

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF PENNSYLVANIA

JILL STEIN, RANDALL REITZ, ROBIN HOWE,
SHANNON KNIGHT, and EMILY COOK,

Plaintiffs,

-against-

KATHY BOOCKVAR, in her official capacity as
Acting Secretary of the Commonwealth; and
JONATHAN MARKS, in his official capacity as
Commissioner of the Bureau of Commissions,
Elections, and Legislation,

Defendants.

No. 16-CV-6287 (PD)

MOTION TO ENFORCE THE SETTLEMENT AGREEMENT

Plaintiffs Jill Stein, Randall Reitz, Robin Howe, Shannon Knight, and Emily Cook hereby move the Court, pursuant to Paragraph 13 of the Parties' Settlement Agreement (Dkt. #108-1) and Paragraph 3 of the Court's Order of dismissal (Dkt. #110), upon the annexed memorandum of law, Declaration of Ilann M. Maazel with all exhibits thereto, Declaration of J. Alex Halderman, and Declaration of Rich Garella, for an order (1) finding Defendants in breach of the Settlement Agreement; (2) enjoining Defendants to specifically perform their obligations under the Settlement Agreement by immediately rescinding the certification of the Election Systems & Software ExpressVote XL voting system (the "ExpressVote XL") for use in the Commonwealth of Pennsylvania; and (3) enjoining Defendants from re-certifying the ExpressVote XL for use in the Commonwealth of Pennsylvania at any time until after the expiration date of the Settlement Agreement.

Dated: November 26, 2019

EMERY CELLI BRINCKERHOFF & ABADY
LLP

/s/

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**MEMORANDUM OF LAW IN SUPPORT OF PLAINTIFFS'
MOTION TO ENFORCE THE SETTLEMENT AGREEMENT**

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TABLE OF CONTENTS

	<u>PAGE NO.</u>
TABLE OF AUTHORITIES	ii
PRELIMINARY STATEMENT	1
PROCEDURAL BACKGROUND.....	2
LEGAL STANDARD.....	4
ARGUMENT	4
I. ON THE EXPRESSVOTE XL, THE “VOTE” IS THE BAR CODE	4
II. THE EXPRESSVOTE XL DOES NOT “PRODUCE A VOTER-VERIFIABLE RECORD OF EACH VOTE”	7
III. THE EXPRESSVOTE XL DOES NOT USE PAPER BALLOTS AND FRUSTRATES THE PARTIES’ INTENT IN REQUIRING PAPER BALLOTS .	8
A. Not Every Piece of Paper Is a Paper Ballot	9
B. Design Flaws in the ExpressVote XL Frustrate the Purpose of Using Paper Ballots	10
IV. THE EXPRESSVOTE XL DOES NOT SUPPORT ROBUST PRE- CERTIFICATION AUDITING OF ELECTION RESULTS.....	12
CONCLUSION.....	13

TABLE OF AUTHORITIES

PAGE NO.

Cases

Bohler-Uddeholm Am., Inc. v. Ellwood Grp., Inc.,
247 F.3d 79 (3d Cir. 2001)..... 4

Cal. Sun Tanning USA, Inc. v. Electric Beach, Inc.,
369 F. App’x 340 (3d Cir. 2010) 4

DeHainaut v. Cal. Univ. of Pa.,
490 F. App’x 420 (3d Cir. 2012) 4

Kokkonen v. Guardian Life Ins. Co of Am.,
511 U.S. 375 (1994)..... 4

Mazzella v. Koken,
739 A.2d 531 (Pa. 1999)..... 4

Wells Fargo Bank. N.A. v. Chun Chin Yang,
317 F. Supp. 3d 879 (E.D. Pa. 2018) 4

Statutes

25 P.S. § 3031.1 9, 10

PRELIMINARY STATEMENT

In this case, Plaintiffs—a 2016 presidential candidate and four Pennsylvania voters—challenged the Commonwealth of Pennsylvania’s election system as a whole. Plaintiffs alleged that the Commonwealth disenfranchised voters by forcing them to use outdated machines that failed to work reliably, then erecting insurmountable barriers to having those votes counted under the byzantine provisions of the Election Code. After the Court denied Defendants’ motion to dismiss in substantial part, the parties entered into a settlement agreement painstakingly negotiated with the involvement of Magistrate Judge Rice (the “Agreement,” Maazel Decl. Ex. A). This Court has jurisdiction to enforce the terms of the Agreement. Agreement ¶ 13. The Agreement is designed, among other things, to achieve one clear goal: “every Pennsylvania voter in 2020 uses a voter-verifiable paper ballot.” Agreement ¶ 3.

To that end, the Agreement limits Defendants’ ability to certify voting systems in Pennsylvania. Defendants may only certify a voting system if: (a) “[t]he ballot on which each vote is recorded is paper,” *i.e.*, the system must use “paper ballot[s],” *id.* ¶¶ 2(a), 3; (b) the system “produce[s] a voter-verifiable record of each vote,” *id.* ¶ 2(b); and (c) the system is “capable of supporting a robust pre-certification auditing process” to verify the accuracy and integrity of election results before the results are certified, *id.* ¶ 2(c). The Agreement further requires the Secretary to “direct each county in Pennsylvania to implement these voting systems by the 2020 primaries.” *Id.* ¶ 3. Taken together, these provisions ensure that all Pennsylvania counties transition to voter-verifiable, auditable paper-ballot systems by 2020.

Plaintiffs acknowledge Defendants’ efforts to implement the Agreement and move toward the goal of voter-verifiable, auditable, paper-ballot voting in Pennsylvania by 2020. Progress has been made. Regrettably, however, Defendants have certified a voting system, the Election Systems & Software ExpressVote XL, that violates the Agreement’s three clear

requirements. Defendants improperly certified the ExpressVote XL twice in the past year despite the availability of many other systems that comply with the Agreement and are consistent with best practices. This is significant. Absent relief, 17 percent of Pennsylvania voters will use this defective, non-compliant system, including the voters of Philadelphia County.

First, the ExpressVote XL counts votes by counting bar codes printed by a machine on paper. It does not count handwritten marks made by voters themselves on paper, or marks made by ballot-marking devices (BMDs) on paper that are visually comprehensible to voters. Because the ExpressVote XL counts bar codes, not comprehensible markings, it does not produce a “voter-verifiable record of each vote.” The “vote” is the bar code. No voter can verify a bar code.

Second, the ExpressVote XL does not use a “paper ballot.” And, because it makes reliable recording of the voter’s choice on paper entirely dependent upon software, it does not function like a true paper ballot system in important ways. These shortcomings frustrate the parties’ intent in requiring paper ballots.

Third, because its paper records may not accurately reflect voters’ intent, the ExpressVote XL is not capable of supporting robust pre-certification auditing of election results.

The Court should therefore find Defendants in breach of the Agreement, order Defendants to immediately rescind the certification of the ExpressVote XL, and enjoin Defendants from again certifying the ExpressVote XL for the duration of the Agreement.

PROCEDURAL BACKGROUND

On November 30, 2018, Defendants initially certified the ExpressVote XL as safe for use by voters in Pennsylvania elections and compliant with the requirements of the Election Code under 25 P.S. § 3031.5(b). Maazel Decl. Ex. B at 2. On July 17, 2019, Pennsylvania voters petitioned for a reexamination of the system under 25 P.S. § 3031.5(a). *Id.* app. A. The

reexamination required Defendants to again decide whether the ExpressVote XL would be certified for use in the Commonwealth.¹

Aware that the request for a reexamination was pending, on July 29, 2019, Plaintiffs notified Defendants under Paragraph 14 of the Agreement that the ExpressVote XL did not comply with the Agreement. Maazel Decl. Ex. C.

On September 3, 2019, Defendants announced the results of the reexamination and again certified the ExpressVote XL for use in the Commonwealth. Maazel Decl. Ex. B at 2. On September 12, 2019, Defendants responded to Plaintiffs under Paragraph 15 of the Agreement and explained the basis of their belief that the ExpressVote XL is compliant. Maazel Decl. Ex. D. Plaintiffs sent a further notice of noncompliance on October 1, 2019, Maazel Decl. Ex. E, to which Defendants again responded on October 29, 2019, Maazel Decl. Ex. F.

On Election Day, November 5, Northampton County conducted its first election using ExpressVote XL machines that it purchased in March. Voters reported widespread “irregularities” with the machine. As a result of this election disaster, the county abandoned ExpressVote XL machines to count the votes. *See* Maazel Decl. Exs. G, H. Instead, the county borrowed scanners from neighboring counties to count the votes. *See* Maazel Decl. Ex. I.

On November 6, 2019, the parties conferred by telephone, and were unable to resolve their differences. During that meet-and-confer, Plaintiffs informed Defendants that they would likely seek relief from the Court. On November 10, 2019, having learned about the problems in Northampton, Plaintiffs inquired one last time whether the State would modify its position. The State refused. *See* Maazel Decl. Ex. J. This motion follows.

¹ Counties are responsible for purchasing voting equipment. Counties therefore ultimately decide for themselves whether to use the ExpressVote XL or some other certified voting system.

LEGAL STANDARD

This Court has jurisdiction to enforce the Agreement because the Agreement so provides, Agreement ¶ 13, and the Court retained such jurisdiction in its order dismissing the case, Dkt. #110. *See Kokkonen v. Guardian Life Ins. Co of Am.*, 511 U.S. 375, 381 (1994). Pennsylvania law governs the interpretation of the Agreement. Agreement ¶ 23. Settlement agreements are contracts, and under Pennsylvania law, their enforcement is “governed by principles of contract law.” *DeHainaut v. Cal. Univ. of Pa.*, 490 F. App’x 420, 422 (3d Cir. 2012) (quoting *Mazzella v. Koken*, 739 A.2d 531, 536 (Pa. 1999)).

“The primary goal of contract interpretation is to determine the intent of the parties.” *Wells Fargo Bank. N.A. v. Chun Chin Yang*, 317 F. Supp. 3d 879, 886 (E.D. Pa. 2018). “[I]t is ‘firmly settled’ under Pennsylvania law that ‘the intent of the parties to a written contract is contained in the writing itself.’” *Id.* (quoting *Bohler-Uddeholm Am., Inc. v. Ellwood Grp., Inc.*, 247 F.3d 79, 92 (3d Cir. 2001)).

Given the non-monetary nature of Defendants’ obligations under the Agreement, the appropriate remedy for any breach is specific performance. *See, e.g., Cal. Sun Tanning USA, Inc. v. Electric Beach, Inc.*, 369 F. App’x 340, 348 (3d Cir. 2010).

ARGUMENT

I. ON THE EXPRESSVOTE XL, THE “VOTE” IS THE BAR CODE

In the mode certified for use in Pennsylvania, the ExpressVote XL works as follows:

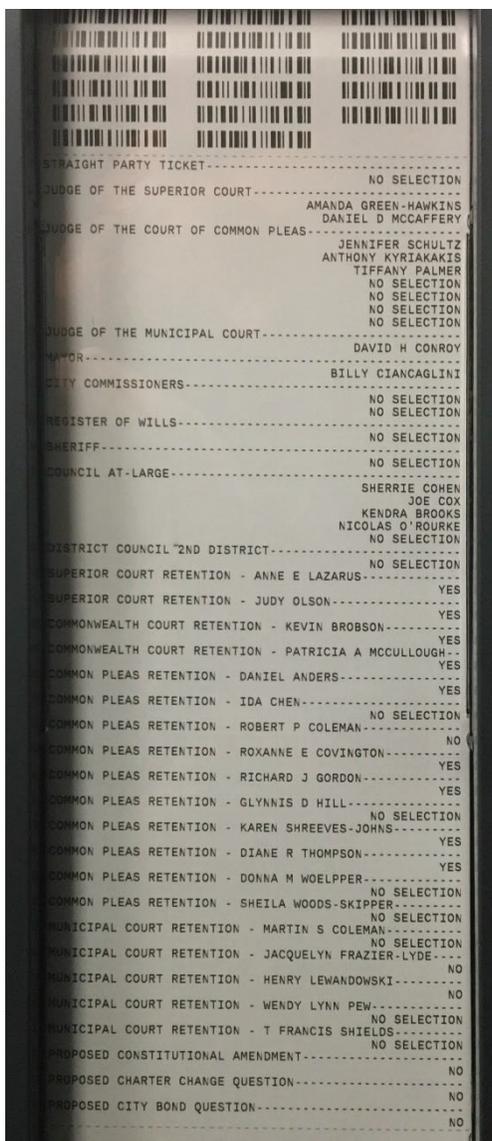
1. A card is inserted into the machine to tell the machine which elections the voter can vote in.
2. The machine displays those elections and the candidates running in them on a touchscreen.

3. The voter makes her choice of candidate(s) in those races on the touchscreen, then presses “print.”
4. The machine prints the voter’s choices on a piece of paper.
5. The piece of paper includes (a) a series of bar codes that are supposed to reflect the voter’s choices and (b) a written record of the voter’s choices.
6. The machine scans the *bar code* on the piece of paper.
7. The voter can, with some difficulty, review the physical piece of paper through glass.
8. If the voter approves what she sees, she presses a button to cast her vote.
9. The vote recorded from the bar code is saved and tabulated.
10. The piece of paper goes back into the machine and is deposited and stored.

See Maazel Decl. Ex. B at 6.²

Thus, while the voter makes his or her choices on a touchscreen, the system actually counts the piece of paper. That piece of paper looks like this:

² A video showing how this process appears from the voter’s perspective is available here: <https://youtu.be/UjWQnngHRgE>.



This system has three fundamental problems. Each violates the Agreement.

First, it does not provide the required “voter-verifiable record of each vote.”

Agreement ¶ 2(b). The scanner reads the bar code, not the words, to tabulate the results.

Declaration of J. Alex Halderman dated Nov. 21, 2019 (“Halderman Decl.”) ¶ 8. Unless the

voter can somehow decipher a bar code, she cannot know whether the writing on the paper

matches the vote that the machine will tabulate. The voter can only verify the *words*. She

cannot verify the *vote*. She has to take it on faith that the words match the vote—the bar code.

Second, it does not use a paper ballot and, because of its problematic design, thwarts the parties' intent in requiring paper ballots. Paper ballots are safer and more reliable for several reasons. Among the most important is that paper ballots minimize the role of error- and attack-prone software in mediating between the voter's expression of her choice and the tabulation of the vote. The ExpressVote XL largely neutralizes these advantages by scanning the ballot before the voter sees it and depending upon software to avoid tampering with the printed ballot.

Third, because one cannot be sure that the paper reflects voter intent, the ExpressVote XL cannot support robust pre-certification auditing of the election results.

II. THE EXPRESSVOTE XL DOES NOT “PRODUCE A VOTER-VERIFIABLE RECORD OF EACH VOTE”

The Agreement permits Defendants to certify a voting system only if it “produce[s] a voter-verifiable record of each vote.” Agreement ¶ 2(b). The ExpressVote XL does not do so.

With ordinary paper ballots read by optical scanners, the “vote” is the voter's own marking on a piece of paper. On the ExpressVote XL, however, the “vote” is the bar code. *See* Maazel Decl. Ex. B at 6; Halderman Decl. ¶ 8. The voter can verify the text. The voter cannot verify the bar code. But it is the bar code, not the text, that counts as the vote. It is perfectly possible for a malfunctioned, hacked, or compromised machine to print one thing in the text and another in the bar code. *See* Halderman Decl. ¶ 9. For precisely these reasons, the State of Colorado in September 2019 decided to forbid the use of QR codes on ballots and to require that all ballots be tabulated using “human-verifiable information.”³ Maazel Decl. Ex. K. As Colorado found, “[a]lthough voters can see their vote choices, they cannot verify that the QR

³ QR codes are functionally identical to bar codes but present information that can be scanned by a machine horizontally and vertically, rather than just in one direction.

code is correct. These ballots are tabulated by machines that decode the votes contained in the QR code. QR codes . . . are potentially subject to manipulation.” *Id.*

That the ExpressVote XL requires voters to review the printed paper through glass further exacerbates these problems. While most BMDs release a piece of paper later scanned through an optical scanner, the ExpressVote XL only shows the piece of paper to the voter through a display window. In an informal survey of 150 Philadelphia voters who used the ExpressVote XL on November 5, 2019, about half expressed difficulty reading the paper through the glass window. Many commented that the print was “small” or “tiny” and that the lighting in the voting booth cast “shadows” on the display. *See* Declaration of Rich Garella dated November 25, 2019.

From the perspective of the voter, it is as if the ExpressVote XL printed out every voter’s vote in Greek and scanned and tabulated the Greek version, while also printing what it claimed to be an English translation in semi-legible form. The voter’s vote is recorded in a foreign alphabet she does not understand (unless she happens to read Greek). She has no way of knowing whether the translation accurately reflects the inscrutable original that the machine actually counts as her vote. She therefore cannot verify whether the machine has accurately translated her intention to the printed page. All she can do is hope the translation is accurate.

The parties’ Agreement requires more. The Agreement forbids certification of any voting system unless it provides a “voter-verifiable record of each *vote*.” Agreement ¶ 2(b) (emphasis added). The ExpressVote XL does not provide such a record.

III. THE EXPRESSVOTE XL DOES NOT USE PAPER BALLOTS AND FRUSTRATES THE PARTIES’ INTENT IN REQUIRING PAPER BALLOTS

The Agreement also permits Defendants to certify a voting system only if “the ballot on which each vote is recorded is paper.” *Id.* ¶ 2(a). The requirement furthers the parties’

objective that “every Pennsylvania voter in 2020 uses a voter-verifiable paper ballot.” *Id.* ¶ 3. The ExpressVote XL uses paper, but it does not use paper ballots. It violates the parties’ Agreement for this separate reason as well.

A. Not Every Piece of Paper Is a Paper Ballot

“Paper ballot” is a defined term in the Pennsylvania Election Code. It means a “printed paper ballot which *conforms in layout and format to the voting device in use.*” 25 P.S. § 3031.1 (emphasis added). A paper ballot stands in contrast to a “ballot card,” which refers to “a card which is compatible with automatic tabulating equipment and on which votes may be registered.” *Id.* These definitions draw a clear distinction. A ballot card is any old piece of paper on which votes can be recorded in a manner susceptible to automated counting. But a paper ballot must do more than simply be countable by a machine. It must “conform[] in layout and format” to the equipment the voter is actually using to indicate his choice among candidates. *Id.* In other words, it needs to look like a ballot. It needs to have choices on it. The National Institute of Standards and Technology, a federal agency that performs election security research, similarly defines a “paper ballot” as “[a] piece of paper, or multiple sheets of paper, *on which all contest options of a given ballot style are printed.*” Maazel Decl. Ex. L (emphasis added). A paper ballot stands in contrast to a “voter-verified paper audit trail,” which is simply “[a] paper document that the voter can review before officially casting their ballot.” *Id.*

These definitions are consistent with the ordinary meaning of “ballot” and “paper ballot” in the election context. When one speaks of a “ballot” being presented to voters, one refers to the array of candidates among whom voters are given the option to choose. That is why candidates talk about being “on the ballot,” for example. The Election Day “ballot,” in the everyday meaning of that term, is not any scrap of paper on which the voter writes down his choice. It is the menu of options from which the voter chooses.

The piece of paper used by the ExpressVote XL is not a “paper ballot” under either the Election Code definition or the ordinary meaning of the term. It does not list all the candidates in all the races. It does not conform visually to the options presented to the voter on the ExpressVote XL touchscreen. The piece of paper used by the ExpressVote XL is therefore not a ballot. In the language of the Election Code, it is, if anything, a “ballot card.” *Id.* § 3031.1. In ordinary language, it is probably best described as a receipt. Revealingly, even Defendants do not call it a paper ballot. They call it a “vote summary record” instead. *Maazel Aff. Ex. B* at 6.

This is not a problem endemic to all election systems that use a ballot-marking device to mark paper ballots. For example, the ClearBallot ClearAccess BMD, which is certified for use in Pennsylvania, prints an actual marked paper ballot after the voter uses the machine to make her choice. *See Maazel Decl. Ex. M* at 20-21. In certifying the ClearAccess for use in Pennsylvania in March 2019, Defendants described the piece of paper generated by that BMD as a “paper ballot,” not a “vote summary record.” *Id.* at 6. It is entirely possible for an electronic ballot-marking device to use a “paper ballot,” within the meaning of that term under the Election Code and in plain English. The ExpressVote XL simply does not do so.

B. Design Flaws in the ExpressVote XL Frustrate the Purpose of Using Paper Ballots

Whether the ExpressVote XL uses a “paper ballot” is not just a matter of semantics. Regardless of what the piece of paper is called, the ExpressVote XL impermissibly frustrates the parties’ purpose in requiring paper ballots in the Agreement because it does not function as a true paper ballot system in certain important ways.

Paper ballots enhance transparency and reliability by not using error- and attack-prone software to translate the voter’s expression of his intention into an official record. With a paper ballot, the voter creates the official record of his vote with his own hand. The official

record of his vote—his ballot—is readily understandable to him, and he can tell if he has made a mistake. Unless he mismarks the page and does not realize it, the official record of his vote will reflect his choice. *See* Halderman Decl. ¶ 3.

The paper used by the ExpressVote XL does not serve these purposes. Beyond the fact that the bar code is incomprehensible to voters, the ExpressVote XL has two conspicuous design flaws that could cause the official paper record not to reflect the voter's choice if the software is malfunctioning or compromised.

First, when the paper is fed back into the machine after the voter has had the chance to look at it, the paper passes *back* through the printer that printed it. The software that runs the machine is *supposed* to make the printhead lift up so that the paper can pass back into the collection bin without making physical contact with the printhead. *See* Maazel Decl. Ex. J. But if the software is malfunctioning or hacked, the printhead could make physical contact with the paper *after* the voter has reviewed it and make new marks on the paper without the voter's knowledge. *See* Halderman Decl. ¶ 6.⁴

Second, the ExpressVote XL scans the bar code on the paper *before* the voter reviews the paper, not after. *See* Maazel Decl. Ex. B at 6. In most paper ballot systems, the voter marks his vote, has the chance to review it, and then scans it into a machine for tabulation. The ExpressVote XL works differently. The machine scans the vote; then the voter has the chance to review it; then the machine tabulates the already-scanned result if the voter does not

⁴ In recertifying the machine, Defendants brushed aside this design flaw. They claimed that the voter would *hear* the printhead reprinting their ballot in the event of such a malfunction because the printer is noisy. *See* Maazel Aff. Ex. B at 7. This excuse is wrong for three reasons. First, an untrained voter would have no reason to find such noises suspicious. Second, the voter would have no reason to be listening to the machine at the relevant point in time, since he would have already hit the button to cast his vote and might be gathering his things or walking away. Third, even if the voter paid attention, heard the noises, and found them suspicious, no remedy exists that he can seek from a poll worker.

reject what he sees. That sequence of events is unusual for a paper ballot system and is more analogous to a direct-recording electronic voting machine that prints out a receipt after the fact. It makes the voter entirely reliant upon software not to cast his scanned ballot if he spots an error. Every vote—whether correct or erroneous—gets scanned into the ExpressVote XL. All that stops the erroneous ones from being cast and tabulated is software. *See* Halderman Decl. ¶¶ 5, 7.

Not only does the ExpressVote XL fail to use “paper ballots” under the relevant definitions of that term, but it also fails to *function* like a paper ballot system in important ways. It therefore violates the Agreement, which unambiguously requires paper ballots. *See* Agreement ¶¶ 2(a), 3.

IV. THE EXPRESSVOTE XL DOES NOT SUPPORT ROBUST PRE-CERTIFICATION AUDITING OF ELECTION RESULTS

Because its paper records do not necessarily reflect voters’ actual votes, the ExpressVote XL is not “capable of supporting a robust pre-certification auditing process.” Agreement ¶ 2(c).

Different methods of pre-certification auditing exist, but they share a basic premise: checking a sample of actual ballots to “correct any computer-based error or fraud.” Halderman Decl. ¶ 10. In a voting system that uses paper ballots with an optical scanner, the audit hand-counts a sample of paper ballots to make sure they are consistent with the machine-counted result to a sufficient degree of confidence. This procedure confirms—before the results are certified—that the result tabulated by the scanner matches voters’ choices. It increases public confidence in the result and makes costly recounts unnecessary.

The ExpressVote XL cannot support the same kind of effective auditing. As explained above, a successful hack could cause the ExpressVote XL to produce paper records

that deviate from voters' intended votes—whether by remarking ballots or by casting rejected votes. Halderman Decl. ¶¶ 7-8. If such an attack occurred, the paper records would match the machine count, but neither would match voters' actual choices. *See id.* ¶ 10. Counting paper records in the audit would therefore accomplish nothing—or worse, it would actually “confirm” the wrong result.

The Agreement requires that voting systems certified for use in Pennsylvania support robust pre-certification auditing. The design of the ExpressVote XL makes it impossible to do so. It therefore does not comply with the Agreement.

CONCLUSION

The Court should enter an order finding that the ExpressVote XL does not comply with the Agreement, directing Defendants to immediately decertify the ExpressVote XL, and enjoining Defendants from recertifying it for the duration of the Agreement.

