

# THE ANTRIM REPORT INVESTIGATION & SYNOPSIS

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AHEAD  
AMERICA**

# Table of Contents

Summary .....	3
Chronology of Events .....	4
Summary of the Vote Numbers Over Time .....	6
Parties to the Dispute .....	6
The Allied Security Operations Group .....	6
DePerno Law .....	6
Michigan Secretary of State Jocelyn Benson .....	7
Dominion Voting Systems .....	7
Dr. J. Alex Halderman .....	7
The Allegations.....	8
The Tabulator Wireless Modem Quote Claim .....	8
The Tabulator Wireless Chip Claim .....	9
The Internal Email from Dominion Claim.....	9
The International Server Claim .....	10
The International Subsidiary Claim .....	10
The Smartmatic Connection Claim .....	11
The Wiped Ballot Images Claim .....	11
The Removed Vote Adjudication Logs Claim .....	11
The Failed Attempt to “Zero Out” Claim.....	11
The 90-Day Safe Harbor Act Violation Claim .....	12
The Reprogramming the Ballots Claim .....	12
The Exceeding the Maximum Allowable Error Rate Claim .....	12
The Vote Switches / Software Glitches Claim.....	13
The Ranked Choice Voting Claim .....	13
The Security Vulnerability Claims .....	13
Contractual Violations.....	14
Decertify Dominion Because of Inaccuracies.....	16
Final Assessment of the ASOG Report & Antrim Events.....	19
An Open Source Solution .....	20
Acknowledgements.....	21
Get Involved!.....	21

## Summary

On the night of the 2020 General Election, Antrim County went to Joe Biden. This drew immediate scrutiny given that then-candidate Donald Trump had won handily four years earlier. The following day, a corrected count showed that Dominion machines had erroneously underreported Trump and that he had won Antrim County by nearly 6,000 votes.

The Allied Security Operations Group (ASOG), on behalf of DePerno Law, performed an independent investigation in Antrim County.

ASOG claimed that Dominion Voting Systems (DVS) machines in Antrim County intentionally switched votes from Trump to Biden, transmitted the results wirelessly, had an exceptionally high error rate that exceeded certification limits, and illegally wiped the ballot images in violation of state law. Democratic Michigan Secretary of State Jocelyn Benson, the bipartisan Michigan Senate Oversight Committee, Dominion Voting Systems, and University of Michigan Professor of Computer Science and Engineering Dr. J. Alex Halderman – who performed an independent analysis – concluded that ASOG’s claims had no factual basis for several reasons.

Our analysis of all reports and data showed that, for the most part, the defendants correctly rebutted ASOG’s claims. No evidence suggests that Antrim County’s DVS machines had fraudulent features in their designs, were online, or suffered from wiped ballot images.

Vulnerabilities in the system did exist, however, although mostly due to human error and negligence. Due to missing poll tapes, one local race could not correctly audit or accurately account for 72 ballots. In another race, a 3-ballot discrepancy changed the outcome of the race, with machine error as a conspicuous suspect. That race also had prior scan records erased without explanation. These instances alone should decertify DVS machines.

Furthermore, our research uncovered evidence that Dominion violated its state contract. DePerno Law revealed that Dominion made their machines in Taiwan and not Plano, Texas as they had originally stated. More importantly, because the tabulators and memory cards failed to store write-in ballot images as specified in contract point 1.1.A.23, they violated the state agreement. These points along with the tabulation errors provide sufficient cause to decertify the DVS machines.

As nobody could view the source code due to DVS products being proprietary, “black box voting” machines, nobody outside Dominion knows for sure what it contains. All of these issues could be resolved through the adoption of open source voting machines, with requirements to archive ballot images and ballot definitions.

## Chronology of Events

January 2017 – Former Michigan Secretary of State (SOS) Ruth Johnson, a Republican, announces the purchase of Dominion Voting Systems (DVS), Election Software & Services (ES&S), and HartInterCivic for state elections.<sup>1</sup>

March 1, 2017 – Dominion Voting Systems signs a 10-year contract with the Michigan Department of Technology, Management, and Budget.<sup>2</sup>

January 19, 2019 – The U.S. Election Commission certifies Dominion Voting Systems' Democracy Suite 5.5-A (modification) election management system.<sup>3</sup>

November 5, 2019 – Antrim County, Michigan has its first two elections using DVS' Democracy Suite in Warner Township and for Boyne Falls Public Schools.<sup>4</sup>

August 25, 2020 – DVS employee Cheryl Homes sends an email summarizing the efficacy of the election process following the primaries. The email describes issues related to the transmission of vote totals via wireless modems, and it states that DVS turned off image saving.

November 4, 2020 – Unofficial results posted by the Antrim County Clerk show that Joe Biden got over 7,700 votes, or 3,000 more than Donald Trump. Antrim County voted 62% in favor of President Trump in 2016.

November 5, 2020 – Media outlets publish the county's first attempt to rectify the initial vote discrepancy, which shows Trump with 9,783 votes and Biden with 7,289 votes.

November 6, 2020 – The Allied Security Operations Group (ASOG), headed by DePerno Law, begins its independent investigation after the re-tabulation.

November 7, 2020 – Secretary of State Jocelyn Benson, a Democrat, releases a statement: "After discovering the error in reporting the unofficial results, the clerk worked diligently to report correct unofficial results by reviewing the printed totals tape on each tabulator and hand-entering the results for each race, for each precinct in the county."<sup>5</sup>

November 16, 2020 – Michigan state's Official Vote report releases.

November 21, 2020 – Per the ASOG report, someone unsuccessfully attempts to zero out the election results on the same day as the canvass/certification. The bipartisan Michigan Senate Oversight Committee (MSOC) also begins its own investigation on this day.

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<sup>1</sup> [https://www.michigan.gov/documents/sos/SecJohnsonAnnounce\\_549600\\_7.pdf](https://www.michigan.gov/documents/sos/SecJohnsonAnnounce_549600_7.pdf)

<sup>2</sup> [https://www.michigan.gov/documents/localgov/7700117\\_555468\\_7.pdf](https://www.michigan.gov/documents/localgov/7700117_555468_7.pdf)

<sup>3</sup> <https://www.eac.gov/voting-equipment/democracy-suite-55-modification>

<sup>4</sup> [https://www.michigan.gov/documents/sos/Aug\\_6\\_2019\\_Elec\\_Jurisdictions\\_657811\\_7.pdf](https://www.michigan.gov/documents/sos/Aug_6_2019_Elec_Jurisdictions_657811_7.pdf)

<sup>5</sup> [https://www.michigan.gov/documents/sos/Antrim\\_Fact\\_Check\\_707197\\_7.pdf](https://www.michigan.gov/documents/sos/Antrim_Fact_Check_707197_7.pdf)

December 13, 2020 – Russell Ramsland, Jr. publishes the ASOG Report findings and allegations.<sup>6</sup>

December 14, 2020 – Dominion issues a public relations piece regarding various election claims titled “Setting the Record Straight: Facts & Rumors.”<sup>7</sup>

December 15, 2020 - Dominion Voting Systems CEO John Poulos goes before Michigan’s Senate Oversight Committee and gives testimony under oath.

December 17, 2020 – The final count shows that President Trump won the county.

March 26, 2021 – Professor of Computer Science and Engineering at the University of Michigan, Dr. J. Alex Halderman offers his analysis on behalf of the Michigan SOS, countering ASOG.<sup>8</sup>

April 9, 2021 – DePerno Law files a follow-up claim.<sup>9</sup>

June 23, 2021 –MSOC issues a report which concludes that although the election had many severe weaknesses, there were no significant acts of fraud.<sup>10</sup>

June 24, 2021 – Dominion issues their “Fact Check” of the ASOG report.

September 15, 2021 – Dominion revises “Setting the Record Straight: Facts & Rumors.”<sup>11</sup>

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<sup>6</sup>[https://www.depernelaw.com/uploads/2/7/0/2/27029178/antrim\\_michigan\\_forensics\\_report \[121320\] v2 \[redacted\].pdf](https://www.depernelaw.com/uploads/2/7/0/2/27029178/antrim_michigan_forensics_report_[121320]_v2_[redacted].pdf)

<sup>7</sup> <https://www.dominionvoting.com/election2020-setting-the-record-straight/>

<sup>8</sup> <https://ftt-uploads.s3.amazonaws.com/wp-content/uploads/2021/03/29140718/Antrim.pdf>

<sup>9</sup> [https://www.depernelaw.com/uploads/2/7/0/2/27029178/ex\\_5-10.pdf](https://www.depernelaw.com/uploads/2/7/0/2/27029178/ex_5-10.pdf)

<sup>10</sup> [https://misenategopcdn.s3.us-east-1.amazonaws.com/99/documents/20210623/SMPO\\_2020ElectionReport\\_2.pdf](https://misenategopcdn.s3.us-east-1.amazonaws.com/99/documents/20210623/SMPO_2020ElectionReport_2.pdf)

<sup>11</sup> <https://www.dominionvoting.com/election2020-setting-the-record-straight/>

## Summary of the Vote Numbers Over Time <sup>12</sup>

	Date	Registered Voters	Total Votes Cast	Biden	Trump	Third Party	Write-In	TOTAL VOTES for President	Note
1.	Nov. 4	22,082	16,044	5,960	9,748	239	23	15,970	Tabulator tapes-official results (Not reported on election night).
2.	Nov. 4	22,082	16,047	7,769	4,509	145	14	12,437	Clerk's computer-unofficial results (publicly reported).
3.	Nov. 5	22,082	18,059	7,289	9,783	255	20	17,347	First attempt to rectify discrepancy.
4.	Nov. 6	22,082	16,044	5,960	9,748	241	20	15,969	Completion of re-tabulation.
5.	Nov. 16	22,082	16,044	5,960	9,748	241	20	15,969	Official Vote report.
6.	Nov. 21	22,082	16,044	5,960	9,748	241	20	15,969	Canvass/certification
7.	Dec. 17	22,082	16,044	5,959	9,759	244	20	15,982	Hand Recount

## Parties to the Dispute

### The Allied Security Operations Group

The Allied Security Operations Group (ASOG) alleged that Dominion Voting Systems (DVS) intentionally and purposefully had inherent errors built into its design schematics in order to create systemic fraud and influence election results. ASOG claimed that the system intentionally generated an enormously high number of ballot errors in the electronic ballots in order to transfer them to adjudication with no oversight, transparency, or audit trail. ASOG claimed that this process led to election fraud as a result of machine and/or software error, not human error. The ASOG Report concluded that because 48 other counties in Michigan used these same machines and software, their alleged finds cast doubt on Michigan's elections.

### DePerno Law

DePerno Law claimed that the machines used in Antrim County used wireless modems and transmitted the results online and overseas in violation of state and federal laws. The firm primarily relied on The ASOG Report by Russell Ramsland, Jr., who headed the group. Ramsland claimed that an unauthorized user attempted to zero out election results on November 21, 2020, which demonstrated intent to deliberately remove the log files. He also cited a DVS training manual mentioning the digital adjudication feature, which they claimed proved that the Antrim machines had digital adjudication that allowed county workers to change votes. DePerno Law also cited an internal email from DVS employees following the 2020 primary election discussing wireless transmission and turning off the ballot image feature as evidence.

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<sup>12</sup> [https://misenategopcdn.s3.us-east-1.amazonaws.com/99/documents/20210623/SMPO\\_2020ElectionReport\\_2.pdf](https://misenategopcdn.s3.us-east-1.amazonaws.com/99/documents/20210623/SMPO_2020ElectionReport_2.pdf)

## Michigan Secretary of State Jocelyn Benson

Michigan Secretary of State Jocelyn Benson first explained the difference between the voting machines and the election management systems (EMS): “Antrim County uses the Dominion Voting Systems election management system and voting machines (tabulators), which count hand-marked paper ballots. Counties use election management systems to program tabulators and also to report unofficial election results.” She explained that the anomalous tabulation event was due to “human error” and isolated to Antrim County, and did not affect other states, counties, or overall election results: “When the software was reprogrammed, the County also had to update the software on all of the media drives that are placed in tabulators to ensure tabulators communicate properly with the election management system [...] However, because the county did not update the media drives for the tabulators that did not have changes to races, those tabulators did not communicate properly with the County’s central election management system software when the county combined and reported unofficial results.”<sup>13</sup>

## Dominion Voting Systems

Dominion Voting Systems responded with a series of “Fact Checks” meant to debunk the ASOG Report in its entirety on June 24, 2021.<sup>14</sup> Often arguing from authority and using circular reasoning (such as citing the statement from Michigan’s Secretary of State, which cited the DVS site as a debunking source, which in turn cited her statement), it disputed ASOG’s claims as unfounded and baseless. It largely relied on Dr. J. Alex Halderman’s analysis for its response.

## Dr. J. Alex Halderman

University of Michigan Professor of Computer Science and Engineering Dr. J. Alex Halderman provided the most objective review. Dr. Halderman concluded that human errors resulted in inaccurate vote totals in his investigation. He explained that the corrected ballots did not affect the presidential candidate’s ballot position, but that changes affected everything downstream; everything had a 1+ in terms of assignment, so that votes cast for Trump went to Biden.

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<sup>13</sup> [https://www.michigan.gov/documents/sos/Antrim\\_Fact\\_Check\\_707197\\_7.pdf](https://www.michigan.gov/documents/sos/Antrim_Fact_Check_707197_7.pdf)

<sup>14</sup> <https://www.dominionvoting.com/election-2020-setting-the-record-straight-antrim-county-michigan/>

Central Lake, Precinct 1V Initial Ballot Definition	Central Lake, Precinct 1V Revised Ballot Definition
<b>Local School District</b> Board Member Ellsworth Schools Vote for not more than 2	<b>Local School District</b> Board Member Central Lake Schools Vote for not more than 3
952 Mark Edward Groenink <input type="radio"/>	952 Melanie Eckhardt <input type="radio"/>
953 Christopher Wallace <input type="radio"/>	953 Keith Shafer <input type="radio"/>
954 <input type="radio"/>	954 <input type="radio"/>
955 <input type="radio"/>	955 <input type="radio"/>
956 <input type="radio"/>	956 <input type="radio"/>
957 <input type="radio"/>	957 <input type="radio"/>
958 <input type="radio"/>	958 <input type="radio"/>

**(1) The Central Lake, Precinct 1V ballot was modified to reflect the correct school board contest. This necessitated inserting an additional write-in blank.**

**(2) The insertion incremented the ID number of every subsequent voting target.**

**(3) In alphabetically later townships, the change in Central Lake incremented the ID for every choice.**

**(4) A scanner using the initial definition records this Trump vote as ID 970. The EMS, using the revised definition, reports ID 970 as a vote for Biden.**

## The Allegations

Many allegations and rebuttals regarding the conduct and accuracy of the Antrim elections came out of these events. We review each of them individually below.

### The Tabulator Wireless Modem Quote Claim

In its April 9, 2021 filing, DePerno Law persisted in its claims that the machines used in Antrim County used wireless modems. “Two versions of Michigan voting systems both Dominion and ESS [sic] have been found to have utilized wireless technology. The Dominion Voting Systems proposal for Antrim County shows a quote for wireless transmission capabilities.”<sup>15</sup> The Michigan Senate Oversight Committee stated, “The cited proof of [wireless] modems is from a quote for purchasing received by the county from Dominion, not an actual purchase receipt or physical sighting of any [wireless] modems.”<sup>16</sup> Indeed, no records appear to support this claim.

<sup>15</sup> [https://www.michigan.gov/documents/sos/Dominion\\_quotes\\_554556\\_7.pdf](https://www.michigan.gov/documents/sos/Dominion_quotes_554556_7.pdf)

<sup>16</sup> [https://misenategopcdn.s3.us-east-1.amazonaws.com/99/documents/20210623/SMPO\\_2020ElectionReport\\_2.pdf](https://misenategopcdn.s3.us-east-1.amazonaws.com/99/documents/20210623/SMPO_2020ElectionReport_2.pdf)

## The Tabulator Wireless Chip Claim

The ASOG Report introduced an image in evidence of a wireless chip, suggesting fraud in Antrim.<sup>17</sup> It came from ES&S, however, a company not used in Antrim County. The MSOC Report countered in a footnote that Antrim County DVS machines had no modems in them: “ES&S and Hart InterCivic tabulators have internal modems, but not Dominion. However, they are not turned on until the polls are closed and tabulation has concluded.” According to the contract between DVS and Michigan, however, these machines did contain internal dial-up modems: “ImageCast Precinct: The ImageCast Precinct tabulators are equipped with internal dial-up modems, and can also transmit results via an external cellular modem.”<sup>18</sup> Bois Blanc Township confirmed that Antrim machines had internal modems: “While the State of Michigan requires all tabulation systems to be capable of transmitting election results from the precincts via modems, Antrim County does not use modems.”<sup>19</sup> Even Dr. J. Alex Halderman confirmed that Antrim used ImageCast Precinct (ICP) and that these machines had internal modems. However, he did confirm that they lacked external wireless, cellular modems: “Antrim County did not purchase and does not use the Dominion wireless results transmission functionality.” NBC News had confirmed that Dominion put them in tabulators and scanners: “The three largest voting manufacturing companies — Election Systems & Software, Dominion Voting Systems and Hart InterCivic — have acknowledged they all put modems in some of their tabulators and scanners. The reason? So that unofficial election results can more quickly be relayed to the public.”<sup>20</sup> In other words, the machines could transmit online with their internal dial-up modems as required by law, but did not use these or wireless modems because they had none. Although ASOG erred on the external modem claim, the MSOC and DVS also misled by claiming these had no modems.

## The Internal Email from Dominion Claim

DePerno law cited an email from DVS employees as evidence that the machines went online and wiped ballot images.<sup>21</sup> It stated “Dominion representatives also confirmed issues with wireless transmission of vote totals and even went as far as disabling the saving of ballot images without explicit authorization.” The MSOC responded, “The context in the email, to make electronically transmitting the results after the election with the attachable modem function better, makes the instruction to turn off transmitting the image a reasonable instruction when coupled with there being no law in Michigan to save the images.” Further examination of this email reveals that it appeared to be internal, and unrelated to Antrim County. Second, clearly the email discussed 3G, wireless signals, and thus the attachable modem referred to an external, wireless modem, which Antrim County did not have. Finally, it

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<sup>17</sup> [https://www.depernelaw.com/uploads/2/7/0/2/27029178/ex\\_5-10.pdf](https://www.depernelaw.com/uploads/2/7/0/2/27029178/ex_5-10.pdf) (Figure 5)

<sup>18</sup> [https://www.michigan.gov/documents/localgov/7700117\\_555468\\_7.pdf](https://www.michigan.gov/documents/localgov/7700117_555468_7.pdf) (p. 112)

<sup>19</sup> [http://www.boisblanctownship.org/downloads/to\\_satisfy\\_the\\_numerous\\_questions\\_about\\_the\\_dominion\\_tabulators\\_used\\_in\\_our\\_township\\_voting\\_process.pdf](http://www.boisblanctownship.org/downloads/to_satisfy_the_numerous_questions_about_the_dominion_tabulators_used_in_our_township_voting_process.pdf)

<sup>20</sup> <https://www.nbcnews.com/politics/elections/online-vulnerable-experts-find-nearly-three-dozen-u-s-voting-n1112436>

<sup>21</sup> [https://www.depernelaw.com/uploads/2/7/0/2/27029178/ex\\_5-10.pdf](https://www.depernelaw.com/uploads/2/7/0/2/27029178/ex_5-10.pdf)

came from an election before the 2020 General Election and would not have been relevant anyway, even if what ASOG had claimed was true.

### The International Server Claim

Having shown that these machines in Antrim were not online, the claims that Dominion servers were owned and operated from Canada, Spain, Serbia, and Germany would not have affected Antrim either way. Even so we reviewed the claim. MSOC explained international connections:

Mr. John Polous, Dominion CEO denied the existence of Dominion servers in Spain and Germany, emphasizing that ballots remain local, are counted locally, and are not moved over state lines, let alone overseas [...] County clerks then report these unofficial results both locally and to the secretary of state. The secretary of state releases the unofficial results to media and their own page. Clarity, a Spanish based company, also takes in these unofficial results from the county or the state. This company, which is based in Spain and has servers in Europe, makes the unofficial results available to multiple users, especially media subscribers who utilize the unofficial results in their election night prognostications. Scytl and others are companies that provide similar services. All of these activities, especially due to media inquiries, constitute a significant explanation for much of the cyber activity across the country and the globe on election night.<sup>22</sup>

Indeed, the overseas servers did not belong to Dominion but rather to Scytl. One must prove that Dominion owned Scytl or held a majority share in it, and ASOG did not.

### The International Subsidiary Claim

The report explained that DVS is a Canadian owned company with global subsidiaries, owned by Staple Street Capital, a New York hedge fund, which is in turn owned by UBS Securities LLC, of which 3 of their 7 board members are Chinese nationals. Dominion refuted this as impossible with the oversights and full disclosure, with which they must comply. Although Dominion's main headquarters are in Toronto, Canada, it incorporated in Denver, Colorado, making it legal. Furthermore, the report wrongly attributed US-based UBS Securities LLC's purchase of Staple Street Capital in October 2020 to the Chinese subsidiary, UBS Securities Co., Ltd. Additionally, nothing suggested that UBS Securities LLC would remain the eventual buyer. The report showed no direct ties between Dominion and the Chinese Communist Party, and could not connect the dots with any certainty. Instead it relied on speculation, which has no legal weight.

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<sup>22</sup> [https://misenategopcdn.s3.us-east-1.amazonaws.com/99/documents/20210623/SMPO\\_2020ElectionReport\\_2.pdf](https://misenategopcdn.s3.us-east-1.amazonaws.com/99/documents/20210623/SMPO_2020ElectionReport_2.pdf) (p. 20-22)

## The Smartmatic Connection Claim

ASOG claimed that Dominion either bought or leased (depending on its argument) Smartmatic software in order to connect it to Venezuela. It cited a former Venezuelan professor of mathematics and alumni of University of Michigan Gustavo Delfino who claimed that software in the Smartmatic electronic voting machines got incorporated into Dominion Voting Systems during the 2004 Venezuela national referendum. Dominion responded that they are two separate companies that make electronic voting systems, and do not use or license Smartmatic software and/or its software from Sequoia. Smartmatic also refuted such claims.

## The Wiped Ballot Images Claim

DePerno Law insisted that much of the purported fraud occurred due to a high rate of digital adjudication of votes in Antrim County. Dominion claimed that Antrim County opted out of the adjudication service. Dr. Halderman confirmed this fact and so the claim would not apply: “Dominion’s adjudication system stores the ballot image together with the scanner’s interpretation of the votes and a log of any changes made by the system operator. Adjudication is an optional feature of the Dominion system and was not used in Antrim County.” Antrim County could not delete or disable any ballot images, and the media drives failed to load ballot images, precisely because the county chose not to purchase this feature. DePerno’s citing a DVS training manual only applied to machines with the feature, therefore, was irrelevant. While Halderman noted that a ballot image saving option should be mandatory for future elections, DePerno’s evidence showed that ballot images were unavailable, not that deletions occurred.

## The Removed Vote Adjudication Logs Claim

The report stated that the computer system showed vote adjudication logs for prior years but missing adjudication log entries for the 2020 election cycle. The report’s authors believed that this showed evidence that manual removal of the 2020 election cycle records occurred. Due to purportedly missing files and adjudication logs, it had not yet determined where bulk adjudication occurred or who was responsible.

## The Failed Attempt to “Zero Out” Claim

Russell Ramsland, Jr. also claimed that an unauthorized user attempted to zero out election results on November 21, 2020, which demonstrated intent to deliberately remove the log files. Halderman showed that Ramsland did not understand how programming code functions:

The only evidence he offers for this assertion is an EMS log file entry that reads “EmsLogger - There is no permission to {0}”, which he claims “is direct proof of an attempt to tamper with evidence” (¶J.8). This is absurd and misleading. A programmer would immediately recognize that {0} is merely a placeholder, in this case one that was intended to be replaced with a description of the attempted action [26]. It has nothing to do with “zeroing” election results.

In many programming languages, anything indexed begins with the index 0 instead of 1, contrary to what non-programmers might expect; non-programmers expect the first value to always be “value #1” not “value #0”. In any case, this evidence did not indicate voter fraud.

### The 90-Day Safe Harbor Act Violation Claim

The ASOG Report had claimed that the Antrim County election workers violated the “Help America Vote Act, Safe Harbor” (HAVA) 90-day period. MSOC explained that no such definition exists in HAVA. Indeed, no such statement exists in this document.<sup>23</sup> No such statement appears in any Michigan state law or document either. Therefore, it is a baseless claim.

### The Reprogramming the Ballots Claim

The ASOG Report argued that new ballot programming occurred on Dominion ImageCast Precinct Cards both on 10/23/2020 and on 11/05/2020. These system changes affected how the machines read and tabulated ballots. The report concluded that the only reason to change the software after the election was to obfuscate evidence of fraud and/or to correct program errors that would decertify the election. Halderman demonstrated that the October changes resulted from the local election update, and the change in November from this correction.

### The Exceeding the Maximum Allowable Error Rate Claim

ASOG forensic researchers allegedly observed an error rate of 68.05% in Antrim County using the tabulation log. They asserted that it recorded 10,667 of 15,676 individual events (68.05%) as errors. They added that Central Lake Township purportedly had 1,222 ballots reversed out of 1,491 total ballots cast (an 81.96% rejection rate) that led to the sending of these ballots to adjudication for a decision by election personnel without oversight. Halderman explained that the “error rate” resulted from standard operating system error messages for basic computerized machine operations. For example: error logs generated during start up or shut down sequences, or issues such as not properly inserting a ballot. These do not represent large batches of human adjudicated ballots. While Halderman showed that the ASOG Report failed to produce the claimed 68.05% error rate, he neglected to mention that the report misstated its source claim in three ways: (1) the Federal Election Commission never cited an allowable 1 in 250,000 ballots error rate, (2) 1 in 250,000 ballots would equal 0.0004% not 0.0008%, (3) the report later cited its source as the National Conference of State Legislatures’ (NCSL) error rate of 1 in 125,000 (0.0008%), correcting its earlier misstatement.<sup>24</sup> These failures to substantiate mathematical claims, coupled with an incorrect citation and calculation, undermined the report’s credibility.

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<sup>23</sup> [https://www.eac.gov/sites/default/files/eac\\_assets/1/6/HAVA41.PDF](https://www.eac.gov/sites/default/files/eac_assets/1/6/HAVA41.PDF)

<sup>24</sup> [https://www.eac.gov/sites/default/files/eac\\_assets/1/28/VVSG.1.1.VOL.1.FINAL1.pdf](https://www.eac.gov/sites/default/files/eac_assets/1/28/VVSG.1.1.VOL.1.FINAL1.pdf)

## The Vote Switches / Software Glitches Claim

Dominion argued that no votes were “switched” by “software glitches” in Antrim County, but rather by user-error. The Michigan SOS stated this occurred as well. Our research showed that the issue stemmed from ballot issues, inadequate staff training, and a failure to update software. The ASOG Report stated that *“the vote flip occurred because of machine error built into the voting software designed to create error.”* Yet, Dominion’s source code remains inaccessible and thus ASOG cannot make such a determination.

## The Ranked Choice Voting Claim

The ASOG Report claimed that the ranked choice voting feature present in DVS allowed a bad actor to assign fractional vote counts to specified candidates. Though the report claimed “In the logs we identified that the RCV or Ranked Choice Voting Algorithm was enabled” it only showed a Dominion training manual referencing RCV. DVS’ “fact check” and CEO John Poulos countered under oath before MSOC that Michigan does not use RCV, nor support fractional or “weighted” voting. Although Antrim did not have RCV, Eastpointe, Michigan does use RCV.<sup>25 26</sup> While RCV remains illegal in US presidential elections, it has legal use in some state and local elections. Dominion markets itself to any state or municipal organization willing to purchase their EMS. Therefore, RCV features in DVS would reflect laws established in some areas. However, this does not support any claim that Antrim County machines had or used this feature.

## The Security Vulnerability Claims

The ASOG investigators discovered a number of security issues. They found an election program thumb drive outside of a security vault specifically used to secure data memory cards and other election-purposed thumb drives. ASOG investigators discovered election data package files on an unsecured desktop computer, apparently a component of the EMS. In addition, the desktop hard drive containing these data packages had no encryption, with software and security updates/patches over two years out of date. The users operating this computer primarily logged in with “Super User” privileges. This credential allows the user to have significant access to all aspects of the data and operating system present on the computer. Also, multiple users shared login credentials (likely “Super User” credentials), making full audits of election data activity significantly more difficult. Halderman confirmed all these claims and commented on Antrim’s lack of election security practices. He did not conclude that it led to fraud or that any exploits had occurred, but that such negligence posed serious security vulnerabilities. He disagreed that machine decertification should occur on these grounds, however, noting that “missing software updates are frequently an unfortunate consequence of the federal certification process, under which voting system vendors must obtain EAC approval for any changes to election system software, including Windows updates.” He provided many

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<sup>25</sup> <https://www.justice.gov/opa/pr/justice-department-reaches-agreement-city-eastpointe-michigan-under-voting-rights-act>

<sup>26</sup> <https://www.fairvote.org/eastpointe-michigan-to-become-first-in-state-to-implement-ranked-choice-voting>

suggestions for the county and state to follow to ensure that these issues never recurred, and even MSOC acknowledged these security issues. Indeed, this election was not secure at all.

## Contractual Violations

Dominion Voting Systems violated its contract with the state of Michigan. Under “2.1 Time Frames – Order and Processing”, the contract stated “[t]abulators provided to counties in Michigan will be newly manufactured by Flextronics in their Plano, Texas manufacturing facility.”<sup>27</sup> Yet Exhibit 6 from James Penrose indicated that “[t]he ICX [ImageCast X] machine itself appears to be manufactured in Taiwan and shipped to the United States via airfreight using China Airlines.”<sup>28</sup> The Z38 and Z200 seen on the shipping label image refer to a Hewlett-Packard monitor (Z38)<sup>29</sup> and computer (Z200)<sup>30</sup> that entered JFK Airport from Australia.



This constituted a breach of contract, as the contract explicitly stated under “1.8 Quality Assurance Program” that the “Contractor uses a top tier contract manufacturer, **based in the United States**, and recognized as a leader in the industry for manufacturing [emphasis added].” While one could argue that HP, Inc. (Hewlett-Packard) has its base in Palo Alto, California, this conflicts with the earlier contract statement to use Flextronics in Plano, Texas. If they claim that they performed repairs instead of manufactured these machines off-site, then according to the contract DVS should have had a reasonable amount of parts as it was required to repair on-site.

A more significant reason to decertify these machines is that they violated the state contract and state regulations, specifically item 1.1.A.23.<sup>31</sup>

<sup>27</sup> [https://www.michigan.gov/documents/localgov/7700117\\_555468\\_7.pdf](https://www.michigan.gov/documents/localgov/7700117_555468_7.pdf)

<sup>28</sup> [https://www.depernolaw.com/uploads/2/7/0/2/27029178/ex\\_5-10.pdf](https://www.depernolaw.com/uploads/2/7/0/2/27029178/ex_5-10.pdf)

<sup>29</sup> <https://h30434.www3.hp.com/t5/Desktop-Video-Display-and-Touch/Connecting-Two-Computers-to-One-HP-Z38-Monitor/m-p/6566251>

<sup>30</sup> <https://support.hp.com/us-en/document/c02027649>

<sup>31</sup> [https://www.michigan.gov/documents/sos/071B7700117\\_Dominion\\_Exhibit\\_2\\_to\\_Sch\\_A\\_Tech\\_Req\\_555357\\_7.pdf](https://www.michigan.gov/documents/sos/071B7700117_Dominion_Exhibit_2_to_Sch_A_Tech_Req_555357_7.pdf)

The Contractor shall describe in detail all aspects of the write-in vote and adjudication process. The tabulator shall allow for the voter to cast a write-in vote by marking the target area and writing the candidate name of their choice in a provided area. **The tabulator shall store an image of the write-in vote, which can be separated out (as a group) for later determination and adjudication of valid write-in votes.** [emphasis added]

Dominion agreed to this contractual item and even made the comment:

The ImageCast Precinct allows for the voter to cast a write-in vote by marking the target area and writing the candidate name of their choice in a provided area. The tabulators will divert ballots with write-in votes to the write-in bin for easy retrieval after the polls have closed. **Additionally, all tabulators save the ballot image which includes the write-in name. Ballot images can be sorted by all conditions including write-in votes, allowing election officials to separate write-in votes as a group for later determination and adjudication. The Results Tally & Reporting module allows the manual entry of qualified write-in candidates and the associated vote totals which appear on the results reports [...]** The ImageCast X allows the voter to enter a write-in name which is printed on the Verifiable Choice Summary Ballot. **The image of the write-in name is saved by the ImageCast Precinct tabulator.** [emphasis added]"

When Halderman focused on the re-zeroing issue (yellow highlighted), he showed an image titled "Figure 3: Memory Cards Mistakenly Re-zeroed" (red square). It does not seem that the machines stored write-in images, though ASOG and others who support the wiped image log theory might believe this. In reality, this line would indicate something being reset like a partition, but it alone cannot confirm or deny whether the files were previously blank or had previously stored data. The presence of this line likely indicates that write-in ballot images were enabled, but does not indicate whether any images were actually stored. In sum, one cannot determine from this data alone.

```
Nov 03/2020 20:32:59 Admin chose Utilities Options
Nov 03/2020 20:33:07 Admin chose to Rezero the Results.
Nov 03/2020 20:33:16 Correct passcode entered for Rezero.
Nov 03/2020 20:33:16 Start election database re-zero poll procedure.
Nov 03/2020 20:33:20 Comparing Raw Results files on primary and secondary cards...
Nov 03/2020 20:33:20 ... Raw Results files match.
Nov 03/2020 20:33:20 Comparing Detail Results files on primary and secondary cards...
Nov 03/2020 20:33:20 ... Detail Results files match.
Nov 03/2020 20:33:20 Comparing Write-in Image files on primary and secondary cards...
Nov 03/2020 20:33:20 ... Write-in Images files match.
Nov 03/2020 20:33:21 Image Partition reset.
Nov 03/2020 20:33:21 Results re-zeroed.
```

Halderman's report confirmed that the machines complied with providing the ability to select a write-in option, write-in a candidate, and separate write-in ballots, as their contract required:

1.1.A.23: "Voting System HARDWARE Technical Requirements - Ballot Counter / Tabulator - Write-in Votes"

Mr. Ramsland makes several further mistakes in interpreting the election system logs. He states that the scanner log shows that “Divert Options” were selected and claims that this means “all write-in ballots were sent for ‘adjudication’ by a poll worker or election official to process the ballot based on voter ‘intent’”. Adjudication files allow a computer operator to decide to whom to award those votes (or to trash them)” (¶J.4). **In reality, the divert option simply means that when a voter has selected a write-in, the scanner directs the physical ballot into a separate compartment within the ballot box. This makes it more convenient for a worker to later read the name that was written in.** All voter selections, including the presence of a write-in, are processed normally by the scanner and reflected on the poll tape. The setting has nothing to do with electronic adjudication. [emphasis added]

Nevertheless, Halderman confirmed that these tabulators not only disabled the adjudication software, but did not even install it:

[A]djudication functionality was not enabled at all in Antrim County during the November 2020 election. The adjudication software application is an optional component of Democracy Suite. Antrim did not purchase it, and my examination of the EMS shows that it was not installed. There are no adjudication logs for the simple reason that adjudication was not used.

One must ask whether image storage for regular ballots was different from that of write-in ballots, which may or may not have required adjudication? If they were not distinct and used the same software that was required to take and store images of write-in ballots, then the software configuration purchased was non-compliant for certification. If these two categories of ballots were distinct, then the choice of Antrim County not to purchase the adjudication feature says nothing as to whether the tabulators were in compliance with contract requirements specified in 1.1.A.23. Halderman answered this question in the next sentence:

Moreover, **the tabulators were not configured to store ballot images—a necessary precondition for adjudication—and my inspection of the memory cards confirms that no ballot images are present.** This means that it would have been impossible to use the adjudication feature even if the software were somehow installed after the election [emphasis added].

Thus, one must conclude that Dominion Voting Systems violated contract item 1.1.A.23 as it failed to include images of write-in ballots as mandated by contract and law. His analysis remains consistent with that evidence, and this supports enough reason to decertify.

## [Decertify Dominion Because of Inaccuracies](#)

Halderman’s analysis gave yet another reason for decertification:

[M]y analysis shows that both the poll tapes and the final results are inaccurate with respect to a few down-ballot contests in the three precincts where ballot designs changed, as a result of the county's failure to appropriately distinguish between ballots voted using the old and new ballot designs. The largest discrepancy is in Central Lake Village, where the poll tape is inaccurate for the Central Lake Schools school board contest and State Proposal 20-1. I estimate that approximately 72 ballots are affected. Small numbers of votes may also have been affected in Mancelona Village for the Village Trustee race and in Warner Township for the Boyne Falls Public Schools Sinking Fund Millage Proposal. The circumstances that caused these discrepancies did not affect any other contests and do not affect enough votes to change the outcome of any contest.

While the presidential election did not get impacted, this discrepancy affected down ballot issues, such as the legalization of marijuana (state proposal 20-1), and the Central Lake Schools school board contest. Although the outcomes of both contests did not change with this discrepancy, 72 of 16,044 ballots cast produced an error rate of 0.45%, a number significantly higher than the allowable election error rate as established by the National Conference of State Legislatures' guidelines of 1 in 125,000 ballots (0.0008%). Furthermore, it directly affected the outcome of a local race for legalizing a marijuana retailer.

In the presidential election, Halderman confirmed a higher percentage than 0.0008%. He wrote, "In December, the state conducted a county-wide hand count of the presidential contest that agreed with the final reported results to within 0.08%. In January, the state conducted a state-wide risk-limiting audit of the presidential contest that affirmed the reported outcome. These findings and my analysis all support the conclusion that there are no significant errors in Antrim County's final presidential results."<sup>32</sup>

While Halderman showed why ASOG incorrectly claimed that misfed ballots equated to errors, the professor glossed over the 13-ballot difference found in the presidential hand recount as well as a 72-ballot difference in down-ballot contests. A variance of 13 of the 16,044 ballots cast in the presidential contest (0.081%) and 72 of the 16,044 ballots cast in the local contests (0.45%), exceeded the allowable ballot error rate of 1 in 125,000 cast (0.0008%). True enough, neither discrepancy affected the overall outcome of the presidential race, nor state or local contests. Yet Halderman mentioned that a key item for a forensic audit, the poll tapes, had several inaccuracies in three precincts. Nevertheless, Halderman dismissed it: "Since State Proposal 20-1 was decided by a margin of more than 3 million votes, the error could not have affected the outcome." By his logic, no matter how large the discrepancy found in Antrim County's 16,044 votes, nothing could overturn the 3 million votes already cast by Michiganders.

Most notably, he explored a discrepancy that directly affected the outcome of a marijuana initiative, which failed the first time when scanned, but passed on the second scan. Additionally, he noted someone overwrote the records from the first pass to do the second.

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<sup>32</sup> <https://ftt-uploads.s3.amazonaws.com/wp-content/uploads/2021/03/29140718/Antrim.pdf>

(Why nobody made a copy he did not explain.) Halderman assigned the blame to human error, but could not entirely avoid the possibility of it having stemmed from faulty machines:

Beyond the discrepancies noted above, the poll tapes from the two Central Lake scans show a large number of smaller differences. Many contests have one or two fewer votes in the second scan. One of these differences potentially affected the outcome of a contest. As shown in Figure 6, in the first scan, the Central Lake Village Marihuana Retailer Initiative was tied (and thus defeated), but in the second scan, which became the final result, it passed by a single vote. The data I examined suggests that three ballots that were included in the first scan were omitted when the ballots were scanned again, either correctly or due to human error. The scanner log from election day, as recorded in the EMS database, shows that 1494 ballots were scanned. Yet the log from the memory card shows that only 1491 ballots were scanned on November 6. The memory card from the first scan was overwritten to prepare it for the second scan, so the original digital records of the ballots are not available. [...] The data supports the conclusion that these three ballots fully account for the residual differences between the poll tapes from the two scans. There are multiple possibilities for why they were not included in the second scan. **While it is possible that they were ruled invalid due to some defect and properly excluded, it is also possible that elections staff simply did not scan them the second time, due to human error. If these ballots are valid, it is likely that the final reported outcome of the Central Lake Village Marihuana Retailer Initiative is incorrect and that the true result is a tie, as shown on the election day poll tape [emphasis added].**

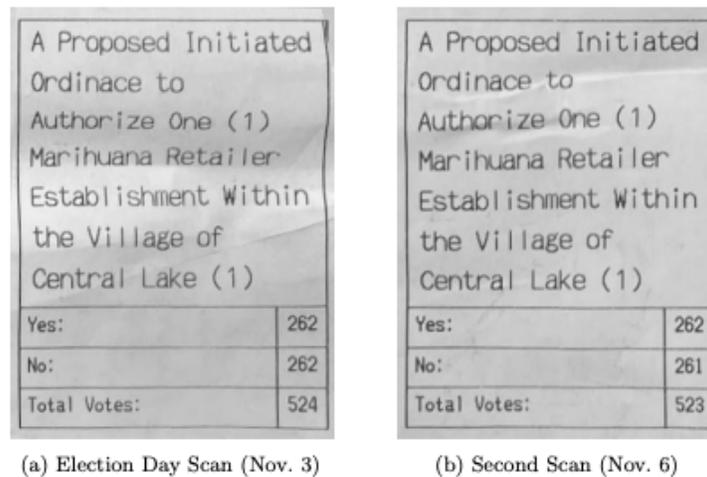


Figure 6: **Central Lake Village Marihuana Retailer Initiative.** In this local contest, the poll tapes differ by one vote—enough to change the outcome. The data suggests that three ballots that were scanned on Nov. 3 were omitted when the ballots were re-scanned on Nov. 6, either correctly or due to human error.

**Ballot 1 — Central Lake Township, Precinct 1CENT**

President and Vice President of the United States : Donald J. Trump / Michael R. Pence  
 United States Senator for State : John James  
 Representative in Congress 1st District : Jack Bergman  
 Representative in State Legislature 105th District : Ken Borton  
 Member of the State Board of Education : Tami Carlone, Michelle A. Frederick  
 Regent of the University of Michigan : Sarah Hubbard, Carl Meyers  
 Trustee of Michigan State University : Pat O'Keefe, Tonya Schuitmaker  
 Governor of Wayne State University : Don Gates  
 County Prosecuting Attorney : Write-in  
 County Sheriff : Write-in  
 County Clerk : Sheryl Guy  
 County Treasurer : Sherry A. Comben  
 County Register of Deeds : Patty Niepoth  
 County Drain Commissioner : Mark Stone  
 County Surveyor : Scott Papineau  
 County Commissioner 2nd District : Joshua E. Watrous  
 Township Supervisor for Central Lake Township : Write-in  
 Township Clerk for Central Lake Township : Judy Kosloski  
 Township Treasurer for Central Lake Township : Andrew Smith  
 Township Trustee for Central Lake Township : Patrick Hanlon, Pat Marshall  
 Justice of Supreme Court : Katherine Mary Nepton, Brock Swartzle  
 Judge of Court of Appeals 4th District Incumbent Position : Michael J. Kelly, Amy Ronayne Krause  
 Judge of Court of Appeals 4th District Non-Incumbent Position : Michelle Rick  
 Judge of Circuit Court 13th Circuit Incumbent Position : Kevin A. Elsenheimer  
 Board Member for Charlevoix-Emmet Intermediate School District 6 Year Term : Thelma A. Chellis  
 State Proposal 20-1 : Yes  
 State Proposal 20-2 : Yes

**Ballot 2 — Central Lake Township, Precinct 1V**  
 [\*No selections.]

**Ballot 3 — Central Lake Township, Precinct 1V**

Straight Party Ticket : Republican Party  
 President and Vice President of the United States : Donald J. Trump / Michael R. Pence  
 United States Senator for State : John James  
 Representative in Congress 1st District : Jack Bergman  
 Member of the State Board of Education : Tami Carlone, Michelle A. Frederick  
 Regent of the University of Michigan : Sarah Hubbard, Carl Meyers  
 Trustee of Michigan State University : Pat O'Keefe, Tonya Schuitmaker  
 County Prosecuting Attorney : James L. Rossiter  
 County Sheriff : Daniel S. Bean  
 County Clerk : Sheryl Guy  
 County Treasurer : Sherry A. Comben  
 County Register of Deeds : Patty Niepoth  
 County Commissioner 2nd District : Joshua E. Watrous  
 Township Supervisor for Central Lake Township : Stanley A. Bean  
 Village President for Village of Central Lake : Rob Tyler  
 Village Trustee for Village of Central Lake : Bill Chapman  
 \* School Board Member for Central Lake Schools : Melanie Eckhardt, Keith Shafer  
 \* State Proposal 20-1 : —  
 \* State Proposal 20-2 : —  
 \* A Proposed Initiated Ordinance to Authorize One (1) Marihuana Retailer Establishment Within the Village of Central Lake : No

\* indicates contests that are potentially incomplete due to limited data.

**Figure 7: Reconstructed Omitted Ballots from Central Lake.** This figure shows selections registered by the scanner on Nov. 3 for three ballots that were not included when the ballots were scanned again on Nov. 6. It is possible that these ballots were properly excluded due to some disqualifying defect. However, if Ballot 3 was valid and omitted due to human error, it is likely that the outcome of the Central Lake Village Marihuana Retailer Initiative is incorrect.

## Final Assessment of the ASOG Report & Antrim Events

The ASOG Report demonstrated many possibilities where election security could have been compromised, but failed to prove any actual compromise or intent of compromise from Dominion Voting Systems.

By its nature, the design of Dominion Voting Systems has additional points of potential failure in the chain of election events. While human error demonstrably had the largest contributing factor in the reported election irregularities, seemingly unintentional design flaws in Dominion Voting Systems (as well as the lack of publicly available documentation and disclosure of its design) increased that potential for human error. That no parties could review the source code made the claims difficult to prove, but likewise difficult to disprove.

Halderman confirmed that the Dominion Voting Systems machines violated contract item 1.1.A.23. Likewise, in the evidence provided, DePerno Law showed that these machines violated their contract stating that they would produce these machines in Plano, TX but instead manufactured them in Taiwan. At minimum, the 72-ballot difference that even Halderman could not account for in a local race raised issues of reliability with inaccurate paper trails. Halderman did not rule out machine error as a possibility for the 3-ballot discrepancy in the local marijuana initiative, which exceeded the NSCL error rate and directly changed the election outcome. This lack of certainty with the discrepancies is emblematic of DVS machines' unreliability. For these contract violations and variances, Michigan should decertify DVS machines.

## An Open Source Solution

Open source voting would have rendered these unaddressed issues irrelevant by allowing any interested party to inspect the source code and restore transparency to the voting process. In short, it would have removed all lingering doubts. We recommend that counties investigate our link to more information on open source voting: <https://lookaheadamerica.org/blackbox/>.

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## Get Involved!

If you wish to help the Research Group, then please volunteer at <https://lookaheadamerica.org/volunteer/>.

If you liked our work and wish to support it, then please make a tax-deductible donation at <https://lookaheadamerica.org/donate/>.