continued examination."
- § 156(h) (patent term extension) authorizes that "The Director may establish such fees as the Director determines appropriate to cover the costs to the Office."
- § 257(d)(1) (supplemental examination) directs "The Director shall, by regulation, establish fees for the submission of a request for supplemental examination of a patent."
- § 261 (recording of assignments) authorizes (but does not require) a fee.
- § 311(a) and § 321(a) require the Director to establish a fee for IPR and PGR petitions.
- § 376(a) and (b) (PCT national stage entry) and § 382 and § 389(c) (Hague convention design applications) are unique: these are the only delegations of authority to the Director to choose what items are fee-bearing *and* what amount.

Other fees are not subject to AIA § 10.

A. The Constitution and the Supreme Court's definition of "tax"

The current proposal is a "tax," not a user fee. The Supreme Court and D.C. Circuit explain that the line between "taxes" and "user fees" lies with agency purpose. A "user fee" is a fee set for reasons of neutral cost-recovery. On the other hand, any fee set for any policy reason, "public interest," to "encourage or discourage a particular activity," etc. is a "tax." The PTO overstepped its authority in 2013, and propagates the error in this fee-setting proposal.

The AIA *does* waive a statutory constraint that applies to all other agencies—other agencies may set user fees only to cover costs *to a specific party*, and not to cover general administrative costs, and costs of providing benefits to the public (see § I.D). The AIA waived that, and allows the PTO to recover all costs of patent operations.

BUT—the constraint of law that the AIA did *not* waive—and could not possibly waive because it is a constitutional constraint on the executive branch—is that the PTO may not "tax." And that means that even with the AIA, the PTO may *not* "adjust assessments to encourage or discourage a particular activity."

The United States Constitution provides in Article I sec. 8 clause 1 provides that the power to "lay and collect Taxes" lies with Congress, not the executive branch. Art. I sec. 7 clause 1 provides that "All Bills for raising Revenue shall originate in the House of Representatives."

The Supreme Court and D.C. Circuit have interpreted the constitutional taxing power in a series of agency user fee cases. The current state of constitutional limits on agency use of fees to incentivize or disincentivizes behavior is summed up in a D.C. Circuit case:

> Such policy decisions, whereby an agency could, for example, adjust assessments to encourage or discourage a particular activity, would, according to the [Supreme] Court, 'carr[y] an agency far from its customary orbit' and infringe on Congress's exclusive power to levy taxes.[3] REF _Ref523926138 \w \h * MERGEFORMAT

A much more detailed explanation of the constitutional limits on fee-setting can be found in an article by Ron Katznelson, which we have attached as an exhibit.[4] REF _Ref523926138 \w \h * MERGEFORMAT

B. The Independent Offices Appropriations Act (IOAA) and Circular A-25

The Independent Offices Appropriations Act of 1952, 31 U.S.C. § 9710, is the basic set of guiding principles for agency user fees. OMB Circular A-25[5] REF _Ref523926138 \w \h * MERGEFORMAT is the OMB guidance for implementation, which the Supreme Court has cited as an authoritative interpretation. The Supreme Court and D.C. Circuit have interpreted the IOAA to impose several constraints:

1. Congress may lay taxes to "encourage" or "discourage," as discussed in § I.C, but not agencies.[6] REF _Ref523926138 \w \h * MERGEFORMAT

3. Most agencies may set fees only for specific services to a specific "identifiable recipient," at the cost of providing that service or the value to the recipient, but may not recover agency general operating costs.[7] REF _Ref523926138 \w \h * MERGEFORMAT

2. Most agencies may set user fees to cover the lesser of agency cost of providing services and things that the agency provides, or "value to the recipient," but the agency may not charge for benefits to the general public or other societal benefits.[8] REF _Ref523926138 \w \h * MERGEFORMAT

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[3] *Seafarers International Union v. U.S. Coast Guard*, 81 F.3d 179, 183, 185 n.4 (D.C. Cir. 1996), *quoting National Cable Television Association Inc. v. United States*, 415 U.S. 336 (1974); *cf. National Federation of Independent Businesses v. Sebelius*, 567 U.S. 519, __, 132 S.Ct. 2566, 2594-95 (2012) (because the Affordable Care Act has an exaction designed to incentivize behavior, it is a "tax" and a valid exercise of Congress' taxing authority).

[4] Ron D. Katznelson, *The U.S. Patent Office's Proposed Fees Under the America Invents Act—Part I: The Scope of the Office's Fee-Setting Authority*, 85 BNA PAT. TM & COPYRIGHT J. 206 (Dec. 7, 2012), attached as an exhibit, available at https://works.bepress.com/rkatznelson/70.

[5] https://www.whitehouse.gov/wp-content/uploads/2017/11/Circular-025.pdf

[6] *National Cable Television Association Inc. v. United States*, 415 U.S. 336, 340-41 (1974) (*NCTA*); *Seafarers International Union v. U.S. Coast Guard*, 81 F.3d 179, 183, 185 n.4 (D.C. Cir. 1996); *see also Federal Power Commission v. New England Power Co.*, 415 U.S. 345, 351 (1974) ("*NEPCO*") (fees set to reflect "economic climate" are "taxes," and thus impermissible).

[7] *NCTA*, 415 U.S. at 343; *Seafarers*, 81 F.3d at 183.

[8] *NEPCO*, 415 U.S. at 349.

3. Where the agency has specific line item data to show both the "value of the service to the recipient" and the "reasonable cost incurred" to provide that service, an agency may charge the lesser of those two amounts.

The PTO is special in this respect—AIA § 10(a)(2) gives the PTO a carve-out from one of the provisions of the IOAA, in the form of authority to recover general and administrative costs. However, of the constraints set by the IOAA, AIA § 10 waives only bullet 3. The explicit wording of AIA § 10(a)(1) waives bullet 3 only for those fees "*established, authorized, or charged under title 35*," but the legislative history makes clear that the PTO is to be entirely self-funding, so that would likely be sufficient authorization to build general operating costs into other fees as well.

The prioritized examination statute, § 2(b)(2)(G), and IPR and PGR petitions statutes, § 311(a) and § 321(a), specifically exempt these fees from bullet 3—these fees can be set at something other than cost recovery. "Value to the recipient" may be a good measure under bullet 4.

Fees without statutory grounding are not within § 10, and thus are either barred outright, or are subject to the four constraints of the IOAA.

A. Executive Order 12866 and OMB Circular A-4

Executive Order 12866 is the basic benefit-cost executive order. In his first weeks in office, President Trump reminded all agencies of E.O. 12866 and one of its important implementing guidance documents, the *Bulletin on Agency Good Guidance Practices*.[9] REF _Ref523926138 \w \h * MERGEFORMAT These two provide important guidance to the PTO. In relevant part, E.O. 12866 reads:

> **Section 1.** *Statement of Regulatory Philosophy and Principles.*
>
> (a) *The Regulatory Philosophy*. Federal agencies should promulgate only such regulations as are required by law, are necessary to interpret the law, or are made necessary by compelling public need, such as material failures of private markets to protect or improve the health and safety of the public, the environment, or the well-being of the American people. In deciding whether and how to regulate, agencies should assess all costs and benefits of available regulatory alternatives, including the alternative of not regulating. Costs and benefits shall be understood to include both quantifiable measures (to the fullest extent that these can be usefully estimated) and qualitative measures of costs and benefits that are difficult to quantify, but nevertheless essential to consider.

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[9] See Office of Management and Budget, *Guidance Implementing Executive Order 13771, Titled 'Reducing Regulation and Controlling Regulatory Costs'.*" M-17-21, § 1 (Apr. 5, 2017) ("[A]gencies must continue to assess and consider both the benefits and costs of regulatory actions, including deregulatory actions, when making regulatory decisions, and issue regulations *only upon* a reasoned determination that benefits justify costs" (emphasis added); Office of Management and Budget, Memorandum, *Interim Guidance Implementing Section 2 of the Executive Order of January 30, 2017, Titled "Reducing Regulation and Controlling Regulatory Costs"*, https://www.whitehouse.gov/sites/whitehouse.gov/files/briefing-room/presidential-actions/related-omb-material/eo_iterim_guidance_reducing_regulations_controlling_regulatory_costs.pdf (Feb. 2, 2017) ("Agencies should continue to adhere to OMB's 2007 Memorandum on Good Guidance Practices.").

> Further, in choosing among alternative regulatory approaches, agencies should select those approaches that maximize net benefits (including potential economic, environmental, public health and safety, and other advantages; distributive impacts; and equity), unless a statute requires another regulatory approach.
>
> (b) *The Principles of Regulation.* To ensure that the agencies' regulatory programs are consistent with the philosophy set forth above, agencies should adhere to the following principles, to the extent permitted by law and where applicable:
>
> (1) Each agency shall identify the problem that it intends to address (including, where applicable, the failures of private markets or public institutions that warrant new agency action) as well as assess the significance of that problem.
>
> (2) Each agency shall examine whether existing regulations (or other law) have created, or contributed to, the problem that a new regulation is intended to correct and whether those regulations (or other law) should be modified to achieve the intended goal of regulation more effectively.
>
> …
>
> (5) When an agency determines that a regulation is the best available method of achieving the regulatory objective, it shall design its regulations in the most cost-effective manner to achieve the regulatory objective. In doing so, each agency shall consider incentives for innovation, consistency, predictability, the costs of enforcement and compliance (to the government, regulated entities, and the public), flexibility, distributive impacts, and equity.
>
> (6) Each agency shall assess both the costs and the benefits of the intended regulation and, recognizing that some costs and benefits are difficult to quantify, propose or adopt a regulation only upon a reasoned determination that the benefits of the intended regulation justify its costs.
>
> …
>
> (8) Each agency shall identify and assess alternative forms of regulation and shall, to the extent feasible, specify performance objectives, rather than specifying the behavior or manner of compliance that regulated entities must adopt.
>
> …
>
> (11) Each agency shall tailor its regulations to impose the least burden on society, including individuals, businesses of differing sizes, and other entities (including small communities and governmental entities), consistent with obtaining the regulatory objectives, taking into account, among other things, and to the extent practicable, the costs of cumulative regulations.
>
> …

The Office of Management and Budget elaborated on the economic analysis required by E.O. 12866 for any regulation that may reasonably be expected to "have an annual effect on the economy of $100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities." Guidance and methodological implementation of

E.O. 12866 are provided in OMB Circular A-4.[10] REF _Ref523926138 \w \h * MERGEFORMAT Some of the required components in a Regulatory Impact Analysis include:

- Identify a range of regulatory approaches.[11] REF _Ref523926138 \w \h * MERGEFORMAT
- Estimate the benefits and costs—both quantitative and qualitative—of the proposed regulatory action and its alternatives
- Identify the Consequences of Regulatory Alternatives
- Quantify and Monetize the Benefits and Costs
- Evaluate Non-quantified and Non-monetized Benefits and Costs
- Characterize uncertainty in benefits, costs, and net benefits.

E.O. 12866 § 1(b)(2) requires the PTO to "examine whether existing regulations (or other law) have created, or contributed to, the problem that a new regulation is intended to correct." Most of the policy goals of the fee schedule could be addressed by internal reforms to reduce costs, as an alternative to raised fees. For example, IEEE-USA gave an extensive set of comments on how internal PTO processes and incentives could be restructured to reduce costs to the PTO and to applicants.[12] REF _Ref523926138 \w \h * MERGEFORMAT The NPRM identifies no exemption from E.O. 12866 that permits the PTO to forego this examination.

A. The Paperwork Reduction Act

The Paperwork Reduction Act, 44 U.S.C. § 3506(c)(2) has its own notice-and-comment requirement, which most agencies run in parallel with the APA comment period:

> (c) With respect to the collection of information and the control of paperwork, each agency shall—
>
> (A) … provide 60-day notice in the Federal Register, and otherwise consult with members of the public and affected agencies concerning each proposed collection of information, to solicit comment to—
>
> (i) evaluate whether the proposed collection of information is necessary for the proper performance of the functions of the agency, including whether the information shall have practical utility;

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[10] https://www.whitehouse.gov/sites/whitehouse.gov/files/omb/circulars/A4/a-4.pdf Those that prefer a smaller typeface can find a version at the Federal Register web site https://www.gpo.gov/fdsys/pkg/FR-2003-10-09/pdf/03-25606.pdf A 16-page "condensed books" primer is at OMB's web site, https://www.reginfo.gov/public/jsp/Utilities/circular-a-4_regulatory-impact-analysis-a-primer.pdf

Note that since the total national budget for patent applications and prosecution is about $5 billion per year, this requirement for an economic analysis is triggered by any regulation that covers 2% of all patent prosecution. It's striking that the PTO has never undertaken a Regulatory Impact Analysis for any regulation other than its fee-setting rules.

[11] Other suggestion letters from well-informed commentators abound. Ron Katznelson, *Patent Reforms Must Focus on the U.S. Patent Office*, Medical Innovations & Business Journal at 77 (Summer 2010), https://www.uspto.gov/sites/default/files/documents/2015quality_f_katznelson2_19may2015.pdf

[12] Comment letter under Paperwork Reduction Act (29 May 2012), at https://www.uspto.gov/sites/default/files/news/fedreg/comments/0651-0031_IEEE_Comment.pdf

> (ii) evaluate the accuracy of the agency's estimate of the burden of the proposed collection of information;
>
> (iii) enhance the quality, utility, and clarity of the information to be collected; and
>
> (iv) minimize the burden of the collection of information on those who are to respond, including through the use of automated collection techniques or other forms of information technology; and
>
> (B) for any proposed collection of information contained in a proposed rule (to be reviewed by the Director under section 3507(d)), provide notice and comment through the notice of proposed rulemaking for the proposed rule and such notice shall have the same purposes specified under subparagraph (A)(i) through (iv);
>
> (3) certify (and provide a record supporting such certification, including public comments received by the agency) that each collection of information submitted to the Director for review under section 3507—
>
> (A) is necessary for the proper performance of the functions of the agency, including that the information has practical utility;
>
> (B) is not unnecessarily duplicative of information otherwise reasonably accessible to the agency;
>
> (C) reduces to the extent practicable and appropriate the burden on persons who shall provide information to or for the agency, including with respect to small entities, as defined under section 601(6) of title 5, the use of such techniques as—
>
> (i) establishing differing compliance or reporting requirements or timetables that take into account the resources available to those who are to respond;
>
> (ii) the clarification, consolidation, or simplification of compliance and reporting requirements; or
>
> (iii) an exemption from coverage of the collection of information, or any part thereof;
>
> (D) is written using plain, coherent, and unambiguous terminology and is understandable to those who are to respond;
>
> (E) is to be implemented in ways consistent and compatible, to the maximum extent practicable, with the existing reporting and recordkeeping practices of those who are to respond. …

Several components of this rulemaking implicate the Paperwork Reduction Act (e.g., the DOCX proposal and the annual practitioner fee). The NPRM asserts that the PTO has obtained Paperwork clearance. This assertion is plainly false—the PTO has never even *applied* for clearance. See §§ II.A.5 and II.B below.

B. The PTO has not acknowledged, let alone addressed, the legal constraints

Despite multiple challenges,[13] REF _Ref523926138 \w \h * MERGEFORMAT there is apparently no document in which the PTO discusses:

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[13] E.g., Katznelson, *The U.S. Patent Office's Proposed Fees*, note 4, *supra*; letter of David Boundy to PPAC, Sept. 12, 2018, https://www.uspto.gov/sites/default/files/documents/David_Boundy.pdf

- The AIA legislative history, particularly in the removal of the earlier text, "notwithstanding the fee amounts established or charged," or the discussion in the House report (see page). It is deeply puzzling to us that the PTO has never issued any legal analysis of legislative history.
- The effect of the word "only" in the phrase "*only* to recover the aggregate estimated costs." Why would that mean "only" in amount rather than "only" in purpose? If Congress had meant "only" amount, that's the words they would have used. (The legislative history makes clear that Congress intended "only" to apply to purpose as well as amount, see page .) It is also deeply puzzling to us that the PTO has never issued any legal analysis of *that* part of the legislative history.
- The Constitutional taxing power.
- The relevant Supreme Court or D.C. Circuit case law, even though the holdings (especially *Seafarers*) are 180º opposite the position the PTO takes in this NPRM.

I. Specific examples of unlawful or unwise fees

A. The proposal to charge a premium fee for PDF, and discount DOCX

As we explain below, the factual assumptions in the NPRM are entirely incorrect. There are a number of problems with DOCX that are apparent to us, and that were explained in the letters to PPAC. It is troubling that the NPRM fails to respond to the issues raised in the earlier comment letters, and instead offers a number of unsupported and counterfactual rationales.

There is a much better way to solve the problems the PTO identifies in the NPRM. Applicants upload most of their submissions as text-based PDFs. ***Then the PTO's computer systems degrade them*** to flatten them to unstructured bitmaps. The problem is ***caused by the PTO***.

We recommend an alternative—follow the lead of WIPO's ePCT and the federal courts' CM/ECF system. Both ePCT and CM/ECF accept text-based PDFs. Unlike the PTO's system, both ePCT and CM/ECF remove metadata, but otherwise leave documents intact, in the form that they are submitted. Neither ePCT nor CM/ECF flattens text-based PDFs to bitmaps.

1. Any standard for an electronic filing system must be portable and consistent across all implementations

The most basic requirement for any form of legal archiving is that it be portable and consistent. Page cites must be consistent—even small changes that move a word or line from one page to the next are simply not acceptable. Special characters, equations, and chemical formulae must render *exactly*. If a system does not *absolutely* guarantee that "What you see is what you get," it is not acceptable.

DOCX does not satisfy that basic criterion. The NPRM proceeds from a false understanding of the word "standard." There are two fundamentally-different kinds of standards: most standards are "minimum conforming implementation" standards.[14] REF _Ref523926138 \w \h *

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[14] Most programming language standards are "minimum conforming implementation" standards. For example, the FORTRAN standard permits each implementer to include extension features, and no computer manufacturer's extensions are compatible with any other's. Similarly, the FORTRAN standard leaves some rules for arithmetic unspecified—basic arithmetic expressions may give different results on

MERGEFORMAT Only a few are "interoperability" standards.[15] REF _Ref523926138 \w \h * MERGEFORMAT DOCX is not itself a "standard," and ECMA-376 and ISO/IEC 29500 are only "minimum conforming implementation" standards. DOCX implements a standard—just like car parts implement the metric system standard. Even though the measurements in today's cars are all metric, that does not mean that any two alternators from different manufacturers are interchangeable. ECMA-376 and ISO/IEC 29500 are relatively "loose" standards—they leave a lot of room for implementations to differ (after all, Microsoft, the sponsor of the standard, did not want the choices it made in 2007 to be permanent lock-ins). DOCX files cannot even be transferred reliably between Microsoft Word for Windows and Microsoft Word for Mac. Users that use LibreOffice, or WordPerfect cannot reliably transfer documents to or from Microsoft Word. The problems are especially pronounced for equations and formulas. Even basic text can have the problem—standard fonts like Times Roman and Helvetica are available from different vendors, each with slight differences that will alter pagination in some cases. Even in an environment where all software is provided by Microsoft, the result is not reliable in this respect—using different versions of Word *on the same computer*, this letter changed in length by half a page (See Exhibit B).

On the other hand, PDF maintains all this consistency. That is what Adobe designed it to do, and why they named it "portable."[16] REF _Ref523926138 \w \h * MERGEFORMAT Portability and consistency is the reason that the WIPO's ePCT and courts' CM/ECF use PDF—the pagination and rendering are always consistent.

Another fundamental requirement in the design of a system like PTO's system for e-filing patent applications is that the system should not force applicants or attorneys to purchase any particular proprietary software as a precondition of use of the system. For PDF, there are a number of free and freely-available tools that create and display PDF files. Not so for DOCX—to be consistent with whatever the PTO has in mind, applicants will be locked into purchasing a specific tool.

It appears that the PTO is unaware of the technology of word processors and documents. The rendering from DOCX to a visible form (either on screen, paper, or PDF) is done by the word processor. That rendering may vary based on various software components installed on a given computer. The same DOCX file can be rendered differently depending on the word processor, fonts installed, which font vendor supplied the font, whether the word processor chooses a vector form or bitmap form for the font, and add-ins for the word processor (especially for equations, pictures and drawings, and chemical formulae). Because a single word processor's rendering engine is used to display on screen, print on paper, and print-as-PDF, the applicant has a trustworthy what-you-see-is-what-you-get. But if that same DOCX is transmitted

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different computers, or even different results on the same computer depending on which software it's used with.

[15] Examples include the WiFi and IEEE cell phone standards: every implementation is interoperable with every other.

[16] "Portable Document Format (PDF) is a file format used to present and exchange documents reliably, independent of software, hardware, or operating system." Adobe, *What is PDF?*, https://acrobat.adobe.com/us/en/acrobat/about-adobe-pdf.html

to the PTO, for the PTO to render using unidentified software and unidentified environment, the results will be different.

2. The factual representations in the NPRM relating to two standards and portability of DOCX are incorrect

The PTO does not tell us what rendering engine will be used within the PTO. Will it be MS Word or some other rendering engine? The "viewer" software in Firefox, Internet Explorer, or Chrome, or the viewer in Google gmail, Word 2003, 2013, or 2016? For Mac or Windows? All behave differently. With DOCX, no amount of care by a practitioner can possibly ensure how the document will be interpreted by the PTO's rendering or conversion software. It is unreasonable to expect the filer to undertake to proofread, carefully, word-by-word, any specimen of the conversion result the PTO may provide just before the filing is finally submitted. Indeed, the very requirement to proofread the rendering (noted below in red text) is an admission by the PTO that it recognizes that DOCX is a shaky foundation for a legal document filing system (there's no such warning in today's system). For lengthy, complex specifications, the 60-minute timeout in EFS would preclude effective review. In the case of a timeout, the subsequent re-submission would still require the filer to review the entire conversion result from the beginning.

Standards ECMA-376 and ISO/IEC 29500 themselves disclaim the kind of interoperability that the PTO assumes. Some example sentences:

- "a software application should be accompanied by documentation that describes what subset of ECMA-376 it supports" ECMA-376 expressly states that there is no common set of features that are required to be implemented; all the standard guarantees is that *if* certain features are implemented, they will behave in a certain manner. A standard useful for an electronic filing system cannot rely on features that are optional in some implementations and unimplemented in others.
- "The application need not implement operations on all XML elements defined in ECMA-376." Some implementations of DOCX are permitted to have features that will cause errors in others.
- "A batch tool that reads a word-processing document and reverses the order of text characters in every paragraph with 'Title' style before saving it can be conforming even though ECMA-376 does not recommend this behavior. [A conforming word processor may] transform the title 'Office Open XML' into 'LMX nepO eciffO'. Its documentation should declare its effect on such paragraphs." The ECMA standard *expressly allows* for entirely different renderings, so long as it's documented.
- "These application descriptions should not be taken as limiting the ability of an application provider to create innovative applications. They are intended as a mechanism for labelling applications rather than for restricting their capabilities." A standard useful for an electronic filing system can't rely on features that are optional in some implementations and unimplemented in others.
- "[*Note*: A possible application description would be a 'standard' application description for a wordprocessing application. This could be created by taking the intersection of the features available in common wordprocessing applications such as Word 2000, OpenOffice 2, WordPerfect, and iWork Pages. … *end note*]" ECMA-376 expressly states that there is no common set of features that are required to be implemented; all

ECMA-376 guarantees is that *if* an implementer wants to implement a given feature, there is a format in which to implement it. There are very few behavioral guarantees.

- ECMA-376 leaves a number of features "implementation defined," including whether and how to save any element that is under the control of a plug-in, how dates are rendered, how embedded pictures are rendered, whether numerical values are rendered with a "." or a "," as a decimal point, how fonts are chosen in rendering, line number spacing, and other characteristics. Documents copied from one DOCX program to another have no guarantee of being rendered consistently.
- A Microsoft blog[17] REF _Ref523926138 \w \h * MERGEFORMAT writes "One of the great things about ISO/IEC 29500 is its extensibility mechanisms - implementers can extend the file format while remaining 100% compliant with the standard." That statement is the admission—there is no uniform interoperability standard. ISO/IEC 29500 is a baseline, minimum functionality standard, not an interoperability standard that guarantees bilateral consistency between any two implementations. That may be a good feature for software developers, but it's catastrophic for the use that the PTO contemplates. That bilateral interoperability is the whole point of the PDF standard.

As technically-trained lawyers, we don't understand how any person could read ECMA-376 and not have immediately noticed the glaring deficiencies as a "standard" for legal documents.

One of the signatories of this letter was among the very first of the beta-testers of PTO's system for DOCX filings. As implemented by the PTO, the practitioner would upload a DOCX file, and PTO would render the DOCX file in a human-readable PDF image format. As part of the e-filing process, the practitioner was expected to proofread the rendered image as provided by the PTO's e-filing system. The notion was that the practitioner would be obliged to catch any instances of PTO's system rendering the DOCX file differently from the way the practitioner's word processor had rendered that same DOCX file. If, for example, some math equation or chemical formula had gotten corrupted in PTO's system, the practitioner would expected to catch this ***prior to*** clicking "submit."

There is no single unambiguous thing called "DOCX" format. The history may be seen in the Wikipedia article on "Office Open XML," at https://en.wikipedia.org/wiki/Office_Open_XML . One key sentence is:

> The Office Open XML specification exists in a number of versions.

Five, to be precise. https://www.ecma-international.org/publications/standards/Ecma-376.htm ***To the extent there is a standard at all, it is too lax to be useful for the purpose the PTO proposes***. DOCX exists in many variants, and Microsoft has a history of making poorly documented changes over time to the ways that Microsoft Word implements DOCX formatting of documents.

The PTO's web site, https://www.uspto.gov/patent/docx inaccurately characterizes DOCX as if one could be sure that any word processor will implement DOCX in the same way as any other word processor. For example, PTO says:

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17 https://blogs.msdn.microsoft.com/chrisrae/2010/10/06/where-is-the-documentation-for-offices-docxxlsxptx-formats-part-2-office-2010/

> There are several word processors that can create and save in DOCX format, including Google Docs, Microsoft Word 2007 or higher, Office Online, LibreOffice, and Pages for Mac.

That statement is misleadingly incomplete, conveying a clearly erroneous impression, disingenuous at best, and borders upon falsity given that there is no single unambiguous DOCX format. A more accurate statement would be:

> There are several word processors that can create and save documents in variants of DOCX formats, including Google Docs, Microsoft Word 2007 or higher, Office Online, LibreOffice, and Pages for Mac.

PTO also says (https://www.uspto.gov/patent/docx):

> DOCX is stable and governed by two international standards (ECMA-376 and ISO/IEC 29500).

This statement is simply false. There is no single DOCX standard to which Microsoft Word and the other word processors are all compliant.

To give a simple example, consider this math equation in a patent application recently filed as a PDF-based PCT application using Libre Office:

As an experiment, this Libre Office DOCX file was uploaded as a DOCX to EFS-Web as if filing a domestic US patent application. The way the PTO has designed EFS-Web, what happens next is that the practitioner sees this message in red letters:

> **The PDF(s) have been generated from the docx file(s). Please review the PDF(s) for accuracy. By clicking the continue button, you agree to accept any changes made by the conversion and that it will become the final submission.**

It is easy to see that this filing procedure, as contemplated by the PTO, imposes an enormous professional liability risk on the practitioner. The practitioner is obligated to proofread the entire patent application, from top to bottom, for any corruption introduced by the PTO's rendering system.

Here is how the PTO rendered this math equation:

Note that the PTO's rendering system inserted a spurious digit "1" into the math equation. Had the practitioner overlooked this corruption of the document by the PTO, the practitioner might then have clicked "continue", at which point it would have been PTO's position that the practitioner had agreed to accept PTO's change of "0.2" to "10.2".

In other cases, the PTO's system changes fonts.

Let's assume that the practitioner catches a situation where the PTO's rendering engine has changed the result relative to what the practitioner saw on his/her word processor. Let's say some characters are showing up as boxes, question marks, or just the wrong character, or changed fonts. The practitioner has been diligent and noted that the PDF does not match the DOCX. Now what? Does that guarantee that the practitioner knows how to fix the problem? No. Most of these problems are deep in the guts of two different software systems. With deadlines looming, how is a practitioner going to change either the practitioner's word processor or the PTO's rendering software so that the two agree? Which one should change? How will the practitioner get that software change

implemented in the next few hours so that the application can get its filing date? Knowing that there is a problem, and being able to fix the problem in a timely manner, may be two completely different things.

Signatories of this letter that have used the PTO's DOCX system opt out (and use PDF) if there is any math equation or chemical formula, or anything other than very simple alphanumerical characters.

Exhibit B to this letter is a copy of this letter as rendered after copying from Word 2013 to several of the applications that the PTO claims (https://www uspto gov/patent/docx) to be compatible. The formatting differences will be instantly apparent, and could well be fatal to any patent application: tables are rendered unreadable, page cross-references and many formulas are simply lost (converted to spaces), headings and similar structure formatting were lost (which will, at the least, result in unreliable pagination). It certainly appears that no one at the PTO did any experimentation to confirm the factual representations at the PTO's "docx" page or the NPRM.

But this proposed DOCX rule would put every practitioner in the untenable position of having to pay a $400 penalty tax for every case filed electronically using EFSWeb.

3. The rationales stated in the NPRM are faulty

The following table responds to the PTO's factual assertions and rationales. The PTO's claims for the "Non-DOCX Filing Surcharge Fee" are in the left column. The actual facts and observations of attorneys and agents with experience are in the right column:[18] REF _Ref523926138 \w \h * MERGEFORMAT

Rationale from 84 Fed. Reg. 37413	**Our observations**
Based on a USPTO survey, over 80 percent of applicants author their patent applications in DOCX in the normal course of business.	Even if this is true (the PTO neglects to make its data or methodology available, in violation of the PTO's obligations under its own Information Quality Guidelines), it ignores two key facts: · 20% don't. The costs on those parties to *reliably* file based on DOCX from their word processors—and reviewing the PTO's rendering of the document as received—will be immense. The PTO fails to consider that cost. · That 80% includes users of many different word processors, and document rendering across those word processors is *not* portable
Filing in structured text allows applicants to submit their specifications, claims, and abstracts in text-based format, and eliminates the need to convert structured text into a PDF for filing.	Applicants already submit most documents in a "text-based format," PDF. · The PTO did not measure the cost of *not* converting word processor documents to PDF, or compare that cost. · The PTO did not measure the cost of splitting one DOCX file into three for filing. · The PTO did not consider costs of DOCX features that might be in a practitioner's

[18] NPRM, 84 Fed. Reg. at 37413.

	word processor but not accepted by the PTO's system..
Applicants can access examiner Office actions in text-based format which makes it easy to copy and paste when drafting responses.	The format for Office Actions has no relevance whatsoever to the format of applicant submissions. In a system that accepts PDFs, applicants are responsible for generating a correct PDF. Under current practice, that generation is readily predictable and controllable. If the PTO does it, with an undisclosed tool, the process is unpredictable. It certainly appears that the PTO intends to shift responsibility for the PTO's unpredictable data transcription errors onto applicants. In downloaded Office actions, much information can be gained by seeing what information is form or template data. The Office has not considered the impact of similar accessibility of application edit history data even if "metadata" is scrubbed.
The availability of structured text also improves accessibility for sight-impaired customers, who use screen reading technology.	These advantages are available to exactly the same extent for the text-based PDFs that applicants submit today, if only the PTO's systems did not degrade them to flat bitmaps.
It enables development of software to provide automated initial reviews of applicant submissions to help reduce effort required by the Office.	
The automated reviews can tell applicants up-front if potential problems exist and allow them to make changes prior to or at the time of submission.	
This also improves validation based on content, such as claims validation for missing claim numbering or abstract validation for word count and paragraph count.	
DOCX filing also improves document identification by automatic detection, allows for greater reuse of content, and provides improved searching for patent applications and submissions.	

Increased DOCX filing will also lead to higher data quality, by reducing system conversion errors.	This is false. DOCX will *increase* data conversion errors, because DOCX does not, and was not intended to, provide reliable or portable "what you see is what you get" uniformity. The supposed benefits are available to a *greater degree* with the text-based PDFs that applicants submit today, if only the PTO would stop degrading them.
It provides a flexible format with no template constraints.	To the degree this sentence has any meaning (which is not apparent), this is available to exactly the same extent for the text-based PDFs that applicants submit today, if only the PTO would stop degrading them. To the contrary, the three-document requirement is a template constraint. But this also highlights the potential loss to applicants of advanced word processing features.
[DOCX] also improves data quality by supporting original formats for chemical formulas, mathematical equations, and tables.	This is false. DOCX will *increase* data conversion errors. Various word processors use several different third-party plug-in packages for chemical formulas and mathematical equations, and they differ. However, as rendered in a PDF, they are all consistent. The supposed benefits are available to a *greater degree* with the text-based PDFs that applicants submit today.
The originally submitted structured text document is available within Private PAIR, allowing easy retrieval of original DOCX files after transfer of cases between users.	It is very rare that when a case moves from one practitioner to another, that the old practitioner won't do the courtesy of transferring original working documents. Of the "costs" and "benefits" imagined in the NPRM, this is the only one that a value in the PTO's direction, but it's vanishingly small.

This is a failure of the obligation to disclose rationale. If there is any sound cause-and-effect between the proposal and the asserted benefits, they are not explained in the NPRM. That is arbitrary and capricious under the Administrative Procedure Act.

1. Alternative suggestions

Our preferred solution is to change nothing on the applicant's side—applicants should continue to file text-based PDFs. Instead, the PTO should change—discontinue degrading those text-based PDFs into flattened bitmap PDFs.

Another option to consider is the example of WIPO: WIPO permits the applicant, at the time of filing an international patent application, to provide not only the character-based version of the patent application (XML, in the case of PCT), but also the "pre-conversion format" of the document. This is explained in the PCT Administrative Instructions § 706, at https://www.wipo.int/pct/en/texts/ai/s706 html. The idea is that if later it turns out that some flaw arose in the generation of the XML file, or some flaw in the way the XML got rendered into human-readable form, the applicant would be able to point to what the application looked like in its "pre-conversion format".

As a precondition to imposing a $400 penalty for non-DOCX filings, the PTO should provide the practitioner the option to provide a PDF version of the patent application being filed, along with the DOCX file. This PDF version would serve as the controlling version in the event that (for example) the PTO rendered the DOCX incorrectly.

It is clear that the PTO never actually tested its DOCX e-filing system with any word processor other than Microsoft Word. And the software in the PTO's e-filing system fails to handle correctly even a very simple DOCX file created using Libre Office. It is recalled (see above) that Libre Office is one of the word processors that the PTO points to as (supposedly) being supported by the PTO in its patent e-filing system.

DOCX files are more prone to viruses and malicious code.

2. Legal deficiencies in the DOCX proposal

The PTO's materials state that the fee is intended to "encourage" applicants to do something. That violates the limits of § 10(b)(2), and it is an unconstitutional "tax." See §§ I.B.1 and I.C.

The PTO's current DOCX system requires that a single document be split into three, the specification, claims, and abstract. But that breaks page numbering and other automatic formatting features provided by Word. The PTO's Paperwork Reduction Act analysis fails to consider this and similar costs.

How will shifting from PDF to DOCX affect applicants' recordkeeping requirements and costs? There is a lot of benefit to PDF's—with a PDF, it is always clear *exactly* which version was submitted to the PTO, even if there were many versions of the DOCX. A PDF *always* looks exactly the same, no matter what computer it is opened on, no matter what font cartridge happens to be loaded in a given printer. The same cannot be said for DOCX files. We have had situations where a Word document printed on one printer has one more line per page than when printed on another printer—trying to page-cite to a document that is in the PTO's IFW will be unreliable. The PTO will have to estimate the recordkeeping costs of this randomness, costs of reviewing every submission before hitting "submit," and the costs of developing and changing recordkeeping practices, under the Paperwork Reduction Act. And all transition costs.

Drawing submissions are generally in PDF file format and generally cannot easily be made in the DOCX format, so the Office will receive PDF submissions anyway. This is particularly true for provisional applications, where drawings embedded in the text are especially common. The PTO will have to confer with the public to estimate those costs.

The NPRM states that this rule is a "transfer payment from one group to another." This is false. The operative definition of "transfer payment" is in OMB Circular A-4;[19] REF _Ref523926138 \w \h * MERGEFORMAT the original definition involved cash payments to private sector actors (such as social security, poverty and food assistance programs, and other social benefit programs), and the definition has grown to cover other direct cash transfers among private sector entities (for example, prices set at supracompetitive levels). In contrast, the NPRM is calls for

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[19] OMB Circular A-4, *Regulatory Analysis*, at 38 (Sept. 17, 2003), https://www.whitehouse.gov/sites/whitehouse.gov/files/omb/circulars/A4/a-4.pdf

funds to be paid from private sector persons to government for government consumption. The NPRM discusses no monetary payout to any private sector party, the essential characteristic of a "transfer payment."

The PTO cannot legally go forward with the annual practitioner fee from this NPRM. If the PTO wants to impose such a fee, it must re-propose with a new NPRM, which contains a complete and truthful Regulatory Flexibility Analysis, Paperwork Reduction Act certification, and E.O. 12866 Regulatory Impact Analysis, and E.O. 13771 statement, each discussing the factors we raise below, and showing positive benefit-cost.

B. The "annual practitioner fee" and CLE discount

The proposal proposes to create new fees for "Annual Active Patent Practitioner Fee … without certifying continuing legal education (CLE) completion" and "…with certifying continuing legal education (CLE) completion."

At PPAC stage, the PTO was completely silent on rationale for creating the annual fee (there were a few sentences of rationale for the CLE discount, but not for the fee). The rationale offered in the NPRM is (84 Fed. Reg. at 37415):

> Currently, the costs of OED's disciplinary and other functions are paid by patent applicants and owners. The Office proposes these fees so that practitioners, who directly benefit from registration, should bear the costs associated with maintaining the integrity of their profession, including the costs of OED's register maintenance and disciplinary functions. This parallels the way many state bars operate where the services of maintaining the bar are often paid by the attorneys who are members of that bar. Accordingly, these fee collections are proposed to shift the costs of the services OED provides practitioners in administering the disciplinary system and register maintenance from patent applicants and owners to the practitioners.
>
> … The fees would also serve to fund the Patent Pro Bono Program and the Law School Clinic Certification Program, which increase public access to competent legal representation in IP matters, help enhance the IP legal profession for its members, and serve to make the patent examination process more efficient by decreasing the number of pro se applicants. In addition, the fee would help to cover the costs of increased outreach efforts, including speaking engagements and providing additional training opportunities to help patent practitioners receive the CLE discount…

In addition, PPAC stated that the annual fee would "make certain that the roll of registered practitioners is up-to date and to defray the patent related costs of operating the Office of Enrollment and Discipline (OED)." These rationales confess that the "annual practitioner fee" is beyond the PTO's authority under § 10, and violates the IOAA:

- For maintaining a current roll of active practitioners, the Paperwork Reduction Act requires that the PTO seek the lowest-burden alternative. What's the matter with an annual paper survey, an email ping, or a reminder to any practitioner that hasn't logged into his/her myuspto account for a year?
- For "defraying operating cost," where's the statutory authorization?
- The IOAA limits agency user fees to cover specific services to a specific "identifiable recipient," at the cost of providing that service or the value to the recipient, but may not recover agency general operating costs (see § I.D and note 7 of this letter). The NPRM never mentions the IOAA, let alone any exception.

The NPRM is entirely silent on several legally-required issues relating to the annual practitioner fee proposal:

- The materials identify no statutory authorization. § 41(d)(2)(A) permits the Director to "establish fees for all other processing, services, or materials." One of the comment

letters to the PPAC directly challenged the PTO to identify a specific "processing, service or material" that is provided;[20] REF _Ref523926138 \w \h * MERGEFORMAT by silence, the NPRM concedes there is none. § 2(a)(2)(D) authorizes the Director to "govern recognition and conduct of agents [and] attorneys," but no fee is authorized as part of § 2(a)(2)(D).

- AIA § 10(a)(1) only authorizes the Director to "adjust by rule any fee *established, authorized, or charged under title 35*." § 10 does not authorize creating new fees, only adjusting existing fees (see § I.B.2). Because this is not a fee within the AIA § 10, the Independent Offices Appropriations Act applies. The IOAA and its implementing case law limit the PTO's ability to set levels of new user fees—the PTO may charge fees to cover actual cost, but not to create cross-subsidies, or to influence behavior.[21] Thus, at highest, an annual practitioner fee can be at cost-recovery *for the services provided to the specific "identified recipient."*
- The NPRM identifies no legally-permissible reason for it. E.O. 12866 § 3(f)(1) requires that the PTO "identify the problem that it intends to address (including, where applicable, the failures of private markets or public institutions that warrant new agency action) as well as assess the significance of that problem." The Administrative Procedure Act also requires a statement of rationale at proposal stage. The only explanations of either need or benefit for an annual practitioner fee, at the level required by E.O. 12866, are both illegal.
- E.O. 12866 § 3(f)(1) requires that the PTO "assess both the costs and the benefits of the intended regulation and, recognizing that some costs and benefits are difficult to quantify, propose or adopt a regulation only upon a reasoned determination that the benefits of the intended regulation justify its costs." There is no estimate of either costs or benefits, and thus no balancing against the *status quo*.
- The Paperwork Reduction Act requires the PTO to account for costs for reporting, recordkeeping, and other compliance costs. The NPRM is silent.
- The PTO must analyze costs for all patent agents, who are not admitted to the bar of any state, and thus have no existing CLE requirement that would overlap with any Patent Office Requirement.
- The PTO must analyze costs for all patent attorneys who are admitted to the bars of any state that does not impose an existing CLE requirement that would overlap with any Patent Office Requirement.
- A great fraction of all practitioners work for small entities. Thus, the Regulatory Flexibility Analysis (84 Fed. Reg. 37425-30) must analyze the effect of the annual practitioner fee on these small entities. It does not. It would be unlawful for the PTO to proceed further with this proposal without an Initial Regulatory Flexibility Analysis.
- The PTO must be able to *certify* that the requirement is "*necessary* for the proper performance of the functions of the agency." 44 U.S.C. § 3506(c)(3)(A). The PTO has

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[20] letter of David Boundy to PPAC, Sept. 12, 2018, https://www.uspto.gov/sites/default/files/documents/David_Boundy.pdf at page ___.

[21] *See* §§ I.B.1 (legislative history), I.C (constitutional taxing power), and I.D (IOAA) above, and Katznelson, *Scope of Fee-Setting Authority*, note 4, *supra*.

run a practitioner registration program for the better part of a century without an annual practitioner fee or CLE requirement—why have they suddenly become "*necessary*?"

- The PTO must be able to *certify* that the requirement is implemented in ways "consistent and compatible, to the maximum extent practicable, with the existing reporting and recordkeeping practices of those who are to respond," including for those attorneys in states that do not have existing CLE requirements, and for all agents.
- "The USPTO proposes to add paragraph (d) to § 11.8 to establish a new fee to be paid annually by practitioners." 84 Fed. Reg. 37422 at col. 1. The E.O. 13771 certification, at 84 Fed. Reg. 37430, states "this proposed rule is expected to involve a transfer payment." These two sentences cannot both be true. The latter is a falsehood: the annual practitioner fee does not fit any of the applicable definitions of "transfer payment" (see § IV.C).
- The PTO proposes that "[T]hrough the encouragement of practitioner CLE by offering a $100 annual fee discount as well as recognition on OED's public practitioner search page, the patent system should benefit greatly." NPRM, 84 Fed. Reg. at 37415. If it's about "encouraging," it's an unconstitutional tax.
- The PTO proposes that "Encouraging CLE, by offering a discount, will improve the quality of the bar and therefore of the resulting patents." *Detailed Appendix* slide 65. If it is about "encouraging," it is an unconstitutional tax.
- This fee would raise about $5 million per year for the PTO. The Paperwork Reduction Act requires that the PTO estimate *all* costs—searching for appropriate CLE courses, travel, attendance, fees for the courses, tracking the paperwork, recordkeeping, submitting it to the PTO, docketing the annual act of paying the fee, firm administration to ensure that all practitioners are up to date, and the like. Multiplying out some estimated numbers, it seems that added costs would lie in the range of $40-$100 million per year. Before proceeding, the PTO will have to show public benefit in the same range, and that the annual fee is the least costly way to achieve the benefit. (The burden of proof is on the agency.) OED gets its current funding out of the general patent fund—no paperwork muss, no fuss. What's wrong with that?
- The NPRM states "The collection of information involved in this proposed rule has been reviewed and previously approved by OMB under control numbers 0651–0012, 0651–0016, 0651–0020, 0651–0021, 0651–0031, 0651–0032, 0651–0033, 0651–0059, 0651–0063, 0651–0064, 0651–0069, and 0651–0075." This is false. If there were any such approval, it would be under control number 0651-0012 "Admission to Practice and Roster of Registered Patent Attorneys and Agents" and it is not in the current inventory.[22] REF _Ref523926138 \w \h * MERGEFORMAT The PTO has made no filing seeking any substantive change to 0651-0012 since 2014.[23] REF _Ref523926138 \w \h * MERGEFORMAT

Circular A-4 then requires that the agency "Quantify and monetize the benefits and Costs" and "evaluate non-quantified and non-monetized benefits and costs." The PTO has not done so, except to state "The Office … found that the proposed rule has significant qualitative benefits with no identified costs" (84 Fed. Reg. 37401). The NPRM does not specify what those "qualitative benefits" are for the practitioner fee. The absence of "identified costs" tells more about the quality of the Office's analysis than about costs.

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[22] https://www reginfo.gov/public/do/PRAICList?ref_nbr=201712-0651-022

[23] https://www reginfo.gov/public/do/PRAOMBHistory?ombControlNumber=0651-0012

The laws that govern regulatory analysis required the PTO to perform a benefit-cost analysis, and make the analysis public so that the public could meaningfully participate in the PPAC hearing. Maybe an annual practitioner fee is a good idea. Maybe not. Maybe it would be counterproductive to the PTO's budget—maybe the costs of administration would nearly eat up the revenue. Regulatory analysis is mandatory precisely to ensure that agencies do not leap before they look, and benefits the agency when the agency can show the public that it is acting for public benefit, not for agency benefit.

Regulatory analysis is not just something that agencies get around to when they feel like it; it is something that law-abiding agencies do for every regulation that "that is likely to result in a rule that may … have an annual effect on the economy of $100 million or more or adversely affect in a material way the economy,"[24] REF _Ref523926138 \w \h * MERGEFORMAT under the Executive Order 12866 and Circular A-4. It is something agencies do for any regulation that requires the public to submit paperwork to the agency, under the Paperwork Reduction Act.[25] REF _Ref523926138 \w \h * MERGEFORMAT Because a high fraction of patent practitioners are employed by small entities, analysis under the Regulatory Flexibility Act is also required.

A. The proposal to increase fees for second RCEs

1. The selective disclosure of factual information is problematic

Fees for RCEs are authorized to be set by the Director. They are not specifically scheduled in § 41, but they are "authorized." Therefore, § 10 allows the PTO to set those fees. However, § 10 only supersedes one requirement of the IOAA, and leaves all other fee-setting laws in place (see § I.D of this letter). The PTO may not set fees to "encourage" or "discourage," (see §§ I.B.1 and I.C), and must honor the provisions of the IOAA that are not waived by § 10(a)(2), and must honor the non-waivable constitutional limits against executive branch "taxation."

The cost materials provided to the PPAC showed unit costs for "RCE—1st request" and "RCE—2nd and subsequent."[26] REF _Ref523926138 \w \h * MERGEFORMAT

	proposed fee	unit cost FY 2017
Request for Continued Examination (RCE) - 1st Request (see 37 CFR 1.114)	$1,360	$2,235
Request for Continued Examination (RCE) - 2nd and Subsequent Request (see 37 CFR 1.114)	$2,000	$1,654

If "RCE 2nd request" is ***lower*** in unit cost, then how can the PTO justify setting the "2nd and subsequent request" fee ***higher***? The PTO's 2013 and 2016 rule notices *have* offered justification for this fee—an illegal justification. The PTO's very own words make clear that the "2nd and subsequent" fee is a tax, and therefore unlawful.

At NPRM stage, how does the PTO handle this anomaly? By excising the "inconvenient" information. The "USPTO Section 10 Fee Setting – Activity-Based Information

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24 Executive Order 12866 § 2(f)(1).

25 44 U.S.C. § 3506.

26 Table of Patent Fees – Current, Proposed and Unit Cost, https://www.uspto.gov/sites/default/files/documents/Table_of_Patent_Fees_-_Current_Proposed_and_Unit_Cost.xlsx (Sept. 22, 2019)

and Costing Methodology" document[27] REF _Ref523926138 \w \h * MERGEFORMAT simply omits any discussion of "2nd and subsequent request"—note how each line only discusses "1st request:"

The omission, after including it in previous documents, certainly appears to be entirely intentional. Omission of information that is known to the PTO and that known to be contrary to a position stated by the PTO is deeply problematic.

2. The higher fee for "2nd and subsequent RCE" is unlawful

· The 2019 NPRM does not state any rationale for the "2nd and subsequent RCE fee" to be different than the 1st, let alone higher. Without an explanation, this is "arbitrary and capricious."

· RCE fees are governed by the IOAA, except for the one requirement that is carved out by AIA § 10 (see § I.D of this letter). Thus, the PTO may charge its actual cost, plus

[27] https://www.uspto.gov/sites/default/files/documents/ABI_Methodology_July2019.docx

a proportional share of general administrative costs, reduced by a proportional share of issue and maintenance fees. But no more than that. The excess charge for second RCEs is unlawful.

· The 2012 NPRM explained that the "2nd and subsequent RCE fee" was intended to "Multipart RCE fees demonstrate how the Office seeks to facilitate the effective administration of the patent system and offer patent prosecution options to applicants." That admission makes the 2nd-and-subsequent RCE fee an unconstitutional "tax" (see § I.C of this letter).

· This tends to hurt small entity applicants, and small entity law firms. Small entity applicants' applications. The Initial Regulatory Flexibility Analysis offers no explanation justifying that differential effect on small entities.

· More-innovative inventions tend to take longer prosecution times than small incremental inventions—inventors are less willing to compromise to just "take a weak patent and run." The higher charge for "2nd and subsequent RCEs" penalizes exactly the more-inventive inventions that the patent system is supposed to encourage. E.O. 12866 § 1(b)(5) requires that the PTO explain any regulation that impairs "incentives for innovation." The NPRM fails to do so.

· E.O. 12866 § 1(b)(2) directs agencies to "examine whether existing regulations (or other law) have created, or contributed to, the problem that a new regulation is intended to correct " In 2012, the PTO requested comment on RCE practice.[28] Several of the comment letters[29] noted that at least in part, extended RCE practice was driven by a breakdown of "compact prosecution"—Office Actions were less complete, less careful, less responsive to applicants' arguments. We have not observed any effort by the PTO to address its "existing regulation" half of the problem—for example, the PTO has not recalibrated the count system to remove incentives for gaming by examiners, or provided sound supervision to ensure completeness of Office Actions. E.O. 12866 suggests that it's inappropriate to shift costs to the public for a failure of the PTO to implement its own self-regulatory obligations.

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[28] https://www.uspto.gov/patent/laws-and-regulations/comments-public/comments-request-comments-request-continued-examination

[29] IEEE-USA, https://www.uspto.gov/sites/default/files/patents/law/comments/ieee_20130204.pdf ("the PTO's current compensation system provides examiners with considerable incentives to *delay*."); ABA-IPS, https://www.uspto.gov/sites/default/files/patents/law/comments/aba-ipl_20130201.pdf ("reducing the number of RCE applications requires increasing education of … examiners, with appropriate incentives"); Kenneth Fagin, https://www.uspto.gov/sites/default/files/patents/law/comments/fagin_20130311.pdf ("I believe the primary causes for the growing RCE backlog lie with the PTO"); Bruce Hayden https://www.uspto.gov/sites/default/files/patents/law/comments/hayden_20130308.pdf ("Better enforcement of MPEP requirements for proper examination and for marking OA as final"); Mark Levine, https://www.uspto.gov/sites/default/files/patents/law/comments/levine_20130212.pdf ("[T]he most significant factor contributing to the need to file an RCE … is the poor and improper examination practices in first actions. … Another possible factor contributing to the need to file an RCE is the tendency for examiner's to improperly make second actions final. This is so because the current count system at the USPTO incentivizes such practices.")

A. The restructuring of appeal fees exceeds the PTO's authority under AIA § 10

The change from "notice of appeal" and "filing a brief in support of an appeal" of § 41(a)(6) was restructured into "notice of appeal" and "forwarding an appeal to the Board" as in 37 C.F.R. § 41.20(b)(1) and (4). That is unlawful, and needs to be backed out.

The proposed fees are entirely out of line with the statutory fees. This is especially concerning, given the high rate of reversal (when reversals at pre-Appeal stage, Appeal Brief stage, and final decision stage are added together, the reversal rate is well over 50%, and last time all the data were assembled, was in the mid-80% range. Appeal is a cost largely created by poor examination quality, not a cost created at the instance of applicants). In drafting § 41, Congress had the PTO's data in hand to understand the PTO's cost structure. Congress set the fees for appeal at a fraction of the actual cost. Congress could easily have had in mind that appeal fees should not penalize applicants for examiners' mistakes. Instead, Congress might well have believed that the PTO should have financial incentives and supervisory oversight to ensure that unfounded rejections are withdrawn before the PTO bears the cost of an appeal. The PTO's fee structure interferes with those (inferable) Congressional concerns.

	§ 41 fee	proposed fee	unit cost FY 2017
Notice of Appeal	540	800	17
Filing a Brief in Support of an Appeal	540	0	n/a
Forwarding an Appeal to the Board	unauthorized	2240	5147
Request for Oral Hearing	1080	1300	1566

And at any rate, for reasons discussed §§ I.B.1 and I.C, the PTO lacks statutory and constitutional authority to second guess Congress' policy balances encoded in the appeal fee line items.

B. Other specific examples of unlawful fees

A number of line items in the proposed fee schedule are problematic:

- **Maintenance fees.** The "Detailed Appendix" slides (slide 64) propose that the PTO wants to "restructure issue and maintenance fees," to rebalance the ratio between "back-end" maintenance fees vs. "front-end" processing fees. Congress already made the policy choice: initial filings should be cross-subsidized by maintenance fees, at approximately 50%.[30] REF _Ref523926138 \w \h * MERGEFORMAT Congress (by inference) felt it important to encourage filing, and allow successful patentees to cross-subsidize filing. Constitutionally, it is beyond the PTO's authority to second-guess Congress' policy balance and "tax" to effect the PTO's preference. Under the APA, this is rulemaking

[30] That is not just the statutory language; it's in the legislative history. Pub. L.96-517, 94 Stat 3015 (Dec. 12, 1980); See H. Rep. 96-1307(I),8-9 (1980) (patent applicants should bear the office's patent costs through the payment of fees split in equal amounts between application "processing" fees and post-grant "'maintenance"' fees).

relying on "factors which Congress has not intended [the agency] to consider," one of the categories of agency action that is arbitrary and capricious nearly *per se*.[31] REF _Ref523926138 \w \h * MERGEFORMAT The PTO departed from Congress' intent in 2013, and should move back.

- **Raising the late surcharge for maintenance fees** to "encourage" earlier payment. Congress determined that the public should have clear notice of abandonment on the 4th, 8th, and 12th anniversaries. The PTO disagrees, and thinks the public should know on the 3½, 7½. and 11½ anniversaries. The PTO identifies no statutory delegation of authority for it to hold such an opinion, let alone act on it. Nor does the PTO explain how any rational competitor could reasonably rely on a failure to pay a maintenance fee in the first half of the window to commence investment during the second half—no lawyer would advise a client to undertake the risk of commercial exploitation based on such flimsy information. If this is a good idea, then it is a good idea to secure through a proper law, by Congress.

I. The "operating reserve"

We agree in principle with the PTO's operating reserve. But we see no statutory authorization.

The operating reserve is not fairly within the text of AIA § 10, which limits PTO fee collections to "only" aggregate costs. The House report reinforces this reading.[32] REF _Ref523926138 \w \h * MERGEFORMAT Neither the 2012 Notice of Proposed Rulemaking nor the 2013 Final Rule notice discuss statutory authority for the operating reserve.[33] REF _Ref523926138 \w \h * MERGEFORMAT It is inconsistent with the IOAA, which bars agencies from collecting user fees to cover agency priorities, unless Congress grants express authority.

Further, the legislative history suggests that Congress intended that the PTO *not* have an operating reserve. In fall 2011, Sen. Coburn proposed an amendment that would have given the PTO an operating account outside the normal appropriations process, which (arguably) would have given the PTO the authority to raise funds that it could hold for its own future expenditures. That amendment was not adopted, because of constitutional concerns—an agency can only spend when the money is *appropriated*.

Sen. Coons' "Big Data for IP Act" S.2601[34] REF _Ref523926138 \w \h * MERGEFORMAT would have added a statutory authorization for the operating reserve. But that did not become law.

A good idea is only a good idea if it's legal. If the PTO has no statutory authority for the operating reserve, we urge the PTO to consider whether acting outside the law, just because it seems like a good idea, is in fact a good idea. The PTO only succeeds to the extent that the

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31 *Motor Vehicle Mfrs. Ass'n v. State Farm Mutual Auto. Ins. Co.*, 463 U.S. 29, 43 (1983).

32 See excerpts from the House report at § I.B.1 at page .

33 Patent and Trademark Office, *Setting and Adjusting Patent Fees, Final Rule*, 78 Fed. Reg. 4212 (Jan. 18, 2013)

34 https://www.congress.gov/bill/115th-congress/senate-bill/2601

public is confident in the PTO's commitment to the rule of law and its mission. Conversely, a lawless act by senior officials percolates down, and might contribute to a culture of disrespect for the rule of law within the rest of the agency. Respect for the rule of law builds good will with stakeholders outside the agency. Is the operating reserve worth compromising that?

I. Procedural violations

A. Independent Offices Appropriations Act and Circular A-25

The Federal Register Notice does not even mention the IOAA and circular A-25, which are the general framework statute and Presidential interpretation for agencies that charge user fees. How can an agency comply with a law that it so pointedly ignores?

A. Executive Order 12866

The NPRM states (84 Fed. Reg. at 37401, col. 1):

> The Office did not identify any monetized costs and benefits of the proposed rule, but found that the proposed rule has significant qualitative benefits with no identified costs.

This statement strains credulity:

- The whole point of the rule is to raise fees, by hundreds of millions of dollars. "No identified costs?"
- The comment letters to PPAC identified substantial costs to the public for the DOCX problem, and additional costs are explained in this letter. "No identified costs?"
- The "annual active practitioner fee"—"no identified costs?"

But why has there never been an analysis of the alternative required by statute and the Constitution, raising all fees proportionally from the baseline set by Congress, with deviations only where the PTO has specific data to support a deviation? After all, that is the constitutionally required alternative—the current fee schedule, with its incentives here and disincentives there, is an unconstitutional "tax." Considering only phony strawmen as "alternatives" is not compliant with the PTO's obligations under the letter of the law,[35] REF _Ref523926138 \w \h * MERGEFORMAT and cannot be reconciled with the "regulatory philosophy" or spirit of the law. Artificially narrowing the options is arbitrary and capricious *per se*.[36] REF _Ref523926138 \w \h * MERGEFORMAT Indeed, developing and vetting alternatives is one of the essential goals of the notice and comment process.[37] REF _Ref523926138 \w \h * MERGEFORMAT

C. Executive Order 13771

The NPRM states (84 Fed. Reg. at 37430 at col. 2):

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[35] An "agency must consider reasonably obvious alternatives and, if it rejects those alternatives, it must give reasons for the rejection…" *Yale-New Haven Hosp. v. Leavitt*, 470 F.3d 71, 80 (2d Cir. 2006).

[36] *Pillai v. Civilian Aeronautics Board*, 485 F.2d 1018, 1027 (D.C. Cir. 1973).

[37] *Owner-Operator Independent Drivers Ass'n v. Fed Motor Co.*, 494 F.3d 188, 199–203 (D.C. Cir. 2007) (rule invalid when agency failed to disclose the data and assumptions on which it based its benefit-cost analyses); *Home Box Office Inc. v. Federal Communications Comm'n*, 567 F.2d 9, 36 (D.C. Cir. 1978) ("an agency proposing informal rule-making has an obligation to make its views known to the public in a concrete and focused form so as to make criticism or formulation of alternatives possible").

> This proposed rule is not expected to be subject to the requirements of Executive Order 13771 (Jan. 30, 2017) because this proposed rule is expected to involve a transfer payment.

The claim to the "transfer payments" exemption is false, for at least three reasons:

- The definition of "transfer payment" is in OMB Circular A-4.[38] REF _Ref523926138 \w \h * MERGEFORMAT Payments from the private sector to government for government consumption are not "transfer payments."
- Any carve out from Executive Order 13771 for "transfer payments" is limited to "Federal ***spendin***g regulatory actions that cause ***only*** income transfers between taxpayers and program beneficiaries" (that is, the side that results in payment to a private sector entity, not the government revenue side of the transaction), and "action that establishes a new fee or changes the existing fee for a service, ***without imposing any new costs***"[39] REF _Ref523926138 \w \h * MERGEFORMAT The "annual practitioner fee" and addition of a PDF surcharge are new fee collections from the private sector for consumption by government. Neither is within any carveout.
- OMB's *Implementing Guidance* states the scope of E.O. 13771 such that E.O. 13771 covers at least the annual practitioner fee and surcharge for PDF filing: "[R]egulatory actions [that] impose requirements apart from transfers … need to be offset to the extent they impose more than *de minimis* costs. Examples of ancillary requirements that may require offsets include *new reporting or recordkeeping requirements* or *new conditions, other than user fees*, for receiving a grant, a loan, or a permit." The fee-setting portion of the rule, and the annual practitioner fee and PDF surcharge are directed to covered payments from the public to government, not transfer payments from one private sector person to another.

At least parts of the NPRM are covered by EO 12866 and 13771. The claim for complete exemption is false.

These statements are directed to OMB review under the Paperwork Reduction Act and Executive Orders 12866 and 13771, and the Small Business Administration under the Regulatory Flexibility Act. In all these proceedings, OMB and SBA act *ex parte*. The PTO is cautioned to observe Virginia Bar Rule 3.3(c).[40] REF _Ref523926138 \w \h * MERGEFORMAT

A. The Regulatory Impact Statement fails to consider mandatory issues

This fee-setting regulation is "likely to result in … annual effect on the economy of $100 million or more," E.O. 12866 § 3(f)(1), and thus requires a full Regulatory Impact Analysis

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38 OMB Circular A-4, *Regulatory Analysis*, at 38 (Sept. 17, 2003), https://www.whitehouse.gov/sites/whitehouse.gov/files/omb/circulars/A4/a-4.pdf

39 Executive Order 13771, Reducing Regulation and Controlling Regulatory Costs (Jan. 30, 2017), https://www.federalregister.gov/documents/2017/02/03/2017-02451/reducing-regulation-and-controlling-regulatory-costs ; OMB Memorandum M-17-21, *Guidance Implementing Executive Order 13771, Titled "Reducing Regulation and Controlling Regulatory Costs"* Q&A 13 (Apr. 5, 2017), https://www.whitehouse.gov/sites/whitehouse.gov/files/omb/memoranda/2017/M-17-21-OMB.pdf

40 https://www.vsb.org/pro-guidelines/index.php/rules/advocate/rule3-3/

under Circular A-4. The RIA in the NPRM only considers non-starter alternatives like not raising fees at all, setting all fees at actual cost, applying only inflation adjustment. Of course, against these nonstarter strawmen, the PTO's preferred alternative looks really good. But that's not the way an RIA is supposed to work. The agency is supposed to compare the good approaches, not one plausible one against several bad ones.

A keyword search in the Regulatory Impact Analysis (both the 2019 RIA and the 2016 and 2013 RIA's) for words that ought to be there under OMB Circular A-4, aren't there. The required analysis is omitted.

The alternatives considered in the Regulatory Impact Analysis are strawmen, chosen to be unrealistic. Why is there no analysis of the proportional lockstep fee hike, relative to § 41 as a baseline?

The factors that an agency is directed to consider under Circular A-4 are designed to assist agencies in considering a range of regulatory alternatives, and to choose from among them to ensure that the agency considers all applicable laws, all applicable economic effects, and balances all regulatory priorities. As we noted in the opening to this letter, the laws are there to ensure that the PTO acts in the public interest. These laws are not "bureaucratic sport" or needless burden to be ignored.

Respectfully submitted,

Fifty patent practitioners on the signature page

Attachments:

Exhibit A: Ron D. Katznelson, *The U.S. Patent Office's Proposed Fees Under the America Invents Act—Part I: The Scope of the Office's Fee-Setting Authority*, 85 BNA PAT. TM & COPYRIGHT J. 206 (Dec. 7, 2012).

Exhibit B: A copy of this letter prepared from the .docx of this letter as printed from Google Docs