STATE OF MICHIGAN
IN THE CIRCUIT COURT FOR THE COUNTY OF ANTRIM

WILLIAM BAILEY

Plaintiff

Case No. 20-9238-CZ

v.

ANTRIM COUNTY

HON. KEVIN A. ELSENHEIMER

Defendant

SECRETARY OF STATE JOCELYN BENSON

Intervenor-Defendant,

Matthew S. DePerno (P52622)
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Assistant Attorneys General
Attorneys for Intervenor-Defendant Benson
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EXHIBITS 14-16

PLAINTIFF'S FIRST AMENDED COMPLAINT

Respectfully submitted

DePERNO LAW OFFICE, PLLC

Dated: May 17, 2021

/s/ Matthew S. DePerno
Matthew S. DePerno (P52622)
Attorney for Plaintiff

Exhibit 14

Subject: Preliminary Report of Subversion in the Antrim County Election Management System, Results Tallying and Reporting Application
Date: 5/9/2021
Analyst: Jeffrey Lenberg

Executive Summary

The Antrim County Dominion Democracy Suite, Election Management System (EMS), Results Tallying and Reporting (RTR) application has been found to be subverted. Numerous error conditions that are identified by the tabulator are ignored by the EMS/RTR. The error conditions are easily reproduced and displayed on the tabulator, yet the EMS/RTR has been subverted in a fashion to purposefully ignore vote manipulation. This technical behavior is consistent with a subversion being deployed in the Antrim County EMS/RTR and is designed to mute such error reporting. This subversion technique is common among malicious actors seeking to proactively handle error conditions that would jeopardize their ability to modify software's performance.

The J Alex Halderman expert report dated March 26, 2021 does not accurately describe the conditions that occurred in the Antrim election. The shifting of votes described by Halderman during the November 3, 2020 election should have resulted in Biden's votes being shifted to the Natural Law Party, Straight Party Vote, which in turn would have resulted in Rocky De La Fuente (the Natural Law Party Candidate) receiving a large number of votes as a result, or an error condition should have occurred on the EMS/RTR for a vote shift outside of the Presidential contest. Neither of these scenarios occurred because the EMS/RTR was subverted in a fashion to handle such an error silently and treat that situation as an undervote (no vote for the Presidential race at all).

Testing of related scenarios has shown the ImageCast Precinct (ICP) tabulator properly reported a critical error and shut down the tabulator when there were votes shifted between contests. However, when the EMS/RTR was presented with the same results file processed on the tabulator, it reported no errors, but instead erroneously reported those vote choices as blanks (undervotes) instead of generating a critical error.

The evidence of a subversion in the EMS/RTR is sufficient that an expert review of the source code for the EMS/RTR is warranted to determine the extent of the subversion and breadth of the configuration options available to the malicious actors that would employ it.

This assessment is based on the review of the Antrim County EMS/RTR and testing with an ICP tabulator. If more forensic information and source code becomes available for review, this assessment will be reevaluated in the light of the new

evidence available. Upon receipt of the source code a specific evaluation of the error handling routines will be conducted along with static and dynamic code analysis to definitively determine the specific behavior of the software.

Details

Discovery of Subversion of the Antrim County EMS/RTR

A specific test was designed to determine how the Antrim County EMS/RTR along with the tabulator would handle the swap of Biden votes with the Natural Law Party (Straight Ticket Vote from the Contest Above on the ballot).

The rationale for making this test was the fact that Halderman indicated that the shift of votes that occurred would have changed the index of the candidate selection to cross the boundary from the Presidential contest to the Straight Party Ticket contest. This shifting across the boundary of a contest should have created a critical error condition during the processing of votes, however, in the case of Antrim County election it did not.

The test scenario is as follows:

Ballot Style: Helena Township, Precinct 1 (1124)
DVD File Name: 1120_8_8_0_DETAIL.DVD
internalMachineID for Biden: 3016
internalMachineID for Natural Law Party: 3015

Votes Cast on Test Ballots (See Appendix A):
Biden: 2
Trump: 4
Jorgenson: 1

Both the EMS/RTR and the ICP tabulator used exactly the same DVD file listed above.

The test scenario implemented a swap between the internalMachineID fields of Biden and the Natural Law Party in the VIF_BALLOT_INSTANCE.DVD file to attempt to cause Biden's votes to be swapped with the Straight Party/Natural Law Party.

The expected outcome was that Biden’s votes would be assigned to the Natural Law Party (Straight Party Vote) and the result would be Biden’s votes being tallied for the Natural Law Party Presidential Candidate Rocky De La Fuente.

The test revealed the following:

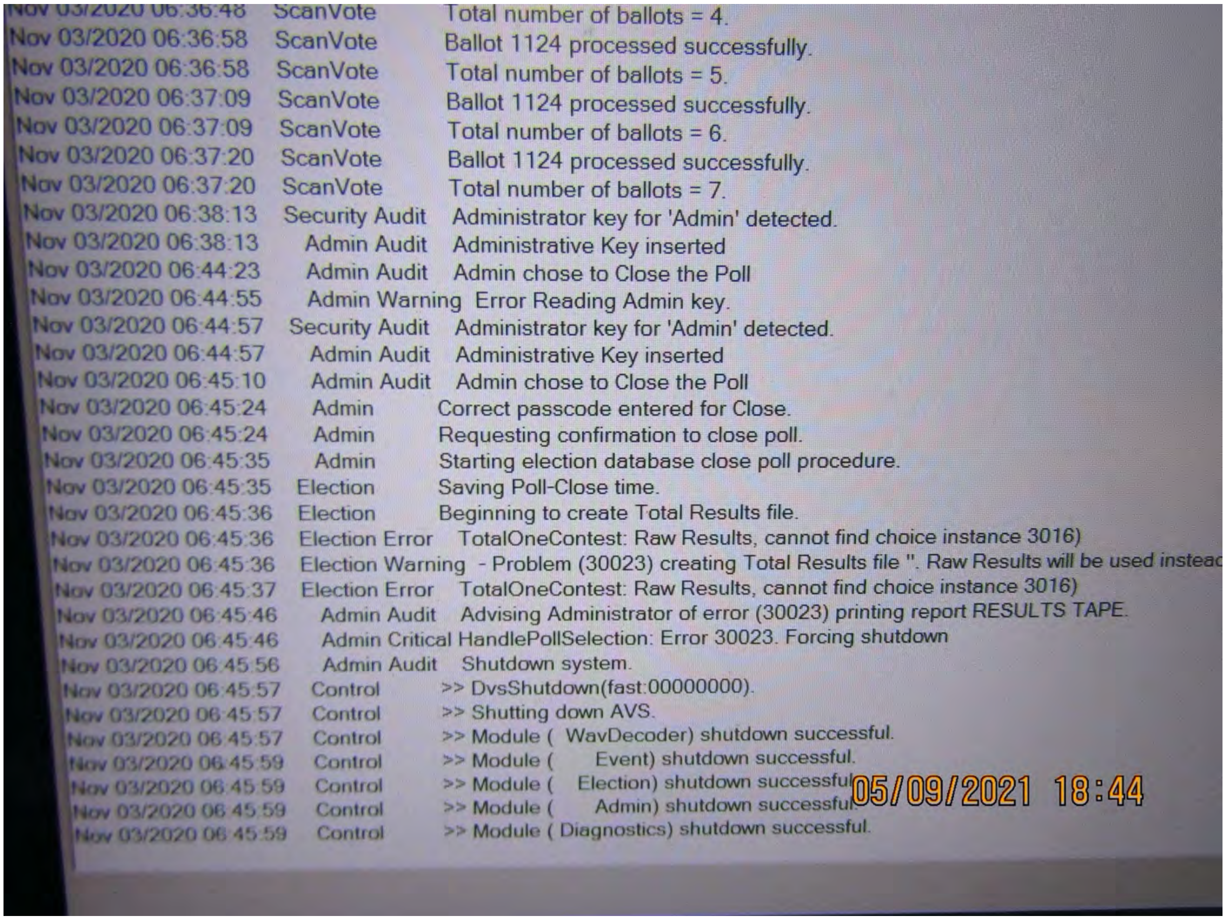
- The ICP reported a critical error and does not finish processing the vote file, does not print a paper tape, writes the error to the log file, and forces a mandatory shutdown of the tabulator
- The EMS/RTR loads the same file with no errors and takes all of the Biden votes and treats them as undervotes

The 1120_8_8_0_DETAIL.DVD file is a result file containing the votes that are cast on the ICP. When the poll is closed, the ICP software processes the file containing the votes and produces a paper tape with the tallies for each candidate. This process works normally as long as the internalMachineID is not modified or the modification stays within the boundaries of the those "expected" for the specific contest, for example the Presidential Contest. In other words, a malicious actor can swap internalMachineIDs within the same Contest for any candidate so long as the index remains in the correct range for that same contest.

However, for the purposes of this test the internalMachineIDs were swapped between different Contests, the software in the ICP reports a critical error (see Figure 1). The ICP does not finish processing the vote file (Figure 1), does not print a paper tape, requires the operator to shut-down the tabulator (see Figure 2), and records details of the error in the slog.txt file (Figure 3) on the compact flash card. The tabulator takes drastic action to inform the operator that a very serious problem has been encountered. Note that the vote result file 1120_8_8_0_DETAIL.DVD is still correctly stored on the compact flash card.

Figure 1 - ICP Error Loading Results File

Figure 2 - ICP Critical Error - Shutdown Required



```
Nov 03/2020 06:36:48   ScanVote          Total number of ballots = 4.
Nov 03/2020 06:36:58   ScanVote          Ballot 1124 processed successfully.
Nov 03/2020 06:36:58   ScanVote          Total number of ballots = 5.
Nov 03/2020 06:37:09   ScanVote          Ballot 1124 processed successfully.
Nov 03/2020 06:37:09   ScanVote          Total number of ballots = 6.
Nov 03/2020 06:37:20   ScanVote          Ballot 1124 processed successfully.
Nov 03/2020 06:37:20   ScanVote          Total number of ballots = 7.
Nov 03/2020 06:38:13   Security Audit    Administrator key for 'Admin' detected.
Nov 03/2020 06:38:13   Admin Audit       Administrative Key inserted
Nov 03/2020 06:44:23   Admin Audit       Admin chose to Close the Poll
Nov 03/2020 06:44:55   Admin Warning     Error Reading Admin key.
Nov 03/2020 06:44:57   Security Audit    Administrator key for 'Admin' detected.
Nov 03/2020 06:44:57   Admin Audit       Administrative Key inserted
Nov 03/2020 06:45:10   Admin Audit       Admin chose to Close the Poll
Nov 03/2020 06:45:24   Admin             Correct passcode entered for Close.
Nov 03/2020 06:45:24   Admin             Requesting confirmation to close poll.
Nov 03/2020 06:45:35   Admin             Starting election database close poll procedure.
Nov 03/2020 06:45:35   Election          Saving Poll-Close time.
Nov 03/2020 06:45:36   Election          Beginning to create Total Results file.
Nov 03/2020 06:45:36   Election Error    TotalOneContest: Raw Results, cannot find choice instance 3016)
Nov 03/2020 06:45:36   Election Warning  - Problem (30023) creating Total Results file ''. Raw Results will be used insteac
Nov 03/2020 06:45:37   Election Error    TotalOneContest: Raw Results, cannot find choice instance 3016)
Nov 03/2020 06:45:46   Admin Audit       Advising Administrator of error (30023) printing report RESULTS TAPE.
Nov 03/2020 06:45:46   Admin Critical    HandlePollSelection: Error 30023. Forcing shutdown
Nov 03/2020 06:45:56   Admin Audit       Shutdown system.
Nov 03/2020 06:45:57   Control           >> DvsShutdown(fast:00000000).
Nov 03/2020 06:45:57   Control           >> Shutting down AVS.
Nov 03/2020 06:45:57   Control           >> Module (  WavDecoder) shutdown successful.
Nov 03/2020 06:45:59   Control           >> Module (       Event) shutdown successful.
Nov 03/2020 06:45:59   Control           >> Module (    Election) shutdown successful
Nov 03/2020 06:45:59   Control           >> Module (       Admin) shutdown successful
Nov 03/2020 06:45:59   Control           >> Module ( Diagnostics) shutdown successful.
```


Figure 3 - slog.txt File Contents from Compact Flash Card

The same compact flash card is then loaded on to the Antrim EMS/RTR software. The card reports that it loaded successfully both the vote results and the log file (See Figure 4). Prior to loading this compact flash card the EMS database is directly manipulated in the same way that the file sent to the tabulator was manipulated by swapping 3015 and 3016 internalMachineID in the ChoiceManifestion table of 5744 vote choices spanning all of the contests on all of the 49 ballots types.

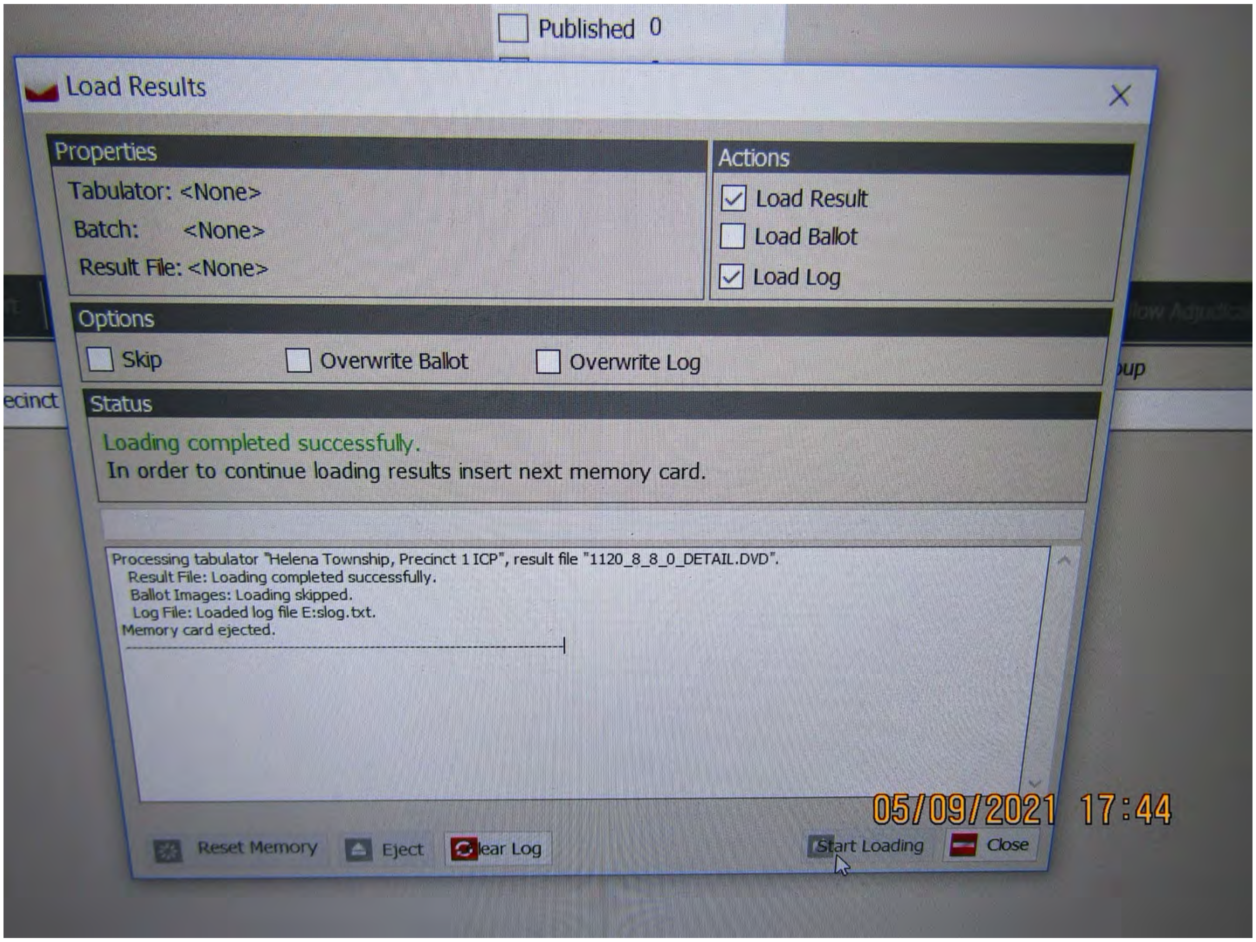


Figure 4 - EMS Successfully Loads Results File

The displayed results indicated that Biden is missing his votes and they are reported as blank ballots and undervotes for that contest (See Figure 5). One of two things should have happened. Either Biden's votes should have been assigned to the Straight Party/Natural Law (internalMachineID = 3015) in which case Bidens vote for President would have been assigned to De La Fuente and note that this did not occur. The other possibility is that the software was able to check the range for internalMachineID range for the contest in which case it would not have found the reference for the Biden vote choice and it should have created an error very similar to what the ICP output. This would be a critical error that should have stopped the application from further processing the compact flash card. Because the Biden vote choice must exist and it did not exist, the application should have stopped loading the results with an error message as to the fact that the results were corrupted. However, no errors were indicated of any kind by the EMS/RTR. The Biden votes just became blank votes (no choice) when there clearly is a choice on the ballot. In summary, either the shifted votes should have gone to De La Fuente (via Straight Party – Natural Law Party) or the application should have created a critical error that would have kept the votes from being tallied and reported.

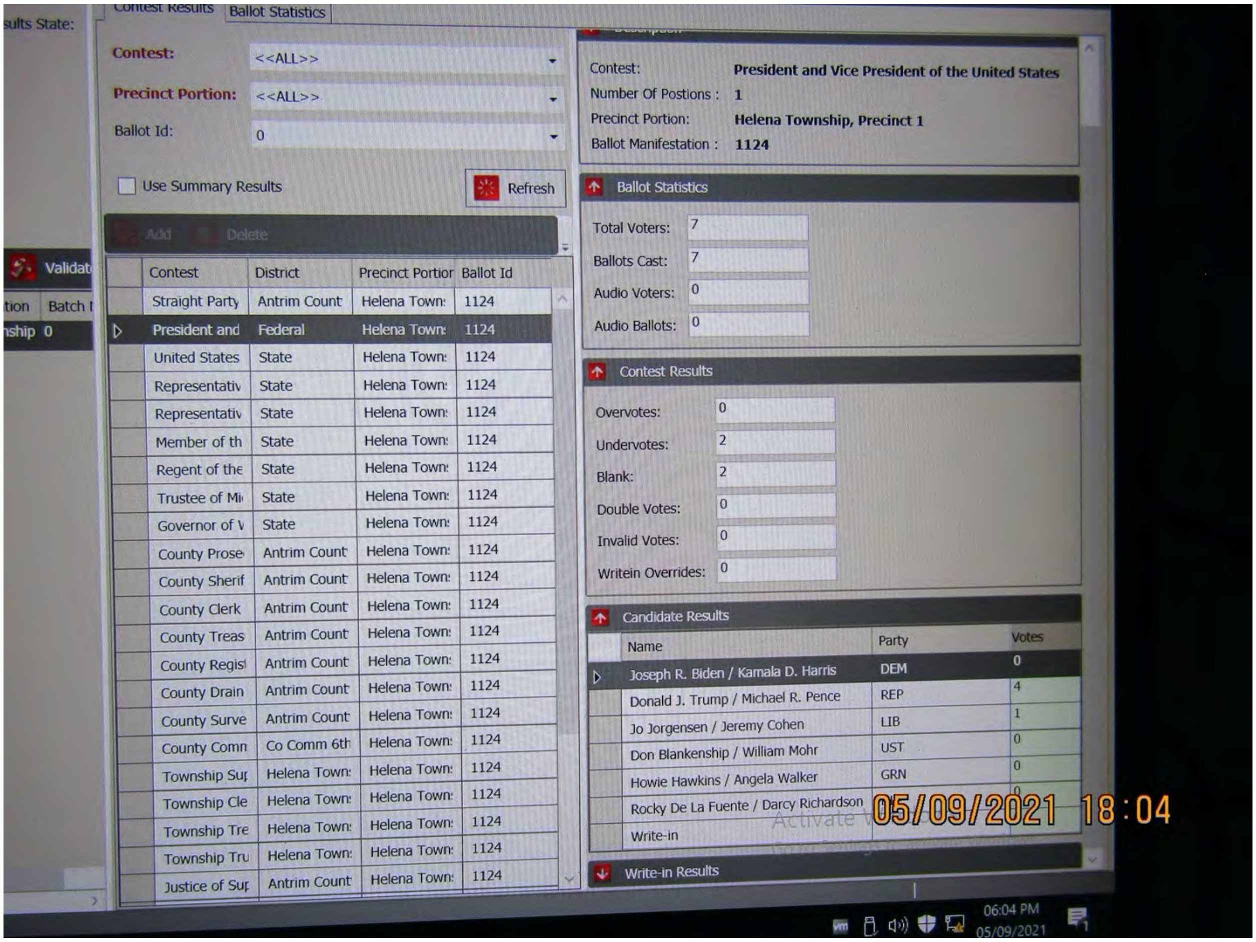


Figure 5 - Biden Undervotes Results

The conclusion of this test indicates EMS/RTR technical behavior consistent with a technical subversion. Further in-depth analysis of source code would be required to gain definitive clarity on the specific nature of the subversion. This would include analysis of the error handling routines, code traces, static and dynamic code analysis.

Under the penalties of perjury, I declare that I have read the foregoing report and that the fact stated in it are true.

Jeffrey Lenberg
Date: 5/9/2021

STATE OF MICHIGAN

COUNTY OF OAKLAND

The foregoing instrument was acknowledged before me this 9th of May, 2021 by Jeffrey Lenberg.

Ann M. Howard

Notary Public

Printed Name: Ann M. Howard

My Commission Expires: 2/24/2023

ANN M. HOWARD
Notary Public, State of Michigan
County of Oakland
My Commission Expires 02-24-2023
Acting in the County of Oakland

Appendix A – Ballots Used in Test

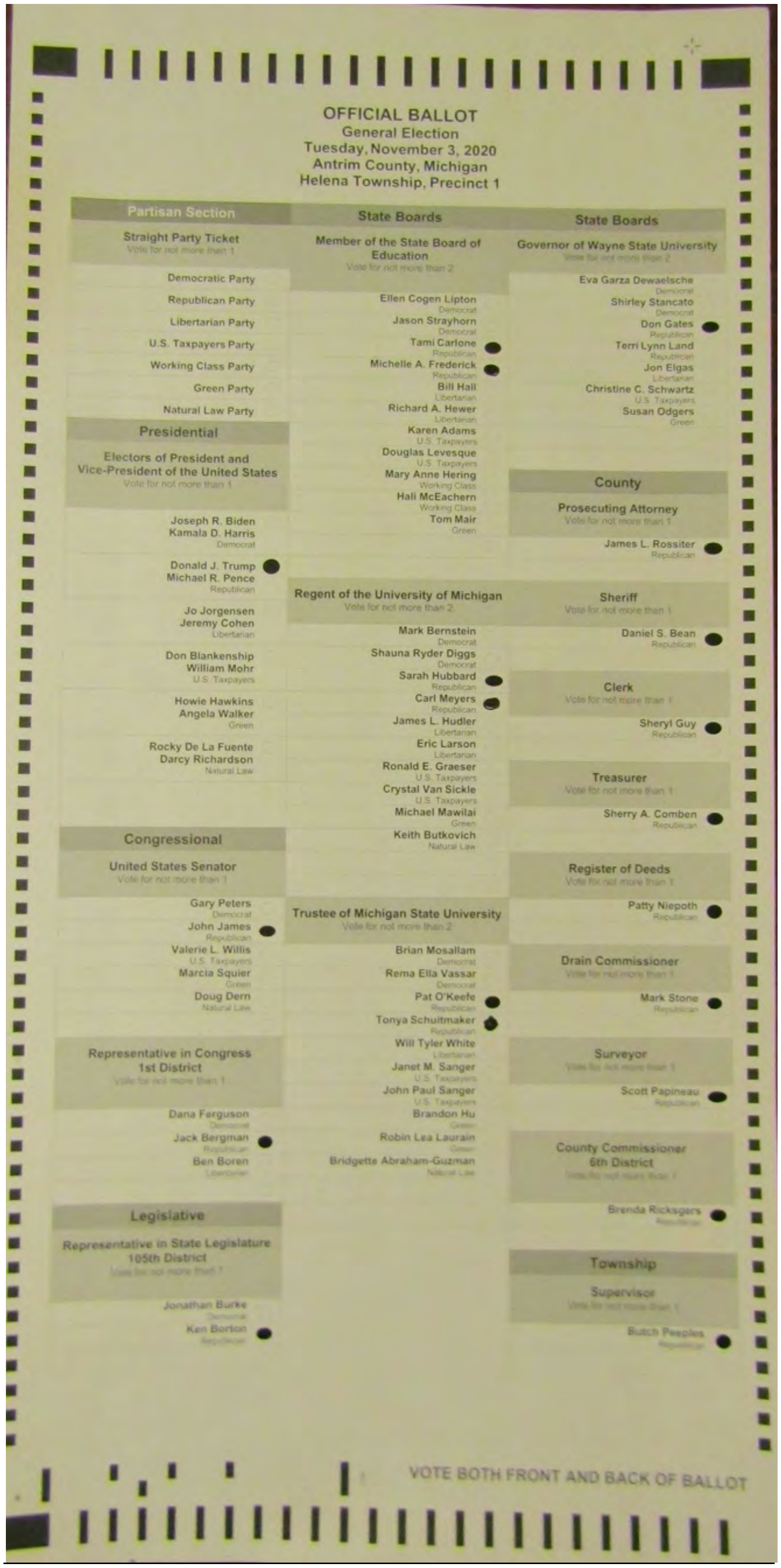


Figure 6 - Trump/James/Bergman

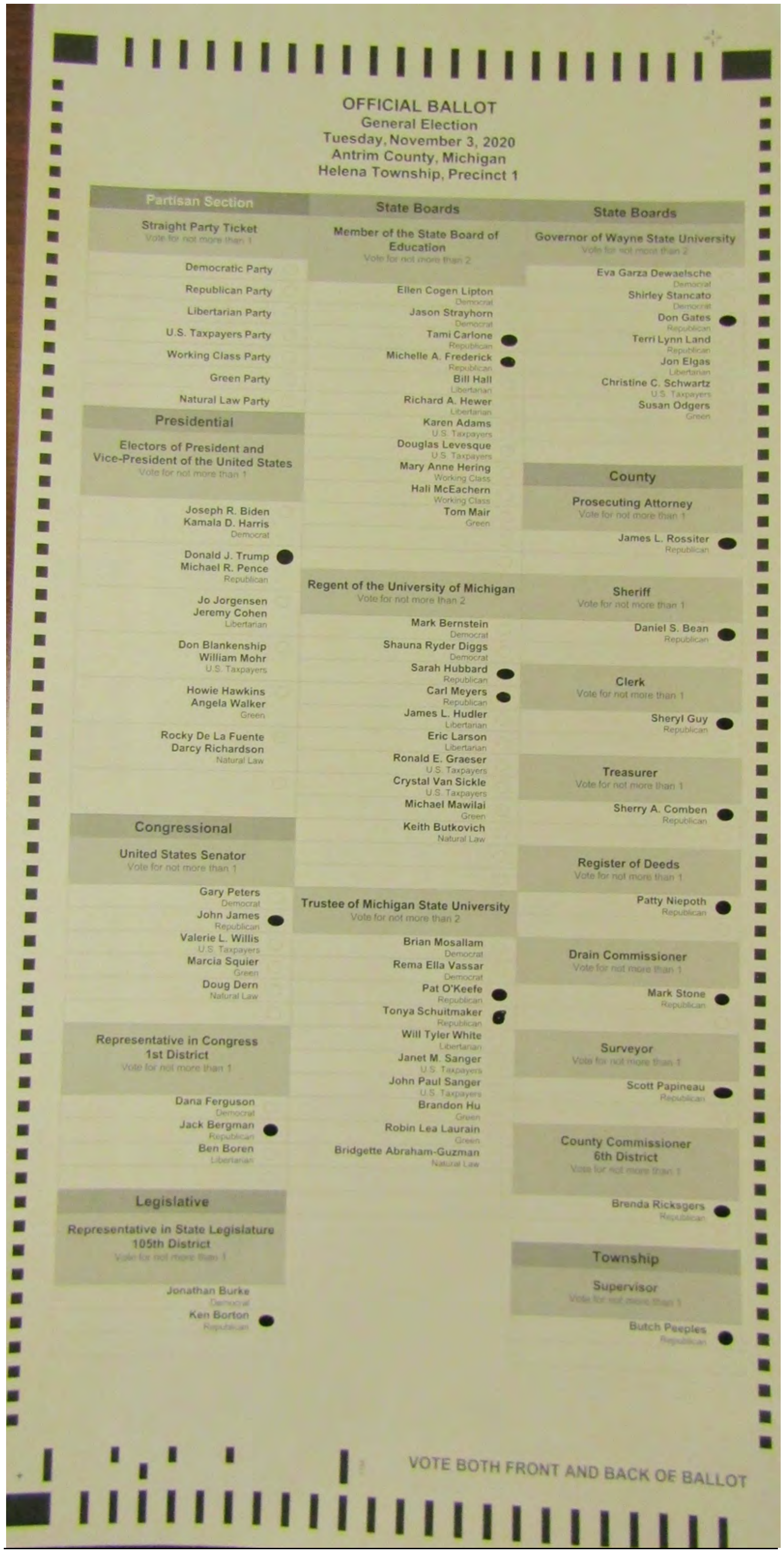
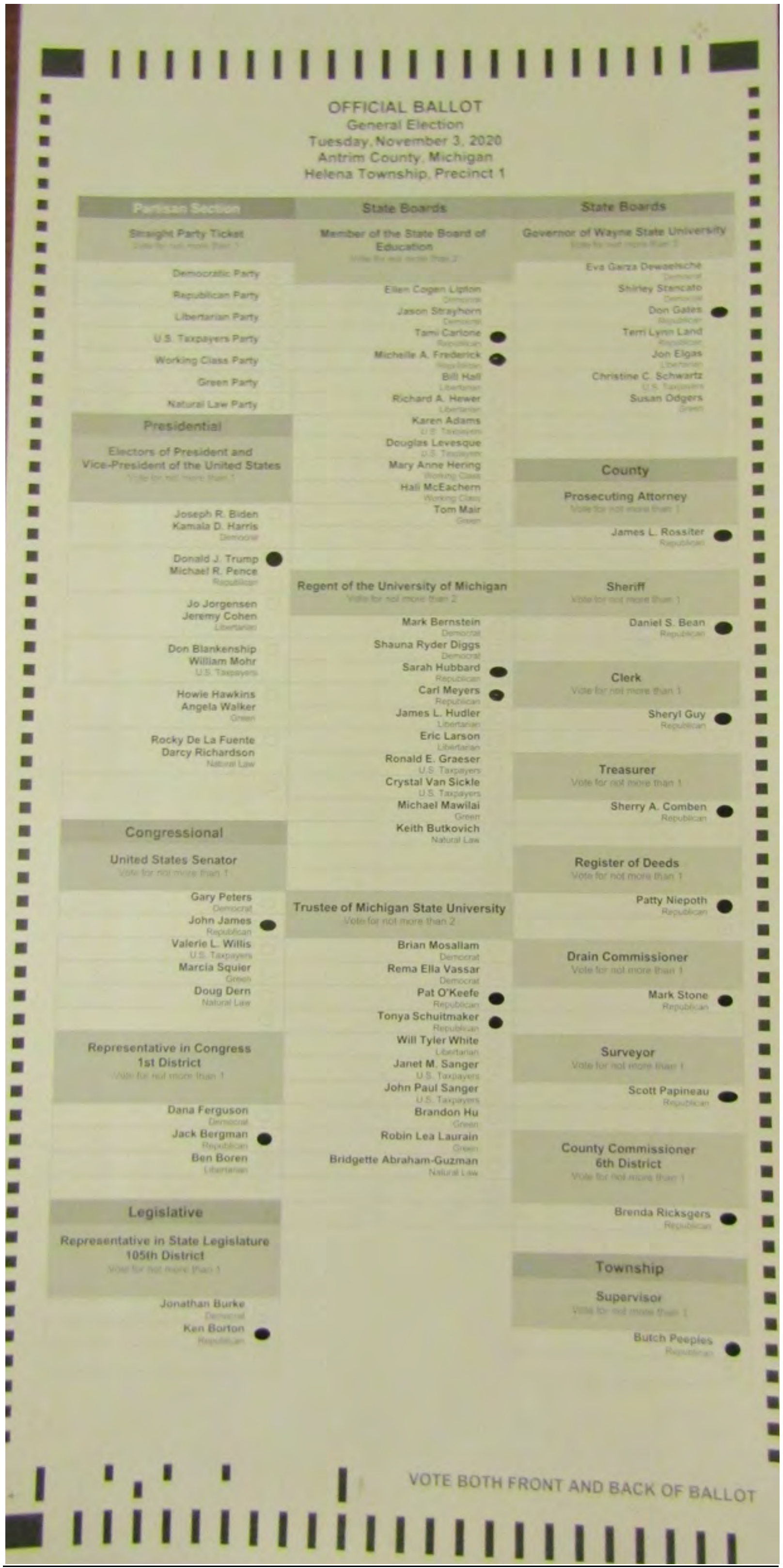


Figure 7 - Trump/James/Bergman



OFFICIAL BALLOT
General Election
Tuesday, November 3, 2020
Antrim County, Michigan
Helena Township, Precinct 1

Partisan Section

Straight Party Ticket
Vote for not more than 1

Democratic Party
Republican Party
Libertarian Party
U.S. Taxpayers Party
Working Class Party
Green Party
Natural Law Party

Presidential

Electors of President and Vice-President of the United States
Vote for not more than 1

Joseph R. Biden / Kamala D. Harris — Democratic
Donald J. Trump / Michael R. Pence — Republican
Jo Jorgensen / Jeremy Cohen — Libertarian
Don Blankenship / William Mohr — U.S. Taxpayers
Howie Hawkins / Angela Walker — Green
Rocky De La Fuente / Darcy Richardson — Natural Law

Congressional

United States Senator
Vote for not more than 1

Gary Peters — Democratic
John James — Republican
Valerie L. Willis — U.S. Taxpayers
Marcia Squier — Green
Doug Dern — Natural Law

Representative in Congress 1st District
Vote for not more than 1

Dana Ferguson — Democratic
Jack Bergman — Republican
Ben Boren — Libertarian

Legislative

Representative in State Legislature 105th District
Vote for not more than 1

Jonathan Burke — Democratic
Ken Borton — Republican

State Boards

Member of the State Board of Education
Vote for not more than 2

Ellen Cogen Lipton — Democratic
Jason Strayhorn — Democratic
Tami Carlone — Republican
Michelle A. Frederick — Republican
Bill Hall — Libertarian
Richard A. Hewer — Libertarian
Karen Adams — U.S. Taxpayers
Douglas Levesque — U.S. Taxpayers
Mary Anne Hering — Working Class
Hali McEachern — Working Class
Tom Mair — Green

Regent of the University of Michigan
Vote for not more than 2

Mark Bernstein — Democratic
Shauna Ryder Diggs — Democratic
Sarah Hubbard — Republican
Carl Meyers — Republican
James L. Hudler — Libertarian
Eric Larson — Libertarian
Ronald E. Graeser — U.S. Taxpayers
Crystal Van Sickle — U.S. Taxpayers
Michael Mawilai — Green
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Eva Garza Dewaelsche — Democratic
Shirley Stancato — Democratic
Don Gates — Republican
Terri Lynn Land — Republican
Jon Elgas — Libertarian
Christine C. Schwartz — U.S. Taxpayers
Susan Odgers — Green

County

Prosecuting Attorney
Vote for not more than 1

James L. Rossiter — Republican

Sheriff
Vote for not more than 1

Daniel S. Bean — Republican

Clerk
Vote for not more than 1

Sheryl Guy — Republican

Treasurer
Vote for not more than 1

Sherry A. Comben — Republican

Register of Deeds
Vote for not more than 1

Patty Niepoth — Republican

Drain Commissioner
Vote for not more than 1

Mark Stone — Republican

Surveyor
Vote for not more than 1

Scott Papineau — Republican

County Commissioner 6th District
Vote for not more than 1

Brenda Ricksgers — Republican

Township

Supervisor
Vote for not more than 1

Butch Peeples — Republican

VOTE BOTH FRONT AND BACK OF BALLOT

Figure 8 - Trump/James/Bergman

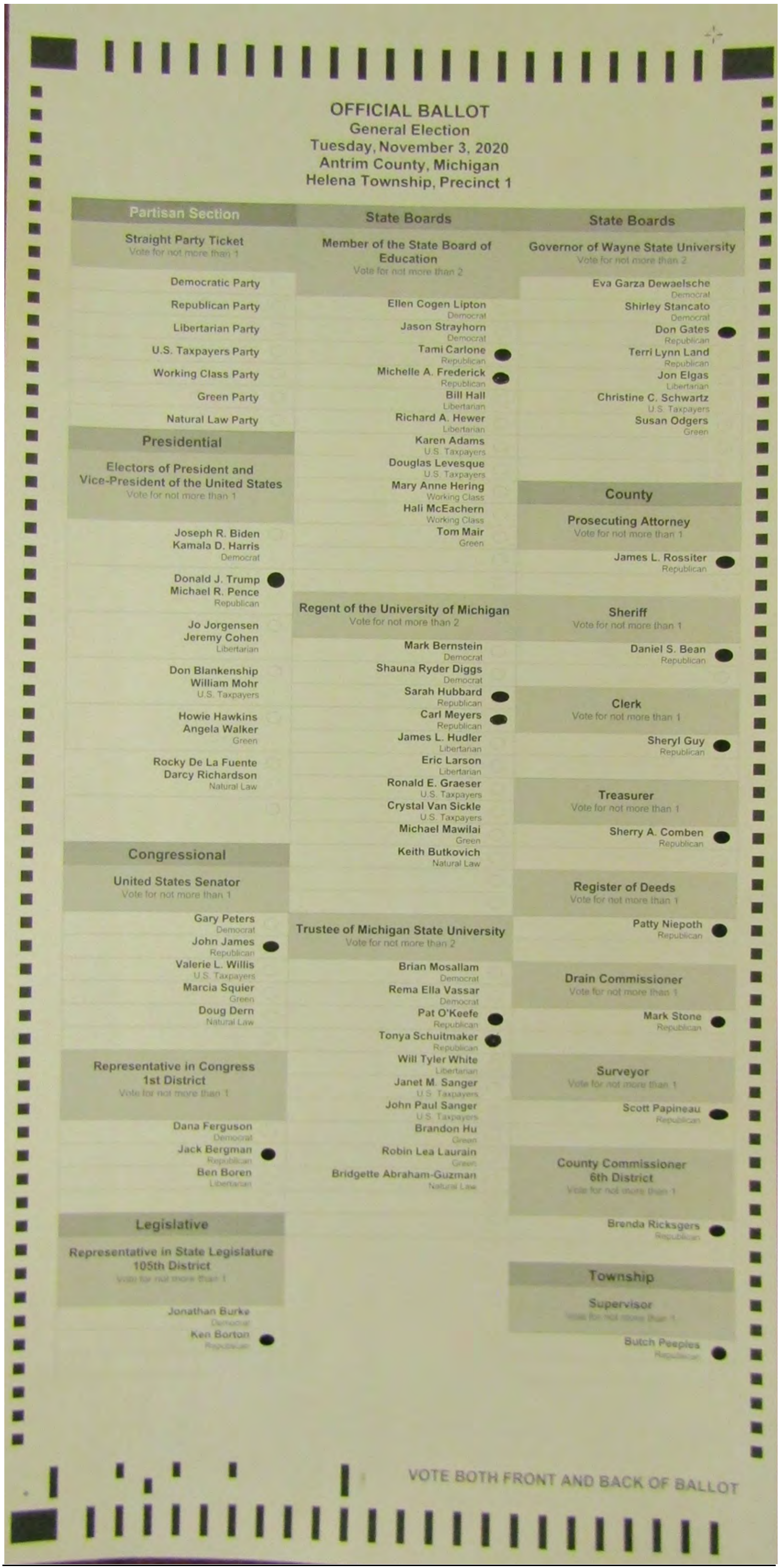

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Figure 9 - Trump/James/Bergman

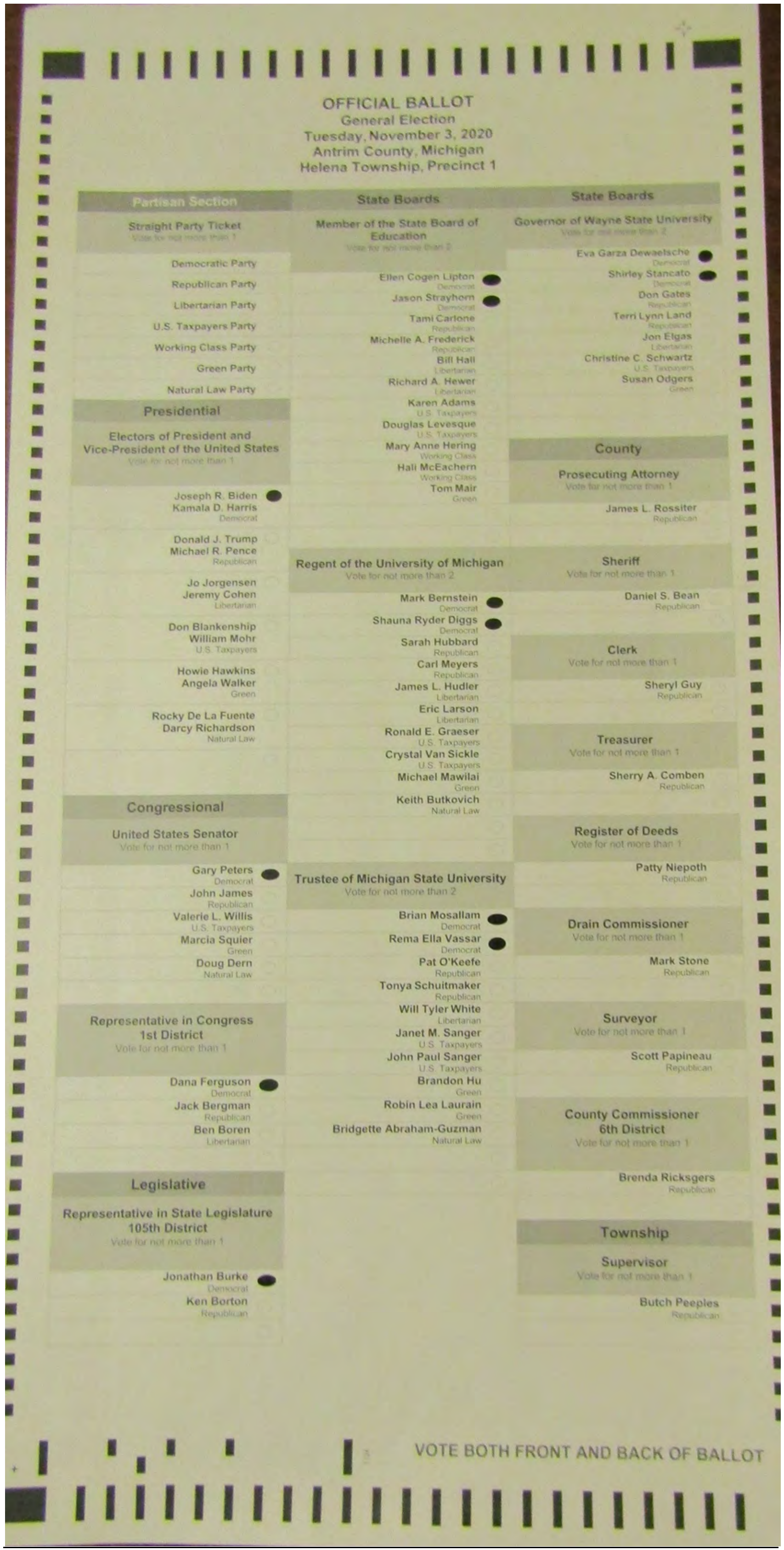

Figure 10 - Biden/Peters/Ferguson

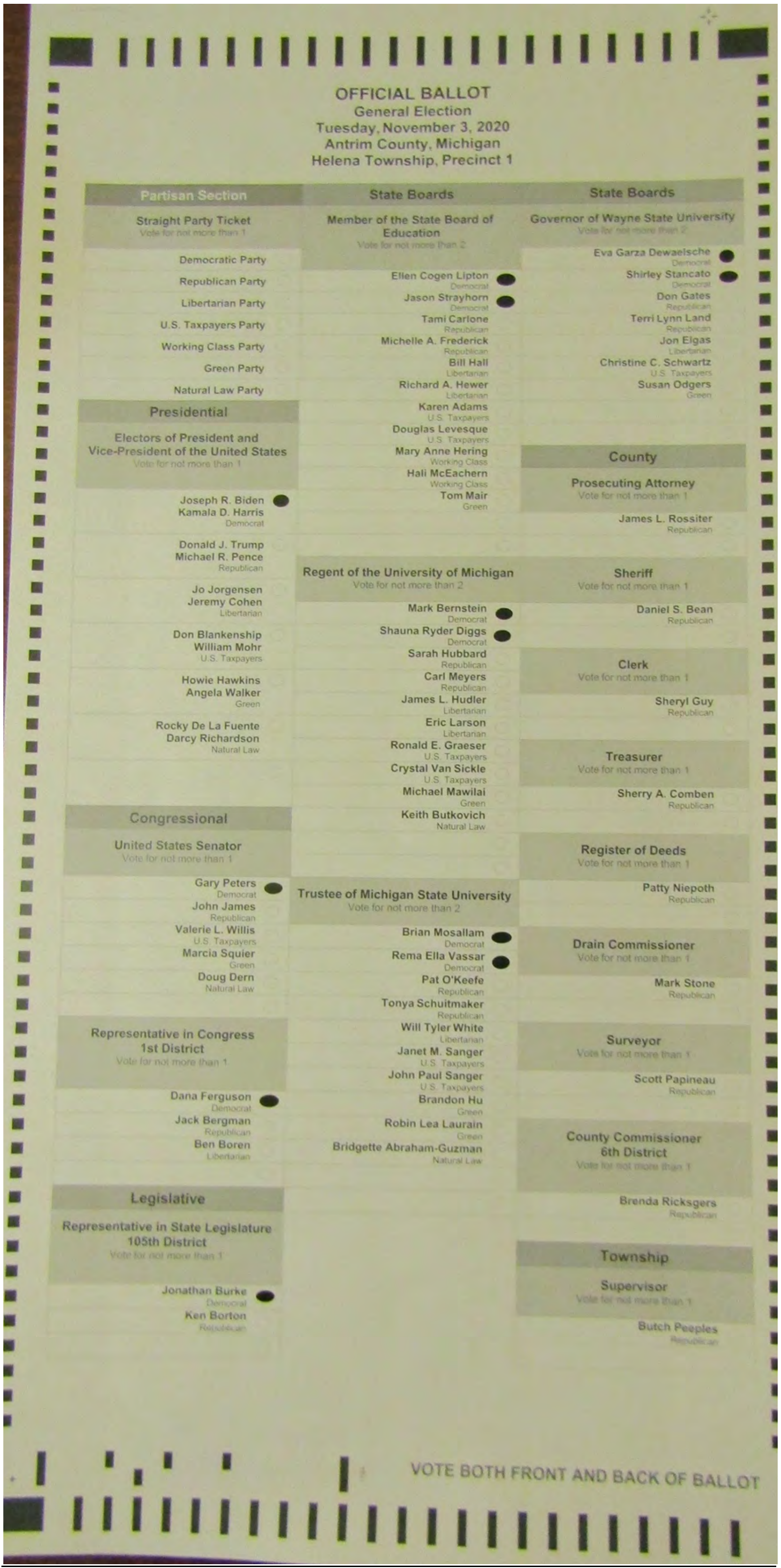

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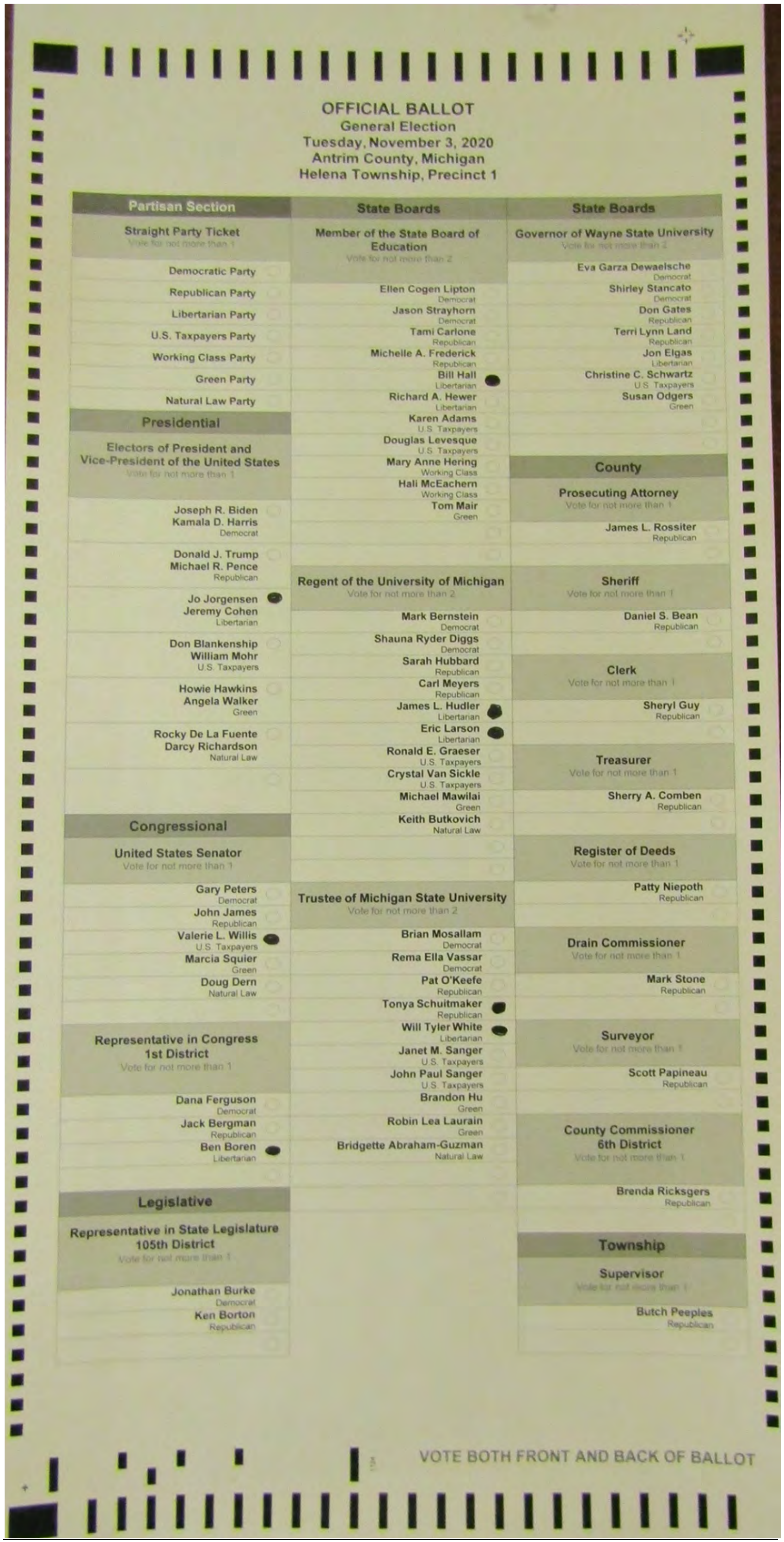
Figure 11 - Biden/Peters/Ferguson



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County

Prosecuting Attorney
Vote for not more than 1

- James L. Rossiter — Republican

Sheriff
Vote for not more than 1

- Daniel S. Bean — Republican

Clerk
Vote for not more than 1

- Sheryl Guy — Republican

Treasurer
Vote for not more than 1

- Sherry A. Comben — Republican

Register of Deeds
Vote for not more than 1

- Patty Niepoth — Republican

Drain Commissioner
Vote for not more than 1

- Mark Stone — Republican

Surveyor
Vote for not more than 1

- Scott Papineau — Republican

County Commissioner 6th District
Vote for not more than 1

- Brenda Ricksgers — Republican

Township

Supervisor
Vote for not more than 1

- Butch Peeples — Republican

VOTE BOTH FRONT AND BACK OF BALLOT

Figure 12 - Jorgenson/Willis/Boren

Exhibit 15

Date: 5/15/2021
Subject: Evidence of Vote Shifting in Barry County Michigan
Analyst: Jeffrey Lenberg

Executive Summary

The Dominion Voting Systems Election Management Systems (EMS), Results Tally & Reporting (RTR) application was subverted during the course of the November 3, 2020 election in Barry County Michigan. There is evidence of the same vote shifting discovered in Antrim County, Michigan occurring in Barry County during election night.

In a previous report by this author dated May 9, 2021, a subversion in the EMS/RTR system was demonstrated where critical errors were disregarded, and the processing of votes continued despite error conditions that should have triggered a critical error in the system.

One of the specific subversions to the error handling in the EMS/RTR noted was the use of logical "bumpers" that prevented the shifting of votes from one contest to another. These logical bumpers account for the shifted Biden votes in the Antrim County election going to the status of "undervote" for the Presidential contest. Without this subversion the vote shifting would result in votes being assigned to the Natural Law Party in the Straight Party Ticket contest on the ballot. The votes shifted from Biden to the Natural Law Party, Straight Party Ticket vote, would then result in the Presidential candidate Rocky De La Fuente receiving Biden's votes.

An affidavit from Jada Chadwick of Hastings, Barry County, Michigan dated December 5, 2020 indicates that she observed Rocky De La Fuente leading in the race with 8,883 votes at 11:17PM with 47% of the precincts reporting on November 3, 2020. Jada Chadwick attached a photo of her computer screen to her affidavit documenting Rocky De La Fuente leading the race.

The candidate Rocky De Law Fuente's final total vote count in Barry County was 16 votes. This type of aberration occurring during a live election is consistent with a subversion being employed operationally by a malicious actor in a misconfigured mode. We have established that the subverted EMS/RTR in Antrim County will not allow Biden votes to be shifted to the Natural Law Party, Straight Party Ticket vote. However, in Barry County during election night November 3, 2020 it is apparent that the subversion was misconfigured resulting in the shifting of votes and consequently causing votes to accrue to the Natural Law Party Candidate, Rocky De Law Fuente.

It is highly likely that the required error handling subversion observed in Antrim was not in place in Barry as would be required to force the cross-Contest vote shift to go to undervote. The accidental but observable extreme results generated from this vote manipulation were anticipated by the malicious actor and likely required a rapid deployment of a pre-planned software fix or an updated configuration to correct for this obvious error in logic. This update would have needed to be deployed across the State of Michigan on all Dominion Voting Systems EMS/RTR systems where the incomplete subversion had a similar malfunction when manipulating the vote totals. This could have been done by an unwitting technician or a download if there existed any remote path into the EMS computer.

The evidence of EMS/RTR subversion in Barry County is relevant to Antrim County because the same contractor, ElectionSource, was likely responsible for the design and deployment of the election project files in both Antrim and Barry County that take advantage of this subversion in order to manipulate votes. A definitive conclusion on the observed behavior of the EMS in Barry County and its relation to the subversion in Antrim can only be completed with a full forensic examination of the equipment and removable media in Barry County. The Michigan Secretary of State has previously ordered destruction of some removable media related to the November 3, 2020 election (See Appendix C). The removable media (compact flash card(s)) is crucial to understand the nature of the subversion that occurred.

Details

This author's report dated May 9, 2021 indicated the presence of a subversion in the Dominion Voting Systems EMS/RTR system. The subversion specifically pertained to how the EMS/RTR system processed results files where a shift occurs in the targeted race.

The Antrim County shift impacted the internalMachineID field of the table named Choice_Manifestation in the EMS database. The subversion of the Antrim County EMS/RTR includes a logical bumper that does not allow the shifting of votes from one contest to another, only shifting of votes within the same contest. The subversion prevents the system from raising a critical error and permits the EMS/RTR to continue processing and posting results without any error or warning messages.

In Antrim County, Biden's votes (internalMachineID index) were shifted to the index number assigned to the Straight Party Ticket Contest, Natural Law Party vote. However, due to the logical bumpers deployed as part of the subversion, all of Biden's shifted votes were counted as "undervotes" by the EMS/RTR in Antrim. Without the subversion it would be expected that shifted Biden votes would cross into the Straight Party Ticket contest, leaving the Presidential contest with no vote within. The internalMachineID index selected as a result of the shift would be the

Natural Law Party, Straight Party Ticket vote. If this selection were to be accurately executed by the Dominion Imagecast Precinct (ICP) and the EMS/RTR, the result would be a vote for the Natural Law Presidential candidate Rocky De La Fuente.

See Figure 1 containing a graphical explanation of the internalMachineID index of vote bullets on the ballot are assigned and used by the ICP and EMS/RTR.

MICHIGAN NOTARY ACKNOWLEDGEMENT

State of Michigan
County of Oakland

The foregoing instrument was acknowledged before me on this 15th day of May, 2021 by Jeffrey Lenberg.

Notary Public Signature:

Notary Printed Name: Ann M. Howard
Acting in the County of: Oakland
My Commission Expires: 2/24/2023

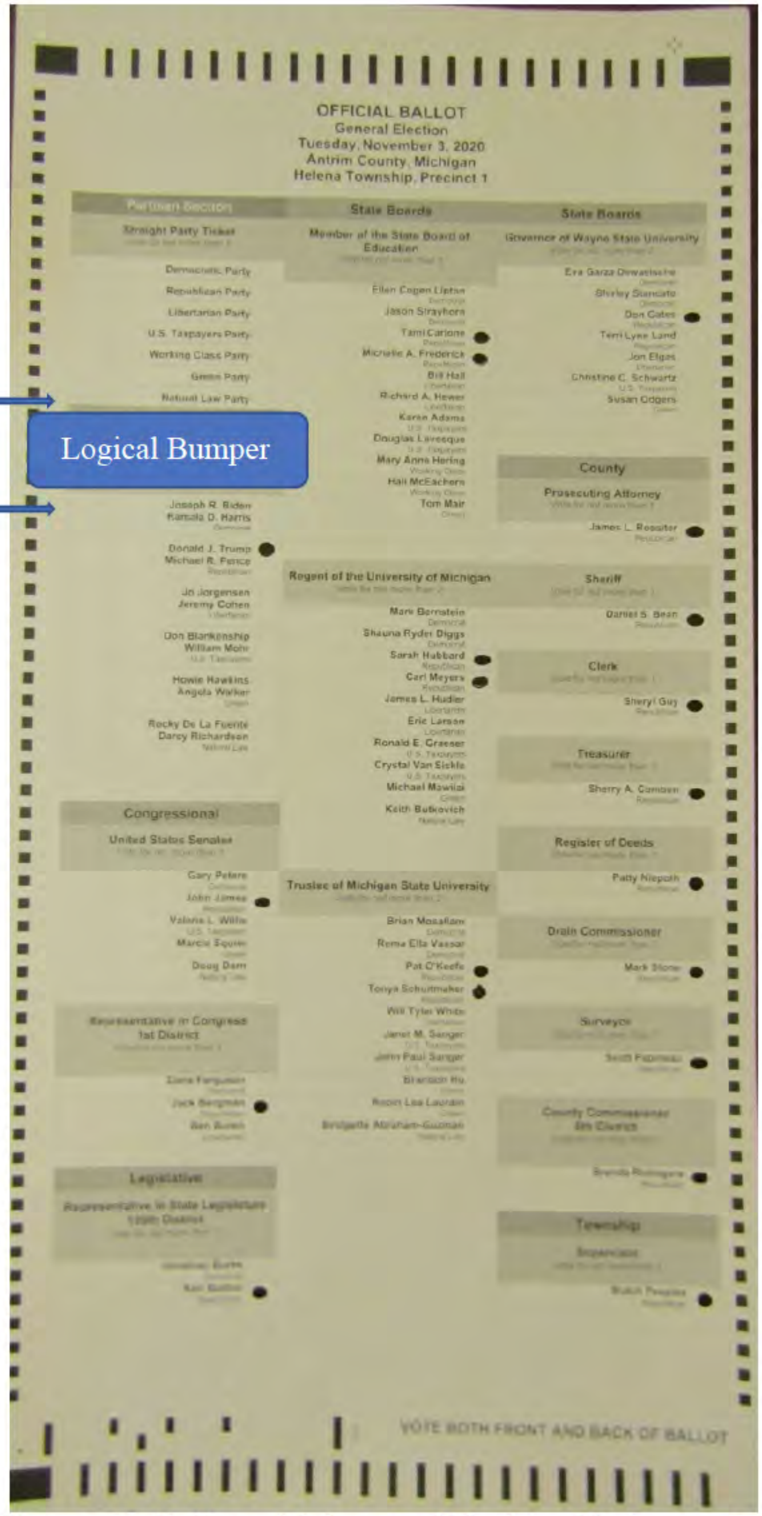


Figure 1 - Ballot with internalMachineID Annotated

When the manipulation of vote occurred in Antrim County, the index for Biden was shifted from 3016 to 3015. In Antrim, the shift of internalmachineID resulted in an undervote due to the subversion. However, the Natural Law Party would be the actual selection, resulting in Rocky De La Fuente receiving the Presidential vote because it had just been vacated.

In Barry County the affidavit of Jada Chadwick shows that the candidate Rocky De La Fuente received an abnormally high number of votes during the course of election night. See Figure 2.

Evidence of Subversion in Barry County, Michigan

An affidavit filed by Jada Chadwick of Hastings in Barry County, Michigan dated December 5, 2020 indicated that she observed Rocky Del La Fuente leading in the Presidential contest having 8,883 votes at 11:17PM with 47% of the precincts reporting on November 3, 2020. Figure 2 is the screenshot that Ms. Chadwick took of the vote totals from her computer screen.

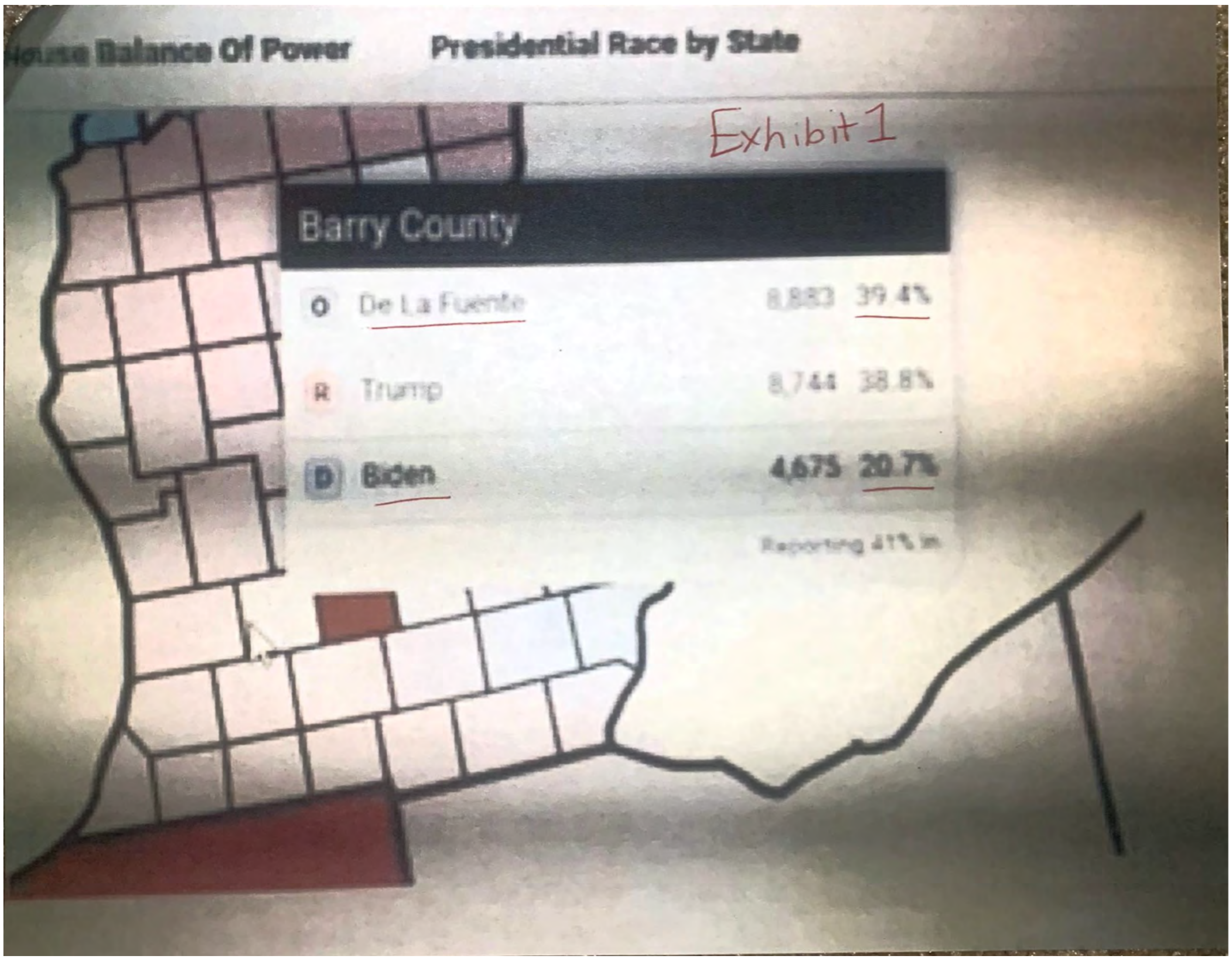


Figure 2 - Barry County Election Live Update 11:17PM November 3, 2020
See Appendix A for full Affidavit from J Chadwick

The final vote totals for Barry County reflect that the candidate Rocky De La Fuente received only 16 total votes vice the 8,883 votes reported on election night when he was in the lead.

President/Vice-President of the United States (Vote for 1)

Precincts Reported: 24 of 24 (100.00%)

		Election Day	AV Counting	Total	
Times Cast		21,099	15,047	36,146 / 0	N/A

Candidate	Party	Election Day	AV Counting Boards	Total	
Joseph R. Biden/Kamala D. Harris	DEM	4,522	7,275	11,797	
Donald J. Trump/Michael R. Pence	REP	16,088	7,383	23,471	
Jo Jorgensen/Jeremy Cohen	LIB	297	182	479	
Don Blankenship/William Mohr	UST	24	35	59	
Howie Hawkins/Angela Walker	GRN	50	33	83	
Rocky De La Fuente/Darcy Richardson	NLP	12	4	16	
Total Votes		20,993	14,912	35,905	

	Election Day	AV Counting Boards	Total	
Unresolved Write-In	33	23	56	

Figure 3 - Barry County, Michigan Final Vote Totals

Conclusion

The subversion that impacted Antrim County was present yet not fully implemented in the EMS/RTR in Barry County on election night. The manifestation of votes being shifted to Rocky De La Fuente is consistent with the EMS/RTR subversion previously identified in Antrim County. The large number of votes for Rocky De La Fuente in Barry County during the live election results reporting can be attributed to a misconfiguration of the subversion or inadequate planning on the part of the subversion developer when writing the code to support the subversion. It is highly likely that a software update or some sort of "patch" had to be deployed to correct this issue and then the results files had to be reprocessed and reposted to the state and the election night reporting system.

The Antrim County subversion is not an isolated incident, and it is apparent that whoever is responsible for creating election project files exercised their ability to manipulate voting in Barry County as well as Antrim County.

Under the penalties of perjury, I declare that I have read the foregoing report and that facts stated in it are true.

Jeffrey Lenberg

Jeffrey Lenberg

Appendix A – Jada Chadwick Affidavit

Exhibit 3

Pages 1 of 3 (JC)

Affidavit & Sworn Statement

I, Jada Chadwick, residing at [redacted], Barry County, Hastings, State of Michigan, do swear and attest under the penalties of perjury and upon personal knowledge that the contents of this sworn statement are true, accurate, and correct, and that I am competent to testify.

Description of account

1. On November 3 2020 I voted for the presidential and
local election. At the Hasting Baptist Church. at 10:30 Am
2. I went with my husband, Shawn Chadwick. When
3. we arrived the parking lot was full. We made our
way inside and was dirrected to our ward, Ward 1.
4. We both stood in line waiting to vote for about 20
5. Minutes. My husband voted before me and the lady at
the table handed him his ballot but she noticed that all
6. the booths were in use. There were 5 booths in total.
There was a basket full of sharpie markers that were
7. porvided to us. I noticed the person before us grab one
and my husband and I used one. They were the
8. only writing untensils porvided. I went to the booth
9. to vote and noticed the marker bleed to the other
side of my ballot and it looked like a dalmatian
10. with dots everywhere. I turned my ballot in and
it went into the counter but I didn't know if

Dated this 5th day of December, 2020
Signature Jada Chadwick

Diane Kay Patterson
Notary Public of Michigan
Kent County
Expires 08/08/2027
Acting in the County of Barry

SUBSCRIBED AND SWORN to before me this 5th day of December 2020
Diane Kay Patterson

Exhibit 3

Pages 2 of 3 (JC)

Affidavit & Sworn Statement

I, Jada Chadwick, residing at [redacted], Barry County Hastings, State of Michigan, do swear and attest under the penalties of perjury and upon personal knowledge that the contents of this sworn statement are true, accurate, and correct, and that I am competent to testify.

Description of account

1. it was accepted. we both turned in our sharpies into a volunteer who wiped them with a clorox wipe.
2. After the election was over, it was about 11:00pm and I was watching fox news. I noticed that
3. Eaton County had it's final count in and Barry
4. had not. I clicked on barry County and the count was:
5. De La Fuente at 8,883 39.4% Exhibit 1 (JC) Trump at 8,744 38.8%
6. Biden at 4,675 20.7% Reporting at 41%. I took a screen shot of this.
7. This conserned me because I had used a sharpie marker and I never used one before. I then went to the
8. SOS.org to see what voting sustem was being used in
9. Barry County and Eaton county. Barry was using Dominion voting system and Eaton was using Exhibit 2 + 3 (JC)
10. Heart voting system. I took screen shots of this as well. I ~~ate~~ also viewed a ~~$~~Screen shot of

Dated this 5th day of December 2020
Signature Jada Chadwick

Diane Kay Patterson
Notary Public of Michigan
Kent County
Expires 08/08/2027
Acting in the County of Barry

SUBSCRIBED AND SWORN to before me this 5th day of December 2020

Diane Kay Patterson

Affidavit & Sworn Statement

Juda Chadwick, residing at [redacted], Barry County Hastings, State of Michigan, do swear and attest under the penalties of perjury and upon personal knowledge that the contents of this sworn statement are true, accurate, and correct, and that I am competent to testify.

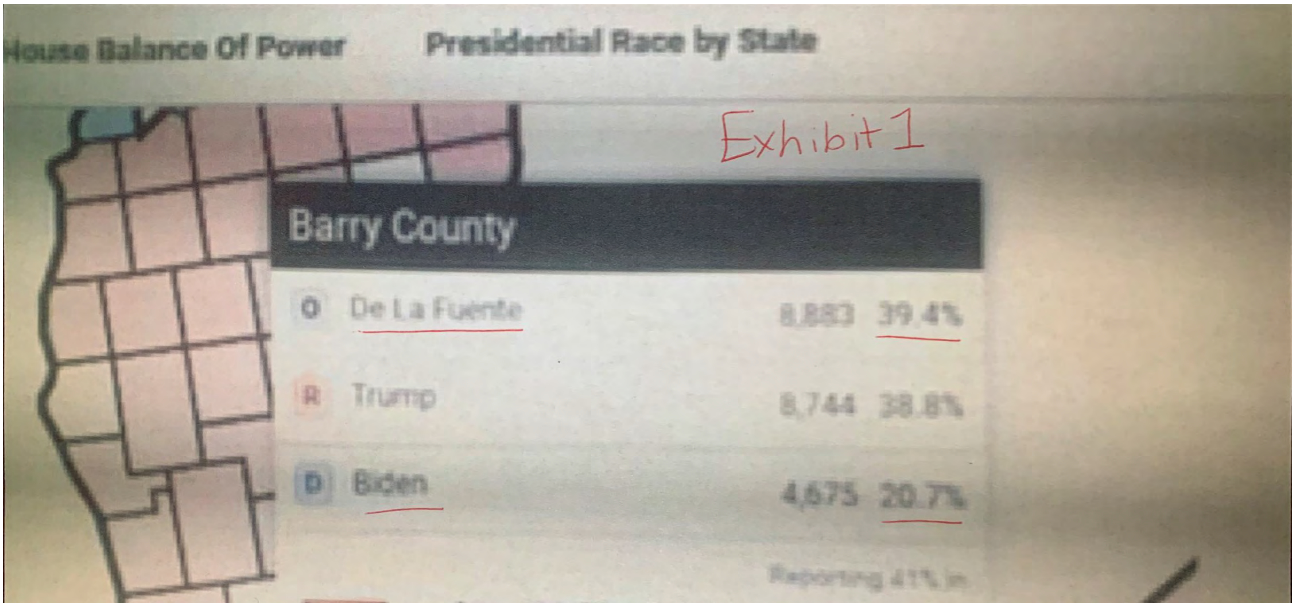
Description of account

1. a ballot that look very similar to mine that night. Exhibit 4 (JC)
2. Tody on December 5th 2020 I viewed the SOS.org website and it is now deleted. Exhibit 5 (JC)
3. I have no idea if my vote was even counted
4.
5.
6.
7.
8.
9.
10.

Dated this 5th day of December, 20 20
Signature Juda Chadwick

Diane Kay Patterson
Notary Public of Michigan
Kent County
Expires 08/08/2027
Acting in the County of

SUBSCRIBED AND SWORN to before me this 5th day of December 2020
Diane Kay Patterson



House Balance Of Power
Presidential Race by State
Exhibit 1
Barry County
De La Fuente 8,883 39.4%
Trump 8,744 38.8%
Biden 4,675 20.7%
Reporting 41% in

Verizon 12:30 PM 92%

State Representative Jack O'Malley's Post

michigan.maps.arcgis.c...

2 of 2

EATON COUNTY

Vendor/Manufacturer: Hart InterCivic

Voting System Name: Hart InterCivic Verity Voting 2.2.2

Tabulator: Verity Scan

Number of Tabulators: 57.00

Exhibit 2

Accessible Equipment: Verity Touch Writer

Number of Accessible Equipment: 38.00

Implementation Timeframe: 2018

...

Send

Verizon 12:30 PM 92%

State Representative Jack O'Malley's Post •••

× michigan.maps.arcgis.c... •••

1 of 2

BARRY COUNTY

Vendor/Manufacturer: Dominion

Voting System Name: Dominion Democracy Suite 5.5

Tabulator: ImageCast Precinct

Number of Tabulators: 28.00

Exhibit 3

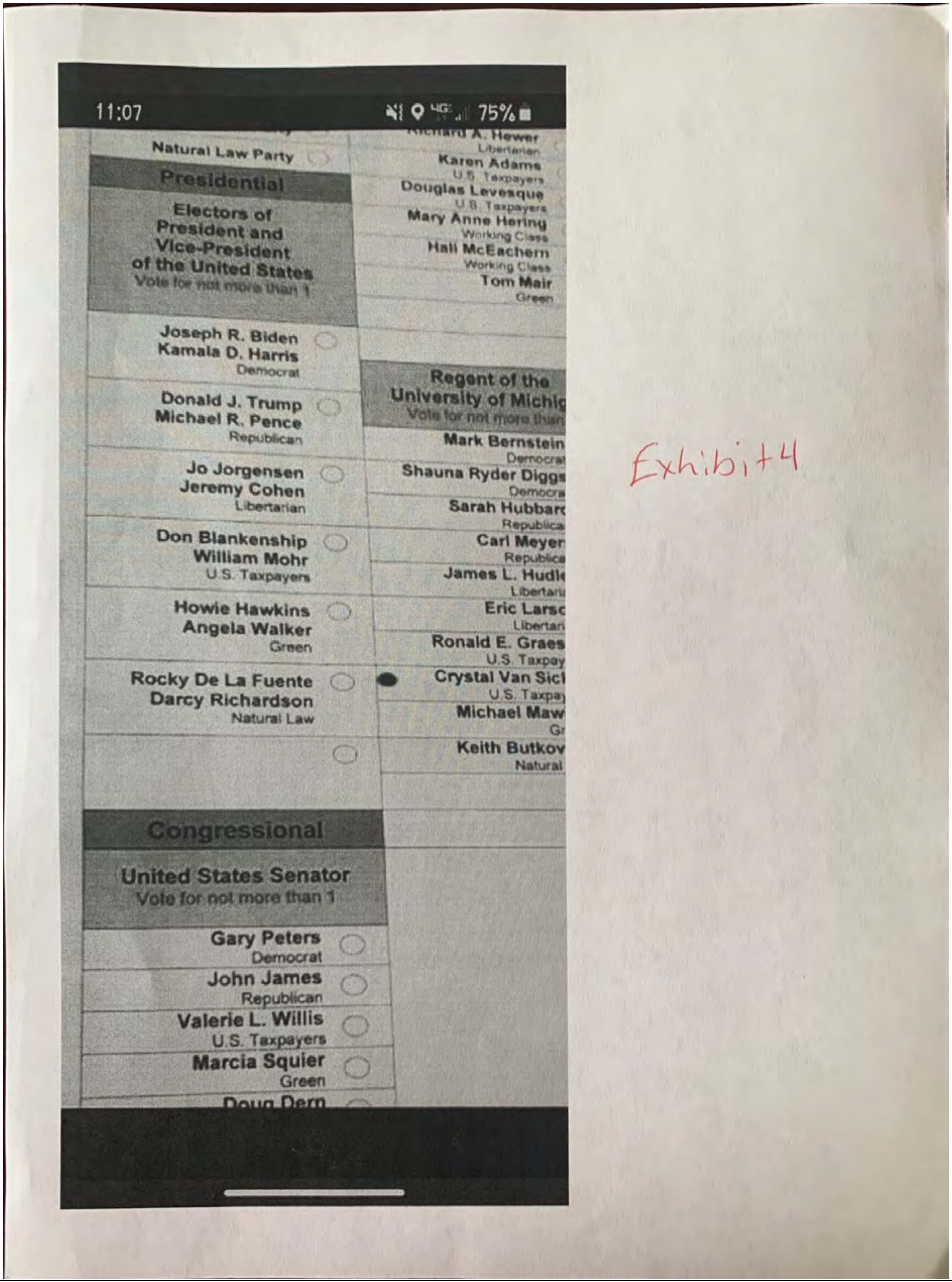
Accessible Equipment: ImageCast X

Number of Accessible Equipment: 24.00

Implementation Timeframe: 2018

•••

Send


11:07 75%

Natural Law Party

Presidential

Electors of President and Vice-President of the United States
Vote for not more than 1

Joseph R. Biden
Kamala D. Harris
Democrat

Donald J. Trump
Michael R. Pence
Republican

Jo Jorgensen
Jeremy Cohen
Libertarian

Don Blankenship
William Mohr
U.S. Taxpayers

Howie Hawkins
Angela Walker
Green

Rocky De La Fuente
Darcy Richardson
Natural Law

Congressional

United States Senator
Vote for not more than 1

Gary Peters
Democrat

John James
Republican

Valerie L. Willis
U.S. Taxpayers

Marcia Squier
Green

Doug Dern

Richard A. Hewer
Libertarian

Karen Adams
U.S. Taxpayers

Douglas Levesque
U.S. Taxpayers

Mary Anne Hering
Working Class

Hali McEachern
Working Class

Tom Mair
Green

Regent of the University of Michig
Vote for not more than

Mark Bernstein
Democrat

Shauna Ryder Diggs
Democra

Sarah Hubbard
Republica

Carl Meyer
Republica

James L. Hudl
Libertari

Eric Larso
Libertari

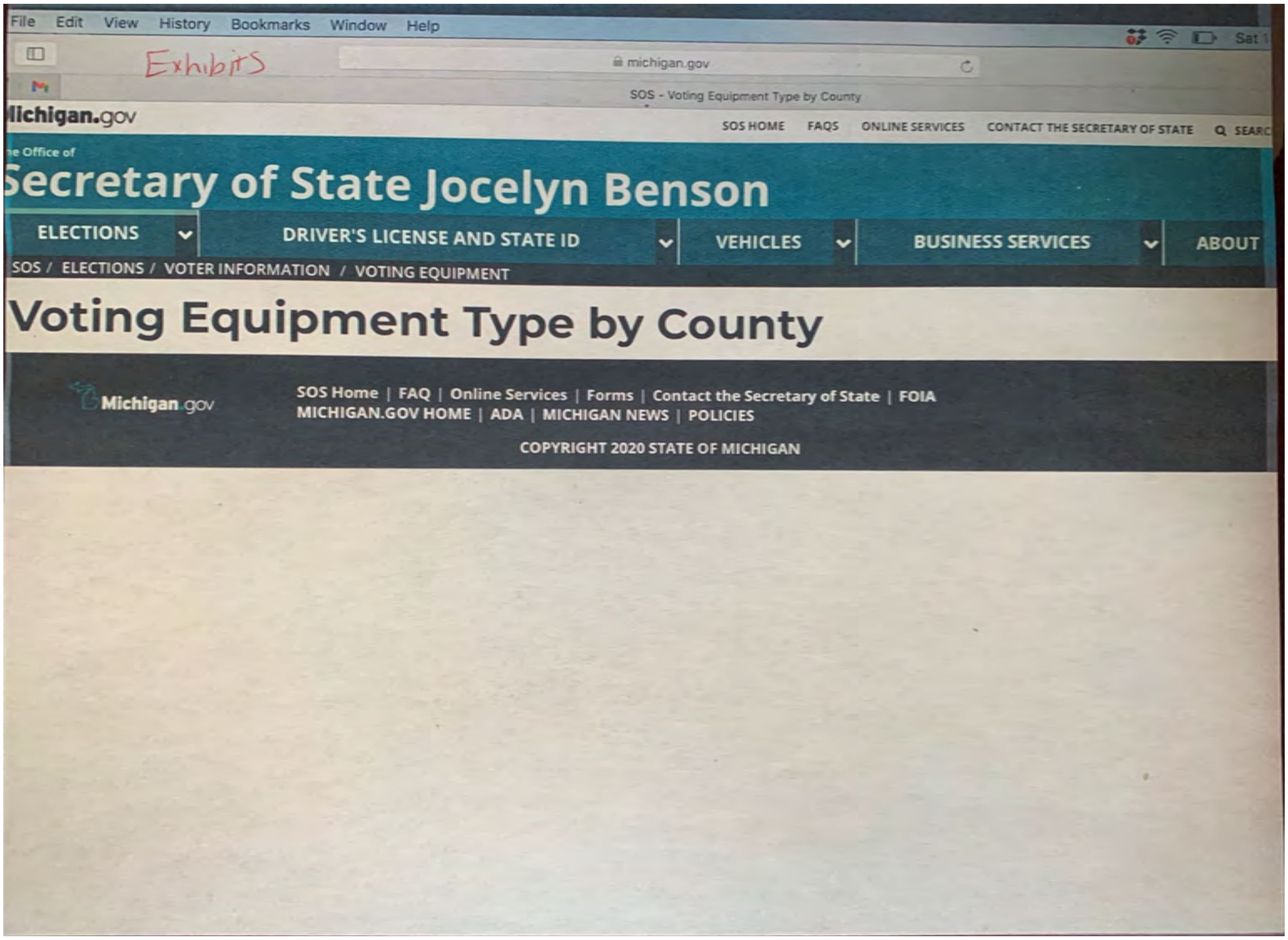
Ronald E. Graes
U.S. Taxpay

Crystal Van Sicl
U.S. Taxpay

Michael Maw
G

Keith Butkov
Natural

Exhibit4


File Edit View History Bookmarks Window Help
Exhibits
michigan.gov
SOS - Voting Equipment Type by County
Michigan.gov
SOS HOME FAQS ONLINE SERVICES CONTACT THE SECRETARY OF STATE
Secretary of State Jocelyn Benson
ELECTIONS
DRIVER'S LICENSE AND STATE ID
VEHICLES
BUSINESS SERVICES
ABOUT
SOS / ELECTIONS / VOTER INFORMATION / VOTING EQUIPMENT
Voting Equipment Type by County
Michigan.gov
SOS Home | FAQ | Online Services | Forms | Contact the Secretary of State | FOIA
MICHIGAN.GOV HOME | ADA | MICHIGAN NEWS | POLICIES
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Appendix B – Official Election Results from Barry County, Michigan

Page: 1 of 49 11/17/2020 11:57:45 AM

Election Summary Report

General Election

Barry County, Michigan

November 03, 2020

Summary for: All Contests, All Precincts, All Tabulators, All Counting Groups

Precincts Reported: 24 of 24 (100.00%)

Registered Voters: 36,146 of 0 (N/A)

Ballots Cast: 36,146

Straight Party Ticket (Vote for 1)

Precincts Reported: 24 of 24 (100.00%)

	Election Day	AV Counting	Total	
Times Cast	21,099	15,047	36,146 / 0	N/A

Candidate	Party	Election Day	AV Counting Boards	Total	
Democratic Party	DEM	2,069	3,214	5,283	
Republican Party	REP	9,649	4,442	14,091	
Libertarian Party	LIB	87	35	122	
U.S. Taxpayers Party	UST	8	15	23	
Working Class Party	WCP	68	23	91	
Green Party	GRN	22	13	35	
Natural Law Party	NLP	16	0	16	
Total Votes		11,919	7,742	19,661	

		Election Day	AV Counting Boards	Total	
Unresolved Write-In		0	0	0	

President/Vice-President of the United States (Vote for 1)

Precincts Reported: 24 of 24 (100.00%)

	Election Day	AV Counting	Total	
Times Cast	21,099	15,047	36,146 / 0	N/A

Candidate	Party	Election Day	AV Counting Boards	Total	
Joseph R. Biden/Kamala D. Harris	DEM	4,522	7,275	11,797	
Donald J. Trump/Michael R. Pence	REP	16,088	7,383	23,471	
Jo Jorgensen/Jeremy Cohen	LIB	297	182	479	
Don Blankenship/William Mohr	UST	24	35	59	
Howie Hawkins/Angela Walker	GRN	50	33	83	
Rocky De La Fuente/Darcy Richardson	NLP	12	4	16	
Total Votes		20,993	14,912	35,905	

		Election Day	AV Counting Boards	Total	
Unresolved Write-In		33	23	56	

United States Senator (Vote for 1)

Precincts Reported: 24 of 24 (100.00%)

	Election Day	AV Counting	Total	
Times Cast	21,099	15,047	36,146 / 0	N/A

Candidate	Party	Election Day	AV Counting Boards	Total	
Gary Peters	DEM	4,428	6,941	11,369	
John James	REP	15,958	7,541	23,499	
Valerie L. Willis	UST	195	171	366	
Marcia Squier	GRN	132	109	241	
Doug Dern	NLP	64	31	95	
Total Votes		20,777	14,793	35,570	

		Election Day	AV Counting Boards	Total	
Unresolved Write-In		22	10	32	

Appendix C – Michigan Secretary of State Memo December 2, 2020

STATE OF MICHIGAN
BUREAU OF ELECTIONS
LANSING

MEMORANDUM

DATE: December 1, 2020
TO: County Clerks
FROM: Michigan Bureau of Elections
SUBJECT: Recounts; Release of Voting Equipment

Please be advised of the following:

STATE RECOUNTS: The Board of State Canvassers completed its canvass of the November 3, 2020 general election on November 23, 2020. The deadline for filing a petition for a recount with the Secretary of State elapsed on November 30, 2020. The following lists the recount requests received by the Secretary of State by the recount petition filing deadline:

- 71st State House District: Eaton County

CONDUCT OF LOCAL RECOUNTS: Recounts requested for local offices that overlap the district listed above may not proceed until clearance is received through this office. Recounts requested for local offices that do not overlap the district listed above may proceed at this time.

DEADLINE FOR COMPLETION OF RECOUNTS: After a general election, each requested recount must be completed no later than 30 days after 1) the deadline for filing a counter petition or 2) the first date the recount may lawfully begin (MCL 168.875).

CONDUCT OF POST-ELECTION AUDITS: If a recount has been requested involving a precinct that has been selected for a post-election audit, the audit may not begin until after the recount has been completed. All other post-election audits may proceed at this time. All of the resources you will need to conduct post-election audits may be found at this link: Post-Election Audit Resources.

The post-election procedure audit includes a hand count of the ballots for the U.S. Senate race in each precinct selected for audit. Additionally, we will be conducting a state-wide Risk Limiting Audit of the Presidential race.

RELEASE OF VOTING EQUIPMENT: The security of ballots and election equipment is released as follows:

BUREAU OF ELECTIONS
RICHARD H. AUSTIN BUILDING • 1ST FLOOR • 430 W. ALLEGAN • LANSING, MICHIGAN 48918
www.Michigan.gov/elections • (800) 292-5973

Ballots, programs and related materials: The security of all optical scan ballots, programs, test decks, accuracy test results, edit listings and any other related materials will be released once all post-election audits are completed.

E-Pollbook laptops and flash drives: The EPB software and associated files must be deleted from all devices by the seventh calendar day following the final canvass and certification of the election (November 30, 2020) unless a petition for recount has been filed and the recount has not been completed, a post-election audit is planned but has not yet been completed, or the deletion of the data has been stayed by an order of the court or the Secretary of State.

FEDERAL BALLOT RETENTION REQUIREMENT: If the office of President, U.S. Senator or U.S. Representative in Congress appears on the ballot (all appeared on the November 3, 2020 general election ballot), federal law requires that all documents relating to the election -- including optical scan ballots and the programs used to tabulate optical scan ballots -- be retained for 22 months from the date of the certification of the election. To comply with the requirement, the Bureau of Elections recommends that optical scan ballots and the programs relating to federal elections be stored in **sealed ballot bags** in a secure place during the 22-month retention period. The documents subject to the federal retention requirement must not be transferred to ballot bags for extended retention until after they are released under Michigan election law as detailed in this memo.

Questions?

If you have any questions, please contact us via email at elections@michigan.gov, or by phone at (517) 335-3234 or (800) 292-5973.

Exhibit 16

May 15, 2021

Title: Necessity of Source Code Review for Dominion Voting Systems EMS and Tabulators
Analyst: James Thomas Penrose, IV

Executive Summary

The Dominion Voting Systems Patent US8,876.002B2 dated Nov 4, 2014 details how Dominion voting machines support pre-election Logic and Accuracy testing (Pre-LAT) system.

This patent outlines the technology concepts and design of Dominion with respect to maximizing automation in the election configuration, ballot generation, processing, and testing process. The outcome is to save the maximum amount of time through automation with features and functionality that make it unnecessary to have humans in the loop of running elections with various configurations that impact the ballot configuration, vote casting, tabulation process, processing of ballot images, and final tallied vote totals.

The specific incident in Antrim county is related to the features and the functionality outlined in this patent; if any of the automated configuration and testing functionality implemented by Dominion were to be abused in a systematic fashion, modification of election outcomes would be trivial for an attacker. Patents do not specify the precise implementation of the features or functionality and the only way to determine the precise functionality implemented is to review the source code of the operational systems using this patented technology.

Details

Here is an excerpt from the patent that speaks extensively about the use of networked functionality to allow for testing at scale in larger jurisdictions:

> ***Additionally, the network communication device 28 enables the Voting machines to have polls opened in pre-LAT mode remotely over the network. Pre-LAT polls mode is a standard mode of operation for a voting device for conducting Pre-election Logic and Accuracy tests. Further, the communication device enables the voting machines 11 to be provided with a vote simulation script over the network. A vote simulation script is a set of commands that can simulate Voting patterns on the machine even to the level of providing pre canned scanned ballot images or PDF images of ballots with machine generated marks for testing the vote interpretation engine on the tabulator. The communication device 28 also***

enables the voting machines 11 to be remotely instructed to run pre-LAT activities such as interpreting vote simulation Scripts and images, performing image calibration procedures, Verifying all system components for readiness and proper function, self printer test etc. Finally, results of all Pre-LAT tests can be communicated back to the EMS through the communications device 28.
Further, the network communication device 28 allows the Voting machines 11 to have pre-LAT polls opened remotely over the network, have pre-LAT polls closed remotely over the network and can communicate pre-LAT results back over the network. Additionally, the pre-LAT polls can be closed manually and can communicate pre-LAT results back over the network.
Thus, the Voting machines 11 can be programmed with an election ballot from over the network, have pre-LAT polls opened remotely over the network and then disable all net work ports thru the tabulator firmware and software. Further, the Voting machines 11 can be programmed with an election ballot from over the network, have pre-LAT polls opened remotely over the network, have pre-LAT polls closed manu ally and then disable all network ports.
Use of a Network to Prepare Voting Machines
Typically the warehouse process cycle consists of the fol lowing functions (see FIG.3): Storage and maintenance 100: Test 101: Repair 102: Machine Preparation 103; Pre-LAT 104; Distribution 105: Acceptance back after election 106: and Escrow storage 107.

The Dominion Voting System's patent states that their machines have network connectivity that can be used to open the polls for pre-LAT activities. Being able to remotely open the polls using networked devices raises a number of questions related to the network security.

- What authentication controls the level of access to the voting machines using the remote access?

- What safeguards are in place to protect the mode of operation of the voting machines; for instance, what prevents a technician from placing the machines in the Pre-LAT mode during the time of an election, and how are such mode changes logged for security review?

The patent also indicates that a vote simulation script is used to produce votes and enable counting of votes for pre-LAT purposes. The vote simulation script includes additional features such as the ability to generate "pre-canned" ballots to scan.

- This script is configurable to generate various election results for testing purposes
- The results from the pre-LAT activities are reported back to the EMS for logging and validation of a successful test

It is unclear from the patent if all parts of networked voting machine infrastructure are properly logged when they are operating in Pre-LAT mode. Given the far-reaching interaction of the pre-LAT scripts across all of the voting machine infrastructure it is imperative to review the original source code of the pre-LAT scripts used by Dominion, their sub-contractors (eg ElectionSource) and the county staff. A review of the pre-LAT script source code would illuminate all of the ways that the networked voting machine infrastructure is manipulated to test. Moreover, to truly understand the impact and methods of the pre-LAT script, the source code for the tabulators, EMS, and other listener servers would be required to make an assessment.

In Antrim County, there was no evidence of pre-LAT test results on the EMS. The use of automated scripts designed to generate votes comes with inherent dangers, not the least of which is the fact that the script could fall into the hands of a malicious actor that wants to use those techniques for fraud.

The versatile pre-LAT set of tools used by Dominion to test the networked voting system is pivotal to understanding whether what happened in Antrim county is attributable to a script that is of the same parentage as pre-LAT scripts, or if the error was purely human in nature.

In order to determine if a pre-LAT script was used in Antrim County, it is critical that the source code be reviewed for the script(s) itself and the appropriate investigative steps be taken to determine if the scripts run to change the vote counting in Antrim are of the same parentage.

The source code for all elections systems is required to be retained by the Michigan Secretary of State in a third-party escrow account. The Michigan Election Code states the following:

> ***168.797c Computer program; disposition and use of source code.***
>
> *Sec. 797c. A person or company providing a computer program that examines, counts, tabulates, and prints results of the votes cast by a voter on an electronic voting system shall place in an escrow account a copy of the source code of the program and any subsequent revisions or modifications of the source code. The secretary of state or an authorized agent of the secretary of state shall agree to use the information contained in the source code solely for the purpose of analyzing and testing the software and shall not disclose proprietary information to any other person or agency without the prior written consent of the vendor.*

Here are the relevant definitions of the terms above:

> ***168.794 Definitions used in MCL 168.794 to 168.799a.***
>
> *Sec. 794. As used in sections 794 to 799a:*
>
> *(a) "Audit trail" means a record of the votes cast by each voter that can be printed, recorded, or visually reviewed after the polls are closed. The record shall not allow for the identification of the voter.*
>
> *(b) "Ballot" means a card, ballot label, paper ballot, envelope, or any medium through which votes are recorded.*
>
> *(c) "Ballot label" means the display or material containing the names of offices and candidates or the questions to be voted on.*
>
> *(d) "Counting center" means 1 or more locations selected by the board of election commissioners of the city, county, township, village, or school district at which ballots are counted by means of electronic tabulating equipment or vote totals are electronically received from electronic tabulating equipment and electronically compiled.*
>
> *(e) "Electronic tabulating equipment" means an apparatus that electronically examines and counts votes recorded on ballots and tabulates the results.*
>
> *(f) "Electronic voting system" means a system in which votes are recorded and counted by electronic tabulating equipment.*
>
> *(g) "Escrow account" means a third party approved by the secretary of state for the purpose of taking custody of all source codes, including all revisions or modifications of source codes.*
>
> *(h) "Source code" means the assembly language or high level language used to program the electronic voting system.*
>
> *(i) "Voting device" means an apparatus that contains the ballot label and allows the voter to record his or her vote.*
>
> *(j) "Voting station" means an enclosure provided to ensure ballot secrecy during the voting of the ballot.*
> *(k) "Memory device" means a method or device used to store electronic data.*

The benefit of analyzing source code from the third-party escrow account is the fact that all original source code and changes to the source code must be stored with the third-party to ensure that changes that impact any election voting, tabulation, reporting, and testing is memorialized for authorized investigations. The Michigan Election Code (law) provides for this transparency to ensure the integrity of the election system.

Source code is required to perform this evaluation from the following systems and technical tools:

- All scripts (source) used for pre-LAT activities
- All source code associated with all the varieties of tabulators, EMS, poll books, and other networked servers

Under the penalties of perjury, I declare that I have read the foregoing report and that the fact stated in it are true.

James Thomas Penrose, IV
Date: 5/15/2021

May 15, 2021

MICHIGAN NOTARY ACKNOWLEDGEMENT

State of Michigan
County of Oakland

The foregoing instrument was acknowledged before me on this 15th day of May, 2021 by James Thomas Penrose, IV.

Notary Public Signature: Ann M. Howard

Notary Printed Name: Ann M. Howard
Acting in the County of: Oakland
My Commission Expires: 2/24/2023

US008876002B2

(12) **United States Patent**
Arnao et al.

(10) **Patent No.: US 8,876,002 B2**
(45) **Date of Patent: Nov. 4, 2014**

(54) **SYSTEMS FOR CONFIGURING VOTING MACHINES, DOCKING DEVICE FOR VOTING MACHINES, WAREHOUSE SUPPORT AND ASSET TRACKING OF VOTING MACHINES**

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(73) Assignee: **Dominion Voting Systems, Inc.**, Denver, CO (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **13/092,604**

(22) Filed: **Apr. 22, 2011**

(65) **Prior Publication Data**

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Related U.S. Application Data

(63) Continuation of application No. PCT/US2009/062069, filed on Oct. 26, 2009.

(60) Provisional application No. 61/193,062, filed on Oct. 24, 2008.

(51) **Int. Cl.**
G07C 13/00 (2006.01)

(52) **U.S. Cl.**
CPC ***G07C 13/00*** (2013.01)
USPC .... **235/386**; 235/51; 235/54 F

(58) **Field of Classification Search**
USPC .... 235/51, 52, 54 E, 54 F, 56, 57, 386, 454, 235/462.01, 487, 492
See application file for complete search history.

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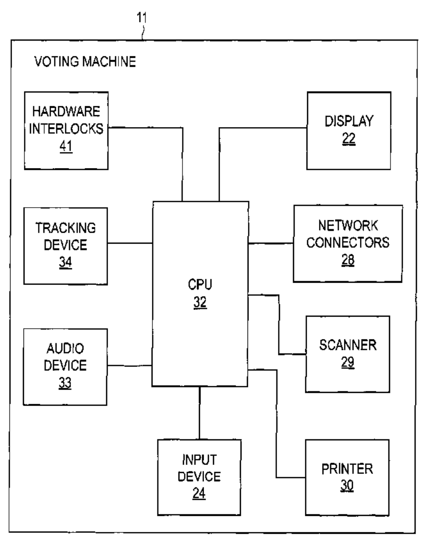
Primary Examiner — Paultep Savusdiphol
(74) *Attorney, Agent, or Firm* — Holland & Hart LLP

(57) **ABSTRACT**

A system and device facilitate the storage and tracking of warehoused voting machines. A system includes a host computer, a plurality of voting machines that are connected via a network to the host computer, each voting machine having one or both of a wireless communication device and a data port that is coupled to the host computer. The system also includes an election and voting machine preparation portion included in the host computer to manage and/or control the connected voting machines. The election and voting machine preparation portion is configured to manage the status of the connected voting machines, is configured to instruct the voting machines to run self tests, is configured to receive results of the self tests back from the connected voting machines, and is configured to prepare/program the connected voting machines with an election ballot.

17 Claims, 8 Drawing Sheets



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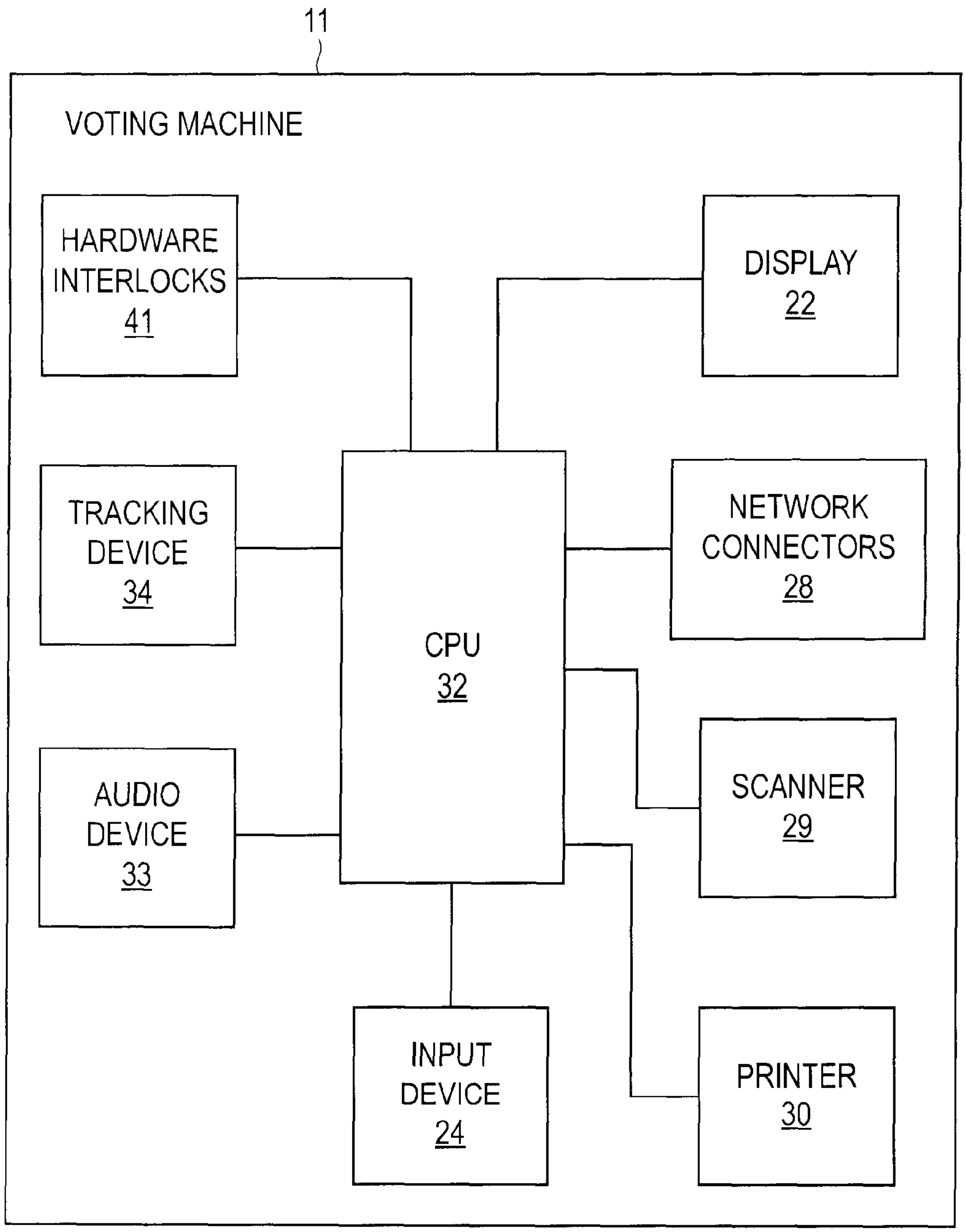
11
VOTING MACHINE
HARDWARE INTERLOCKS 41
DISPLAY 22
TRACKING DEVICE 34
CPU 32
NETWORK CONNECTORS 28
SCANNER 29
AUDIO DEVICE 33
INPUT DEVICE 24
PRINTER 30

FIG. 1

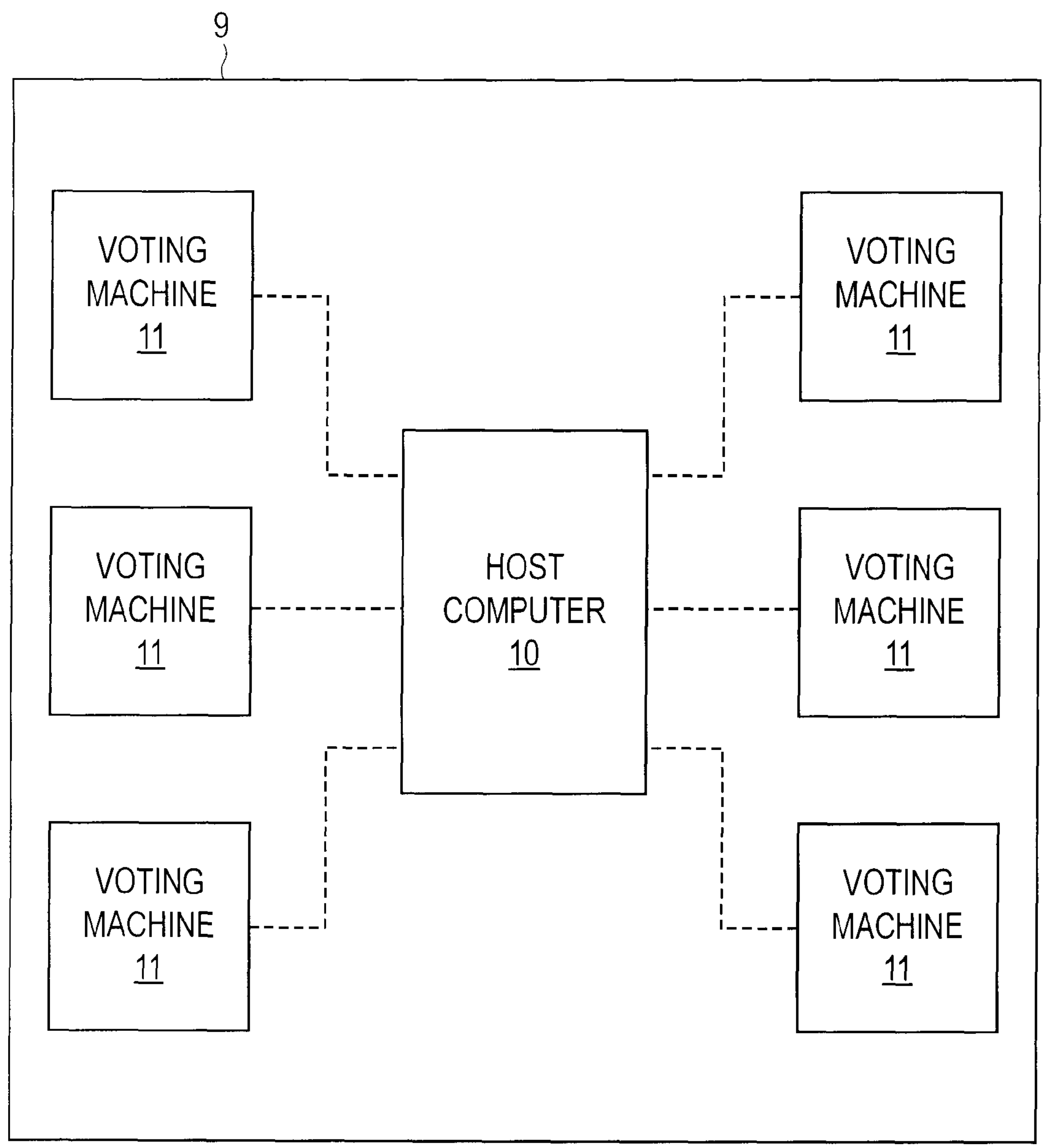
9
VOTING
MACHINE
11
VOTING
MACHINE
11
VOTING
MACHINE
11
HOST
COMPUTER
10
VOTING
MACHINE
11
VOTING
MACHINE
11
VOTING
MACHINE
11

FIG. 2

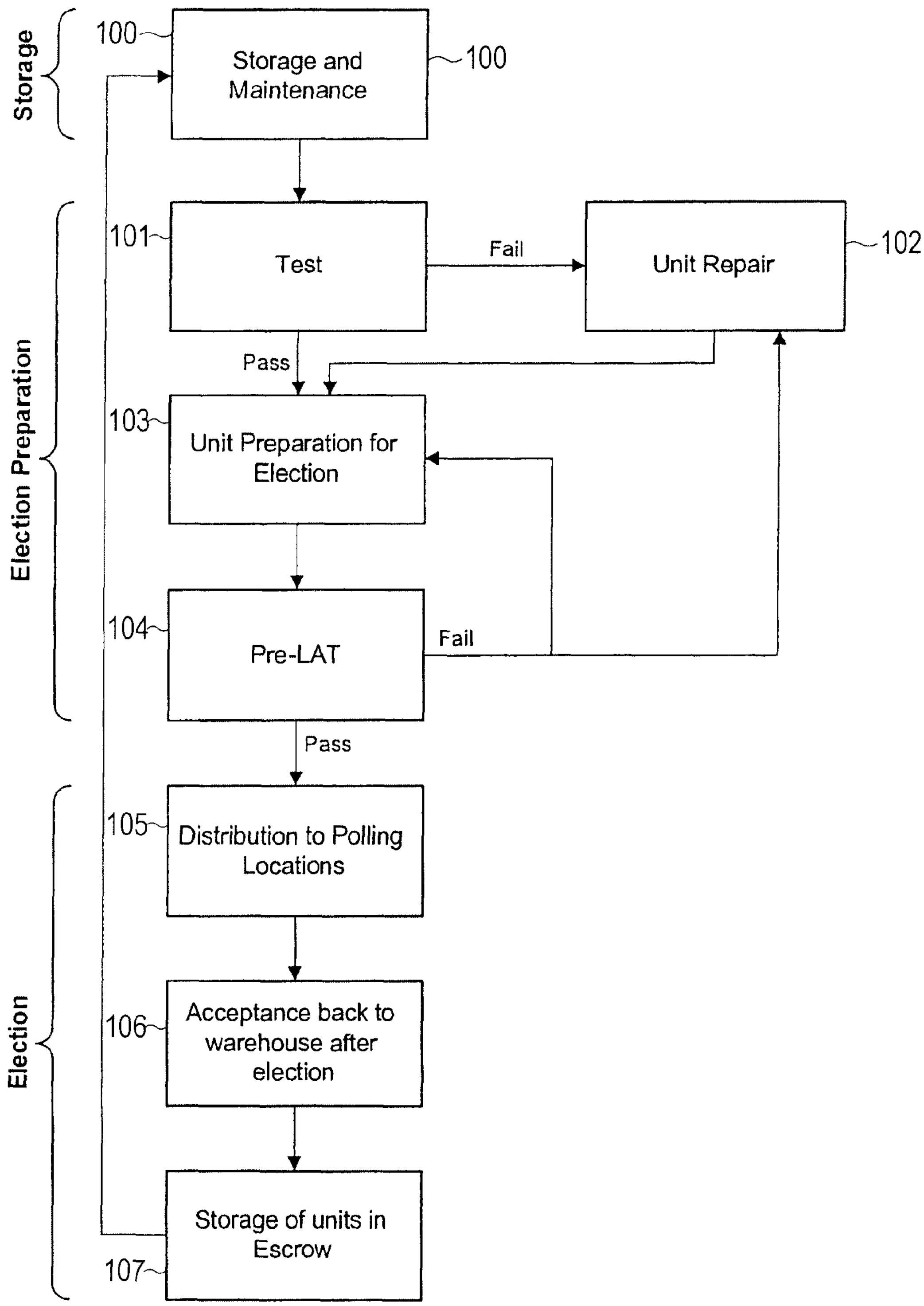
Storage
Election Preparation
Election
100
Storage and Maintenance
100
101
Test
Fail
Unit Repair
102
Pass
103
Unit Preparation for Election
104
Pre-LAT
Fail
Pass
105
Distribution to Polling Locations
106
Acceptance back to warehouse after election
Storage of units in Escrow
107

FIG. 3

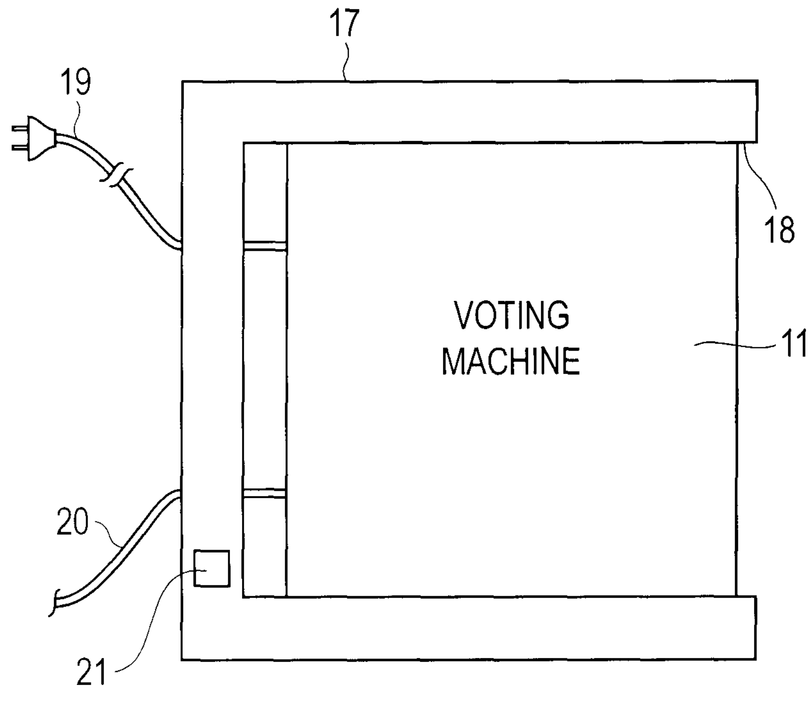

FIG. 4

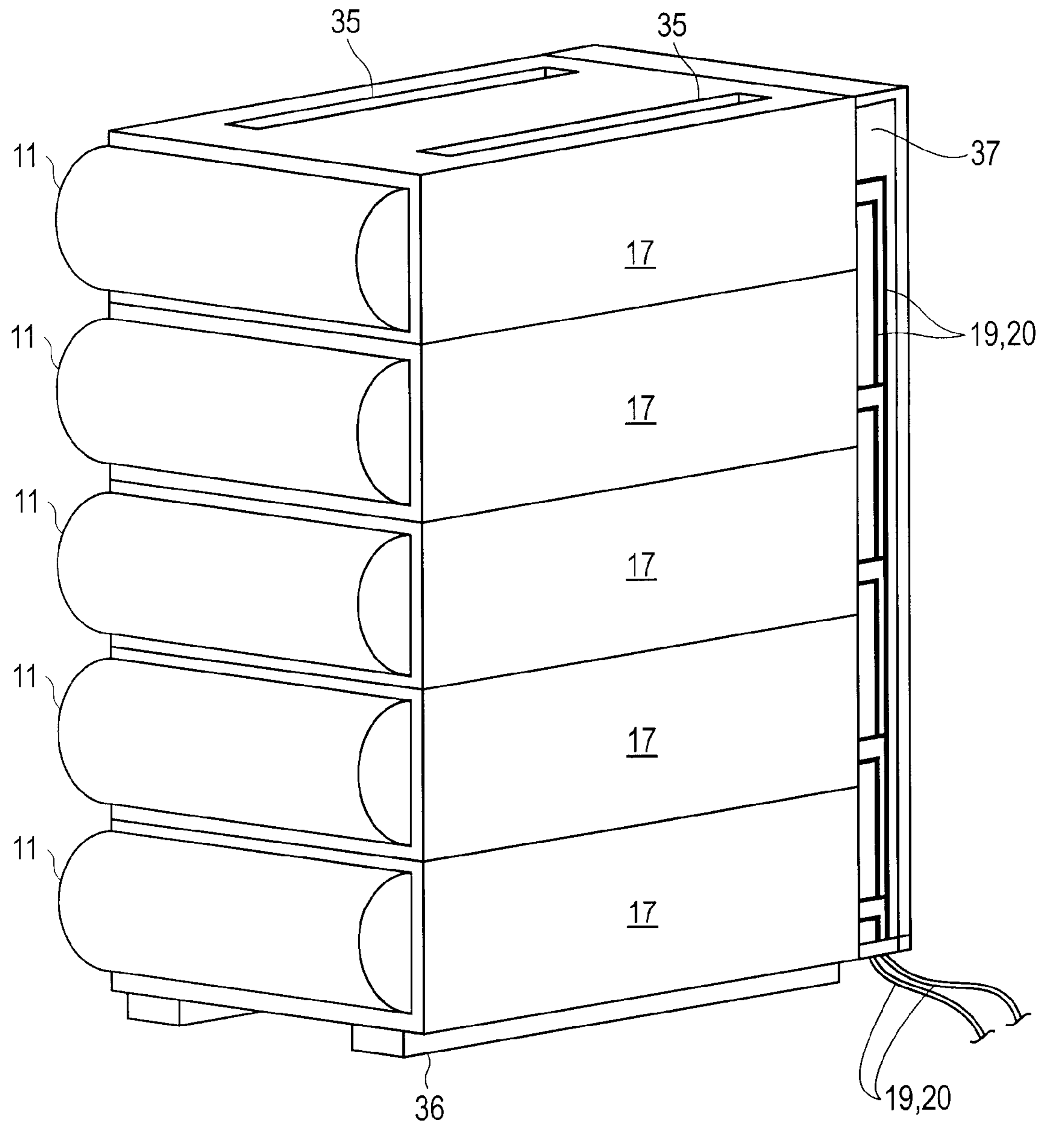

FIG. 5

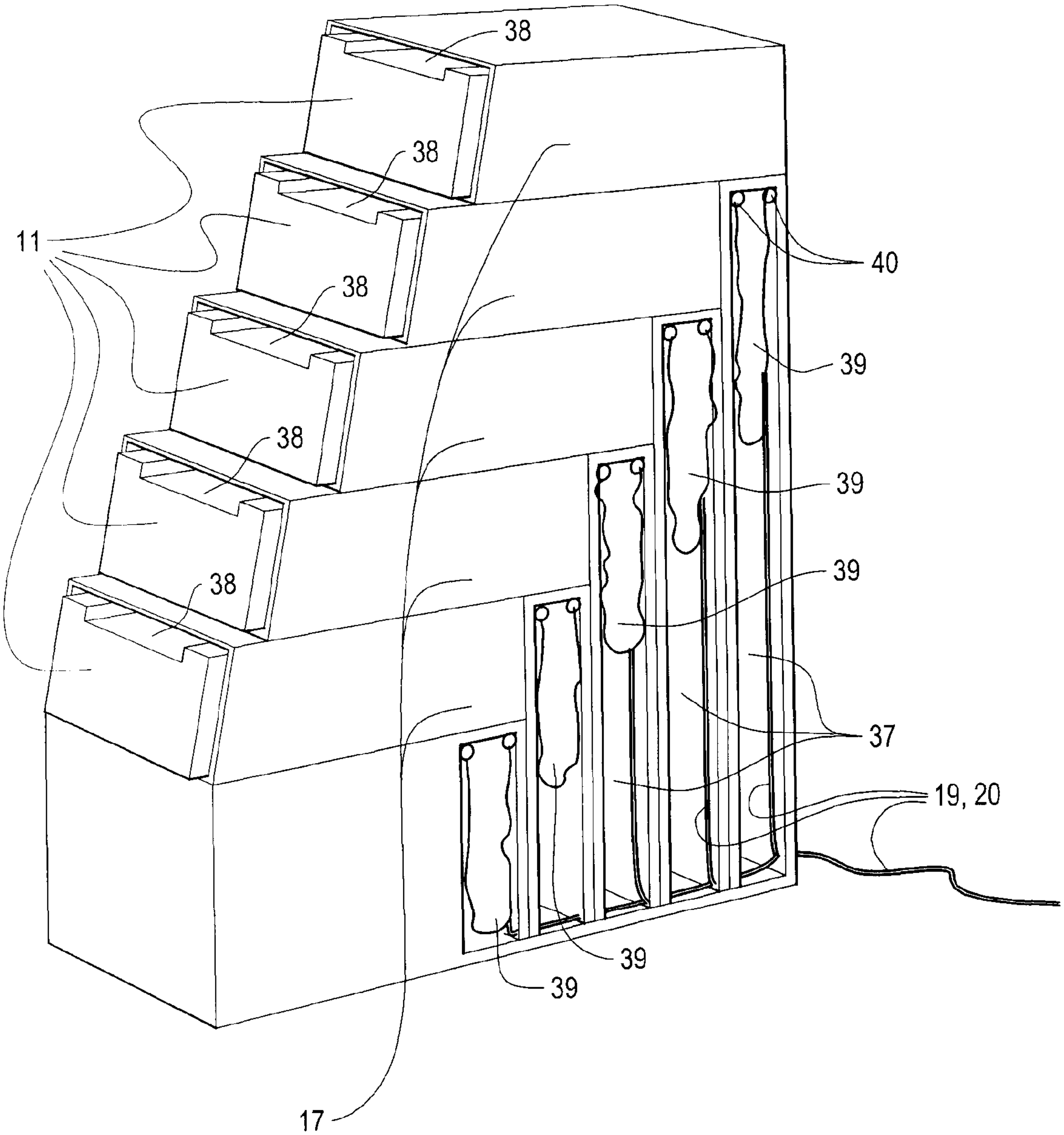

FIG. 6

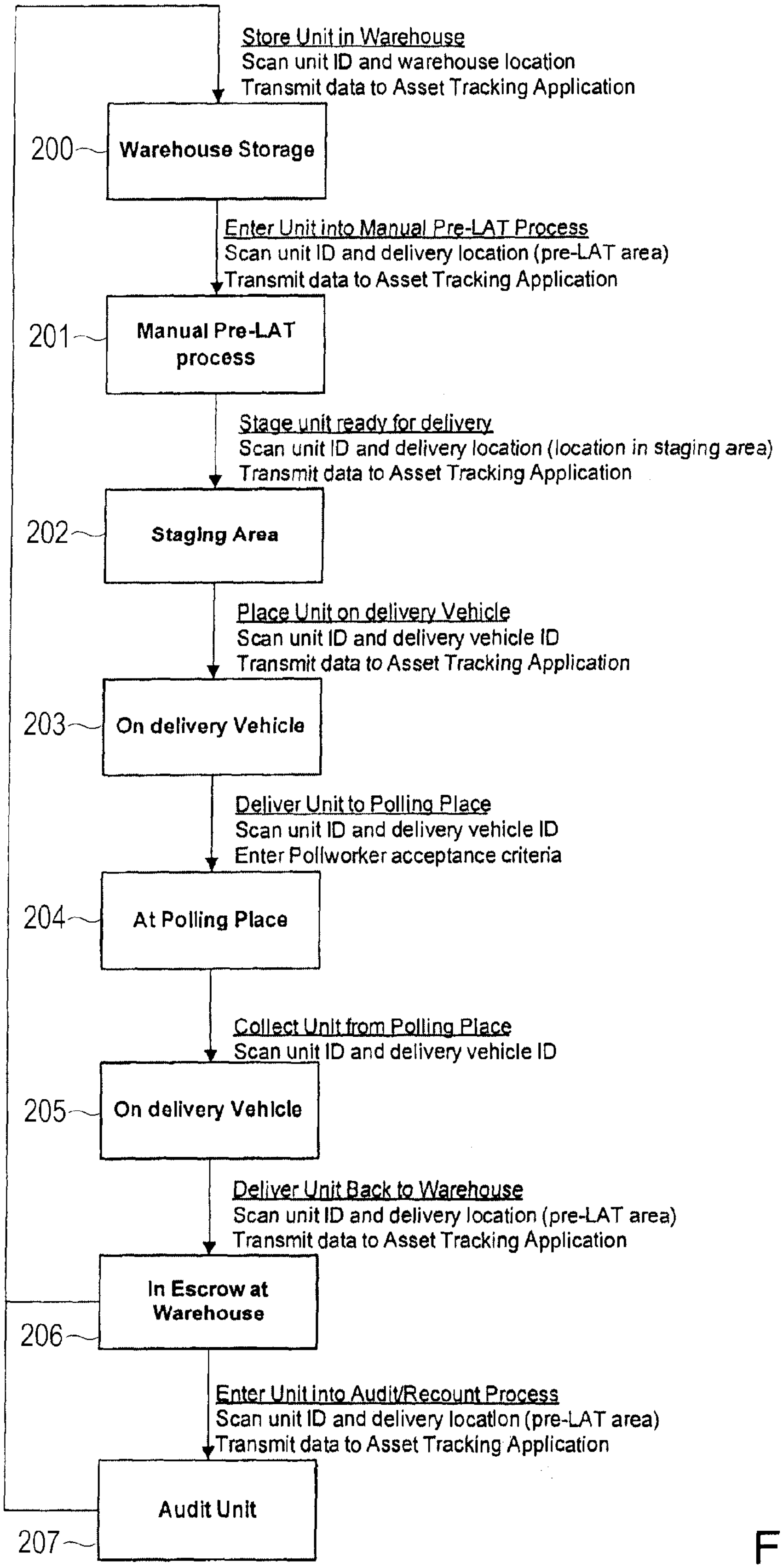
Store Unit in Warehouse
Scan unit ID and warehouse location
Transmit data to Asset Tracking Application
200
Warehouse Storage
Enter Unit into Manual Pre-LAT Process
Scan unit ID and delivery location (pre-LAT area)
Transmit data to Asset Tracking Application
201
Manual Pre-LAT process
Stage unit ready for delivery
Scan unit ID and delivery location (location in staging area)
Transmit data to Asset Tracking Application
202
Staging Area
Place Unit on delivery Vehicle
Scan unit ID and delivery vehicle ID
Transmit data to Asset Tracking Application
203
On delivery Vehicle
Deliver Unit to Polling Place
Scan unit ID and delivery vehicle ID
Enter Pollworker acceptance criteria
204
At Polling Place
Collect Unit from Polling Place
Scan unit ID and delivery vehicle ID
205
On delivery Vehicle
Deliver Unit Back to Warehouse
Scan unit ID and delivery location (pre-LAT area)
Transmit data to Asset Tracking Application
206
In Escrow at Warehouse
Enter Unit into Audit/Recount Process
Scan unit ID and delivery location (pre-LAT area)
Transmit data to Asset Tracking Application
207
Audit Unit

FIG. 7

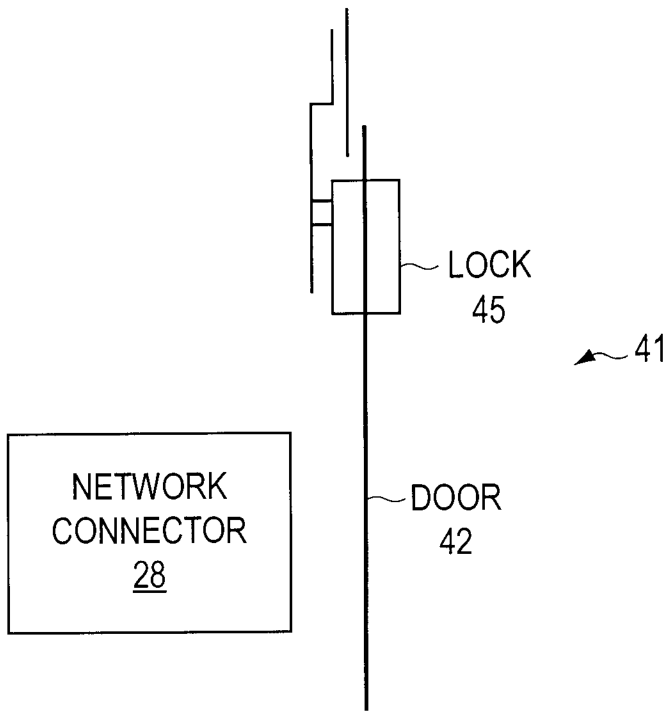
LOCK
45
41
NETWORK
CONNECTOR
28
DOOR
42

FIG. 8

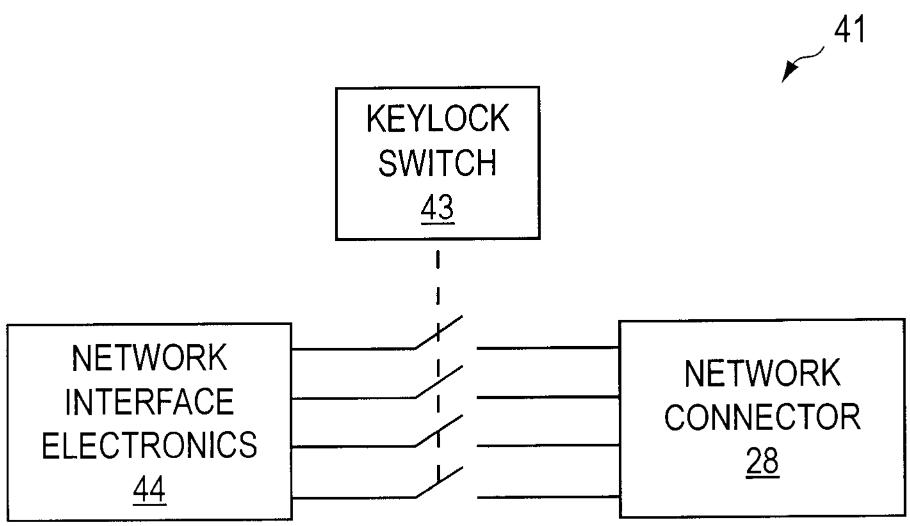
41
KEYLOCK
SWITCH
43
NETWORK
INTERFACE
ELECTRONICS
44
NETWORK
CONNECTOR
28

FIG. 9

SYSTEMS FOR CONFIGURING VOTING MACHINES, DOCKING DEVICE FOR VOTING MACHINES, WAREHOUSE SUPPORT AND ASSET TRACKING OF VOTING MACHINES

This application is a continuation of International Application No. PCT/US2009/062069, filed Oct. 26, 2009, which claims the benefit of U.S. Provisional Application No. 61/193,062, filed Oct. 24, 2008, each of which are incorporated herein by reference in their entirety.

BACKGROUND

The warehousing processes associated with an election are some of the most problematic and time consuming in the entire election process, especially for larger jurisdictions. The complexity of these processes increases exponentially with the size of the jurisdiction.

Electronic voting systems consist of several disparate systems including the Election Management System (EMS), Ballot Tabulators (digital-optical scan voting machines, direct-record-electronic (DRE) voting machines, etc), as well as other ancillary systems including electronic poll-books, accumulation and consolidation devices, and wireless transmission systems for results. Managing these assets can be a significant burden to jurisdictions. In addition, current voting systems rely on a disconnected process for programming the voting machines to transfer the ballot definition data from the EMS to the voting machines. This is historically accomplished by writing the ballot definition data to a removable memory element from the EMS-flash drive usb drives, secure-digital flash drives, PCMCIA flash drives etc. This disconnected process introduces several failure points in the process, and significantly increases the overall effort required of jurisdictions to run an election.

Further, due to the periodic nature of elections, voting machines are necessarily stored for periods up to years in between elections. Therefore, it is desirable to produce apparatus for and methods of adequately, safely and efficiently storing voting machines in between elections.

Furthermore, in large jurisdictions having several voting machines, it is desirable to provide a means for tracking the voting machines as they are used in an election.

SUMMARY

In view of the above issues, a number of improvements are presented.

The system for configuring voting machines described herein has the following benefits. First, the system significantly reduces the effort required to test the functioning of the voting machine by automating the programming and testing of the machines. Second, the system significantly reduces the effort required to prepare and conduct pre-election Logic and Accuracy Tests (pre-LAT) on the voting machines, by automating as much of the process as possible in the warehouse. Third, this system allows warehouse workers to identify and locate voting machines that have faults. Fourth, this system allows warehouse workers to identify and locate voting machines that failed to prepare correctly. Fifth, this system allows warehouse workers to identify and locate voting machines that failed pre-LAT. And sixth, this system ensures voting machine integrity by ensuring that network functionality is not available after pre-LAT has been completed.

Some improvements allow for the safe stacking and storage of voting machines in a warehouse, allow voting machines to be provided with power to operate and charge batteries while being stored in the warehouse, allow voting machines to be connected to a network while being stored in the warehouse, and allow the location of individual voting machines to be tracked while being stored in the warehouse.

Another improvement relates to a storage and docking station designed for each type of voting machine and allows voting machines to be stacked and stored safely such that the voting machines are protected from damage. The storage and docking station also is capable of providing power to the machines for battery charging and network connectivity, if supported, for connection to a warehouse management application. The docking station also provides security authentication, which will allow the voting machine to activate various interface ports and support various modes of operation.

The protective docking device can accept a voting machine such that the protective docking device provides physical protection for the voting machine while being stored. Additionally, the protective docking device is capable of being stacked on other protective docking devices such that no damage occurs to the voting machines while being stored. Additionally, the protective docking device can be stacked in position either with or without a voting machine attached therein. Another feature of this improvement is that the protective docking device can provide power and communication connections (including network connectivity) to the voting machine. The protective docking device can also provide loop-back connections on I/O ports to support external loop back tests.

Further, the docking device can have the necessary authentication devices in them for successful communication with the voting machines.

Furthermore, it is within the scope of the improvement that the voting machines can contain location tracking mechanisms such as unique barcodes and RFID tags.

Additionally, the plurality of protective docking devices can communicate location information of the voting machine to the asset tracking system.

Another improvement provides an asset tracking system that allows jurisdictions to accurately manage and account for their voting machine assets by allowing jurisdictions to monitor the locations of their voting machine assets both in the warehouse and in transit for an election. For example, the voting machine assets can be scanned when they are staged for shipment, scanned when they are loaded onto a truck or other vehicle, scanned when they are delivered to polling places, scanned when they are picked up from polling places and scanned when they are delivered back to the warehouse. The asset tracking system will then be able to track where the voting machine assets are in that lifecycle.

In the asset tracking system, each voting machine can have its own unique serial number identifier, which can be, for example, encoded in a bar code on the outside of the machine. Alternatively, the unique serial number identifier can be encoded in an RFID tag in the machine. Further, the RFID tag in the machine can be an RFID tag that is "read only."

Some improvements can further include asset tracking peripheral devices that are capable of reading the serial number identifiers of the plurality of voting machines via bar codes on the outside of the voting machines. In the case where the unique serial number identifiers are encoded in an RFID tag in the voting machines, the asset tracking peripheral devices are capable of reading the serial numbers of a plurality of voting machines via the RFID tags in the voting machines. These peripheral devices can consist of portable hand held devices containing supporting applications or fixed location devices directly connected to the asset tracking application.

One improvement also includes asset tracking applications that are capable of managing and tracking assets utilizing the serial number data collected from a plurality of voting machines that have unique serial number identifiers using a plurality of asset tracking peripheral devices. Further, the asset tracking peripheral devices are capable of communicating the serial number data to the asset tracking application.

Another improvement includes a tracking and preparation system for networked voting machines including a host computer, a plurality of voting machines connected via a network to the host computer, each voting machine having one or both of a wireless communication device and a data port for coupling to the host computer, and an election and voting machine preparation portion included in the host computer that is configured to manage and/or control the connected voting machines.

The election and voting machine preparation portion can be configured to manage the status of the connected voting machines, can be configured to instruct the voting machines to run self tests, can be configured to receive results of the self tests back from the connected voting machines, and can be configured to prepare/program the connected voting machines with an election ballot.

The self tests run by the voting machines can correspond to pre-LAT tests.

The election and voting machine preparation portion can be configured to open pre-LAT polls remotely over the network.

The election and voting machine preparation portion can also be configured to run simulation scripts on the voting machines over the network.

The election and voting machine preparation portion can further be configured to disable all network ports of the voting machines after the voting machines have been configured for an election.

Each voting machine can contain a location tracking mechanism. The location tracking mechanism can be a barcode and/or an RFID tag, for example.

Another improvement relates to a protective docking device for a voting machine. The protective docking device includes a voting machine accepting portion configured to accept and store a voting machine, a power connection portion to provide power to the voting machine stored in the voting machine accepting portion, a receiving portion on a top surface of the protective docking device that is configured to receive another protective docking device stacked thereon, a security authentication portion configured to manage interface ports and modes of operation of the voting machines, and a data connection port to provide a data connection to the voting machine stored in the voting machine accepting portion.

The protective docking device can include a plurality of docking stations, each docking station being configured to receive a voting machine.

The protective docking device can include a groove on a top surface of each of the docking stations.

The docking stations can be stacked in a tiered manner.

The protective docking device can include a bag on a back surface of each voting machine within each docking station to collect ballots that have been scanned by the voting machines.

Another improvement relates to a voting machine having an input portion, a network communication device, and a location tracking mechanism.

The voting machine can further include hardware interlocks that disable the network communication device to prevent the voting machine from being accessed via the network communication devices during an election.

BRIEF DESCRIPTION OF THE DRAWINGS

The foregoing and further objects, features and advantages of the invention will become apparent from the following descriptions of exemplary embodiments with reference to the accompanying drawings, in which like numerals are used to represent like elements and wherein:

FIG. **1** is a diagram illustrating some of the components of a voting machine;

FIG. **2** is a diagram illustrating an example of warehouse networking system;

FIG. **3** is a diagram illustrating an example of a warehouse process cycle;

FIG. **4** is a diagram illustrating an example of a voting machine in a protective docking station;

FIG. **5** is a diagram illustrating an example of a protective docking station in a stacked configuration;

FIG. **6** is a is a diagram illustrating an example of a protective docking station in a stacked tiered configuration;

FIG. **7** is a flowchart illustrating an example of a process of asset tracking of voting machines;

FIG. **8** is a diagram illustrating an example of a hardware interlock; and

FIG. **9** is a diagram illustrating another example of a hardware interlock.

DETAILED DESCRIPTION OF EMBODIMENTS

FIG. **1** illustrates some of the components that can be included in each voting machine **11**. The voting machine **11** can include a CPU **32** that controls operation of the voting machine **11** including the functions described herein, a tracking device **34**, an audio device **33**, an input device **24**, an optical scanner **29**, a printer **30**, network connectors **28** and a visual display unit **22**. The network communication device (network connector **28**) can be, but is not limited to: ethernet; optical; and wireless communication devices. Voting machine **11** is not limited to these specific components as any number of other components known to one of ordinary skill in the art for inclusion on voting machines **11** could be incorporated therein.

Additionally, the voting machine **11** can completely disable the network communication device **28** using hardware interlocks **41**. The hardware interlocks **41** prevent the voting machine from being accessed via the network communication devices **28** during an election, for example. Further, the voting machine can run self tests such as, but not limited to: destructive memory tests; non-destructive memory tests; tests of I/O ports; I/O communication tests; detection of connected peripheral devices; tests of attached peripheral devices; detection of attached Removable Memory Elements (RME); tests of RMEs; and tests of power supplies and batteries (described below).

There are a variety of methods that can be employed to hardware interlock the secure RME element. A first implementation is to mount the RME port behind a door **42** that can be locked by a lock **45** and controlled by key access (see, for example, FIG. **8**). In addition, a sensor (not shown) can be added to detect whether the door **42** is open or not. If the door **42** is open, an electrical interrupt can be activated to disconnect all power and signal lines connected to the RME port.

FIG. 9 illustrates another embodiment of a hardware interlock 41 where a connection between network interface electronics 44 and network connector 28 is disrupted by a keylock switch 43.

To facilitate the preparation of voting machines 11 prior to an election, the voting machines 11 can be remotely instructed to run the self tests mentioned above from over the network and can communicate the results of the tests back over the network. That is, in the warehouse, for example, a plurality of voting machines 11 can be coupled to a host computer over a network using the network connectors 28. The host computer 10 can then control and/or monitor the plural voting machines 11.

The network communication device 28 in each voting machine 11 enables the voting machine 11 to be configured and tested remotely. Examples of how voting machines 11 can be configured can include, programming the voting machines 11 with an election ballot over the network, performing validation of a loaded election ballot, and communicating results of that validation back over the network.

Additionally, the network communication device 28 enables the voting machines to have polls opened in pre-LAT mode remotely over the network. Pre-LAT polls mode is a standard mode of operation for a voting device for conducting Pre election Logic and Accuracy tests. Further, the communication device enables the voting machines 11 to be provided with a vote simulation script over the network. A vote simulation script is a set of commands that can simulate voting patterns on the machine even to the level of providing pre-canned scanned ballot images or PDF images of ballots with machine generated marks for testing the vote interpretation engine on the tabulator. The communication device 28 also enables the voting machines 11 to be remotely instructed to run pre-LAT activities such as interpreting vote simulation scripts and images, performing image calibration procedures, verifying all system components for readiness and proper function, self printer test etc. Finally, results of all Pre-LAT tests can be communicated back to the EMS through the communications device 28.

Further, the network communication device 28 allows the voting machines 11 to have pre-LAT polls opened remotely over the network, have pre-LAT polls closed remotely over the network and can communicate pre-LAT results back over the network. Additionally, the pre-LAT polls can be closed manually and can communicate pre-LAT results back over the network.

Thus, the voting machines 11 can be programmed with an election ballot from over the network, have pre-LAT polls opened remotely over the network and then disable all network ports thru the tabulator firmware and software. Further, the voting machines 11 can be programmed with an election ballot from over the network, have pre-LAT polls opened remotely over the network, have pre-LAT polls closed manually and then disable all network ports.

Use of a Network to Prepare Voting Machines

Typically the warehouse process cycle consists of the following functions (see FIG. 3): Storage and maintenance 100; Test 101; Repair 102; Machine Preparation 103; Pre-LAT 104; Distribution 105; Acceptance back after election 106; and Escrow storage 107.

The functions listed above, and illustrated in FIG. 3, represent a major logistical effort in large jurisdictions. For example, a jurisdiction has to store its voting machines 11 in a benign environment and keep them charged. Prior to an election, the jurisdiction must test every voting machine 11 to ensure it is operational and repair those that are not. Further, the jurisdiction must then prepare each individual voting machine 11 with the ballot styles for the precinct to which the voting machine 11 is assigned. The preparation and machine function must then be validated against that expected in pre-LAT. The voting machines 11 that fail the "pre-LAT" process must either be re-prepared or repaired, depending on the issue. The voting machines 11 must then be distributed to the correct locations in a secure manner, where they are used in the election. After the day of election, the voting machines 11 then must be collected and returned to the warehouse and accounted for, where they are stored in escrow (securely) for auditing purposes. The voting machines 11 are finally retuned to their normal storage modes after auditing or after it is determined that auditing is not needed.

For a jurisdiction with just a few voting machines 11, this process is not a major issue. However, for a large jurisdiction, such as a jurisdiction with 5,000 or more voting machines 11, this presents a major logistical problem. Anything that can be done to automate this process and thus reduce the logistical burden on the jurisdictions will be extremely useful. Some of the improvements discussed herein achieve this goal. To solve this problem, the voting machines 11 are networked together to a central management system within the warehouse. Additionally, one improvement includes a software application that assists in the management and implementation of the process.

In order to address this logistical problem, all the voting machines 11 are networked together in the warehouse, either with physical network connections or via wireless technology, in their storage positions. Additionally, the voting machines 11 are supplied with power and operate in a special storage mode of operation when in storage. A warehouse management application is used that is capable of sending commands to and receiving data from, the individual voting machines 11, groups of voting machines 11, lists of voting machines or the entire group of voting machines 11 that are stored in the warehouse.

Additionally, the warehouse management application is capable of sending a command instructing voting machines 11 to respond by identifying their location in the warehouse and their current status. The networked voting machines 11 then respond by providing the appropriate data. The voting machines 11 are able to report their location by where they are networked and the status information that includes amongst other information, the firmware version, battery level, current mode of operation, whether the voting machines 11 have results cartridges present and the current configuration of the voting machines 11. This feature allows the warehouse management application to verify the location of the voting machines 11 and receive information regarding the status of each voting machine 11.

Further, the warehouse management application is capable of sending a command instructing the voting machines 11 to run a series of diagnostic tests. The purpose of these tests is to ensure that the hardware is operating correctly. The tests include, but are not limited to the following tests listed below.

Internal Memory Tests	Destructive RAM test	This tests the RAM by writing data to memory address and reading it back to verify that it has written correctly. It is called destructive because any data residing

-continued

		in the memory is lost.
	Non-Destructive RAM tests	This tests the RAM by writing data to memory addresses that are not currently in use and reading it back to verify that it has written correctly.
	Destructive storage memory tests	This tests the storage memory (such as CF, hard disk etc.) by writing data to memory address and reading it back to verify that it has written correctly. It is called destructive because any data residing in the memory is lost.
	Non-Destructive storage memory tests	This tests the storage memory (such as CF, hard disk etc.) by writing data to memory addresses that are not currently in use and reading it back to verify that it has written correctly
Removable Memory Element (RME) Tests	Destructive RME tests	This tests the Removable Memory Element (RME) (results cartridge) by writing data to memory addresses and reading it back to verify that it has written correctly. It is called destructive because any data residing in the memory is lost.
	Non-Destructive RMW tests	This tests the Removable Memory Element (RME) (results cartridge) by writing data to memory addresses that are not currently in use and reading it back to verify that it has written correctly.
Serial Port Tests	Internal tests	These tests test the serial ports by performing internal chip set and internal loop back tests, by transmitting and receiving data in the various modes supported by the chipset.
	Loop-back tests	This tests the serial ports by performing an external loop back tests, by transmitting and receiving data over the port. The serial ports must have a connector that connects the Tx and Rx lines.
	Authentication Tests	This test authenticates any devices currently attached the serial ports of the voting machine.
USB Port Tests	Internal tests	This tests the USB ports by performing internal chip set and internal loop back test, by transmitting and receiving data in the various modes supported by the chipset.
	Loop-back tests	This tests the USB ports by performing an external loop back tests, by transmitting and receiving data over the port. The USB ports must have a connector that interfaces the Tx and Rx lines.
	Authentication Tests	This test authenticates any devices currently attached the serial ports of the voting machine.
Ethernet Tests	Internal tests	This tests the ethernet port by performing internal chip set and internal loop back tests, by transmitting and receiving data in the various modes supported by the chipset.
	Loop-back tests	This tests the ethernet port by performing an external loop back test, by transmitting and receiving data over Ethernet connection with the warehouse application.
Wi-Fi Tests	Internal tests	This tests the Wi-Fi connection by performing internal chip set and internal loop back tests, by transmitting and receiving data in the various modes supported by the chipset.
	Loop-back tests	This tests the Wi-Fi connection by performing an external loop back test, by transmitting and receiving data over Wi-Fi connection with the warehouse application.
	Authentication Tests	This test authenticates the data encryption and certificates used in the Wi-Fi connection
Other Port Tests	Internal tests	This tests the other ports by performing internal chip set and internal loop back tests, by transmitting and receiving data in the various modes supported by the chipset.
	Loop-back tests	This tests the other ports by performing an external loop back tests, by transmitting and receiving data over the port. The ports must

-continued

		have a connector that connects the Tx and Rx lines.
	Authentication Tests	This test authenticates any devices currently attached the other ports on the voting machine.
Processor Tests		This tests the operation of the processor.
Security Tests		These are a suite of tests that test the security features of the voting machine.
Display communication tests		This tests the connections to the displays and the touch screen membrane.
Firmware authentication tests		This authenticates the version of the firmware by calculating a HASH value of the firmware image using a seed passed to it by the warehouse application.
Audit/event logging tests		These tests test the audit and event logging facilities by simulating events and then checking that the events have been written to the logs.
Printer tests		This tests the operation of the printer and or VVPAT connected to the voting machine.
Battery Charging tests		This tests the battery charging circuits and the state of the battery.
Audio sub-system tests		This tests the correct operation of the audio sub-system.
ADA device interface tests		These test the interfaces provided for the use of ADA devices, for example the audio control unit.

After the tests have been run, the voting machines **11** report back the results of the tests identified above to the warehouse management application. The warehouse management application is then able to identify which voting machines **11** have problems via these tests. This allows the voting machines **11** to be tested remotely without human intervention, thereby reducing the time required to prepare the voting machines for an election.

Further, the warehouse management application is capable of setting system parameters in the voting machines **11**, such as setting the date and time as well as being capable of loading election definitions into the machines across the network. Once the election definitions are received, the voting machines **11** authenticate and verify the election definition and copy it to all necessary memory devices including any internal storage devices, and redundant removable memory elements, verifying that it has loaded correctly. The voting machines **11** then report their status back to the warehouse management application. The warehouse management application tracks and manages which voting machines **11** have been prepared successfully and which have had election load issues and thus may require further attention. FIG. **2** illustrates an example of the warehouse management system in a warehouse **9** including host computer **10**, and voting machines **11** that are, in this embodiment, connected to the host computer **10** via a wireless network. The host computer **10** includes RAM, ROM one or more CPUs and various interfaces. The warehouse management application is stored on and runs on the host computer **10**.

This allows the voting machines **11** to be prepared for an election with the election definition automatically without human intervention.

The warehouse management application also is capable of loading simulation scripts to the voting machines **11**. The voting machines **11** authenticate and verify the simulations scripts and report the status of the load back to the warehouse management application. The warehouse management application is capable of instructing voting machines **11** to open polls in pre-LAT and to run the vote simulation scripts. The voting machines **11** then report the status to the warehouse management application.

The warehouse management application can also instruct the voting machines **11** to open polls in pre-LAT mode, and to accept manual feeding of a deck of test ballots. Once the ballots have been fed into the voting machine **11**, a sequence can be initiated on the voting machine **11** to reconnect with the warehouse management application to transmit the results of the test deck for verification and validation.

These pre-LAT based processes using either a vote simulation script, or a set of test ballots allows the vast majority of pre-LAT to be run automatically without human intervention. Some pre-LAT tests may have to be done manually, such as verifying that: the user interface works correctly; that the scanner mechanism is operating correctly; that test ballots are read correctly; that the audio voting works correctly; and that the printer prints correctly. However, the tests capable of being conducted remotely represent a large reduction in the effort required to prepare the voting machines **11**.

The warehouse management application is capable of instructing voting machines **11** to close pre-LAT polls and to tally the pre-LAT data. The voting machines **11** then report the pre-LAT tally data back to the warehouse management application. The warehouse management application then compares the pre-LAT data with what was expected to automatically verify that pre-LAT was successfully passed. These measures allow pre-LAT to be conducted accurately and with minimum effort.

The warehouse management application also is capable of instructing the voting machines **11** to open polls in official election mode and the voting machines **11** then report this back to the warehouse management application.

Thus, the entire voting machine preparation and test process can be automated and the required effort to test and prepare the voting machines can be considerably reduced.

The warehouse management application also is capable of instructing the voting machines **11** to send their audit and event logs and is being capable of searching for certain types of events. The voting machines **11** can also send back their election tally data (ballot image records) if polls have been closed.

One improvement relates to election and machine preparation applications running on a host computer system connected by a network to a plurality of voting machines **11** that each includes a network communication device via that network (see FIG. **2**). One function of the election and machine preparation applications is to manage the status of the connected voting machines **11**. Additional functions of the election and machine preparation applications are to instruct the voting machines **11** to run self tests (listed below), to receive the results of those self tests back from the voting machines **11**, and to display and archive the results. Any errors or issues identified can be communicated back to the user of the system thru these reports and communicated to the warehouse logistics management in order for the machines to be serviced.

Another function of the election and machine preparation applications is to prepare/program those voting machines **11** with an election ballot over the network. In addition, the election and machine preparation applications are capable of receiving verification that the ballot has loaded correctly.

Further, another function of the election and machine preparation applications is to instruct the voting machines that have an election ballot loaded but have not had any polls opened to open pre-LAT polls. The election and machine preparation applications can then receive verification back that pre-LAT polls were opened successfully.

The election and machine preparation applications are also able to provide a vote simulation script to the voting machines **11** that have pre-LAT polls open. The election and machine preparation applications can then receive verification that the simulation script was successfully loaded.

The election and machine preparation applications can also suspend operation after pre-LAT polls have been opened so that a set of test ballots can be manually fed into the system. Once the ballot has been fed, the pre-LAT polls can be manually closed and the results of the test ballots communicated back to the preparation system for verification.

The election and machine preparation applications also can provide those machines **11** that have pre-LAT polls open with instructions to close pre-LAT polls, and the election and machine preparation applications can receive verification that the ballots have been validated, and that pre-LAT polls have been closed successfully.

The election and machine preparation applications can further provide data on the operational health, pre-LAT data and polls status of the voting machines as well as data on the location in the warehouse of those voting machines

Voting Machine Docking and Storage Station

A storage and docking station is designed specifically for each type of voting machine **11**. This allows the voting machines **11** to be stored safely and protected from damage. Further, the storage and docking station allows the voting machines **11** to be stacked. The storage and docking station also is capable of providing power to the machines for battery charging and network connectivity, if supported, for connection to a warehouse management application. The docking station can also provide connection to support various I/O port loop back tests. The docking station also is capable of providing security authentication, which allows the voting machine to activate various interface ports and support various modes of operation.

FIG. **4** illustrates an exemplary embodiment of the storage and docking station **17**. As seen in FIG. **4**, the storage and docking station **17** includes a cavity **18** into which the voting machine **11** can be placed. FIG. **4** also illustrates some of the plugs and interfaces provided in the storage and docking station **17** for connection with the voting machine **11**. As seen in FIG. **4**, these connections can include, for example, a power connection **19** and a data line **20**. In some examples, the storage and docking station **17** may comprise a channel **21** provided near a back portion of the docking station **17** to provide a conduit for the cables such as power connection **19** and a data line **20** connected to the voting machine **11**.

FIG. **5** illustrates how the storage and docking station **17** can be stacked on top of another storage and docking station **17**. As seen in FIG. **5**, in one embodiment, each docking station **17** can be placed directly on top of the other. Grooves **35** are provided on a top surface of each docking station **17** to facilitate stacking. The grooves **35** are configured to receive a corresponding projecting portion **36** on the bottom surface of another docking station **17**. Additionally, a channel **37** is provided near a back portion of each docking station **17** to provide a conduit for the cables such as a power connections **19** and a data lines **20** connected to each voting machine **11**.

FIG. **6** illustrates another embodiment of the stacked docking stations **17**. In this embodiment, the docking stations **17** are stacked in a tiered manner. Additionally, in this embodiment, the docking stations **17** are configured to allow ballots **1** to be fed into ballot feed trays **38** of the optical ballot scanner **29** in each voting machine **11** while the voting machines **11** are stacked. Therefore, the voting machines **11** do not need to be un-stacked to feed ballots during pre-LAT.

Similar to FIG. **4**, in the embodiment of FIG. **5**, a channel **37** is provided near a back portion of each docking station **17** to provide a conduit for the cables such as a power connection **19** and a data line **20** connected to each voting machine **11**.

Further, a bag **39** is provided on a back surface of each voting machine **11** to collect ballots that have been scanned. The bags **39** can be disposed on runners **40** so that the bags **39** can slide out to facilitate the removal of the ballots from the voting machines **11**.

Asset Tracking of Voting Machines

Each individual voting machine **11** can be configured with machine-readable identifiers on/in them such as bar codes or RFID devices. These are generally referred to as a tracking device **34** shown in FIG. **1**. These machine-readable identifiers can contain information such as, for example, the machine type and serial number. These identifiers can also be used to track the location and 'state' of the voting machines **11** within the election lifecycle.

The machine-readable identifiers are capable of being scanned by devices such as barcode scanners and RFID scanners so that the information can be retrieved and used by the tracking and warehouse applications. RFID is preferable as it allows automatic scanning of the devices without the need for manual interaction by a user.

When a voting machine **11** is stored in the warehouse, the voting machine **11** is scanned for its identifier information and its location is recorded. If the machine-readable identifier is contained in barcode, then the user will have to scan that bar code with a bar code reader. If the identifier is contained in an RFID tag, then this can be scanned automatically either by a hand held device or by a scanning device located in the storage area. The location of the voting machine **11** can be inputted in a number of ways. For example, the location of the voting machine **11** could be entered manually by the user, scanned in via a bar code identifying the location, or scanned in via an RFID tag at the location. If the voting machine **11** has an RFID tag, and the RFID scanners are located in warehouse storage area, the location of the voting machine **11** can be calculated automatically via comparing the relative strength of the RFID signals or by some other comparative technique. This identification and location information can be automatically passed to the warehouse management and asset tracking systems, preferably via a wireless network. These applications mark the voting machines as being in a warehouse storage location and record that particular location. Hence the location of a particular voting machine **11** is known and verified.

When a voting machine **11** is removed from storage, a similar process occurs. The machine-readable identifier is scanned. Additionally, the reason for the voting machine **11** being moved can be entered into the system, preferably via a button press on a hand held device (which can include multiple selections from which to choose). Therefore, if the voting machine **11** has an RFID tag, the fact that it has been moved from the storage location may be detected automatically. Again, this information can be passed to the asset tracking system, so that its location is still known.

If the voting machine **11** is taken to a different location, such as a pre-LAT or audit area (for example to complete the manual aspects of pre-LAT prior to staging for deployment), then the voting machine **11** can be scanned and information such as the voting machines' **11** presence in that different location and that part of the process can be recorded and passed to the asset tracking and warehouse management applications.

If the jurisdiction uses a staging area prior to distribution of the voting machines **11**, then when the voting machines **11** are placed in that area, the fact that the voting machines **11** are there and the particular location in that area can be recorded using similar means as described above with respect to the storage location at the warehouse.

Additionally, vehicles that are used for delivery of the voting machines **11** can also have machine-readable identifiers. Again, these machine-readable identifiers could be stored via barcodes or RFID tags. As voting machines **11** are deployed onto vehicles for delivery, they can be scanned and the vehicle identifier scanned. If the vehicle does not have a barcode or RFID tag, then the identifier could be entered manually. This information can then be relayed back to the asset management application, so that the presence of the voting machines **11** on a particular vehicle can be tracked.

In addition, each polling place also can have a machine-readable identifier. These machine-readable identifier could be stored, for example, as barcode or MD tags at the polling place; as codes or barcodes on the delivery sheet; as codes or barcodes in a booklet; or be stored in the hand held device used of scanning for manual selection. If the polling place identifier is contained in a barcode or RFID tag, this can be scanned by the handheld device. If the machine-readable identifier is a code, it can be manually entered in the handheld device. Further, if the machine-readable identifier is stored in the application in the handheld device, then it can be manually selected by the user. When a voting machine **11** is delivered, its ID can be scanned by the handheld device as is the polling place ID. This information is stored in the hand held device. If the process includes an acceptance by someone at the polling place, this can also be recorded in the hand held device (depending on the technology in the hand held device, this could be a signature, a thumb print, an acceptance code or just a button press). If an attempt is made to transport the voting machine **11** to an incorrect location, the handheld device can identify this and warn the user.

When the vehicle returns to the warehouse, the data collected can then be downloaded to the asset tracking application. Hence, the asset tracking application will know what voting machines **11** have been delivered and where the voting machines **11** are located. The asset tracking application also can identify if voting machines **11** have been incorrectly delivered.

When voting machines **11** are picked up from polling locations, the voting machines **11** can be scanned by the hand held device to show they have been collected. Similarly, when the voting machines **11** are placed back into storage or an escrow location, they can be scanned so that the location and this information can be relayed to the asset tracking system.

By using this process and information, the asset tracking system can accurately track the location and state of the voting machines **11**. Therefore, if a voting machine **11** is mislaid, its path can be investigated to aid finding the voting machine **11**. In the warehouse, if a voting machine **11** needs to be retrieved (for example, if it requires repair or is going to be audited) then the asset tracking system can identify its location for easy retrieval.

In addition, results cartridges can also have machine-readable identifiers, which can be in the form of barcodes or RFD tags, so that the results cartridges can be tracked in a similar manner as described above. The results cartridges can be scanned when inserted into a machine (which can be a voting machine or another machine) and that information can be relayed back to the warehouse management system so that a specific results cartridge can be associated with a specific voting machine **11**. This step is not necessary if there is a networked warehouse management system in use as this can be done automatically via the warehouse management system.

If results cartridges are collected separately from the voting machines **11** at the end of the election, then as they are delivered to the tally center, they can be scanned in and tracked. Thus, a record can be kept of which cartridges have been delivered and the time of delivery.

FIG. **7** is a flowchart illustrating one example of how the asset tracking process can function. In step **200** the machine-readable identifier of the voting machine **11** is scanned and the location of the voting machine **11** is recorded and transmitted to the asset tracking application. In step **201** the machine-readable identifier of the voting machine **11** is scanned and the delivery location at the pre-LAT area is recorded and transmitted to the asset tracking application. In step **202** the voting machine **11** is ready for delivery and the machine-readable identifier of the voting machine **11** is scanned and the location of the staging area of the voting machine **11** is recorded and transmitted to the asset tracking application. In step **203** the voting machine **11** is placed on a delivery vehicle after scanning the machine-readable identifier of the voting machine **11** and the vehicle ID. This information is then transmitted to the asset tracking application. In step **204** the voting machine **11** is positioned at the polling place after scanning the machine-readable identifier of the voting machine **11** and the delivery vehicle ID. Additionally, when arriving at the polling place the poll worker acceptance criteria is entered. In step **205** the voting machine **11** is placed back on the delivery vehicle after having the machine-readable identifier of the voting machine **11** and the delivery vehicle ID scanned. Once again, this information is then transmitted to the asset tracking application. In step **206** the voting machine **11** is returned back to the warehouse where it is put in escrow. The machine-readable identifier of the voting machine **11** is scanned upon arriving back at the warehouse as well as the delivery location (pre-LAT area). This information is then transmitted to the asset tracking application. Finally, in Step **207** the voting machine **11** enters the audit/recount process. The machine-readable identifier of the voting machine **11** and the delivery location are scanned and the data is transmitted to the asset tracking application. Upon the completion of step **207** the cycle returns back to warehouse storage step **200**.

The foregoing description is considered as illustrative only of the principles of the improvements discussed above. The inventions described herein are not limited to specific examples provided herein.

What is claimed is:

1. A tracking and preparation system for networked voting machines comprising:

a host computer;

a plurality of voting machines connected via a network to the host computer, each voting machine comprising:

a processor;

a user interface coupled with the processor and configured to receive cast votes;

a network communication device coupled with the processor, the network communication device comprising a wireless communication device and a data port for coupling the voting machine to the host computer; and

a hardware interlock coupled with the network communication device and configured to disable the network communication device to prevent the voting machine from being accessed via the network during an election period, wherein disabling the network communication device comprises activating an electrical interrupt to prevent network communication with the voting machine while maintaining a physical network connection; and

an election and voting machine preparation portion included in the host computer that is configured to distribute programming information to each of the connected voting machines prior to receiving the cast votes at the polling location.

2. The system according to claim 1, wherein the election and voting machine preparation portion is configured to manage the status of the connected voting machines, is configured to instruct the voting machines to run self tests, is configured to receive results of the self tests back from the connected voting machines, and is configured to prepare/program the connected voting machines with an election ballot.

3. The system according to claim 2, wherein the self tests run by the voting machines correspond to pre-LAT tests.

4. The system according to claim 2, wherein the election and voting machine preparation portion is configured to open pre-LAT polls remotely over the network.

5. The system according to claim 2, wherein the election and voting machine preparation portion is configured to run simulation scripts on the voting machines over the network.

6. The system according to claim 2, wherein the election and voting machine preparation portion is configured to disable all network ports of the voting machines after the voting machines have been configured for an election.

7. The system according to claim 2, wherein each voting machine contains a location tracking mechanism.

8. The system according to claim 7, wherein the location tracking mechanism is a barcode.

9. The system according to claim 7, wherein the location tracking mechanism is an RFID tag.

10. The system of claim 1, wherein the election and voting machine preparation portion included in the host computer is further configured to upload vote information from the plurality of voting machines after receiving the cast votes at the polling location.

11. The system of claim 1, wherein the election and voting machine preparation portion is configured to prepare or configure individual voting machines with election-specific information.

12. The system of claim 1, wherein the election and voting machine preparation portion is configured to manage all pre-election preparation for the plurality of voting machines prior to deploying the voting machines to a polling location.

13. A voting machine comprising:

a processor;

an input portion coupled with the processor and configured to receive ballots to be scanned;

a network communication device coupled with the processor and configured to receive programming information from at least one external device;

a hardware interlock coupled with the network communication device and configured to disable the network communication device to prevent the voting machine from being accessed via the network during an election period, wherein disabling the network communication device comprises activating an electrical interrupt to prevent network communication with the voting machine while maintaining a physical network connection; and

a user interface coupled with the processor and configured to receive cast votes from a voter.

14. The voting machine of claim 13, wherein the voting machine receives all pre-election preparation programming information via the network communication device prior to deployment to a polling location.

15. The system according to claim 13, wherein the voting machine contains a location tracking mechanism.

16. The voting machine according to claim 15, wherein the location tracking mechanism is a barcode.

17. The voting machine according to claim 15, wherein the location tracking mechanism is an RFID tag.

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