No. 23-1021

In the Supreme Court of the United States

KARI LAKE AND MARK FINCHEM,
Applicants,

v.

ADRIAN FONTES, ARIZONA SECRETARY OF STATE, *ET. AL.*,
Respondents.

On Petition for Writ of *Certiorari*
to the U.S. Court of Appeals
for the Ninth Circuit

APPENDIX TO PETITIONERS' MOTION TO EXPEDITE

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Declaration of Clay U. Parikh

I, CLAY U. PARIKH, declare under penalty of perjury that the following is true and correct:

1. I have personal knowledge of the matters set forth below and would testify competently to them if called upon to do so.

2. I have a Master of Science in Cyber Security, Computer Science from the University of Alabama in Huntsville. I have a Bachelor of Science in Computer Science, Systems Major from the University of North Carolina at Wilmington. In February 2007 I obtained the Certified Information Systems Security Professional (CISSP) certification and continually maintained good standing, until I released it on 28 February 2024. I also held the following certifications: Certified Ethical Hacker (CEH) and Certified Hacking Forensic Investigator (CHFI).

3. Since December of 2003, I have continually worked in the areas of Information Assurance (IA), Information Security and Cyber Security. I have performed and led teams in Vulnerability Management, Security Test and Evaluation (ST&E) and system accreditation. I have supported both civil and Department of Defense agencies within the U.S. government as well as international customers, such as NATO. I have served as the Information Security Manager for enterprise operations at Marshall Space Flight Center, where I ensured all NASA programs and projects aboard the center met NASA enterprise security standards. I was also responsible in part for ensuring the Marshall Space Flight Center maintained its Authority to Operate (ATO) within the NASA agency. I have also served as the Deputy Cyber Manager for the Army Corps of Engineers where I led and managed several teams directly in: Vulnerability Management, Assessment and Authorization (A&A), Vulnerability Scanning, Host Based Security System (HBSS), Ports Protocols and Service Management, and an Information System Security Manager (ISSM) team for cloud projects. I also have performed numerous internal digital forensic audits. During this time span, I also worked at the Army Threat Systems Management Office (TSMO) as a member of the Threat Computer Network Operations Team (TCNOT). I provided key Computer Network Operations (CNO) support by performing

validated threat CNO penetration testing and systems security analysis. TCNOT is the highest level of implementation of the CNO Team concept.

4. From 2008 to 2017, I also worked through a professional staffing company for several testing laboratories that tested electronic voting machines. These laboratories included Wyle Laboratories, which later turned into National Technical Systems (NTS) and Pro V&V. My duties were to perform security tests on vendor voting systems for the certification of those systems by either the Election Assistance Commission (EAC), or to a state's specific Secretary of State's requirements.

5. I have submitted four declarations in connection with Kari Lake's election contest challenging the results of Arizona's gubernatorial race in 2022 *Lake v. Hobbs*, No. CV2022-095403, filed in Maricopa County Superior Court, related to wrongdoing and violations of Arizona law in connection with Maricopa County's use of electronic voting machines in that election.

6. In mid-August 2023, after I submitted my last declaration, the system log files for Maricopa County's vote center tabulators used in the 2020 General Election were made available to me and to others working the 2022 case. In early January of 2024 we also received a copy of Maricopa County's election systems database and the forensic images of the vote center tabulator memory cards used in the 2020 General Election. The images of the tabulator memory cards contain system configuration settings, election data, and the tabulator system log files. A thorough, months-long analysis of this data was conducted as part of our investigation and compared to the electronic voting system data related to the 2022 General Election. The meticulous data model design and intelligence isolation exercises included over 70 million lines of system log entries, and 558 gigabytes of data.

7. I also reviewed the February 23, 2021, Audit Reports by Pro V&V[1] and SLI Compliance[2], the Maricopa County Forensic Election Audit Report conducted by Cyber Ninjas at the request of the Arizona Senate and related follow-on reports by Maricopa and responses

[1] https://www.maricopa.gov/DocumentCenter/View/66844/Post-Audit-Report
[2] Case 2:22-cv-00677-JJT Document 29-8 Filed 06/07/22 "Exhibit 7"

thereto, and other documents relevant to my analysis as noted herein.

8. The scope of this effort and comparing the 2020 data to the 2022 tabulator system log files acquired in December 2022 in total, encompassed several thousand man-hours in research, data analysis, interviews, testing and collaboration. I make the following observations and conclusions based on this new information and provide this declaration to supplement the previous declarations that have been submitted in *Lake v. Hobbs*, No. CV2022-095403, filed in the Maricopa County Superior Court, and my testimony in *Lake et al. v. Hobbs et al.*, No. 2:22-cv-00677-JJT filed in the United States District Court for the District of Arizona.

EXECUTIVE SUMMARY

9. Given my education, experience as a security professional and years of experience working with Voting System Testing Laboratories (VSTL), and the thorough analysis of the systems, processes, and the electronic records detailed above, the facts have led to the conclusion that the voters of Maricopa County should have no confidence that their votes have been accurately counted, if they were even counted at all. The ***egregious*** security violation discovered, concerning the encryption keys utilized by the voting system only reinforces this conclusion.

10. Maricopa County uses a vote center model to conduct elections. This model includes a central facility (MCTEC) where the Election Management System (EMS) and high-speed tabulator/scanners are located. There are also more than two hundred vote centers (i.e., polling locations) throughout the county each with two ImageCast Precinct-2 (ICP2) tabulators to scan and process ballots. Tabulator memory cards contain the election software programming for each election and are inserted into every tabulator/scanner allowing them to read and tabulate the ballots for that election.

11. Upon analysis and review of the vote center ICP2 tabulator system log files from the 2020 and 2022 General Elections, I make the following observations:

a. The vote center tabulator system log files and other electronic data show conclusively that, Maricopa used election software cobbled together with components from

versions of Democracy Suite 5.5B and 5.10. Democracy Suite 5.10 is not approved for use in Arizona by the Secretary of State or by the EAC in any capacity. The use of any software not included in the specific configuration as tested for certification renders the entire voting system uncertified. Maricopa County election officials acknowledge that any change to the voting system software would violate the official certification and testified that was the reason for not having installed antivirus and operating system security patches.[3]

b. One of the components that has been grafted onto Maricopa's election software is the Machine Behavioral Settings (MBS) of California's Democracy Suite 5.10, to include the election counting rules which govern how ballots are read and votes are tabulated. Because of this use of uncertified software, any election results from these voting systems cannot be relied upon.

c. The SLI Compliance audit report[2] solicited to among other things, "[v]erify[] that the software installed on the tabulation equipment is the same software certified by the U.S. Election Assistance Commission and the Arizona Secretary of State" either did not assess the same election software as that used in the 2020 General Election or falsely claimed that they had.

d. Following the post-election 2020 senate audit, Secretary of State Katie Hobbs purportedly decertified Maricopa County's vote center tabulators for fear that they could have been compromised during the audit. Maricopa County then purchased replacement vote center tabulators. The system logs for 2022 reveal that the uncertified software detailed above was used again for the 2022 General Election.

e. Maricopa County falsely certified that it conducted statutorily required logic and accuracy (L&A) testing on the vote center tabulators before each of the 2020 and 2022 General Elections. In fact, the system log files, test results, and/or video

[3] Transcript 2:22-cv-00677-JJT (pg. 180, Lines 15-19) Testimony of Scott Jarrett "if we were to install or update or implement patches on any piece of that equipment, it would immediately then be decertified at the federal level. So we don't do that because it would violate federal statute and then violate state statute."

evidence show none of the vote center tabulators (including the election software installed on them) used in the 2020 and 2022 General Elections were subjected to statutorily required L&A testing.

12. Analysis of the 2020 election database revealed the most egregious security violation. The secret encryption key and x509 certificate used to encrypt, decrypt, the election data, and used for authentication when transferring files and communication are stored in plaintext, unprotected within the election database. Compounding this, the database is not configured to standard security configurations used for a database dealing with sensitive information.

DETAILED FINDINGS AND CONCLUSIONS

Certification of Democracy Suite 5.5B Election Software Under Arizona Law

13. A.R.S. § 16-442(A) states in part that a committee of three persons appointed by the Secretary of State "shall investigate and test the various types of vote recording or tabulating machines or devices that may be used under this article. ... [and] submit its recommendations to the secretary of state who shall make final adoption of the type or types, make or makes, model or models to be certified for use in this state."

14. A.R.S. § 16-442(B) states further that an electronic voting machines "may only be certified for use in this state and may only be used in this state if they comply with the Help America Vote Act (HAVA) of 2002 and if those machines or devices have been tested and approved by a laboratory that is accredited pursuant to the help America vote act of 2002."

15. Maricopa acknowledges these requirements on its website[4], stating further that: "Maricopa County's tabulation equipment went through extensive testing and received federally accredited Election Assistance Commission certification." "The Dominion Democracy Suite 5.5B is both federally and state certified." "The U.S. Election Assistance Commission certification is an official recognition that a voting system has been tested and has met an identified set of Federal voting system standards."

[4] https://www.maricopa.gov/5539/Voting-Equipment-Facts

16. As shown in the chart entitled 2022 Election Cycle/Voting Equipment posted on the Arizona Secretary of State's website[5], Democracy Suite 5.5B was the only version of Dominion election software certified for use in Arizona and includes version 5.5.1.8 for the firmware used in Maricopa's ICP2 vote center tabulators, see Exhibit B.

17. The EAC's DVS 5.5B certification is attached as Exhibit A. The EAC Certification *Scope of Conformance* defines the specific software and firmware component versions tested and certified by both the EAC and the state of Arizona. The EAC Certificate of Conformance for Democracy Suite 5.5B states: "Components evaluated for this certification are detailed in the attached Scope of Certification document. This certificate ***applies only to the specific version and release of the product in its evaluated configuration***." The EAC's Scope of Certification also states "[a]ny use, configuration changes, revision changes, additions or subtractions from the described system are ***not included*** in this evaluation."

18. Dominion's Democracy Suite election software includes a component called Machine Behavior Settings (MBS) which govern how ballots are read and tabulated by the tabulators. According to Dominion's manual[6], MBS are "[t]he settings that hold configuration parameters as defined by EMS applications and passed onto the ICE and ICP2 tabulators. These settings define and determine the behavior of the ICE and ICP2 during an election." The MBS "are configured prior to the election to detect for particular ballot scenarios and elicit various responses based on the type of ballot scenario detected[6]" with respect to accepting, reading, and tabulating ballots. In short, through the MBS, one can control the outcome of an election.

19. The ***only*** version of Dominion's tested, certified, and authorized for use in the state of Arizona, during the 2020 and 2022 elections, was Democracy Suite 5.5B. The ICP2 tabulator (vote center) MBS version 5.5.1.4 is shown highlighted in the screenshot from the Scope of Certification below: [7]

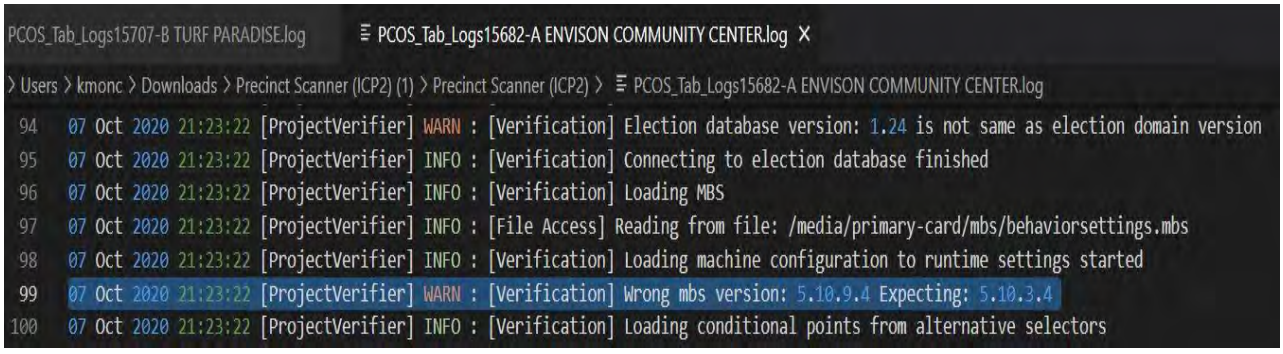
[5] https://apps.azsos.gov/election/files/ve/ve_2022_election_cycle_voting_equipment_aug.pdf
[6] Democracy Suite Use Procedures Version: 5.10-A::5 September 9, 2021 pg. 15, pg. 188
[7] Exhibit A, pg.5

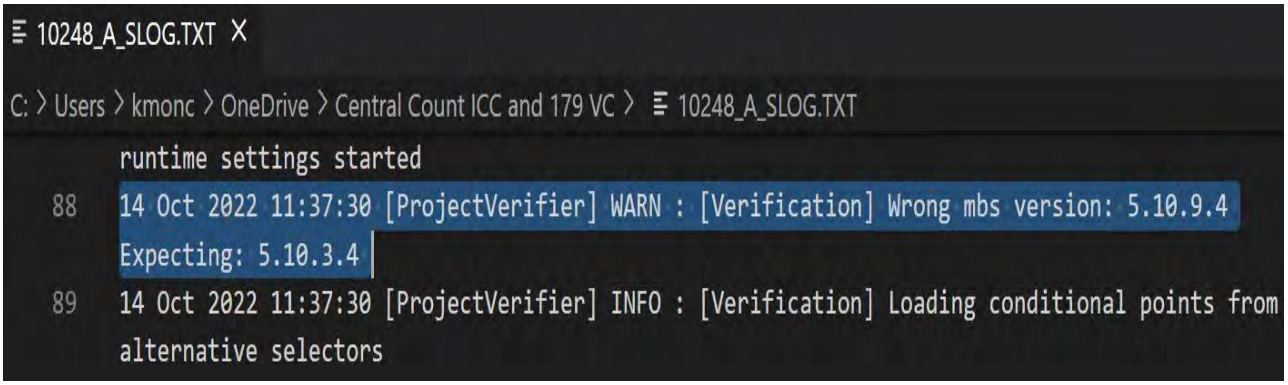
Machine Configuration File (MCF)	5.5.12.1_20190510	Proprietary	ICX Configuration File
Device Configuration File (DCF)	5.5.31_20190423	Proprietary	ICP and ICC Configuration File
ICE Machine Behavior Settings	5.5.6.3 20190512	Proprietary	ICE Configuration
ICP2 Machine Behavior Settings	5.5.1.4 20190510	Proprietary	ICP2 Configuration

Hardware Components:

Maricopa County's Election Software Has Been Altered and Is Not Certified

20. The tabulator system log files reveal that the Dominion election software Maricopa County used in the 2020 and 2022 General Elections is an uncertified home-brew version that inserts Democracy Suite software version 5.10 MBS into the approved and certified Democracy Suite 5.5B. This configuration has ***not*** been tested by the VSTL Pro V&V, nor been certified by the EAC, and has not been certified for use in Arizona by the Secretary of State. Specifically, the tabulator system log files for all vote center tabulators used in the 2020 and 2022 elections reveal that Maricopa is using an MBS version (5.10.9.4) from California's 5.10 system, not the proper 5.5B version 5.5.1.4. Representative exemplars of the vote center tabulator system log files for the 2020 and 2022 General Elections, respectively, are shown below:





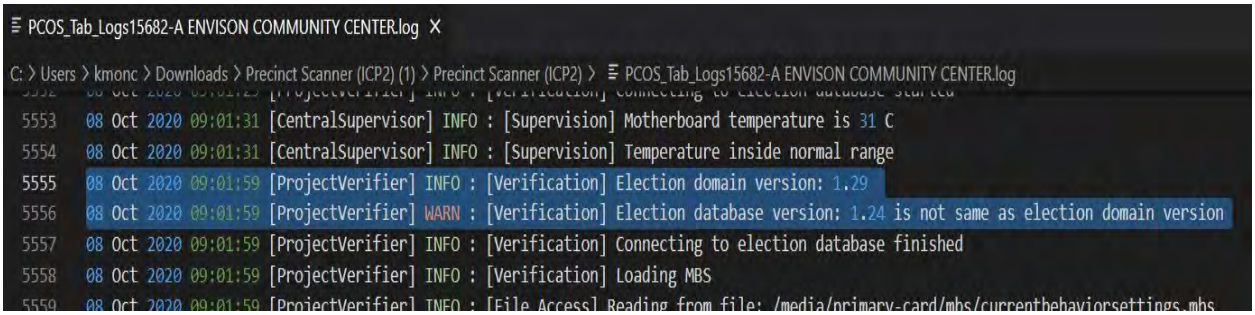
21. All the system log files for the vote center tabulators used in the 2020 and 2022 General Elections show that Maricopa installed MBS version 5.10.9.4 and that the vote center tabulators were programmed to "expect" MBS version 5.10.3.4. Both versions are not certified for use with Democracy Suite 5.5B.

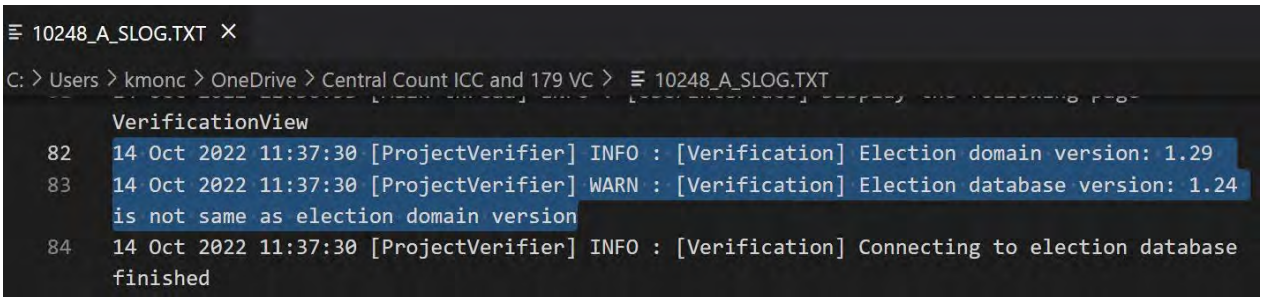
22. The "WARN[ING]" described in the tabulator system log files establishes the fact the vote center tabulators were programmed to expect a version of the California's 5.10 system is separate and apart from the fact that Maricopa County's use of version 5.10 MBS Dominion software is not authorized by the Arizona Secretary of State or certified by the EAC. California is the only state that uses Dominion Democracy Suite version 5.10.

23. In the California Secretary of State's Staff Report dated August 19, 2019, evaluating this election software, the Staff Report states: "Validating the software often, and on every system component is crucial to a secure system. Finally, ***Democracy Suite does not support mixing and matching of versions between components***.[8]" [p.25, emphasis added]

24. The system log files for all vote center tabulators used in the 2020 and 2022 General Elections also show another warning that of a database version and domain conflict. Representative exemplars of the vote center tabulator system log files for the 2020 and 2022 General Elections, respectively, are shown below:

[8] https://votingsystems.cdn.sos.ca.gov/vendors/dominion/dvs510staff-report.pdf





25. In computer programming, functions that check and compare component or sub-component versions--such as the two warnings noted above--serve a vital purpose in ensuring system functionality. Event logs are the standard way to record system checks. "Warnings" are a specific category of an event log in software programming. A warning indicates that there could be multiple, if not hundreds, of issues and that errors could occur. Critically, when a warning is issued, the system could have a resulting consequence or error occur that is not detectable by the system.

26. Candidates, contests, corresponding ballot bubbles, ballot styles, types and the relationship between those variables are only a fraction of the potential material adverse events that such a conflict gives rise to. Which could mean a ballot is not recorded correctly or the vote results are not accurately tabulated. The MBS and database version conflicts are a serious matter which can affect whether the tabulator accurately reads or records a voter's ballot.

27. This is especially significant in this instance due to the complex relational database architecture of the voting system. Notably, the warnings with respect to the MBS and Election

database/domain conflict are exactly the same for 2020 and 2022. Maricopa purchased new tabulators after the completion of the Arizona Senate audit in September 2021. Thus, Maricopa had to reload its unlawfully modified software onto the vote center tabulators used in the 2022 General Election.

28. The result of these critical faults, individually or collectively, means there is no way to know if votes cast in the 2020 and 2022 General Elections were correctly recorded or tabulated. The only way to verify the correct vote would be to conduct a full analysis of the Election Management Server (EMS), tabulator memory cards, and paper ballots. The senate audit did not compare the 2020 paper ballots to the ballot images created during the tabulation process and the tabulator's interpretation of each ballot (AuditMark).

Maricopa County Did Not Perform L&A Testing in Accordance with A.R.S. §16-449

29. L&A testing is designed to test the voting systems before an election, establish and preserve a successful state or baseline, and give the public confidence that the electronic voting machines will accurately record and tabulate votes. The procedures for L&A testing are set forth at A.R.S. §16-449 and in the Election Procedure Manual (EPM). A.R.S. §16-449(A) states in part that "[w]ithin the period of time before the election day prescribed [by the EPM] adopted pursuant to section 16-452…the automatic tabulating equipment and programs [shall be] tested to ascertain that the equipment and programs will correctly count the votes cast for all offices and on all measures."

30. The 2019 EPM and 2023 EPM expressly state that:

> The Board of Supervisors or officer in charge of elections is responsible for performing an L&A test ***on all voting equipment prior to each election***. The conduct of the test must be overseen by at least two elections staff or inspectors (of different political parties) and shall be open to observation by representatives of the political parties, candidates, the press, and the public.

31. For any election that includes a federal, statewide, or legislative office, the Secretary of State is responsible for conducting an L&A test on ***selected voting equipment***. A.R.S. § 16-

449.[9] The 2019 and 2023 EPM also expressly state that while the Secretary of State's L&A testing may be of selected voting equipment, "all of the county's deployable voting equipment must be tested."[10]

32. On October 03, 2020, Maricopa County issued a statutorily required public notice that L&A testing for the 2020 General Election would be conducted on October 06, 2020. Maricopa County and the Secretary of State each officially certified that the electronic voting systems had been successfully tested for Logic and Accuracy on October 6, 2020, in accordance with Ariz. Rev. Stat. § 16-449, see Exhibit C.

33. Maricopa County and the Secretary of State each conducted statutorily announced L&A testing for the 2022 General Election on October 11, 2022, and each certified separately that pursuant to A.R.S. §16-449, the electronic voting systems had been successfully tested for Logic & Accuracy, see Exhibit C.

34. Prior to both elections only five spare tabulators were L&A tested. None of the tabulators that were used on either election day were L&A tested. The 2020 systems logs show five tabulators only having activity during the L&A test period. The 2022 records show five systems tested and those were the only tabulator logs we did not receive. The 2020 General Election tabulator system log files all show the vote center tabulators have initialization dates of October 7-13, i.e., after the October 6, 2020, L&A test. With respect to the 2022 General Election, tabulator system log files all show the vote center tabulators all have initialization dates of October 14, 17, or 18, i.e., after the October 11, 2022, L&A test.

35. The fact that the vote center tabulators all have initialization dates after the official L&A test date of October 6, 2020, and October 11, 2022, makes it impossible for any of these tabulators to have been L&A tested in accordance with A.R.S. §16-449. Maricopa thus, falsely certified that it successfully completed L&A testing on October 6, 2020, and October 11, 2022, in accordance with A.R.S. §16-449—which mandates L&A testing of all deployable voting

[9] 2019 EPM p.86; 2023 EPM p. 91.
https://apps.azsos.gov/election/files/epm/2019_elections_procedures_manual_approved.pdf

[10] 2019 EPM p. 94-95; 2023 EPM p. 100.
https://apps.azsos.gov/election/files/epm/2023/EPM_20231231_Final_Edits_to_Cal_1_11_2024.pdf

equipment (i.e., including all vote center tabulators), with advance public notice and required observers.

36. Before I had access to the tabulator system log files for the 2020 General Election, I raised the issue of Maricopa's falsely certifying it conducted L&A testing in connection with the 2022 General Election in my declaration dated May 8, 2023 filed in connection with Lake's Motion for Relief From Judgment in which I concluded that Maricopa County could not have performed statutorily required L&A testing on the vote center tabulators used in the 2022 General Election because, among other things, the vote center tabulators all have initialization dates of October 14, 17, or 18, i.e., after the October 11, 2022 L&A test.

37. In response to Lake's motion, Maricopa submitted the declaration of Scott Jarrett, Maricopa's Co-Director of Elections, as part of their response brief filed on May 10, 2023, in Maricopa Superior Court, Case No. CV2022-095403. In his declaration, Jarrett admitted, seven months after the statutorily mandated L&A testing on October 11, 2022, Maricopa spent three days: (1) cutting the seals on the 446 vote-center tabulators; (2) taking out all the memory cards containing the election program; and (3) reformatting and reinstalling those memory cards, purportedly with a copy of the previously certified election program. [Ex. D at 14, 15-25].

38. The tabulator system log files show Maricopa County also conducted unannounced testing of the 446 vote center tabulators on the same dates, and that 260 tabulators (i.e., 58%) rejected ballots with the same error codes that occurred on Election Day and at a shockingly similar percentage.

39. Jarrett also testified that the installation of these reformatted memory cards into the vote center tabulators on October 14, 17, or 18 came about because Maricopa County purportedly realized on October 10, 2022 (the day before the statutory L&A test), that they "had not programmed the Vote Center tabulators to reject early and provisional ballots" and thus "the reformatted cards needed to be reinserted into each of the tabulators." [Ex. D at 9, 14-15]. Jarrett testified further the new programming was "a security feature that Maricopa County has used since 2020…[and] [s]uch programming prevents a voter from being able to cast and have more than one ballot counted in a single election." [Ex. D at 9, 17-18].

40. However, after Jarrett testified to this excuse, and previously mentioned the 2020 tabulator system log files were obtained and those log files also reflect that Maricopa's vote center tabulators used in the 2020 General Election have initialization dates after the statutory October 6, 2020, L&A test. Did Maricopa forget to properly program the tabulators to reject provisional and early ballots in the 2020 General Election as well?

41. Regardless, reformatting the vote center tabulators' memory cards and installing the election program after the statutorily mandated L&A test means any prior L&A test is void. The testing must be rerun with the tabulators and election software installed to be compliant with the plain language of Arizona law and standard practices.

Pro V&V and SLI did not examine the Election Software or Programming

42. Maricopa County contracted Pro V&V to conduct a field audit "to ensure the software and hardware certified for use in Maricopa County are the same as the software and hardware used in the conduction of the November 2020 General Election." Pro V&V's report details a process by which the tabulator memory cards, which are the sole repository for the software and election configuration files (MBS), were removed and set aside.[11] After Pro V&V finished separate firmware analysis, the report states that the memory cards were reinserted into the machine; therefore, the software and configuration files at issue were not validated by Pro V&V.

43. Shortly after the 2020 General Election, Maricopa requested SLI Compliance (SLI) to forensically audit "the voting system equipment used in the November 3rd, 2020, presidential election and records from that election, to extract facts about the use of the Dominion Voting Systems Democracy Suite 5.5B voting system" and generate a written report [12].

44. SLI stated their first assigned tasks was to: "1. Verifying that the software installed on the tabulation equipment is the same as the software certified by the U.S. Election Assistance Commission and the Arizona Secretary of State. This item is applicable to ICP2 (precinct

[11] https://www.maricopa.gov/DocumentCenter/View/66844/Post-Audit-Report pg. 4 Section 3.3
[12] https://www.maricopa.gov/DocumentCenter/View/66843/SLI-Compliance-Forensic-Audit-Report

scanner), EMS (election management system – workstations and servers), ICC (central count system) and Adjudicator (ballot resolver)."

45. As it pertains to number one of the assigned tasks, SLI's report details the following:

> To capture a full data set of the environments being examined, and to prevent contamination of the environments, SLI Compliance performed cloning operations on all workstations and all Administrator SD cards collected from the ICP2 devices.
>
> Dominion voting system files were extracted from the 35 ICP2s to validate against EAC generated hash codes, which are used to validate that each file's content has not been modified.
>
> The files were then hashed and compared to the EAC generated hash codes and verified to match. This verified Item #1 for the 35 evaluated ICP2 components.

46. It is also important to note that the uncertified and unlawful tabulator programming for both the 2020 and 2022 General Elections straddle the SLI Compliance forensic audit which purportedly verified the tabulator programming at issue; therefore, either the audit was not true and correct as the MBS software that SLI's audit verified was not that which was used for 2020- or the uncertified and unlawful software was surreptitiously reinstalled for 2022. There are no other possibilities.

47. Maricopa County Defendants falsely asserted that they had performed hash validation of the software of the tabulators and EMS before the Logic & Accuracy test for each election by comparing it to that which was certified by the EAC and the Arizona Secretary of State, when in fact they did not.[13]

Storing Encryption Keys in Plain Text and Unprotected Violates Basic Security Procedures

48. Electronic voting systems overall are full of vulnerabilities with multiple exploits

[13] Transcript 2:22-cv-00677-JJT (pg. 187, Lines 15-24) Mr. Jarrett also explained that Maricopa County performs "a hash code verification" prior to the Secretary's logic and accuracy testing. (Tr. 187:15-24.)

available. The vulnerabilities range from outdated Operating Systems (OS), third party applications, to protocols and services. Adding to these weaknesses is system configuration. Nearly all aspects of the voting systems do not use standard security, let alone industry best practices when configuring their systems. Voting system vendors, like Dominion, lack basic configuration management of their systems.

49. The election database is a prime example of misconfiguration. It is standard practice for a database to not use OS authentication to access or modify the database. Democracy Suite versions use OS authentication, which increases the number of attack vectors on the database. Additionally, if a database is to hold sensitive data it should be configured to encrypt the table, column, or row to which the sensitive data is to reside. This prevents anyone with read only or unauthorized access from seeing the data.

50. Lastly, Democracy Suite systems use a combination of a Rijndael Key, a Rijndael Vector, a Hash-based Message Authentication Code (HMAC) and a x509 security certificate to encrypt, decrypt and to authenticate data. The encryption key is considered a secret key and should be hidden and protected. All the components listed above (security processes) should be stored encrypted, especially if stored within a database. In the Democracy Suite systems, they are not. They are left unprotected and out in the open easy to find. With these items anyone could manipulate system configuration files causing the tabulators to not function properly. They could create or duplicate election data and make it look authentic. The possibilities are endless.

51. Furthermore, the plaintext storage of passwords and encryption keys on **any** information system, let alone a voting system, is an **egregious**, **inexcusable** violation of long-standing, **basic** cybersecurity best practices. It destroys any type of security the system wishes to implement. Windows log-in is the only authentication needed to access the unprotected database where the keys are stored. Windows log-in can easily be bypassed.[14]

52. These keys being plaintext outside of the cryptographic module also **violates** FIPS 140-2. Section 4.7 of FIPS 140-2 “Cryptographic Key Management”[15] states "The security

[14] https://www.youtube.com/watch?v=2v-mGf4_9-A
[15] https://nvlpubs.nist.gov/nistpubs/FIPS/NIST.FIPS.140-2.pdf pg.30

requirements for cryptographic key management encompass the entire lifecycle of cryptographic keys[.]" The section also states that "Secret keys, private keys, and CSPs shall be protected within the cryptographic module from unauthorized disclosure, modification, and substitution." Section 4.7.5 “Key Storage” states "Plaintext secret and private keys shall not be accessible from outside the cryptographic module to unauthorized operators." Additionally, the National Institute of Standards and Technology NIST SP 800-57[16] section 4.7 “Key Information Storage” states "The integrity of all key information **shall** be protected; the confidentiality of secret and private keys and secret metadata **shall** be protected. When stored outside a cryptographic module[.]"

CONCLUSION

53. The version mismatches and uncertified software identified in the tabulator system logs indicate an uncertified voting system was used in both the 2020 and 2022 elections, in violation of Arizona law. Two independent audits and Maricopa County couldn’t properly verify the integrity of the voting system, via hash validation. The encryption mechanisms and security certificates are left totally unprotected in a highly vulnerable system. The result of these critical faults, individually or collectively, means there is no way to know if votes cast in either election were correctly recorded or tabulated.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on this 18 day of March 2024.

s/ Clay Parikh
Clay U. Parikh

[16] https://doi.org/10.6028/NIST.SP.800-57pt2r1

Exhibit A

United States Election Assistance Commission

VVSG 2005 VER. 1

EAC CERTIFIED

Certificate of Conformance

Dominion Voting Systems
Democracy Suite 5.5-B

The voting system identified on this certificate has been evaluated at an accredited voting system testing laboratory for conformance to the *Voluntary Voting System Guidelines Version 1.0 (VVSG 1.0)*. Components evaluated for this certification are detailed in the attached Scope of Certification document. This certificate applies only to the specific version and release of the product in its evaluated configuration. The evaluation has been verified by the EAC in accordance with the provisions of the EAC *Voting System Testing and Certification Program Manual* and the conclusions of the testing laboratory in the test report are consistent with the evidence adduced. This certificate is not an endorsement of the product by any agency of the U.S. Government and no warranty of the product is either expressed or implied.

Product Name: Democracy Suite

Model or Version: 5.5-B

Name of VSTL: Pro V&V

EAC Certification Number: DVS-DemSuite5.5-B

Date Issued: September 11, 2019

Executive Director
U.S. Election Assistance Commission

Scope of Certification Attached

Scope of Certification

This document describes the scope of the validation and certification of the system defined above. Any use, configuration changes, revision changes, additions or subtractions from the described system are not included in this evaluation.

Significance of EAC Certification

An EAC certification is an official recognition that a voting system (in a specific configuration or configurations) has been tested to and has met an identified set of Federal voting system standards. An EAC certification is **not**:

- An endorsement of a Manufacturer, voting system, or any of the system's components.
- A Federal warranty of the voting system or any of its components.
- A determination that a voting system, when fielded, will be operated in a manner that meets all HAVA requirements.
- A substitute for State or local certification and testing.
- A determination that the system is ready for use in an election.
- A determination that any particular component of a certified system is itself certified for use outside the certified configuration.

Representation of EAC Certification

Manufacturers may not represent or imply that a voting system is certified unless it has received a Certificate of Conformance for that system. Statements regarding EAC certification in brochures, on Web sites, on displays, and in advertising/sales literature must be made solely in reference to specific systems. Any action by a Manufacturer to suggest EAC endorsement of its product or organization is strictly prohibited and may result in a Manufacturer's suspension or other action pursuant to Federal civil and criminal law.

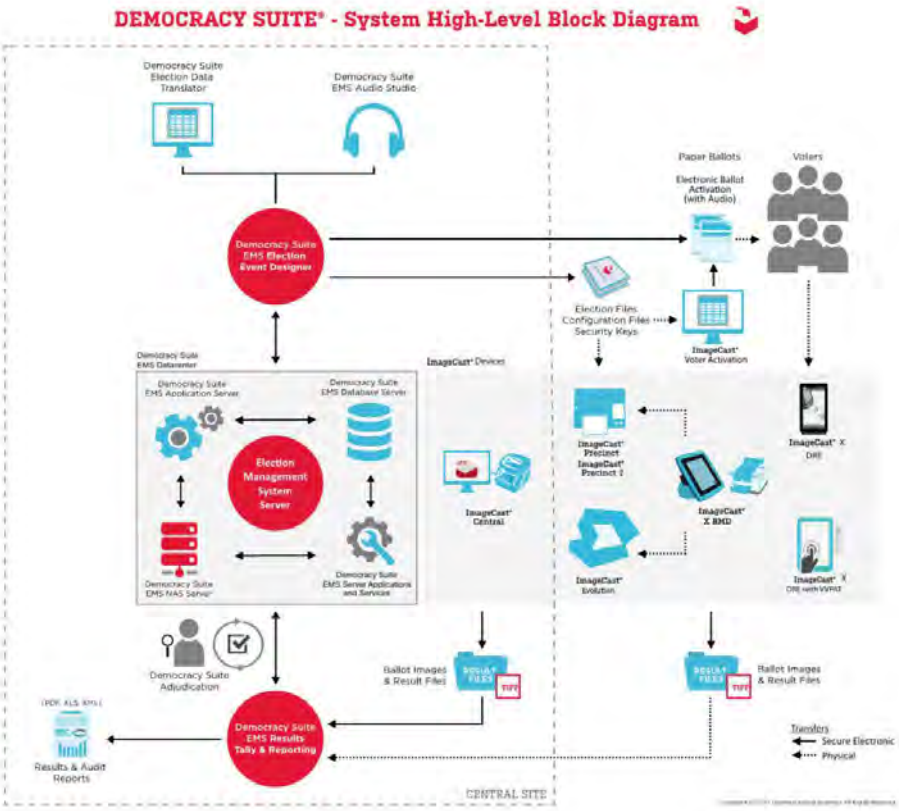
System Overview:

The D-Suite 5.5-B Voting System is a paper-based optical scan voting system with a hybrid paper/DRE option consisting of the following major components: The Election Management System (EMS), the ImageCast Central (ICC), the ImageCast Precinct (ICP and ICP2), the ImageCast Evolution (ICE), the ImageCast X (ICX) DRE w/ Reports Printer, ImageCast X (ICX) DRE w/ voter-verifiable paper audit trail (VVPAT), and the ImageCast X ballot marking device (BMD). The D-Suite 5.5-B Voting System configuration is a modification from the EAC approved D-Suite 5.5 system configuration.

Language capability:

System supports Alaska Native, Apache, Bengali, Chinese, English, Eskimo, Filipino, French, Hindi, Japanese, Jicarilla, Keres, Khmer, Korean, Navajo, Seminole, Spanish, Thai, Towa, Ute, Vietnamese, and Yuman.

Democracy Suite 5.5-B System Diagram



Components Included:

This section provides information describing the components and revision level of the primary components included in this Certification.

Voting System Software Components:

System Component	Software or Firmware Version	Operating System or COTS	Comments
EMS Election Event Designer (EED)	5.5.32.4	Windows 10 Pro	EMS
EMS Results Tally and Reporting (RTR)	5.5.32.4	Windows 10 Pro	EMS
EMS Application Server	5.5.32.4	Windows Server 2012 R2 Windows 10 Pro	EMS
EMS File System Service (FSS)	5.5.32.4	Window 10 Pro	EMS
EMS Audio Studio (AS)	5.5.32.4	Windows 10 Pro	EMS
EMS Data Center Manager (DCM)	5.5.32.4	Windows Server 2012 R2 Windows 10 Pro	EMS
EMS Election Data Translator (EDT)	5.5.32.4	Windows 10 Pro	EMS
ImageCast Voter Activation (ICVA)	5.5.32.4	Windows 10 Pro	EMS
EMS Adjudication (ADJ)	5.5.32.4	Windows 10 Pro	EMS
EMS Adjudication Services	5.5.32.4	Windows 10 Pro	EMS
Smart Card Helper Service (SCHS)	5.5.32.4	Windows 10 Pro	EMS
Election Firmware	5.5.31.1	uClinux	ICP
Firmware Updater	5.5.31.1	uClinux	ICP
Firmware Extractor	5.5.31.1	uClinux	ICP
Kernel (uClinux)	5.5.31.1	Modified COTS	ICP
Boot Loader (COLILO)	20040221	Modified COTS	ICP
Asymmetric Key Generator	5.5.31.1	uClinux	ICP
Asymmetric Key Exchange Utility	5.5.31.1	uClinux	ICP
Firmware Extractor (Technician Key)	5.5.31.1	uClinux	ICP
ICP2 Application	5.5.1.8	uClinux	ICP2
ICP2 Update Card	5.5.1.8	uClinux	ICP2
Voting Machine	5.5.6.5	Ubuntu Linux	ICE
Election Application	5.5.6.5	Ubuntu Linux	ICE
ImageCast Central Application	5.5.32.5	Windows 10 Pro	ICC
ICX Application	5.5.13.2	Android 5.1.1 (ICX Prime) Android 4.4.4 (ICX Classic)	ICX

Voting System Platform:

System Component	Version	Operating System or COTS	Comments
Microsoft Windows Server	2012 R2 Standard	Unmodified COTS	EMS Server SW Component
Microsoft Windows	10 Professional	Unmodified COTS	EMS Client/Server SW Component
.NET Framework	3.5	Unmodified COTS	EMS Client/Server SW Component
Microsoft Visual J#	2.0	Unmodified COTS	EMS Client/Server SW Component
Microsoft Visual C++ 2013 Redistributable	2013	Unmodified COTS	EMS Client/Server SW Component
Microsoft Visual C++ 2015 Redistributable	2015	Unmodified COTS	EMS Client/Server SW Component

System Component	Version	Operating System or COTS	Comments
Java Runtime Environment	7u80	Unmodified COTS	EMS Client/Server SW Component
Java Runtime Environment	8u144	Unmodified COTS	EMS Client/Server SW Component
Microsoft SQL Server 2016Standard	2016 Standard	Unmodified COTS	EMS Client/Server SW Component
Microsoft SQL Server 2016 Service Pack 1	2016 SP1	Unmodified COTS	EMS Client/Server SW Component
Microsoft SQL Server 2016 SP1 Express	2016 SP1	Unmodified COTS	EMS Client/Server SW Component
Cepstral Voices	6.2.3.801	Unmodified COTS	EMS Client/Server SW Component
Arial Narrow Fonts	2.37a	Unmodified COTS	EMS Client/Server SW Component
Maxim iButton Driver	4.05	Unmodified COTS	EMS Client/Server SW Component
Adobe Reader DC	AcrobatDC	Unmodified COTS	EMS Client/Server SW Component
Microsoft Access Database Engine	2010	Unmodified COTS	EMS Client/Server SW Component
Open XML SDK 2.0 for Microsoft Office	2.0	Unmodified COTS	EMS Client/Server SW Component
Infragistics NetAdvantage Win Forms 2011.1	2011 Vol. 1	Unmodified COTS	EMS SW Platform
Infragistics NetAdvantage WPF 2012.1	2012 Vol. 1	Unmodified COTS	EMS SW Platform
TX Text Control Library for .NET	16.0	Unmodified COTS	EMS SW Platform
SOX	14.3.1	Unmodified COTS	EMS SW Platform
NLog	1.0.0.505	Unmodified COTS	EMS SW Platform
iTextSharp	5.0.5	Unmodified COTS	EMS SW Platform
OpenSSL	1.0.2K	Unmodified COTS	EMS SW Platform
OpenSSL FIPS Object Module	2.0.14 (Cert 1747)	Unmodified COTS	EMS SW Platform
SQLite	1.0.103.0	Unmodified COTS	EMS SW Platform
Lame	3.99.4	Unmodified COTS	EMS SW Platform
Speex	1.0.4	Unmodified COTS	EMS SW Platform
Ghostscript	9.04	Unmodified COTS	EMS SW Platform
One Wire API for .NET	4.0.2.0	Unmodified COTS	EMS SW Platform
Avalon-framework-cvs-20020806	20020806	Unmodified COTS	EMS SW Platform
Batik	0.20-5	Unmodified COTS	EMS SW Platform
Fop	0.20-5	Unmodified COTS	EMS SW Platform
Microsoft Visual I# 2.0 Redistributable Package – Second Edition (x64)	2.0	Unmodified COTS	EMS SW Platform
Entity framework	6.1.3	Unmodified COTS	EMS SW Platform
Spreadsheetlight	3.4.3	Unmodified COTS	EMS SW Platform
Open XML SDK 2.0 for Microsoft Office	2.0.5022.0	Unmodified COTS	EMS SW Platform
Open SSL	1.0.2K	Unmodified COTS	ICP
OpenSSL FIPS Object Module	2.0.10 (Cert 1747)	Unmodified COTS	ICP
Zlib	1.2.3	Unmodified COTS	ICP
uClinux	20070130	Modified COTS	ICP
Kernel (Linux)	2.6.30.9-dvs-36	Modified COTS	ICE

System Component	Version	Operating System or COTS	Comments
U-Boot	1.3.4	Modified COTS	ICE
Google Text-to-Speech Engine	3.11.12	Unmodified COTS	ICX SW
Kernel	4.9.11	Modified COTS	ICP2
U-Boot	2017.03	Modified COTS	ICP2
Zxing Barcode Scanner	4.7.5	Modified COTS	ICX SW
SoundTouch	1.9.2	Modified COTS	ICX SW
ICX Prime Android 5.1.1 Image	0405	Modified COTS	ICX SW
ICX Classic Android 4.4.4 Image	0.0.98	Modified COTS	ICX SW
OpenSSL FIPS Object Module	2.0.10 (Cert 2473)	Unmodified COTS	ICX SW Build Library
OpenSSL	1.0.2K	Unmodified COTS	ICC SW Build Library
OpenSSL FIPS Object Module	2.0.10 (Cert 1747)	Unmodified COTS	ICC SW Build Library
1-Wire Driver (x86)	4.05	Unmodified COTS	ICC Runtime SW
1-Wire Driver (x64)	4.05	Unmodified COTS	ICC Runtime SW
Canon DR-G1130 TWAIN Driver	1.2 SP6	Unmodified COTS	ICC Runtime SW
Canon DR-G160II TWAIN Driver	1.2 SP6	Unmodified COTS	ICC Runtime SW
Canon DR-M260 TWAIN Driver,	1.1 SP2	Unmodified COTS	ICC Runtime SW
InoTec HiPro 821 TWAIN Driver	1.2.3.17	Unmodified COTS	ICC Runtime SW
Visual C++ 2013 Redistributable (x86)	12.0.30501	Unmodified COTS	ICC Runtime SW
Machine Configuration File (MCF)	5.5.12.1_20190510	Proprietary	ICX Configuration File
Device Configuration File (DCF)	5.5.31_20190423	Proprietary	ICP and ICC Configuration File
ICE Machine Behavior Settings	5.5.6.3 20190512	Proprietary	ICE Configuration
ICP2 Machine Behavior Settings	5.5.1.4 20190510	Proprietary	ICP2 Configuration

Hardware Components:

System Component	Hardware Version	Proprietary or COTS	Comments
ImageCast Precinct (ICP)	PCOS-320C	Proprietary	Precinct Scanner
ImageCast Precinct (ICP)	PCOS-320A	Proprietary	Precinct Scanner
ImageCast 2 Precinct (ICP2)	PCOS-330A	Proprietary	Precinct Scanner
ImageCast Evolution (ICE)	PCOS-410A	Proprietary	Precinct Scanner
ICP Ballot Box	BOX-330A	Proprietary	Ballot Box
ICP Ballot Box	BOX-340C	Proprietary	Ballot Box
ICP Ballot Box	BOX-341C	Proprietary	Ballot Box
ICP Ballot Box	ElectionSource IM-COLLAPSIBLE	Proprietary	Ballot Box
ICE Ballot Box	BOX-410A	Proprietary	Ballot Box
ICE Ballot Box	BOX-420A	Proprietary	Ballot Box
ICP2 Ballot Box	BOX-350A	Proprietary	Ballot Box
ICP2 Ballot Box	BOX-340C	Proprietary	Ballot Box
ICP2 Ballot Box	BOX-341C	Proprietary	Ballot Box
ICP2 Ballot Box	ElectionSource IM-COLLAPSIBLE	Proprietary	Ballot Box
ICX UPS Inline EMI Filter	1.0	Proprietary	EMI Filter
ICX Tablet (Classic)	aValue 15" Tablet (SID-15V)	COTS	Ballot Marking Device
ICX Tablet (Classic)	aValue 21" Tablet (SID-21V) (Steel or Aluminum chassis)	COTS	Ballot Marking Device
ICX Tablet (Prime)	aValue 21" Tablet (HID-21V) (Steel or Aluminum chassis)	COTS	Ballot Marking Device or Direct Recording Electronic
Thermal Printer	SII RP-D10	COTS	Report Printer

System Component	Hardware Version	Proprietary or COTS	Comments
Thermal Printer	KFI VRP3	COTS	Voter-verifiable paper audit trail (VVPAT)
Server	Dell PowerEdge R620	COTS	Standard Server
Server	Dell PowerEdge R630	COTS	Standard Server
Server	Dell PowerEdge R640	COTS	Standard Server
ICC Workstation HW	Dell OptiPlex 7440 All in One	COTS	
ICC Workstation HW	Dell OptiPlex 3050 All In One	COTS	
ICC Workstation HW	Dell OptiPlex 9030 All In One	COTS	
ICC Workstation HW	Dell OptiPlex 9020 All In One	COTS	
ICC Workstation HW	Dell OptiPlex 9010 All In One	COTS	
ICC Scanner	Canon imageFormula DR-G1130	COTS	Central Count Scanner
ICC Scanner	Canon imageFormula DR-M160II	COTS	Central Count Scanner
ICC Scanner	Canon imageFormula DR-M260	COTS	Central Count Scanner
ICC Scanner	InoTec HiPro 821	COTS	Central Count Scanner
ICC Scanner	Dell Optiplex 7050	COTS	
ICC Scanner	Dell 2418HT Monitor	COTS	
Client Workstation HW and Express Server	Dell Precision 3430	COTS	
Client Workstation HW and Express Server	Dell Precision 3431	COTS	
Client Workstation HW and Express Server	Dell Precision T3420	COTS	
Client Workstation HW	Dell Precision T1700	COTS	
Client Workstation HW	Dell Latitude 3400	COTS	
Client Workstation HW	Dell Latitude 3490	COTS	
Client Workstation HW	Dell Latitude E3480	COTS	
Client Workstation HW	Dell Latitude E3470	COTS	
Client Workstation HW	Dell Latitude E7450	COTS	
ICX Printer	HP LaserJet Pro Printer M402dn	COTS	
ICX Printer	HP LaserJet Pro Printer M402dne	COTS	
Monitor	Dell Monitor KM632	COTS	
Monitor	Dell Monitor P2414Hb	COTS	
Monitor	P2419H	COTS	
Monitor	P2417H	COTS	
Monitor	Dell Ultrasharp 24" Monitor U2414H	COTS	
CD/DVD Reader	Dell DVD Multi Recorder GP60NB60	COTS	
iButton Programmer	Maxim iButton Programmer DS9490R# with DS1402-RP8+	COTS	
UPS	Tripp Lite SMART1500RMXL2U	COTS	
UPS	APC SMT1500C Smart-UPS	COTS	
UPS	APC SMT1500 Smart-UPS	COTS	
UPS	APC BE600M1	COTS	
UPS	APC BR1000G	COTS	
Network Switch	Dell X1008	COTS	
Network Switch	Dell X1018	COTS	
Network Switch	Dell X1026	COTS	
Network Switch	Dell PowerConnect 2808	COTS	
Sip and Puff	Enabling Devices #972	COTS	
Headphones	Cyber Acoustics ACM-70 and ACM-70B	COTS	
4-way Joystick Controller	S26	Modified COTS	

System Component	Hardware Version	Proprietary or COTS	Comments
Rocker (Paddle) Switch	Enabling Device #971	COTS	
Rocker (Paddle) Switch	AbleNet 10033400 (2x)	COTS	
CF Card Reader	IOGEAR SDHC/microSDHC 0U51USC410	COTS	
CF Card Dual-Slot Reader	Lexar USB 3.0	COTS	
CF Card Reader	Hoodman Steel USB 3.0 102015	COTS	
CF Card Reader	Lexar Professional CFR1	COTS	
CF Card Reader	Kingston FCR-HS4	COTS	
ATI	ATI handset	Proprietary	
ATI	ATI-USB handset	Proprietary	
ACS PC-Linked Smart Card Reader	ACR38	COTS	
ACS PC-Linked Smart Card Reader	ACR39	COTS	

System Limitations

This table depicts the limits the system has been tested and certified to meet.

Characteristic	Limiting Component	Limit	Comment
Ballot positions	Ballot	292*/462**	Landscape Ballot: 240 candidates + 24 write-ins + 28 Yes/No choices.
Precincts in an election	EMS	1000; 250	Standard; Express
Contests in an election	EMS	1000; 250	Standard; Express
Candidates/Counters in an election	EMS	10000; 2500	Standard; Express
Candidates/Counters in a precinct	Ballot	240*/462**	Both
Candidates/Counters in a tabulator	Tabulator	10000; 2500	Standard; Express
Ballot Styles in an election	Tabulator	3000; 750	Standard; Express
Ballot IDs in a tabulator	Tabulator	200	Both
Contests in a ballot style	Ballot	38*/156**	Both
Candidates in a contest	Ballot	240*/231**	Both
Ballot styles in a precinct	Tabulator	5	Both
Number of political parties	Tabulator	30	Both
"vote for" in a contest	Ballot	24*/30**	Both
Supported languages in an election	Tabulator	5	Both
Number of write-ins	Ballot	24*/462**	Both

* Reflects the system limit for a ballot printed in landscape.

** Reflects the system limit for a ballot printed in portrait.

Functionality

2005 VVSG Supported Functionality Declaration

Feature/Characteristic	Yes/No	Comment
Voter Verified Paper Audit Trails		
VVPAT	YES	
Accessibility		
Forward Approach	YES	
Parallel (Side) Approach	YES	
Closed Primary		
Primary: Closed	YES	
Open Primary		
Primary: Open Standard (provide definition of how supported)	YES	
Primary: Open Blanket (provide definition of how supported)	YES	
Partisan & Non-Partisan:		
Partisan & Non-Partisan: Vote for 1 of N race	YES	
Partisan & Non-Partisan: Multi-member ("vote for N of M") board races	YES	
Partisan & Non-Partisan: "vote for 1" race with a single candidate and write-in voting	YES	
Partisan & Non-Partisan "vote for 1" race with no declared candidates and write-in voting	YES	
Write-In Voting:		
Write-in Voting: System default is a voting position identified for write-ins.	YES	
Write-in Voting: Without selecting a write in position.	NO	
Write-in: With No Declared Candidates	YES	
Write-in: Identification of write-ins for resolution at central count	YES	
Primary Presidential Delegation Nominations & Slates:		
Primary Presidential Delegation Nominations: Displayed delegate slates for each presidential party	YES	
Slate & Group Voting: one selection votes the slate.	YES	
Ballot Rotation:		
Rotation of Names within an Office; define all supported rotation methods for location on the ballot and vote tabulation/reporting	YES	Equal time rotation
Straight Party Voting:		
Straight Party: A single selection for partisan races in a general election	YES	
Straight Party: Vote for each candidate individually	YES	
Straight Party: Modify straight party selections with crossover votes	YES	
Straight Party: A race without a candidate for one party	YES	
Straight Party: "N of M race (where "N">1)	YES	
Straight Party: Excludes a partisan contest from the straight party selection	YES	

Feature/Characteristic	Yes/No	Comment
Cross-Party Endorsement:		
Cross party endorsements, multiple parties endorse one candidate.	YES	
Split Precincts:		
Split Precincts: Multiple ballot styles	YES	
Split Precincts: P & M system support splits with correct contests and ballot identification of each split	YES	
Split Precincts: DRE matches voter to all applicable races.	YES	
Split Precincts: Reporting of voter counts (# of voters) to the precinct split level; Reporting of vote totals is to the precinct level	YES	
Vote N of M:		
Vote for N of M: Counts each selected candidate, if the maximum is not exceeded.	YES	
Vote for N of M: Invalidates all candidates in an overvote (paper)	YES	
Recall Issues, with options:		
Recall Issues with Options: Simple Yes/No with separate race/election. (Vote Yes or No Question)	YES	
Recall Issues with Options: Retain is the first option, Replacement candidate for the second or more options (Vote 1 of M)	NO	
Recall Issues with Options: Two contests with access to a second contest conditional upon a specific vote in contest one. (Must vote Yes to vote in 2nd contest.)	NO	
Recall Issues with Options: Two contests with access to a second contest conditional upon any vote in contest one. (Must vote Yes to vote in 2nd contest.)	NO	
Cumulative Voting		
Cumulative Voting: Voters are permitted to cast, as many votes as there are seats to be filled for one or more candidates. Voters are not limited to giving only one vote to a candidate. Instead, they can put multiple votes on one or more candidate.	NO	
Ranked Order Voting		
Ranked Order Voting: Voters can write in a ranked vote.	NO	
Ranked Order Voting: A ballot stops being counting when all ranked choices have been eliminated	NO	
Ranked Order Voting: A ballot with a skipped rank counts the vote for the next rank.	NO	
Ranked Order Voting: Voters rank candidates in a contest in order of choice. A candidate receiving a majority of the first choice votes wins. If no candidate receives a majority of first choice votes, the last place candidate is deleted, each ballot cast for the deleted candidate counts for the second choice candidate listed on the ballot. The process of eliminating the last place candidate and recounting the ballots continues until one candidate receives a majority of the vote	NO	

Feature/Characteristic	Yes/No	Comment
Ranked Order Voting: A ballot with two choices ranked the same, stops being counted at the point of two similarly ranked choices.	NO	
Ranked Order Voting: The total number of votes for two or more candidates with the least votes is less than the votes of the candidate with the next highest number of votes, the candidates with the least votes are eliminated simultaneously and their votes transferred to the next-ranked continuing candidate.	NO	

Feature/Characteristic	Yes/No	Comment
Provisional or Challenged Ballots		
Provisional/Challenged Ballots: A voted provisional ballots is identified but not included in the tabulation, but can be added in the central count.	YES	
Provisional/Challenged Ballots: A voted provisional ballots is included in the tabulation, but is identified and can be subtracted in the central count	NO	
Provisional/Challenged Ballots: Provisional ballots maintain the secrecy of the ballot.	YES	
Overvotes (must support for specific type of voting system)		
Overvotes: P & M: Overvote invalidates the vote. Define how overvotes are counted.	YES	Overvotes cause a warning to the voter and can be configured to allow voter to override.
Overvotes: DRE: Prevented from or requires correction of overvoting.	YES	
Overvotes: If a system does not prevent overvotes, it must count them. Define how overvotes are counted.	YES	If allowed via voter override, overvotes are tallied separately.
Overvotes: DRE systems that provide a method to data enter absentee votes must account for overvotes.	N/A	
Undervotes		
Undervotes: System counts undervotes cast for accounting purposes	YES	
Blank Ballots		
Totally Blank Ballots: Any blank ballot alert is tested.	YES	Precinct voters receive a warning; both precinct and central scanners will warn on blank ballots.
Totally Blank Ballots: If blank ballots are not immediately processed, there must be a provision to recognize and accept them	YES	Blank ballots are flagged. These ballots can be manually examined and then be scanned and accepted as blank; or precinct voter can override and accept.
Totally Blank Ballots: If operators can access a blank ballot, there must be a provision for resolution.	YES	Operators can examine a blank ballot, re-mark if needed and allowed, and then re-scan it.
Networking		
Wide Area Network – Use of Modems	NO	
Wide Area Network – Use of Wireless	NO	

Feature/Characteristic	Yes/No	Comment
Local Area Network – Use of TCP/IP	YES	Client/server only
Local Area Network – Use of Infrared	NO	
Local Area Network – Use of Wireless	NO	
FIPS 140-2 validated cryptographic module	YES	
Used as (if applicable):		
Precinct counting device	YES	ImageCast Precinct
Central counting device	YES	ImageCast Central

Baseline Certification Engineering Change Orders (ECO)

ECO #	Component	Description
100503	ICP PCOS-320C & ICP PCOS-320A	Adding a COTS collapsible ballot box to AVL for use with the ICP
100521	Servers and Workstations	Added DELL P2419H monitor as a display device.
100527	EMS Workstations.	Added DELL Latitude 3490 computer with updated i3-8130U processor (Dual Core, 4MB Cache, 2.2GHz) to DVS PN 190-000061 (a client workstation).
100543	ICC Scanner	Update to the DR-G1130 Scanner LCD Panel User Interface.
100588	ICX Workstation	Added new models of VVPAT printer for use with the D-Suite ICX workstation due to previous model becoming commercially unavailable
100596	EMS Workstation	Added DELL Latitude 3400 computer as a client workstation due to the DELL Latitude 3490 computer becoming commercially unavailable for purchase
100597	EMS Server	Added DELL PowerEdge R640 computer with new processor and RAM as an AVL to the existing R640 server computer configurations
100602	EMS Server and Workstations	Added DELL Precision 3431 computer in an EMS Express Server and EMS Client Workstation configuration due to the DELL Precision 3430 computer becoming commercially unavailable for purchase
100603	ICC Scanner	Added DELL P2418HT monitor as a display device for ICC HiPro scanner workstation configuration due to the Lenovo 10QXPAR1US monitor becoming commercially unavailable for purchase

Exhibit B

2022 Election Cycle / Voting Equipment*

County	System Type	Manufacturer	Maintenance	Model	Firmware Type	Software Type
Apache	Accessible Ballot Marking Device	ES&S	ES&S	ExpressVote (BMD)	1.5.2.1	ElectionWare 6.0.4.0
	Central Count - Digital Scan			DS450	3.1.1.0	ElectionWare 6.0.4.0
	Central Count - Digital Scan			DS850	3.1.1.0	ElectionWare 6.0.4.0
Cochise	Accessible Ballot Marking Device	ES&S	ES&S	ExpressVote (BMD)	1.5.2.1	ElectionWare 6.0.4.0
	Digital Scan			DS200	2.17.4.0	ElectionWare 6.0.4.0
	Central Count - Digital Scan			DS450	3.1.1.0	ElectionWare 6.0.4.0
	Central Count - Digital Scan			DS850	3.1.1.0	ElectionWare 6.0.4.0
Coconino	Accessible Ballot Marking Device	ES&S	ES&S	ExpressVote (BMD)	2.4.5.1	ElectionWare 6.0.4.0
	Central Count - Digital Scan			DS450	3.1.1.0	ElectionWare 6.0.4.0
Gila	Accessible Ballot Marking Device	ES&S	ES&S	ExpressVote (BMD)	1.5.2.0	ElectionWare 5.0.4.0
	Central Count - Digital Scan			DS850	3.1.1.0	ElectionWare 5.0.4.0
Graham	Accessible Ballot Marking Device	ES&S	ES&S	ExpressVote (BMD)	1.5.2.1	ElectionWare 5.0.4.0
	Central Count - Digital Scan			DS850	3.1.1.0	ElectionWare 5.0.4.0
Greenlee	Accessible Ballot Marking Device	ES&S	ES&S	ExpressVote (BMD)	1.5.2.0	ElectionWare 5.0.4.0
	Digital Scan			DS200	2.17.4.0	ElectionWare 5.0.4.0
	Central Count - Digital Scan			DS450	3.1.1.0	ElectionWare 5.0.4.0
La Paz	Accessible Ballot Marking Device	ES&S	ES&S	ExpressVote (BMD)	1.5.2.1	ElectionWare 6.0.4.0
	Digital Scan			DS200	2.17.4.0	ElectionWare 6.0.4.0
	Central Count - Digital Scan			DS450	3.1.1.0	ElectionWare 6.0.4.0
Maricopa	Accessible Ballot Marking Device	Dominion	Dominion	ImageCast X (BMD)	5.5.13.2	Democracy Suite 5.5b
	Accessible Ballot Marking Device			ICX ATI Unit (BMD)	181-000036 Rev. A	Democracy Suite 5.5b
	Ballot Marking Device Printer			HP LaserJet Pro M402dne	Unmodified COTS	Democracy Suite 5.5b
	Digital Scan			Imagecast Precinct 2	5.5.18	Democracy Suite 5.5b
	Central Count - Digital Scan			ICC Cannon DR-G1130	Unmodified COTS	Democracy Suite 5.5b
	Central Count - Digital Scan			ICC Interscan HiPro 821	Unmodified COTS	Democracy Suite 5.5b
Mohave	Accessible Ballot Marking Device	ES&S	ES&S	ExpressVote (BMD)	2.4.5.1	ElectionWare 6.0.4.0
	Central Count - Digital Scan			DS850	3.1.1.0	ElectionWare 6.0.4.0
Navajo	Accessible Ballot Marking Device	ES&S	ES&S	ExpressVote (BMD)	2.4.5.1 / 1.5.2.1	ElectionWare 6.0.4.0
	Digital Scan			DS200	2.17.4.0	ElectionWare 6.0.4.0
	Central Count - Digital Scan			DS450	3.1.1.0	ElectionWare 6.0.4.0
	Central Count - Digital Scan			DS850	3.1.1.0	ElectionWare 6.0.4.0
Pima	Accessible Ballot Marking Device	ES&S	ES&S	ExpressVote (BMD)	2.4.5.1	ElectionWare 6.0.4.0
	Central Count - Digital Scan			DS850	2.4.0.0	ElectionWare 6.0.4.0
Pinal	Accessible Ballot Marking Device	ES&S	ES&S	ExpressVote (BMD)	2.1.10.0	ElectionWare 5.0.4.0
	Central Count - Digital Scan			DS850	1.0.0.0	ElectionWare 5.0.4.0
Santa Cruz	Accessible Ballot Marking Device	ES&S	ES&S	ExpressVote (BMD)	1.5.2.1	ElectionWare 6.0.4.0
	Central Count - Digital Scan			DS450	3.1.1.0	ElectionWare 6.0.4.0
Yavapai	Accessible Ballot Marking Device	Unisyn	Unisyn	FVT	OpenElect 2.2	OCS OpenElect 2.2
	Central Count - Digital Scan			OVCS	1.55	OCS OpenElect 2.2
Yuma	Accessible Ballot Marking Device	ES&S	ES&S	ExpressVote (BMD)	1.5.2.1	ElectionWare 6.0.4.0
	Digital Scan			DS200	2.17.4.0	ElectionWare 6.0.4.0
	Central Count - Digital Scan			DS450	3.1.1.0	ElectionWare 6.0.4.0

**This list may be updated prior to the next election*
Revised August 2022

Arizona Secretary of State

Exhibit C

MARICOPA COUNTY
ELECTIONS DEPARTMENT

Certificate of Accuracy

General Election
November 3, 2020

Tested on October 6, 2020
Optical Scan/Central Count
Accessible BMD Touchscreen
Precinct Tabulators

We, the undersigned, do hereby certify that the Pre Logic and Accuracy Test was conducted in Maricopa County for the November 3, 2020, General Election in accordance with AZ Statute 16-449. We attest that the count produced by the equipment and programs used correctly matched the predetermined manual tally of votes provided by the Maricopa County Elections Department.

State of Arizona

DEPARTMENT OF STATE

Office of the Secretary of State

2022 Statewide General Election

Logic & Accuracy Equipment Certificate

Pursuant to Arizona Revised Statute § 16-449, the Arizona Secretary of State's Office has completed the required logic and accuracy testing and certifies that the voting equipment, including accessible voting and tabulation equipment, in Maricopa County met the requirements for logic and accuracy testing standards on October 11, 2022.

Maricopa County will confirm that all early and provisional ballots from ICX accessible voting devices are duplicated prior to tabulation at central counting locations.

Secretary of State's Office Representatives:

Kori Lorick 10/19/22
Signature and Date

10/19/22
Signature and Date

MARICOPA COUNTY
ELECTIONS DEPARTMENT

Certificate of Accuracy

General Election
November 8, 2022

Tested on October 11, 2022
Optical Scan/Central Count
Accessible BMD Touchscreen
Precinct Tabulator

We, the undersigned, do hereby certify that the Pre Logic and Accuracy Test was conducted in Maricopa County for the November 8, 2022, General Election in accordance with AZ Statute 16-449. We attest that the count produced by the equipment and programs used correctly matched the predetermined manual tally of votes provided by the Maricopa County Elections Department.

SIGNATURE	PRINT NAME	PARTY
K Gallagher	KEVIN GALLAGHER	REPUBLICAN
Jeffrey Greeson	JEFFREY GREESON	DEMOCRAT
Robin Greeson	Robin Greeson	Democrat
Jan D Byrd	JANICE BRANT	REPUBLICAN
Nancy J Schrieber	Nancy Schrieber	Democrat
Kristi Passarelli	Kristi Passarelli	MCTEC
	Scott Jarrett	MCTEC
	REDACTED	OFFICE
Renée Shaava	Renée Shaava	MCTEC

Exhibit D

RACHEL H. MITCHELL
MARICOPA COUNTY ATTORNEY

By: THOMAS P. LIDDY (Bar No. 019384)
JOSEPH J. BRANCO (Bar No. 031474)
JOSEPH E. LA RUE (Bar No. 031348)
KAREN J. HARTMAN-TELLEZ (Bar No. 021121)
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Attorneys for Maricopa County Defendants

IN THE SUPERIOR COURT OF THE STATE OF ARIZONA

IN AND FOR THE COUNTY OF MARICOPA

KARI LAKE, Contestant/Petitioner, vs. KATIE HOBBS, et al., Defendants.	No. CV2022-095403 **DECLARATION OF SCOTT JARRETT IN SUPPORT OF THE MARICOPA COUNTY DEFENDANTS' RESPONSE OPPOSING LAKE'S MOTION FOR RELIEF FROM JUDGMENT** (Expedited Election Matter) (Honorable Peter Thompson)

I, Scott Jarrett, declare as follows:

1. During the 2022 general election, I was the Co-Director of the Maricopa County Elections Department (the "Elections Department"). My official title was the Director of In-Person Voting and Tabulation.

2. I have first-hand knowledge of the events about which I testify in this Declaration, and if called upon to testify to these matters at trial I would provide competent testimony.

3. I am over the age of 18 and suffer from no impairments that would affect my testimony, either in this Declaration or at trial.

LOGIC AND ACCURACY TESTING.

4. I have reviewed the portion of Lake's Motion for Relief from Judgment and the portion of Clay Parikh's Declaration that allege that Maricopa County failed the November 2022 General Election Logic and Accuracy test and that the County conducted subsequent, "secret" logic and accuracy testing. [Motion at 14-15.] These allegations are false.

5. All Election Tabulation Programs used in the November 2022 General Election were tested as part of the statutorily required Logic and Accuracy Test that occurred on October 11, 2022.

6. This declaration describes Maricopa County's testing process that was used for the 2022 General Election to ensure tabulators were accurate and that testing met statutory and operational requirements. The testing process described below is consistent with the testing that the County has completed for previous election cycles, with the following exceptions: (a) . the County expanded the testing to include more testing before the statutorily required Logic and Accuracy testing and (b) the County now includes over 13,000 ballot styles, which consists of early ballot, provisional and election day ballots, in its statutorily required Logic and Accuracy test. The inclusion of more than 13,000 ballot styles is more than thirteen times the amount of ballots that state law requires to be included in the Logic and Accuracy test.

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7. From October 4 through 10, 2022, the Elections Department thoroughly tested every Vote Center tabulator that would be used or that was prepared as a backup that could be used on Election Day at the 223 Vote Centers. This test included running more than 11,000 different Election Day ballot styles through the 446 Vote Center tabulators and the 54 backup tabulators. In addition to standard voted ballots, the testing included accessible voting device ballots, ballots with overvotes, and blank ballots. As the tabulator reads these ballots it creates a log of the inserting and reading of the ballot. The logs for these ballots could be interpreted as the ballot being "misread" or "returned" by the tabulator. However, the tabulator is operating as it is certified and programed to perform.

8. This testing that occurred on October 4 through the 10 was in addition to the testing we performed on the Central Count Tabulators and the stress testing of the Ballot on Demand printers and tabulators that occurred during the months of September and early October of 2022. It was also in addition to the statutorily required Logic and Accuracy tests that occurred on October 11.

9. During the testing from October 4 through 10, we recognized that we had not programmed the Vote Center tabulators to reject early and provisional ballots. It is not a statutory requirement that we do so. However, this is a security feature that Maricopa County has used since 2020. Such programming prevents a voter from being able to cast and have more than one ballot counted in a single election.

10. Upon recognizing that we had inadvertently omitted this programming, we reprogrammed the Vote Center tabulators to reject early and provisional ballots. The tabulators were programed to accurately accept and count Election Day ballots. This reprogramming occurred on October 10, prior to the statutorily required Logic and Accuracy test.

11. Because Maricopa County uses a Vote Center model, all of the Vote Center tabulators have the exact same programming. As a result, any tabulator deployed to any Vote Center could read any of the 4,312 Election Day ballot styles that were used during the 2022 General Election.

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12. As required by statute, the November 2022 General Election program that was installed on every Central Count and Vote Center tabulator and used to tabulate every ballot cast in the November 2022 General Election was tested at the statutorily required Logic and Accuracy tests performed by the Secretary of State and the County on October 11, 2022. The Logic and Accuracy test was publicly advertised, and the County Political Parties were in attendance.

13. The County's October 11, 2022, statutorily required Logic and Accuracy test consisted of running 13,837 early and election day ballots through a combination of the Central Count and Vote Center tabulators. The Secretary of State's test consisted of running 1,186 early and election day ballots through a combination of the Central Count and randomly-selected Vote Center tabulators. The County successfully passed both the Secretary of State's and the County's Logic and Accuracy tests on October 11, 2022, and the tabulation equipment and program were certified for use in the November 2022 General Election.

14. Because the County made a program change on October 10, 2022, prior to the Logic and Accuracy test, the encrypted pair of memory cards that were initially inserted in each of the Vote Center tabulators during the October 5 – 10 testing process needed to be reformatted with the certified election program that underwent the statutorily required Logic and Accuracy testing on October 11, 2022. The reformatted cards needed to be reinserted into each of the tabulators. As part of the certified build, this reformatting overwrites any subsequent recorded logs from the memory cards. Accordingly, any logs predating October 14 are stored on the internal storage device located within the Vote Center tabulator. Those logs were not requested by Lake or included in Parikh's review. Beginning on October 14 and occurring through October 18, Maricopa County installed the new memory cards that had the certified Election Program. Due to the reformatting, the logs from the memory cards would have a start date of either October 14, 17, or 18, the date they were reinserted into the Vote Center tabulators and they do not reflect the prior testing that occurred, as explained above. The process to reinsert the memory cards that had the certified program that

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underwent logic and accuracy testing was conducted under the live video streaming cameras within the County's Ballot Tabulation Center. It was not completed in secret as implied by Plaintiff's court filing.

15. When installing the new memory cards, the County tabulated a small number of ballots through each tabulator to ensure that the memory cards were properly inserted and that the ballots would tabulate. Similar to the test that occurred on October 4 – 10, the test deck of ballots included accessible voting device ballots, ballots with overvotes, and blank ballots, which could appear in the log files as a misread ballot. After the running of the test ballots, the tabulators were zeroed to ensure no votes were stored on the memory cards. The tabulators were affixed with tamper evident seals and prepared for delivery to each Vote Center. Again, all of this was done under the live video streaming cameras, which were operational and streaming this event to anyone who wanted to watch it.

16. The Poll Workers working in the vote centers performed a verification to ensure that there are not ballots recorded on the tabulator and that all results equal zero. They performed this by running a zero report when opening the polls on election day.

17. Finally, a tabulator misreading a ballot does not necessarily indicate a tabulator is malfunctioning, accordingly a review of the tabulator logs for misread ballots is not an appropriate method for identifying if a tabulator failed a logic and accuracy test. There can be common situations for a ballot to be logged as being misread when being initially inserted into the tabulator. One situation is when a ballot is inserted slightly askew, which will result in an initial misread of the ballot. However, upon reinserting the ballot in a more aligned direction, the tabulator will accept and accurately count the ballot. This is not a failure or error of the tabulator, is a common occurrence during both testing and voting and would not result in a finding that a tabulator has failed a logic and accuracy test. Another common issue that can create a misread during testing is when running test ballots after the tabulators have been cleaned. In some instances the cleaning process may leave a small piece of material or lint on the tabulator. The first attempt(s) to insert a ballot after cleaning can result in the tabulator not accepting the ballot and a misread ballot being recorded in the

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logs. When this occurs, it is not a failure or error created by the tabulator. Typically, inserting a ballot a second or third time resolves the issue, and any subsequent ballots are accepted normally. As part of the Elections Department's pre-election testing procedures, we clean every tabulator.

DUPLICATE BALLOTS.

18. For the November 2022 General Election, Maricopa County duplicated a total of 11,918 ballots. Of the 11,918, there were a total of 2,656 Election Day ballots. Of the 2,656 Election Day ballots, 1,282 came from three Vote Centers (999 - Gateway Fellowship, 215 - Journey Church, 68 - LDS Church Lakeshore) that were identified as having a "fit-to-page" setting inadvertently turned on at a Vote Center. The duplication process was performed in accordance with state statute and the Elections Procedures Manual. This included the duplication process being completed by bi-partisan teams and the assigning of marrying numbers to match the duplicated ballots with the original ballots. Maricopa County segregates the storage of the original ballots and the storage of the duplicated ballots after they are tabulated. The combination of the marrying number and the segregated storage allows for the matching of the original ballot with the duplicated ballot. Every duplicated ballot was tabulated and the vote tallies included in the final results.

19. While preparing for the inspection of the ballots that was ordered by this Court in this matter in December, 2022, I recognized that there were over 1,562,000 ballots stored on 60 separate pallets. I offered, through the County's attorneys, the opportunity for plaintiff's inspector to pre-select the batches of ballots so on the date of the inspection (December 20, 2022), there would be more time to perform the inspection of ballots. Despite that offer, to my knowledge, the Plaintiff's attorneys never provided a list of preselected batches.

20. On the date of the court ordered ballot inspection, I met with ballot inspectors and attorneys for both parties and the court appointed ballot inspector. The purpose of the

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meeting was to allow the ballot inspectors to select the ballots that they desired to inspect and to allow for the inspection to take place.

21. During the initial conversation about selecting the ballots to inspect, the Plaintiff's inspector wanted to use the cast vote record from the original count to select the ballots. I explained that, because there was a statutory recount of all the ballots, the cast vote record ("CVR") from the original count would not be useful in locating the batches of ballots. I stated it could be used, but we would have to create a "cross walk" between the old CVR from the original count and the new CVR from the recount, and it would take much more time than what was provided before the evidentiary hearing was scheduled to start at 8:00 a.m. the next day.

22. The initial discussion and locating of ballots took a significant portion of the time allotted for inspection. Once the inspection progressed to reviewing the original ballots that were sent to be duplicated, it was already later in the day. We offered the inspector the option to choose how to proceed and if he wanted to continue with the inspection of the duplicated ballots. The plaintiff's inspector chose to inspect the spoiled ballots rather than the duplicated ballots. Since Maricopa County stores the original and duplicated ballots separately and segregated from other tabulated ballots, it would have been possible for the plaintiffs to inspect both if advanced notice had been provided.

Pursuant to Rule 80(c), Ariz. R. Civ. P., I declare under penalty of perjury that the foregoing is true and correct.

Executed on May 10, 2023.

Scott Jarrett

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ATTORNEY'S OFFICE
CIVIL SERVICES DIVISION
225 WEST MADISON STREET
PHOENIX, ARIZONA 85003

SECOND DECLARATION OF BENJAMIN R. COTTON

I, Ben Cotton, being duly sworn, hereby depose and state as follows:

1) I am over the age of 18, and I understand and believe in the obligations of an oath. I make this affidavit of my own free will and based on first-hand information and my own personal observations.

2) This Second Declaration is an update to my declaration dated June 8, 2022 filed in the case of *Kari Lake et al. v. Katie Hobbs et al.* (2:22-cv-00677-JJT) filed in U.S. District Court for the District of Arizona (Doc. No. 35) ("First Declaration"). This Second Declaration details important new information which has come to my attention since November 2023.

3) I am the founder of CyFIR, LLC (CyFIR).

4) I have a master's degree in Information Technology Management from the University of Maryland University College. I have numerous technical certifications, including the Certified Information Systems Security Professional (CISSP), Microsoft Certified Professional (MCP), Network+, and Certified CyFIR Forensics and Incident Response Examiner.

5) I have over twenty-seven (27) years of experience performing computer forensics and other digital systems analysis.

6) I have over twenty (20) years of experience as an instructor of computer forensics and incident response. This experience includes thirteen (13) years of experience teaching students on the Guidance Software (now OpenText) EnCase Investigator and EnCase Enterprise software.

7) I have testified as an expert witness in state courts, federal courts and before the United States Congress.

8) I have testified before the Arizona State Senate in public hearings on 15 July 2021 and 24 September 2021 concerning the digital forensics findings connected to the Arizona State Senate

Maricopa County audit of the 2020 general elections. I fully stand behind those forensic findings.

9) I regularly lead engagements involving digital forensics, cyber security, and incident response for law firms, corporations, and government agencies and am experienced with the digital acquisition of evidence under the Federal Rules of Evidence.

10) In the course of my duties, I have forensically examined Dominion Voting Systems (DVS) components in Maricopa County Arizona, Antrim County Michigan, Fulton County Pennsylvania, Coffee County Georgia, Mesa County Colorado and Bibb County Georgia, hereinafter referred to as the "Analyzed Election County Components".

11) In the course of my duties, I have reviewed the administrative manuals and documentation for the DVS Democracy Suite software and hardware components.

12) In the course of my duties, I have reviewed the public information from the Election Assistance Commission ("EAC") and its certification process for election software.

13) I have reviewed and considered applicable Arizona law[1] concerning the certification and operation of electronic voting systems[2].

14) I have reviewed and considered the Pro V&V report dated March 2, 2022 concerning the programmatic errors of the Dominion tabulator titled "ICP Modification to Reset Provisional Flag on each Ballot Scan".

15) I have reviewed and considered the SLI Compliance report titled Forensic Audit Report, Report Number: MCA-21001-AR-01 dated February 23, 2021.

16) I have reviewed and considered the Pro V&V report titled Field Audit Report Dominion Voting Systems Democracy Suite (D-Suite) 5.5-B Voting System Maricopa Post-Election Field Audit dated February 23, 2021.

17) I have reviewed and considered the Maricopa Board of Supervisors' Response to the Arizona

[1] Arizona Revised Statutes Title 16. Elections and Electors

2 https://azsos.gov/sites/default/files/2019_ELECTIONS_PROCEDURES_MANUAL_APPROVED.pdf

Senate dated 5-17-21 and named "2021.05.17 Response Letter to Senate President Fann - FINAL_20210517143029133 2.pdf".

18) I have reviewed Maricopa County tabulator logs from the 2020 and the 2022 elections.

19) Since the Arizona Senate Audit of 2020 I have gained more knowledge concerning these voting systems and how they work. I have incorporated that additional knowledge into this declaration.

EXECUTIVE SUMMARY

20) I performed a thorough analysis of the Maricopa County Election Management System ("EMS") used in the November 2020 election, the tabulator system log files used in November 2022 election, and additional artifacts. I make the following findings:

a) The tabulator logs from the Maricopa County 2020 and 2022 elections demonstrate clearly that the machine behavior settings (MBS) and the database versions that existed on the tabulators used in those elections were not approved by the EAC certification of Dominion Voting System (DVS) Democracy Suite version 5.5B. The MBS file and the database version could not have been produced by the DVS version 5.5B. The election software Maricopa County used in the November 2020 and November 2022 elections has been materially altered from the EAC and Arizona Secretary of State certified[3] DVD D-Suite 5.5B. Any representation that this is the same golden image that the EAC approved is false.

b) Comprehensive evidence was found that the EMS system contained other significant software alterations or deviations to the configurations approved and certified in the EAC Certification and Scope of Conformance.

c) The encryption keys used to secure the results, encrypt and decrypt the tabulator results and protect the integrity of the EMS operations are stored in plain text in an unencrypted SQL database that is accessible with a simple SQL query. This egregious security lapse provides anyone with access to the voting system with the tools to alter election results without likely

[3] https://azsos.gov/sites/default/files/2024-02/2024_0118_Official_Voting_Equipment_List.pdf

detection.

d) The Maricopa EMS has a compiler installed that provides the ability to modify and create executable files and drivers on the fly that could be used to alter election results without detection. There is evidence new executable files were created at least three times during the active voting period in 2020.

e) EAC authorized voting system auditors Pro V&V and SLI Compliance failed to detect material changes to the voting systems in their audits of February 2021.

DETAILED FINDINGS

Evidence of Uncertified Configurations and Software

21) I examined the Dominion Imagecast Precinct (ICP2) logs (slog.txt) files and images from the November 2020 and November 2022 elections in Maricopa County. In connection with that examination, I undertook an extensive examination and analysis of the EAC certification documentation for the Dominion Democracy Suite version 5.5B, slogs.txt files for the 2020 election, slogs.txt files produced under FOIA by Maricopa County for the 2022 election, slog.txt files produced by other jurisdictions for the 2020 and 2022 elections, election databases from Maricopa County for the 2020 election, and system artifacts derived from the Arizona Senate Audit of the 2020 election. My findings are as follows:

a) The EAC website states that the DVS Democracy Suite version 5.5B was tested by Pro V&V and was certified on September 10, 2019.[4]

b) The EAC Certificate of Conformance contains a Scope of Certification that details the software versions that were certified. This document details that the certified ICE Machine Behavior Settings (MBS) are version 5.5.6.3 20190512 and the ICP2 Machine MBS are version 5.5.1.4 20190510[5]. Note that the first two numbers in each of these setting numbers

[4] Democracy Suite 5.5B (Modification) | U.S. Election Assistance Commission (eac.gov) 3/7/2024.

[5] DVS_5.5B_Certificate_Scope_Conformance.pdf (eac.gov) 3/7/2024

correspond to the Dominion Voting Software version of 5.5. The Dominion Democracy Suite Use Procedures manual defines Machine Behavior Settings (MBS) as "The settings that hold configuration parameters as defined by EMS applications and passed onto the ICE and ICP2. These settings define and determine the behavior of the ICE and ICP2". The first two place numbers (separated by a period) in the MBS version number are derived from the version number of the Dominion Voting Systems Democracy Suite version. The Maricopa version of the DVS Democracy Suite is 5.5B, therefore the version number of the MBS files should be 5.5.

Voting System Software Components:

System Component	Software or Firmware Version	Operating System or COTS	Comments
EMS Election Event Designer (EED)	5.5.32.4	Windows 10 Pro	EMS
EMS Results Tally and Reporting (RTR)	5.5.32.4	Windows 10 Pro	EMS
EMS Application Server	5.5.32.4	Windows Server 2012 R2 Windows 10 Pro	EMS
EMS File System Service (FSS)	5.5.32.4	Window 10 Pro	EMS
EMS Audio Studio (AS)	5.5.32.4	Windows 10 Pro	EMS
EMS Data Center Manager (DCM)	5.5.32.4	Windows Server 2012 R2 Windows 10 Pro	EMS
EMS Election Data Translator (EDT)	5.5.32.4	Windows 10 Pro	EMS
ImageCast Voter Activation (ICVA)	5.5.32.4	Windows 10 Pro	EMS
EMS Adjudication (ADJ)	5.5.32.4	Windows 10 Pro	EMS
EMS Adjudication Services	5.5.32.4	Windows 10 Pro	EMS
Smart Card Helper Service (SCHS)	5.5.32.4	Windows 10 Pro	EMS
Election Firmware	5.5.31.1	uClinux	ICP
Firmware Updater	5.5.31.1	uClinux	ICP
Firmware Extractor	5.5.31.1	uClinux	ICP
Kernel (uClinux)	5.5.31.1	Modified COTS	ICP
Boot Loader (COLILO)	20040221	Modified COTS	ICP
Asymmetric Key Generator	5.5.31.1	uClinux	ICP
Asymmetric Key Exchange Utility	5.5.31.1	uClinux	ICP
Firmware Extractor (Technician Key)	5.5.31.1	uClinux	ICP
ICP2 Application	5.5.1.8	uClinux	ICP2
ICP2 Update Card	5.5.1.8	uClinux	ICP2
Voting Machine	5.5.6.5	Ubuntu Linux	ICE
Election Application	5.5.6.5	Ubuntu Linux	ICE
ImageCast Central Application	5.5.32.5	Windows 10 Pro	ICC
ICX Application	5.5.13.2	Android 5.1.1 (ICX Prime) Android 4.4.4 (ICX Classic)	ICX

Figure 1-Subset of Certified Software Versions for DVS 5.5B

c) In the case of the slog.txt files that I examined, each ICP2 system recorded an error message concerning the MBS version. In all cases the error message read "Wrong MBS version:

5.10.9.4 Expecting: 5.10.3.4." As evidenced by the first two place number sets in the version numbers, both of these MBS versions would have been created by the DVS Democracy Suite version 5.10. It is important to note that the ICP2 firmware was expecting to receive MBS version 5.10.3.4, but the version that was on the SD cards that was inserted into the ICP2 at the time the election was opened was 5.10.9.4. Neither of these MBS versions were approved, tested or certified by the EAC with the certification of Dominion Democracy Suite 5.5B. The MBS version approved by the EAC for the ICP2 is 5.5.1.4 20190510.

System Component	Version	Operating System or COTS	Comments
U-Boot	1.3.4	Modified COTS	ICE
Google Text-to-Speech Engine	3.11.12	Unmodified COTS	ICX SW
Kernel	4.9.11	Modified COTS	ICP2
U-Boot	2017.03	Modified COTS	ICP2
Zxing Barcode Scanner	4.7.5	Modified COTS	ICX SW
SoundTouch	1.9.2	Modified COTS	ICX SW
ICX Prime Android 5.1.1 Image	0405	Modified COTS	ICX SW
ICX Classic Android 4.4.4 Image	0.0.98	Modified COTS	ICX SW
OpenSSL FIPS Object Module	2.0.10 (Cert 2473)	Unmodified COTS	ICX SW Build Library
OpenSSL	1.0.2K	Unmodified COTS	ICC SW Build Library
OpenSSL FIPS Object Module	2.0.10 (Cert 1747)	Unmodified COTS	ICC SW Build Library
1-Wire Driver (x86)	4.05	Unmodified COTS	ICC Runtime SW
1-Wire Driver (x64)	4.05	Unmodified COTS	ICC Runtime SW
Canon DR-G1130 TWAIN Driver	1.2 SP6	Unmodified COTS	ICC Runtime SW
Canon DR-G160II TWAIN Driver	1.2 SP6	Unmodified COTS	ICC Runtime SW
Canon DR-M260 TWAIN Driver,	1.1 SP2	Unmodified COTS	ICC Runtime SW
InoTec HiPro 821 TWAIN Driver	1.2.3.17	Unmodified COTS	ICC Runtime SW
Visual C++ 2013 Redistributable (x86)	12.0.30501	Unmodified COTS	ICC Runtime SW
Machine Configuration File (MCF)	5.5.12.1_20190510	Proprietary	ICX Configuration File
Device Configuration File (DCF)	5.5.31_20190423	Proprietary	ICP and ICC Configuration File
ICE Machine Behavior Settings	5.5.6.3 20190512	Proprietary	ICE Configuration
ICP2 Machine Behavior Settings	5.5.1.4 20190510	Proprietary	ICP2 Configuration

Figure 2 - MBS Scope of Conformance Version Numbers

d) Given the static nature of an EAC certified voting system, the only explanation for the presence of a non-certified components and version numbers of the MBS is an intentional manipulation and usage of non-certified, external systems to produce the version of MBS that was used with or imported into the Maricopa County voting systems in 2020 and 2022.

22) Dominion Voting Systems represents in their documentation that "Democracy Suite is an

Election Management System (EMS) that supports all ImageCast voting channels: early votes, vote by mail votes, Election Day votes from touchscreen ballot marking devices (ICX) and Scanner, and Uniformed and Overseas Citizens Absentee Voting Act (UOCAVA) votes, from a single comprehensive database."[6] My examination of the slog.txt data also determined there was an issue with the verification of the election database that was resident on the ICP2 systems. That warning was once again on all slog.txt files that I examined. That warning stated that "[Verification] Election database version: 1.24 is not the same as election domain version." The election database version that the ICP2 was programed to expect was 1.24. This indicates that the election was conducted with mismatched database versions, which would have increased the probability of errors in tabulation and reporting. Further analysis is required to determine if the mismatched databases were leveraged to manipulate vote counts or modify tabulator behavior.

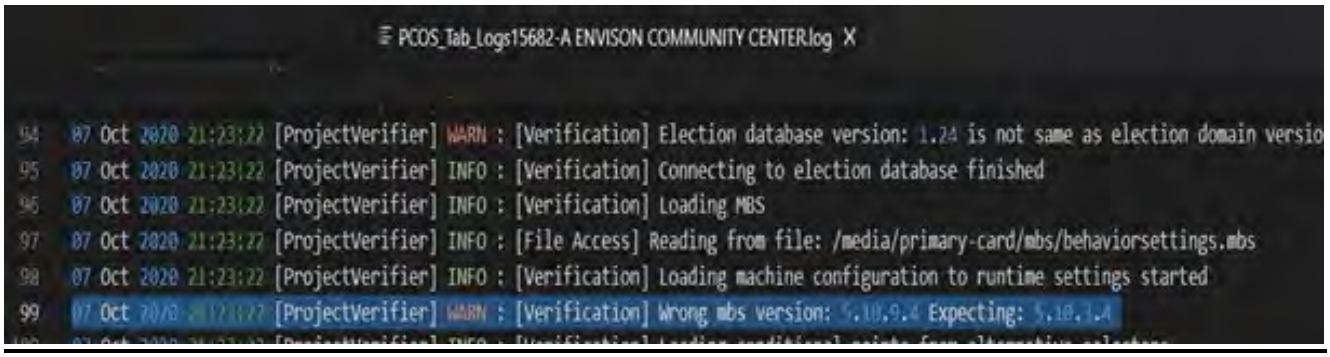


Figure 3 - 2020 Slog.txt With Wrong mbs

[6] (A) AGREEMENT.pdf (fulton.pa.us) Page 26, Paragraph 3.5.1 – 3/7/2024

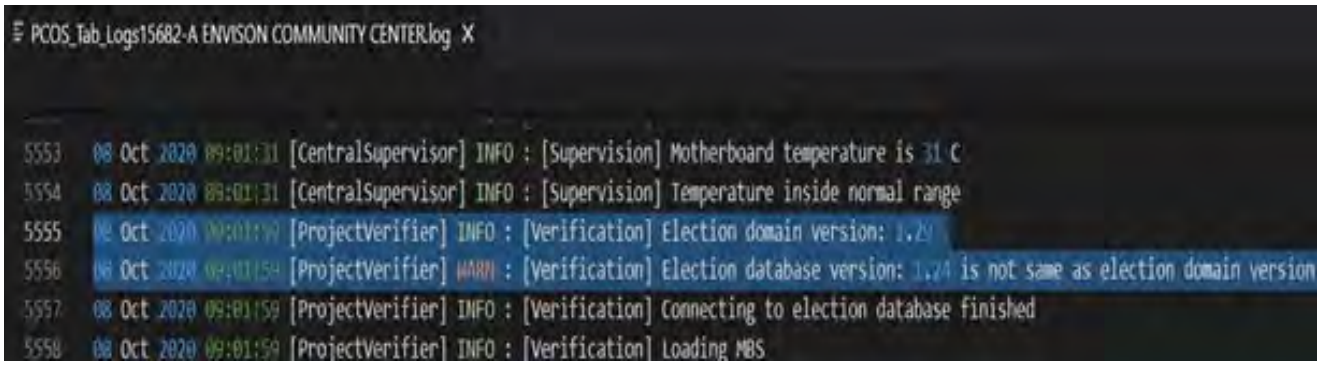


Figure 4 - 2020 Election Database Mismatch

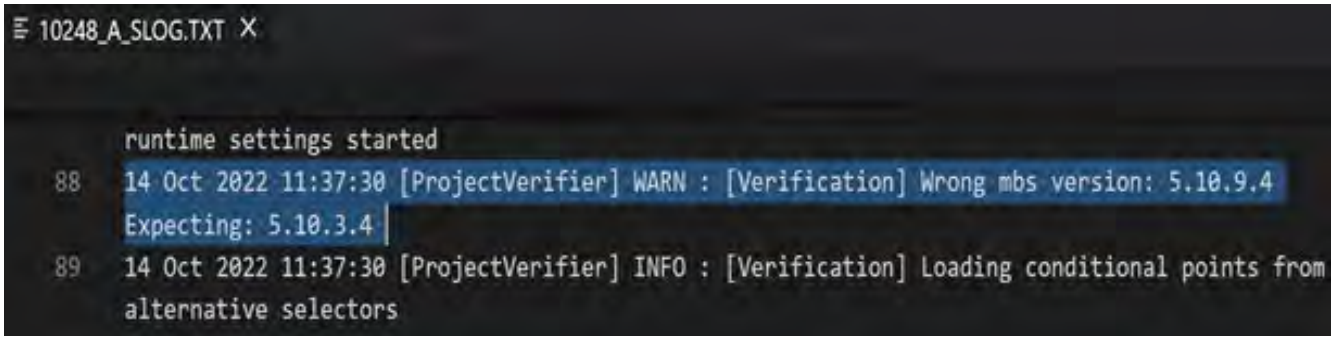


Figure 5 - 2022 Wrong MBS Version

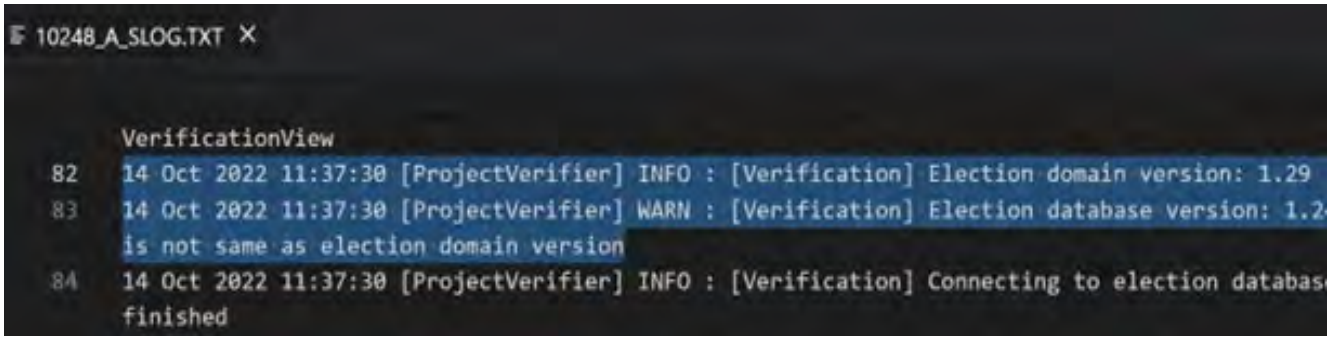


Figure 6 - 2022 Election Database Error

Unprotected Encryption Keys

23) In the course of my analysis, I determined that there was a flagrant failure to protect the election encryption and decryption keys within the election databases in the Analyzed County Election Components. The DVS Democracy Suite utilizes a combination of a Rijndael Key, a Rijndael Vector, a Hash-based Message Authentication Code (HMAC) and a x509 security certificate to

encrypt, decrypt and authenticate data. This data includes code signing, data signing, communications, and tabulator results from ICC or ICP2 components. The protection of election encryption and decryption keys is prominently described by DVS within Democracy Suite Technical Data Package documents as the mitigation for the risk of a malicious actor tampering with the election database, election result files, scanned ballot images, device audit logs, device log reports, ballot definitions and other critical elements that could allow authorized or unauthorized parties, to alter the outcome of an election without detection. These keys have been left unprotected on the election database and are in plain text as shown below:

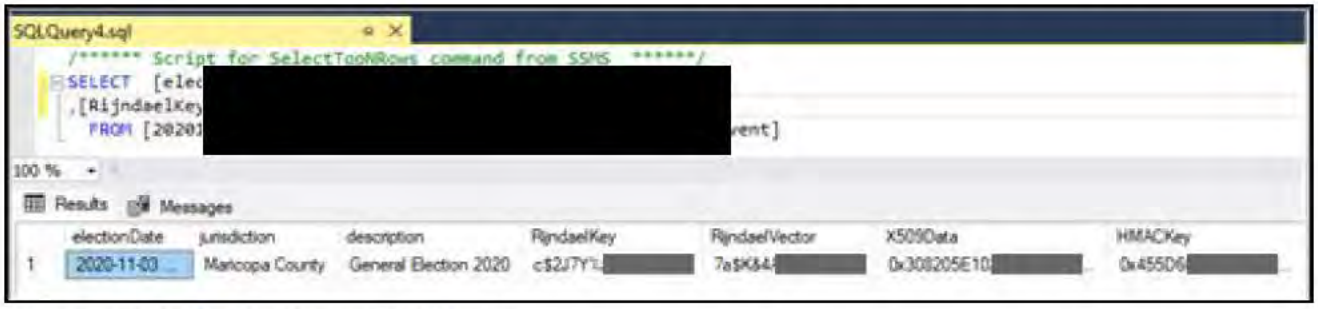


Figure 7 - Rijndael Key for Maricopa 2020 Election

24) The only barrier to access these keys is the Windows-log-in. This log in obviously would not prevent a malicious insider from changing results. A non-insider could easily bypass the Windows log-in feature in about 5 minutes with well-known hacking techniques available on the internet. Given the cyber security vulnerabilities, including the sharing of passwords between user accounts, access to all of these encryption elements is easily obtained. The encryption elements are stored in the MS SQL election database and are easily retrieved with a simple SQL query.

25) Simply put, this is like a bank having the most secure vault in the world, touting how secure it is to the public and then taping the combination in large font type on the wall next to the vault door. Anyone with local or remote access to the system, including authorized or unauthorized users, can obtain the certificates and keys and once obtained the entire election can be compromised. A simple example of the exploitation of these keys would be the modification of the results and

.dvd files that are transmitted or copied from the ICC scanners, HiPro scanners and the ICP2 tabulators prior to the ingestion of these files into the EMS for counting. By leveraging the decryption/encryption keys it is possible to script a program that would automatically change the contents of the ICP2 tabulator .dvd files, results.txt and cast vote records files prior to ingestion into the EMS. This altered vote count would not be logged as an intrusion or an error. Simply put, it would not be detected on the EMS.

The Maricopa County EMS Contains the Ability to Modify and Create Executable Files and Drivers on the Fly

26) Contained on the Maricopa EMS are computer programs designed to create or modify executable files through a command line interface (CLI) by any user on the system. These programs are not found as part of approved and certified Voting System Platform software that is listed on the EAC's Scope of Certification posted on the EAC's website.[7]

a) This document lists the following software packages as part of the certification:

i) .Net Framework ver. 3.5

ii) Microsoft Visual J# ver 2.0

iii) Microsoft Visual C++ 2015 Redistributable

iv) Microsoft Visual C++ 2013 Redistributable

v) Java Runtime Environment ver 7u80

vi) Java Runtime Environment ver 8u144

b) The Maricopa County EMS server program installations deviate from the EAC approved certification baseline and has the following programming software packages installed:

i) Visual Studio 10

ii) Visual Studio 14

[7] https://www.eac.gov/sites/default/files/voting_system/files/DVS_5.5B_Certificate_Scope_Conformance.pdf

iii) visual studio 2016 Prerequisites

iv) Microsoft Visual C++ 2013 x64 Debug Runtime - 12.0.21005

v) Microsoft Visual C++ Additional Runtime - 14.0.23026

vi) Microsoft Visual C++ 2015 x64 Debug Runtime - 14.0.23026

vii) Microsoft Visual J# 2.0 Redistributable Package - SE(x64)

viii) Microsoft Visual C++ 2013 x64 Minimum Runtime - 12.0.21005

ix) Microsoft Visual C++ 2013 x64 Additional Runtime - 12.0.21005

x) Microsoft Build Tools 14.0 (amd64)

xi) Microsoft Build Tools Language Resources 14.0 (amd64)

xii) Visual Studio 2015 Prerequisites - ENU Language Package

xiii) Microsoft Visual C++ 2010 x64 Redistributable - 10.0.40219

xiv) Microsoft Visual C++ 2015 x64 Minimum Runtime - 14.0.23026

xv) Microsoft Visual J# 2.0 Redistributable Package - SE (x64)

xvi) .Net Framework ver. 3.5

c) Common to these software packages is the ability to compile code to create new executable files (.exe) or dynamic linked libraries (.dll) used to control the computer or the devices contained on the system. Within this list of unauthorized programs are two (2) Microsoft Build Tool packages. MSBuild is a build tool that helps automate the process of creating a software product, including compiling the source code, packaging, testing, deployment and creating documentations. Of particular interest is that the MSBuild utility can be executed with the command line interface (CLI), meaning that the compiling and creating functions of MSBuild can be automated and scripted. The MSBuild.exe file (SHA Hash: 1502e504e4f5e7d1abb96130f174a11c4aa59b2567cf9c0eda198132e39c4b37) is located on the Maricopa EMS in the C:\Windows\Microsoft.NET\Framework\v4.0.30319\MSBuild.exe file path.

27) To determine the scope of the presence of the MSBuild.exe compiler I examined the systems from

Antrim County Michigan, Fulton County Pennsylvania, and others. The complier was present on all of these jurisdiction's EMS. I have determined that twelve thousand five hundred and seven (12,507) executable files were created or modified after the August 6, 2019 installation date of the DVS Democracy Suite on the Maricopa voting systems. My findings also determined that there were three (3) of these files created during the actual voting process of the 2020 elections. These files are:

a) AnalysisServer.bin created on 10/07/20 08:41:42 AM

b) App_Code.q2pxxzik.dll created on 10/31/20 12:26:18 PM

c) App_global.asax.uf72y7eu.dll created on 10/31/20 12:26:20 PM

The creation and implementation of these files created after the installation date and certification date of the DVS Democracy Suite software violates and undermines the entire purpose for the EAC certification process.

EAC Accredited Voting System Test Labs Failed to Detect Material Changes to Maricopa County's Voting System Election Software

28) Maricopa County engaged the two EAC accredited VSTLs to perform audits on the Dominion Voting Systems employed by the county in February of 2021. The SLI Compliance forensic report (the "SLI Report") was solicited by Maricopa County Elections Department after the 2020 election to among other things, "[v]erify that the software installed on the tabulation equipment is the same software certified by the EAC and the State of Arizona." The election software referred to in the SLI Report attachment contained a list of hash values purported to be the EAC certified software with hash values matching the DVS Democracy Suite version 5.5B certified system. The results of these audits were published on February 23, 2021 prior to the Arizona Senate commissioned audit. Neither of these audits reported the significant deviations found from my examination of Maricopa County's election software from the EAC Certification Scope of Conformance. Specifically:

a) The auditors only analyzed the hash values of a very small subset of the executable files on the systems. My analysis of the reports indicate that only files located in the file paths contained in the list of file hashes attached to the SLI Compliance report were evaluated by SLI Compliance. This report is included to this declaration as Exhibit A. Notably the auditor did not analyze or compare any files in the subdirectories of the Windows\.Net directory associated with the EMSApplicationServer functions or any other directory on the system.

b) The auditors did not perform a comparative analysis of the software listed in the EAC Scope of Conformance and note any deviations from the certified baseline. My analysis indicates significant differences between the installed files on the Maricopa EMS and the authorized software packages from the EAC Scope of Conformance. Had they done so they would have reported the software deviations discussed in Paragraphs 21, 22, 26 and 27.

c) I performed a comprehensive analysis of the hash values contained in the SLI Compliance report dated February 23, 2021. On every system that was produced to the Arizona Senate and had the respective package installed, the hash value for the following files deviated from the SHA256 hash value listed in the SLI compliance report:

i) AdjudicationClient.exe.config

ii) DVS.Bridging.ImportAdapter.exe.Config

iii) DVS.DemocracySuite.ElectionEventDesigner.exe.Config

iv) DVS.DemocracySuite.ResultTally.exe.Config

v) DVS.ICVA.GUI.exe.config

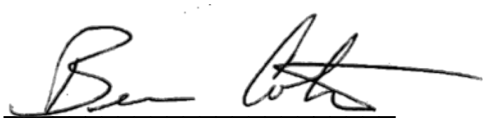
vi) DefaultScanner.cfg

These deviations were not reported. It should be noted that all of these files which do not match the EAC certified file hashes are configuration files. These deviations from the approved EAC baseline are especially significant because changes to configuration files change how the election software acts and whether ballots have been accurately recorded and tabulated.

CONCLUSION

29) It is clear, based on my findings, that unauthorized programs, databases, configuration settings and actions were present on the voting systems in Maricopa County for the elections in both 2020 and 2022. The election software Maricopa County used in the November 2020 and 2022 elections is not the Democracy Suite 5.5B software version approved by the EAC. The failure to maintain the EAC certification configuration should, among other things, immediately lead to the decertification of these systems. The placing of the master cryptographic keys on the election database in plain text and unprotected allows any actor with access to the voting system complete control over the election results. Any changes to the voting results leveraging these keys would likely not be detected. This is an egregious breach of basic security practices that must be remedied immediately. No election results provided by these voting machines can be trusted given the subjects identified and described in this report.

SIGNED UNDER THE PAINS AND PENALTIES OF PERJURY THIS 19th DAY OF March, 2024.



Benjamin R. Cotton

Exhibits

Exhibit A - SLI Compliance report titled Forensic Audit Report, Report Number: MCA-21001-AR-01 dated February 23, 2021

Exhibit B - Pro V&V report titled Field Audit Report Dominion Voting Systems Democracy Suite (D-Suite) 5.5-B Voting System Maricopa Post-Election Field Audit dated February 23, 2021

Exhibit A

Forensic Audit Report

Report Number: MCA-21001-AR-01

Dominion Voting Systems, Democracy Suite 5.5B

Report Rev 1.0

[February 23, 2021]

Prepared for: **Maricopa County Elections Department**

Prepared by:

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Revision History

Date	Release	Author	Revision Summary
February 23, 2021	1.0	M. Santos	Initial release

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Disclaimer

The observations and conclusions reported herein must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. Results herein relate only to the items evaluated.

All evaluation conducted for this engagement has been done outside of the U.S. Election Assistance Commission's (EAC) Test and Certification Program. In no way does this report represent an EAC certification against the Voluntary Voting System Guidelines (VVSG) or any other standard.

The audit activities referenced in this document were performed in a controlled environment using specific systems and data sets, and results are related to the specific items evaluated. Actual results in other environments may vary.

Contents

1 Introduction

SLI Compliance is submitting this report as a summary of forensic auditing efforts, solicited by Maricopa County Elections Department. The forensic audit conducted consisted of an analysis and review of the voting system equipment used in the November 3rd, 2020 presidential election and records from that election, to extract facts about the use of the Dominion Voting Systems Democracy Suite 5.5B voting system.

The Maricopa County forensic audit was conducted on the Dominion Democracy Suite (DS) 5.5B system and included examination of the following items per direction given by Maricopa County Elections Department:

- 100% (9) of the County's central count tabulators (ICC) (4 Hi-Pro high-speed scanners and 5 Cannon high-speed scanners), which are used for processing large quantities of ballots.
- 100% (4) workstations and (2) servers used to operate the election management system (EMS), which includes pre-election functions for creating the election definition for the specified election, as well as post-election activities including accumulating, tallying and reporting election results.
- 10% sample (35) of the County's 350 precinct-based tabulators (ICP2s) that were utilized in the election, at the polling centers.
- 20% sample (4) of 20 adjudication stations, which allow ballots with exceptions or outstack conditions such as over-votes, blank ballots, write-ins and marginal marks, to be resolved.

This effort included verification of the following items:

1. Verifying that the software installed on the tabulation equipment is the same as the software certified by the U.S. Election Assistance Commission and the Arizona Secretary of State.

   This item is applicable to ICP2 (precinct scanner), EMS (election management system – workstations and servers), ICC (central count system) and Adjudicator (ballot resolver).

2. Verifying that no malicious software is running on the component.

   This item is applicable to ICP2 (precinct scanner), EMS (election management system – workstations and servers), ICC (central count system) and Adjudicator (ballot resolver).

3. Verifying that the components are not connected to the internet and that they have not been connected to the internet during the period of July 6, 2020 through November 20, 2020.

This item is applicable to ICP2 (precinct scanner), EMS (election management system – workstations and servers), ICC (central count system) and Adjudicator (ballot resolver).

4. Performing a physical audit of the components to verify there is no unexpected hardware (a sample of 5 ICP2 precinct scanners).

   This item is applicable to ICP2 (precinct scanner).

Below is a listing of when each item above was completed for each relevant component.

For Item #1, verifying **component hashes against EAC generated hashes**:

- Item #1 was complete for ICP on Day 1
- Item #1 was complete for EMS workstations on Day 3
- Item #1 was complete for EMS servers on Day 5
- Item #1 was complete for ICC on Day 3
- Item #1 was complete for Adjudicator on Day 3

For Item #2, verifying **that no malicious software is running on the component**:

- Item #2 was complete for ICP on Day 3
- Item #2 was complete for EMS workstations on Day 4
- Item #2 was complete for EMS servers on Day 4
- Item #2 was complete for ICC on Day 5
- Item #2 was complete for Adjudicator on Day 4

For Item #3, verifying components **are not connected to the internet**:

- Item #3 was complete for ICP on Day 3
- Item #3 was complete for EMS workstations on Day 4
- Item #3 was complete for EMS servers on Day 5
- Item #3 was complete for ICC on Day 5
- Item #3 was complete for Adjudicator on Day 4

For Item #4, verifying **physical audit of the ICP component**:

- Item #4 was complete for ICP on Day 1

This audit was performed at a Maricopa County Election Department facility, located at 510 South 3rd Avenue, Phoenix, Arizona, over a five day period, from February 8th to February 12th, 2021.

- Attachments included are as listed:
  - Attachment A – Hashes by Component
  - Attachment B – User Activity and Malicious Software Review
  - Attachment C – Networking Review Criteria

2 Process

SLI Compliance conducted the forensic audit in a way that maximized efficiencies in examining the election artifacts.

The process included creation of raw disk images that allowed the examiners to audit and analyze the systems without the risk of changing the original system environments. Once the system media was imaged using a bit-to-bit copy of each item of system media, the examiners were able to mount and use forensic tools to inspect the systems for indicators of internet connectivity, as well as indicators of malicious or unauthorized software present on the systems.

Due to the County's strict policies regarding maintenance of the election infrastructure air gap, where election related devices are not allowed to be connected to non-election devices, SLI Compliance had to demonstrate the ability to prevent write back to any election media or resources. To fulfill this requirement, SLI Compliance utilized the WriteProtect™-BAY technology to prevent contamination of any of the election media during the forensic audit.

The WriteProtect™-BAY technology provides read-only, write blocking technology at a hardware layer, preventing inadvertent modification of election media during the audit. The WriteProtect™-BAY provides multiple write protected ports that allow for a wide variety of storage media to be connected in a read only write protected manner.

Examination for Item #1, verification of hashes, included usage of

- Md5deep hashing application, resident on auditing workstation with a Win10 operating system, for hashing extracted files utilizing a Sha256deep algorithm
- MS Excel spreadsheet utilizing comparison formulas, for comparing and determining if files have matching hash codes

Examination for Item #2, checking for malicious software, included usage of

- ClamWin Antivirus checks for software threats including viruses and spyware (utilizing engine version 0.99.4)
- Malwarebytes protection against software threats like viruses, malware, and spyware (utilizing component package version 1.0.1157, update package version 1.0.1157)
- Microsoft Defender Antivirus protection against software threats like viruses, malware, and spyware (utilizing security intelligence version 1.331.708.0)
- ESET Endpoint Antivirus protection against software threats including malware, viruses, worms and spyware (ESET Antivirus 7.3.2044.0)
- OSForensics, a digital examination tool that extracts data, including hidden data, from a PC
- Manual review utilizing a malicious software review checklist
- For the EMS servers, due to their configuration, a different antivirus, Avast, was utilized for examination

Examination for Item #3, internet connectivity check, included usage of

- OSForensics, a digital examination tool that extracts data, including hidden data, from a PC
- Manual review utilizing an internet connectivity review checklist

Examination for Item #4

- Four ICP2 devices were opened to show the internal components resident within
- A fifth ICP2 device was opened and all components removed from the chassis for a full examination of each internal component

3 Examination

This section details the proceedings of the examination, as conducted onsite at the Maricopa County Elections Department facilities.

Day 1

- Out of a pool of 315 available ICP2 precinct scanners (35 had been examined in a previous audit), SLI Compliance examined each and selected 35 ICP2s, based, in part, on any anomalies noticed on devices. This included missing labels or seals. Note: Due to defective batteries that would not attain the 10% minimal charge

needed to operate the device, five of the ICP2s originally selected would not power up, so they were replaced by five other ICP2s.

- Out of a pool 16 available Adjudication workstations (4 had been examined in a previous audit), SLI Compliance selected 4 Adjudication workstations.
- SLI Compliance auditors then recorded serial numbers of each of the 35 ICP2s, 4 adjudication workstations, all 9 of Maricopa County's ICC central count stations and all 4 Maricopa County EMS workstations, and 2 EMS servers. All labels and seals which had an associated serial number were recorded as well.
- To capture a full data set of the environments being examined, and to prevent contamination of the environments, SLI Compliance performed cloning operations on all workstations and all Administrator SD cards collected from the ICP2 devices.
- Dominion voting system files were extracted from the 35 ICP2s to validate against EAC generated hash codes, which are used to validate that each file's content has not been modified.
- The files were then hashed and compared to the EAC generated hash codes and verified to match. This verified **Item #1** for the 35 evaluated **ICP2** components.
- Cloning of the 4 Adjudicator workstations was initiated and completed.
- Cloning of the 9 ICC workstations was initiated.
- Physical audit of 5 ICP2s was conducted to verify no unexpected hardware was resident within the device. This verified **Item #4** for the **ICP2** components.
- The ICP2 contains an internal SD card that contains all information resident on the ICP2. That card was removed and examined to verify that no unexpected or malicious items were resident. Contents were also compared to artifacts that were extracted earlier as part of the Dominion file extraction process. All artifacts matched as expected.

Day 2

- Cloning of the 9 ICC workstations was completed.
- It was determined that the audit log (needed for review for determination of any connections to the internet) was resident on both the Administrator SD card and the Pollworker SD card. As the Pollworker card is the card pulled during election activities for results determinations, SLI Compliance auditors utilized the Administrator SD card. These cards were pulled and cloned, and then the audit log was obtained.
    - Note that six of the sampled ICP2 devices did not have SD cards. Maricopa County personnel informed the auditors that when a device needs to be replaced, the cards are pulled and utilized in the replacement device. Documentation was provided by the County for five of the ICP2 devices as

being replaced in the field. These devices were replaced due to tabulators not powering on, or needing to be replaced due to ball point pens being used which smeared the mylar screen on the scanner. The County indicated that the sixth device was prepared as a spare unit, but was never utilized in the election, and thus never had SD cards inserted.

- Review of ICP2 logs for any internet connections was initiated.
- Review of ICP2 files for any unknown/malicious software was initiated.
- Review of Adjudicator workstation logs for any internet connections was initiated.
- Review of Adjudicator workstation files for any unknown/malicious software was initiated.

Day 3

- Dominion voting system files were extracted from the four Adjudicator workstation cloned images to validate against EAC generated hash codes, which are used to validate that each file's content has not been modified.
- The Adjudicator workstation files were then hashed and compared to the EAC generated hash codes and verified to match. This verified **Item #1** for the 4 evaluated **Adjudicator** workstation components.
- Dominion voting system files were extracted from the nine ICC workstation cloned images to validate against EAC generated hash codes, which are used to validate that a files content has not been modified.
- The ICC workstation files were then hashed and compared to the EAC generated hash codes and verified to match. This verified **Item #1** for the 4 evaluated **ICC** workstation components.
- Review of ICP2 files for any unknown/malicious software was completed. This verified **Item #2** for the **ICP2** components.
- Review of ICP2 logs for any internet connections was completed. This verified **Item #3** for the **ICP2** components.
- Dominion voting system files were extracted from the four EMS workstation cloned images to validate against EAC generated hash codes, which are used to validate that each file's content has not been modified.
- The EMS workstation files were then hashed and compared to the EAC generated hash codes and verified to match. This verified **Item #1** for the 4 evaluated **EMS workstation** components.

Day 4

- Review of EMS files for any unknown/malicious software was completed. This verified **Item #2** for the **EMS workstation** components.
- Review of EMS logs for any internet connections was completed. This verified **Item #3** for the **EMS workstation** components.
- Dominion voting system files were extracted from the two EMS servers to validate against EAC generated hash codes, which are used to validate that each file's content has not been modified.
- The EMS server files were then hashed and compared to the EAC generated hash codes and verified to match. This verified **Item #1** for the 2 evaluated **EMS server** components.
- Review of Adjudicator files for any unknown/malicious software was completed. This verified **Item #2** for the **Adjudicator** components.
- Review of Adjudicator logs for any internet connections was completed. This verified **Item #3** for the **Adjudicator** components.

Day 5

- Review of EMS server files for any unknown/malicious software was completed. This verified **Item #2** for the **EMS server** components.
- Review of EMS server logs for any internet connections was completed. This verified **Item #3** for the **EMS server** components.
- Review of ICC files for any unknown/malicious software was completed. This verified **Item #2** for the **ICC** components.
- Review of ICC logs for any internet connections was completed. This verified **Item #3** for the **ICC** components.

4 Audit Findings Determinations

This section identifies the determinations for each review criterion, covering the relevant DS 5.5B components.

Item #1 Verifying that the software installed on the tabulation equipment is the same as the software that was certified by the U.S. Election Assistance Commission and the Arizona Secretary of State.

ICP2 (precinct scanner)

Each of the 35 ICP2s that were examined had the voting system files extracted following the Dominion prescribed procedure. Those files were then hashed, with the md5deep tool, and compared to the relevant EAC hash codes, which determined that the Dominion Voting Systems files remained unmodified from the certified files.

For the five ICP2s that were opened for Item #4, the internal SD cards were compared to the extracted files and were verified to match.

The Internal SD cards were bit-by-bit cloned, and then the image was restored onto duplicate SD cards for examination with Kali Linux 2020.4. This allowed the examiners to determine that the files contained on the internal SD storage cards matched those that were extracted using the Dominion defined hash verification methods.

EMS (election management system – workstations and servers)

Each of the six EMSs that were examined had all voting system files extracted. Those files were then hashed with the md5deep tool and compared to the relevant EAC hash codes, which determined that the Dominion Voting Systems files remained unmodified from the certified files.

Each of the four EMS client systems were first bit-by-bit imaged, and then the images were mounted read-only for file extraction and verification. This allowed the examiners to maintain a clean snapshot of the EMS client systems under evaluation.

The EMS servers contained encrypted raid drives that didn't allow for bit-by-bit media imaging, so the EMS servers had to be examined under the close scrutiny of County officials, including maintaining strict air-gap policies for introduction of clean media into the environment. This included monitored use of brand-new USBs (witnessed to be removed from original packaging) to obtain election software for verification.

ICC (central count system)

Each of the nine ICCs that were examined had all voting system files extracted. Those files were then hashed with the md5deep tool and compared to the relevant EAC hash codes, which determined that the Dominion Voting Systems files remained unmodified from the certified files.

Each of the nine ICC client systems were first bit-by bit-imaged, and then the images were mounted read-only for file extraction and verification. This allowed the examiners to maintain a

clean snapshot of the ICC client systems examined. It should be noted that additional hardware was required to process and image M.2 NVMe drive technology. All ICC systems were successfully imaged using the WriteProtect™-BAY technology.

Adjudicator (ballot resolver)

Each of the four Adjudicators that were examined had all voting system files extracted. Those files were then hashed with the md5deep tool and compared to the relevant EAC hash codes, which determined that the Dominion Voting Systems files remained unmodified from the certified files.

Each of the four Adjudication client systems were first bit-by-bit imaged, and then the images were mounted read-only for file extraction and verification. This allowed the examiners to maintain a clean snapshot of the Adjudication client systems examined.

No modifications were found by SLI Compliance to the installed Dominion software from the EAC certified release.

Item #2: Verifying that no malicious software is running on the component.

ICP2 (precinct scanner)

All files on each of the ICP2s were examined to determine if any malicious files were resident. Four different antivirus scanners were utilized (Windows Defender, ESET Endpoint Protection, ClamWin and Malwarebytes), as well OSForensics, a digital forensics tool, to examine the contents of each component.

No instance of malicious software was found on any of the devices.

In addition to using multiple forms of antivirus and malicious software detection software, the verification of all of the systems' software against trusted hash repositories stored by the Election Assistance Commission determined that no unexpected files or processes were present on the ICP2 Systems.

EMS (election management system)

All files on each of the EMSs were examined to determine if any malicious files were resident. On the four workstations, four different antivirus scanners were utilized (Windows Defender, ESET Endpoint Protection, ClamWin and Malwarebytes), as well OSForensics, a digital forensics tool, to examine the contents of each component.

In addition to using multiple forms of antivirus and malicious software detection software, manual examination of the systems was conducted to identify malicious or unauthorized software on the systems. These inspections included:

1) Inspection of the system registry. This included items such as Windows 'Run' entries, most recently used programs, recent documents, and Windows Explorer last visit.

2) Inspection of the system file system and installed programs: installed programs, autorun commands, shellbag entries, Windows userassist, download history, and USB history.

3) Inspection of the system audit logs. Includes Windows event logs, browser history, search terms, website logins, Windows timeline events, and host system antivirus logs.

On the two servers, Avast antivirus was utilized, as well OSForensics, a digital forensics tool, to examine the contents of each component. The examination of the EMS servers was performed manually, and all information for the EMS servers was pulled manually, for export and examination with the OSForensics tool on a separate system.

No instance of malicious software was found on any of the devices.

ICC (central count system)

All files on each of the ICCs were examined to determine if any malicious files were resident. On the four workstations, four different antivirus scanners were utilized (Windows Defender, ESET Endpoint Protection, ClamWin and Malwarebytes), as well OSForensics, a digital forensics tool, to examine the contents of each component.

In addition to using multiple forms of antivirus and malicious software detection software, manual examination of the systems was conducted to identify malicious or unauthorized software on the systems. These inspections included:

1) Inspection of the system registry. This included items such as Windows ‘Run’ entries, most recently used programs, recent documents, and Windows Explorer last visit.

2) Inspection of the system file system and installed programs: installed programs, autorun commands, shellbag entries, Windows userassist, download history, and USB history.

3) Inspection of the system audit logs. Includes Windows event logs, browser history, search terms, website logins, Windows timeline events, and host system antivirus logs.

No instance of malicious software was found on any of the devices.

Adjudicator (ballot resolver)

All files on each of the ICCs were examined to determine if any malicious files were resident. On the four workstations, four different antivirus scanners were utilized (Windows Defender, Endpoint, ClamWin and Malwarebytes), as well OSForensics, a digital forensics tool, to examine the contents of each component.

In addition to using multiple forms of antivirus and malicious software detection software, manual examination of the systems was conducted to identify malicious or unauthorized software on the systems. These inspections included:

1) Inspection of the system registry. This included items such as Windows ‘Run’ entries, most recently used programs, recent documents, and Windows explorer last visit.

2) Inspection of the system file system and installed programs: installed programs, autorun commands, shellbag entries, Windows userassist, download history, and USB history.

3) Inspection of the system audit logs. Includes Windows event logs, browser history, search terms, website logins, Windows timeline events, and host system antivirus logs.

No instance of malicious software was found on any of the devices.

SLI Compliance found no malicious software components on the installed software.

Item #3: Verifying that the components are not connected to the internet and that they have not been connected to the internet during the period of July 6, 2020 through November 20, 2020.

ICP2 (precinct scanner)

Manual examination and usage of the tool OSForensics, a digital forensics tool, were used to examine the activities of each ICP2 component, looking to determine if any connections were made to the internet, with primary focus on the time period of July 6, 2020 through November 20, 2020.

Manual examination and the OSForensics software were used to inspect the systems to identify if there were any instances of the systems being connected to an internet routed network. These inspections included:

1) Manual examination of the ICP2's storage partitions including the "ICP2-Boot" and "ICP2-Data" for logfiles, connection strings, ethernet callouts.

2) Inspection of the system file system and installed programs, extraction and examination of the squashfs system files.

3) Inspection of the system audit logs including the election logs, system logs and the system's diagnostic logs.

4) Searched for ethernet, modem, and wireless connectivity settings.

5) Examination and research for WLAN, ethernet and modem connectivity, logs, configuration, and usage.

No evidence of internet connectivity was found.

EMS (election management system)(workstations and servers)

OSForensics, a digital forensics tool, was used to examine the activities of each EMS component, looking to determine if any connections were made to the internet, with primary focus on the period of July 6, 2020 through November 20, 2020.

OSForensics software was used to inspect the systems to identify if there were any instances of the systems being connected to an internet routed network. These inspections included:

1) Inspection of the system registry. This included items such as Windows 'Run' entries, most recently used programs, recent documents, and Windows Explorer last visit.
2) Inspection of the system file system and installed programs: installed programs, autorun commands, shellbag entries, Windows userassist, and download history.
3) Inspection of the system audit logs; includes Windows event logs, browser history, search terms, website logins, and Windows timeline events.
4) USB history, to determine if there were any unauthorized wireless or USB ethernet devices plugged in and to determine if the systems were connected to an unauthorized network connection via a USB device.

In the case of the EMS server systems for which the OSForensics tools could not be utilized due to the air-gap policy, all of the information was manually examined.

1) Inspection of the system registry. This included items such as Windows 'Run' entries, most recently used programs, recent documents, and Windows Explorer last visit.
2) Inspection of the system file system and installed programs: installed programs, autorun commands, shellbag entries, Windows userassist, and download history.
3) Inspection of the system audit logs; includes Windows event logs, browser history, search terms, website logins, and Windows timeline events.
4) USB history, to determine if there were any unauthorized wireless or USB ethernet devices plugged in and to determine if the systems were connected to an unauthorized network connection via a USB device.
5) Examination and research for WLAN connectivity.
6) Verification of the server's ARP tables, routing lists, established connections, DNS server configurations, and netstat information.

No evidence of internet connectivity was found.

ICC (central count system)

OSForensics, a digital forensics tool, was used to examine the activities of each ICC component, looking to determine if any connections were made to the internet, with primary focus on the time period of July 6, 2020 through November 20, 2020.

OSForensics software was used to inspect the systems to identify if there were any instances of the systems being connected to an internet routed network. These inspections included:

1) Inspection of the system registry. This included items such as Windows 'Run' entries, most recently used programs, recent documents, and Windows Explorer last visit.
2) Inspection of the system file system and installed programs: installed programs, autorun commands, shellbag entries, Windows userassist, and download history.
3) Inspection of the system audit logs; includes Windows event logs, browser history, search terms, website logins, and Windows timeline events.
4) USB history, to determine if there were any unauthorized wireless or USB ethernet devices plugged in and to determine if the systems were connected to an unauthorized network connection via a USB device.

One ICC had a log entry of a connection attempt, with no corresponding DNS failure message, on August 26, 2020. The connection attempt itself was a search for how to adjust screen brightness. Examination of all other log files on that machine did not provide evidence of a successful internet connection.

No evidence of internet connectivity was found. Such evidence would have been found if the system had been connected to the internet.

Adjudicator (ballot resolver)

OSForensics, a digital forensics tool, was used to examine the activities of each Adjudicator component, looking to determine if any connections were made to the internet, with primary focus on the time period of July 6, 2020 through November 20, 2020.

OSForensics software was used to inspect the systems to identify if there were any instances of the systems being connected to an internet routed network. These inspections included:

1) Inspection of the system registry. This included items such as Windows 'Run' entries, most recently used programs, recent documents, and Windows Explorer last visit.
2) Inspection of the system file system and installed programs: installed programs, autorun commands, shellbag entries, Windows userassist, and download history.
3) Inspection of the system audit logs; includes Windows event logs, browser history, search terms, website logins, and Windows timeline events.
4) USB history, to determine if there were any unauthorized wireless or USB ethernet devices plugged in and to determine if the systems were connected to an unauthorized network connection via a USB device.

No evidence of internet connectivity was found.

SLI Compliance found there to be no internet connectivity occurring within the specified time period (July 6, 2020 through November 20, 2020) on any of the examined components.

Item #4: Performing a physical audit of the components to verify there is no unexpected hardware (5 ICP2 precinct scanners).

Physical examination of the ICP2 component included removal of the outer cover, as well an inner cover to expose the resident circuit boards and accompanying components on four ICP2s. A fifth ICP2 precinct scanner was taken even further, such that all components were completely removed from the chassis for examination.

The examination showed that there were no physical components resident that were not expected to be there.

SLI Compliance's findings indicate that the installed hardware is the hardware that was certified as part of the EAC certification and that none of the examined components contains any malicious or unexpected hardware components.

5 Summary Findings

SLI Compliance has completed the audit of the Dominion Voting Systems Democracy Suite 5.5B voting system components as prescribed by the Maricopa County Elections Department.

SLI Compliance maintained the integrity of the audited system components by performing a bit-by-bit image of all systems examined by SLI Compliance, except for the two EMS servers that were live systems. Unused media from original packaging was used to remove or extract data from the live systems. In all instances when removing or examining system storage media, the County required that proof of write back protection be demonstrated, to protect the election infrastructure's air-gapped environment.

Physical examination of the County election infrastructure indicated that the physical setup of the systems is arranged so that all network connectivity is clearly marked and delineated. This means that, at any time, observers can examine and determine that the election systems are connected only to authorized networking. Separate cable runs are positioned to clearly identify all network cabling to and from election devices, and cables are color coded for easy identification. In addition, the entire election area is fully covered by cameras that may be used for observing the election process and maintaining a historic record of events on the election processing floor.

While the systems examined showed no malicious or networking related USB devices being connected, the systems examined didn't provide a physical or a digital method of preventing unauthorized USB devices to the systems. In this particular case, County policy drives control of USB connectivity.

For the four items being examined,

1. Verifying that the software installed on the tabulation equipment is the same as the software that was certified by the U.S. Election Assistance Commission and the Arizona Secretary of State.

This item is applicable to ICP2 (precinct scanner), EMS (election management system – workstations and servers), ICC (central count system) and Adjudicator (ballot resolver).

SLI Compliance's findings indicate that the installed Dominion software remains unmodified from the EAC certified release.

2. Verifying that no malicious software is running on the component.

   This item is applicable to ICP2 (precinct scanner), EMS (election management system – workstations and servers), ICC (central count system) and Adjudicator (ballot resolver).

   SLI Compliance's findings indicate that the installed software does not contain any malicious software components.

3. Verifying that the components are not connected to the internet and that they have not been connected to the internet during the period of July 6, 2020 through November 20, 2020.

   This item is applicable to ICP2 (precinct scanner), EMS (election management system – workstations and servers), ICC (central count system) and Adjudicator (ballot resolver).

   One ICC had a log entry of a connection attempt, with no corresponding DNS failure message, on August 26, 2020. Examination of all other log files on that machine did not provide evidence of a successful internet connection. No other component examined had any anomalies.

4. Performing a physical audit of the components to verify there is no unexpected hardware (5 ICP2 precinct scanners).

   This item is applicable to ICP2 (precinct scanner).

   SLI Compliance's findings indicate that the installed hardware is only the hardware that was certified as part of the EAC certification and that none of the examined components contains any malicious or unexpected hardware components.

End of Forensic Audit Report

Adjudication

Version: 5.5.32.1	
Filename	**SHA-256 Value**
Program Files (x86)\Dominion Voting Systems\Adjudication Client\AdjudicationClient.exe	5b07834c5bb79c542df57fadb9dc6ddd37159d2d9318a2be20edc0762a71d14a
Program Files (x86)\Dominion Voting Systems\Adjudication Client\AdjudicationClient.exe.config	ac104ab9b4f2c5921f8dd2ad8c2042c5c1313315bb94f31b770a3c932e26c484
Program Files (x86)\Dominion Voting Systems\Adjudication Client\BitMiracle.LibTiff.NET.dll	f752a459a1eb5d35c597ff26437a75cc9aff7a5ca1d4fcdb2bc08ded5cb71465
Program Files (x86)\Dominion Voting Systems\Adjudication Client\DVS.Common.dll	2350a09486f0bc62c96607b6ea70e1edf9731803a5ef622302144a9fe043bb00
Program Files (x86)\Dominion Voting Systems\Adjudication Client\DVS.EMS.Infrastructure.dll	08bff90e689c25cf3e4a23b91e11932e5d868c7ec12455ca6794937414116c91
Program Files (x86)\Dominion Voting Systems\Adjudication Client\DVS.EMS.Services.Common.dll	636fda238c8c96e2fd25a6d6af897558950c2694be398fbecc8f681a3952bdbd
Program Files (x86)\Dominion Voting Systems\Adjudication Client\DVS.Utilities.Common.dll	d5fa1b91e9e915eaa2a3801bae98166c0fb3dd33353e9fde951b2409104f6b2a
Program Files (x86)\Dominion Voting Systems\Adjudication Client\DVS.Windows.dll	b3ecc7e75b0eef7c86e2faf4bab3485f97822a1ca48dd0b73905b78925a96839
Program Files (x86)\Dominion Voting Systems\Adjudication Client\logging.config	814817711f24e4b213db6cd3766f5ab8ecb402e7cf57c2c61f64653e1d284c69
Program Files (x86)\Dominion Voting Systems\Adjudication Client\Microsoft.Practices.EnterpriseLibrary.Common.dll	cb0153495092cab9bb80803c51b25f00a550deae28b35007c60888dbc1529673
Program Files (x86)\Dominion Voting Systems\Adjudication Client\libeay32.dll	d11e92f738e6f1ac5b8ba1393d2ae3378ba55757822a856da3a9cba9fe124723
Program Files (x86)\Dominion Voting Systems\Adjudication Client\itextsharp.dll	f6576c783a8db98c4a09919ea0a8b8bff70ac1729d3aa2935e07c6e639f25070
Program Files (x86)\Dominion Voting Systems\Adjudication Client\Microsoft.Practices.EnterpriseLibrary.Logging.dll	6f785c20eae305a430d1bfc358d8a54b3a218238fd3a444ca29aba1e77108fa8
Program Files (x86)\Dominion Voting Systems\Adjudication Client\Microsoft.Practices.Prism.dll	f1043059a9a6630d152bb6a56effb3f1e295546ab4cf791487762571866b740f
Program Files (x86)\Dominion Voting Systems\Adjudication Client\Microsoft.Practices.Prism.UnityExtensions.dll	01762c0060c3a080c3f99c6b7b8574643a904b360be2bd006484b3e00be0cbff
Program Files (x86)\Dominion Voting Systems\Adjudication Client\Microsoft.Practices.ServiceLocation.dll	2028dba77ffefc0fb9f3cf5aba68868d6f706cb2599b1a67d5784d1cc411ccf7
Program Files (x86)\Dominion Voting Systems\Adjudication Client\Microsoft.Practices.Unity.Configuration.dll	d91f9863439bd849889105ecc3182eb1dc14e8e6bcb7aa33b9058b5e837ea271
Program Files (x86)\Dominion Voting Systems\Adjudication Client\Microsoft.Practices.Unity.dll	201655cd2f641ac05e450fb03ce763afbc5e859d6ce1a25ae7fef3c27a2ee39a
Program Files (x86)\Dominion Voting Systems\Adjudication Client \Microsoft.Practices.Unity.Interception.dll	79ec0b9b9752fe63c0c37bc4217c2e7d9ea33016107e3870d5e61889eb8cc3e3
Program Files (x86)\Dominion Voting Systems\Adjudication Client\Modules\DVS.Adjudication.Clients.AdjudicationClient.Module.dll	6e51b3c847ce90e67314f2a0b691448f68b412bfc18a89cb7914792165b836c4
Program Files (x86)\Dominion Voting Systems\Adjudication Client\Modules\DVS.Adjudication.Domain.dll	27fb3194185ddcfe4814bff84e3a8c6c9394eb7937e632c0c573ded596851f10
Program Files (x86)\Dominion Voting Systems\Adjudication Client\Modules\DVS.Adjudication.Services.Data.Contract.dll	85c6fe8ba99309224162f47200209e7051a6082141c98291166a77586874cccc
Program Files (x86)\Dominion Voting Systems\Adjudication Client\Modules\DVS.Tabulation.Domain.dll	560e67fe10fb370119bcf3a43a22620b2d05699a93e5600c2782ca37eb5ecede
Program Files (x86)\Dominion Voting Systems\Adjudication Client\Modules\EntityFramework.dll	ed6ebd749052f9018f6699671ae5469adedf086cf8b1bd4256bbe9c4e7f6ff05
Program Files (x86)\Dominion Voting Systems\Adjudication Client\Modules\EntityFramework.SqlServer.dll	a1bf6c9e3820e83f43e9f20dd7d9b0a3362a93146f0afe0b1330185e2d51b0cb
Program Files (x86)\Dominion Voting Systems\Adjudication Client\Modules\InfragisticsWPF4.Controls.Reports.v13.1.dll	0b48851dd13827e8e823309de69903a5343f31c05f7d0e3dc73753ff7055b6ff
Program Files (x86)\Dominion Voting Systems\Adjudication Client\Modules\InfragisticsWPF4.Models.Data.v13.1.dll	4c8c0860c7adc2007fde5e242086df7f52807907dba5e21cfb9569f56e65e271
Program Files (x86)\Dominion Voting Systems\Adjudication Client\Modules\InfragisticsWPF4.Models.Presentation.v13.1.dll	f778ce2c251ffa7b029148b0cf126a71e30a1a16a98f23f8494bb40bb1bb1a07
Program Files (x86)\Dominion Voting Systems\Adjudication Client\Modules\InfragisticsWPF4.Reports.Client.v13.1.dll	a5bc22bda49b24597b3572be6c72b897c7b58765a836034042dcaddb6b217765

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Program Files (x86)\Dominion Voting Systems\Adjudication Client\Modules\InfragisticsWPF4.Reports.Controls.Charts.XamDataChart.v13.1.dll	35e8f99e2c29ef2fe8c877eb1d55e83597b5bf9c51cccbfffebaa02805ee6284
Program Files (x86)\Dominion Voting Systems\Adjudication Client\Modules\InfragisticsWPF4.Reports.Controls.Common.v13.1.dll	cc7b06a5d334d2bdb00318ce79a67e79f765d4ce9315b40fbb3a562c3a83a657
Program Files (x86)\Dominion Voting Systems\Adjudication Client\Modules\InfragisticsWPF4.Reports.Controls.DataVisualization.v13.1.dll	68305b8f0656ad80af0aa7518acb2f17f7d6fda1d8a0c364fd0ad9e4efc1aa98
Program Files (x86)\Dominion Voting Systems\Adjudication Client\Modules\InfragisticsWPF4.Reports.Excel.v13.1.dll	ee89a298f47ece1187244d347ba07589f16a850a0cead18c5524d7d1902aa3e3
Program Files (x86)\Dominion Voting Systems\Adjudication Client\Modules\InfragisticsWPF4.Reports.Pdf.v13.1.dll	c0c2596ebed8b0ad5fbc657481e72789d9f4a03623bf73b738a08a73e6b24e9c
Program Files (x86)\Dominion Voting Systems\Adjudication Client\Moduless\InfragisticsWPF4.Reports.v13.1.dll	770f62761c34ed3208f817436263d47b713eee79f0c6c833f913da2d8a14e57e
Program Files (x86)\Dominion Voting Systems\Adjudication Client\Modules\Microsoft.Expression.Drawing.dll	c4f7b7d98db894d7b19d2dd25b0b1987d195778b35302152ed3d5e4f3e5901a4
Program Files (x86)\Dominion Voting Systems\Adjudication Client\Modules\ToggleSwitch.dll	e8d5bbabd2551547bdcf06dac30b4c9297a6f76f55ba2b8f382a5f8abf6ade43
Program Files (x86)\Dominion Voting Systems\Adjudication Client\Modules\TreeViewEx.dll	573a2f18cb21295a135a0eeb46cf632a0e8c3dc18ff0b40f1edac9d4af7f7a89
Program Files (x86)\Dominion Voting Systems\Adjudication Client\openssl.cnf	0414ea6e5553e4a0ecdc1d78878efee4727e58e7d792c19f0b4521e98ac772df
Program Files (x86)\Dominion Voting Systems\Adjudication Client\openssl.exe	2634dd8cb1438d50dedb034ae6fff3fb1282dde84696f927b53b05b02f6484ca
Program Files (x86)\Dominion Voting Systems\Adjudication Clien\SecurityKeyInstaller.exe	bf02bb8bc766c46694ec5ff4cbfbc39df1c7c57abadb8d0abdc3e85874c67a9a
Program Files (x86)\Dominion Voting Systems\Adjudication Client\SecurityKeyInstaller.exe.config	1d71ccbf93cad99bb4873c4372bd6c9e997ce22d87b716b73f85d77b7cfa84e0
Program Files (x86)\Dominion Voting Systems\Adjudication Client\ssleay32.dll	28f2fe4d27b694023255f8dbfa6e30ff81d3155c12bd0060e30bd7c39e4ea19f
Table C.2 Adj Client 32bit	
Version: 5.5.32.1 32-bit	
Filename	**SHA-256 Value**
Program Files (x86)\Dominion Voting Systems\Adjudication Client\AdjudicationClient.exe	5b07834c5bb79c542df57fadb9dc6ddd37159d2d9318a2be20edc0762a71d14a
Program Files (x86)\Dominion Voting Systems\Adjudication Client\AdjudicationClient.exe.config	ac104ab9b4f2c5921f8dd2ad8c2042c5c1313315bb94f31b770a3c932e26c484
Program Files (x86)\Dominion Voting Systems\Adjudication Client\BitMiracle.LibTiff.NET.dll	f752a459a1eb5d35c597ff26437a75cc9aff7a5ca1d4fcdb2bc08ded5cb71465
Program Files (x86)\Dominion Voting Systems\Adjudication Client\DVS.Common.dll	2350a09486f0bc62c96607b6ea70e1edf9731803a5ef622302144a9fe043bb00
Program Files (x86)\Dominion Voting Systems\Adjudication Client\DVS.EMS.Infrastructure.dll	08bff90e689c25cf3e4a23b91e11932e5d868c7ec12455ca6794937414116c91
Program Files (x86)\Dominion Voting Systems\Adjudication Client\DVS.EMS.Services.Common.dll	636fda238c8c96e2fd25a6d6af897558950c2694be398fbecc8f681a3952bdbd
Program Files (x86)\Dominion Voting Systems\Adjudication Client\DVS.Utilities.Common.dll	d5fa1b91e9e915eaa2a3801bae98166c0fb3dd33353e9fde951b2409104f6b2a
Program Files (x86)\Dominion Voting Systems\Adjudication Client\DVS.Windows.dll	b3ecc7e75b0eef7c86e2faf4bab3485f97822a1ca48dd0b73905b78925a96839
Program Files (x86)\Dominion Voting Systems\Adjudication Client\itextsharp.dll	f6576c783a8db98c4a09919ea0a8b8bff70ac1729d3aa2935e07c6e639f25070
Program Files (x86)\Dominion Voting Systems\Adjudication Client\libeay32.dll	d11e92f738e6f1ac5b8ba1393d2ae3378ba55757822a856da3a9cba9fe124723
Program Files (x86)\Dominion Voting Systems\Adjudication Client\logging.config	814817711f24e4b213db6cd3766f5ab8ecb402e7cf57c2c61f64653e1d284c69

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Program Files (x86)\Dominion Voting Systems\Adjudication Client\Microsoft.Practices.EnterpriseLibrary.Common.dll	cb0153495092cab9bb80803c51b25f00a550deae28b35007c60888dbc1529673
Program Files (x86)\Dominion Voting Systems\Adjudication Client\Microsoft.Practices.EnterpriseLibrary.Logging.dll	6f785c20eae305a430d1bfc358d8a54b3a218238fd3a444ca29aba1e77108fa8
Program Files (x86)\Dominion Voting Systems\Adjudication Client\Microsoft.Practices.Prism.dll	f1043059a9a6630d152bb6a56effb3f1e295546ab4cf791487762571866b740f
Program Files (x86)\Dominion Voting Systems\Adjudication Client\Microsoft.Practices.Prism.UnityExtensions.dll(	01762c0060c3a080c3f99c6b7b8574643a904b360be2bd006484b3e00be0cbff
Program Files (x86)\Dominion Voting Systems\Adjudication Client\Microsoft.Practices.ServiceLocation.dll	2028dba77ffefc0fb9f3cf5aba68868d6f706cb2599b1a67d5784d1cc411ccf7
Program Files (x86)\Dominion Voting Systems\Adjudication Client\Microsoft.Practices.Unity.Configuration.dll(	d91f9863439bd849889105ecc3182eb1dc14e8e6bcb7aa33b9058b5e837ea271
Program Files (x86)\Dominion Voting Systems\Adjudication Client\Microsoft.Practices.Unity.dll	201655cd2f641ac05e450fb03ce763afbc5e859d6ce1a25ae7fef3c27a2ee39a
Program Files (x86)\Dominion Voting Systems\Adjudication Client\Microsoft.Practices.Unity.Interception.dll	79ec0b9b9752fe63c0c37bc4217c2e7d9ea33016107e3870d5e61889eb8cc3e3
Program Files (x86)\Dominion Voting Systems\Adjudication Client\Modules\DVS.Adjudication.Clients.AdjudicationClient.Module.dll	6e51b3c847ce90e67314f2a0b691448f68b412bfc18a89cb7914792165b836c4
Program Files (x86)\Dominion Voting Systems\Adjudication Client\Modules\DVS.Adjudication.Domain.dll	27fb3194185ddcfe4814bff84e3a8c6c9394eb7937e632c0c573ded596851f10
Program Files (x86)\Dominion Voting Systems\Adjudication Client\Modules\DVS.Adjudication.Services.Data.Contract.dll	85c6fe8ba99309224162f47200209e7051a6082141c98291166a77586874cccc
Program Files (x86)\Dominion Voting Systems\Adjudication Client\Modules\DVS.Tabulation.Domain.dll	560e67fe10fb370119bcf3a43a22620b2d05699a93e5600c2782ca37eb5ecede
Program Files (x86)\Dominion Voting Systems\Adjudication Client\Modules\EntityFramework.dll	ed6ebd749052f9018f6699671ae5469adedf086cf8b1bd4256bbe9c4e7f6ff05
Program Files (x86)\Dominion Voting Systems\Adjudication Client\Modules\EntityFramework.SqlServer.dll	a1bf6c9e3820e83f43e9f20dd7d9b0a3362a93146f0afe0b1330185e2d51b0cb
Program Files (x86)\Dominion Voting Systems\Adjudication Client\Modules\InfragisticsWPF4.Controls.Reports.v13.1.dll	0b48851dd13827e8e823309de69903a5343f31c05f7d0e3dc73753ff7055b6ff
Program Files (x86)\Dominion Voting Systems\Adjudication Client\Modules\InfragisticsWPF4.Models.Data.v13.1.dll	4c8c0860c7adc2007fde5e242086df7f52807907dba5e21cfb9569f56e65e271
Program Files (x86)\Dominion Voting Systems\Adjudication Client\Modules\InfragisticsWPF4.Models.Presentation.v13.1.dll	f778ce2c251ffa7b029148b0cf126a71e30a1a16a98f23f8494bb40bb1bb1a07
Program Files (x86)\Dominion Voting Systems\Adjudication Client\Modules\InfragisticsWPF4.Reports.Client.v13.1.dll	a5bc22bda49b24597b3572be6c72b897c7b58765a836034042dcaddb6b217765
Program Files (x86)\Dominion Voting Systems\Adjudication Client\Modules\InfragisticsWPF4.Reports.Controls.Charts.XamDataChart.v13.1.dll	35e8f99e2c29ef2fe8c877eb1d55e83597b5bf9c51cccbfffebaa02805ee6284
Program Files (x86)\Dominion Voting Systems\Adjudication Client\Modules\InfragisticsWPF4.Reports.Controls.Common.v13.1.dll	cc7b06a5d334d2bdb00318ce79a67e79f765d4ce9315b40fbb3a562c3a83a657
Program Files (x86)\Dominion Voting Systems\Adjudication Client\Modules\InfragisticsWPF4.Reports.Controls.DataVisualization.v13.1.dll	68305b8f0656ad80af0aa7518acb2f17f7d6fda1d8a0c364fd0ad9e4efc1aa98
Program Files (x86)\Dominion Voting Systems\Adjudication Client\Modules\InfragisticsWPF4.Reports.Excel.v13.1.dll	ee89a298f47ece1187244d347ba07589f16a850a0cead18c5524d7d1902aa3e3
Program Files (x86)\Dominion Voting Systems\Adjudication Client\Modules\InfragisticsWPF4.Reports.Pdf.v13.1.dll	c0c2596ebed8b0ad5fbc657481e72789d9f4a03623bf73b738a08a73e6b24e9c
Program Files (x86)\Dominion Voting Systems\Adjudication Client\Modules\InfragisticsWPF4.Reports.v13.1.dll	770f62761c34ed3208f817436263d47b713eee79f0c6c833f913da2d8a14e57e
Program Files (x86)\Dominion Voting Systems\Adjudication Client\Modules\Microsoft.Expression.Drawing.dll	c4f7b7d98db894d7b19d2dd25b0b1987d195778b35302152ed3d5e4f3e5901a4
Program Files (x86)\Dominion Voting Systems\Adjudication Client\Modules\ToggleSwitch.dll	e8d5bbabd2551547bdcf06dac30b4c9297a6f76f55ba2b8f382a5f8abf6ade43
Program Files (x86)\Dominion Voting Systems\Adjudication Client\Modules\TreeViewEx.dll	573a2f18cb21295a135a0eeb46cf632a0e8c3dc18ff0b40f1edac9d4af7f7a89
Program Files (x86)\Dominion Voting Systems\Adjudication Client\openssl.cnf	0414ea6e5553e4a0ecdc1d78878efee4727e58e7d792c19f0b4521e98ac772df
Program Files (x86)\Dominion Voting Systems\Adjudication Client\openssl.exe	2634dd8cb1438d50dedb034ae6fff3fb1282dde84696f927b53b05b02f6484ca
Program Files (x86)\Dominion Voting Systems\Adjudication Client\SecurityKeyInstaller.exe	bf02bb8bc766c46694ec5ff4cbfbc39df1c7c57abadb8d0abdc3e85874c67a9a

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Program Files (x86)\Dominion Voting Systems\Adjudication Client\SecurityKeyInstaller.exe.config	1d71ccbf93cad99bb4873c4372bd6c9e997ce22d87b716b73f85d77b7cfa84e0
Program Files (x86)\Dominion Voting Systems\Adjudication Client\ssleay32.dll	28f2fe4d27b694023255f8dbfa6e30ff81d3155c12bd0060e30bd7c39e4ea19f
Table C.3 EMS Adj Services	
Version: 5.5.32.1 32-bit	
Filename	**SHA-256 Value**
Program Files (x86)\Dominion Voting Systems\Adjudication Services\DVS.Adjudication.Domain.dll	9f8746c6a59c432843256bf3476400a82d46b759b1e6a5f74c0812d97b157dc9
Program Files (x86)\Dominion Voting Systems\Adjudication Services\DVS.Adjudication.Infrastructure.dll	f8daea1ac561f05ec9340c9abbd45fcdf4e72b849441f97eaa6218763f5e4022
Program Files (x86)\Dominion Voting Systems\Adjudication Services\DVS.Adjudication.Services.AdjudicableBallots.exe	5fbaec17b94dbd920c9d13c3b1a8ff65fa00432f9594fe5da8bda0885ce6cf29
Program Files (x86)\Dominion Voting Systems\Adjudication Services\DVS.Adjudication.Services.AdjudicableBallots.exe.config	337914861856c639b4c11f133d47056ebf4bc7871c52dc9fa8029c4e915728fc
Program Files (x86)\Dominion Voting Systems\Adjudication Services\DVS.Adjudication.Services.BallotCompletion.exe	d95f52e744429c246df76c19ce3cff375232ea2a236bba5703cdf36a3ab40f9d
Program Files (x86)\Dominion Voting Systems\Adjudication Services\DVS.Adjudication.Services.BallotCompletion.exe.config	a8f9344258be97aa2ffc1f6388eb13d41613dd9836b5956d4d560b4f674d78dc
Program Files (x86)\Dominion Voting Systems\Adjudication Services\DVS.Adjudication.Services.BallotPreparation.exe	1bd292025498c40ce8811f0158deb6fb3453c38c977bba9872b3f57dbb2356fd
Program Files (x86)\Dominion Voting Systems\Adjudication Services\DVS.Adjudication.Services.BallotPreparation.exe.config	33ded77e4651b65a455002de767693d5ab5e571b28f9f842e0c9fdbd3b8829ad
Program Files (x86)\Dominion Voting Systems\Adjudication Services\DVS.Adjudication.Services.BatchCompletion.exe	1237c952cedcd3598f0d4f95f448f0d4224f4aa34dda88d6abc3bd1afc6473cd
Program Files (x86)\Dominion Voting Systems\Adjudication Services\DVS.Adjudication.Services.BatchCompletion.exe.config	95a9b4eac8ee586433b2a3950fad2b9f5a51c006a215a0e7f63ae23e47386a58
Program Files (x86)\Dominion Voting Systems\Adjudication Services\DVS.Adjudication.Services.Data.Contract.dll	3ed105b94c6e82b9088731a757b2ab33568da73d56eded52bcc999255238c5e5
Program Files (x86)\Dominion Voting Systems\Adjudication Services\DVS.Adjudication.Services.Data.Service.exe	74cec5b8f65130dd01425e7183eca1b3e9ceebbfe2f01760ede39d3f037e72d2
Program Files (x86)\Dominion Voting Systems\Adjudication Services\DVS.Adjudication.Services.Data.Service.exe.config	eb6da607acefb4be4e7a3a1b8a4f9cd6aa9d1c029943956bb1346a267e22e3b2
Program Files (x86)\Dominion Voting Systems\Adjudication Services\DVS.Adjudication.Services.ReportBuilder.exe	f0f13ae37b9c7b5bf1179ad362f517e7541aa00225bb57654a8aa2ec04eafefa
Program Files (x86)\Dominion Voting Systems\Adjudication Services\DVS.Adjudication.Services.ReportBuilder.exe.config	1b0f7a3f57e6c441721b9ed2b63af97ae7d392412564a594103a964f7e1ba61e
Program Files (x86)\Dominion Voting Systems\Adjudication Services\DVS.Adjudication.Services.Reports.exe	f9c503f576eae620ed7d7b13df57dbb1ac192d9b536d7365d161b38afa039d27
Program Files (x86)\Dominion Voting Systems\Adjudication Services\DVS.Adjudication.Services.Reports.exe.config	7f450aed688cbdddfc85f99f4888624dbe771737734d90920d2457c2bb2d7751
Program Files (x86)\Dominion Voting Systems\Adjudication Services\DVS.Adjudication.Services.Statistics.exe	ef07b38e5277f9ec5913a283368af2edfa192d4bd6a5ab32d319b96ea2899dd4
Program Files (x86)\Dominion Voting Systems\Adjudication Services\DVS.Adjudication.Services.Statistics.exe.config	20d7febadf8a26344c46eba61aed888fea0198b5ad1726ef91d311ef396a5994
Program Files (x86)\Dominion Voting Systems\Adjudication Services\DVS.Common.dll	48926474d56abcc45582d09a8f7adb1e904c427da1f01c6da8b785ec685a07dd
Program Files (x86)\Dominion Voting Systems\Adjudication Services\DVS.EMS.Infrastructure.dll	6fda6b66a32f9a1cb02358293d59e267bf5a1184b99d1fabb7e5b89b98408304
Program Files (x86)\Dominion Voting Systems\Adjudication Services\DVS.EMS.Services.Common.dll	813fd8806c900759522949e38d283bc6267ab3f4779c56f644a2e5dc15e42f9c
Program Files (x86)\Dominion Voting Systems\Adjudication Services\DVS.EMS.Services.ElectionData.Contract.dll	cee96e034d2a5de3ee4256a5e2044e85991f50f0b008e3951891326da124242e
Program Files (x86)\Dominion Voting Systems\Adjudication Services\DVS.Tabulation.Domain.dll	88c1246b2abc73ef3778c2be61f8d9f6ffb0ac48505a332c0d6910fbef73f3ef
Program Files (x86)\Dominion Voting Systems\Adjudication Services\DVS.Tabulation.Services.ElectionFileManager.Contract.dll	9fb89285eeaaec64b842a08a92aaf32d33d29aaa4d8a1f56bea82ecc15082580
Program Files (x86)\Dominion Voting Systems\Adjudication Services\EntityFramework.dll	ed6ebd749052f9018f6699671ae5469adedf086cf8b1bd4256bbe9c4e7f6ff05
Program Files (x86)\Dominion Voting Systems\Adjudication Services\EntityFramework.SqlServer.dll	a1bf6c9e3820e83f43e9f20dd7d9b0a3362a93146f0afe0b1330185e2d51b0cb

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Program Files (x86)\Dominion Voting Systems\Adjudication Services\libeay32.dll	d11e92f738e6f1ac5b8ba1393d2ae3378ba55757822a856da3a9cba9fe124723
Program Files (x86)\Dominion Voting Systems\Adjudication Services\Microsoft.IdentityModel.dll	fd50c4488ab275dd892ca8ed1adb0d125c6c59381b59a1ae5d9f2a299781239b
Program Files (x86)\Dominion Voting Systems\Adjudication Services\Microsoft.Practices.EnterpriseLibrary.Common.dll	cb0153495092cab9bb80803c51b25f00a550deae28b35007c60888dbc1529673
Program Files (x86)\Dominion Voting Systems\Adjudication Services\Microsoft.Practices.EnterpriseLibrary.Logging.dll	6f785c20eae305a430d1bfc358d8a54b3a218238fd3a444ca29aba1e77108fa8
Program Files (x86)\Dominion Voting Systems\Adjudication Services\Microsoft.Practices.ServiceLocation.dll	2028dba77ffefc0fb9f3cf5aba68868d6f706cb2599b1a67d5784d1cc411ccf7
Program Files (x86)\Dominion Voting Systems\Adjudication Services\Microsoft.Practices.Unity.Configuration.dll	d91f9863439bd849889105ecc3182eb1dc14e8e6bcb7aa33b9058b5e837ea271
Program Files (x86)\Dominion Voting Systems\Adjudication Services\Microsoft.Practices.Unity.dll	201655cd2f641ac05e450fb03ce763afbc5e859d6ce1a25ae7fef3c27a2ee39a
Program Files (x86)\Dominion Voting Systems\Adjudication Services\Microsoft.Practices.Unity.Interception.dll	79ec0b9b9752fe63c0c37bc4217c2e7d9ea33016107e3870d5e61889eb8cc3e3
Program Files (x86)\Dominion Voting Systems\Adjudication Services\openssl.cnf	0414ea6e5553e4a0ecdc1d78878efee4727e58e7d792c19f0b4521e98ac772df
Program Files (x86)\Dominion Voting Systems\Adjudication Services\openssl.exe	2634dd8cb1438d50dedb034ae6fff3fb1282dde84696f927b53b05b02f6484ca
Program Files (x86)\Dominion Voting Systems\Adjudication Services\ssleay32.dll	28f2fe4d27b694023255f8dbfa6e30ff81d3155c12bd0060e30bd7c39e4ea19f
EMS Server Installed Files Hash Values	
Adjudication Client Application	
Version: 5.5.32.1	
Filename	**SHA-256 Value**
Program Files (x86)\ Dominion Voting Systems\Adjudication Client\ AdjudicationClient.exe	5b07834c5bb79c542df57fadb9dc6ddd37159d2d9318a2be20edc0762a71d14a
Program Files (x86)\ Dominion Voting Systems\Adjudication Client\ AdjudicationClient.exe.config	ac104ab9b4f2c5921f8dd2ad8c2042c5c1313315bb94f31b770a3c932e26c484
Program Files (x86)\ Dominion Voting Systems\Adjudication Client\ BitMiracle.LibTiff.NET.dll	f752a459a1eb5d35c597ff26437a75cc9aff7a5ca1d4fcdb2bc08ded5cb71465
Program Files (x86)\ Dominion Voting Systems\Adjudication Client\ DVS.Common.dll	2350a09486f0bc62c96607b6ea70e1edf9731803a5ef622302144a9fe043bb00
Program Files (x86)\ Dominion Voting Systems\Adjudication Client\ DVS.EMS.Infrastructure.dll	08bff90e689c25cf3e4a23b91e11932e5d868c7ec12455ca6794937414116c91
Program Files (x86)\ Dominion Voting Systems\Adjudication Client\ DVS.EMS.Services.Common.dll	636fda238c8c96e2fd25a6d6af897558950c2694be398fbecc8f681a3952bdbd
Program Files (x86)\ Dominion Voting Systems\Adjudication Client\ DVS.Utilities.Common.dll	d5fa1b91e9e915eaa2a3801bae98166c0fb3dd33353e9fde951b2409104f6b2a
Program Files (x86)\ Dominion Voting Systems\Adjudication Client\ DVS.Windows.dll	b3ecc7e75b0eef7c86e2faf4bab3485f97822a1ca48dd0b73905b78925a96839
Program Files (x86)\ Dominion Voting Systems\ Adjudication Client\ itextsharp.dll	f6576c783a8db98c4a09919ea0a8b8bff70ac1729d3aa2935e07c6e639f25070
Program Files (x86)\ Dominion Voting Systems\ Adjudication Client\ libeay32.dll	d11e92f738e6f1ac5b8ba1393d2ae3378ba55757822a856da3a9cba9fe124723
Program Files (x86)\ Dominion Voting Systems\ Adjudication Client\ logging.config	814817711f24e4b213db6cd3766f5ab8ecb402e7cf57c2c61f64653e1d284c69
Program Files (x86)\Dominion Voting Systems\AdjudicationClient\Microsoft.Practices.EnterpriseLibrary.Common.dll	cb0153495092cab9bb80803c51b25f00a550deae28b35007c60888dbc1529673
Program Files (x86)\Dominion Voting Systems\AdjudicationClient\Microsoft.Practices.EnterpriseLibrary.Logging.dll	6f785c20eae305a430d1bfc358d8a54b3a218238fd3a444ca29aba1e77108fa8
Program Files (x86)\ Dominion Voting Systems\Adjudication Client\ Microsoft.Practices.Prism.dll	f1043059a9a6630d152bb6a56effb3f1e295546ab4cf791487762571866b740f
Program Files (x86)\Dominion Voting Systems\AdjudicationClient\Microsoft.Practices.Prism.UnityExtensions.dll	01762c0060c3a080c3f99c6b7b8574643a904b360be2bd006484b3e00be0cbff

Program Files (x86)\ Dominion Voting Systems\Adjudication Client\ Microsoft.Practices.ServiceLocation.dll	2028dba77ffefc0fb9f3cf5aba68868d6f706cb2599b1a67d5784d1cc411ccf7
Program Files (x86)\Dominion Voting Systems\AdjudicationClient\Microsoft.Practices.Unity.Configuration.dll	d91f9863439bd849889105ecc3182eb1dc14e8e6bcb7aa33b9058b5e837ea271
C.1 EMS Server Installed Files Hash Values	
C.1.1 Adjudication Client Application	
Version: 5.5.32.1	
Filename	**SHA-256 Value**
Program Files (x86)\ Dominion Voting Systems\Adjudication Client\ AdjudicationClient.exe	5b07834c5bb79c542df57fadb9dc6ddd37159d2d9318a2be20edc0762a71d14a
Program Files (x86)\ Dominion Voting Systems\Adjudication Client\ AdjudicationClient.exe.config	ac104ab9b4f2c5921f8dd2ad8c2042c5c1313315bb94f31b770a3c932e26c484
Program Files (x86)\ Dominion Voting Systems\Adjudication Client\ BitMiracle.LibTiff.NET.dll	f752a459a1eb5d35c597ff26437a75cc9aff7a5ca1d4fcdb2bc08ded5cb71465
Program Files (x86)\ Dominion Voting Systems\Adjudication Client\ DVS.Common.dll	2350a09486f0bc62c96607b6ea70e1edf9731803a5ef622302144a9fe043bb00
Program Files (x86)\ Dominion Voting Systems\Adjudication Client\ DVS.EMS.Infrastructure.dll	08bff90e689c25cf3e4a23b91e11932e5d868c7ec12455ca6794937414116c91
Program Files (x86)\ Dominion Voting Systems\Adjudication Client\ DVS.EMS.Services.Common.dll	636fda238c8c96e2fd25a6d6af897558950c2694be398fbecc8f681a3952bdbd
Program Files (x86)\ Dominion Voting Systems\Adjudication Client\ DVS.Utilities.Common.dll	d5fa1b91e9e915eaa2a3801bae98166c0fb3dd33353e9fde951b2409104f6b2a
Program Files (x86)\ Dominion Voting Systems\Adjudication Client\ DVS.Windows.dll	b3ecc7e75b0eef7c86e2faf4bab3485f97822a1ca48dd0b73905b78925a96839
Program Files (x86)\ Dominion Voting Systems\ Adjudication Client\ itextsharp.dll	f6576c783a8db98c4a09919ea0a8b8bff70ac1729d3aa2935e07c6e639f25070
Program Files (x86)\ Dominion Voting Systems\ Adjudication Client\ libeay32.dll	d11e92f738e6f1ac5b8ba1393d2ae3378ba55757822a856da3a9cba9fe124723
Program Files (x86)\ Dominion Voting Systems\ Adjudication Client\ logging.config	814817711f24e4b213db6cd3766f5ab8ecb402e7cf57c2c61f64653e1d284c69
Program Files (x86)\Dominion Voting Systems\AdjudicationClient\Microsoft.Practices.EnterpriseLibrary.Common.dll	cb0153495092cab9bb80803c51b25f00a550deae28b35007c60888dbc1529673
Program Files (x86)\Dominion Voting Systems\AdjudicationClient\Microsoft.Practices.EnterpriseLibrary.Logging.dll	6f785c20eae305a430d1bfc358d8a54b3a218238fd3a444ca29aba1e77108fa8
Program Files (x86)\ Dominion Voting Systems\Adjudication Client\ Microsoft.Practices.Prism.dll	f1043059a9a6630d152bb6a56effb3f1e295546ab4cf791487762571866b740f
Program Files (x86)\Dominion Voting Systems\AdjudicationClient\Microsoft.Practices.Prism.UnityExtensions.dll	01762c0060c3a080c3f99c6b7b8574643a904b360be2bd006484b3e00be0cbff
Program Files (x86)\ Dominion Voting Systems\Adjudication Client\ Microsoft.Practices.ServiceLocation.dll	2028dba77ffefc0fb9f3cf5aba68868d6f706cb2599b1a67d5784d1cc411ccf7
Program Files (x86)\Dominion Voting Systems\AdjudicationClient\Microsoft.Practices.Unity.Configuration.dll	d91f9863439bd849889105ecc3182eb1dc14e8e6bcb7aa33b9058b5e837ea271
Program Files (x86)\Dominion Voting Systems\AdjudicationClient\SecurityKeyInstaller.exe	bf02bb8bc766c46694ec5ff4cbfbc39df1c7c57abadb8d0abdc3e85874c67a9a
Program Files (x86)\Dominion Voting Systems\AdjudicationClient\SecurityKeyInstaller.exe.config	1d71ccbf93cad99bb4873c4372bd6c9e997ce22d87b716b73f85d77b7cfa84e0
Program Files (x86)\ Dominion Voting Systems\ Adjudication Client\ ssleay32.dll	28f2fe4d27b694023255f8dbfa6e30ff81d3155c12bd0060e30bd7c39e4ea19f

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EMS Adjudication Services	
Version: 5.5.32.1	
Filename	**SHA-256 Value**
Program Files (x86)\Dominion Voting Systems\Adjudication Services\DVS.Adjudication.Infrastructure.dll	f8daea1ac561f05ec9340c9abbd45fcdf4e72b849441f97eaa6218763f5e4022
Program Files (x86)\Dominion Voting Systems\Adjudication Services\DVS.Adjudication.Services.AdjudicableBallots.exe	5fbaec17b94dbd920c9d13c3b1a8ff65fa00432f9594fe5da8bda0885ce6cf29
Program Files (x86)\Dominion Voting Systems\Adjudication Services\DVS.Adjudication.Services.AdjudicableBallots.exe.config	337914861856c639b4c11f133d47056ebf4bc7871c52dc9fa8029c4e915728fc
Program Files (x86)\Dominion Voting Systems\Adjudication Services\DVS.Adjudication.Services.BallotCompletion.exe	d95f52e744429c246df76c19ce3cff375232ea2a236bba5703cdf36a3ab40f9d
Program Files (x86)\Dominion Voting Systems\Adjudication Services\DVS.Adjudication.Services.BallotCompletion.exe.config	a8f9344258be97aa2ffc1f6388eb13d41613dd9836b5956d4d560b4f674d78dc
Program Files (x86)\Dominion Voting Systems\Adjudication Services\DVS.Adjudication.Services.BallotPreparation.exe	1bd292025498c40ce8811f0158deb6fb3453c38c977bba9872b3f57dbb2356fd
Program Files (x86)\Dominion Voting Systems\Adjudication Services\DVS.Adjudication.Services.BallotPreparation.exe.config	33ded77e4651b65a455002de767693d5ab5e571b28f9f842e0c9fdbd3b8829ad
Program Files (x86)\Dominion Voting Systems\Adjudication Services\DVS.Adjudication.Services.BatchCompletion.exe	1237c952cedcd3598f0d4f95f448f0d4224f4aa34dda88d6abc3bd1afc6473cd
Program Files (x86)\Dominion Voting Systems\Adjudication Services\DVS.Adjudication.Services.BatchCompletion.exe.config	95a9b4eac8ee586433b2a3950fad2b9f5a51c006a215a0e7f63ae23e47386a58
Program Files (x86)\Dominion Voting Systems\Adjudication Services\DVS.Adjudication.Services.Data.Contract.dll	3ed105b94c6e82b9088731a757b2ab33568da73d56eded52bcc999255238c5e5
Program Files (x86)\Dominion Voting Systems\Adjudication Services\DVS.Adjudication.Services.Data.Service.exe	74cec5b8f65130dd01425e7183eca1b3e9ceebbfe2f01760ede39d3f037e72d2
Program Files (x86)\Dominion Voting Systems\Adjudication Services\DVS.Adjudication.Services.Data.Service.exe.config	eb6da607acefb4be4e7a3a1b8a4f9cd6aa9d1c029943956bb1346a267e22e3b2
Program Files (x86)\Dominion Voting Systems\Adjudication Services\DVS.Adjudication.Services.ReportBuilder.exe	f0f13ae37b9c7b5bf1179ad362f517e7541aa00225bb57654a8aa2ec04eafefa
Program Files (x86)\Dominion Voting Systems\Adjudication Services\DVS.Adjudication.Services.ReportBuilder.exe.config	1b0f7a3f57e6c441721b9ed2b63af97ae7d392412564a594103a964f7e1ba61e
Program Files (x86)\Dominion Voting Systems\Adjudication Services\DVS.Adjudication.Services.Reports.exe	f9c503f576eae620ed7d7b13df57dbb1ac192d9b536d7365d161b38afa039d27
Program Files (x86)\Dominion Voting Systems\Adjudication Services\DVS.Adjudication.Services.Reports.exe.config	7f450aed688cbdddfc85f99f4888624dbe771737734d90920d2457c2bb2d7751
Program Files (x86)\Dominion Voting Systems\Adjudication Services\DVS.Adjudication.Services.Statistics.exe	ef07b38e5277f9ec5913a283368af2edfa192d4bd6a5ab32d319b96ea2899dd4
Program Files (x86)\Dominion Voting Systems\Adjudication Services\DVS.Adjudication.Services.Statistics.exe.config	20d7febadf8a26344c46eba61aed888fea0198b5ad1726ef91d311ef396a5994
Program Files (x86)\Dominion Voting Systems\Adjudication Services\DVS.Common.dll	48926474d56abcc45582d09a8f7adb1e904c427da1f01c6da8b785ec685a07dd

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Program Files (x86)\Dominion Voting Systems\Adjudication Services\DVS.EMS.Infrastructure.dll	6fda6b66a32f9a1cb02358293d59e267bf5a1184b99d1fabb7e5b89b98408304
Program Files (x86)\Dominion Voting Systems\Adjudication Services\DVS.EMS.Services.Common.dll	813fd8806c900759522949e38d283bc6267ab3f4779c56f644a2e5dc15e42f9c
Program Files (x86)\Dominion Voting Systems\Adjudication Services\DVS.EMS.Services.ElectionData.Contract.dll	cee96e034d2a5de3ee4256a5e2044e85991f50f0b008e3951891326da124242e
Program Files (x86)\Dominion Voting Systems\Adjudication Services\DVS.Tabulation.Domain.dll	88c1246b2abc73ef3778c2be61f8d9f6ffb0ac48505a332c0d6910fbef73f3ef
Program Files (x86)\Dominion Voting Systems\Adjudication Services\DVS.Tabulation.Services.ElectionFileManager.Contract.dll	9fb89285eeaaec64b842a08a92aaf32d33d29aaa4d8a1f56bea82ecc15082580
Program Files (x86)\Dominion Voting Systems\Adjudication Services\EntityFramework.dll	ed6ebd749052f9018f6699671ae5469adedf086cf8b1bd4256bbe9c4e7f6ff05
Program Files (x86)\Dominion Voting Systems\Adjudication Services\EntityFramework.SqlServer.dll	a1bf6c9e3820e83f43e9f20dd7d9b0a3362a93146f0afe0b1330185e2d51b0cb
Program Files (x86)\ Dominion Voting Systems\ Adjudication Services\ libeay32.dll	d11e92f738e6f1ac5b8ba1393d2ae3378ba55757822a856da3a9cba9fe124723
Program Files (x86)\Dominion Voting Systems\Adjudication Services\Microsoft.IdentityModel.dll	fd50c4488ab275dd892ca8ed1adb0d125c6c59381b59a1ae5d9f2a299781239b
Program Files (x86)\Dominion Voting Systems\Adjudication Services\Microsoft.Practices.EnterpriseLibrary.Common.dll	cb0153495092cab9bb80803c51b25f00a550deae28b35007c60888dbc1529673
Program Files (x86)\Dominion Voting Systems\Adjudication Services\Microsoft.Practices.EnterpriseLibrary.Logging.dll	6f785c20eae305a430d1bfc358d8a54b3a218238fd3a444ca29aba1e77108fa8
Program Files (x86)\Dominion Voting Systems\Adjudication Services\Microsoft.Practices.ServiceLocation.dll	2028dba77ffefc0fb9f3cf5aba68868d6f706cb2599b1a67d5784d1cc411ccf7
Program Files (x86)\Dominion Voting Systems\Adjudication Services\Microsoft.Practices.Unity.Configuration.dll	d91f9863439bd849889105ecc3182eb1dc14e8e6bcb7aa33b9058b5e837ea271
Program Files (x86)\Dominion Voting Systems\Adjudication Services\Microsoft.Practices.Unity.dll	201655cd2f641ac05e450fb03ce763afbc5e859d6ce1a25ae7fef3c27a2ee39a
Program Files (x86)\Dominion Voting Systems\Adjudication Services\Microsoft.Practices.Unity.Interception.dll	79ec0b9b9752fe63c0c37bc4217c2e7d9ea33016107e3870d5e61889eb8cc3e3
Program Files (x86)\ Dominion Voting Systems\ Adjudication Services\ openssl.cnf	0414ea6e5553e4a0ecdc1d78878efee4727e58e7d792c19f0b4521e98ac772df
Program Files (x86)\ Dominion Voting Systems\ Adjudication Services\ openssl.exe	2634dd8cb1438d50dedb034ae6fff3fb1282dde84696f927b53b05b02f6484ca
Program Files (x86)\ Dominion Voting Systems\ Adjudication Services\ ssleay32.dll	28f2fe4d27b694023255f8dbfa6e30ff81d3155c12bd0060e30bd7c39e4ea19f

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EMS
Election data Service

Version: 5.5.32.4 32-bit	
Filename	**SHA-256 Value**
Program Files (x86)\Dominion Voting Systems\Election Data Service\BallotCoordinates.dll	9bccd581ded96a7d99ed0000e774a656a0c0e490531ab6cc99d4ea9b01e584b0
Program Files (x86)\Dominion Voting Systems\Election Data Service\BitMiracle.LibTiff.NET.dll	f752a459a1eb5d35c597ff26437a75cc9aff7a5ca1d4fcdb2bc08ded5cb71465
Program Files (x86)\Dominion Voting Systems\Election Data Service\DVS.Common.dll	cc85e6593e7636d52935ded776e42fe68ef07f3c120bb8e12ce07f95cf45f195
Program Files (x86)\Dominion Voting Systems\Election Data Service\DVS.DemSuite.Services.Common.dll	370bce8cdb93bc5ac2b253f19b5da371121a3f17e9a0758b63beabf4996b36cb
Program Files (x86)\Dominion Voting Systems\Election Data Service\DVS.EMS.Infrastructure.dll	b17d171c2289fa26ac9983ea920dfd8e9005b9c4f044a3759cc0c7db97362546
Program Files (x86)\Dominion Voting Systems\Election Data Service\DVS.EMS.Services.Common.dll	e803c7a31d18e64bac815e3a83ecb55ff3d64d505ad7b03fee2299f913b1cf8b
Program Files (x86)\Dominion Voting Systems\Election Data Service\DVS.EMS.Services.ElectionData.Contract.dll	8b0ab5f0ada036fa7a925c8a664f22404eefdc6cc0077467ab5883f62d316914
Program Files (x86)\Dominion Voting Systems\Election Data Service\DVS.EMS.Services.ElectionData.ElectionDataService.Domain.dll	ffe93d06a31ba0abaf99df4c03bef751aedc431471704124539cef5ecf39d63d
Program Files (x86)\Dominion Voting Systems\Election Data Service\DVS.EMS.Services.ElectionData.ElectionDataService.exe	555c84ff6bf35897f646d88cc117e00a4df6f2d0dcbf8f50a66ed18936cbc01d
Program Files (x86)\Dominion Voting Systems\Election Data Service\DVS.EMS.Services.ElectionData.ElectionDataService.exe.config	98a15ba31fde5fa654323c75f831d052f46ae9575071b661972a643ad84de383
Program Files (x86)\Dominion Voting Systems\Election Data Service\DVS.EMS.Services.ElectionService.Contract.dll	38eb4c6f93f463d19d36531172b41cfe9a5633f14314853d76c184ce553c4532
Program Files (x86)\Dominion Voting Systems\Election Data Service\DVS.Utilities.Common.dll	d5fa1b91e9e915eaa2a3801bae98166c0fb3dd33353e9fde951b2409104f6b2a
Program Files (x86)\ Dominion Voting Systems\ Election Data Service\ itextsharp.dll	f6576c783a8db98c4a09919ea0a8b8bff70ac1729d3aa2935e07c6e639f25070
Program Files (x86)\Dominion Voting Systems\Election Data Service\Microsoft.IdentityModel.dll	fd50c4488ab275dd892ca8ed1adb0d125c6c59381b59a1ae5d9f2a299781239b
Program Files (x86)\Dominion Voting Systems\Election Data Service\Microsoft.Practices.EnterpriseLibrary.Common.dll	cb0153495092cab9bb80803c51b25f00a550deae28b35007c60888dbc1529673
Program Files (x86)\Dominion Voting Systems\Election Data Service\Microsoft.Practices.EnterpriseLibrary.Data.dll	ab6cfbf4865f164e2fba93d8187293f24927e267ca9960e51b3df63461bdffdb
Program Files (x86)\Dominion Voting Systems\Election Data Service\Microsoft.Practices.EnterpriseLibrary.Logging.dll	6f785c20eae305a430d1bfc358d8a54b3a218238fd3a444ca29aba1e77108fa8
Program Files (x86)\Dominion Voting Systems\Election Data Service\Microsoft.Practices.ServiceLocation.dll	2028dba77ffefc0fb9f3cf5aba68868d6f706cb2599b1a67d5784d1cc411ccf7
Program Files (x86)\Dominion Voting Systems\Election Data Service\Microsoft.Practices.Unity.Configuration.dll	d91f9863439bd849889105ecc3182eb1dc14e8e6bcb7aa33b9058b5e837ea271
Program Files (x86)\Dominion Voting Systems\Election Data Service\Microsoft.Practices.Unity.dll	201655cd2f641ac05e450fb03ce763afbc5e859d6ce1a25ae7fef3c27a2ee39a

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Program Files (x86)\Dominion Voting Systems\Election Data Service\Microsoft.Practices.Unity.Interception.dll	79ec0b9b9752fe63c0c37bc4217c2e7d9ea33016107e3870d5e61889eb8cc3e3
Program Files (x86)\ Dominion Voting Systems\ Election Data Service\ NLog.dll	e17aac589bd48a623857de7f8113bcae6f72e4fe4652ca615ffa1028353b246d

Election File Manager

Version: 5.5.32.4 32-bit	
Filename	**SHA-256 Value**
Program Files (x86)\Dominion Voting Systems\Election File Manager\BitMiracle.LibTiff.NET.dll	f752a459a1eb5d35c597ff26437a75cc9aff7a5ca1d4fcdb2bc08ded5cb71465
Program Files (x86)\Dominion Voting Systems\Election File Manager\DVS.Common.dll	7ccfb7b1b409b50a07ac04a6c6b31c22a76bfe71b2f6532d0bafbe25a5897c9f
Program Files (x86)\Dominion Voting Systems\Election File Manager\DVS.DemocracySuite.ResultInterfaces.dll	ee3f87f31b4607bbed3a1c5361453b21fca3de70350fe0b7572e7d85b54da628
Program Files (x86)\Dominion Voting Systems\Election File Manager\DVS.DemocracySuite.ResultsDomain.dll	0e32ff2ebb5e082ab894c7087665a263d16fc10f6a7f894aace68859cb4055df
Program Files (x86)\Dominion Voting Systems\Election File Manager\DVS.DemSuite.Services.Common.dll	186a106e2540e0a9460344678bc7affd273fead2c3741fd5fa90ff91ca2d5911
Program Files (x86)\Dominion Voting Systems\Election File Manager\DVS.EMS.Infrastructure.dll	7bd39e7940c08514279b1a64c6bdc9403814c7978bdfbfa62acf9564eb44588d
Program Files (x86)\Dominion Voting Systems\Election File Manager\DVS.EMS.Services.Common.dll	61942a0914e1cde3c6b4574e86ed435ca5c666899d5f20bbfce591ebc52dc3e5
Program Files (x86)\Dominion Voting Systems\Election File Manager\DVS.EMS.Services.ElectionData.Contract.dll	f5dcf4b91bdd8002b1ce624146537c64b98d640a55096c66dd3b150c4fa113ff
Program Files (x86)\Dominion Voting Systems\Election File Manager\DVS.Tabulation.Domain.dll	d958a068983f8393360ad345043048d3815ff81a497dd53ba5fdaba5166432f3
Program Files (x86)\Dominion Voting Systems\Election File Manager\DVS.Tabulation.IO.dll	28745b1debfba21f05dd0ddddbd7a123c0b5c755b052777dd0e0cd6f96f03a49
Program Files (x86)\Dominion Voting Systems\Election File Manager\DVS.Tabulation.Services.ElectionFileManager.Contract.dll	4b4b12b0690356880a4540bdf7aeb13dc9d3223ecfd735e8c7506ca1b4811db6
Program Files (x86)\Dominion Voting Systems\Election File Manager\DVS.Tabulation.Services.ElectionFileManager.exe	c352a6ef2717cb3f1d840ec090788f11c64b95eb9ac0787de182af9846de18ec
Program Files (x86)\Dominion Voting Systems\Election File Manager\DVS.Tabulation.Services.ElectionFileManager.exe.config	05aa7da5e438d96ecdcfc6f61e8c6fa4dcc8fc8adde9cad367cae93995cfe0a5
Program Files (x86)\Dominion Voting Systems\Election File Manager\DVS.Utilities.Common.dll	d5fa1b91e9e915eaa2a3801bae98166c0fb3dd33353e9fde951b2409104f6b2a
Program Files (x86)\Dominion Voting Systems\Election File Manager\DVS.Utilities.RemoteInterfaces.dll	b379429abaced02e1bbc199e3ef79984f6e94b43fc655a8228c7dd9ced53a2bc
Program Files (x86)\Dominion Voting Systems\Election File Manager\EntityFramework.dll	ed6ebd749052f9018f6699671ae5469adedf086cf8b1bd4256bbe9c4e7f6ff05
Program Files (x86)\Dominion Voting Systems\Election File Manager\EntityFramework.SqlServer.dll	a1bf6c9e3820e83f43e9f20dd7d9b0a3362a93146f0afe0b1330185e2d51b0cb

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Program Files (x86)\Dominion Voting Systems\Election File Manager\Microsoft.IdentityModel.dll	fd50c4488ab275dd892ca8ed1adb0d125c6c59381b59a1ae5d9f2a299781239b
Program Files (x86)\Dominion Voting Systems\Election File Manager\Microsoft.Practices.EnterpriseLibrary.Common.dll	cb0153495092cab9bb80803c51b25f00a550deae28b35007c60888dbc1529673
Program Files (x86)\Dominion Voting Systems\Election File Manager\Microsoft.Practices.EnterpriseLibrary.Logging.dll	6f785c20eae305a430d1bfc358d8a54b3a218238fd3a444ca29aba1e77108fa8
Program Files (x86)\Dominion Voting Systems\Election File Manager\Microsoft.Practices.ServiceLocation.dll	2028dba77ffefc0fb9f3cf5aba68868d6f706cb2599b1a67d5784d1cc411ccf7
Program Files (x86)\Dominion Voting Systems\Election File Manager\Microsoft.Practices.Unity.Configuration.dll	d91f9863439bd849889105ecc3182eb1dc14e8e6bcb7aa33b9058b5e837ea271
Program Files (x86)\Dominion Voting Systems\Election File Manager\Microsoft.Practices.Unity.dll	201655cd2f641ac05e450fb03ce763afbc5e859d6ce1a25ae7fef3c27a2ee39a
Program Files (x86)\Dominion Voting Systems\Election File Manager\Microsoft.Practices.Unity.Interception.dll	79ec0b9b9752fe63c0c37bc4217c2e7d9ea33016107e3870d5e61889eb8cc3e3

EMS Logger

Version: 5.5.32.4 32-bit	
Filename	**SHA-256 Value**
Program Files (x86)\ Dominion Voting Systems\ EMS Logger\ EMSLogger.exe	031f812ea18dc0ddb81ec0512f7c57e47d9e5a29aa33814e7f39a49ff26829af

EMS File System Service

Version: 5.5.32.4 32-bit	
Filename	**SHA-256 Value**
Program Files (x86)\Dominion Voting Systems\File System Service\BitMiracle.LibTiff.NET.dll	f752a459a1eb5d35c597ff26437a75cc9aff7a5ca1d4fcdb2bc08ded5cb71465
Program Files (x86)\Dominion Voting Systems\File System Service\DVS.Utilities.BinaryFileAccess2007.dll	0b4ac965c5e6ebfb50c1d048ea6d8495f282d721588260be7202372349bd69f3
Program Files (x86)\Dominion Voting Systems\File System Service\DVS.Utilities.Common.dll	74a63eb1d4802a541fba87d81156bd883f03eaa37324b2478b8b21734162d7df
Program Files (x86)\Dominion Voting Systems\File System Service\DVS.Utilities.FileSystemService.exe	31fdaa78195ead39a18346f07b47054dab113b2a2e515eba4703df76d5fa7d82
Program Files (x86)\Dominion Voting Systems\File System Service\DVS.Utilities.FileSystemService.exe.config	f55c5126aeefaf4d3df8a2c372bf849e90779198e02fe6e3ab8d228950b5fee1
Program Files (x86)\Dominion Voting Systems\File System Service\DVS.Utilities.MSWinManager.dll	604e9d6d334dfe102085efb422e33e4f408b7b3610665485ee45ad5a5a89d110
Program Files (x86)\Dominion Voting Systems\File System Service\DVS.Utilities.RemoteInterfaces.dll	8793db0a0539383ea5d09680ea15ed2c6fe2b4710072129f647ac7e41443e8d3
Program Files (x86)\Dominion Voting Systems\File System Service\DVS.Utilities.UsbFileSystem.dll	c7cc73eb9ea756bcb22c4eb1119366fd34c22033276b43e01e5b71203d2206d0
Program Files (x86)\Dominion Voting Systems\File System Service\EMSFSSCustomAction.CA.dll	e571ca8afcd92f14b49f70e816a7fd0ec427a8d6ebcdc120fc6de0f12b98497c

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Program Files (x86)\Dominion Voting Systems\File System Service\EMSFSSCustomAction.dll	19dc28faff20c6999af6c4bc0d987c2e087c5ded10545d11115b42ec2a76c0b6
Program Files (x86)\ Dominion Voting Systems\ File System Service\ itextsharp.dll	beb5c25eb5f659cbb2574f3eaddda35c5b18e860558daac4533b4ed98e29bd55
Program Files (x86)\ Dominion Voting Systems\ File System Service\ Log\ Error.log	935fa21033735ad183aba3845b45105ccae03f5b3436d00ef4d1a302db71c238
Program Files (x86)\ Dominion Voting Systems\ File System Service\ Log\ Info.log	f5b7407d443d1c2e7a4282b2f4cf93fa9acda38c19930b08dc404be2a45ce867
Program Files (x86)\ Dominion Voting Systems\ File System Service\ Log\ Trace.log	e520a1bb61d55112c50d11c866d6616705ca022956f0b85ae67fa965a88c56aa
Program Files (x86)\Dominion Voting Systems\File System Service\Microsoft.Deployment.WindowsInstaller.dll	9aebc76cb8c864593e0419162b2bf40b81bd52b3ff12edac1d032828df83dcfa
Program Files (x86)\Dominion Voting Systems\File System Service\Microsoft.Web.Administration.dll	5b28ceefb320c6a808cb352385ae4523fbecc676af1cb091ceb1789b3b83aefc
Program Files (x86)\ Dominion Voting Systems\ File System Service\ NLog.config	e50f1d10b846dbecd44ddba2f54a858e38427858cb1d0038a63a0a4b4c9bdd28
Program Files (x86)\ Dominion Voting Systems\ File System Service\ NLog.dll	e17aac589bd48a623857de7f8113bcae6f72e4fe4652ca615ffa1028353b246d
Program Files (x86)\ Dominion Voting Systems\ File System Service\ nlogError.txt	1c3ca32f1ec3c92572309b6f4ea5270e8290b34ffdbcd83b811a2eaa3b94d1b7
Program Files (x86)\ Dominion Voting Systems\ File System Service\ Renci.SshNet.dll	451ba700ecb5e77bea05160fda3ee6fb706839d831c925279634614d610ab8d9

EMS Election Data Translator

Version: 5.5.32.4 64-bit	
Filename	**SHA-256 Value**
Program Files\Dominion Voting Systems\Election Data Translator\AllowedCharacters.txt	07aea6da557bf0df384a329ffabcb120d84f0791b34327b91d1009d9139ab29d
Program Files\Dominion Voting Systems\Election Data Translator\BitMiracle.LibTiff.NET.dll	f752a459a1eb5d35c597ff26437a75cc9aff7a5ca1d4fcdb2bc08ded5cb71465
Program Files\Dominion Voting Systems\Election Data Translator\Democracy Suite EMS EDT Users Guide.pdf	572fea08f08c60d0fe02d676b7549cfc689702238df6ad26a87b771844e8e8e2
Program Files\Dominion Voting Systems\Election Data Translator\DocumentFormat.OpenXml.dll	bb18c540d6c1ec80d7d3ae9a538f3205e6e3e695c6788e406d793c53d50ed415
Program Files\Dominion Voting Systems\Election Data Translator\DVS.Bridging.CommonAdaptation.dll	8ee3ce12bd8dbbaa67d70bbbf7ee99bb2b9fc4cf91175a4af6d71edc9742120b
Program Files\Dominion Voting Systems\Election Data Translator\DVS.Bridging.ExcelAdapter.dll	1197331ccecd7318c768d2363fd7ad782f2f6bfc4eeb71015940eef8a2e49cfc
Program Files\Dominion Voting Systems\Election Data Translator\DVS.Bridging.ImportAdapter.exe	650b792dfdef3d74bb7d63cc7eae6d12d91d3601bf95aa6248ecd569d1662e87
Program Files\Dominion Voting Systems\Election Data Translator\DVS.Bridging.ImportAdapter.exe.config	0c44cf91aaa7dea7baa431b30adaab1b79268d6cdb949599d9637d9c8864aa3b
Program Files\Dominion Voting Systems\Election Data Translator\DVS.Bridging.Mapping.dll	ac9bb057329f58b3edcb0b9d94ab1e920d43dbd49ce16cda8d3cd56f2bbe343d
Program Files\Dominion Voting Systems\Election Data Translator\DVS.Bridging.SimpleExcelImportAdapter.dll	6ca9786489abaa236a95ae576bd550ccaa4ddfe0b22bdcae5b8c24013ca933a0
Program Files\Dominion Voting Systems\Election Data Translator\DVS.DemocracySuite.AuthenticationService.dll	88bc90a5ad334f8c16afee6860b2a0265083d298fcc0a5befcba6a445105a1f5

Program Files\Dominion Voting Systems\Election Data Translator\DVS.DemocracySuite.BehaviorSettings.dll	280bf6290e21000c6aaa730b9d7d451336f722ac173c5e034f9c9ea5a8906fcf
Program Files\Dominion Voting Systems\Election Data Translator\DVS.DemocracySuite.ClientCommunicationObject.dll	9ebb9ef22e197ad6ede73a8cccb3e1d9b5ff6d34f9017ce4b004bd4d60cec842
Program Files\Dominion Voting Systems\Election Data Translator\DVS.DemocracySuite.Common.dll	19ab686922d33c42f235ba0ab7823bcb36e958b0f3f006201bf3c30935958c42
Program Files\Dominion Voting Systems\Election Data Translator\DVS.DemocracySuite.ConfigurationService.dll	12deeff716767a3b85ac203dc7d3fa21191ac300fd5173a85e405f6058552758
Program Files\Dominion Voting Systems\Election Data Translator\DVS.DemocracySuite.CryptoService.dll	c59c3511bb793318ae59bdac3fc5cc6710b2bc55a59b981e406be7da7b0d012b
Program Files\Dominion Voting Systems\Election Data Translator\DVS.DemocracySuite.DatabaseService.dll	a07ade3ec1e7c5a2b9111f0650f7b1dc1fe38a989acdb56c9104a989a6589e5e
Program Files\Dominion Voting Systems\Election Data Translator\DVS.DemocracySuite.ExportImport.Default.dll	0edbe7fb5b1f8f28cae0378b32d7e270962beb26615ae70086748e824f166960
Program Files\Dominion Voting Systems\Election Data Translator\DVS.DemocracySuite.ExportImport.dll	bddf5bac672d378de8c8b76fba93f60458abf54e10c8544c121dce0fd8502bde
Program Files\Dominion Voting Systems\Election Data Translator\DVS.DemocracySuite.ExportImport.Formats.dll	111c7f4f246f3391f5ed9d65979bc7a88fbcdbde8ac95818d2f9f7f29d2edd78
Program Files\Dominion Voting Systems\Election Data Translator\DVS.DemocracySuite.PermissionManager.dll	ef2031ea02f9bfd59d8beeb6abcaa42e0051c7db5cb15b71d97f98f600790a47
Program Files\Dominion Voting Systems\Election Data Translator\DVS.DemocracySuite.RemoteServerProvider.dll	0251ffd7bc3724d5508f260114eb0c2434a8c06e4d20ed30ccb8f6f397d079db
Program Files\Dominion Voting Systems\Election Data Translator\DVS.DemocracySuite.ReportServiceBase.dll	288dd1781cd06731a84f19dbe2a2c39befaf28302497abf65e9d01d9e5a8349c
Program Files\Dominion Voting Systems\Election Data Translator\DVS.DemocracySuite.ResultsDomain.dll	ec900d6bce6794f01dab5b25122613d3b34d45e5ac13f58159686ddd6f51773e
Program Files\Dominion Voting Systems\Election Data Translator\DVS.DemocracySuite.USElectionsDomain.dll	3114e5004ac2754ca797540d55ea53edac2c8ea6bb3959b511ccb95a52ca800d
Program Files\Dominion Voting Systems\Election Data Translator\DVS.ElectionEvent.RtfInterpreter.dll	d6629cfbf3f4c77d3e8c21e2e21c7091d984004b90fea32451fbd6e3499de4b5
Program Files\Dominion Voting Systems\Election Data Translator\DVS.Framework.Commands.dll	8f35e5d5dfcc10d6133e6c3410745ae3641af1e05b7d1c5a589c11449fdff0a3
Program Files\Dominion Voting Systems\Election Data Translator\DVS.Framework.DbMaker.dll	5a49b19d2d3573f3ee262e326653d23e3213273871c1730eb7fec6cbbf47a4e8
Program Files\Dominion Voting Systems\Election Data Translator\DVS.Framework.Domains.Logging.dll	346fa5e49326531dfb80c21a679d83d1eabc111cc31dc2df52ef6873be6475a7
Program Files\Dominion Voting Systems\Election Data Translator\DVS.Framework.Domains.Parametrization.dll	c8b3afe4264b2ed8534c3a87943197151f3fd8f63642e4366d81c03b2981fb93
Program Files\Dominion Voting Systems\Election Data Translator\DVS.Framework.Domains.PermissionManagement.dll	95bde5decf9f3dd23e2cb31a43c513d30d4e1e1621a25e187e0e4babd8c6ec77
Program Files\Dominion Voting Systems\Election Data Translator\DVS.Framework.Domains.SystemVariables.dll	02b3d46a0a7894d1df81f81b4d3c97ea5db53cd4db0124157e97661a830f0f70

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Program Files\Dominion Voting Systems\Election Data Translator\DVS.Framework.GUIConfiguration.dll	49c7b6519979bbcadcab477805490a01ef26f86a71247e24ab21d9004d051d20
Program Files\Dominion Voting Systems\Election Data Translator\DVS.Framework.GUICore.dll	202ca5b9cb6b45497ec4961b260d91865b9e73eaae057ba8deaba9d7c0d77315
Program Files\Dominion Voting Systems\Election Data Translator\DVS.Framework.MemoryCore.dll	881156b603e934ad2214d646c9092681327165475a6d3704a96687969785b154
Program Files\Dominion Voting Systems\Election Data Translator\DVS.Framework.RemotingAdo.dll	1a3a046f5d1c4105b314df1dc8247507038df8e977f205381c3a4584cfdbb960
Program Files\Dominion Voting Systems\Election Data Translator\DVS.Framework.ResourceTranslator.dll	7da87ea3eebbd092f978fedb2907cd1c894a250e35b48b9206b14a829d3b26b0
Program Files\Dominion Voting Systems\Election Data Translator\DVS.Framework.Serializer.dll	61f8adaa24f5c1a5f23c3ec2dc0386d4a807ec5673ffd38b2a010fe7b9b863e2
Program Files\Dominion Voting Systems\Election Data Translator\DVS.Utilities.Common.dll	c86bdc20064e3a748fff15524d144f927551fb3c7f15d994e307b594c51f7047
Program Files\Dominion Voting Systems\Election Data Translator\DVS.Utilities.MSWinManager.dll	f380e4ccbe5c552ad2bb6917c56b81b3240a993da2b55bbe4d82df5edcb46507
Program Files\Dominion Voting Systems\Election Data Translator\DVS.Utilities.ProjectMangementFacade.dll	7e1d47dcc5c5316e519033bd5d97a6dd50cd7358c10916853d188b5a5db2c78f
Program Files\Dominion Voting Systems\Election Data Translator\DVS.Utilities.RemoteInterfaces.dll	0c620f5819af7265b1b60a18bdff7609aabdd62e7920c42416f8cbd0216ccf08
Program Files\Dominion Voting Systems\Election Data Translator\EDTCustomAction.CA.dll	31454d4c60f60717032242e8181d010e068bc795746327078ffc1792c9ab29a6
Program Files\Dominion Voting Systems\Election Data Translator\EDTCustomAction.dll	3de8a4f1633fc9c5d422a35879fc6a8e8f94715494c2effb7921a7707d856720
Program Files\Dominion Voting Systems\Election Data Translator\EdtMapper\EdtFormat.xml	dd84945d4b8c3a7bbe9ff32e2c144063ce462016165141b65593db6bd4c0976f
Program Files\Dominion Voting Systems\Election Data Translator\EntityFramework.dll	ed6ebd749052f9018f6699671ae5469adedf086cf8b1bd4256bbe9c4e7f6ff05
Program Files\Dominion Voting Systems\Election Data Translator\EntityFrameworkUtil.dll	62bb37cf68aa0732bc3462fa9b6e490efd5ef0db12ab5ad153878c263015809a
Program Files\Dominion Voting Systems\Election Data Translator\GemsImport\GemsImportFormat 1 3.xml	6ff57f77c4c13a113a94729641b9e971c5f44f9fcb1c5cc41eb0285423a51149
Program Files\Dominion Voting Systems\Election Data Translator\itextsharp.dll	beb5c25eb5f659cbb2574f3eaddda35c5b18e860558daac4533b4ed98e29bd55
Program Files\Dominion Voting Systems\Election Data Translator\Microsoft.Deployment.WindowsInstaller.dll	9aebc76cb8c864593e0419162b2bf40b81bd52b3ff12edac1d032828df83dcfa
Program Files\Dominion Voting Systems\Election Data Translator\Microsoft.Web.Administration.dll	5b28ceefb320c6a808cb352385ae4523fbecc676af1cb091ceb1789b3b83aefc
Program Files\Dominion Voting Systems\Election Data Translator\NLog.config	9ce2c7a089aaa8a3fc72e50d918210402dae2e04712980c5f9278c992c4a662e
Program Files\Dominion Voting Systems\Election Data Translator\NLog.dll	e17aac589bd48a623857de7f8113bcae6f72e4fe4652ca615ffa1028353b246d

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Program Files\Dominion Voting Systems\Election Data Translator\Renci.SshNet.dll	451ba700ecb5e77bea05160fda3ee6fb706839d831c925279634614d610ab8d9
Program Files\Dominion Voting Systems\Election Data Translator\ReydiImport\ReydiFormat 1 0.xml	2a9268310560697b01d871d7ad637f0a79c6726d92ce347a8372dbf52d4c9972
Program Files\Dominion Voting Systems\Election Data Translator\RtfCompatibility.dll	365d06ce941350482201bc9f3fc54a746e7d476d9ac0f862a125716ec2be38ac
Program Files\Dominion Voting Systems\Election Data Translator\RTFReader.dll	cda525e3eec917d1f097af0381a0d2d0611be7ede12be80068f0af1516181f3c
Program Files\Dominion Voting Systems\Election Data Translator\Simple Excel Import Adapter.ico	b7f0dccd49c4e2a6704ee72d5c901bdfad849ff05ba5fb207570e9829af07cf5
Program Files\Dominion Voting Systems\Election Data Translator\SimpleExcelMapping.xml	4060b976497e673c67e6031508ed873c455dea7e7cd51bb5c2c8b94071f3d23d
Program Files\Dominion Voting Systems\Election Data Translator\SpreadsheetLight.dll	3f367b84ae2f149ac8e53d790c3aa1160b1915c3e558c366b527a87cb53ffcde
Program Files\Dominion Voting Systems\Election Data Translator\System.Data.SQLite.dll	907d947ec9f35e0b49bab8df1d3791117eec2cc45a4ef9687557df0e656d9d08
Program Files\Dominion Voting Systems\Election Data Translator\TabulatorMapping.xml	aa2348b7c3397e0b5cf3668a7176ba0c1eae380485ecdebe9d1a23470119a752
Program Files\Dominion Voting Systems\Election Data Translator\TextDocumentCommon.dll	6342dd68e5058f53ec35f758787befcb6a66e6ddd7453d927d00bbb3260b4f61
Program Files\Dominion Voting Systems\Election Data Translator\TextGraphicalEditorCore.dll	1d103cfec2b2a580b24a74740022a5e7a52ca1d7a630996bddb55f065ef6cc01
Program Files\Dominion Voting Systems\Election Data Translator\TextualContent.dll	70aae862f55b68dddea94e0dca62b112c4ce813834c6bafc9ded1c03a24446df
Program Files\Dominion Voting Systems\Election Data Translator\TranslationMapping.xml	dbfa9d606deb52aa8612444503e25fb96401bfb5ecf384bd11cb479113c7acf7
Program Files\Dominion Voting Systems\Election Data Translator\tx16bmp.flt	7bec71af7be3bcf76f8b34c6d7cc7d87c6c612507cdaa57a97b9fa7637a8724f
Program Files\Dominion Voting Systems\Election Data Translator\tx16css.dll	e61ce98925f96cb59bc9f6261f4eeed6e7921b1c4dcb7a2fe5b34d61be1324d8
Program Files\Dominion Voting Systems\Election Data Translator\tx16doc.dll	b1bae7700444c71bbceb1cbbb488babc11cd4b8a3102aab3861aba22042b9424
Program Files\Dominion Voting Systems\Election Data Translator\tx16dox.dll	67b19985f4ba96e040c1b0f58ea68e7ae1d8a62814ed0ae9dabb59b11886a03c
Program Files\Dominion Voting Systems\Election Data Translator\tx16gif.flt	f5871adae67e25836272700d3b02cf082fa444f0537420da14ec702ccb80718b
Program Files\Dominion Voting Systems\Election Data Translator\tx16htm.dll	0672fc52f7f2172783365f526204e3f1cff0636dc21c65eb70230177b8451c23
Program Files\Dominion Voting Systems\Election Data Translator\tx16ic.ini	3754f3454fce6c40f55f7f3cced671d8828e034ab89bc0a450ab3a88b496a2d2
Program Files\Dominion Voting Systems\Election Data Translator\tx16jpg.flt	27644d1a94c5fece37c71da8a21fde52e35b6fd910f3e7fb4a64459f2454ee5d
Program Files\Dominion Voting Systems\Election Data Translator\tx16pdf.dll	90110a3b0bc84be25cf23c10d6a2bb63898a357820971ea339f6f6474461761c

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Program Files\Dominion Voting Systems\Election Data Translator\tx16 png.flt	fe7e0d8d261d15cc438eb4f712d1c27396fef1e11d7b2c09e5fbf672fb147a4a
Program Files\Dominion Voting Systems\Election Data Translator\tx16 rtf.dll	bcf88d31ea94d43b69a2d79f4b4ce91770ec740a7ff8b8197980004be8cc224f
Program Files\Dominion Voting Systems\Election Data Translator\tx16 tif.flt	7eb2f067c31e078cb3416f52a325b83c58b4815720741a3f34d1a80fa93ca2d6
Program Files\Dominion Voting Systems\Election Data Translator\tx16 wmf.flt	c479eaf41f32809076e1926bb1ca308cb8c22b08874b3621e9da80e2c45c7ac3
Program Files\Dominion Voting Systems\Election Data Translator\tx16 xml.dll	dd3a5458256211dd537a8b0ea7d86648f3b6857d39d853344d7b820bc411c5c7
Program Files\Dominion Voting Systems\Election Data Translator\txic.dll	e8ed7a1e2735c463c856dc7cd1738fc39200137727d295f769aff57aa292683d
Program Files\Dominion Voting Systems\Election Data Translator\txkernel.dll	1af40648e4dbf252cc179b0d9f482b29ed786493ef5c2135bd079e51f878237b
Program Files\Dominion Voting Systems\Election Data Translator\txpdf.dll	10344d82c1555451953e1bb7dcfbee23714f3c492541ff1eb05517d0a16623a0
Program Files\Dominion Voting Systems\Election Data Translator\TXTextControl.dll	8172aed7c82846bee5328a781c3bdce359cf8b6a6406d85a807dc7302d1f20b0
Program Files\Dominion Voting Systems\Election Data Translator\TXTextControl.Server.dll	fb584b4e7da2bdb79e58af06a2be393a0fedd0b2136d80ffc970a626e66235f7
Program Files\Dominion Voting Systems\Election Data Translator\TXTextControl.Windows.Forms.dll	77610ff1d3e44e259da659271262ce9c2250e5a3224d74fd05e962ecc3c2cb4d
Program Files\Dominion Voting Systems\Election Data Translator\txtools.dll	f8893f9f889d38c81e1e60e19ec1f24366020925419fd5f78d4eb7bfc5578846
Program Files\Dominion Voting Systems\Election Data Translator\USElectionsDomain.dll	8d42c066d30408975c21f7d2be6523e9efddba84b2c6d33c7cb94a9978f05e3c
Program Files\Dominion Voting Systems\Election Data Translator\ValidationData\UpdateExcelStructure.xml	b82e8f4bbd2853e6c2c0900ad45a55a2ce185f24420cb324c52c3fc29190c70b
Program Files\Dominion Voting Systems\Election Data Translator\ValidationData\ValidationExcelStructure.xml	ac316fd5833833be82ecfce97cf2e1e8e04210d50e8ca83fac237f3bb128187b
Program Files\Dominion Voting Systems\Election Data Translator\ValidationData\ValidationRules.xml	df0148a84afeee8b8e96e44e0d6d7f8199042ae9a39331f14e960696bf2abb65
Program Files\Dominion Voting Systems\Election Data Translator\WinEdsImport\WinEdsFormat.xml	0ebd138435a1f0b8d7cd027c519ac774a9e4e38a893cc255e8cdcdc7e21e9c66

EMS Election Event Designer

Version: 5.5.32.4 64-bit	
Filename	**SHA-256 Value**
Program Files\ Dominion Voting Systems\ Election Event Designer\ App.config	2e1d0ff29fcd686afb30268376659c604fc16b16a748b6d23db30dac4d109901
Program Files\Dominion Voting Systems\Election Event Designer\BallotGeneration.dll	26669dddd7f8d39c219c17500e5df6316a15f5224f9080cc85e25cb9dc5a54fd
Program Files\Dominion Voting Systems\Election Event Designer\BitMiracle.LibTiff.NET.dll	f752a459a1eb5d35c597ff26437a75cc9aff7a5ca1d4fcdb2bc08ded5cb71465
Program Files\Dominion Voting Systems\Election Event Designer\ConfigurationControls.dll	6d2e0e30ce73e7aac4aea6a01cc782b2bb07495f683d4f6e456e109f30285a03
Program Files\Dominion Voting Systems\Election Event Designer\DefModificator.dll	a0974d8ed5e55d7ee19430fb692da9d0a591fa3f73ba04a19d48baf17cc7aa63
Program Files\Dominion Voting Systems\Election Event Designer\Democracy Suite EMS EED Users Guide.pdf	3940666b054a6ba139062b4c172ee5a3164e56925962065d242c291e9b5700f9

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Program Files\Dominion Voting Systems\Election Event Designer\Documents\Democracy Suite EMS CADSCS.rtf	1a2a75b533c777268ac01004352696041238 3b72f9b4a1d24d74a9d003ba1583
Program Files\Dominion Voting Systems\Election Event Designer\DVS.DemocracySuite.AudioLibrary.dll	7b968cea82caf5eef58f4c40f864c4b392846a781c7c9af1e226b5da6729fc01
Program Files\Dominion Voting Systems\Election Event Designer\DVS.DemocracySuite.AuthenticationService.dll	e8a0a2832955f0c39dfee599457756647518b84886a5d962577618532f523874
Program Files\Dominion Voting Systems\Election Event Designer\DVS.DemocracySuite.BehaviorSettings.dll	6ca20ef4de4a037c28c34780d28a5d63cd733f99789cbf83b141701fe70158d8
Program Files\Dominion Voting Systems\Election Event Designer\DVS.DemocracySuite.BehaviourSettingsManager.dll	9a94370c089122e6931cad66371baa17105d9083dc9c63ca54e406bd5daee109
Program Files\Dominion Voting Systems\Election Event Designer\DVS.DemocracySuite.ClientCommunicationObject.dll	2b5976ecbd0201d9018b5a911609949cc250ecc4451779d3ed442770b48b4396
Program Files\Dominion Voting Systems\Election Event Designer\DVS.DemocracySuite.Common.dll	836d0836b63b9720b46c409599806fc92725d0698f6f34c80274e00026442427
Program Files\Dominion Voting Systems\Election Event Designer\DVS.DemocracySuite.ConfigurationService.dll	ec4c38b32ff668bdfeeafa480a35c3cc9be870908aa2b90aad030a18408d3249

Program Files\Dominion Voting Systems\Election Event Designer\DVS.DemocracySuite.CryptoService.dll	78e6b5c8ebcfc7f4a1c3318c2c897a6d14240d3beef6376a2e3917876a01cfe5
Program Files\Dominion Voting Systems\Election Event Designer\DVS.DemocracySuite.DatabaseService.dll	db1908a24ce490d6003d1347a9434b612f26d67d2c06d8b7f38f0a8a26c98bc0
Program Files\Dominion Voting Systems\Election Event Designer\DVS.DemocracySuite.DCFFiller.dll	24cd610a0c0c4105a2f283d9f265dc0e7757cec043c29d7b86be348afde558c4
Program Files\Dominion Voting Systems\Election Event Designer\DVS.DemocracySuite.DCFFiller.Serialization.dll	4592729f0a09b014b416072149b03a0ace287b335fd60139cb4e064db9373f01
Program Files\Dominion Voting Systems\Election Event Designer\DVS.DemocracySuite.EedAppsCommon.dll	c86e7a4629ddc77c3fedf420a050a6fc4ceaed4d5859a1114be4678149d9462f
Program Files\Dominion Voting Systems\Election Event Designer\DVS.DemocracySuite.EEDCustomAction x64.CA.dll	927462d401f6997322fb267ad133e5b6b0b2aa3429a49375ae1af60dee51a18b
Program Files\Dominion Voting Systems\Election Event Designer\DVS.DemocracySuite.EEDCustomAction x64.dll	07fa8e70029cd7df55dc2d1165b67ebf768531c294c64283d60b32fb4bf3ad96
Program Files\Dominion Voting Systems\Election Event Designer\DVS.DemocracySuite.ElectionEventDesigner.exe	aac19abe37fe892aeab99749212e83812f11feb6b260fe13ec3d01e580aadec8
Program Files\Dominion Voting Systems\Election Event Designer\DVS.DemocracySuite.ElectionEventDesigner.exe.Config	abc370f0c0658d724e93030726d42d7fdc39c9ae6060f178e1e1c7d8ab58e569
Program Files\Dominion Voting Systems\Election Event Designer\DVS.DemocracySuite.ExportImport.Default.dll	6002c14a71e02d2807d7560b758f0c70c8cf997b44003240e371e3acb8d8e46b
Program Files\Dominion Voting Systems\Election Event Designer\DVS.DemocracySuite.ExportImport.dll	0b658c82642a7db72cfd206c68b7a8fefdc9a91591a22a884ab55abb01e7cf02
Program Files\Dominion Voting Systems\Election Event Designer\DVS.DemocracySuite.ExportImport.Formats.dll	a9207a272dc50d60e3ceb81ed041fa79bdcd3c48ec1f975cba78362fa9f67188

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Program Files\Dominion Voting Systems\Election Event Designer\DVS.DemocracySuite.ExportService.BaseExportService.dll	9c0a6e2a1f74c9da5e7b012e5bc9a74ebdbd155c296155b1fea0edf8e428376e
Program Files\Dominion Voting Systems\Election Event Designer\DVS.DemocracySuite.ExportService.EMLExportService.dll	09bb8e4be7cab75bf20ad8ef4cad76f22c9f624f36469e87b7a2f8916a59de80
Program Files\Dominion Voting Systems\Election Event Designer\DVS.DemocracySuite.GenericDrawing.dll	d9ae83a7e9d4a29315d1d97a2ee8a207e041dd80c707aaa273573a626df9a6fc
Program Files\Dominion Voting Systems\Election Event Designer\DVS.DemocracySuite.LibraryCollector.EED FED CERT.dll	6156ad73d117a0b2c97fe59cb37ef36f80ad053042288058513c465af61048c6
Program Files\Dominion Voting Systems\Election Event Designer\DVS.DemocracySuite.PermissionExportService.dll	fbc8d9f5e73d8dec917703b3dd3106afdd075f8d4982f28004ada9ae51a0b6ff
Program Files\Dominion Voting Systems\Election Event Designer\DVS.DemocracySuite.PermissionManager.dll	cf73b73c3659cb2865a93f17597aefbff99f56edd9675ab1dcf7aa8f77eb439c
Program Files\Dominion Voting Systems\Election Event Designer\DVS.DemocracySuite.PermissionManager.Gui.dll	89051f6795d96bb9704e403a69c69a83ace68e0f69bdafeeab77f486b16ec00c
Program Files\Dominion Voting Systems\Election Event Designer\DVS.DemocracySuite.RemoteServerProvider.dll	53d3d1789fc51d863a37b128824a5d92ec0b9933caa9e506378491d89c1d337f
Program Files\Dominion Voting Systems\Election Event Designer\DVS.DemocracySuite.ReportService.dll	dc464a0b672cd86c13b5b305e395d9d8f425dd75e7315bc3533dd5764334385e
Program Files\Dominion Voting Systems\Election Event Designer\DVS.DemocracySuite.ReportServiceBase.dll	694c01ebde1105aeab7fa15be3a7b8a0ebf3f44d2f4898a8ae926635676284ce

Program Files\Dominion Voting Systems\Election Event Designer\DVS.DemocracySuite.ResultsDomain.dll	6b04912d85020ff5242d5c4938164e75dd84277dd51b93eac5cd4d622105ab7f
Program Files\Dominion Voting Systems\Election Event Designer\DVS.DemocracySuite.ResultsParsing.dll	7af5c1f453d0cdd819dee10d71010d6eb442e92e2b001065cc1be04440947ced
Program Files\Dominion Voting Systems\Election Event Designer\DVS.DemocracySuite.TabulatorGDomain.dll	fb30a872bf7f69a5024e5878c7b5524b95170f6d54a2554fc70f5c47eed1c66e
Program Files\Dominion Voting Systems\Election Event Designer\DVS.DemocracySuite.USElectionsDomain.BallotGeneration.BallotStyle.dll	0dd0ab741717a45d2a60d4d4f817bb4a78060982097b4a859f6f88fa1874e293
Program Files\Dominion Voting Systems\Election Event Designer\DVS.DemocracySuite.USElectionsDomain.BallotGeneration.dll	4804469de88b94f09faed9111c63d6bf9512cb3721caf7f8c4d76dcceb4a4727
Program Files\Dominion Voting Systems\Election Event Designer\DVS.DemocracySuite.USElectionsDomain.BallotGeneration.Florida.dll	c234426c63c564e94ec3f52b2894979a21c10c6350f0265abc1b5aacbbf10478
Program Files\Dominion Voting Systems\Election Event Designer\DVS.DemocracySuite.USElectionsDomain.BallotGeneration.NYGeneral.dll	5e2e40089be786e9e49dc00497801dde4011509030bf9035f379802a3f606346
Program Files\Dominion Voting Systems\Election Event Designer\DVS.DemocracySuite.USElectionsDomain.BallotGeneration.RankChoice.dll	7f63a6cf51761c4e37df3e5f0cd7ad23da8ac7b69e52a0a4a0cbaed226989b49
Program Files\Dominion Voting Systems\Election Event Designer\DVS.DemocracySuite.USElectionsDomain.dll	c7a53428992aed9c0eeddb97c755598ccd49933b0e6722c28d2ab491fbcc745a

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Program Files\Dominion Voting Systems\Election Event Designer\DVS.DemocracySuite.USElectionsDomain.ElectionFiles.dll	26894ef04cd04535026bfa386c5297bb351e8d549951cd45bf4e2bfab53708af
Program Files\Dominion Voting Systems\Election Event Designer\DVS.DemocracySuite.USElectionsDomain.GUI.dll	b95ee5f5c86c6fbd88288e34b5ea83c93c7ffcde5ed730ab124f0c73870862c7
Program Files\Dominion Voting Systems\Election Event Designer\DVS.ElectionEvent.BallotRenderer.dll	99d2ffdd38b03b2ff834666180e8d1947cdf913da007b3f74805847865b731da
Program Files\Dominion Voting Systems\Election Event Designer\DVS.ElectionEvent.BallotRendererSupport.dll	70d80500f3119471bc2561ad87fc9484bb377e3a7e273631fd18c09cd443f1cd
Program Files\Dominion Voting Systems\Election Event Designer\DVS.ElectionEvent.Layouting.dll	929854af1a8839e13916cf10d9396d8e8933058fee90339a343e576ba27b4105
Program Files\Dominion Voting Systems\Election Event Designer\DVS.ElectionEvent.RtfInterpreter.dll	6afcea8de1f47d4602092e3a5a780fed95b7a98c61928758f51bb42eb2b558c9
Program Files\Dominion Voting Systems\Election Event Designer\DVS.ElectionEvent.SVG.dll	497a2a659ab659c48ebec2ac4c3afafd10d0bf42825cc7ed9055a4b86e601cd3
Program Files\Dominion Voting Systems\Election Event Designer\DVS.ElectionEvent.SVGGui.dll	22799f12de853b047c9a8720a4c995ab14263f58660eca3983faf032745f3a2e
Program Files\Dominion Voting Systems\Election Event Designer\DVS.ElectionEvent.SVGGuiCore.dll	106af16a93207fd87620e41d42d2272479b0ffe4fbe6857d79264c98d7919e10
Program Files\Dominion Voting Systems\Election Event Designer\DVS.Framework.Commands.dll	5d0b8ffb9e60b6f2c627c8a0388ec0817584ca62bf832fb429aa61af7d38f33a
Program Files\Dominion Voting Systems\Election Event Designer\DVS.Framework.DbMaker.dll	c289bda020a9961e8ee38a4c7246f4decfa0621b664bbfadcf3015f829ebc304
Program Files\Dominion Voting Systems\Election Event Designer\DVS.Framework.Domains.Logging.dll	a4d48e1c0e0e9ada86b7640ea4f5b6d6fbae4dbbd2d4dba58d93975f62ffb330
Program Files\Dominion Voting Systems\Election Event Designer\DVS.Framework.Domains.Parametrization.dll	d6a478f53be8d1f98a7ad1dae4f98f0d0a881e14468c94c6a9ce0fa80023fab6
Program Files\Dominion Voting Systems\Election Event Designer\DVS.Framework.Domains.PermissionManagement.dll	e46f39e0c03871eb6a9b16cfa52cd02f1a151ec35f01783e6a618d84da2c5e68
Program Files\Dominion Voting Systems\Election Event Designer\DVS.Framework.Domains.SystemVariables.dll	26592b02c46f3d665b893dfcac4f00a0a4ab638fda18b442c23830ddf6fda87a
Program Files\Dominion Voting Systems\Election Event Designer\DVS.Framework.GUIConfiguration.dll	9d398bdf12c36d4dcea23bf5d004b63a257db5d44822091dc03c14f16f729b47
Program Files\Dominion Voting Systems\Election Event Designer\DVS.Framework.GUICore.dll	5649534f7e7200e0cbb14582ead986b3968dbbe193aed64935fabcf3499e4bb6
Program Files\Dominion Voting Systems\Election Event Designer\DVS.Framework.MemoryCore.dll	9d751571f9bfb186a9bf549ad5517b6c2502ad9c69ecb4d8032359d3dcf504c0
Program Files\Dominion Voting Systems\Election Event Designer\DVS.Framework.RemotingAdo.dll	7605a76694e4d632c027ad33504c0ee26c550829e60a05b45cce2b7e6e78432f
Program Files\Dominion Voting Systems\Election Event Designer\DVS.Framework.ResourceTranslator.dll	4ac35967c058893208a6e45523a1a877905a24e55bb87695b2b82436b00edf03
Program Files\Dominion Voting Systems\Election Event Designer\DVS.Framework.Serializer.dll	7e219df614a9a74008911cd533190d079a634efd700b602a81ad0ec799d39261

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Program Files\Dominion Voting Systems\Election Event Designer\DVS.Framework.TPWinGUICore.dll	d5099d2cadc71c648e15a362dca3cebdee46e5f1705df8ed38077e2436f8619d
Program Files\Dominion Voting Systems\Election Event Designer\DVS.Framework.Utilities.DbModificationFilter.exe	e7da0fbe60084f20f422a63fc313cca1d1ce065c865a77b18f2641a895762a4a
Program Files\Dominion Voting Systems\Election Event Designer\DVS.SmartCardManager.dll	d55d6c0a4425349ae5f67547242b0650923525aa0a4e777516078fa6f745c949
Program Files\Dominion Voting Systems\Election Event Designer\DVS.Utilities.AudioConverters.dll	70dc8284c5fe75eed2d58dfb13814c15c9afce51c029734ef7a356a36a2709aa
Program Files\Dominion Voting Systems\Election Event Designer\DVS.Utilities.BinaryFileAccess2007.dll	054c439e2ba5ca120bb7924a8cb198b729eae00968161551246a1c40d984bd2c
Program Files\Dominion Voting Systems\Election Event Designer\DVS.Utilities.Common.dll	054024f75482b86a0e4ffa4f21a506316e7788367570593105864c8dcf38d527
Program Files\Dominion Voting Systems\Election Event Designer\DVS.Utilities.FileSystemServiceFacade.dll	850471a5f5301afccfebaac954fadbe968df5aebb64682e993336caf42c829c9
Program Files\Dominion Voting Systems\Election Event Designer\DVS.Utilities.MSWinManager.dll	40327b9711f5c06ae4469f2fccb4e6f3d2fa20dd6227586cfeb76b711965fb26
Program Files\Dominion Voting Systems\Election Event Designer\DVS.Utilities.ProjectMangementFacade.dll	eaee548941a5385f94d366c54fa14a0938d13b4e11e48e4738945d387cfbe6e9
Program Files\Dominion Voting Systems\Election Event Designer\DVS.Utilities.RemoteCache.dll	b3527dbf246eccd1521df98b67dbafcf53ca8d68bcfbdd93289362c8a6e7f576
Program Files\Dominion Voting Systems\Election Event Designer\DVS.Utilities.RemoteCacheProxy.dll	22eae529620ade8dae6e9d3b401add99f024ca25523a352f2b0d958a934465c5
Program Files\Dominion Voting Systems\Election Event Designer\DVS.Utilities.RemoteInterfaces.dll	5e3752b9e95d03450f2b47f93f90db6f21602d36de0436f7e9de96516bebf07a
Program Files\Dominion Voting Systems\Election Event Designer\DVS.Utilities.UsbFileSystem.dll	ebeeb76e1e81f40365a99c4388c71d7480265f8fa37202f17e7592d342fd9900
Program Files\Dominion Voting Systems\Election Event Designer\DVS.UtilitiesFullFrameworkWrapper.dll	af124dddfca65ca3932aa0ccaa0b8c9118aff4fa37be4c40d5a92d6501552ca7

Program Files\Dominion Voting Systems\Election Event Designer\EedTCPCommunication.dll	c830ca303ea7ea665ba9dedba093396e78ba9f34d1762bdbd21352f325abdee1
Program Files\Dominion Voting Systems\Election Event Designer\ElectionFilesGeneration.dll	b8a9bb1255590ff823d80b1394b3e581259949df103050d1b0fc800a7fefd9eb
Program Files\Dominion Voting Systems\Election Event Designer\EmsBallotGeneration.dll	9377287b67ae18fcaaccc3f9f6b45657925527bdef514b96717e3f0f94c5759a
Program Files\Dominion Voting Systems\Election Event Designer\EntityFramework.dll	ed6ebd749052f9018f6699671ae5469adedf086cf8b1bd4256bbe9c4e7f6ff05
Program Files\Dominion Voting Systems\Election Event Designer\EntityFrameworkUtil.dll	82621115570730c78979f51d21eb05a73b1d12ff44b34739d4fd9b857b58a700
Program Files\Dominion Voting Systems\Election Event Designer\en-US\DVS.ElectionEvent.BallotRendererSupport.resources.dll	a3d7160dd9949fae7081212dfe742492fd8204ed4be0b6e55d5a044eeca37dbf

Program Files\Dominion Voting Systems\Election Event Designer\GuiEditorCommon.dll	5a334c69edfcd93692d53ba39b8c7b5d6478b4eee2873115c12c83742b439520
Program Files\Dominion Voting Systems\Election Event Designer\Infragistics2.Shared.v11.1.dll	43d6d97cef01feb0187608a3b10296f9e57301f344c3cccd4c0f6959de59a4c7
Program Files\Dominion Voting Systems\Election Event Designer\Infragistics2.Win.Misc.v11.1.dll	28ac4d99e7b800a39bad93d478b55b50634365c9f58cb5cb96d86c15a0cbffe4
Program Files\Dominion Voting Systems\Election Event Designer\Infragistics2.Win.UltraWinEditors.v11.1.dll	f9622a7a6b56c3ca252772421e13fea757a34729b5f815090d6f7094f6a284a5
Program Files\Dominion Voting Systems\Election Event Designer\Infragistics2.Win.UltraWinExplorerBar.v11.1.dll	dafc088a2c5495a011cc9af74997b40b270768dddcd73e4bb15a39c64dbf3397
Program Files\Dominion Voting Systems\Election Event Designer\Infragistics2.Win.UltraWinMaskedEdit.v11.1.dll	1ec60fb4201e80cee5f7e61d081ec2e1ff15f6d3cf1807ea3964f64a229431f6
Program Files\Dominion Voting Systems\Election Event Designer\Infragistics2.Win.UltraWinStatusBar.v11.1.dll	13c1a9c1c528b94651e1a7e5281f2464753611b19502b2f4471cccbbb555aef8
Program Files\Dominion Voting Systems\Election Event Designer\Infragistics2.Win.UltraWinTabControl.v11.1.dll	944d9958f8a86d1ea682275aafca2c5719edaf9dab51ede3cf062c745e8c596a
Program Files\Dominion Voting Systems\Election Event Designer\Infragistics2.Win.UltraWinToolbars.v11.1.dll	a9f876661d9e70fce1f4b35bb67c042f48e88014cdb0f3d082650f49968c7d5a
Program Files\Dominion Voting Systems\Election Event Designer\Infragistics2.Win.v11.1.dll	7550da2b0699879ad0552777d6cc3499969eae9ba3e76ca4518d73dc82b41207
Program Files\Dominion Voting Systems\Election Event Designer\InfragisticsWPF4.Controls.Editors.XamColorPicker.v12.1.dll	751645399f3e60df0c89c0aeb70288ed4a0a4eccbf5f6a8edb40c69a24d4ab34
Program Files\Dominion Voting Systems\Election Event Designer\InfragisticsWPF4.Controls.Editors.XamSlider.v12.1.dll	71848e74fa3c3708d740921a69e11753dc1faa672bd7fb98b1c78eae5a0ee956
Program Files\Dominion Voting Systems\Election Event Designer\InfragisticsWPF4.Editors.v12.1.dll	6eaf86848c240faea4f5bd4c15388ce31ac23e085a14c52540fb1b131df70c16
Program Files\Dominion Voting Systems\Election Event Designer\InfragisticsWPF4.v12.1.dll	e6d7c6e94d4bc62b5ebea0d887196b0e4d0bca5d978914325d9dac00a6f7fdbd
Program Files\ Dominion Voting Systems\ Election Event Designer\ itextsharp.dll	beb5c25eb5f659cbb2574f3eaddda35c5b18e860558daac4533b4ed98e29bd55
Program Files\ Dominion Voting Systems\ Election Event Designer\ Log\ Error.0.log	12262b3eaa611c1d9d0c67899e7d3f12a78b8d7d1ca9dfb05315c8749601e5f8
Program Files\ Dominion Voting Systems\ Election Event Designer\ Log\ Error.1.log	efccb6f6ac51f2a23e933bdf28e98fac448ffab3652a6aa31dceeb28a97dcdf1
Program Files\ Dominion Voting Systems\ Election Event Designer\ Log\ Error.10.log	7393937166ec8ed658b0ab3a60e8d15fa797a1da5ec239b8bee9283a86278022
Program Files\ Dominion Voting Systems\ Election Event Designer\ Log\ Error.11.log	e8d76aebbb887836c90b4ae5f20b532ef7d5fe5f02803401fc953462e0d1c5f6
Program Files\ Dominion Voting Systems\ Election Event Designer\ Log\ Error.2.log	d8f3ba50837a71465eb5dc815d958696e4bdd034a2a733099cb51e9630af0db9
Program Files\ Dominion Voting Systems\ Election Event Designer\ Log\ Error.3.log	c82818aa0bb80e9f07f661dc7153143d508f925cbc4316f8f0f5dab8db76fdef
Program Files\ Dominion Voting Systems\ Election Event Designer\ Log\ Error.4.log	e65bc9f54c44f79fe9dadf618f381aa7eeb1f5e0cb167a618bd5131adf52ca7a
Program Files\ Dominion Voting Systems\ Election Event Designer\ Log\ Error.5.log	d0edddb0864759e8e2e81a6c3cbe0acae4dac3077ead78f3011ea2af7cac90b2
Program Files\ Dominion Voting Systems\ Election Event Designer\ Log\ Error.6.log	8d8f4728bd424adc53c92c298beb2da5f85c9f0c858802a6c4ea450954567b3e

Program Files\ Dominion Voting Systems\ Election Event Designer\ Log\ Error.7.log	075638e49a8c612378dce6f7cbaf73aa60c78d35641730d828624b6f24cd4143
Program Files\ Dominion Voting Systems\ Election Event Designer\ Log\ Error.8.log	1ad8b4e0d3266c66574c4afbf8ff997d60e61717a44b091a5d89bf3a44d19c60
Program Files\ Dominion Voting Systems\ Election Event Designer\ Log\ Error.9.log	3f974dedf7e3c3e5032ccf0bc7b5ed4f290ad9bd64f3b022b532e13a8a0a318b
Program Files\ Dominion Voting Systems\ Election Event Designer\ Log\ Error.log	bfc14e9b277f2f7901fbb1d95c6c77276ff7d36a487734e37f3e6834e5afa2bc
Program Files\ Dominion Voting Systems\ Election Event Designer\ Log\ Info.log	3d1c51d61237b0c26ca20e398dd6aa75b4d24c9538d7992916156484521 90b19
Program Files\ Dominion Voting Systems\ Election Event Designer\ Log\ Trace.log	f68d5e544925445fb8d19fe6e9d7c5173e506148172396c4f249265c337f64b9
Program Files\Dominion Voting Systems\Election Event Designer\Microsoft.Deployment.WindowsInstaller.dll	9aebc76cb8c864593e0419162b2bf40b81bd52b3ff12edac1d032828df83dcfa
Program Files\Dominion Voting Systems\Election Event Designer\Microsoft.ReportViewer.Common.dll	e3f6d98df27d1877366a374a82dbdfa529405297217624b1309a57339d57d4dd
Program Files\Dominion Voting Systems\Election Event Designer\Microsoft.ReportViewer.DataVisualization.dll	e9ea1b82fd7bc766c723181f1cd01d9ba7dc9754d34c3a5e4cb12601d059b1fc
Program Files\Dominion Voting Systems\Election Event Designer\Microsoft.ReportViewer.ProcessingObjectModel.dll	2e9a2509b5e79c68aec78fe84df95c52ba2d56359b1e24920479bd143410e2a5
Program Files\Dominion Voting Systems\Election Event Designer\Microsoft.ReportViewer.WinForms.dll	b10ada2d6881eead90dc319f791abd0d5d6f028e3532b7d7641addd001afb93c
Program Files\Dominion Voting Systems\Election Event Designer\Microsoft.Web.Administration.dll	5b28ceefb320c6a808cb352385ae4523fbecc676af1cb091ceb1789b3b83aefc
Program Files\ Dominion Voting Systems\ Election Event Designer\ NLog.config	198812ce6b4a38838737cf1303d212f14c952b81a609968c8410d980c5514431
Program Files\ Dominion Voting Systems\ Election Event Designer\ NLog.dll	e17aac589bd48a623857de7f8113bcae6f72e4fe4652ca615ffa1028353b246d
Program Files\Dominion Voting Systems\Election Event Designer\OneWireAPI.NET.dll	e0e95a3b2fe54ee9dc7c907124d8b564aa0781b163d0d091147f59a3008e7673
Program Files\Dominion Voting Systems\Election Event Designer\PdfConvertLib.dll	80d290cb62e0bf3ffd7e3487afd1672a48310cb6a2a0688cca651cff0b21e70b
Program Files\ Dominion Voting Systems\ Election Event Designer\ Renci.SshNet.dll	451ba700ecb5e77bea05160fda3ee6fb706839d831c925279634614d610ab8d9
Program Files\Dominion Voting Systems\Election Event Designer\Resources\Arial.xml	8a4a0ff9c4f9eb2cc198a2e4f096631d383b2a7126df8b6036e2c1ce42650c54
Program Files\Dominion Voting Systems\Election Event Designer\Resources\ArialBold.xml	2a2cf9e764699a6189777b084601da22e109d84d24071a7ea4821059ea287b7c
Program Files\Dominion Voting Systems\Election EventDesigner\Resources\avalon-framework-cvs-20020806.jar	51ed0ddf5c6cb03f76f250eb22f1b4e5585c0e6242af3a02d5f40ed563af149c
Program Files\Dominion Voting Systems\Election Event Designer\Resources\batik.jar	a8af031e63b8807066f094ab2cd1eae28de6aac92a460705ab44b14b5bb0f07b
Program Files\ Dominion Voting Systems\ Election Event Designer\ Resources\ fop.jar	aa97ad1ca47782cfb5cfae2eac3f7153a87056d924b6987ff8d68542865f2b47
Program Files\Dominion Voting Systems\Election Event Designer\Resources\fopcfg.xml	4d55239b7df47170d1bb4f3a7e878a94a2afa149cbe8d613ca160d2f9430841d
Program Files\Dominion Voting Systems\Election Event Designer\Resources\LabelsPagePattern.rtf	e94bd324c5cb7eb16732f1784ae7ee30188c61f948326b95964308a8c2d0b4f0

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Program Files\Dominion Voting Systems\Election Event Designer\Resources\LabelsPattern.rtf	6cd11621f3d445a21103a1b5c82f287fcd2ac27e3f443568ec6751cf9b37ef94
Program Files\Dominion Voting Systems\Election Event Designer\Resources\lame.exe	af62aa829fd07d8b8729b8ecb9a5c4bb30c9a7add248a25e0861e50e50ec9904
Program Files\Dominion Voting Systems\Election Event Designer\Resources\libeay32.dll	d11e92f738e6f1ac5b8ba1393d2ae3378ba55757822a856da3a9cba9fe124723
Program Files\Dominion Voting Systems\Election EventDesigner\Resources\libgomp-1.dll	287804ff69730b3f5830fb488ea7640fdd52a27250275aca1052adff37c8c25c
Program Files\Dominion Voting Systems\Election Event Designer\Resources\openssl.cfg	06baa8f15992bacd3e5b113cd571d828c0544d0482ccd2e15969fe819957271d
Program Files\Dominion Voting Systems\Election Event Designer\Resources\openssl.exe	2634dd8cb1438d50dedb034ae6fff3fb1282dde84696f927b53b05b02f6484ca
Program Files\Dominion Voting Systems\Election Event Designer\Resources\PropertySetter.xml	973894179933bcd2df000ae29732165556e3271d7b94b177a84706f85a59c5d3
Program Files\Dominion Voting Systems\Election Event Designer\Resources\pthreadgc2.dll	cf14602bb18e7670ea6dc89e577d473b9d65b98f926c998aa40614d671adf98e
Program Files\Dominion Voting Systems\Election Event Designer\Resources\sox.exe	9bf1ed9cfce4092a1b14c442acdb0ea59d3bc1eef32e209e577daf1c23a1ce08
Program Files\Dominion Voting Systems\Election Event Designer\Resources\speexdec.exe	9b935d21d2b9e7fb1394cc3cbab13af3d562105237535f08764137dfbb686038
Program Files\Dominion Voting Systems\Election Event Designer\Resources\speexenc.exe	2f464a7ddfd7a2679797e930a0b367a92ff358fab6ddb2383241d2b291dd0fc5
Program Files\Dominion Voting Systems\Election Event Designer\Resources\ssleay32.dll	28f2fe4d27b694023255f8dbfa6e30ff81d3155c12bd0060e30bd7c39e4ea19f
Program Files\Dominion Voting Systems\Election Event Designer\Resources\zlib1.dll	2ff8a0abf8220e350a229dd3be5f2a0f18fa0d62b588c589c6c47d8c593cf14c
Program Files\ Dominion Voting Systems\ Election Event Designer\ Rotations.dll	0fabf2b0458c116f75eda64e2db61ce9f6519acdd4f9a6a0308c97ef3fabd16f
Program Files\ Dominion Voting Systems\ Election Event Designer\ RTFReader.dll	b3cc3a93d6e62194f6353f9198998b350cabd5c46ea5d6010c65bb43dd01cfac
Program Files\Dominion Voting Systems\Election Event Designer\System.Data.SQLite.dll	907d947ec9f35e0b49bab8df1d3791117eec2cc45a4ef9687557df0e656d9d08
Program Files\ Dominion Voting Systems\ Election Event Designer\ tech.xml	fef0ce1ab3428208f5f62d22436ba104ca5fc4375f35ac3728eca82072d40b8a
Program Files\ Dominion Voting Systems\ Election Event Designer\ TextBlockGui.dll	5582fdc60d64dcb4a01149f0337ed9c114da02551ae59c985c1cc49c37e2c41b
Program Files\Dominion Voting Systems\Election Event Designer\TextDocumentCommon.dll	05ddc2b84e34f0e4940153bec867ebea04691f49a1e762fca9a0ff7c69e6591e
Program Files\Dominion Voting Systems\Election Event Designer\TextGraphicalEditorCore.dll	66cdacf5e719e5d658896ed45d9a1509963abef61f8c67577185148459498997
Program Files\Dominion Voting Systems\Election Event Designer\TextualContent.dll	e7299c0b739d6483868eb5a38ae4d2087bf2b03bb1f3b44f9e0248122ae4a14b
Program Files\ Dominion Voting Systems\ Election Event Designer\ tx16bmp.flt	7bec71af7be3bcf76f8b34c6d7cc7d87c6c612507cdaa57a97b9fa7637a8724f
Program Files\ Dominion Voting Systems\ Election Event Designer\ tx16css.dll	e61ce98925f96cb59bc9f6261f4eeed6e7921b1c4dcb7a2fe5b34d61be1324d8

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Program Files\ Dominion Voting Systems\ Election Event Designer\ tx16doc.dll	b1bae7700444c71bbceb1cbbb488babc11cd4b8a3102aab3861aba22042b9424
Program Files\ Dominion Voting Systems\ Election Event Designer\ tx16dox.dll	67b19985f4ba96e040c1b0f58ea68e7ae1d8a62814ed0ae9dabb59b11886a03c
Program Files\ Dominion Voting Systems\ Election Event Designer\ tx16gif.flt	f5871adae67e25836272700d3b02cf082fa444f0537420da14ec702ccb80718b
Program Files\ Dominion Voting Systems\ Election Event Designer\ tx16htm.dll	0672fc52f7f2172783365f526204e3f1cff0636dc21c65eb70230177b8451c23

Program Files\ Dominion Voting Systems\ Election Event Designer\ tx16ic.ini	3754f3454fce6c40f55f7f3cced671d8828e034ab89bc0a450ab3a88b496a2d2
Program Files\ Dominion Voting Systems\ Election Event Designer\ tx16jpg.flt	27644d1a94c5fece37c71da8a21fde52e35b6fd910f3e7fb4a64459f2454ee5d
Program Files\ Dominion Voting Systems\ Election Event Designer\ tx16pdf.dll	90110a3b0bc84be25cf23c10d6a2bb63898a357820971ea339f6f6474461761c
Program Files\ Dominion Voting Systems\ Election Event Designer\ tx16png.flt	fe7e0d8d261d15cc438eb4f712d1c27396fef1e11d7b2c09e5fbf672fb147a4a
Program Files\ Dominion Voting Systems\ Election Event Designer\ tx16rtf.dll	bcf88d31ea94d43b69a2d79f4b4ce91770ec740a7ff8b8197980004be8cc224f
Program Files\ Dominion Voting Systems\ Election Event Designer\ tx16tif.flt	7eb2f067c31e078cb3416f52a325b83c58b4815720741a3f34d1a80fa93ca2d6
Program Files\ Dominion Voting Systems\ Election Event Designer\ tx16wmf.flt	c479eaf41f32809076e1926bb1ca308cb8c22b08874b3621e9da80e2c45c7ac3
Program Files\ Dominion Voting Systems\ Election Event Designer\ tx16xml.dll	dd3a5458256211dd537a8b0ea7d86648f3b6857d39d853344d7b820bc411c5c7
Program Files\ Dominion Voting Systems\ Election Event Designer\ txic.dll	e8ed7a1e2735c463c856dc7cd1738fc39200137727d295f769aff57aa292683d
Program Files\ Dominion Voting Systems\ Election Event Designer\ txkernel.dll	1af40648e4dbf252cc179b0d9f482b29ed786493ef5c2135bd079e51f878237b
Program Files\ Dominion Voting Systems\ Election Event Designer\ txpdf.dll	10344d82c1555451953e1bb7dcfbee23714f3c492541ff1eb05517d0a16623a0
Program Files\Dominion Voting Systems\Election Event Designer\TXTextControl.dll	8172aed7c82846bee5328a781c3bdce359cf8b6a6406d85a807dc7302d1f20b0
Program Files\Dominion Voting Systems\Election Event Designer\TXTextControl.Server.dll	fb584b4e7da2bdb79e58af06a2be393a0fedd0b2136d80ffc970a626e66235f7
Program Files\Dominion Voting Systems\Election Event Designer\TXTextControl.Windows.Forms.dll	77610ff1d3e44e259da659271262ce9c2250e5a3224d74fd05e962ecc3c2cb4d
Program Files\ Dominion Voting Systems\ Election Event Designer\ txtools.dll	f8893f9f889d38c81e1e60e19ec1f24366020925419fd5f78d4eb7bfc5578846
Program Files\Dominion Voting Systems\Election Event Designer\USElectionsDomain.dll	ae1434bb4f2baa8213e99e29db06e70c5623db63e35527a3f7a5f4ef38a10bed
Program Files\ Dominion Voting Systems\ Election Event Designer\ vjsc.dll	ee26fbf3f4c7222ae3aefaa957c5d237103bb400ea4b620d567ed768fb9d5157
Program Files\ Dominion Voting Systems\ Election Event Designer\ vjsjbc.dll	9d18f7b502727209aa6acc5830f9b24f16e61584fa695425b405202e6ff5ba99
Program Files\ Dominion Voting Systems\ Election Event Designer\ vjsnativ.dll	934d4ca23671d245d4fbe433e726bb7bb38a4258e1a6ff4681a7aaea2a4bbd1a
Program Files\ Dominion Voting Systems\ Election Event Designer\ vjssupuilib.dll	d8fd2643d2d19301aa83c4baa3e7062795e36344307429baa63c2fd92d37c10b
Program Files\ Dominion Voting Systems\ Election Event Designer\ vjsvwaux.dll	ca8ba8e4eb56d712fb00489039548846f0f4e6238f0a5daa94cc8bebc53e0ab2

ICVA

Version: 5.5.32.4 64-bit	
Filename	**SHA-256 Value**

Program Files\ Dominion Voting Systems\ ICVA\ activate card statistics.xml	cdf2e01492b669fa90034956c1deae920ad25c773147e3cec759a7b6b8a041e4
Program Files\ Dominion Voting Systems\ ICVA\ BitMiracle.LibTiff.NET.dll	f752a459a1eb5d35c597ff26437a75cc9aff7a5ca1d4fcdb2bc08ded5cb71465
Program Files\Dominion Voting Systems\ICVA\Democracy Suite ImageCast VoterActivation User Guide.pdf	55beae600aa37eb2bc694846593d722cad7dcfa17bc08243d65c8738f197bd6c
ProgramFiles\DominionVotingSystems\ICVA\DVS.DemocracySuite.ExportImport.Formats.dll	bbfa1e0a11c5bb1dd78797e99b2a9cbc8c38b4f0a6a3d5861783e9aa1757e839
Program Files\ Dominion Voting Systems\ ICVA\ DVS.ICVA.GUI.exe	dca90ae5d7964586f599f374bef672928cda0adfe57efe5f58cdab1f6108ee76
Program Files\ Dominion Voting Systems\ ICVA\ DVS.ICVA.GUI.exe.config	d4359fc10af49afd5fc7b6cfa8f76bddf1beb3f6376f4d5420a9b2d1d01d483f
Program Files\ Dominion Voting Systems\ ICVA\ DVS.ICVA.ViewModel.dll	121484614bddc7fac835288ed8edb128f89630bd7087287ce98df4b9f5740c04
Program Files\ Dominion Voting Systems\ ICVA\ DVS.SmartCardManager.dll	63e3b86976a68c6a940039cc49509e37c4edf0087ca85932ee3f41ce7af51bac

Program Files\ Dominion Voting Systems\ ICVA\ DVS.Utilities.Common.dll	9b708565f9db066926c7dc348f9fbdb442dafce1ae5107eb3010a8420ceeaab3
Program Files\ Dominion Voting Systems\ ICVA\ DVS.Utilities.MSWinManager.dll	84f7c9e66dff0a2eab5f2a67803d95cc181b20a015bb4b585aafcfcb9a0b0792
Program Files\ Dominion Voting Systems\ ICVA\ DVSICVACustomAction.CA.dll	c7b6c5447c1089fe1242655746f956e4bbb98f1af6e249df4b5cb3eceb2d2a22
Program Files\ Dominion Voting Systems\ ICVA\ DVSICVACustomAction.dll	616b1d3b0ce89cb4eaec73d63e7625bcc3344eb16bb4a4971c2d3087e029773c
Program Files\ Dominion Voting Systems\ ICVA\ itextsharp.dll	beb5c25eb5f659cbb2574f3eaddda35c5b18e860558daac4533b4ed98e29bd55
Program Files\ Dominion Voting Systems\ ICVA\ Log\ Error.log	d9a93d0ed272c317c02a8292350a1e8316e1f7a076906ccb73255a0308c77288
Program Files\ Dominion Voting Systems\ ICVA\ Log\ Info.log	620ed70bd3f3e0bc7a4043024b671edb4f4d54c7fcd0489c3a295ee73e61a17b
Program Files\ Dominion Voting Systems\ ICVA\ Log\ Trace.log	53acd3341bc85900088af3018ee1dbaf40d46e14d3c268dfe89a03863ecb1f6c
ProgramFiles\DominionVotingSystems\ICVA\Microsoft.Deployment.WindowsInstaller.dll	9aebc76cb8c864593e0419162b2bf40b81bd52b3ff12edac1d032828df83dcfa
Program Files\ Dominion Voting Systems\ ICVA\ Microsoft.Web.Administration.dll	5b28ceefb320c6a808cb352385ae4523fbecc676af1cb091ceb1789b3b83aefc
Program Files\ Dominion Voting Systems\ ICVA\ Nlog.config	d7ada065bd3e12a41a3ace29217191ae6e83c88852b3a5fd8b8b8bc51ee5589a
Program Files\ Dominion Voting Systems\ ICVA\ NLog.dll	e17aac589bd48a623857de7f8113bcae6f72e4fe4652ca615ffa1028353b246d
Program Files\ Dominion Voting Systems\ ICVA\ Renci.SshNet.dll	451ba700ecb5e77bea05160fda3ee6fb706839d831c925279634614d610ab8d9

EMS Results Tally and Reporting

Version: 5.5.32.4 64-bit	
Filename	**SHA-256 Value**
Program Files\Dominion Voting Systems\Results Tally and Reporting\BitMiracle.LibTiff.NET.dll	f752a459a1eb5d35c597ff26437a75cc9aff7a5ca1d4fcdb2bc08ded5cb71465
Program Files\Dominion Voting Systems\Results Tally and Reporting\DemocracySuite EMS RTR Users Guide.pdf	0b5d83b40379b7af45979b19943820109d224b22d3b675c7c3c93207be4a641c
Program Files\Dominion Voting Systems\Results Tally and Reporting\DVS.DemocracySuite.AudioLibrary.dll	97d94839529d0ad8c320a6169f30421e2e0ad25dc0e92c7824df334c92c46a98
Program Files\Dominion Voting Systems\Results Tally and Reporting\DVS.DemocracySuite.AuthenticationService.dll	8e8af362b58d0a8948036a3ac9418acdc61ed0c8f13cd0828eb8c9d7a4c43be3
Program Files\Dominion Voting Systems\Results Tally and Reporting\DVS.DemocracySuite.BehaviorSettings.dll	158c66d14058280cd1216207b963d3d4df6c0f6a65be1c8de1c771f3b702405f
Program Files\Dominion Voting Systems\Results Tally and Reporting\DVS.DemocracySuite.ClientCommunicationObject.dll	7a4cce8bd5e9bc77487651d8a5ce4d1030cab8a2c246a687980a85583d084094

Program Files\Dominion Voting Systems\Results Tally and Reporting\DVS.DemocracySuite.Common.dll	3cd1e5d9e72b235c9ed49e245db59de5b1e02bad4c9982b180439827ae44f73c
Program Files\Dominion Voting Systems\Results Tally and Reporting\DVS.DemocracySuite.ConfigurationService.dll	c62139bab0ec6b2156c8353fb1d002c9ec174fa72bcde9045081ca62ae8fea0e
Program Files\Dominion Voting Systems\Results Tally and Reporting\DVS.DemocracySuite.CryptoService.dll	26b047b0c7a710b7daf8398c91cb6044a43b4facf8dca9e8bed3536269ef5acc
Program Files\Dominion Voting Systems\Results Tally and Reporting\DVS.DemocracySuite.DatabaseService.dll	6002612c6cfc8b567469b564cf12ed6a19baecd37c3dea96bcbeed6ebf053599

Program Files\Dominion Voting Systems\Results Tally and Reporting\DVS.DemocracySuite.DCFFiller.Serialization.dll	79937b6a2478b71826c6bac3a19df72cbb20236fe320b2dcecae3930d2534d1e
Program Files\Dominion Voting Systems\Results Tally and Reporting\DVS.DemocracySuite.EMSRTRCustomAction x64.CA.dll	648c226b9f13a45e49116c4e23f0251c433c50968969b5f7fd3b3df5187da3bf
Program Files\Dominion Voting Systems\Results Tally and Reporting\DVS.DemocracySuite.EMSRTRCustomAction x64.dll	6b468aaf895fce66c1d345669af2a45279a0a7492853bbb76eb89e19ba49eeea
Program Files\Dominion Voting Systems\Results Tally and Reporting\DVS.DemocracySuite.ExportImport.Formats.dll	2ce653b602aa5e4d7a0e3cfa13da27c875f3149a24a7d8704b1d2d5e14f7da86
Program Files\Dominion Voting Systems\Results Tally and Reporting\DVS.DemocracySuite.LibraryCollector.dll	c27793e73183d07cebc2b2d71550581651177eda1c79a757888b612f9fdf29c4
Program Files\Dominion Voting Systems\Results Tally and Reporting\DVS.DemocracySuite.PermissionManager.dll	b5cc082163b55894029fbc0913e72e37a52e7e68406cccf56ad3bcf0ce47f6bb
Program Files\Dominion Voting Systems\Results Tally and Reporting\DVS.DemocracySuite.RemoteServerProvider.dll	ee90028735c6cdce030eae9519b0ec32c5f46dbb6b930f99f6d6b2f13620f259
Program Files\Dominion Voting Systems\Results Tally and Reporting\DVS.DemocracySuite.ReportServiceBase.dll	1926167888613a18032de9670c4dc89ca9e61e012171515f3656ea804efbcf2e
Program Files\Dominion Voting Systems\Results Tally and Reporting\DVS.DemocracySuite.ResultInterfaces.dll	1cd797a95f350385039a0d99e0abafe5b10d94f2a7b4ef16c2d406b8a8f93263
Program Files\Dominion Voting Systems\Results Tally and Reporting\DVS.DemocracySuite.ResultsDomain.dll	71534387e2f9adabf37c914d0e15d44345f9631be6915d696bf89fe0522d3cbb
Program Files\Dominion Voting Systems\Results Tally and Reporting\DVS.DemocracySuite.ResultServiceClient.dll	9d46e942c904218f3bf47b6f1c606b6b3af035bac35732489b1bc574e8528fa1
Program Files\Dominion Voting Systems\Results Tally and Reporting\DVS.DemocracySuite.ResultsParsing.dll	b78eb1d5223ef40fe512314e2895f7e3f971b8c57e27562b0a3912e48664a620
Program Files\Dominion Voting Systems\Results Tally and Reporting\DVS.DemocracySuite.ResultTally.exe	587ac0654da1b3a97c32a65c202794c3be6708fa0a88ec254e095c8514c0a7d8
Program Files\Dominion Voting Systems\Results Tally and Reporting\DVS.DemocracySuite.ResultTally.exe.Config	36a9d3741499c62f28edebb397288a1c8ca09196dd68f3abe80242217b3d167d
Program Files\Dominion Voting Systems\Results Tally and Reporting\DVS.DemocracySuite.ResultTally.Reports.dll	a482e27a005ae6ebd5fd67fbed13b8c290008c19469d9927e31d79144995eeb5
Program Files\Dominion Voting Systems\Results Tally and Reporting\DVS.DemocracySuite.ResultTally.StyleAdjustment.dll	4eae2ba9447224cbb2c816c82765b155ba3ec18d0f5f227a3bd6d8c3a7be515c
Program Files\Dominion Voting Systems\Results Tally and Reporting\DVS.DemocracySuite.TabulatorGDomain.dll	d874ceb463d3b24d439c40e31ee6c8dd19edd1405be04a924be164082c841fe3

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Program Files\Dominion Voting Systems\Results Tally and Reporting\DVS.DemocracySuite.Ui.Wpf.CustomControls.dll	b40cfc7f9cc9fc9971d7b6da5880a1b3c0b007b9ab0466b90bce720c89f5a6bd
Program Files\Dominion Voting Systems\Results Tally and Reporting\DVS.DemocracySuite.USElectionsDomain.dll	26f4bacb03a7f74e82e799e2f703dd862d542cc7c3095592ceac8e40241f4fdd
Program Files\Dominion Voting Systems\Results Tally and Reporting\DVS.DemocracySuite.USElectionsDomain.ElectionFiles.dll	522b7ca52fa6b8c9afeae892e1676d0916ff8717dc87417479133b94f8b2ef22
Program Files\Dominion Voting Systems\Results Tally and Reporting\DVS.DemocracySuite.VotingMethods.dll	5b03521a158ee43e2d05f5f02273be84631b7a087376730c918a709514d5d2e5
Program Files\Dominion Voting Systems\Results Tally and Reporting\DVS.ElectionEvent.BallotRendererSupport.dll	e0318c28453a5d923fe1c3d97d9c06d18c634fa536b9e6f2d5a73760b4eac64a

Program Files\Dominion Voting Systems\Results Tally and Reporting\DVS.Framework.Commands.dll	3c58d7021b68b6cadd3b7a8ba2b4d0f712b0f33bce76588e22574ff33817c36f
Program Files\Dominion Voting Systems\Results Tally and Reporting\DVS.Framework.DbMaker.dll	5d8a84f8354339371a210d668c3ca7af9b6fc7d3f06714af8b99874204ddd9b6
Program Files\Dominion Voting Systems\Results Tally and Reporting\DVS.Framework.Domains.Logging.dll	23f4dae613e797b91edda55f74efa57f4cb61ff33bce4a5b2ce1ded26beb09fd
Program Files\Dominion Voting Systems\Results Tally and Reporting\DVS.Framework.Domains.Parametrization.dll	a2e4bf4c62576360a77dc2736ce4021845a0691a431297a5ff0579bf6213458b
Program Files\Dominion Voting Systems\Results Tally and Reporting\DVS.Framework.Domains.PermissionManagement.dll	68b5c478768a5dd002ff59e6d2945c546b6675e766c164df70ff8118150e139a
Program Files\Dominion Voting Systems\Results Tally and Reporting\DVS.Framework.Domains.SystemVariables.dll	e80e85d67f0cd8bcfe9bfa2c586e0f0774b85db3a09a0367d575a249223ad831
Program Files\Dominion Voting Systems\Results Tally and Reporting\DVS.Framework.GUIConfiguration.dll	f25f99ca9eb286b71d71b19cb4f3166498bc9cee41cf430f78948052951ea9b1
Program Files\Dominion Voting Systems\Results Tally and Reporting\DVS.Framework.GUICore.dll	e710346cb9859a3fd07ec22e3f8798f578681275afe1371349c854a03c3b9696
Program Files\Dominion Voting Systems\Results Tally and Reporting\DVS.Framework.MemoryCore.dll	c5b36ce2488c0227200c40fa5f4d02a2ca329fb8c35f879b089100388bdf089f
Program Files\Dominion Voting Systems\Results Tally and Reporting\DVS.Framework.RemotingAdo.dll	93d41b5405d30c95fa232a1beb19fd222b83679ad263fbfef51e48f5524da74e
Program Files\Dominion Voting Systems\Results Tally and Reporting\DVS.Framework.ResourceTranslator.dll	99c28a5ecd08c9fc2bc1fc6af708ab952688b379578de91730932b2712773506
Program Files\Dominion Voting Systems\Results Tally and Reporting\DVS.Framework.Serializer.dll	002fae5c21d4d42686c7624e9d1a28239ab2bfdd4b0a410d96ec23f1c01c5f8c
Program Files\Dominion Voting Systems\Results Tally and Reporting\DVS.Framework.Utilities.DbModificationFilter.exe	09242d758cf0a96c8fdbb10bc9700d9343234376264bb4f5c0177cec57e049b5
Program Files\Dominion Voting Systems\Results Tally and Reporting\DVS.Utilities.AudioConverters.dll	f4623642887d85a74bc4b81c027b8a36fba8a2912e3c6f39ba19db2a569125b8
Program Files\Dominion Voting Systems\Results Tally and Reporting\DVS.Utilities.BinaryFileAccess2007.dll	0b9cf8928c9673f6862a52066dd471bfcff52011fc351c92997666b4640ad83e

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Program Files\Dominion Voting Systems\Results Tally and Reporting\DVS.Utilities.Common.dll	7d700590f8f05776d12567fb3df5c5afdda27828c5ae60a7158354f362f76039
Program Files\Dominion Voting Systems\Results Tally and Reporting\DVS.Utilities.FileSystemServiceFacade.dll	f3698f4eefddb4608dab323b65e4ffbc8a3acc59956d9624da1f337373087e8e
Program Files\Dominion Voting Systems\Results Tally and Reporting\DVS.Utilities.MSWinManager.dll	9021523f19e6fb0ac0c12843f85352ec1829ea62cc805ceb07a8253d3867864b
Program Files\Dominion Voting Systems\Results Tally and Reporting\DVS.Utilities.ProjectMangementFacade.dll	6f8d613966ee4fb7ac52d9c1bf1d4482d93fa0e94aa8efc37e763e03f059a800
Program Files\Dominion Voting Systems\Results Tally and Reporting\DVS.Utilities.RemoteCacheProxy.dll	43003badc162da57d6caff17961f09d86eb3bd343d95890e1d647d5bbb15d9ce
Program Files\Dominion Voting Systems\Results Tally and Reporting\DVS.Utilities.RemoteInterfaces.dll	c03a2a4150c5e0be9484211244280a07cdf5ceb5c387293cd8be86557f36ff70
Program Files\Dominion Voting Systems\Results Tally and Reporting\DVS.Utilities.UsbFileSystem.dll	334fa0d337aeecf63c776f3be1d601ba3ca4edaa39483c85cabd5d06827c3dce

Program Files\Dominion Voting Systems\Results Tally and Reporting\DVS.UtilitiesFullFrameworkWrapper.dll	1cbb6884322c4eb63443864989224528db62c696676e7ceebbebf01a21947914
Program Files\Dominion Voting Systems\Results Tally and Reporting\en-US\DVS.ElectionEvent.BallotRendererSupport.resources.dll	7d99e775859153ec9ca7776f4337ace47b310a746a5fa09f1e6ce5e0af4adce5
Program Files\Dominion Voting Systems\Results Tally and Reporting\infragisticswpf4.datavisualization.v12.1.dll	88e3b218844a28f45e14341c225663a60733bb8ed3a904a2fc82ee7cdb018e2d
Program Files\Dominion Voting Systems\Results Tally and Reporting\infragisticswpf4.dockmanager.v12.1.dll	9916004aa048b2cb6bc72d83a15042832b6458d39da261df23a5955a7dcff2f5
Program Files\Dominion Voting Systems\Results Tally and Reporting\infragisticswpf4.editors.v12.1.dll	6eaf86848c240faea4f5bd4c15388ce31ac23e085a14c52540fb1b131df70c16
Program Files\Dominion Voting Systems\Results Tally and Reporting\InfragisticsWPF4.v12.1.dll	e6d7c6e94d4bc62b5ebea0d887196b0e4d0bca5d978914325d9dac00a6f7fdbd
Program Files\ Dominion Voting Systems\ Results Tally and Reporting\ itextsharp.dll	beb5c25eb5f659cbb2574f3eaddda35c5b18e860558daac4533b4ed98e29bd55
Program Files\ Dominion Voting Systems\ Results Tally and Reporting\ Log\ Error.log	add1cdb0d112a673f2867a87797b15b236df1fc5902a2ced9738668cf751f30b
Program Files\ Dominion Voting Systems\ Results Tally and Reporting\ Log\ Info.log	b27215a7e0423978881648850f4740ad248bc39aa32ec54e2f9e2f1d2a108aab
Program Files\Dominion Voting Systems\Results Tally and Reporting\Microsoft.Deployment.WindowsInstaller.dll	9aebc76cb8c864593e0419162b2bf40b81bd52b3ff12edac1d032828df83dcfa
Program Files\Dominion Voting Systems\Results Tally and Reporting\Microsoft.Practices.Prism.Mvvm.dll	06f36c88682b48640e1adc2d8320672b210db2c5eb0038eaae7d21b809e1a3ba
Program Files\Dominion Voting Systems\Results Tally and Reporting\Microsoft.Practices.Prism.SharedInterfaces.dll	df38529542a1b34ee6ec2db514e6503cf68c6ec37613f99895d5184d03f455e0
Program Files\Dominion Voting Systems\Results Tally and Reporting\Microsoft.ReportViewer.Common.dll	e3f6d98df27d1877366a374a82dbdfa529405297217624b1309a57339d57d4dd
Program Files\Dominion Voting Systems\Results Tally and Reporting\Microsoft.ReportViewer.DataVisualization.dll	e9ea1b82fd7bc766c723181f1cd01d9ba7dc9754d34c3a5e4cb12601d059b1fc
Program Files\Dominion Voting Systems\Results Tally and Reporting\Microsoft.ReportViewer.ProcessingObjectModel.dll	2e9a2509b5e79c68aec78fe84df95c52ba2d56359b1e24920479bd143410e2a5

Program Files\Dominion Voting Systems\Results Tally and Reporting\Microsoft.ReportViewer.WinForms.dll	b10ada2d6881eead90dc319f791abd0d5d6f028e3532b7d7641addd001afb93c
Program Files\Dominion Voting Systems\Results Tally and Reporting\Microsoft.Web.Administration.dll	5b28ceefb320c6a808cb352385ae4523fbecc676af1cb091ceb1789b3b83aefc
Program Files\ Dominion Voting Systems\ Results Tally and Reporting\ NLog.config	c0ff29f881acb80f67c7f5a6cfee091cb9438d7edeb230ac751bbe5b352bc1fe
Program Files\ Dominion Voting Systems\ Results Tally and Reporting\ NLog.dll	e17aac589bd48a623857de7f8113bcae6f72e4fe4652ca615ffa1028353b246d
Program Files\ Dominion Voting Systems\ Results Tally and Reporting\ nlogError.txt	f60f967a6707017a2ebaa6a469711a2cb004856f8ec132ccd1b5857ac8fef1b3
Program Files\Dominion Voting Systems\Results Tally and Reporting\Renci.SshNet.dll	451ba700ecb5e77bea05160fda3ee6fb706839d831c925279634614d610ab8d9
Program Files\Dominion Voting Systems\Results Tally andReporting\Resources\avalon-framework-cvs-20020806.jar	51ed0ddf5c6cb03f76f250eb22f1b4e5585c0e6242af3a02d5f40ed563af149c
Program Files\Dominion Voting Systems\Results Tally and Reporting\Resources\batik.jar	a8af031e63b8807066f094ab2cd1eae28de6aac92a460705ab44b14b5bb0f07b
Program Files\Dominion Voting Systems\Results Tally and Reporting\Resources\fop.jar	aa97ad1ca47782cfb5cfae2eac3f7153a87056d924b6987ff8d68542865f2b47
Program Files\Dominion Voting Systems\Results Tally and Reporting\System.Data.SQLite.dll	907d947ec9f35e0b49bab8df1d3791117eec2cc45a4ef9687557df0e656d9d08

Program Files\ Dominion Voting Systems\ Results Tally and Reporting\ tech.xml	eaad0c4b828b6875f5041bb020ca6db12b64a97f5616a0b820c8013dd14778f2
Program Files\ Dominion Voting Systems\ Results Tally and Reporting\ tx16 bmp.flt	7bec71af7be3bcf76f8b34c6d7cc7d87c6c612507cdaa57a97b9fa7637a8724f
Program Files\ Dominion Voting Systems\ Results Tally and Reporting\ tx16 css.dll	e61ce98925f96cb59bc9f6261f4eeed6e7921b1c4dcb7a2fe5b34d61be1324d8
Program Files\ Dominion Voting Systems\ Results Tally and Reporting\ tx16 doc.dll	b1bae7700444c71bbceb1cbbb488babc11cd4b8a3102aab3861aba22042b9424
Program Files\ Dominion Voting Systems\ Results Tally and Reporting\ tx16 dox.dll	67b19985f4ba96e040c1b0f58ea68e7ae1d8a62814ed0ae9dabb59b11886a03c
Program Files\ Dominion Voting Systems\ Results Tally and Reporting\ tx16 gif.flt	f5871adae67e25836272700d3b02cf082fa444f0537420da14ec702ccb80718b
Program Files\ Dominion Voting Systems\ Results Tally and Reporting\ tx16 htm.dll	0672fc52f7f2172783365f526204e3f1cff0636dc21c65eb70230177b8451c23
Program Files\ Dominion Voting Systems\ Results Tally and Reporting\ tx16 ic.ini	3754f3454fce6c40f55f7f3cced671d8828e034ab89bc0a450ab3a88b496a2d2
Program Files\ Dominion Voting Systems\ Results Tally and Reporting\ tx16 jpg.flt	27644d1a94c5fece37c71da8a21fde52e35b6fd910f3e7fb4a64459f2454ee5d
Program Files\ Dominion Voting Systems\ Results Tally and Reporting\ tx16 pdf.dll	90110a3b0bc84be25cf23c10d6a2bb63898a357820971ea339f6f6474461761c
Program Files\ Dominion Voting Systems\ Results Tally and Reporting\ tx16 png.flt	fe7e0d8d261d15cc438eb4f712d1c27396fef1e11d7b2c09e5fbf672fb147a4a
Program Files\ Dominion Voting Systems\ Results Tally and Reporting\ tx16 rtf.dll	bcf88d31ea94d43b69a2d79f4b4ce91770ec740a7ff8b8197980004be8cc224f
Program Files\ Dominion Voting Systems\ Results Tally and Reporting\ tx16 tif.flt	7eb2f067c31e078cb3416f52a325b83c58b4815720741a3f34d1a80fa93ca2d6
Program Files\ Dominion Voting Systems\ Results Tally and Reporting\ tx16 wmf.flt	c479eaf41f32809076e1926bb1ca308cb8c22b08874b3621e9da80e2c45c7ac3
Program Files\ Dominion Voting Systems\ Results Tally and Reporting\ tx16 xml.dll	dd3a5458256211dd537a8b0ea7d86648f3b6857d39d853344d7b820bc411c5c7
Program Files\ Dominion Voting Systems\ Results Tally and Reporting\ txic.dll	e8ed7a1e2735c463c856dc7cd1738fc39200137727d295f769aff57aa292683d

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Program Files\ Dominion Voting Systems\ Results Tally and Reporting\ txkernel.dll	1af40648e4dbf252cc179b0d9f482b29ed786493ef5c2135bd079e51f878237b
Program Files\ Dominion Voting Systems\ Results Tally and Reporting\ txpdf.dll	10344d82c1555451953e1bb7dcfbee23714f3c492541ff1eb05517d0a16623a0
Program Files\Dominion Voting Systems\Results Tally and Reporting\TXTextControl.dll	8172aed7c82846bee5328a781c3bdce359cf8b6a6406d85a807dc7302d1f20b0
Program Files\Dominion Voting Systems\Results Tally and Reporting\TXTextControl.Server.dll	fb584b4e7da2bdb79e58af06a2be393a0fedd0b2136d80ffc970a626e66235f7
Program Files\Dominion Voting Systems\Results Tally and Reporting\TXTextControl.Windows.Forms.dll	77610ff1d3e44e259da659271262ce9c2250e5a3224d74fd05e962ecc3c2cb4d
Program Files\ Dominion Voting Systems\ Results Tally and Reporting\ txtools.dll	f8893f9f889d38c81e1e60e19ec1f24366020925419fd5f78d4eb7bfc5578846

SmartCard Helper Service

Version: 5.5.32.4 64-bit	
Filename	**SHA-256 Value**
Program Files\Dominion Voting Systems\Smart Card Service\DVS.SmartCardHelperService.exe	50406d2f5ec8f9c36c2a02a618d54016a335feae020b6f5b80ec4207be579070
Program Files\Dominion Voting Systems\Smart Card Service\DVS.SmartCardHelperService.exe.config	5a40aa628c9c0bd9dd5483b89d717636d989970c117bb3240b707aeeaeb78f83
Program Files\Dominion Voting Systems\Smart Card Service\DVS.Utilities.DevLogger.dll	49ef6646f9022e24080331cfadc992e8af8eb73515361dff4445c91e71a554b2
Program Files\Dominion Voting Systems\Smart Card Service\DVS.Utilities.SecureLogin.dll	41f2ff654e1484f49b91fabd0310b01f87b3007481ec08c3a0197bd920c09cfd
Program Files\ Dominion Voting Systems\ Smart Card Service\ Log\ Trace.log	cdcbddd51d81505c73c65620d10b56957dff508c107621d666e4cbd83deba047
Program Files\ Dominion Voting Systems\ Smart Card Service\ NLog.config	44de83fa30582135c24f7fd2fcf4669a50198397378e06e2fd5bd6cddcce3e0b
Program Files\ Dominion Voting Systems\ Smart Card Service\ NLog.dll	e17aac589bd48a623857de7f8113bcae6f72e4fe4652ca615ffa1028353b246d

Election Data Service

Version: 5.5.32.4	
Filename	**SHA-256 Value**
Program Files (x86)\Dominion Voting Systems\Election Data Service\\BitMiracle.LibTiff.NET.dll	f752a459a1eb5d35c597ff26437a75cc9aff7a5ca1d4fcdb2bc08ded5cb71465
Program Files (x86)\Dominion Voting Systems\Election Data Service\\DVS.Common.dll	cc85e6593e7636d52935ded776e42fe68ef07f3c120bb8e12ce07f95cf45f195
Program Files (x86)\Dominion Voting Systems\Election Data Service\\DVS.DemSuite.Services.Common.dll	370bce8cdb93bc5ac2b253f19b5da371121a3f17e9a0758b63beabf4996b36cb
Program Files (x86)\Dominion Voting Systems\Election Data Service\\DVS.EMS.Infrastructure.dll	b17d171c2289fa26ac9983ea920dfd8e9005b9c4f044a3759cc0c7db97362546
Program Files (x86)\Dominion Voting Systems\Election Data Service\\DVS.EMS.Services.Common.dll	e803c7a31d18e64bac815e3a83ecb55ff3d64d505ad7b03fee2299f913b1cf8b
Program Files (x86)\Dominion Voting Systems\Election Data Service\\DVS.EMS.Services.ElectionData.Contract.dll	8b0ab5f0ada036fa7a925c8a664f22404eefdc6cc0077467ab5883f62d316914

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Program Files (x86)\Dominion Voting Systems\Election Data Service\\DVS.EMS.Services.ElectionData.ElectionDataService.Domain.dll	ffe93d06a31ba0abaf99df4c03bef751aedc431471704124539cef5ecf39d63d
Program Files (x86)\Dominion Voting Systems\Election Data Service\\DVS.EMS.Services.ElectionData.ElectionDataService.exe	555c84ff6bf35897f646d88cc117e00a4df6f2d0dcbf8f50a66ed18936cbc01d
Program Files (x86)\Dominion Voting Systems\Election Data Service\\DVS.EMS.Services.ElectionData.ElectionDataService.exe.config	98a15ba31fde5fa654323c75f831d052f46ae9575071b661972a643ad84de383
Program Files (x86)\Dominion Voting Systems\Election Data Service\\DVS.EMS.Services.ElectionService.Contract.dll	38eb4c6f93f463d19d36531172b41cfe9a5633f14314853d76c184ce553c4532
Program Files (x86)\Dominion Voting Systems\Election Data Service\\DVS.Utilities.Common.dll	d5fa1b91e9e915eaa2a3801bae98166c0fb3dd33353e9fde951b2409104f6b2a
Program Files (x86)\ Dominion Voting Systems\ Election Data Service\ itextsharp.dll	f6576c783a8db98c4a09919ea0a8b8bff70ac1729d3aa2935e07c6e639f25070
Program Files (x86)\Dominion Voting Systems\Election Data Service\\Microsoft.IdentityModel.dll	fd50c4488ab275dd892ca8ed1adb0d125c6c59381b59a1ae5d9f2a299781239b
Program Files (x86)\Dominion Voting Systems\Election Data Service\\Microsoft.Practices.EnterpriseLibrary.Common.dll	cb0153495092cab9bb80803c51b25f00a550deae28b35007c60888dbc1529673
Program Files (x86)\Dominion Voting Systems\Election Data Service\\Microsoft.Practices.EnterpriseLibrary.Data.dll	ab6cfbf4865f164e2fba93d8187293f24927e267ca9960e51b3df63461bdffdb
Program Files (x86)\Dominion Voting Systems\Election Data Service\\Microsoft.Practices.EnterpriseLibrary.Logging.dll	6f785c20eae305a430d1bfc358d8a54b3a218238fd3a444ca29aba1e77108fa8
Program Files (x86)\Dominion Voting Systems\Election Data Service\\Microsoft.Practices.ServiceLocation.dll	2028dba77ffefc0fb9f3cf5aba68868d6f706cb2599b1a67d5784d1cc411ccf7
Program Files (x86)\Dominion Voting Systems\Election Data Service\\Microsoft.Practices.Unity.Configuration.dll	d91f9863439bd849889105ecc3182eb1dc14e8e6bcb7aa33b9058b5e837ea271
Program Files (x86)\Dominion Voting Systems\Election Data Service\\Microsoft.Practices.Unity.dll	201655cd2f641ac05e450fb03ce763afbc5e859d6ce1a25ae7fef3c27a2ee39a
Program Files (x86)\Dominion Voting Systems\Election Data Service\\Microsoft.Practices.Unity.Interception.dll	79ec0b9b9752fe63c0c37bc4217c2e7d9ea33016107e3870d5e61889eb8cc3e3
Program Files (x86)\ Dominion Voting Systems\ Election Data Service\ NLog.dll	e17aac589bd48a623857de7f8113bcae6f72e4fe4652ca615ffa1028353b246d

Election File Manager

Version: 5.5.32.4	
Filename	**SHA-256 Value**
Program Files (x86)\Dominion Voting Systems\Election File Manager\BitMiracle.LibTiff.NET.dll	f752a459a1eb5d35c597ff26437a75cc9aff7a5ca1d4fcdb2bc08ded5cb71465
Program Files (x86)\Dominion Voting Systems\Election File Manager\DVS.Common.dll	7ccfb7b1b409b50a07ac04a6c6b31c22a76bfe71b2f6532d0bafbe25a5897c9f
Program Files (x86)\Dominion Voting Systems\Election File Manager\DVS.DemocracySuite.ResultInterfaces.dll	ee3f87f31b4607bbed3a1c5361453b21fca3de70350fe0b7572e7d85b54da628
Program Files (x86)\Dominion Voting Systems\Election File Manager\DVS.DemocracySuite.ResultsDomain.dll	0e32ff2ebb5e082ab894c7087665a263d16fc10f6a7f894aace68859cb4055df

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Program Files (x86)\Dominion Voting Systems\Election File Manager\DVS.DemSuite.Services.Common.dll	186a106e2540e0a9460344678bc7affd273fead2c3741fd5fa90ff91ca2d5911
Program Files (x86)\Dominion Voting Systems\Election File Manager\DVS.EMS.Infrastructure.dll	7bd39e7940c08514279b1a64c6bdc9403814c7978bdfbfa62acf9564eb44588d
Program Files (x86)\Dominion Voting Systems\Election File Manager\DVS.EMS.Services.Common.dll	61942a0914e1cde3c6b4574e86ed435ca5c666899d5f20bbfce591ebc52dc3e5
Program Files (x86)\Dominion Voting Systems\Election File Manager\DVS.EMS.Services.ElectionData.Contract.dll	f5dcf4b91bdd8002b1ce624146537c64b98d640a55096c66dd3b150c4fa113ff
Program Files (x86)\Dominion Voting Systems\Election File Manager\DVS.Tabulation.Domain.dll	d958a068983f8393360ad345043048d3815ff81a497dd53ba5fdaba5166432f3
Program Files (x86)\Dominion Voting Systems\Election File Manager\DVS.Tabulation.IO.dll	28745b1debfba21f05dd0ddddbd7a123c0b5c755b052777dd0e0cd6f96f03a49
Program Files (x86)\Dominion Voting Systems\Election File Manager\DVS.Tabulation.Services.ElectionFileManager.Contract.dll	4b4b12b0690356880a4540bdf7aeb13dc9d3223ecfd735e8c7506ca1b4811db6
Program Files (x86)\Dominion Voting Systems\Election File Manager\DVS.Tabulation.Services.ElectionFileManager.exe	c352a6ef2717cb3f1d840ec090788f11c64b95eb9ac0787de182af9846de18ec
Program Files (x86)\Dominion Voting Systems\Election File Manager\DVS.Tabulation.Services.ElectionFileManager.exe.config	05aa7da5e438d96ecdcfc6f61e8c6fa4dcc8fc8adde9cad367cae93995cfe0a5
Program Files (x86)\Dominion Voting Systems\Election File Manager\DVS.Utilities.Common.dll	d5fa1b91e9e915eaa2a3801bae98166c0fb3dd33353e9fde951b2409104f6b2a
Program Files (x86)\Dominion Voting Systems\Election File Manager\DVS.Utilities.RemoteInterfaces.dll	b379429abaced02e1bbc199e3ef79984f6e94b43fc655a8228c7dd9ced53a2bc
Program Files (x86)\Dominion Voting Systems\Election File Manager\EntityFramework.dll	ed6ebd749052f9018f6699671ae5469adedf086cf8b1bd4256bbe9c4e7f6ff05
Program Files (x86)\Dominion Voting Systems\Election File Manager\EntityFramework.SqlServer.dll	a1bf6c9e3820e83f43e9f20dd7d9b0a3362a93146f0afe0b1330185e2d51b0cb
Program Files (x86)\Dominion Voting Systems\Election File Manager\Microsoft.IdentityModel.dll	fd50c4488ab275dd892ca8ed1adb0d125c6c59381b59a1ae5d9f2a299781239b
Program Files (x86)\Dominion Voting Systems\Election File Manager\Microsoft.Practices.EnterpriseLibrary.Common.dll	cb0153495092cab9bb80803c51b25f00a550deae28b35007c60888dbc1529673
Program Files (x86)\Dominion Voting Systems\Election File Manager\Microsoft.Practices.EnterpriseLibrary.Logging.dll	6f785c20eae305a430d1bfc358d8a54b3a218238fd3a444ca29aba1e77108fa8
Program Files (x86)\Dominion Voting Systems\Election File Manager\Microsoft.Practices.ServiceLocation.dll	2028dba77ffefc0fb9f3cf5aba68868d6f706cb2599b1a67d5784d1cc411ccf7

Program Files (x86)\Dominion Voting Systems\Election File Manager\Microsoft.Practices.Unity.Configuration.dll	d91f9863439bd849889105ecc3182eb1dc14e8e6bcb7aa33b9058b5e837ea271
Program Files (x86)\Dominion Voting Systems\Election File Manager\Microsoft.Practices.Unity.dll	201655cd2f641ac05e450fb03ce763afbc5e859d6ce1a25ae7fef3c27a2ee39a
Program Files (x86)\Dominion Voting Systems\Election File Manager\Microsoft.Practices.Unity.Interception.dll	79ec0b9b9752fe63c0c37bc4217c2e7d9ea33016107e3870d5e61889eb8cc3e3

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EMS Logger

Version: 5.5.32.4	
Filename	**SHA-256 Value**
Program Files (x86)\ Dominion Voting Systems\ EMS Logger\ EMSLogger.exe	031f812ea18dc0ddb81ec0512f7c57e47d9e5a29aa33814e7f39a49ff26829af

EMS Application Server

Version: 5.5.32.4	
Filename	**SHA-256 Value**
EMSApplicationServer\ AdjElectionProcessor.svc	31d36240cdb0a3c04475f79facbfe6431cc70e0c8495722f8e8243d77486b0c2
EMSApplicationServer\ App Code\ ServiceInitializer.cs	75d7c6f478de40fd1e87c6c222578c95de1de91f7877bb8f97e441df7c08f478
BallotCoordinates.dll	9044db9520a276d57cfc4d6fd59004baabbe820161667a8c4150b2f25f642cdd
BallotCoordinatesManager.dll	74e41318b8a30dff1d3732cd07609e07fd83c1967cdcc1ba1df362b3345ee954
BallotGeneration.dll	702e7d8eac2db77397afdf0ebeb43ff466f5c59491c4348da69e07eabbbf7415
BitMiracle.LibTiff.NET.dll	f752a459a1eb5d35c597ff26437a75cc9aff7a5ca1d4fcdb2bc08ded5cb71465
CoordinateServicePersisenceLayer.dll	f656156bd14daa9a6cd0ae3bb834a974427ec42d71bfb50dea43b4cf8d91b26d
DefModificator.dll	89e4bcbea3a2a643effd3616bf0ae3003052b315cd4b31c3dc20c189b429c3ea
DrawingWorkbench\ CanadaMunicipalStyle.dwf	bce006f73fa6138e5e5a545d05547f2206473cd2eec362caf6bd8852cb56c36f
DrawingWorkbench\ CanadaMunicipalStyle.sha	32907b397f77c41870c751550ff8baf8a5b2f44096e0034c39572cbdd2bb96b2
DrawingWorkbench\ CanadaProvincialStyle.dwf	2164e3575561fba413513d79d555ec92601b83d0e9faa2fd6767213a6924031f
DrawingWorkbench\ CanadaProvincialStyle.sha	c67205e15650fe005097c42796722a67ef1fe3d827ecbbae09de207ced5156e2
DrawingWorkbench\ CanadaVBMStyle.dwf	6bc40acb91860f230cb55c989eacdf4ad7a01ff4c58ab946a6a8185ab1ef6a7a
DrawingWorkbench\ CanadaVBMStyle.sha	8bfa79c0860f0353a9d0573ca4d32347e943accc3f9225af32bbe3badecb23e8
DrawingWorkbench\ Census - Census Grid.dwf	d2e5524f708ff35476b19f25fe05cfe7e7dc398f6854e9386a791caeb2cee031
DrawingWorkbench\ Census - Census Grid.sha	12f7fe0af8c263c31fe0478cb7ab51241abd54a16f86c63d0977d18e46fe648d
DrawingWorkbench\ Census - Rank Choice Grid.dwf	b6c273965d353898c7010e458b9e577cfe6c39aeb8af66020a12ee802f76a5db
DrawingWorkbench\ Census - Rank Choice Grid.sha	c2f06f97a5870388c2b01553ae88e06cd5a52d09ff82fa8c9e8d0d8f42e2980d
DrawingWorkbench\ CensusStyle.dwf	d2e5524f708ff35476b19f25fe05cfe7e7dc398f6854e9386a791caeb2cee031
DrawingWorkbench\ CensusStyle.sha	12f7fe0af8c263c31fe0478cb7ab51241abd54a16f86c63d0977d18e46fe648d
DrawingWorkbench\ FloridaStyle.dwf	9ccf1364bafe512fc4aaf79d4a8613efd772f29108f8a1351a43cb443d3049e9
DrawingWorkbench\ FloridaStyle.sha	18d63895b9ad5bd3b419539b3413eb15b63f2c547cf5aef176abaf7cbb6aa3cb
DrawingWorkbench\ MongoliaStyle.dwf	03b62aac80c49786d1dfe7697b2f7514f49f3655d9eb036bff5b7f918aad828d
DrawingWorkbench\ MongoliaStyle.sha	36fb970c32f822c39506e9f11adbd14ccc9e1cccdd2487eb615bea3a86847daf
DrawingWorkbench\ NewJersey.dwf	d7fa310d90455717cf9297a0ab9d7d752857c8731fad6807b017146b107bc22f
DrawingWorkbench\ NewJersey.sha	a7f83dc5610909021c467d8b1f0443c505cca6148d2233a49be5ffb6b70917ce
DrawingWorkbench\ NewYorkCityGeneral.dwf	d5688faa0934de97049b10e79e6bda485f91da73430ead606aac32d282b88a98
DrawingWorkbench\ NewYorkCityGeneral.sha	b59ba0f935743f0ddfd9ba2bdcfcae09e706d6874ec8821b3d35bd545a33e16c
DrawingWorkbench\ NewYorkGenStyle.dwf	32235663dfd0ef335a5824de896fd6baf0bf74a8dc1d1d59cc9f871120f00229
DrawingWorkbench\ NewYorkGenStyle.sha	b9ad6b5edd0c920273f6c897fab6fab012a40ce7b3490239634635e042a5c095
DrawingWorkbench\ OklahomaStyle.dwf	e975f520033745f57ad136ba3445932d38d49418aa2893bb921a0a03bd6dac67
DrawingWorkbench\ OklahomaStyle.sha	e18d7befe1ae43cecc56c491d8f0431e71376929495a3e9785bed1efe6c794e3
DrawingWorkbench\ PhilipinnesStyle.dwf	e1b85aa8aec37aa543a9826b41395c3374db5e64cf840205b5b1fdaea8ab0083
DrawingWorkbench\ PhilipinnesStyle.sha	ce605290550bcc61ce524f359acf50ae5949f0cfc532fc48711bcd0a543d8a72
DrawingWorkbench\ PuertoRicoGeneralStyle.dwf	9f8f3040b8901771edd308a467c9ded832e3e73f003f042118cfcd40e33a9119
DrawingWorkbench\ PuertoRicoGeneralStyle.sha	0c2646238e72eef6126b249f6a15c1e1f59a59a6acbca8327f8089f343b64f99
DrawingWorkbench\ PuertoRicoPrimaryStyle.dwf	0b08f1875f854989a6bb459210cc6489b0ca0e2d0f5f9178599df2576faf2297
DrawingWorkbench\ PuertoRicoPrimaryStyle.sha	6d62851fe2aa9e36dce2d8bf8f86c38952ecfdbb58dd575af6b7dfefa5f0d463
DrawingWorkbench\ RankChoiceStyle.dwf	2954980995cb20a69657a271a6af85a10fe8c8eb7a9c37fcea6a4ac606fda727
DrawingWorkbench\ RankChoiceStyle.sha	ed021add6783891590d90d42e5016572638d4d71982b013aef4fe71974f588fa
DVS.DemocracySuite.APPSCustomAction.CA.dll	aadbd5ec169459e0b8dfd62d10a9bb11beb07a8b523dc71e8978b38f0cb5b02d
DVS.DemocracySuite.APPSCustomAction.dll	2a2faedac264d4c105d91fcfd046a1a2aa5ddedf84ed9fb0735dd6f994ccf928
DVS.DemocracySuite.AudioLibrary.dll	fc23c4a2b52a205a3779bd421879fe2a6c5e7e384b215433e300631b1abcbd8c
DVS.DemocracySuite.BehaviorSettings.dll	3379c13cd61a9c5541cdadff9ca2d1459d23d396c921f82e3a33e98dbd041c1b
DVS.DemocracySuite.ClientCommunicationObject.dll	ec34874acd7c491d5bdf8b679696a56eabe5b9344ee81c4733a99bf5c2563f3f
DVS.DemocracySuite.Common.dll	bcf4b38a55b712e5596618d6141d440e59e2ab3fd175540e06063ca86045f1c1
DVS.DemocracySuite.CommonService.dll	355049cef2a6d9dbc7c61a0c252b8f4f2e7626ea7504c9aee437ea0aa294f84d

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DVS.DemocracySuite.ConfigurationService.dll	257853ab3687a608df43986fc37c6f048aeaf114e9df659f00a4a5fb0537f8eb
DVS.DemocracySuite.CryptoService.dll	6a5f95179dacc8a05beb395236e0d308ad42d20087b88e008401aa5e405f2cbd
DVS.DemocracySuite.DatabaseService.dll	f32446ef26a58efa6bdb6d35eeaeaefbbf41ae202416665e6859462c7a07092e
DVS.DemocracySuite.DCFFiller.dll	3a346ba6c626f6bc92429c7fb64b2754010498530b2da32b72cd77e0daaa86b2
DVS.DemocracySuite.DCFFiller.Serialization.dll	e3d8dbd0dd0c56cd1dfaf9ddaa54cee2d0bf5c524b97d0bd268d725d9c9cbec6
DVS.DemocracySuite.EedAppsCommon.dll	3afffb1fbcabfe2e4b62bba6e4429296db0704879680104029edf5fc2706dbb2
DVS.DemocracySuite.EMSApplicationServer.dll	8a3c3eb9c2a11f012437cda5409fe50453a1c17bd1cfa2db58981747b11edd78
DVS.DemocracySuite.ExportImport.dll	caeb49838d361a92e109b428e3aea245518d52260c315f877e14ac0ed0a8926d
DVS.DemocracySuite.ExportImport.Formats.dll	88fe717f64f48ccc47ab117da839f2bffb4f0fa99101def89a4039d6d03a0912
DVS.DemocracySuite.ExportService.BaseExportService.dll	8817bf1c1d385886405f23cbc1afb507dad216421300bafa53c6980c4e79f25b
DVS.DemocracySuite.ExportService.EMLExportService.dll	8597ec9430bfc94faa560f0cf0d130cf632436b4ed01bf3fdbaa456626dc5418
DVS.DemocracySuite.GenerationService.exe	45c9b63f223be21205195dce0c0d953a7f291f386ec6aa77850a5b914d748da4
DVS.DemocracySuite.GenerationService.exe.config	050920d14a7ec9f342e26f6008fca30d4a4de8fe9a692d0a55ecb4948082ba26
DVS.DemocracySuite.GenericDrawing.dll	19b4916e342173ebdcceada4a2fc31df474e4e01c53be8b3eb96ca124267a76a

DVS.DemocracySuite.ImageCastX.dll	dfe2c1287c9b6477f4b29b02621b03bd6777c554f46bd04b3681da1c8766a0d8
DVS.DemocracySuite.IntegrationServices.dll	7fc0a0fabf375e3c4e96b5655216aa72c24cb6148a6c5c50af43d728f7121e0f
DVS.DemocracySuite.LibraryCollector.dll	4a4db87f2dde4980fb1f6807f6fbebf1b27c2082ac5067f4290a3e1b8fc39b78
DVS.DemocracySuite.PermissionManager.dll	bae82141bfea41b3ad00ebc1d907f4cada34e3e3f3272e20b4a8fec4437d3763
DVS.DemocracySuite.RemoteServerProvider.dll	f7e655bbe1bc46fd7e87f8b1dd51a42951f9991987c49c025d5c6d3eb647bcb6
DVS.DemocracySuite.ReportServiceBase.dll	dddd7aa9ed8266e03c930a359a618554fd5deb08b983fd9c16a259bf762bddb7
DVS.DemocracySuite.ResultInterfaces.dll	bb942e445f01ddfb33ed49ef34e49edb913aaadbb6089a9dccb5219a3399cb1f
DVS.DemocracySuite.ResultsBusinessLogic.dll	8c26f547f82fd02a21fdacb146115afc759602632f13f537e1c707151ac9b95c
DVS.DemocracySuite.ResultsCommonService.dll	99df97bc61b149fa1890b473b74ef80a9a4aa99626506e8d724a9f2422fe49c6
DVS.DemocracySuite.ResultsDataAccess.dll	7584b604666582863a8fc50b2a5206976ab137f4e62fc09cd64c81c46cca9175
DVS.DemocracySuite.ResultsDomain.dll	90990c5c2aa2324cccbf2a1d9d28a3fdecdd91035d2432c4ffdee99d471fb995
DVS.DemocracySuite.ResultsParsing.dll	8e5e42e76598eb883d54b0e6b309eacfea44bcf1660d0ef8cf2bddbb852cf41f
DVS.DemocracySuite.ResultTally.RcvService.dll	21be74360e1f459b3cf14309d1c752f7dfa866615abde6754ddd25529abf8b70
DVS.DemocracySuite.ResultTally.Services.dll	9f5ccb98260e3e29bca137413a86fc7b3c191cc3729eda07f0c188ed2f209d92
DVS.DemocracySuite.ServerSideReports.dll	08cda97e234b8cea8cf34a775d040aae03187288e4705e1ce14fe21d60fa334d
DVS.DemocracySuite.TabulatorGDomain.dll	a088ac3e09b49f3a9897b87f9fcc399d1d4b453a819d9f90557905bed7c3b7a8
DVS.DemocracySuite.USElectionsDomain.BallotGeneration.BallotStyle.dll	b095bf2465f2ba46e8e2e08024ae3b499133463ef207735f690460719c9bd7bf
DVS.DemocracySuite.USElectionsDomain.BallotGeneration.dll	d26656720952708 0a34676988106ae28ed3b99f1df9770dad90a2c23f0645acb
DVS.DemocracySuite.USElectionsDomain.BallotGeneration.Florida.dll	acdca79eedbb5f29eae00bb2265400e20a70b89075f1899fed060da94e121677
DVS.DemocracySuite.USElectionsDomain.BallotGeneration.NYGeneral.dll	cf0a52bf7ddcc2774008c4cefafc38901463800d0d5cb48b7b70fffc1275c5d4
DVS.DemocracySuite.USElectionsDomain.BallotGeneration.RankChoice.dll	021c377076830d7f52d5ed84ece2648c96de3090cb06c63e1256afb256af77b5
DVS.DemocracySuite.USElectionsDomain.dll	fd8ca9f5c446279a55397b488d372b489d81b6b82157a9449e0341cbda288231
DVS.DemocracySuite.USElectionsDomain.ElectionFiles.dll	fe16d6487dc6bf86d70c91bc73c5f1c7097b89674100162310f414a7a94816b8
DVS.DemocracySuite.VotingMethods.dll	8acc48537bcbe53c9c750b3c6a2522a39892fe1b9922cb5b5c60497986f9513d
DVS.DemocracySuite.VotingRules.dll	fd85ca314e97e8856ad33964c5f0860ccf401e3e418ebfaa6190123c0d7baf67
DVS.ElectionEvent.BallotRenderer.dll	32d7761021bbf707fe684ec5c7c4cc710f53ce5d0b63bc8987aa803886cbc648
DVS.ElectionEvent.BallotRendererSupport.dll	d6ee320421bd5dece9aba97bc1b0c75a3e35cab356eebb6e7656fc0718d9860c
DVS.ElectionEvent.Layouting.dll	877e4ca2baff924bd678ba7cfd9fc83e8484f8c53c5cb3a031fea2d24fb0e30c
DVS.ElectionEvent.RtfInterpreter.dll	3c4318582fa22f2cb70e3a93cac5aaaf3f616a0f4fa5475f073819df43faf1a6
DVS.ElectionEvent.SVG.dll	101cc5e1f04009d5a4b9f330b52c242032e17ba90b2a913353a2f2bf700f01ea
DVS.EMS.Services.ElectionService.BusinessLayer.dll	22b6fcec7c07c4f59c2de4dc634f7268f26f937117a7437a8bfcc93352e82bf8
DVS.EMS.Services.ElectionService.Contract.dll	b95cc0a4a88667f2882fb6866d92f61a3a75d59adba99a80e426f8da67b0b2f7
DVS.EMS.Services.ElectionService.PersistenceLayer.dll	c26527b0acbb5bf3204f3d7747704955192393e52aa4ce3c625900d394295dc4
DVS.Framework.Commands.dll	cdccc83e317ce88ad44470dffa4e4c77b2ecdcd924117663954b0358359c7eac
DVS.Framework.DbMaker.dll	de8ea3d1359f53c3f47a5396ca94d6771aca9ae9e6cdaf7a7185289490e7a65e
DVS.Framework.Domains.Logging.dll	0d2e63331877955eebc06811d5accb371cb342a4b0cf5fc924b2713c581fbe71
DVS.Framework.Domains.Parametrization.dll	9e730aacb31de5f3e82ea74525a5d2e3fa0dda1d0d75d2f47e6b2843fa606ae3
DVS.Framework.Domains.PermissionManagement.dll	92c7960571d3f242984b69205ab64c3d67481af523e8ea7ec3b87654cbbd1fd4
DVS.Framework.Domains.SystemVariables.dll	ec01a7ce1b1e7641791ace29dfb2cc13bdbffc7b3521b21fcf8bd30433831ddc
DVS.Framework.GUIConfiguration.dll	91b85fa83175b6919245520895cf0e006f4ea3450cb915ba2576d292a3c0d4f0
DVS.Framework.GUICore.dll	d1226bb58d3d6d98753edd76263ed6bf4bfe83d570e9661e198d5ebf86dd0e6a
DVS.Framework.MemoryCore.dll	44fbdf9d5dfcc671781874fc85ec000802a7bc648af2d9e535e8340c45b8ff64
DVS.Framework.RemotingAdo.dll	5f2a9b557970248a0949f4681deb0e362367d1f3a6121d91608d620eeff0882e

DVS.Framework.RemotingAdoExe.exe	10b79e84d083dafee839d098a3a628d1c073237e322be0d27c547d50ec47d672
DVS.Framework.ResourceTranslator.dll	08ed8a5ca35a922a21f8b8cff84630531961ff2d881d962d74e0c21c1ff84db8
DVS.Framework.Serializer.dll	2d53bd1ebbb65c1dae4b9e98088365a4b421e2180bb7edf73200c4751d809da9
DVS.Framework.Utilities.DbModificationFilter.exe	32b3e201399e97f22cf13452ac6b941aa064d9f4a12584f7eb7ba627a45666eb
DVS.SmartCardManager.dll	79d2afa7c9ae514bc444f0ec1575c95873fc685216a5030f4c71e1d5da6ffce2
DVS.Utilities.AudioConverters.dll	7fc6a5c8468b684a5c74242853b073e6d4f9a8dec8b219a1f61509b431440c50
DVS.Utilities.BinaryFileAccess2007.dll	7369f99f045888658cfad09eb88002d0fcddf80308846b9f827f19103664dfc2
DVS.Utilities.Common.dll	d5fa1b91e9e915eaa2a3801bae98166c0fb3dd33353e9fde951b2409104f6b2a
DVS.Utilities.FileSystemServiceFacade.dll	5d0048bd3ec7e386ff579d93f09770aecb572754f001cb7c87a2b69c722981f9
DVS.Utilities.MSWinManager.dll	4ffb1e0407fdcf32ad324e8a621d765793a427bdf021e6357ff093e49d048b53
DVS.Utilities.PdfConverter.exe	f261cffe0be8e7a5687d8eeb3aba99f1c9de7591768094f7a38fce2eee6c65ff
DVS.Utilities.PdfConverter.exe.config	f4988d39842ba14286723fafaf34d0386c4346c7b1b057ac415356c9e26d6a2d
DVS.Utilities.RemoteCache.dll	7f41b3087777207f949ab40c6e5a110affb487f8660fbc4d0e06240a49199126
DVS.Utilities.RemoteCacheProxy.dll	a126388cb4f337db8cc3753337245872a873eda4b2712e8333c4694ee0842b02
DVS.Utilities.RemoteInterfaces.dll	b379429abaced02e1bbc199e3ef79984f6e94b43fc655a8228c7dd9ced53a2bc
DVS.Utilities.UsbFileSystem.dll	48552d0640d88b668f66fdb114c11fa35499ba163e9b65f714c63b1d3b9fe837
DVS.UtilitiesFullFrameworkWrapper.dll	185a0b6c5552c49d1a97ac04c39cd62d4161ddd4ab3c8870500bd5c0faf82ebb
ElectionFilesGeneration.dll	aab24c796a92c6b9cc2f97994f39909f8aeef59fe1f13ad3d2c49d9dd7768036
EMSApplicationServerManager.exe	5f1c8ae92f748727fa6baecb1688e7ff998dbaff2a4ebcc742f84d108d1fd37b
EMSApplicationServerManager.exe.config	b83ddb07892129a38dda10ceef69b8161f33b1cadab2a1cedffd8e26f1c2cb6f
EMSApplicationServerManager.XmlSerializers.dll	672572295fe8163e541325e814320524a4a9c8ed394ec59457ffa0df26bd5ad9
EmsBallotGeneration.dll	b585355f7b4c45b5fa650049cf57a8555ec2e0bfc9c87a5af0e7523da9a0852f
EntityFramework.dll	ed6ebd749052f9018f6699671ae5469adedf086cf8b1bd4256bbe9c4e7f6ff05
EntityFramework.SqlServer.dll	a1bf6c9e3820e83f43e9f20dd7d9b0a3362a93146f0afe0b1330185e2d51b0cb
EntityFrameworkUtil.dll	07fef8c019ff423a33997504e67712f895a30b29922631c9609efb4c364656de
en-US\ DVS.ElectionEvent.BallotRendererSupport.resources.dll	ed73f51170e762772405fb12af7db6dbecb7725af76f562280d83419ea0c9b78
gsdll32.dll	c8c7cbcd1485e71e1fb2d01bcb1ef1ddf15d3e729d1947b30abf2ba41ee7c58c
Infragistics2.Shared.v11.1.dll	43d6d97cef01feb0187608a3b10296f9e57301f344c3cccd4c0f6959de59a4c7
Infragistics2.Win.UltraWinTabControl.v11.1.dll	944d9958f8a86d1ea682275aafca2c5719edaf9dab51ede3cf062c745e8c596a
Infragistics2.Win.v11.1.dll	7550da2b0699879ad0552777d6cc3499969eae9ba3e76ca4518d73dc82b41207
InfragisticsWPF4.Controls.Editors.XamColorPicker.v12.1.dll	751645399f3e60df0c89c0aeb70288ed4a0a4eccbf5f6a8edb40c69a24d4ab34
InfragisticsWPF4.Controls.Editors.XamComboEditor.v12.1.dll	e51d61487ea90ab3547e2d396c248ee1ac1b9923cc016488f6694a359abff80c
InfragisticsWPF4.Controls.Editors.XamSlider.v12.1.dll	71848e74fa3c3708d740921a69e11753dc1faa672bd7fb98b1c78eae5a0ee956
InfragisticsWPF4.DataManager.v12.1.dll	49ef3da0db6e257fe9f8244ba6431c67df3fac5df80459538e4815c7989e9627
infragisticswpf4.editors.v12.1.dll	6eaf86848c240faea4f5bd4c15388ce31ac23e085a14c52540fb1b131df70c16
InfragisticsWPF4.v12.1.dll	e6d7c6e94d4bc62b5ebea0d887196b0e4d0bca5d978914325d9dac00a6f7fdbd
itextsharp.dll	beb5c25eb5f659cbb2574f3eaddda35c5b18e860558daac4533b4ed98e29bd55
Microsoft.Deployment.WindowsInstaller.dll	9aebc76cb8c864593e0419162b2bf40b81bd52b3ff12edac1d032828df83dcfa
Microsoft.Web.Administration.dll	5b28ceefb320c6a808cb352385ae4523fbecc676af1cb091ceb1789b3b83aefc
NLog.config	757a311b652b2eab347d220dba290d80081a015b584d18d8fc6db82fd973b72e
NLog.dll	e17aac589bd48a623857de7f8113bcae6f72e4fe4652ca615ffa1028353b246d
OneWireAPI.NET.dll	e0e95a3b2fe54ee9dc7c907124d8b564aa0781b163d0d091147f59a3008e7673
PdfConvertLib.dll	83041f00842bae9cce9ed065cd603cce216e4fd4d1895bf1451141209d14ec3d

PdfToImageConverter.exe	84dff156f665837160378a197b81462fcd496a1e062ad95b61635a8a15b48bd7
Renci.SshNet.dll	451ba700ecb5e77bea05160fda3ee6fb706839d831c925279634614d610ab8d9
Resources\ Arial.xml	8a4a0ff9c4f9eb2cc198a2e4f096631d383b2a7126df8b6036e2c1ce42650c54
Resources\ ArialBold.xml	2a2cf9e764699a6189777b084601da22e109d84d24071a7ea4821059ea287b7c
Resources\ avalon-framework-cvs-20020806.jar	51ed0ddf5c6cb03f76f250eb22f1b4e5585c0e6242af3a02d5f40ed563af149c
Resources\ batik.jar	a8af031e63b8807066f094ab2cd1eae28de6aac92a460705ab44b14b5bb0f07b
Resources\ fop.jar	aa97ad1ca47782cfb5cfae2eac3f7153a87056d924b6987ff8d68542865f2b47
Resources\ fopcfg.xml	4d55239b7df47170d1bb4f3a7e878a94a2afa149cbe8d613ca160d2f9430841d
Resources\ lame.exe	af62aa829fd07d8b8729b8ecb9a5c4bb30c9a7add248a25e0861e50e50ec9904
Resources\ libgomp-1.dll	287804ff69730b3f5830fb488ea7640fdd52a27250275aca1052adff37c8c25c
Resources\ oggdec.exe	b0240ed9dbacb149f3f5500331f64e875aa4945f6a8490cef0d8b208955ca7c8
Resources\ oggenc2.exe	ba60d33c845a416eacd78936202b0808c4f14c83dc79976f6766194c06bb91b1
Resources\ pthreadgc2.dll	cf14602bb18e7670ea6dc89e577d473b9d65b98f926c998aa40614d671adf98e
Resources\ ResultData.dtsx	65d2d844557c48cd9016b334d9097d832295d08cdea878ef2f8591ab6d355c3a
Resources\ sox.exe	9bf1ed9cfce4092a1b14c442acdb0ea59d3bc1eef32e209e577daf1c23a1ce08
Resources\ speexdec.exe	9b935d21d2b9e7fb1394cc3cbab13af3d562105237535f08764137dfbb686038

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Resources\ speexenc.exe	2f464a7ddfd7a2679797e930a0b367a92ff358fab6ddb2383241d2b291dd0fc5
Resources\ StaticData.dtsx	97fa48674a8260b368cf0370353c51a40c9c99c7e0bf7a7e8a62cd1f411e7812
Resources\ zlib1.dll	2ff8a0abf8220e350a229dd3be5f2a0f18fa0d62b588c589c6c47d8c593cf14c
Rotations.dll	e15477bc6dc558a7cedfa123d8916d09573b37b9caa37df52482794246b151c8
RtfCompatibility.dll	0fcc394632a62deb51c115b9a3d5b52413aad7df12eab63e7304e69bb18eec21
RTFReader.dll	a75c29d6679ef6b2b92126540a24a4ef0ca3f2352d25a939da14faac5e7aa260
SynergyCommon.dll	029545abad3661d63c793f2e230f4133031e30d5c5f39390c4ca1318b5d8f434
SynergyService.dll	2f05a0abdc1d40db11dbf82b8c78b935728d8c880310a19ff61b74201f681a70
System.Data.SQLite.dll	907d947ec9f35e0b49bab8df1d3791117eec2cc45a4ef9687557df0e656d9d08
System.Data.SQLite.EF6.dll	d3616b5ccd18a1d0786da1e363d012eee73c209a264462de1700fba59f9062cd
System.Data.SQLite.Linq.dll	345638f2da02a4241ca35daced93738a556f399584dd0b1ad9fbdd5def955cae
System.Windows.Interactivity.dll	93fbc59e4880afc9f136c3ac0976ada7f3faa7cacedce5c824b337cbca9d2ebf
TextDocumentCommon.dll	3373ef634250c049e81fd7a4d30ca1ecb36ba8f3334fb3d4cf735bbd6d9eb3ca
TextGraphicalEditorCore.dll	c9b471d494734d12e79c4ca21240ea0af350415874bba25468a42c930962071f
TextualContent.dll	603c7e0d1edece056ea35564cc418905d9573b75e3c186a1486749c5944059a2
tx16 bmp.flt	7bec71af7be3bcf76f8b34c6d7cc7d87c6c612507cdaa57a97b9fa7637a8724f
tx16 css.dll	e61ce98925f96cb59bc9f6261f4eeed6e7921b1c4dcb7a2fe5b34d61be1324d8
tx16 doc.dll	b1bae7700444c71bbceb1cbbb488babc11cd4b8a3102aab3861aba22042b9424
tx16 dox.dll	67b19985f4ba96e040c1b0f58ea68e7ae1d8a62814ed0ae9dabb59b11886a03c
tx16 gif.flt	f5871adae67e25836272700d3b02cf082fa444f0537420da14ec702ccb80718b
tx16 htm.dll	0672fc52f7f2172783365f526204e3f1cff0636dc21c65eb70230177b8451c23
tx16 ic.ini	3754f3454fce6c40f55f7f3cced671d8828e034ab89bc0a450ab3a88b496a2d2
tx16 jpg.flt	27644d1a94c5fece37c71da8a21fde52e35b6fd910f3e7fb4a64459f2454ee5d
tx16 pdf.dll	90110a3b0bc84be25cf23c10d6a2bb63898a357820971ea339f6f6474461761c
tx16 png.flt	fe7e0d8d261d15cc438eb4f712d1c27396fef1e11d7b2c09e5fbf672fb147a4a
tx16 rtf.dll	bcf88d31ea94d43b69a2d79f4b4ce91770ec740a7ff8b8197980004be8cc224f
tx16 tif.flt	7eb2f067c31e078cb3416f52a325b83c58b4815720741a3f34d1a80fa93ca2d6

tx16 wmf.flt	c479eaf41f32809076e1926bb1ca308cb8c22b08874b3621e9da80e2c45c7ac3
tx16 xml.dll	dd3a5458256211dd537a8b0ea7d86648f3b6857d39d853344d7b820bc411c5c7
txic.dll	e8ed7a1e2735c463c856dc7cd1738fc39200137727d295f769aff57aa292683d
txkernel.dll	1af40648e4dbf252cc179b0d9f482b29ed786493ef5c2135bd079e51f878237b
txpdf.dll	10344d82c1555451953e1bb7dcfbee23714f3c492541ff1eb05517d0a16623a0
TXTextControl.dll	8172aed7c82846bee5328a781c3bdce359cf8b6a6406d85a807dc7302d1f20b0
TXTextControl.Server.dll	fb584b4e7da2bdb79e58af06a2be393a0fedd0b2136d80ffc970a626e66235f7
TXTextControl.Windows.Forms.dll	77610ff1d3e44e259da659271262ce9c2250e5a3224d74fd05e962ecc3c2cb4d
txtools.dll	f8893f9f889d38c81e1e60e19ec1f24366020925419fd5f78d4eb7bfc5578846
USElectionsDomain.dll	23014ec26bf2021a6ff79838df508f904066d31337ccbb3b42318a6352869ad8
vjsjbc.dll	9d18f7b502727209aa6acc5830f9b24f16e61584fa695425b405202e6ff5ba99
vjsnativ.dll	934d4ca23671d245d4fbe433e726bb7bb38a4258e1a6ff4681a7aaea2a4bbd1a
vjssupuilib.dll	d8fd2643d2d19301aa83c4baa3e7062795e36344307429baa63c2fd92d37c10b
EMSApplicationServer\ ConditionalVotingService.svc	53ac76ae12126e8d8f35a882a1245debd148a3a88e9e88b11371755797023dbd
EMSApplicationServer\ ConfigManagementService.svc	8b75f8cbac71dfb82b43e7d3974a9748fad1c77b7cd15cc278fcac5daf9d215d
EMSApplicationServer\ CoordinateService.svc	34ce83dc4a69ed563dfff4752154ac85f53cdc8eecf3a9426f78d957e403cfa6
EMSApplicationServer\ CvrService.svc	34a5f3d2d0d34250f8f8c8cc76754004afafcd52e0cd1d01f700c3b249979293
EMSApplicationServer\ DataTransferService.svc	e71cb8acce4442db5f010d208e3efa1ffa60487c3612223ed7d69025c53940d2
EMSApplicationServer\ EmsAppsService.svc	0e120cc252a3c7e1511772076b51421030c368dc2e1a685f32d020e3c241761c
EMSApplicationServer\ EPSWebService.asmx	671351bbc814cfcf0c1f55bf3ec14da05b3d0522860812a7d10ec1b8167e178a
EMSApplicationServer\ FileService.svc	d1a5328e11ba7659435cf19e07b36b27444087cd2d4696b8224e260aa843ccfe
EMSApplicationServer\ Global.asax	03323109dac6ebec4ea7350a066a80b211cb61faacf855302a7521310f973b01
EMSApplicationServer\ icons\ ems bak icon.ico	ee70bdf1807a989946699c31e58b0157416ae63cd316e2519f4f0f4f6524c024
EMSApplicationServer\ icons\ ems dat icon.ico	9ca6f7b3874644db89a22da89f7d47f2692df8adbd8e3dc324024fd31284b01b
EMSApplicationServer\ icons\ ems dcf icon.ico	f31dec8dddd972051e7b76eba533093290cf2dad91d1c0aa741ba44e7462c91b
EMSApplicationServer\ icons\ ems dvd icon.ico	eae71ce2027de6f725c3cd61c8353a7e8910bee8e2077e270d2d52bb9ce780fc
EMSApplicationServer\ icons\ ems dwf icon.ico	80364f7a52360f8bf35bdddb4afea7c54e567fb65a9722ac3463bbc91035ba7e
EMSApplicationServer\ icons\ ems enc icon.ico	a786031b15914791464544c99f98be38a2b55b4c721a9957c7af064a51689145
EMSApplicationServer\ icons\ ems mbs icon.ico	6a0fc15f2607536f2a4665e39cece380a82d651b4cbb687fb830dbfafd8e6d81
EMSApplicationServer\ icons\ ems sha icon.ico	04fe973b35ebc75b163ce3d4500c07a2811d91050d58b6120b57be966f64b3fc
EMSApplicationServer\ icons\ ems spx icon.ico	89914d2a5a5a1108dab03f0d0e5cdaa4c78f6a41773e83160c9994f6bb34db42
EMSApplicationServer\ Log\ Error.log	0d667ff552a9fc53ef971dbdeddd1c3d71fd2179813cb3a799194de37e831db0
EMSApplicationServer\ Log\ Warn.log	0622946fe1c7c1eb1bca98310efc1cbff6b15cac8bc33a014f0d109a0a07520c

EMSApplicationServer\ NLog.config	b7f996d3998c47b6f32e41282a33cf33450bc12a819f62e47aa539f1279f2e8d
EMSApplicationServer\ ProjectManagement.svc	68677edbfca50779f9c3b5320a6d2178317051cf747c348deeacf47ccdd020ad
EMSApplicationServer\ RcvService.svc	94eaad314b3b376331d64b6d24b97c20dd9faa5c4847258de6b1e541874c325c
EMSApplicationServer\ Readme.txt	4d43fdf0fa1dbfec8122d1288e9c13a13ad50c814e96f919d60a512c306be85d
EMSApplicationServer\ Reports\ BallotStyleTroubleshootingRPT.rdl	13938d9d98e57b4cfab141fed200c1b8d98c112c2b6c91e9fd2c61da5e5ecfd0
EMSApplicationServer\ Reports\ CandidateResultsRPT.rdl	8daee978e4ab3f4bfeefd143105e2830b8f0af18875275f5bbd8a9526bea0ea8
EMSApplicationServer\ Reports\ CardsCastReportRPT.rdl	50d90dfbfbbd2af871232d79eb50370e449f9a9602b9d50b12cc5f30105c9b6d
EMSApplicationServer\ Reports\ CardsPerBallotType.rdl	9a1ed61661b5770156ec2c59cd607e94579696ae794ac2cba95c8e5eff614afb
EMSApplicationServer\ Reports\ CardsPerBallotTypeAndPortion.rdl	cad0cd8ad5ab55ef74e251e4d76cafcdfba116afa6d270233f9bf5861a4c9aa6
EMSApplicationServer\ Reports\ CardsPerBallotTypeAndPrecinct.rdl	f58dfe6206d3fd1bbe171f85aa74d83ce5c6f0269abc792350477ab7b351ea0a

EMSApplicationServer\ Reports\ Conditional.rdl	194c806cc7b49128b0c06698b4334a5666e07a66e6de81c6d320a8ca3393a311
EMSApplicationServer\ Reports\ ContestStatisticsRPT.rdl	2fd730dd1ea6159126ac6752635717e83420dbea1d17afd6ab0bc97415062e45
EMSApplicationServer\ Reports\ ElectionSummaryReportRPT.rdl	12d62e221cafd4d85f6082d6c5f4048c0bfa89f101d7a3499926cce268ec8f75
EMSApplicationServer\ Reports\ ElectionSummarySubReportRPT.rdl	0ed5f7bc40be3c4e262870e18524e7abda86e9a3694199532db869b2909179e9
EMSApplicationServer\ Reports\ PairReport.rdl	06e26fc2a9db590c0d62767a1e7bedc04b4cb6eb3b9b48b3c430e18e122f5f14
EMSApplicationServer\ Reports\ RcvDetailedReport.rdl	ff056472619c214fabebb8301763f2f4fab9a2a0cd9addab6044c248e9f342ed
EMSApplicationServer\ Reports\ RcvShortReport.rdl	632a3dc4294590a2691f5d41bc1733370b6cffb94260ef84e646f8e4678c045d
EMSApplicationServer\ Reports\ RcvStaticData.rdl	9468e33d6c779db6e16c9531d48774ca06993d77a9070f8d2658178569a2825b
EMSApplicationServer\ Reports\ RegistrationAndTurnout.rdl	874ec11bb27b370c48a45d2af3bbb7ca4d3c6194b77ce9c969cd9a931c4c7b2c
EMSApplicationServer\ Reports\ ResolvedWriteinResults.rdl	9a069e6ffbd1ed9cef741e91831431d8e6d2d7e83f8a7a31a0d1219f9b850f61
EMSApplicationServer\ Reports\ SovcVotesSectionRPT.rdl	180e6d34eeb0a125439133b5a43d3c73a62a91a1f7a63d0c10f05fbfbf84eb80
EMSApplicationServer\ Reports\ StatementOfVotesCastRPT.rdl	dcf2d38b2bd29b5e19bc09a6a3655297dfae241c007021ff4a9a6db0d0fec477
EMSApplicationServer\ Reports\ Title.rdl	5b325910b1bdc6cf0a7661b81e32228af64429c59c3454b4ac1977a9b6fdd403
EMSApplicationServer\ ReportService.svc	d18b66270fe27bc413dc08725d13bc6915c3a8bb006eb359138a086f2bdc603e
EMSApplicationServer\ Results.svc	fd8be87220767447f88c30256fd94158689378dc3e46793e68b7b31c813fbb17
EMSApplicationServer\ RtrService.svc	88d96cb840d4fa96cee85f75a199ea15e226372a02b1485d242fecb2528b6088
EMSApplicationServer\ Security\ libeay32.dll	d11e92f738e6f1ac5b8ba1393d2ae3378ba55757822a856da3a9cba9fe124723
EMSApplicationServer\ Security\ openssl.cfg	06baa8f15992bacd3e5b113cd571d828c0544d0482ccd2e15969fe819957271d
EMSApplicationServer\ Security\ openssl.exe	2634dd8cb1438d50dedb034ae6fff3fb1282dde84696f927b53b05b02f6484ca
EMSApplicationServer\ Security\ ssleay32.dll	28f2fe4d27b694023255f8dbfa6e30ff81d3155c12bd0060e30bd7c39e4ea19f
EMSApplicationServer\ SosMappingManagement.svc	7cf76975c537bda90459b279ff7629882066b6398624bf38adff847fe69722bd
EMSApplicationServer\ SynergyService.svc	0bb4264da7562c6577222e92c976c3af76a2de8dfdddae8729b0494a0a5aeff9
EMSApplicationServer\ tech.xml	43dc2858d66aa3715eb099fde00643e9a9d278a9ea7ca18749b4871425827be3
EMSApplicationServer\ Web.config	5e0e80188a1a0a8b517b90816aaf1634999c5e58ed88a12972466675fc1680d8

EMS Service

Version: 5.5.32.4	
Filename	**SHA-256 Value**
VirtualDirectories\ EMSService\ bin\ BitMiracle.LibTiff.NET.dll	f752a459a1eb5d35c597ff26437a75cc9aff7a5ca1d4fcdb2bc08ded5cb71465
VirtualDirectories\ EMSService\ bin\ DVS.Utilities.Common.dll	b325fdb47ec3b2725e2cdb087d89beea1c300f4f710566bb846332d3f3935524
VirtualDirectories\ EMSService\ bin\ DVS.Utilities.MSWinManager.dll	f860d3efdf1b97c7d8d612fd2e27fc1e2bb53689ed5b41c141f469618ea832a0
VirtualDirectories\ EMSService\ bin\ EMSBusinessProcess.dll	96401d3160563ca36520bfd60784727653e4c3085c6b1f36239cfb81d66c0121
VirtualDirectories\ EMSService\ bin\ EMSDataRepository.dll	b23022ed1e229a6f2ebff3158b4a4e026ef8b176639af1b03112ae1d13d41e0d
VirtualDirectories\ EMSService\ bin\ EMSServiceFacade.dll	2c2405156c925fd6ca3e1d0cf73bc679bc98d0f5286c4b215885b203818cb358
VirtualDirectories\ EMSService\ bin\ EMSSvcCustomAction.CA.dll	57515f9925d7c6960164560400ef6356494794bfe4f15ec317792e5559d6dc68
VirtualDirectories\ EMSService\ bin\ EMSSvcCustomAction.dll	0d5f3b51203f546dd7c19a887cd82b34363523ed5620315f501916faa7618eb6
VirtualDirectories\ EMSService\ bin\ EMSSvcManager.exe	50ca073340daf5ea616ffbddb17a0eb74d9cd63d86be1164f455d8c5e86bc383
VirtualDirectories\ EMSService\ bin\ EMSSvcManager.exe.config	8202310b15586d1e5d43e18740528e0b1056812996c3ed366019273480e24989

VirtualDirectories\ EMSService\ bin\ EntityFramework.dll	ed6ebd749052f9018f6699671ae5469adedf086cf8b1bd4256bbe9c4e7f6ff05
VirtualDirectories\ EMSService\ bin\ EntityFramework.SqlServer.dll	a1bf6c9e3820e83f43e9f20dd7d9b0a3362a93146f0afe0b1330185e2d51b0cb
VirtualDirectories\ EMSService\ bin\ itextsharp.dll	beb5c25eb5f659cbb2574f3eaddda35c5b18e860558daac4533b4ed98e29bd55
VirtualDirectories\ EMSService\ bin\ Microsoft.Deployment.WindowsInstaller.dll	9aebc76cb8c864593e0419162b2bf40b81bd52b3ff12edac1d032828df83dcfa
VirtualDirectories\ EMSService\ bin\ Microsoft.Web.Administration.dll	5b28ceefb320c6a808cb352385ae4523fbecc676af1cb091ceb1789b3b83aefc
VirtualDirectories\ EMSService\ bin\ NLog.dll	e17aac589bd48a623857de7f8113bcae6f72e4fe4652ca615ffa1028353b246d
VirtualDirectories\ EMSService\ bin\ Renci.SshNet.dll	451ba700ecb5e77bea05160fda3ee6fb706839d831c925279634614d610ab8d9
VirtualDirectories\ EMSService\ bin\ System.Web.dll	860c6af4914f031f01dd9e2fb37026733af031e82ac43c6ed2ef00b52ccd4cd0
VirtualDirectories\ EMSService\ EMSService.svc	76d2a05b2d19214d9ec0389406de7661a46eacdf480adf0038471a1ea5732e05

VirtualDirectories\ EMSService\ NLog.config	130342f5a2d1ac0153056b118bf3e3f6370c4ca7370565782e49b84204d6d95f
VirtualDirectories\ EMSService\ web.config	1b29212bb18da144c5760b61a9124ce9cb0304fab6c917a45b645434fa1fc257

EMS File System Service

Version: 5.5.32.4 32-bit	
Filename	**SHA-256 Value**
Program Files (x86)\Dominion Voting Systems\File System Service\BitMiracle.LibTiff.NET.dll	f752a459a1eb5d35c597ff26437a75cc9aff7a5ca1d4fcdb2bc08ded5cb71465
Program Files (x86)\Dominion Voting Systems\File System Service\DVS.Utilities.BinaryFileAccess2007.dll	0b4ac965c5e6ebfb50c1d048ea6d8495f282d721588260be7202372349bd69f3
Program Files (x86)\Dominion Voting Systems\File System Service\DVS.Utilities.Common.dll	74a63eb1d4802a541fba87d81156bd883f03eaa37324b2478b8b21734162d7df
Program Files (x86)\Dominion Voting Systems\File System Service\DVS.Utilities.FileSystemService.exe	31fdaa78195ead39a18346f07b47054dab113b2a2e515eba4703df76d5fa7d82
Program Files (x86)\Dominion Voting Systems\File System Service\DVS.Utilities.FileSystemService.exe.config	f55c5126aeefaf4d3df8a2c372bf849e90779198e02fe6e3ab8d228950b5fee1
Program Files (x86)\Dominion Voting Systems\File System Service\DVS.Utilities.MSWinManager.dll	604e9d6d334dfe102085efb422e33e4f408b7b3610665485ee45ad5a5a89d110
Program Files (x86)\Dominion Voting Systems\File System Service\DVS.Utilities.RemoteInterfaces.dll	8793db0a0539383ea5d09680ea15ed2c6fe2b4710072129f647ac7e41443e8d3
Program Files (x86)\Dominion Voting Systems\File System Service\DVS.Utilities.UsbFileSystem.dll	c7cc73eb9ea756bcb22c4eb1119366fd34c22033276b43e01e5b71203d2206d0
Program Files (x86)\Dominion Voting Systems\File System Service\EMSFSSCustomAction.CA.dll	e571ca8afcd92f14b49f70e816a7fd0ec427a8d6ebcdc120fc6de0f12b98497c
Program Files (x86)\Dominion Voting Systems\File System Service\EMSFSSCustomAction.dll	19dc28faff20c6999af6c4bc0d987c2e087c5ded10545d11115b42ec2a76c0b6
Program Files (x86)\ Dominion Voting Systems\ File System Service\ itextsharp.dll	beb5c25eb5f659cbb2574f3eaddda35c5b18e860558daac4533b4ed98e29bd55
Program Files (x86)\ Dominion Voting Systems\ File System Service\ Log\ Error.log	935fa21033735ad183aba3845b45105ccae03f5b3436d00ef4d1a302db71c238
Program Files (x86)\ Dominion Voting Systems\ File System Service\ Log\ Info.log	f5b7407d443d1c2e7a4282b2f4cf93fa9acda38c19930b08dc404be2a45ce867
Program Files (x86)\ Dominion Voting Systems\ File System Service\ Log\ Trace.log	e520a1bb61d55112c50d11c866d6616705ca022956f0b85ae67fa965a88c56aa

Program Files (x86)\Dominion Voting Systems\File System Service\Microsoft.Deployment.WindowsInstaller.dll	9aebc76cb8c864593e0419162b2bf40b81bd52b3ff12edac1d032828df83dcfa
Program Files (x86)\Dominion Voting Systems\File System Service\Microsoft.Web.Administration.dll	5b28ceefb320c6a808cb352385ae4523fbecc676af1cb091ceb1789b3b83aefc
Program Files (x86)\ Dominion Voting Systems\ File System Service\ NLog.config	e50f1d10b846dbecd44ddba2f54a858e38427858cb1d0038a63a0a4b4c9bdd28
Program Files (x86)\ Dominion Voting Systems\ File System Service\ NLog.dll	e17aac589bd48a623857de7f8113bcae6f72e4fe4652ca615ffa1028353b246d
Program Files (x86)\ Dominion Voting Systems\ File System Service\ nlogError.txt	1c3ca32f1ec3c92572309b6f4ea5270e8290b34ffdbcd83b811a2eaa3b94d1b7
Program Files (x86)\ Dominion Voting Systems\ File System Service\ Renci.SshNet.dll	451ba700ecb5e77bea05160fda3ee6fb706839d831c925279634614d610ab8d9

ICC

Version: 5.5.32.5	
Filename	**SHA-256 Value**
Program Files (x86)\Dominion Voting Systems\ImageCast Central\bin\ImageCast Central.exe	5c321804357d587dc954fe155f3ee8a058e51788e77173d21107dcbfd33e8def
Program Files (x86)\Dominion Voting Systems\ImageCast Central\bin\libeay32.dll	d11e92f738e6f1ac5b8ba1393d2ae3378ba55757822a856da3a9cba9fe124723
Program Files (x86)\Dominion Voting Systems\ImageCast Central\bin\Log\1 1 1 0 slog.txt	27631b6b7b566e50cabdf8056f74f6c284f8c702e1f03d4a7d99345da638bb0d
Program Files (x86)\Dominion Voting Systems\ImageCast Central\bin\Log\1 1 3 0 slog.txt	c6c0ab88e81bf7fb0c36be41f161aed345535a59d82178ef5044c4108dd8593f
Program Files (x86)\Dominion Voting Systems\ImageCast Central\bin\Log\1 2 1930 0 slog.txt	9acce20399313a1136cf00962990c72252fa91e1ca709098c58ca3fa2c05366e
Program Files (x86)\Dominion Voting Systems\ImageCast Central\bin\Log\1 333333 100001 0 slog.txt	89b0a005f16022fbdb9152e1bf57e877dca19c87ce49948f554b6a055d013f1d
Program Files (x86)\Dominion Voting Systems\ImageCast Central\bin\ssleay32.dll	28f2fe4d27b694023255f8dbfa6e30ff81d3155c12bd0060e30bd7c39e4ea19f
Program Files (x86)\Dominion Voting Systems\ImageCast Central\\bin\TWAINDSM.dll	ba747e28769d85458a33a61a2a230435612e376f99b9a2dc104a817e2d451bfa

No. 23-1021

ICP2

Version: 5.5.1.8	
Filename	**SHA-256 Value**
dvs	18A0B06B7EF36F6D7CA6C0BF4FBE513B0092632E5DC628C1C441295B74AF1762
initramfs	1418A85ABFFC829D3B52ABCF8DF32C30E5C00613AEA861909D8D715C42AD969E
rfs	32188DC9677471650E2EC6F3EAC17E5226FC2312E1EEE6F061CEA93608C923CB
icp2.dtb	6596FCEDE64E448A7531B097B53148D23C043F6A061BF32A27B4FAFBE4C1540A
zImage	61BB6BE39627257A7C140D00E226480FAAAFC543FC56EEA1DB96B4EAD1F705C2
logo.bmp.gz	70E02B3EE3BFB97FEFAF8BB060E851FC84A54E88C210C96456D628849AE8603C
data.squashfs	ED68837801E726A9AA1F4E89B7019DDE23196E0851409BDEB14FFCF6D575EE69

No. 23-1021

The table below prescribes the criteria utilized in review of the Dominion DS 5.5B voting system. This review is designed to ascertain whether any component contained malicious software of any kind.
User Activity and Malicious Software Review
Installed Programs: This is used to determine if there are any suspicious programs installed on the systems. This could be for malicious software or indications of Internet usage. This could include things like VNC player, or software that was not listed in the Dominion documentation.
Auto-Run commands: This includes software or other objects that are run automatically upon system load. We will be looking for things that might indicate internet activity, including Zoom or other software that may load automatically and require internet connectivity.
Event Logs: This is where a bulk of the examination will be looking for Windows events that will detail external connections or other faults to help identify internet connectivity or malicious software usage or activity.
UserAssist: This is detailed information from the Windows registry, about programs executed on the system including when last used and how many times. This will be used to examine programs executed on the systems. This should help track down potentially malicious executions on the system, as well as potentially find indicators of network connected programs (Webex, Zoom, VNC etc.)
Jump Lists: List of recently opened items including files, folders, websites etc. We will examine these areas to look for indicators of malicious software activities and internet connectivity.
Recycle Bin: Used to determine if there are any deleted files that would indicate malicious software activity or internet connectivity.
USB: This will tell you every USB device connected to the system, to help identify potentially malicious file activity.
FileName Search: A check of filenames, verifying files associated with products, and looking for known malicious files.

The table below prescribes the criteria utilized in review of the Dominion DS 5.5B voting system. This review is designed to ascertain whether any component was connected to the internet during the timeframe of July 6th 2020 through November 20th 2020.

Networking Review Criteria
Microsoft-Windows-NlaSvc%4Operational.evtx
Microsoft-Windows-SENSE%4Operational.evtx
Microsoft-Windows-SmbClient%4Connectivity.evtx
Microsoft-Windows-Windows Defender%4Operational.evtx
Microsoft-Windows-WindowsUpdateClient%4Operational.evtx
Microsoft-Windows-WLAN-AutoConfig%4.evtx
Microsoft-Windows-Dhcp-Client%4Admin.evtx
Microsoft-Windows-Dhcpv6%4Admin.evtx
Microsoft-Windows-Host-Network-Service-Admin.evtx
Microsoft-Windows-Host-Network-Service-Operational.evtx
Microsoft-Windows-NetworkProfile%4Operational.evtx
Examine in OSForensics:
System Passwords: this will include indication of potential unauthorized connections.
SRUM: System Resource Usage Monitor: if there is any activity here this may detail unusual network connectivity or usage
Downloads: this will include indication of potential unauthorized connection of systems to the internet.
Browser history: this will include indication of potential unauthorized connection of systems to the internet.
Search terms: this will include indication of potential unauthorized connection of systems to the internet.
Website logins: this will include indication of potential unauthorized connection of systems to the internet.
Form History: this will include indication of potential unauthorized connection of systems to the internet.
Bookmarks: this will include indication of potential unauthorized connection of systems to the internet.
Chat Logs: this will include indication of potential unauthorized connection of systems to the internet.
Peer to Peer: this will include indication of potential unauthorized connection of systems to the internet
WLAN: this will include indication of potential unauthorized connection of systems to the internet.

Exhibit B

Field Audit Report

Dominion Voting Systems Democracy Suite (D-Suite) 5.5-B Voting System Maricopa Post-Election Field Audit

Approved by: Jack Cobb

Jack Cobb, Laboratory Director

February 23, 2021

1.0 INTRODUCTION

The purpose of this report is to document the procedures that Pro V&V, Inc. followed to perform a Post-Election Field Audit of the Dominion Voting Systems Democracy Suite (D-Suite) 5.5-B Voting System Maricopa County Board Elections. The Post Election Field Audit was conducted in Maricopa County, Arizona, from February 2, 2021 through February 5, 2021. The audit was conducted at the following location:

Maricopa County Elections

510 South 3rd Avenue

Phoenix, Arizona 85003

1.1 References

The documents listed below were utilized in the development of this Report:

- Pro V&V Test Plan No. TP v. 01-03-MAR-01.03, *"Dominion Voting Systems D-Suite 5.5-B Voting System Maricopa Post-Election Field Audit"*
- Election Assistance Commission (EAC) 2005 Voluntary Voting System Guidelines (VVSG) Version 1.0, Volume I, "Voting System Performance Guidelines", and Volume II, "National Certification Testing Guidelines"
- Election Assistance Commission Testing and Certification Program Manual, Version 2.0
- Election Assistance Commission Voting System Test Laboratory Program Manual, Version 2.0
- National Voluntary Laboratory Accreditation Program NIST Handbook 150-2016, "NVLAP Procedures and General Requirements (NIST Handbook 150)", dated July 2016
- National Voluntary Laboratory Accreditation Program NIST Handbook 150-22, 2008 Edition, "Voting System Testing (NIST Handbook 150-22)", dated May 2008
- United States 107th Congress Help America Vote Act (HAVA) of 2002 (Public Law 107-252), dated October 2002
- Pro V&V, Inc. Quality Assurance Manual, Version 7.0
- EAC Requests for Interpretation (RFI) (listed on www.eac.gov)
- EAC Notices of Clarification (NOC) (listed on www.eac.gov)

1.2 Terms and Abbreviations

The terms and abbreviations applicable to the development of this Test Report are listed below:

"EAC" – United States Election Assistance Commission

"EMS" – Election Management System

"HAVA" – Help America Vote Act

"ICC" – ImageCast Central

"ICP2" – ImageCast Precinct 2

"ISO" – International Organization for Standardization

"NOC" – Notice of Clarification

"QA" – Quality Assurance

"RFI" – Request for Interpretation

"VSTL" – Voting System Test Laboratory

"VVSG" – Voluntary Voting System Guidelines

1.3 Background

The Maricopa County Board of Elections contracted with Pro V&V to conduct a Post-Election Field Audit to ensure the software and hardware certified for use in Maricopa County are the same as the software and hardware used in the conduction of the November 2020 General Election. Maricopa also requested that Pro V&V perform a network analysis and an accuracy test.

1.4 System Description

The D-Suite 5.5-B Voting System is a paper-based optical scan voting system consisting of the following major components: The Election Management System (EMS), the ImageCast Central (ICC), and the ImageCast Precinct 2 (ICP2). The D-Suite 5.5-B Voting System configuration is a modification from the EAC approved D-Suite 5.5 system configuration.

1.5 Scope

The Post-Election Field Audit evaluated the EMS and ICC workstations and servers by comparing the SHA-256 hash value to the known SHA-256 hash values. In addition, a malware detection tool was run on each workstation/server to establish whether any malware/virus or malicious software was running on the workstations/servers. Pro V&V utilized the tool to extract the firmware from a sample of thirty-five

ICP2 units. These extractions were then placed on the Pro V&V laptop to generate the SHA-256 hash value for the firmware. These hash values were compared to known hash values for the Election Assistance Commission Federal Test Campaign. In addition to these evaluations, Pro V&V conducted a network analysis to ensure the network is a "Closed Network" incapable of reaching the internet Pro V&V also conducted an Accuracy Test to meet the requirements of the 2005 Voluntary Voting Systems Guidelines (VVSG).

2.0 AUDIT OVERVIEW

The evaluation of the D-Suite 5.5-B Voting System consisted of removing a copy of the software/firmware from each component and evaluating the software/firmware against a known SHA-256 hash value outside of the system, running the malware detection tool to verify no malicious software was resident on the workstations/servers, performing a network analysis, and executing an accuracy test.

3.0 AUDIT PROCESS AND RESULTS

The following procedure outlines the steps that the evaluation team will execute to evaluate the D-Suited 5.5-B under the scope defined in Section 1.5.

3.1 General Information

The evaluation was conducted under the guidance of Pro V&V by personnel verified by Pro V&V to be qualified to perform the evaluation.

3.2 Audit Configuration

The evaluation utilized system configurations of the D-Suite 5.5-B Voting System and its components that were setup by Maricopa personnel. Pro V&V had complete access and control of the equipment being audited.

3.3 Procedures and Summary Findings

ICP2 Software Verification

To perform the verification, the Pro V&V test team randomly selected thirty-five units for evaluation. A team member then photographed the seals and the device. All seals that needed to be removed were then removed. After all photographs were taken, the team member removed any compact flash cards under county supervision and placed them on top of the machine being evaluated. The team member then inserted two compact flash cards (one blank and the other containing the firmware extraction tool). The unit was plugged in and powered on with the security token iButton press on the iButton reader. A password was entered and a tech iButton was then read by the ICP2 and the option to "Extract Firmware" was selected. The original compact flash cards were then reinserted into the ICP2. The team member then took the compact

flash card containing the exported firmware to a Pro V&V laptop to compare the SHA-256 hash values to the known value from previous testing.

Summary Findings

All SHA-256 hash values retrieved from the units sampled matched the known value from certification testing. No discrepancies were noted at any time during this portion of the evaluation.

The serial numbers of the units selected along with the corresponding seal numbers are detailed in the table below.

Table 3-1 ICP2 Software Verification Serial and Seal Numbers

ICP2 Serial Number	Seal Number	
	Front	Back
FAL19460086	IS143365	1004649
FAL19460030	IS437104	1004719
FAL19330163	IS439376	1004217
FAL19450094	IS419918	1004579
FAL19380033	IS439358	1004621
FAL19460025	IS136178	1004786
FAL19450035	IS441937	1004032
FAL19390009	IS149173	1004260
FAL19380263	IS129272	1004955
FAL19283163	IS1642553	1004904
FAL19450002	IS136177	1004743
FAL19460023	IS437315	1004568
FAL19450257	IS439331	1004216
FAL19320179	IS437217	10041912
FAL19450000	IS1642634	1004973
FAL19450119	ISIS146739	1004997
FAL19252973	IS1642766	1004971
FAL19450133	IS1640855	1004830
FAL19450196	IS1640979	1004572
FAL19380044	IS148896	1004314

Table 3-1 ICP2 Software Verification Serial and Seal Numbers *(continued)*

ICP2 Serial Number	Seal Number	
	Front	Back
FAL19460080	IS439339	1004320
FAL19320062	IS439396	1004204
FAL19450068	IS1640786	1004530
FAL19450007	IS1639766	1004747
FAL19450040	IS149919	1004461
FAL19450274	IS439195	1004097
FAL19450241	IS439431	1004375
FAL19460044	IS437295	1004988
FAL19460089	IS437291	1004672
FAL19460042	IS143032	1004752
FAL19450004	IS162418	1004531
FAL19460068	IS437240	1004498
FAL19450034	IS143031	1004491
FAL19450062	IS143686	1004587
FAL19460105	IS1640785	1004125

ICP2 Hardware Verification

To perform the verification, the Pro V&V test team selected five units for evaluation. A team member then photographed the seals and the device. All seals that needed to be removed were then removed. After all photographs were taken, the team member removed the necessary security screws from the bottom of the ICP2. Once the screws were removed the cover was removed. The team member then used the hardware verification guide to visually inspect the hardware components and subcomponents against known photographs, part numbers and identifying marks.

Summary Findings

All units inspected were verified to contain the correct hardware components and subcomponents. No discrepancies were noted at any time during this portion of the evaluation.

The serial numbers of the units selected along with the corresponding seal numbers are detailed in the table below.

Table 3-2 ICP2 Hardaware Verification Serial and Seal Numbers

ICP2 Serial Number	Seal Number
FAL19380033	1004580
FAL19450257	***
FAL19320179	1004481
FAL19320062	1004029
FAL19450040	1004708

****Note: There are various acceptable reasons for a seal to be unattached, such as: the unit was a spare, the seal was broken in transit, or the poll worker had to remove it on election night and return it to the Board of Elections with the elections results.*

EMS and ICC Workstations/Servers Verification

To perform the verification, the Pro V&V test team was granted access to the workstations/servers from qualified Board of Elections Employees. Once access was achieved, a team member navigated to the folder containing the DVS software and copied the software onto a brand new USB drive. The USB was then inserted into the Laboratory laptop and a SHA-256 hash value was generated. A comparison was made between the generated hash value and the known hash value. The hard drive from the ICC workstation/server was then removed and placed into a cloning device. The hard drive was then "cloned". After completion, the hard drive was place into equipment from Pro V&V's laboratory that is an exact sample of the same ICC workstation/server. The equipment was then booted up. The Pro V&V test team was granted access to the workstations/servers from qualified Board of Elections Employees. Once that was achieved, a USB containing a malware/virus scanning software was run to scan the equipment for malware/viruses.

Summary Findings

All units inspected were verified to contain the correct hardware components and subcomponents. No discrepancies were noted at any time during this portion of the evaluation.

Identification information of the units inspected is detailed in the table below.

Table 3-3 EMS and ICC Workstations/Servers Verification Details

Scanner Information	Computer	
	Model	Serial Number
ICC Client Workstation		
HP-0124K28	OptiPlex 7060	2JGJ3W2
HP-0124K29	OptiPlex 7060	2FDK3W2
HP-0190K29	OptiPlex 7060	2K6M3W2
HP-0192K29	OptiPlex 7060	2JYM3W2
C-GF307234	OptiPlex 3050	8NCCB03
C-GFY00088	OptiPlex 3050	4RMZNX2
C-GF302006	OptiPlex 3050	4RPOPX2

Table 3-3 EMS and ICC Workstations/Servers Verification Details

Scanner Information	Computer	
	Model	Serial Number
C-GFY00019	OptiPlex 3050	4RNZ7X2
C-GFY00347	OptiPlex 3050	4RPVNX2
Adjudicatoin Client Workstation		
N/A	Dell Precision Tower 3420	87NDHL2
N/A	Dell Precision Tower 3431	DVDZG13
N/A	Dell Precision Tower 3431	DVFTG13
N/A	Dell Precision Tower 3431	G4NFZ23
EMS Client		
N/A	Dell Precision 3420	27BD8M2
N/A	Dell Precision 3420	BNWVCH2
N/A	Dell Precision 3420	86PQXK7
N/A	Dell Precision 3420	B0ZRMN2

Network analysis

While onsite, qualified Pro V&V personnel evaluated the network architecture to determine the process and procedure to be followed. All steps were documented in the engineering notebook.

Summary Findings

Pro V&V test team members evaluated the physical wiring of the network, the managed switch, clients, and the server. All wiring is housed in an exposed channel hanging from the ceiling. Different color wires are used for different device types such as printers, PCs, or tabulators. For the server, commands were run to test connectivity to a known internet address and public IP addresses. None for these commands returned successful execution from the server or from the clients. Pro V&V determined that the network it evaluated is a "Closed Network" and does not have access to the internet.

Accuracy Test

An Accuracy Test was performed to ensure the 5.5-B system correctly captures, stores, consolidates, and reports the specific ballot selections, and absence of selections, for each ballot position. To perform the test, the test deck provided by Maricopa Board of Elections was inserted into each tabulator and processed to reach a total of at least 1,549,703 ballot positions.

Summary Findings

An Accuracy Test was performed on the ICP 2 precinct scanner, ICC HiPro Workstation, and the ICC Canon DR-G1130 over a two day period. Using the test deck that was provided by Maricopa County, all votes were tallied and adjudicated resulting in an accurate ballot count. The ICC workstations were scanned on the first day. Ballots were imported into RTR and adjudicated resulting in accurate numbers The ICP 2 ballots were scanned on the second day and were scanned by volunteers from the "Leauge of Women Voters". Board of Elections staff acted as poll workers if the volunteers had any issues.

Two anomalies recorded during the execution of this test:

- A ballot jam was recorded on audit unit 10. It could not be determined if the ballot was tabulated. The Pro V&V test team isolated the ballot until the polls were closed. It was determined the ballot was tabulated and the ballot was returned to the ballot bin.

- On audit unit 11, after the close of polls it was determined that a ballot jammed and was rerun through tabulation because the total ballots cast was plus 1. The tabulator was rezeroed and all ballots were rescanned.

Ballots were imported into RTR and Adjudicated resulting in accurate numbers.

4.0 CONCLUSIONS

Based on the results obtained during the Field Audit, Pro V&V determines the D-Suite 5.5-B Voting System, on all evaluated components, is the voting system software and hardware certified for use in Maricopa County and are the same as the software and hardware used in the conduction of the November 2020 General Election.

SECOND DECLARATION OF WALTER C. DAUGHERITY

WALTER C. DAUGHERITY declares, under penalty of perjury, pursuant to 28 U.S.C. § 1746, that the following is true and correct.

Qualifications

1. I am a Senior Lecturer Emeritus in the Department of Computer Science and Engineering at Texas A&M University and also a computer consultant to major national and international firms, as well as to government agencies, including classified work.

2. Prior to my retirement in 2019, I taught computer science and engineering at both the undergraduate and graduate levels for 37 years, the last 32 years being at Texas A&M University. Courses I developed and taught include courses in artificial intelligence, expert systems, programming and software design, quantum computing, and cyberethics.

3. I have published 26 research articles related to expert systems, fuzzy logic, noise-based logic, and quantum computing from over $2.8 million in funded research projects, plus conference papers and other publications.

4. As a computer expert I have consulted for major national and international firms, including IBM Federal Systems Division, *New York Times*, *Washington Post*, *Los Angeles Times*, Southwestern Bell Telephone, Fulbright & Jaworski (Houston), and Phonogram B.V. (Amsterdam), and also for government agencies such as Cheyenne and Arapaho Tribes of Oklahoma, Texas Department of Agriculture, U. S. Customs Service, and classified work.

5. Further details about my qualifications are included in my Curriculum Vitae attached as Exhibit A.

6. I have qualified as an expert witness in other court cases related to elections, electronic voting machines, and election data, including the cases listed in Exhibit B.

Updated Findings

7. This Second Declaration is an update to my declaration in this case dated June 8, 2022 ("First Declaration") filed in the case of *Kari Lake et al. v. Katie Hobbs et al.* (2:22-cv-00677-JJT) filed in U.S. District Court for the District of Arizona (Doc. No. 38). This Second Declaration details important new information which has come to my attention since January 1, 2024.

8. This new information, described beginning at ¶ 13 below, does not change the conclusions in ¶¶ 42-45 of my First Declaration that:

(a) The evidence overwhelmingly demonstrates to a reasonable degree of scientific and mathematical certainty that the sequence of the Cast Vote Record ("CVR") data in both Maricopa County, Arizona, and Pima County, Arizona, shows artificial control over the tabulation of ballots and the election results for the November 2020 election.

(b) Such control could be implemented by manual means or by a computer algorithm, such as a Proportional-Integral-Derivative ("PID") controller or some equivalent mathematical procedure. However, the alternating oscillations above and below the trend line, with decreasing deviations from the trendline, would require a prohibitive amount of calculation to accomplish by hand, not to mention the careful manual sorting of many thousands of batches of ballots to achieve the actual curves observed in the 26 races analyzed. This means that some type of computer algorithm is indicated, and a PID controller is the simplest control function that

would exhibit following a trend line with alternating oscillations above and below the trend line with decreasing deviations from the trendline.

(c) This same type of manipulation occurred both in Pima County, Arizona, which used ES&S voting machines (as did most other counties in Arizona), and also in Maricopa County, Arizona, which used Dominion voting machines (as did 23 other states), indicating that the same (or similar) software was responsible. Such manipulating software could be installed in a variety of ways, including vendor programming, operating system components, open-source or commercial off-the-shelf libraries, remote access, viruses or other malware, etc.

(d) Unless and until future proposed electronic voting systems (including hardware, software, source code, firmware, etc.) are made completely open to the public and also subjected to scientific analysis by independent and objective experts to determine that they are secure from manipulation or intrusion, in my professional opinion as a computer expert, electronic voting systems should not even be considered for use in any future elections, as they cannot be relied upon to generate secure and transparent election results free from the very real possibility of unauthorized manipulation.

9. Regarding ¶ 8(a) above, my First Declaration mathematically analyzed the CVR data from the November 2020 election, which is a public election record. As stated at in my First Declaration, the CVR is an election record that collects in spreadsheet format the selections contained on each ballot in the order recorded through the tabulator machines without any information that would identify the voter. A key feature of this record is that it records the ballot data in the order in which the ballots are processed for tabulation. After the November

2022 election, the same CVR was requested from Maricopa County as a public record, but the county refused, and only released a redacted CVR with all rows randomly shuffled, thereby destroying the sequence information as to the order the batches of ballots were tabulated.

10. As noted in ¶ 33 of my First Declaration, without the sequence information it is impossible to detect controlled manipulation. Maricopa County thus deliberately blocked the ability to determine whether the processing of ballots in the November 2022 election was manipulated as I had concluded in my First Declaration with respect to the November 2020 election. Should the Court be able to obtain from Maricopa County the original unredacted unshuffled CVR for the November 2022 election, I stand ready to analyze it for controlled manipulation in the same way as I did the 2020 CVR.

11. I note that deliberately concealing and/or altering the sequence information of the public election record may violate 52 U.S.C. § 20702 (codified from § 301 of the Civil Rights Act of 1960), which prescribes penalties for concealing or altering an election record. The Department of Justice's Publication "Federal Law Constraints on Post-Election 'Audits'" dated July 28, 2021, mandates that the materials covered "extend beyond 'papers' to include other 'records.' Jurisdictions must therefore also retain and preserve records created in digital or electronic form."

12. As stated in ¶ 41 of my First Declaration, the conclusions there were based on the data that I reviewed and analyzed, and not on any consideration of specific allegations of fraud. It was brought to my attention on May 4, 2022, subsequent to the analysis in ¶¶ 6-40 of my First Declaration, that a Pima County whistleblower's email previously received by Plaintiff Finchem and others included allegations consistent with, and corroborative of, my conclusions. The whistleblower's full email is attached as Exhibit C. My independent analysis stands separate

from this email, but the similarity between the allegations in the email and the result of my analysis is interesting.

The New Information

13. New information came to my attention in January 2024 that provides insight into ¶ 8 above regarding a significant vulnerability in the Dominion Voting System machines used in Maricopa County that allows total access and control over the election results. This unauthorized access provides a clear means to insert or modify or delete files (including software, ballot images, and election results), invoke commands or processes (including operations to insert or modify or delete software, ballot images, and election results), and to alter or delete the logs recording those unauthorized operations, covering all traces of the intrusion.

14. I am now informed that Dominion Voting Systems database and backup files from the 2020 general election in Maricopa County contain extremely alarming data, including both the cryptographic keys used to encrypt and decrypt election data and also passwords, all stored in plain text and in an unprotected state other than the Windows login to the Election Management System ("EMS"). This allows cryptographic safeguards to be bypassed, rendering the protections afforded by encryption worthless, and enabling attacks, including insider threats, on the election system.

15. In the following paragraphs these issues will be discussed, then their significance to PID control, and finally their significance to the enormous problem with rejected ballots which occurred in Maricopa County during the November 2022 midterm election.

Cryptographic Bypasses and Insider Threats

16. Dominion's contract with Maricopa County (Serial No. 190265-R Elections Tabulation Systems) entered into in June 2019 represents that:

> OPTIONAL PREFERENCES:
> The County verifies hash codes of all software and firmware that is in escrow at the Secretary of State's (SOS) Office and on file with National Institute of Standards and Technology (NIST). Dominion agrees to the following:
>
> Data generated by the Democracy Suite platform, including results reporting, is protected by the deployment of FIPS-approved symmetric AES and asymmetric RSA encryption. The Democracy Suite Election Management System uses these techniques to encrypt election files prior to their use on ImageCast tabulators. Once the polls have been closed, the ImageCast tabulators encrypt all of the results files prior to transmitting them back to EMS.
>
> SHA-256 hashes are used for all data integrity and verification. Should an intrusive process or altering of any file occur, hash values will be, in turn, altered as well. With that said, any presence of an intrusive process will be detected, as the hashes of any altered data will not match the value initially determined.

17. Encrypted information uses a secret "encoding key" to transform the original data (called "plaintext") into an encoded form called "ciphertext" which is unintelligible to others. Only by means of the corresponding "decoding key" can the ciphertext be transformed back to the original plaintext.

18. Symmetric encryption uses the same key for both encoding and decoding; this was the function performed by the Enigma machine famously used by Nazi Germany in World War II. This single key must be kept secret by both the encoder and the decoder. Symmetric encryption is used in the Dominion system both with an Advanced Encryption Standard ("AES") Rijndael key and also with a Hash-based Message Authentication Code ("HMAC") key.

19. Public-key cryptography, on the other hand, uses two keys, a public encoding key

which is not secret paired with a secret private decoding key. Public-key cryptography is used in the Dominion system with X.509 certificates. The original design of X.509 certificates was to serve as a "trusted directory" where one user or process (the sender) could look up the public key for the intended recipient, much like looking up someone's street address in an old-fashioned telephone directory to mail them a letter. However, there are "extended" X.509 certificates which contain the private key as well as the public key for a recipient, and this is apparently what Dominion uses. In this case it is mandatory that the entire X.509 certificate be stored securely, *e.g.*, encrypted.

20. As just noted, symmetric keys such as Rijndael keys and HMAC keys must be kept secret, and the private key for a public key with an X.509 certificate must also be kept secret. Alarmingly, ***all of these are stored in plain text and unprotected*** in the EMS database, along with the Rijndael vector, which performs a function similar to the "salt" used to protect password hashes. This means that anyone with access to the EMS database can completely bypass all the cryptographic safeguards in the Dominion system. As others have publicly demonstrated, gaining access to the EMS database is relatively simple technically.

21. The consequences of this cannot be overemphasized: with access to the Rijndael "master key" anything on the EMS can be altered or spoofed in an undetectable way. For example, according to Dominion, official ballots are sent between the EMS and the Network Attached Storage ("NAS") server using the X.509 public and private keys. Since the private key was not kept secret, an intruder (including an insider) could, for example, decode official ballots from the NAS, alter or replace them, encode the new "official" ballots, and pass them on as legitimate. Since the correct keys are used, the substitution is undetectable.

22. In similar fashion, all of the other critical election files, election databases, device

configuration files, machine behavior settings, results files, reports and logs, ballot images, ballot layout definitions, and user credentials stored on Dominion "iButtons" are encrypted with the HMAC key ***which is stored unencrypted***. Since the HMAC key was not kept secret, an intruder (perhaps an insider) could, for example, decode reports or logs on the NAS and alter and re-encode them. Since the correct key is used, this is undetectable.

23. Storing cryptographic keys unprotected is thus an abysmal breach of cybersecurity protocols and best practices.

Significance to PID Control

24. All of the security failures described above also apply to the PID controller I concluded the CVR shows existed (¶ 8 above). (For more background please see my First Declaration, particularly ¶¶ 34-36, and then return to this paragraph.) With such inadequate security it is quite possible for an intruder or an insider to invoke the PID controller; modify its parameters K_p, K_i, and K_d, and setpoints; or even restart the PID controller.

25. The significance of restarting a PID controller is that the integral accumulator would be reset to zero, discarding the accumulated but not yet corrected deviation from the predetermined setpoint. This would effectively restart an election.

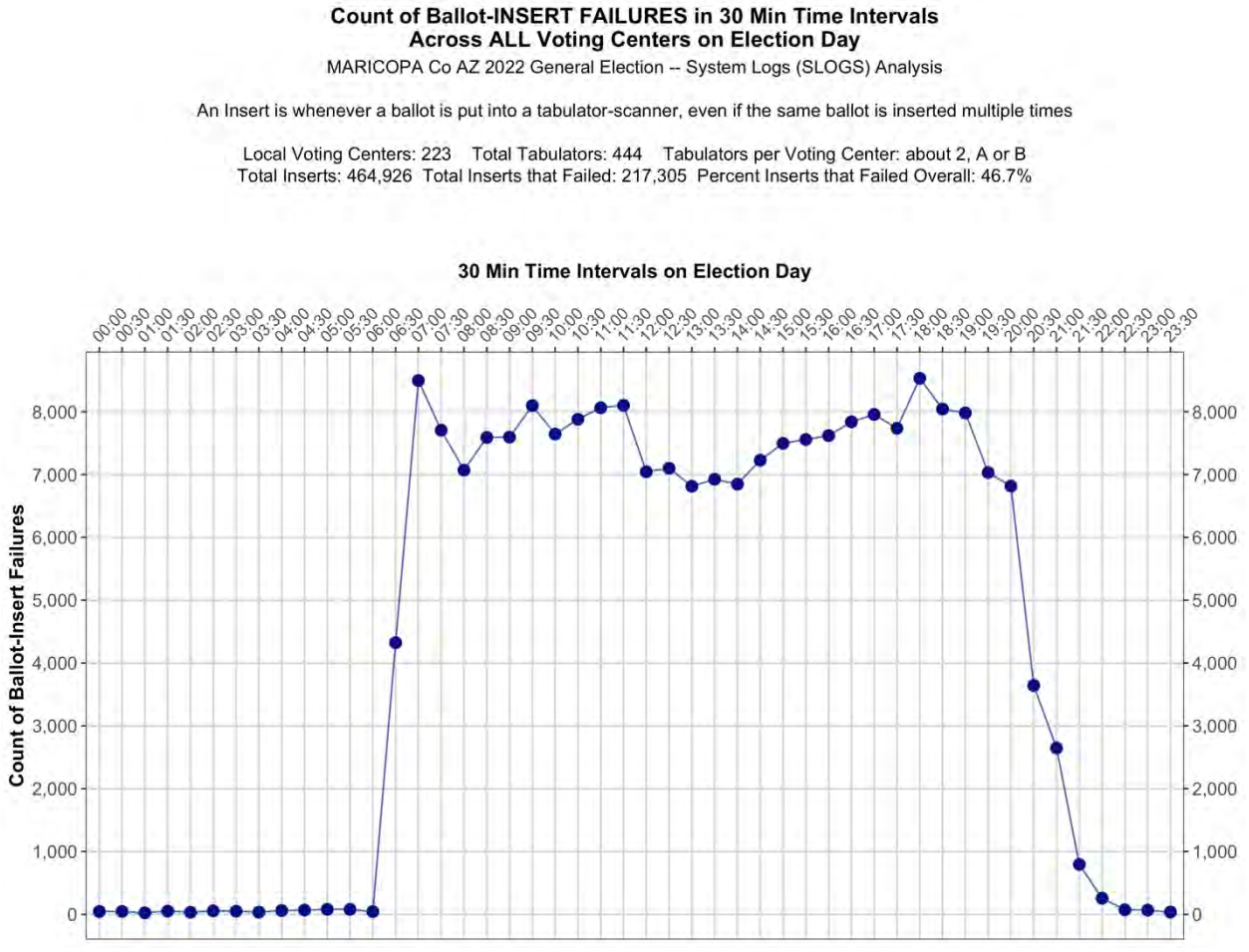
26. The security failures detailed in ¶¶ 13-23 above could thus have been used to install a PID control software module, to set its parameters (including the desired election results) and/or modify them, to start the PID controller, to stop it, to reset it, and so on.

27. The unprotected cryptographic keys would both enable such operations to be performed and also provide the means for deleting all traces of such operations from the logs, as described in ¶ 22 above, making them undetectable.

Significance to Rejected Ballots in the 2022 Midterm Election

28. All of the security failures detailed above could also provide one of the avenues causing the huge numbers of ballots in the Maricopa County 2022 midterm election to be rejected by the tabulators as unscannable. A total of 138 of the 223 vote centers (over 61%) had a tabulator rejection rate of ballots at 20 per cent or more.

29. As depicted in the following graph, across Maricopa County, over 7,000 ballot insertion failures occurred in almost every single 30-minute period for the entirety of Election Day, starting at 6:30 A.M. and continuing to 8:00 P.M. The enormous number of rejections created chaos on Election Day in the November 2022 election, as was widely reported.



30. As has been reported elsewhere, one cause of ballots being unscannable was that

sometimes the 20" ballot image was shrunk to 19" and then printed on 20" paper. Since this made the border timing marks too small, the tabulators rejected these ballots. The same problem was noted in a follow-on investigation by Maricopa County into the causes of these massive ballot rejection failures on Election Day.

31. This was thus a gigantic and continuous problem which did not get better overall during Election Day, despite numerous technicians' making adjustments throughout the day. These facts belie Maricopa County's representations that the problems were minor and quickly remedied.

32. One possible way this could have occurred was by an intruder (perhaps an insider) using the security failures described above to create shrunken ballot images and route them to selected printers.

33. A more detailed description of the problems in ¶¶ 28-31 above is included in my testimony to the Arizona Senate Elections Committee on January 23, 2023, ("Senate Testimony"). A true and accurate copy of my Senate Testimony without exhibits is attached as Exhibit D, dated January 22, 2023. This Senate Testimony was distributed to the Senators on the Elections Committee and presented in person; the video of my presentation is archived by the Arizona Senate at https://www.azleg.gov/videoplayer/?eventID=2023011091 at 1:13:06-1:48:25 and 2:11:33-2:15:49 (last visited Mar. 16, 2024).

34. My presentation was also recorded in the Official Minutes posted at https://www.azleg.gov/legtext/56leg/1R/comm_min/Senate/01232023 ELECTIONS.pdf as follows:

"Dr. Walter C. Daugherity, distributed and explained Exhibit 4 (Attachment E) and

answered questions posed by the Committee….Audio recordings and attachments are on file in the Secretary of the Senate's Office/Resource Center, Room 115."

Conclusion

35. This new information confirms the conclusions of my First Declaration (see ¶ 8 above) and extends them by detailing enormous vulnerabilities in the Dominion software used, which open up multiple pathways for unauthorized access, making the system completely untrustworthy.

36. As stated in ¶ 8 above, in my professional opinion as a computer expert, electronic voting systems such as those used in Maricopa County (Dominion) and Pima County (ES&S), Arizona, should not even be considered for use in any future elections, as they cannot be relied upon to generate secure and transparent election results free from the very real possibility of unauthorized manipulation.

37. I have personal knowledge of the foregoing and am fully competent to testify to it at trial.

I declare under penalty of perjury that the foregoing is true and correct. Executed on March 16, 2024.

Walter C. Daugherity

Walter C. Daugherity

EXHIBIT A

Curriculum Vitae of Walter C. Daugherity

Walter C. Daugherity
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EDUCATION

Ed.D., Mathematical Education, Harvard University, Cambridge, Massachusetts, 1977. Dissertation: "On the Ordering of Topics in the Teaching of Mathematics." Advisor: Marc Lieberman.

M.A.T., Mathematics, Harvard University, Cambridge, Massachusetts, 1967 (age 20).

B.S., Mathematics, Oklahoma Christian College, Oklahoma City, Oklahoma, 1966 (3 years). Minors: Physics and chemistry, German.

EXPERIENCE

1973 to present	Daugherity Brothers, Inc., (Computer consultants), Bethany, Oklahoma. Co-founder, chairman, and president. Clients include IBM Federal Systems Division, New York Times, Washington Post, Los Angeles Times, Cheyenne and Arapaho Tribes of Oklahoma, Southwestern Bell Telephone, Fulbright & Jaworski (Houston), Texas Department of Agriculture, Phonogram B.V. (Amsterdam), and U. S. Customs Service.
1987 to present	Texas A & M University, College Station, Texas. Visiting Assistant Professor/Senior Lecturer/Senior Lecturer Emeritus, Departments of Computer Science and Engineering and Electrical and Computer Engineering, College of Engineering.
1989-91	Texas A & M University System, College Station, Texas. Director, Knowledge Systems Research Center, Computer Science Division of the Texas Engineering Experiment Station.

1984-87	Blinn College, Brenham, Texas. Computer science instructor. Part-time 1984-86, full-time 1986-87.
1978-80	Rose State College, Midwest City, Oklahoma. Data processing instructor (part-time).
1971-73	ECRM, Bedford, Massachusetts. Systems programmer.
1970-71	Harvard Computing Center, Cambridge, Massachusetts. Telecommunications specialist.
1969-70	Computer-Aided Instruction Laboratory, Harvard University, Cambridge, Massachusetts. Systems programmer.
1968-70	Harvard University, Division of Engineering and Applied Physics, Cambridge, Massachusetts. Teaching fellow (for George Mealy and Thomas Bartee).
1967	Driscoll Junior High School, Brookline, Massachusetts. Mathematics teacher.
1967	University of Oklahoma Medical Center Computing Facility, Oklahoma City, Oklahoma. Programmer.
1966	University of Central Oklahoma Data Processing Center, Edmond, Oklahoma. Programmer.
1965	Oklahoma Christian University of Science and Arts, Oklahoma City, Oklahoma. Statistical programmer.
1963	University of Oklahoma Computer Center, Norman, Oklahoma. Lab instructor.

RESEARCH AND DESIGN

1. Refereed Publications

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Kish, L. B., and Daugherity, W. C., "Entanglement, and Unsorted Database Search in Noise-Based Logic," *Applied Sciences*, Vol. 9, No. 15, 3029, 2019.

Kish, L. B., and Daugherity, W. C., "Noise-Based Logic Gates by Operations on the Reference System," *Fluctuation and Noise Letters*, Vol. 17, No. 4, 1850033, 2018.

Daugherity, W. C., and Coulson, R. N., "Knowledge Engineering for Sustainable Agriculture Management," *Proceedings of ICAST 2001 Conference* (Beijing, China, November 2001), 2:266, 2001.

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Coulson, R. N., Daugherity, W. C., Rykiel, E. J., Saarenmaa, H., and Saunders, M. C., "The Pragmatism of Ecosystem Management: Planning, Problem Solving and Decision Making with Knowledge-Based Systems," *Proceedings of Eco-Informa '96 Global Networks for Environmental Information Conference* (Lake Buena Vista, Florida, November 1996), 10:342-50, 1996.

Coulson, R. N., Fitzgerald, J. W.*, Daugherity, W. C., Oliveria, F. L., and Wunneburger, D. F., "Using Spatial Data for Integrated Pest Management in Forest Landscapes," *Proceedings of the 11th Conference on Geographic Information Systems: Integrating Spatial Information Technologies for Tomorrow* (Vancouver, British Columbia, Canada, 1997).

Daugherity, W. C.; Harris, C. E., Jr.; and Rabins, M. J., "Introducing Ethics and Professionalism in REU Programs," *Proceedings of the 1995 World Conference on Engineering Education* (Minneapolis, Minnesota, October 1995).

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* Graduate Research Assistant I funded

Daugherity, W. C., Video review of *Introduction to Biological and Artificial Neural Networks for Pattern Recognition,* by Steven K. Rogers, in *IEEE Transactions on Neural Networks*, Vol. 5, No. 5, 1994.

Teh, S. H.*, Daugherity, W. C., and Coulson, R. N., "A User-Centric Methodology for Building Usable Expert Systems," *Proceedings of the 7th International Conference on Industrial and Engineering Applications of Artificial Intelligence and Expert Systems* (Austin, Texas, May-June 1994), 45-48, 1994.

Daugherity, W. C., "A Neural-Fuzzy System for the Protein Folding Problem," *Proceedings of the Third International Workshop on Industrial Fuzzy Control & Intelligent Systems (IFIS `93)* (Houston, Texas, December 1993), 47-49, 1993.

Daugherity, W. C., "A Partially Self-Training System for the Protein Folding Problem," *Proceedings of the World Congress on Neural Networks (WCNN `93)*, (Portland, Oregon, July 1993). Invited paper.

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Daugherity, W. C., "Characterizations of Fuzzy Operations," *Proceedings of the Second International Workshop on Industrial Fuzzy Control & Intelligent Systems* (College Station, Texas, December 1992), 234, 1992.

Yen, J., Wang, H.*, and Daugherity, W. C., "Design Issues of a Reinforcement-Based Self-Learning Fuzzy Controller for Petrochemical Process Control," *Proceedings of North American Fuzzy Information Processing Society* (Puerto Vallarta, December 1992), 1992.

Yen, J., Wang, H.*, and Daugherity, W. C., "An Adaptive Fuzzy Controller with Application to Petroleum Processing," *Proceedings of IFAC Workshop on Intelligent Manufacturing Systems* (Dearborn, October 1992), 1992.

Yen, J., Daugherity, W. C., and Rathakrishnan, B.*, "Fuzzy Logic and Its Application to Process Control," *Proceedings of CAPA Technology Conference* (Houston, May 1992), 78-86, 1992.

* Graduate Research Assistant I funded

Daugherity, W. C., Rathakrishnan, B.*, and Yen, J., "Performance Evaluation of a Self-Tuning Fuzzy Controller," *Proceedings of the IEEE International Conference on Fuzzy Systems (FUZZ-IEEE)* (San Diego, March 1992), 1992.

Daugherity, W. C., "An Application of Geometrical Reasoning to a Combinatorial Problem," *Proceedings of the Seventh Annual Conference on Applied Mathematics* (Edmond, Oklahoma, April 1991), pp. 226-232, 1991.

Daugherity, W. C., Review of *Data Communications Dictionary*, by Charles J. Sippl, in *Computing Reviews*, Vol. 17, No. 9, pp. 335-336, 1976.

Daugherity, W. C., "Circuits for Dial-up and Local Use of a Stand-alone PDP-8," *Proceedings of the Digital Equipment Computer Users Society*, Vol. 2, No. 2 (Los Angeles, December 1975), pp. 413-414, 1976.

Daugherity, W. C., Review of *Effective Use of ANS COBOL Computer Programming Language*, by Laurence S. Cohn, in *Computing Reviews*, Vol. 16, No. 10, p. 441, 1975.

Manwell, T., Daugherity, W., Desch, S., and Stolurow, L., "Tom Swift and His Electric Bilingual Grandmother," *ACM SIGCUE Bulletin*, Vol. 7, No. 1, pp. 5-17, 1973.

Daugherity, W. C., "A Telephone Amplifier," *Transactions of the Oklahoma Junior Academy of Science*, Vol. IV, pp. 130-132, 1961.

* Graduate Research Assistant I funded

2. Other Publications

Daugherity, W. C., "Honors Section," in Rabins, M. J., and Harris, C. E. Jr. (eds.), *Engineering Ethics Teaching Manual*, 1997.

Daugherity, W. C., "Honors Section," in Rabins, M. J., and Harris, C. E. Jr. (eds.), *Engineering Ethics Teaching Manual*, 1996.

Allen, G. D., Nelson, P., Jarvis, R. D., and Daugherity, W. C., "System Impact of Hit Assessment Capability for NPB Discrimination: Analysis of the Case of No-Hit Assessment," *Weapons Lab/TALN Technical Report*, Kirtland Air Force Base, May, 1990.

3. Other Conference Papers and Presentations

Coulson, R. N., and Daugherity, W. C., "A Knowledge Engineering Approach for Ecosystem Management," 11th Annual Landscape Ecology Symposium, International Association for Landscape Ecology - Integration of Cultural and Natural Ecosystems Across Landscapes: Applications of the Science, Galveston, Texas, 1996.

Coulson, R. N., and Daugherity, W. C., "Decision Support Systems for Forest Pests: Where Do All the Knowledge-Based Systems Go?", North American Forest Insect Work Conference, San Antonio, Texas, 1996.

Daugherity, W. C. and Coulson, R. N., SPBEBE (Economic and Environmental Impact Assessment for Southern Pine Beetle Suppression Projects), computer code, developed for the USDA Forest Service, Forest Health Protection, 1996-1997.

Coulson, R. N., and Daugherity, W. C., "Knowledge System Environment for Ecosystem Management," Global Studies Seminar, Battelle Pacific Northwest Laboratories, Richland, Washington, 1995.

Daugherity, W. C. and Coulson, R. N., ISPBEX-II (Integrated Southern Pine Beetle Expert System), computer code, developed for the USDA Forest Service, Forest Health Protection, 1994.

Daugherity, W. C., and Yen, J., "Tutorial on Neuro-Fuzzy Systems," Third International Workshop on Industrial Fuzzy Control & Intelligent Systems Houston, Texas, December 1993.

Daugherity, W. C., "Introduction to LISP with an On-line Demonstration," Houston Geotech '91, Houston, Texas, 1991.

Daugherity, W. C., "The Universal Classification Problem," South Central Regional Conference of the Association for Computing Machinery, Austin, Texas, 1984.

4. Research Projects

"Remote Laboratory Data Entry and Retrieval System," Texas Department of Agriculture, Walter C. Daugherity, 1986, $3,000 (Daugherity 100%).

"Electrochemical Modeling of a Sinter Plate, Sealed Design Nickel-Cadmium (Ni-Cd) Battery Cell," National Aeronautics and Space Administration, Ralph E. White, Walter C. Daugherity, 1 graduate student, 1989, 25% of my salary 1989-90 (Daugherity 100%).

"Application of Reasoning under Uncertainty to Process Control," Texaco, Walter C. Daugherity and John Yen, 1 graduate student; competitive and peer-reviewed, September 1990, $18,000.

"Design of a Computational Classroom," Texas A & M University, Walter C. Daugherity, September 1990-May 1991, $60,000 (Daugherity 100%).

"Design of a Second Computational Classroom," Texas A & M University, Walter C. Daugherity, January 1991-December 1992, $153,000 (Daugherity 100%).

"Development of Honors Courses in Artificial Intelligence and Analysis of Algorithms," Texas A & M University, Walter C. Daugherity, James Abello and Arkady Kanevsky, 2 graduate students, competitive, September 1991-May 1991, $11,000 (Daugherity 50%).

"Integrated Southern Pine Beetle Expert System"; USDA Forest Service; Robert N. Coulson, Walter C. Daugherity, and Jeffrey W. Fitzgerald; 5 graduate students; competitive and peer-reviewed; 1985-1992, $974,120.

"Distributed Data-Base Support for the ISPBEX Expert System"; USDA Forest Service; Robert N. Coulson, Walter C. Daugherity, and Jeffrey W. Fitzgerald; 1 graduate student; competitive and peer-reviewed; 1992-93; $35,000.

"Integrated Southern Pine Beetle Expert System II"; USDA Forest Service; Robert N. Coulson, Walter C. Daugherity, and Jeffrey W. Fitzgerald; competitive and peer-reviewed; March 1993-February 1994; competitive and peer-reviewed; $170,000.

"Ecological Modelling of Regional Responses to Global Changes: A Knowledge System Environment for Planning, Problem-Solving and Decision Making"; Battelle Pacific Northwest Laboratory; Robert N. Coulson and Walter C. Daugherity; competitive and peer-reviewed; June-December 1995; $39,996.

"Fitness of a Genetically Modified *Gliocladium virens* in Soil and Rhizosphere"; USDA Cooperative State Research Service; Charles M. Kenerley and Walter C. Daugherity; 1 senior associate, 2 graduate students, and 1 undergraduate student; competitive and peer-reviewed; September 1996-August 2001; $254,450 (Daugherity 50%).

"Southern Pine Beetle Biological Evaluation and Economic Evaluation Program Conversion"; USDA Forest Service, Forest Health Protection; Robert N. Coulson (PI) and Walter C. Daugherity (Co-PI); competitive and peer-reviewed; 1996-1997; $16,421.

"The Texas Imported Fire Ant Survey: The Fire Ant Spatial Information Management System (FASIMS)"; Texas Agricultural Experiment Station; Robert N. Coulson (PI) and S. Bradleigh Vinson, Maria D. Guzman, Douglas F. Wunneburger, and Walter C. Daugherity (Co-PI's); competitive and peer-reviewed; January 1998-December 1998; $50,000.

"Special Topics in Computer Science Concepts and Programming"; Academy for Advanced Telecommunications and Learning Technologies; Walter C. Daugherity; competitive and peer-reviewed; June 1998-May 1999; $5,000 (Daugherity 100%).

"Object Modeling Techniques Support for National Simulation Center Tactical Directorate"; U. S. Army through prime contractor Cubic Applications, Inc.; Walter C. Daugherity, James A. Wall, and José Salinas; competitive; September 1998-April 1999; $74,498 (Daugherity 20%).

"The Fire Ant Spatial Information Management System (FASIMS)"; Texas Department of Agriculture, Texas Imported Fire Ant Research and Management Plan; Robert N. Coulson (PI) and Douglas F. Wunneburger, S. Bradleigh Vinson, and Walter C. Daugherity (Co-PI's); competitive and peer-reviewed; 1999-2001; $220,000.

"Evaluating the Impact of Southern Pine Beetle on Ecologically Sustainable Forest Management"; USDA Forest Service; Robert N. Coulson and Walter C. Daugherity; 1 graduate student and 1 undergraduate student; competitive and peer-reviewed; 2000-2003, $90,000.

"Honey Bee Initiative"; State of Texas; Robert N. Coulson (PI), Walter C. Daugherity (Consultant); 2 graduate students; competitive; September 2001-August 2002; $40,000.

"Increasing Computer Science Retention by Developing and Deploying Self-Paced Learning Modules"; State of Texas; Jennifer Welch and Frank Shipman (Co-PI's), Lawrence Petersen, Walter C. Daugherity, and Lauren Cifuentes (Key Personnel); 10 undergraduate students; competitive; June 2002-August 2004; $422,692.

"Facilitating the Transition to Java in High School Computer Programming Classes"; Texas A&M University System Academy for Educator Development; Walter C. Daugherity; 1 graduate student; competitive and peer-reviewed; December 2003-September 2004; $2,966 (Daugherity 100%).

"Instructional Technology Enhancements for Computer Teaching Labs," Texas A&M University, Walter C. Daugherity, competitive, January 2004-August 2004, $20,000 (Daugherity 100%).

"Increasing Computer Science Retention with Peer Teachers and Learning Modules"; State of Texas; Valerie Taylor and Jennifer Welch (Co-PI's), Lawrence Petersen, Walter C. Daugherity, and Joseph Hurley (Key Personnel); undergraduate students; competitive; September 2004-August 2005; $173,158.

Cumulative total: $2,845,801

5. Research Proposals

Note: Funded proposals are listed in section 4 above.

"Automated Support for VLSI Standard Cell Optimization," Texas Advanced Technology Program, Walter C. Daugherity, competitive and peer-reviewed, July 1989, not funded, $233,887.

"Integration of Computer Software Models for NiCd Battery Design," National Aeronautics and Space Administration, Ralph E. White and Walter C. Daugherity, competitive and peer-reviewed, 1990, not funded, $125,000.

"Innovative Use of Supercomputers and Parallel Computers in Grades K-8," Department of Energy, Paul Nelson, Walter C. Daugherity and Bahram Nassersharif, competitive and peer-reviewed, December 1990, preproposal submitted, $885,000.

"Integration of Texas Junior Colleges into State and National Computer Networks," Texas Advanced Technology Program, Walter C. Daugherity and Charles H. Beard, competitive and peer-reviewed, July 1991, not funded, $174,219.

"Adaptive Fuzzy Control for Industrial Processes," Texas Advanced Research Program, John Yen and Walter C. Daugherity, competitive and peer-reviewed, July 1991, not funded, $177,064.

"Development of a Fuzzy Logic Tuner for a PID Controller," Texaco, John Yen and Walter C. Daugherity, 1992-93, not funded, $200,000.

"National Center For Ecological Analysis and Synthesis," National Science Foundation; Robert N. Coulson, Walter C. Daugherity *et al.*, competitive and peer-reviewed, July 1994, not funded, $10,000,000.

"Development of a Fungal Growth Model for Risk Assessment," Texas Advanced Research Program, Charles M. Kenerley and Walter C. Daugherity, competitive and peer-reviewed, July 1995, not funded, $203,792.

"Intelligent Vehicle Navigation System," Texas Advanced Technology Program, Walter C. Daugherity and Jeffrey W. Fitzgerald, competitive and peer-reviewed, July 1995, not funded, $195,058.

"Innovative Programs to Increase the Enrollment in Computer Science," Texas Technology Workforce Development Grant Program, Valerie Taylor and Frank Shipman (co-PI's), Lawrence Petersen, Walter C. Daugherity, and Joseph Hurley (Key Personnel), competitive and peer-reviewed, March 2005, pending, $69,760.

6. New Design Methods, Techniques, or Concepts Developed

Null Modem

I independently invented the null modem in 1969 and constructed one for Harvard University (which is still operational!).

Computer Keyboard National Standard

As a member of the Harvard-MIT Terminal Committee, I participated in the development of the national standard for computer keyboards (*e.g.*, putting braces above brackets for the benefit of programming languages). Nearly every computer terminal and keyboard since then (*e.g.*, VT100, PC) uses this layout.

Integrated User Training

I invented the method of training users about additional features of an application program by integrating the information with the operation of the program (see Manwell, Daugherity, *et al.* under Publications, above). This is now widely adopted, *e.g.*, by Microsoft for its Windows operating systems in the "Getting Started" panel.

Object-Oriented Database

I independently invented and implemented an object-oriented database to support arbitrary combinations of data types.

Self-Organizing Fuzzy Controller

In collaboration with Balaji Rathakrishnan (a Graduate Research Assistant I funded) and John Yen, I developed a new systematic methodology for constructing and tuning fuzzy logic controllers. The research project was funded by Texaco (see the preceding section for details) for use in its refineries.

TEACHING

1. New Courses Developed

CPSC 111/211/311 Java and C-based sequence - Member of curriculum subcommittee, taught 111 and 211
CPSC 210 (Honors) - Data Structures
CPSC 320 (Honors) - Artificial Intelligence
CPSC 489 - Object-Oriented Programming, Systems, and Languages
CPSC 635 - Natural Language Processing (taught by Dr. P. Mayer)
CPSC 689 - Symbolic and Algebraic Computation (not taught)
CSCE 489/PHIL 382 (with Glen Miller [PHIL]) - Ethics and Cybertechnology
ENGR/PHIL 482 (Honors) - Ethics and Engineering
PHIL 282 (with Glen Miller [PHIL]) – Ethics in a Digital Age
PHYS/ELEN 674 (with David Church [PHYS]) - Special Topics in Quantum Computing (the first course at Texas A&M in quantum computing, and, to the best of my knowledge, the first course in quantum computing anywhere in Texas), taught Spring, 2005, for the fifth time.
A Distance Learning section of CPSC 601 - Programming in C and Java, taught Spring, 2003.
Two sections of CPSC 111 - Computer Science Concepts and Programming taught with student peer teachers as assistants, Fall, 2002.
Honors section of CPSC 111 - Computer Science Concepts and Programming taught with student peer teachers as assistants, Fall, 2004.
Developed (with Lawrence Petersen) an intensive summer training program in Java and Software Engineering for high-school computer science teachers, taught Summer, 2003.
Developing an intensive summer training program in Data Structures for high-school computer science teachers, taught Summer, 2004; I was also completely responsible for recruiting teachers, getting them admitted, arranging for housing, and so on.

2. Courses Taught

A. Graduate

CPSC 601	Programming in C and Java
CPSC 602	Object-Oriented Programming, Development, and Software Engineering
CPSC 614	Computer Architecture
CPSC 625	Artificial Intelligence
CPSC 632	Expert Systems
CPSC 681	Graduate Seminar
CPSC 685	Problems

CPSC 691 Research
PHYS/ELEN 674 Quantum Computing (co-teacher)

B. Undergraduate

CPSC 111 Computer Science Concepts and Programming
CPSC 111H Computer Science Concepts and Programming (Honors)
CPSC 120 Programming II
CPSC 120H Programming II (Honors)
CPSC 203 Introduction to Computing
CPSC 206 Structured Programming in C
CPSC 210 Data Structures
CPSC 210H Data Structures (Honors)
CPSC 211 Data Structures and Implementations
CPSC 211H Data Structures and Implementations (Honors)
CPSC 285 Special Topics - Data Structures for Teachers
CPSC 289 Special Topics - Java and Software Engineering for Teachers
CPSC 311 Analysis of Algorithms
CPSC 320/420 Artificial Intelligence
CPSC 320H/420H Artificial Intelligence (Honors)
CPSC 321 Computer Architecture
CPSC 464 Integrated Systems Design Automation
CPSC 485 Problems
CPSC/ELEN 485H Problems (Honors theses)
CPSC 489 Object-Oriented Programming, Systems, and Languages
CSCE 113 Intermediate Programming and Design
CSCE 121 Introduction to Program Design and Concepts
CSCE 121H Introduction to Program Design and Concepts (Honors)
CSCE 315 Programming Studio
CSCE 410 Operating Systems
CSCE 489 Cyberethics (co-teacher)
ENGR 112 Foundations of Engineering II
ENGR 112H Foundations of Engineering II (Honors)
ENGR/PHIL 482H Ethics and Engineering (Honors)

PROFESSIONAL OUTREACH

1. Director, Knowledge Systems Research Center

2. Invited Significant Seminars or Lectures

Daugherity, W. C., "Computers and Privacy," Phi Theta Kappa Honor Society State Convention, Blinn College, Brenham, Texas, 1985.

Daugherity, W. C., and DeSoi, J. F., "Objected-Oriented Programming," Second Annual Texaco Artificial Intelligence Symposium, Houston, Texas, 1989.

Daugherity, W. C., "A Self-Tuning Fuzzy Controller," ARRI Conference on Fuzzy Logic, Arlington, Texas, March 1992.

Daugherity, W. C., Yen, J., and Langari, R., "Tutorial on Fuzzy Logic," Second International Workshop on Industrial Fuzzy Control & Intelligent Systems, College Station, Texas, December 1992.

Daugherity, W.C., "A Partially Self-Training System for the Protein Folding Problem," World Congress on Neural Networks, Portland, Oregon, July 1993.

Daugherity, W.C., "Neuro-fuzzy Systems," Third International Workshop on Industrial Fuzzy Control & Intelligent Systems, Houston, Texas, December 1993.

Daugherity, W.C. and Harris, C.E., "Ethics and Engineering," NSF Research Experience for Undergraduates, College Station, Texas, Summer 1994.

Daugherity, W.C. and Harris, C.E., "Ethics and Engineering," NSF Research Experience for Undergraduates, Austin, Texas, Summer 1994.

Daugherity, W.C. and Harris, C.E., "Ethics and Engineering," NSF Research Experience for Undergraduates, College Station, Texas, Summer 1995.

Daugherity, W.C. and Harris, C.E., "Ethics and Engineering," NSF Research Experience for Undergraduates, Austin, Texas, Summer 1995.

Daugherity, W.C., "Public-Key Cryptography Meets Quantum Computing: Why Secret Agencies are Quaking in their Boots." Quantum Computing Seminar, Texas A&M University, April 9, 2001.

Daugherity, W.C., "Quantum Computing 101: How to Crack RSA." DefCon X, Las Vegas, NV, August 4, 2002.

Daugherity, W.C., "Computer Ethics." ENGR 482 Ethics and Engineering, Texas A&M University, April 14-16, 2003.

Daugherity, W.C., "Incorporating Computer Ethics into an Engineering Ethics Course." University of Texas Ethics Conference, Austin, Texas, April 16, 2004.

Daugherity, W.C., "Computer Ethics." ENGR 482 Ethics and Engineering, Texas A&M University, November 8-10, 2004.

Daugherity, W.C., "[My] 53 Years of Computing History," CSCE 681 Open Graduate Seminar, Texas A&M University, November 18, 2015.

3. Consulting

St. Joseph's Hospital, Bryan, Fall 1990, at no charge.
Other clients include IBM Federal Systems Division, New York Times, Washington Post, Los Angeles Times, Cheyenne and Arapaho Tribes of Oklahoma, Southwestern Bell Telephone, Fulbright & Jaworski (Houston), Texas Department of Agriculture, Phonogram B.V. (Amsterdam), and U. S. Department of the Treasury.

HONORS AND AWARDS

Oklahoma Junior Academy of Science, elected to membership, 1961, Oklahoma State University
National Science Foundation, Institute for High Ability Secondary School Students, 1962, University of Oklahoma
Westinghouse, Science Talent Search national finalist, 1963
National Merit Scholarship test, highest score in Oklahoma,
1963 Frontiers of Science, scholarship, 1963, Oklahoma
City, Oklahoma
Engineering Club of Oklahoma City, award, 1963, Oklahoma City,
Oklahoma Oklahoma Christian College, full scholarship (top entering freshman), 1963,
Oklahoma City, Oklahoma
National Science Foundation, Undergraduate Research Participation Program, 1965, University of Oklahoma, Norman, Oklahoma
Alpha Delta Tau, National Honor Society, 1966
Who's Who in American Colleges and
Universities, 1966 Graduate Record Exam in
Mathematics, scored 800, 1966 Harvard
University, Prize Fellowship, 1966
National Science Foundation, Academic Year
Institute, 1967 Phi Delta Kappa, National Honor
Society, 1967
Harvard University, Class Marshal for the Graduate School of Education, 1967 Harvard University, Bowdoin Prize, bronze medal and cash award for outstanding writing, 1973

Association for Computing Machinery, selected as a reviewer for *Computing Reviews*, 1975

Association for Computing Machinery, Outstanding Regional Intercollegiate Programming Contest Director Award, 1993, Indianapolis, Indiana

World Congress on Neural Networks, Neural Systems Session Co-chair, 1993, Portland, Oregon

Graduate Student Council, 1997 Outstanding Graduate Faculty Award citation: "For your time and dedication to graduate students at Texas A&M."

Named by the TAMU System to The Academy for Educator Development, a major component of The Texas A&M University System's Regents' Initiative for Excellence in Education, 2003 (one of only two faculty members selected from the entire College of Engineering).

Winner, $500 cash prize, Texas A&M University Academic Integrity Week Essay Competition (Faculty Category), 2004.

Texas A&M University, Department of Computer Science & Engineering, 2009 Undergraduate Faculty Award citation: "In grateful appreciation of dedicated service, exemplary attitude, and significant contribution."

Qualified for American MENSA, 2015.

Oklahoma Christian University, Department of Mathematics and Computer Science, 2015

Distinguished Alumnus Award citation: "For outstanding vision, dedication, and commitment to excellence."

EXHIBIT B

EXPERT DISCLOSURE FOR WALTER C. DAUGHERITY, ED.D.

1. My name is Walter C. Daugherity, Ed.D. I am a Senior Lecturer Emeritus in the Department of Computer Science and Engineering at Texas A&M University in College Station, Texas.
2. My opinions are as set forth in the attached Declarations and Report #3, Election Database and Data Process Analysis. In addition, I will testify (a) that the mathematical and statistical analyses I have performed on November 2020 election data clearly and convincingly demonstrate manipulation, and (b) that computerized voting systems are highly vulnerable in their hardware, software, and network connections.
3. The facts or data that I considered are set forth in the attached declarations and Report #3 in light of my background, education, training and experience in the field of computer science as described in my declarations. I have read very widely on investigations and analyses of the November 2020 election, including but not limited to the following:
    i. Expert reports of J. Alex Halderman
    ii. Expert reports of Andrew Appell
4. Exhibits to summarize the data are included in the declarations and Report #3.
5. Qualifications are in the declarations.
6. List of Cases in which I have testified as an expert in the last four years (i) as an expert at trial or in deposition, and also (ii) by declaration or affidavit:

    a. Alabama: (August 17, 2022) Hanes *et al.* v. Merrill *et al.*, Montgomery County Circuit Court, CV-2022-9000595.00
    b. Arizona: (January 22, 2023) Lake *et al.* v. Hobbs *et al.,* Maricopa County Superior Court, CV2022-095403
    c. Arizona: (June 8, 2022) Lake *et al.* v. Hobbs *et al.,* U.S. District Court (Arizona), No. 2:22-cv-00677-JJT
    d. California: (December 19, 2022) Young v. Diaz *et al.*, Nevada County Superior Court, CU0000261 (First Declaration)
    e. California: (March 17, 2023) Young v. Diaz *et al.*, Nevada County Superior Court, CU0000261 (Second Declaration)
    f. Colorado: (December 19, 2022) Kirkwood v. Griswold, District Court (City and County of Denver), 22CV32954
    g. Colorado: (November 8, 2023) Peters v. United States *et al.*, U.S. District Court (Colorado), 1:23-cv-3014-NYW
    h. Illinois: (December 26, 2022) Fritz v. Ferry, 12th Circuit Court, 2022 MR 421 (Declaration)

i. Illinois: (May 22, 2023) Fritz v. Ferry, 12th Circuit Court, 2022 MR 421 (Affidavit)
j. Nevada: (July 25, 2022) Gilbert v. Sisolak, 1st Judicial District Court, 22 OC 000851B (First Amended Declaration)
k. South Carolina: (January 18, 2023) SC Safe Elections *et al.* v. Boards of Elections *et al.*, Richland County Court of Common Pleas, 2022-CP-4004438

7. Compensation: I am being reimbursed for my expenses.
8. Certification: I hereby certify that this report is a complete and accurate statement of all of my opinions, and the basis and reasons for them, to which I will testify under oath.

/s/ Walter C. Daugherity
Walter C. Daugherity, Ed.D.

December 5, 2023

EXHIBIT C

From: Brian Watson <brianwatson70002@gmail.com>
Sent: Thursday, November 12, 2020 2:33 PM
To: Sylvia Allen; Sonny Borrelli; Paul Boyer; Kate Brophy McGee; Heather Carter; Karen Fann; David Farnsworth; Eddie Farnsworth; David Gowan; Rick Gray; Sine Kerr; Vince Leach; David Livingston; J.D. Mesnard; Tyler Pace; Frank Pratt; Michelle Ugenti-Rita; John Allen; Nancy Barto; Leo Biasiucci; Walter Blackman; Shawnna Bolick; Russell Bowers; Noel Campbell; Frank Carroll; Regina Cobb; David Cook; Tim Dunn; John Fillmore; Mark Finchem; Travis Grantham; Gail Griffin; John Kavanagh; Anthony Kern; Jay Lawrence; Becky Nutt; Joanne Osborne; Kevin Payne; Warren Petersen; Steve Pierce; Tony Rivero; Bret Roberts; Thomas T.J. Shope; Bob Thorpe; Ben Toma; Kelly Townsend; Michelle Udall; Jeff Weninger
Subject: Fwd: Meeting held by Pima County Democrats (Voter Fraud Planning meeting)

asking you to void all elections in the state! This includes local, county, state and federal elections! Each ballot contains all these races in it!

The State Legislature has the power to null and void all Nov 3rd election results if AZSOS and the county recorder and elections office will not provide full transparency.
See forwarded message!

---------- Forwarded message ---------
From: **Brian Watson** <brianwatson70002@gmail.com>
Date: Tue, Nov 10, 2020 at 9:38 AM
Subject: Meeting held by Pima County Democrats (Voter Fraud Planning meeting)
To: <Criminal.Division@usdoj.gov>

US Department of Justice,

This is anonymous reporting and do not want to be included in this investigation! Thank you!

Please be advised that Pima County Recorder, located at 240 N Stone Ave, Tucson, AZ 85701 in Pima County Arizona and the Democratic Party added "fraud votes" in the initial count to the Vote-By-Mail (VBM) totals released at 8pm on Nov 3rd 2020.

There were approximately 35,000 fraud votes added to each democrat candidate's vote totals. Candidates impacted include county, state and federal election candidates. Through the utilization of the automated ballot count machines in Pima County Elections, my understanding is that 35,000 was embedded into each democrat candidate's total votes.

Below are the meeting notes:

In a meeting I was invited to by the democrat party in Pima County Arizona on Sept 10th 2020, no phones or recording devices were allowed, a presentation was given including detailed plans to embed 35,000 in a "spread configured distribution" to each democrat candidate's vote totals.

When I asked "how in the world will 35,000 be kept hidden or from being discovered", it was stated that "spread distribution will be embedded across the total registered voter range and will not exceed the registered voter count, and the 35,000 was determined allowable for pima county based on our county registered voter count". It was also stated that "total voter turnout versus total registered voters determine how many votes we can embed. The embedding will auto adjust based on voter turn-out." Because the "embed votes are distributed sporadically all embedded votes will not be found, if audited, because the embeds are in groups of approximately 1,000. This is so the county recorder can declare an orversite issue or error as a group of 1,000 is a normal and acceptable error." "Maricopa County's embed totals will be substantially higher than Pima due to embeds being calculated based on the total number of registered voters."

When I asked "has this ever been tested? and how do we know it works?" The response was "Yes, this has been testing and has shown significant success in Arizona Judicial Retention Elections since 2014 even undetectable in post audits because no candidate will spend the kind of funds needed to audit and contact voters to verify votes in the full potential of total registered voters which is more then 500,000 registered voter. This year our Secretary of State has removed precinct level detail for election night releases so canidates can't see precinct over-votes".

This is what I have from this meeting.
Just thought I'd report this. Not sure if you can do anything since I was unable to have a recording device at this meeting...

Thank you!
B.Watson

EXHIBIT D

DECLARATION OF WALTER C. DAUGHERITY

WALTER C. DAUGHERITY declares, under penalty of perjury, pursuant to 28 U.S.C. § 1746, that the following is true and correct.

Qualifications

1. My full name is Walter Chisholm Daugherity. I am a Senior Lecturer Emeritus in the Department of Computer Science and Engineering at Texas A&M University and also a computer consultant to major national and international firms, as well as to government agencies, including classified work.

2. Prior to my retirement in 2019, I taught computer science and engineering at both the undergraduate and graduate levels for 37 years, the last 32 years being at Texas A&M University. Courses I developed and taught include courses in artificial intelligence, expert systems, programming and software design, quantum computing, and cyberethics.

3. I have published 26 research articles related to expert systems, fuzzy logic, noise-based logic, and quantum computing from over $2.8 million in funded research projects, plus conference papers and other publications.

4. As a computer expert I have consulted for major national and international firms, including IBM Federal Systems Division, *New York Times*, *Washington Post*, *Los Angeles Times*, Southwestern Bell Telephone, Fulbright & Jaworski (Houston), and

Phonogram B.V. (Amsterdam), and also for government agencies such as Cheyenne and Arapaho Tribes of Oklahoma, Texas Department of Agriculture, U. S. Customs Service, and classified work.

5. Further details about my qualifications are included in my Curriculum Vitae attached as Exhibit A.

6. I have qualified as an expert witness in court cases related to elections, electronic voting machines, and election data.

Ballot Tabulation Failures

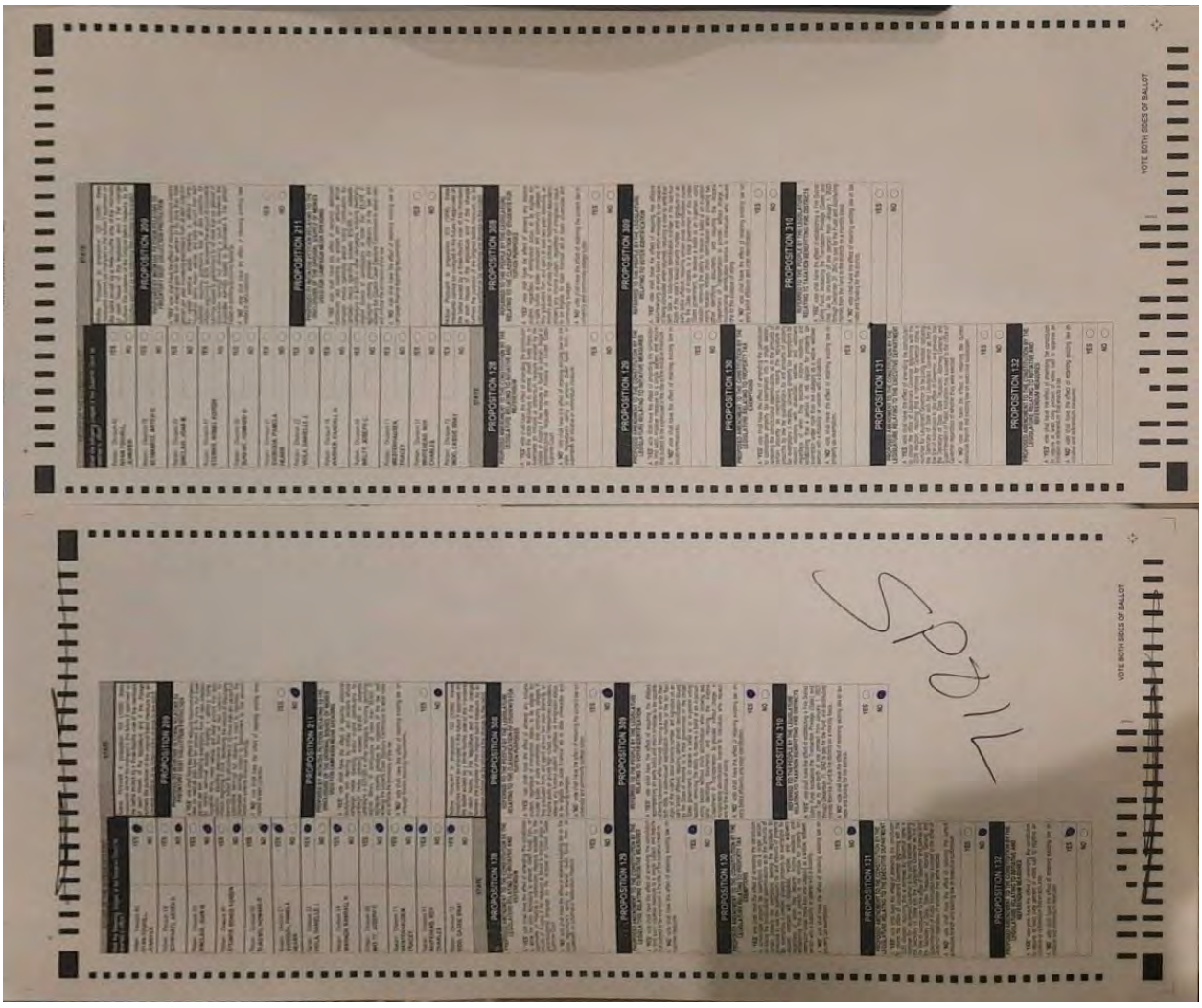
7. I have been provided the tabulator System Log files by Tim LaSota, counsel for Kari Lake, who obtained them from Maricopa County pursuant to a Public Records Act Request.

8. As has been widely reported, there was an extremely large number of ballot tabulation failures at the 223 voting centers in Maricopa County on Election Day, November 8, 2022. By examining the System Log file messages for each tabulator used at Maricopa County's 223 vote centers, as well as the tabulators used at the Maricopa County Tabulation and Election Center (MCTEC), the various types of "insertion error" messages were identified and categorized.

9. However, some of these "insertion error" System Log messages are not "failures" in the sense that the tabulator failed to scan the inserted ballot due to an inability to scan the ballot because of a configuration issue or print quality error, so such error messages must thus

be counted separately. For example, if the tabulator scanned a ballot correctly, sensed an overvote (*e.g.*, voting for more candidates than allowed for a race), informed the voter, and the voter chose not to cast that ballot but to first correct it, the ballot would be ejected.

10. To understand the types of "insertion errors" which ***are*** failures, here is a photograph of the back side of two 20-inch ballots, a good ballot (top) alongside a bad ballot (bottom), which was spoiled:



11. The large black rectangles at three of the four corners enable detection of which end of the ballot is the top, since ballots may be inserted into the tabulator in either direction.

Then around the outer border of the ballot is a series of uniformly-spaced timing synchronization marks which enable the tabulator to determine the row and column of each filled-in bubble and look up the corresponding candidate, contest proposition, etc., in the ballot definition file and tally the vote. The tabulator software scrupulously checks that all these marks are exactly the right size and in exactly the right position, to ensure that the ballot is genuine and that the correct candidate or proposition is tallied for properly filled-in bubbles.

12. Careful inspection of the bottom (bad) ballot reveals that there is a half-inch extra white space at both the top and the bottom, which means that the total distance from the top timing mark row to the bottom timing mark row is one inch less than on the top (good) ballot. The side margins are similarly wider on the bad ballot, and measurements verify that the good 8.5-inch by 20-inch image (top) has been shrunk by 5% to make an 8.075-inch by 19-inch image, which is then centered and printed on 8.5-inch by 20-inch paper. In other words, the good ballot image has been reduced to 95% of its proper size.

13. This results in all the edge markers and frame timing synchronization marks' being too small, which makes the ballot invalid. Multiple detailed error messages are then generated in the System Log file, such as:

```
08 Nov 2022 06:28:03 [ImageProcessing] ERROR : [Pixel Count] left edge marker #39 not found.
08 Nov 2022 06:28:03 [ImageProcessing] ERROR : [Pixel Count] Determine Vertical edge markers failed
08 Nov 2022 06:28:03 [ImageProcessing] ERROR : [Pixel Count] Ballot misread.

…

08 Nov 2022 06:28:05 [CentralManager] INFO : [CentralManager] Ballot returned to a voter
```

since the ballot is unscannable.

14. Another cause of failure, which likewise affects the edge markers and timing

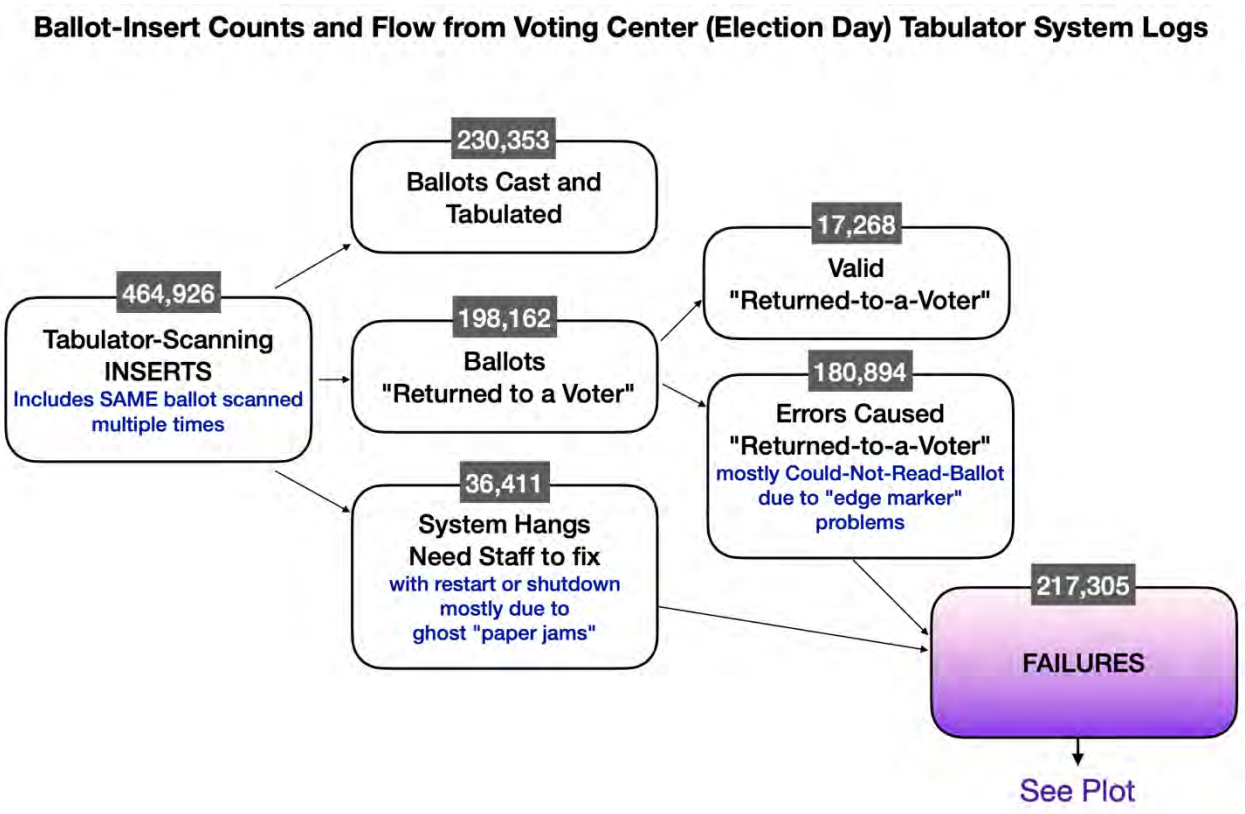
synchronization marks, is when the ink printed on the ballot is not dark enough or is not uniform, as in this photograph:

As a result, the ballot is again rejected, since (in layman's terms) the marks are not perfectly

sized, completely black rectangles. I am informed that once this particular problem was identified on Election Day, some enterprising poll workers or voters spread the word at their voting center to laboriously blacken all the edge markers and timing marks by hand in order to get a rejected blotchy ballot to scan.

15. Possible causes of blotchy printing include (1) insufficient toner (ink cartridge is low and needs replacing) and (2) too low a print fuser temperature. The latter is especially important for heavy media such as the 80 or 100-pound ballot paper specified by the tabulator vendor. I am informed that some technicians discovered the misprinting printers were not set to "heavy media" as they should have been, and when they changed the printers to this correct setting, the print quality improved.

16. All of the "insertion error" System Log messages described in ¶¶ 8-15 above were then categorized by type and counted, as depicted in the following graphic:



17. Of 464,926 tabulator-scanning ballot insertions, 230,353 ballots were cast, 198,162 ballots were returned to the voter, and 36,411 times there was a "system hang" or ghost "paper jam" requiring operator intervention. Of the 198,162 ballots returned to the voter, 17,268 were proper since they were at the request of the voter (see ¶ 9 above), leaving 180,894 which were errors.

18. Attached as Exhibit B is a chart showing the number of ballot rejections due to configuration and/or print quality issues by vote center. These resulted from bad edge markers (corner alignment marks and timing synchronization marks around the "frame" of the ballot image) due to (1) the marks' being too small due to shrinking the 20-inch ballot image to 19 inches and then centering and printing it on 20-inch paper, (2) blotchy printing

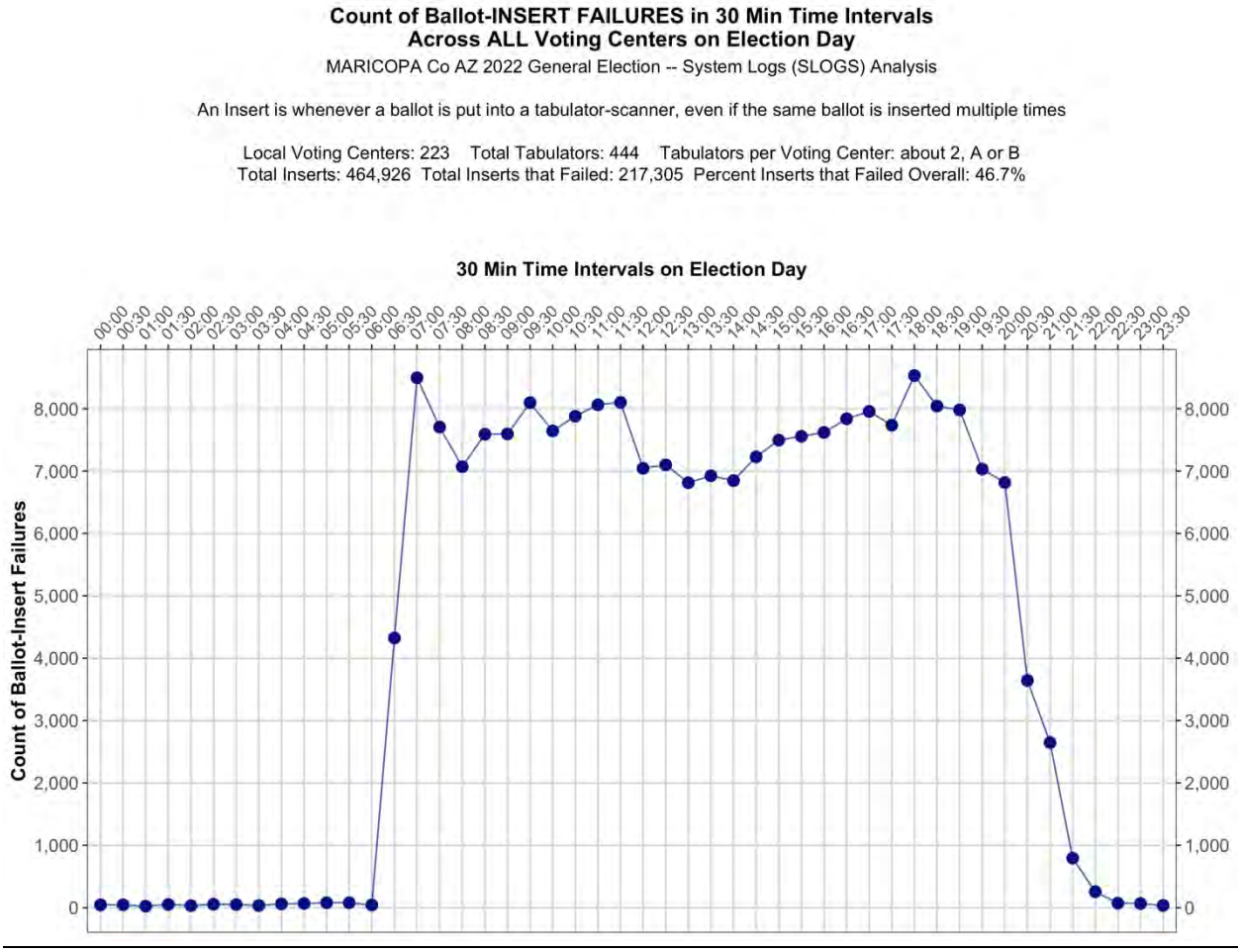
due to improper printer media weight setting, or (3) blotchy printing due to insufficient toner. In case (1), improperly shrinking the ballot image from 20 inches to 19 inches shrank the edge markers by 5% (19 is 5% less than 20) and the tabulator correctly identified them as too small to be a valid ballot. In cases (2) and (3) the timing marks were not completely black.

19. A total of 138 vote centers (out of 223) in Exhibit B show a ballot insertion rejection rate of 20% or more. This is 100 or more times the acceptable limit of 0.2% (1 in 500) specified in the Election Assistance Commission's (EAC's) Voting System Guidelines version 2.0; see section 1.2-G, which says:

> **1.2-G – Misfeed rate benchmark**
>
> The voting system misfeed rate must not exceed 0.002 (1 / 500).
>
> **Discussion**
>
> Multiple feeds, misfeeds (jams), and rejections of ballots that meet all manufacturer specifications are all treated collectively as "misfeeds" for benchmarking purposes; that is, only a single count is maintained.

Timing of Ballot Insertion Errors

20. All of the System Log messages are time-stamped, which makes it possible to see when the ballot insertion errors occurred throughout Election Day, as depicted in the following graph (which is the "Plot" referred to in the graphic in ¶ 16 above):



21. This shows that, across the county, over 7,000 ballot insertion failures occurred in almost every single 30-minute period for the entirety of Election Day, starting at 7:00 A.M. and continuing to 8:00 P.M., with a smaller number of failures prior to 7:00 A.M. and after 8:00 P.M. This was thus an enormous and continuous problem which did not get better overall during Election Day, despite numerous technicians' making adjustments throughout the day.

22. These facts belie Maricopa County's representations that the problems were minor and quickly remedied.

Inconsistencies in the Redacted Cast Vote Record

23. I have also been provided with the redacted Cast Vote Record (CVR) by Tim LaSota, counsel for Kari Lake, who obtained it from Maricopa County pursuant to a Public Records Act Request. Since it is labelled "redacted" it is not complete; however, the portions of the actual CVR remaining are represented by the County to be accurate, but this does not appear to be the case.

24. Although votes were cast in all voting centers, 43 voting centers do not appear at all in the redacted CVR. These are the same voting centers listed in the County's reconciliation report (attached as Exhibit C) as having been tabulated at Central Count ***instead of using the voting center results recorded on their memory cards***, with the exception of Journey Church, which both appears in the redacted CVR (indicating its memory cards were counted) and also in Exhibit C as counted at Central Count, so it may have been counted twice. As a result, there is no way to know what the true outcome of the votes in those voting centers are, nor the total votes for the entire election.

25. Note that only two voting centers are listed as having "Door 3" ballots (defective ballots rejected for printing failures as described in ¶¶ 10-18 above, or for other reasons) commingled with ballots that were successfully scanned and tabulated to the memory cards. To rectify this commingling error, the memory cards from these two voting centers were ignored and all the ballots tabulated at Central Count. ***This should not have been done for any other voting centers.***

26. Also note that defective ballots rejected for printing failures at a voting center would likewise be rejected by a Central Count scanner, since the same ballot

style definitions and format must be used.

Mismatched Signatures

27. I received a copy of Exhibit 12 in *Lake v. Hobbs*, the Declaration of Shelby Busch dated December 7, 2022, regarding mismatched signatures in Maricopa County, Arizona ("Busch Declaration"). From a large sample of mismatched signatures from the November 3, 2020, election, the Busch Declaration projects the expected number of "egregiously mismatched" signatures and "standard mismatched" signatures in the November 8, 2022, election. (Note: The terms "egregiously mismatched" and "standard mismatched" are defined in the Busch Declaration, *e.g.*, at ¶ 19. For example, a signature with a completely different name is termed an "egregious mismatch" and a signature which does not meet the Arizona Secretary of State standards is termed a "standard mismatch.")

28. I was asked to assess the accuracy and statistical significance of the mathematical calculations in the Busch Declaration, specifically in its ¶¶ 19-20.

29. I confirmed that the calculations performed therein are accurate to within rounding to two decimal places.

30. To determine confidence intervals for the projections to the 2022 election made in the Busch Declaration, the appropriate standard statistical method is the "Exact Binomial Test." The confidence intervals resulting from that statistical test were then used to determine the minimum and maximum range for the projections to the 2022 election.

31. The resulting spreadsheet is attached as Exhibit D. It is divided horizontally into two sections: the top half deals with projections of the number of "egregiously

mismatched" signatures, and the bottom half deals with projections of the number of "standard mismatched" signatures. Each half contains the upper and lower limits for five different confidence levels, 95%, 99%, 99.9%, 99.99%, and 99.999%.

32. In both halves the most compelling numbers are highlighted, namely:

(a) With 99.999% confidence, the projected number of ***egregiously mismatched*** signatures in 2022 is at least 184,224 out of 1.9 million ***ballot envelopes***.

(b) With 99.999% confidence, the projected number of ***egregiously mismatched*** signatures in 2022 is at least 127,186 out of 1,311,734 ***early votes***.

(c) With 99.999% confidence, the projected number of ***standard mismatched*** signatures in 2022 is at least 236,763 out of 1.9 million ***ballot envelopes***.

(d) With 99.999% confidence, the projected number of ***standard mismatched*** signatures in 2022 is at least 163,458 out of 1,311,734 ***early votes***.

33. Thus, in all four cases, with 99.999% confidence the projected number of mismatched signatures by either criterion is over seven times the 17,117-vote margin of victory reported in the race for governor.

34. The calculations I performed confirmed that the calculations in the Busch Declaration, specifically in its ¶¶ 19-20, are accurate to within rounding to two decimal places.

35. Using appropriate standard statistical methods, I calculated five sets of confidence intervals for the projected number of mismatched signatures in 2022, at two levels of stringency for what constitutes a mismatch.

36. Taking the lowest (most conservative) of these confidence intervals, and the

most conservative mismatch criterion, the results show that, with 99.999% confidence, the projected number of mismatched signatures in 2022 is at least 127,186 out of 1,311,734 early votes.

37. 127,186 mismatched signatures is over seven times the 17,117-vote margin of victory reported in the race for governor.

38. UPDATE: Yesterday (January 21, 2023) I received from Shelby Busch an update to the Busch declaration dated December 7, 2022, as follows:

Failed SOS Standards	47,366
Egregious Signature Mismatches	38,909

Total Amount of Signatures Reviewed is 380, 976

39. Since the percentage of ***egregiously mismatched*** signatures is now 10.21%, which is higher than the 9.97% in the original smaller sample of 230,339, the projected number of mismatched signatures in 2022, with 99.999% confidence, is even more than 127,186 out of 1,311,734 early votes.

Conclusions

40. **Ballot Tabulation Failures**: There was an extremely large number of ballot tabulation failures at the 223 voting centers in Maricopa County on Election Day, including 180,894 errors which were printer or system failures, as documented in the tabulator System Log files. A total of 138 of these 223 vote centers show a ballot insertion rejection rate of 20% or more, which is 100 or more times the EAC's acceptable

limit of 0.2%.

41. **Timing of Ballot Insertion Errors**: Across the county, over 7,000 ballot insertion failures occurred in almost every single 30-minute period for the entirety of Election Day, starting at 7:00 A.M. and continuing to 8:00 P.M., with a smaller number of failures prior to 7:00 A.M. and after 8:00 P.M. This was thus an enormous and continuous problem which did not get better overall during Election Day, despite numerous technicians' making adjustments throughout the day.

42. **Inconsistencies in the Redacted Cast Vote Record**: 43 voting centers do not appear at all in the redacted CVR, but are listed in the County's reconciliation report (attached as Exhibit C) as having been tabulated at Central Count ***instead of using the voting center results recorded on their memory cards***,

43. **Mismatched Signatures**: With 99.999% confidence, the projected number of mismatched signatures in 2022 is at least 127,186 out of 1,311,734 early votes.

44. I have personal knowledge of the foregoing and am fully competent to testify to it.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on January 22, 2023.

/s/*Walter C. Daugherity*

Walter C. Daugherity