

# BRANDON HURLEY

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July 21, 2023

Ms. Christina Adkins  
Director of Elections  
Texas Secretary of State  
208 East 10th Street  
Austin, Texas 78711

Re: Inspection of the Hart Verity 2.7.4 System conducted on multiple days in March and July of 2023

Dear Ms. Adkins:

Pursuant to my appointment by the Texas Secretary of State as a voting systems legal examiner under TEXAS ELECTION CODE § 122.035, please allow this letter to serve as my report concerning the above referenced examination. I, along with the other statutory examiners and staff from the Secretary of State's office, examined the Hart Verity 2.7.4 voting system ("**Verity 2.7 System**") on January 24 and 25 and March 31, 2023, at the offices of Elections Division of the Texas Secretary of State in Austin, Texas. It should be noted that the literature refers to the Verity 2.7 System as "2.7.1"; however, the additional elements presented and additional changes made before the final day of the examination brought the version number to "2.7.4."

Prior to the in-person exam, officials from the Texas Secretary of State and the examiners participated in a phone call to discuss the Verity 2.7 System and the plan of examination. Also prior to the exam day, I reviewed all of the documentation provided by Hart about the Verity 2.7 System. On March 1, 2023, several examiners, Secretary of state staff and I witnessed the trusted build, hash validation and performed accessibility testing on the Verity 2.7 System. The next day on March 2<sup>nd</sup>, all of the examiners and staff inspected the above referenced software and equipment and accompanying written materials for compliance with

the relevant provisions of the TEXAS ELECTION CODE and Texas Administrative Code related to the requirements for election machines and software. Based on some of the issue raised at the second day of the examination, another day of examination was scheduled to exclusively review the Transmit system that is potentially part of the Verity 2.7 System. That one day examination was on July 6, 2023, at the Hart offices in North Austin.

The Verity 2.7 System is the newest version of the Hart Verity voting system. It is similar to previous Verity systems, but has several substantive changes. One of the major components of the Verity 2.7 System is the Verity Transmit component that can be used to transmit unofficial election results on election night after the polls close. It required an additional day of inspection and will be addressed separately in this report. Also, it is worth noting that the Verity 2.7 System (as presented in Texas) no longer has a DRE component. It is also important to note that the Verity Relay system is not part of the Texas certification request. Verity Relay is similar to Verity Transmit, but can be used to report different types of results on election night.

### **ACCESSIBILITY TESTING**

On the first day of the inspection, staff tested the physical equipment of the Verity 2.7 System for accessibility compliance with the applicable state laws and regulations. These tests confirmed that the Verity 2.7 System complied with the accessibility requirements of Texas law. There was some limited discussion about the audio quality and how some of the audio prompts take you back to screens that seem cumbersome or difficult for people with disabilities to navigate. Nevertheless, none of the concerns were great enough to conclude that the Verity 2.7 System did not comply with the accessibility requirements found in Texas law or regulation.

### **HARDWARE AND SOFTWARE TESTING**

On the first the examination day, Hart completed the loading and installation of the Verity 2.7 System and the hash validation process.

On the second day of the examination, a generalized background of the structure of the Verity 2.7 System occurred among the examiners, staff and the Hart officials. The examiners and staff asked specific questions of the Hart officials. One of these discussion included an explanation of current ECO's and

the way they potentially impact the numbering of the System. Certain ECO's were pending as of the date of the first round of examinations that lead to the final numbering of the System. Hart officials confirmed that none of the physical machines used in the voting process contain or can be connected to a modem and the only connection point can be a daisy-chaining of Duo devices.

Later in the examination day, the examiners tested each piece of equipment and cast a script of ballots on each voting machine. Paper ballots were fed into the optical scanners and tabulated and sorted with the larger scanners and election software.

A concern was raised concerning the closing of polls and the running of tapes during the early voting process. The tapes for a device automatically run upon the closing of the polls. The problem is that the tabulation and running of tapes for early voting should not occur until the polls open on election day. This means the devices used for early voting should either not be closed at the end of early voting (since multiple days pass between the end of the early voting and election day) or a work around has to be created by Hart wherein the tapes can be delayed or stored in a secure place until election day without anyone viewing them. This also means an election authority will likely need separate scanners for use in early voting and on election day.

The Verity 2.7 System uses "Vdrives" to store the election and the votes cast on each device. The Vdrive structure means that they can be pulled at inopportune times by a poll worker (but not a voter since the drives are located behind a locked door) during a voting session; however, it appears that the System provides proper prompts and procedures to allow the data on the Vdrive to not be lost or compromised by an inadvertent removal.

Also, there was some concern concerning the ballot numbering function in the Verity 2.7 System as it relates to randomized numbered that is required under Texas law to protect ballot secrecy. However, it appears the ballot numbering functionality is a secondary ballot numbering that can be disabled to avoid any problems.

### **VERITY TRANSMIT TESTING**

As described above, a unique aspect that can be purchased with the Verity 2.7 System is named "Verity Transmit". It is a system that uses a secondary set of

Vdrives to transmit the unofficial results over a secured internet connection on election night to a regional or central count location so those results can be separately tabulated and produced to the media or other interested parties as unofficial results. This hopefully reduces the reporting time that would be delayed by the driving of the official Vdrives to the same locations. The benefit of this additional system is the time saved, but it creates an entirely separate parallel system that uses separate Vdrives and a tabulation system to arrive at its results.

A small number of counties in Texas may already use the Verity Transmit system; however, the examiners felt that this added function needed to be more carefully reviewed. As a result, the Secretary of State officials scheduled another (third) examination day to review the Verity Transmit System on July 6, 2023.

Texas law and regulation prohibits the use of the Transmit System in early voting. Practically, its benefits would not be present with early voting since the early voting results are not tabulated until the opening of polls on election day.

The examiners and staff thoroughly vetted the Transmit System. They attempted to use the same stick multiple times and added votes to sticks after reporting to determine the accuracy of the Transmit process. Examiners even attempted to remove a Vdrive during the transmission process. None of these attempts lead to issues with the reporting using Transmit.

The technical examiners also tested using Wi-Fi connections and hardwired connections using Virtual Private Networks and ethernet cables. While both paths appeared to be secure, the examiners determined that the hardwired ethernet method may be the best process to use for the transmission for unofficial results.

A broader consideration is the real and perceived benefits of Verity Transmit as opposed to the real and perceived concerns the system presents. The Transmit functionality only makes sense when a county has large distances that must be driven with the Vdrives that may cause serious delay in reporting even unofficial results or in counties where the number of votes is so large that an expedited delivery of unofficial results can allow the media and the public to get unofficial result more quickly than by other means. The concerns about running the Verity Transmit is that it is a completely separate system that present opportunity for human error and could lead to unofficial results that have slight variations from official results that will need to be explained. Also, the use of the Transmit System could allow for variations in methods or processes used by different counties that could lead to confusion or

questions.

For the above reasons, it appears that the Verity Transmit System has limited value in unique circumstances. To minimize some of the potential concerns, it also appears that additional guidance/requirements from the Secretary of State is needed to insure a uniform/accepted process and methodology in setting up, using and reporting from the Transmit System.

### **OBSERVATIONS**

1. Each of the separate pieces of hardware and software of the Verity 2.7 System examined met the listed requirements of the TEXAS ELECTION CODE and TEXAS ADMINISTRATIVE CODE.
2. The secondary ballot numbering function on the Verity 2.7 System should be disabled to ensure the secrecy of the ballot.
3. With early voting, a protocol must be developed to ensure the summary tapes are not run when the polls close after early voting and not run or at least not read until the opening of the polls on election day.
4. In connection with number 3 above, separate scanners should be used with early voting and election day.
5. Verity Transmit is an added feature of limited use; however, when it is to be used, additional protocols and rules from the Secretary of State's office should be created to ensure the proper safety measures and uniform use of the Transmit System is achieved.

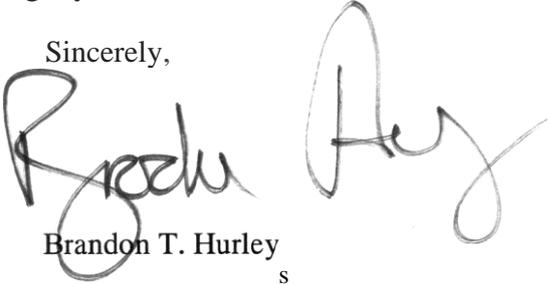
### **RECOMMENDATION**

Based on the foregoing observations and my examination of the Verity 2.7 System, its accompanying literature, and the representations made by Hart officials both in its literature and at the examination, I recommend that the Verity 2.7 System be certified as compliant with the requirements of the TEXAS ELECTION CODE and the TEXAS ADMINISTRATIVE CODE with the express conditions discussed above.

This report should not be construed as a tacit or implied comment on any of the technical aspects of the Verity 2.7 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,

A handwritten signature in black ink, appearing to read "Brandon T. Hurley". The signature is written in a cursive style with a large initial "B" and "H".

Brandon T. Hurley  
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