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August 12, 2016

Mr. Keith Ingram
Director of Elections
Texas Secretary of State   **VIA EMAIL**
Elections Division
208 East 10th Street
Austin, Texas 78711

Re: Inspection of ES&S EVS 5.2.1.0 System Application on June 8th and 9th, 2016

Dear Mr. Ingram:

Pursuant to my appointment by the Texas Secretary of State as a voting systems examiner under TEXAS ELECTION CODE § 122.035, please allow this letter to serve as my report concerning the above referenced examination. All of the statutory examiners and various members of the Secretary of State staff examined the Elections System & Software ("ES&S") voting system on June 8th and 9th of 2016, at the offices of Elections Division of the Texas Secretary of State in Austin, Texas.

We examined the above referenced system (collectively referred to herein as "the ES&S 5.2.1.0 System") that included all of the components listed in the Form 100 for this system to ensure it complied with the portions of the TEXAS ELECTION CODE and Texas Administrative Code that contains the requirements for election machines and software. I also reviewed the written materials submitted by ES&S as part of my review.

DAY 1 OF TESTING

On the first day of testing (the 8th), the examiners in attendance and staff witnesses the installation of the software for the ES&S 5.2.1.0 System and verified the security of chain-of-custody and versions of the hardware and software. The examiners and staff tested the physical equipment for the ES&S 5.2.1.0 System, including the various voting terminals and accompanying software, for accessibility compliance in accordance with the checklist generated by Secretary of State staff from the applicable statutes and regulations. All of the equipment and software complied with these requirements for accessibility for voters with physical disabilities.

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DAY 2 OF TESTING

On the second day of the exam (the 9th), ES&S officials addressed issues listed in their Form 100 and gave an overview of the ES&S 5.2.1.0 System. This system is a substantial change from the previously certified ES&S system (commonly referred to as the "Unity System") being used by some counties in Texas. There are several components offered by ES&S to supplement the ES&S 5.2.1.0 System that were not being presented for certification. These included: (1) a poll book printer; (2) Election Night reporting software to report results; (3) the "Express Pass" application that allows people to print a ballot at their homes and a code to allow you to vote that ballot before entering the polling place so it can be scanned to pull up the voted ballot on election day; and (4) other minor device and software options. *It is important to note that these items were not listed in the Form 100 and, in my opinion, should not be part of any certification considered by the Secretary except for the Express Pass program that was later presented to the Secretary of State staff and appeared to work as intended.*

The examiners and staff in attendance performed an inspection of the physical voting devices and voted script ballots on the various devices. It should be noted that none of the devices or software presented for certification included or related to any DRE devices.

OBSERVATIONS

General Compliance with Texas Election Code. Each of the separate pieces of hardware and software examined that were used for actually casting a ballot complied with the requirements listed in §§ 122.001 *et seq.* of the TEXAS ELECTION CODE and the related regulations in Texas Administrative Code except as expressly noted below.

Internal Audit Logs. Audit logs continue to be a point of confusion and varying opinion. The audit logs for the ES&S 5.2.1.0 System are not encrypted; however, they require a "super password" to access. With this super password, you can alter the logs, but that alteration will also be logged, but the previous data in the log would be lost. There are also digital signatures on the logs and the System is "hardened" to ensure other programs like Wordpad and Excel cannot be used with the System.

These security measures are likely adequate; however, if the purpose of the log is to document rogue actions and be used as evidence in an election-related lawsuit, it appears a person with a malicious motive can undermine voter intent and simply be accused of a tampering with voting or election results, but it will be impossible to show (through the logs) what happened if they logs are destroyed or altered. Instead, it will just be evident that such alteration or destruction occurred. This may still be acceptable since a system of hand-counting paper ballots would not provide more information in the event of a rogue election officials destroying or altering ballots, but it is unfortunate that the logs are able to be altered at all.

Use of Ballot Box feature on Express Vote Device. The Express Vote device is purely a ballot marking machine that does not tabulate, but can record the vote made by a voter. It has an option that allows the printed ballot to be deposited into a ballot box attached to the device. However, this box *does not* have the required locking capabilities required for a ballot box under Texas law (*see* TEX. ELEC. CODE § 127.063). This ballot box attachment can be sealed; however, that does not meet the *lock* requirement. Therefore, I would recommend that the ballot box option for the Express Vote be specifically excluded from any certification based on the lack of a keyed lock on that box.

Discrepancies in Write-In Voting. As part of the mock voting process, some sample ballots had write-in candidates. There are two devices used for reading and tabulating these votes, a central count device and a precinct counting device (with each one using unique hardware). One of the devices rejected one write-in ballot that the other program accepted. This discrepancy was discussed at length; however, the ultimate explanation was simply that it is a difference somewhere in the optical scanning machinery of each machines that allowed one to read the ballot while the other one did not. While this discrepancy is important to note, I do not think it should be a reason to not certify the System.

Concern over the "Ballot" created by Express Vote. An issue also arose during the examination related to the actual printed material created by Express Vote ballot marking device. The information printed by this device does not show all the candidates or the instructions for voting as required by Texas law (*see* TEX. ELEC. CODE § 124.063). This may make the future auditing of an election difficult since it will be difficult to later prove that a voter was presented with all options and proper instructions. However, the discussion among the Examiners was that this paper record plus the electronic media that was used in the Express Vote to create the ballot shown to voters on a screen, when considered in tandem, does satisfy all of the requirements of Texas law. It appears this type of ballot using two or more separate parts is authorized by TEXAS ELECTION CODE § 124.062. This conclusion does highlight the need to keep the media from the Express Vote used in each election for the same period for all voter and candidate contests of elections under Texas law.
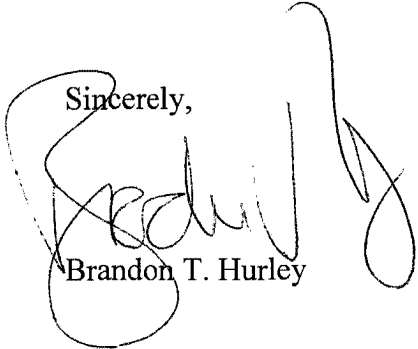
CONCLUSION

Based on the examination and review of the materials, it is my opinion that the ES&S 5.2.1.0 System meets the requirements of Texas law and the applicable administrative rules; however, I believe there certain conditions should be placed on any certification made by the Secretary. My recommendations for those conditions would be: (1) the attached ballot box option on the Express Mark machine should **not** be part of any certification; (2) the components discussed above that were not listed on Form 100 and not presented to the Examiners should not be part of any certification; and (3) the "Express Pass" application that was presented later to staff at the Secretary's office should be considered for certification, but any certification of it should ensure that the use of cell phones by a voter to call up the ballot he or she has created

before entering the polling place should be disabled as the use of cell phones at a polling places is prohibited by state law.

This report should not be construed as a comment on any of the technical aspects of the ES&S 5.2.1.0 System except as expressly stated herein. In the event any of the equipment, software or security devices examined are altered, changed or decertified by any accrediting agency (other than a "minor modification qualified for administrative certification process" as that term is defined in § 81.65 of the Texas Administrative Code), this report should be considered withdrawn.

Thank you for the opportunity to serve as an examiner and participate in this important process that protects the integrity of Texas' voting systems.

Sincerely,

Brandon T. Hurley