Service and Maintenance

Verity Voting Maintenance Information

Operations Technical Reference Manual

Document number 6610-001-A05

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Hart InterCivic, Inc.
P.O. Box 80649
Austin, Texas 78708
Telephone: (866) ASK-HART | (866) 275-4278
URL: www.hartintercivic.com

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CHAPTER 1

Introduction

This is the introductory chapter in the Verity Voting Service and Maintenance Operations Guide. This chapter details the following introductory information:

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1.1 Verity Service and Maintenance Overview

Welcome to the Verity Voting system, an election creation and management system. Verity Voting comprises hardware and software tools.

The Verity Service and Maintenance Operations Guide introduces Verity Voting System hardware components used for voting. This guide also discusses maintenance, setup, troubleshooting, and other relevant topics needed by those who store, maintain, set up, and troubleshoot hardware components of the Verity Voting system.

This guide provides the following information for election officials, support personnel, and warehouse staff:

- Introduction
- Procedures: Storage, Delivery, and Maintenance
- Polling Place Equipment Testing
- Procedures: Pre- and Post-Election
- Procedures: Field Techs & Help Desk
- Troubleshooting Procedures for Support Personnel
- Device Reports
- vDrive Processing and Election Night Procedures

In this chapter we introduce polling place system hardware, Verity security, the Verity work flow and device configuration, and some very important safeguards.

1.2 Polling Place System Hardware

1.2.1 Verity Touch Writer

Verity Touch Writer is a touch-screen enabled Ballot Marking Device that prints voter-marked ballots to a commercial off-the-shelf printer. Voters activate their ballot session by entering a unique access code that provides voter anonymity.

Voters use the electronic interface to privately and independently make their selections on the ballot. When voters finish making their selections, they print the marked ballot. Verity Touch Writer is also compatible with Verity Access, an optional input device (with tactile buttons, audio ballot voting, and compatibility with additional two-switch adaptive devices).

1.2.2 Verity Scan

Verity Scan is a digital paper ballot scanner. Scan provides second-chance voting, with voter instructions for mismarked ballots. Scan includes additional accessibility features, and is attached to a secure ballot box.

Verity Scan records ballots and audit log data in redundant, secure storage locations. One of these storage locations is removable

electronic media. The removable election media allows the ballots to be transferred to the Verity Count tabulation component.

When opening the polls, a poll worker activates the Verity Scan device and prepares it to receive marked paper ballots. Voters may privately and independently insert their marked ballots to scan and cast the ballot.

1.2.3 Other Verity Hardware Components

1.2.3.1 Verity Ballot Box

Verity Ballot Box is a purpose built ballot box that allows Verity Scan to automatically deposit scanned ballots into a secure box; the ballot box also allows for manual insertion of ballots by the voter. Installing privacy screens on the ballot box insures each voter the privacy of their vote throughout the voting process.

Verity Ballot Box is easily setup and collapsed to allow for the product to be easily managed for transportation and storage.

1.2.3.2 Verity Booth

Verity Booth is a purpose-built voting booth that allows Verity Touch Writer to be used by each voter that ensures the voter privacy when voting.

Verity Booth is easily set up and collapsed to allow for the product to be easily managed for transportation and storage.

1.2.3.3 Verity Accessible Booth

Verity Accessible Booth is a purpose-built voting booth that allows Verity Touch Writer to be used by voter with accessibility needs that ensures the voter privacy when voting.

Verity Booth is easily set up and collapsed to allow for the product to be easily managed for transportation and storage.

1.2.3.4 Verity Access

Verity Access is an optional input device that can be connected to Verity Touch Writer voting devices. The module has three tactile buttons, one audio port, and a port for external tactile buttons. Jacks for headphones and adaptive devices are located on the top edge of the device, and the device has grip surfaces on either side.

1.2.3.5 Verity Key

Verity Key, or Key, is a small security device that is programmed for each election and generated by the Verity Build application. Key is activated once inserted into a Verity device's or Verity workstation's USB port.

Key is part of Verity's two-factor authentication process. Two-factor authentication requires each user to know something (the password associated with the Key) and physically have something (a programmed Verity Key). Both the user password and the Key must be authenticated together.

Once verified, Verity Systems read the Key before allowing operations to occur. Operations will not engage without a programmed Key. Each Key is valid for one and only one election. If a Key fails, it may not have been programmed properly for the current election.

1.2.3.6 vDrive

vDrive is a small, portable memory device that collects and stores cast vote record (CVR) data and audit logs. CVR data includes the ballot data collected when votes are cast. Audit logs are electronic records of all activity performed in the Verity Voting system as it occurs. Each Verity component (application or device) maintains its own audit log. Audit logs are a critical part of ensuring that security is maintained by providing an audit trail.

vDrives are created in Verity Build, each vDrive is uniquely identified with data written by Build on to the device; Build also loads the election definition on to the vDrive, including election specific audio and images.

vDrives are used in voting devices at polling places to record device auditing information and cast vote records (in Scan).

vDrives are used in Central to record device auditing information and cast vote records from scanned paper ballots.

vDrives are used to transfer the CVRs and audit information to Verity Count for tabulation.

1.2.3.7 Personnel Requirements

Personnel operating Verity devices (Scan and Touch Writer) must receive training from Hart or Hart-trained personnel on the device in order to obtain the skill level required to successfully operate Verity Scan and Touch Writer.

The number of personnel required to prepare and operate Verity devices for deployment to the polling place would be 2 persons per 50 devices.

The number of poll workers required to operate the devices at the polling place should be 1 person per device.

1.3 Verity Security

Proper security is critical to safeguarding the election process. Hart combines technology and best practices to ensure that Verity is secure. Hart ensures that security policies and procedures for both jurisdictions and physical security (both in-person voting devices and electronic and paper ballots) are fully documented. Verity was designed for cost-effective and meaningful security solutions. To ensure security at every level, Verity Voting utilizes the AAA (authentication, authorization, and audit) security framework.

1.3.1 Quality Certified

In addition to measures taken by Hart to protect Verity security, all Verity software and hardware has been tested by an outside auditing agency to ensure proper security and functionality.

1.3.2 Layered Defense

Verity performs a self-test at start-up. If an error occurs, Verity alerts the user.

A multi-layer defense strategy and application verification process is used to provide security throughout Verity Voting. Software independence measures are employed, which means that voters can verify ballot choices before they are cast and counted, and elections and software can be audited independently.

1.3.3 Tamper Evident

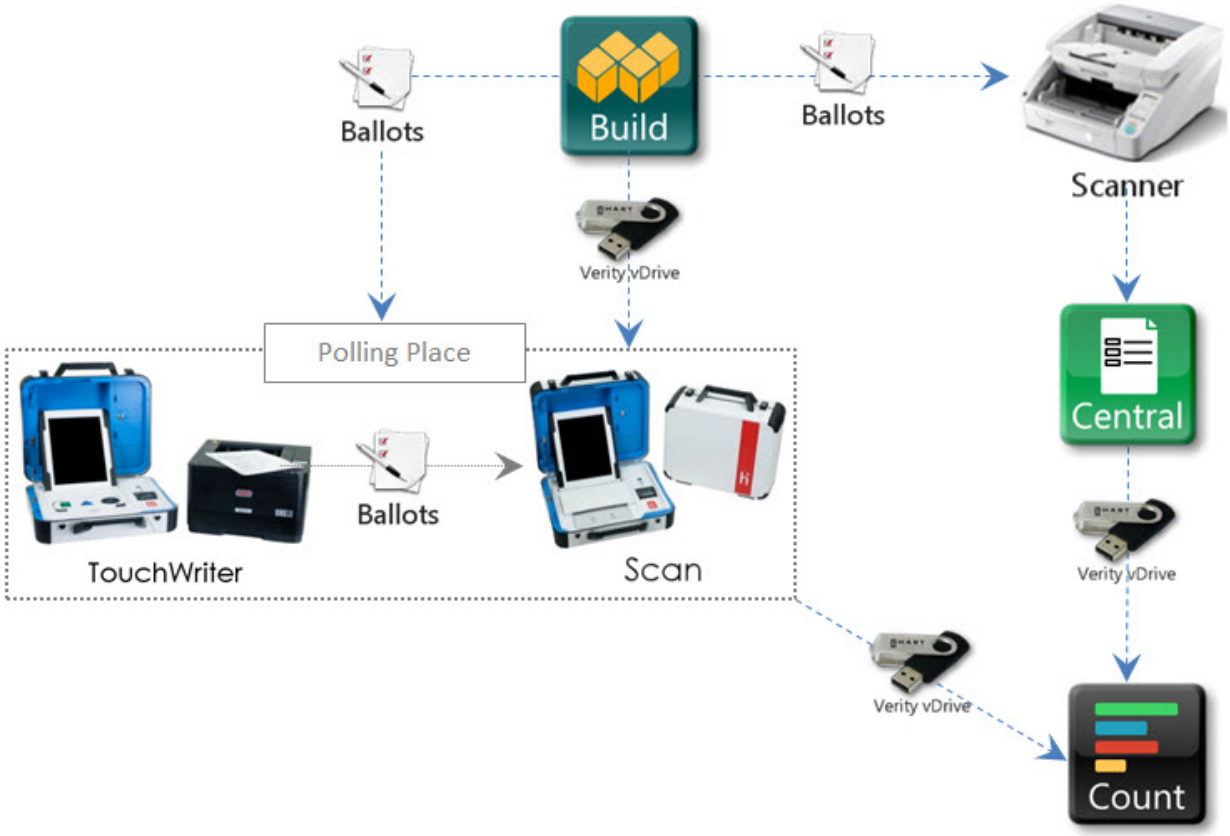
Verity security ensures that, in the event the software was altered in any way, the alteration would be evident (i.e., tamper evident).

1.3.4 Audit Logs

Comprehensive audit logs are generated for all user authentication attempts, data transfers, configuration changes, and errors. Audit logs are designed to be complete and easy to understand. Audit logs are created uniformly across system components, software applications, and voting devices. Audit logs have redundant and secure storage locations. One of these storage locations is removable electronic media.

1.4 Verity Voting System

Following is the Verity Voting device component chart.



1.5 Hart Item Number List

Hart Item Number	Item Description
3005350	Scan, (In Carton)
3005352	Touch Writer w/Access, (In Carton)
2005230	Headphones
3005357	Ballot Box, Scan, Verity (In Carton)
3005358	Booth, Standard, (In Carton)
3005359	Booth, Access, (In Carton)
3005360	Charger, 1 Bay, Verity Battery w/ AC Power Supply (In Carton)
3005361	Key, Verity, Ibutton, in Holder, (In Carton)
3005362	UPS, 1.5KVA (In Carton)
3005365	Charger, 6 Bay, Verity Battery w/ AC Power Supply (In Carton)
3005370	OKI B431d Printer for Touch Writer, (In Carton)
2005430	OKI B431d, toner cartridge
3005385	Build Server workstation
3005391	Build Client workstation
3005387	Central Server workstation
3005390	Central Client workstation
3005388	Count Server workstation
3005392	Count Client workstation
3005386	Build-Count Server workstation
3005393	Build-Count Client workstation
3005433 (bundle) 2005433 (printer)	OKI C831dn, Build – Ballot Printer
2005420	OKI C831dn, Black Toner cartridge
2005421	OKI C831dn, Cyan Toner cartridge
2005423	OKI C831dn, Magenta Toner cartridge
2005422	OKI C831dn, Yellow Toner cartridge
3005434 (bundle) 2005434 (printer)	OKI C911dn, Build – Ballot Printer
2005424	OKI C911dn , Black Toner cartridge

Hart Item Number	Item Description
2005425	OKI C911dn , Cyan Toner cartridge
2005427	OKI C911dn , Magenta Toner cartridge
2005426	OKI C911dn , Yellow Toner cartridge
3005436	Canon, DR-G1100
3005437	Canon, DR-G1130
Mfg. SKU 8262B001 (Canon)	Canon, Roller Replacement Kit for G1100/1130 (qty.4)
Mfg. SKU 1690783 (Kodak)	Transport Cleaning Sheets to be used on any image guide (qty. 10)
3005438	Kodak, i5600
Mfg. SKU 8327538 (Kodak)	Feeder Consumables Kit, Kodak (qty. 2)
Mfg. SKU 8535981 (Kodak)	Roller Cleaning Pads to be used on any image guide (qty. 2)
Mfg. MDV2TCA	Vacuum for scanner & printer clean-out; DATAVAC PRO
1005324	vDrive
1005015	Totex battery
172436	Intrusion Detection Loops for Devices Touch Writer – Printer port vDrive Bay Handles
2005361	Keys for Verity device locks

1.6 Important Safeguards

In addition to the related material presented in this document, follow all warnings and instructions marked on the equipment and in this section.

1.6.1 Read Instructions

All of the safety and operating instructions must be read before operating this voting system.

1.6.2 Retain Instructions

These safety and operating instructions should be retained for future use.

1.6.3 Attachments

Use only Hart InterCivic approved attachments in this voting system. Use of other attachments is unsafe.

DANGER: Never place this product on an unstable cart, stand, tripod, bracket, or table. The product may fall, causing serious injury and serious damage to the product. Use only with a booth, cart, or stand approved by Hart InterCivic or sold with the product. A product and caddy combination must be moved with care. **Quick stops, excessive force, and uneven surfaces may cause the product and caddy combination to overturn, causing serious injury.**

1.6.4 Water and Moisture

Never use this product near water. For example, safeguard against inclement weather.

1.6.5 Servicing

DANGER: Never attempt to service this unit yourself. Opening the unit will result in exposure to dangerous voltages or other hazards. Only the battery and printer doors should be opened by polling place personnel. Refer all other servicing to qualified personnel only. When replacement parts are required, be sure to use only Hart InterCivic approved parts. Unplug the unit from the wall outlet and refer servicing to qualified personnel under the following conditions:

- When the power cord or plug is damaged
- If liquid has been spilled on the product
- If the product has been exposed to rain
- If the product does not operate normally after following the operating instructions

1.6.6 Power Sources

Use only Hart specified power supply, XP Power AMP85W24P, and Hart's replaceable battery. The power supply will operate with 110V or 220V AC wall power as shown on the equipment. If you are not sure of the type of power supplied to a polling location, call the local power company before proceeding. Power cords should be routed so that they are not likely to be walked on or have objects placed on them.

- Use only grounded, three prong outlets
- Use Hart supplied power cords
- Do not use 3-prong to 2-prong adapters
- Do not attach too many devices to a wall power outlet or extension cords, overloaded electrical circuits may result in damaged equipment or other electrical issues.

1.6.7 Verity Tablet Battery Caution

- Do not discharge, short circuit, or dispose of in water.
- Do not expose battery module to temperatures above 60C (140F).
- Do not mishandle or disassemble battery module.

Failure to follow these instructions may present risk of explosion, fire, or high temperatures.

1.6.8 Cleaning Verity Voting Devices

- Unplug the equipment from the wall outlet and any other equipment before cleaning.
- Use only isopropyl alcohol (50% or higher) and lint-free wipes to clean Verity tablet display.
- Never use detergent-based cleaners. Never use aerosol cleaners. Never spray cleaner directly on the unit.

DANGER: Never push objects of any kind into this product through openings as they may touch dangerous voltage points or short out parts that could result in fire or electric shock.

Caution: Never spill or spray anything on or into the product. If liquid is spilled on the product, turn it off immediately, wipe away the liquid, and then return the unit to the local election officials for servicing.

1.6.9 Carts and Caddies

DANGER: Do not place this product on an unstable cart, caddy, stand, tripod, bracket, or table. The product may fall, causing serious injury and serious damage to the product.

The product and cart (caddy) combination must be moved with care. **Quick stops, excessive force, and uneven surfaces may cause the product and caddy combination to overturn, causing serious injury.**

CHAPTER 2

Procedures: Storage, Delivery, and Maintenance

This section details all aspects of storing, receiving, and maintaining the Verity Voting system. This chapter describes the following:

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Verity Specifications 27

Verity Scan Specifications 32

Equipment Environmental Standards 35

Storage Procedures 36

Delivery Procedures 47

Preventative Maintenance Procedures 54

Battery Maintenance 65

Performing Functionality Tests 67

Calibrating the Scanner 75

2.1 Overview

The Verity polling place components can be stored quickly and easily. The following image depicts the entire voting system collapsed for storage. The procedures presented in this guide help to make accessing and deploying system components easy.

2.2 Verity Specifications

The Verity Touch Writer is lightweight and designed for convenient storage. Touch Writer can sit on top of a standard booth or, as shown below, atop a lightweight, ADA-compliant booth, which can be collapsed for easy storage. ADA-compliance means that Touch Writer is accessible to persons with disabilities according to the Americans with Disabilities Act of 1990 (ADA) Standards for Accessible Design (2010 Standards).

2.2.1 Verity Touch Writer

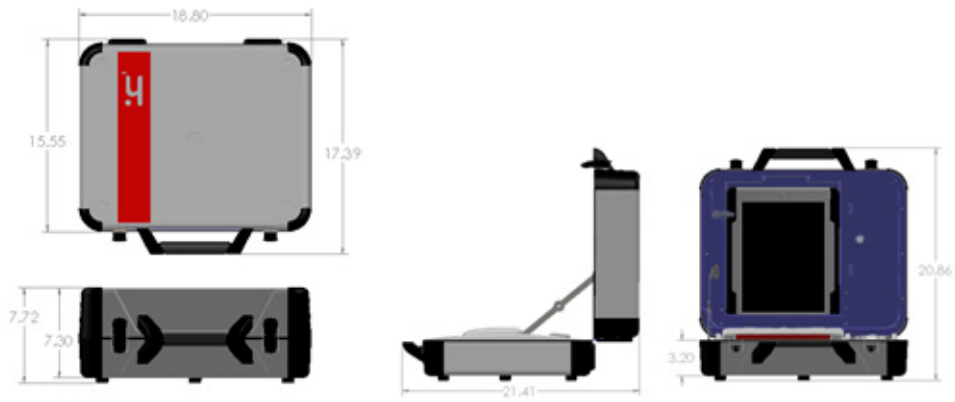


Table 1. Verity Touch Writer specifications.

Setting	Description
Height in inches	7.7
Width in inches	18.8
Depth in inches	15.6
Weight in pounds	28.5
Weight with batteries in pounds	29.3
Display in inches	12.1
Screen Size in inches	12.1
OS	Windows Embedded Standard 7

2.2.2 Standard Verity Touch Writer Booth

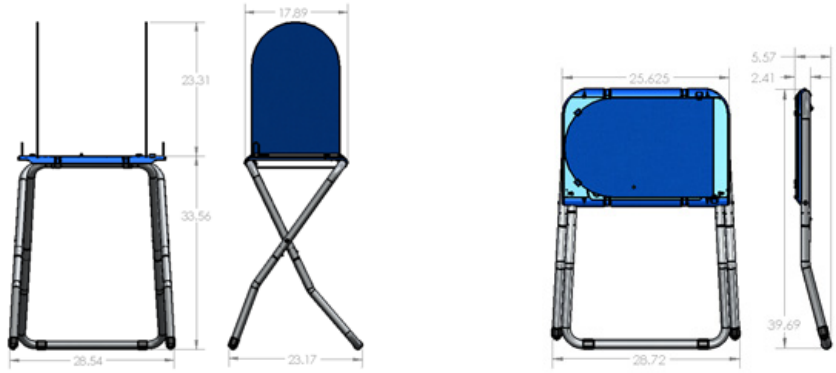


Table 2. Standard Verity Touch Writer Booth specifications.

Dimensions & Weight	Collapsed in Bag	Collapsed	Deployed
Height in inches	22.0	39.7	33.6
Width in inches	31.5	29.0	28.8
Depth in inches	4.0	5.5	23.3
Weight in pounds	11.7	10.1	10.1

2.2.3 Accessible Verity Touch Writer Booth

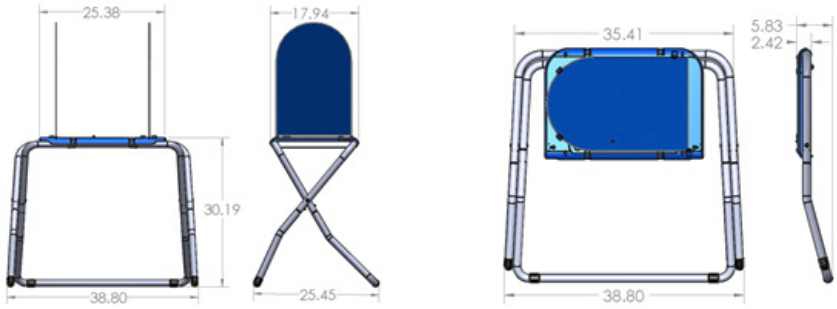


Table 3. Accessible Verity Touch Writer Booth specifications.

Dimensions & Weight	Collapsed in Bag	Collapsed	Deployed
Height in inches	19.5	37.9	30.2
Width in inches	41.5	39.1	38.8

Dimensions & Weight	Collapsed in Bag	Collapsed	Deployed
Depth in inches	4.0	5.8	25.5
Weight in pounds	11.0	10.1	10.1

2.2.4 Verity Touch Writer Ballot Printer

Verity Touch Writer Ballot Printer have been specifically selected for performance and capabilities, no other printers can be substituted for these printers.

Check Printers Power settings

Power Save Timeout Setting:

- On the printer, touch the up arrow on the control wheel until 'SYS CONFIG MENU' appears on the LCD screen.
- Press the 'OK' button located in the middle of the control wheel.
- Touch the up arrow on the control wheel until 'POW SAVE TIME' appears on the LCD screen. (the default on a new printer is '60 MIN')
- Press the 'OK' button to select this setting.
- Press the up arrow until the setting shows '1 min'. It will be blinking.
- Press the 'OK' button to save the new setting. After saving the setting, an asterisk ('*') will appear next to it.
- Press the 'Online' button

Power Save Enable:

- On the printer, touch the up arrow on the control wheel until 'MAINTENANCE MENU' appears on the LCD screen.
- Press the 'OK' button located in the middle of the control wheel.
- Touch the up arrow on the control wheel until 'POWER SAVE' appears on the LCD screen.
- Press the 'OK' button to select this setting.
- Press the up arrow until the setting shows 'ENABLE'. It will be blinking.
- Press the 'OK' button to save the new setting. After saving the setting, an asterisk ('*') will appear next to it.
- Press the 'Online' button.

NOTE: Prior to an election, the printer must be configured to support the elections ballot size.

Properly set the paper size the paper tray can accept

Table 4. Verity Touch Writer Ballot Printers

Printer	Description
OKI B431d	Monochrome Duplexing Laser Printer with USB interface, no Ethernet
Weight:	26 lb. (11.4 kg)
Dimensions:	15.2" x 14.3" x 9.6" (38.7 cm x 36.4 cm x 24.5 cm)

Table 5. Verity Touch Writer Printer UPS

UPS	Description
Eaton 5P1500	1500VA Uninterruptable Power Supply
Weight:	35.6 lbs
Dimensions:	9.1″ x 5.9″ 17.5″

2.2.5 Verity Touch Writer Report Printer Paper

Table 6. Verity Touch Writer thermal, BPA-free paper specifications.

Setting	Description
Brightness	92 or greater
Basis Weight	28 lbs
Ballot Sizes	8.5″x11′ 8.5″x11′ with 3″ stub 8.5″x14″ 8.5″x14′ with 3″ stub 8.5″x17″ 8.5″x17′ with 2″ stub

2.3 Verity Scan Specifications

The Verity polling place components can be stored in quickly and easily deployable cartons and carriers. The following image depicts the entire voting system collapsed for storage. The procedures presented in this guide help to make accessing and deploying system components easy.

Verity Scan is lightweight and designed for convenient storage. Verity Scan sits atop a Ballot Box for election events. The Ballot Box is collapsible so it can easily be stored.

2.3.1 Verity Scan

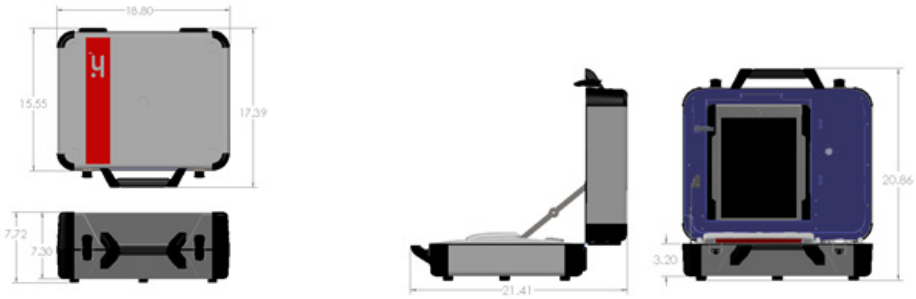


Table 7. Verity Scan specifications.

Setting	Description
Height	7.7 inches

Setting	Description
Width	18.8 inches
Depth	15.6 inches
Weight	28.3 pounds
Weight with batteries	29.1 pounds
Display	12.1 inches
Screen Size	12.1 inches
OS	Windows Embedded Standard 7

2.3.2 Verity Scan Ballot Box

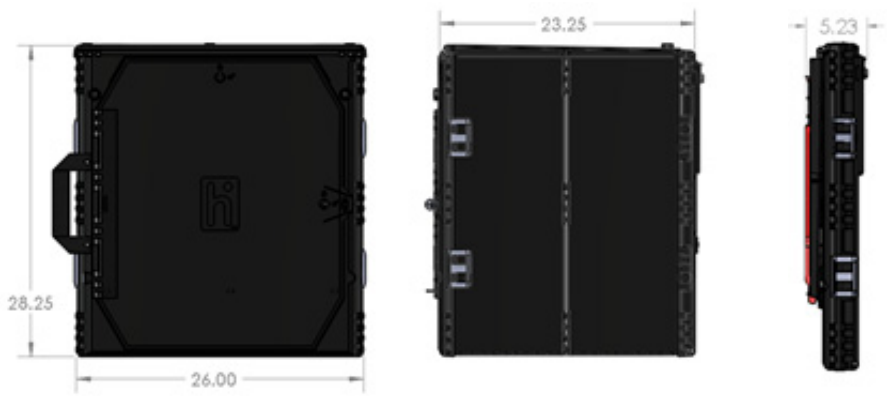


Table 8. Verity Scan Ballot Box specifications.

Dimensions & Weight	Collapsed in Bag	Collapsed	Deployed
Height in inches	28.5	28.3	28.3
Width in inches	26.5	26.0	26.0
Depth in inches	5.5	5.2	23.3
Weight in pounds	26.9	25.6	25.6

2.3.3 Verity Scan Thermal Printer Paper

Table 9. Verity Scan thermal, BPA-free paper specifications.

Setting	Description
Width in inches	2.25
Basis Weight	53 g/m2
Length in feet	80.0

2.4 Equipment Environmental Standards

2.4.1 General Report Options

Table 10. General reports options.

Equipment	Specifications	Operating	Storage and Transportation
Verity Scan and Touch Writer	Temperature	50 to 95 °F	-40 to 150 °F
	Humidity	15 to 85 percent relative humidity, non-condensing	5 to 95 percent relative humidity, non-condensing
	Vibration	Per MIL-STD-810D	Per MIL-STD-810D
	Drop Height	Per MIL-STD-810D	Per MIL-STD-810D
	Power Requirement	120 VAC, 60 Hz, <85 W	

2.5 Storage Procedures

This section reviews the storage of Verity hardware components. Recommendations are based on best practices. Where applicable, refer to hardware manufacturer recommendations.

Create a spreadsheet that shows registered voters by precinct and precincts assigned per polling place. This helps to determine the equipment requirements for each polling place. The use of the term “Precinct” to also define an Election Day polling place varies by jurisdiction. Also, requirements vary by state in regard to machine allocation versus voter registration.

You should maintain the polling place components in precinct sequence if at all possible. While the Verity Scan and Touch Writer do not require this, it is much easier to allocate and access units stored in this manner since most assignments to the system are done by precinct.

At this time you need your spreadsheet showing allocation of equipment to polling places. The easiest layout is to begin with the first precinct/polling place first and increment until you have all precincts/ polling places accounted for. If you need one Verity Scan and 6 Verity Touch Writers in Polling Place #1, load them and other items sent to polling places together on a pallet or other type of transfer container designated for Polling Place #1. Include items such as a transfer case, cell phones, signs, tape, pens, and other items that are not dated. Continue this process until all polling places are completed. One way to identify polling place locations within the facility is by painting the numbers on the floor to insure the proper placement when the polling place equipment is being moved.

2.5.1 Report Printer Paper

The Verity Scan and Touch Writer printer paper purchased through Hart InterCivic has a shelf life of seven years after it has been imaged. The manufacturer recommends that it be imaged within three years of the manufacturing date. Store the paper at temperatures below 77 °F with relative humidity of 45 – 65%. Do not expose to direct light.

2.5.2 Power Accessibility

The storage facility should have at least one workstation with AC power available for functionality testing, etc. A set of one Verity Scan and one Verity Touch Writer requires approximately 0.5 amps (AC) per device to operate, so the use of standard 15 amp circuits will be adequate. If extension cords are necessary when testing the system or setting up for an election, be aware that pulling cords throughout your facility may be time consuming or inconvenient. Accordingly, the use of drop cords that contain multiple outlets is highly recommended, as this allows several polling place sets to be serviced at one time while minimizing the number of cords pulled throughout the facility. Conveyor belts or hand trucks can be used to transport equipment from storage to workstations.

2.5.3 Touch Writer Ballot Printer UPS

The storage facility should have AC power available for storage of the Uninterpretable Power Supply used with Touch Writer's ballot printers. The battery technology used in the UPS requires that the UPS batteries be charged at all times by plugging the UPS into AC power if the UPS is to be stored.

2.6 Predefine Procedures

The following steps walk you through the predefining process for Verity Scan and Verity Touch Writer (Verity Device). This section comprises the following processes:

- Programming Verity Key to the Verity Device
- Loading the current election
- Printing the Zero Tape Report
- Printing the Election Identification Report

Steps for all of these processes are explained in the following sections in case they are ever needed. Usually, however, the first two steps are completed at the warehouse for each election, depending on each precinct's adopted procedures. When the Verity Device arrives at the polling place along with the vDrive, the Zero Tape Report should still be attached to the report roll in the Verity Device.

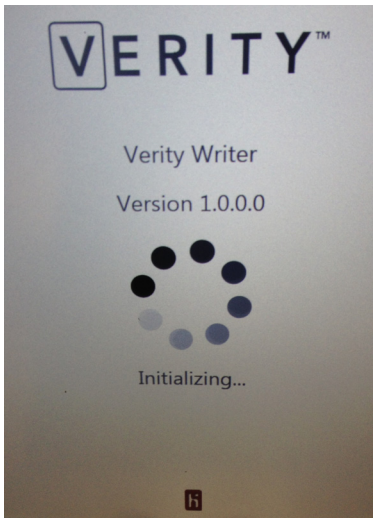
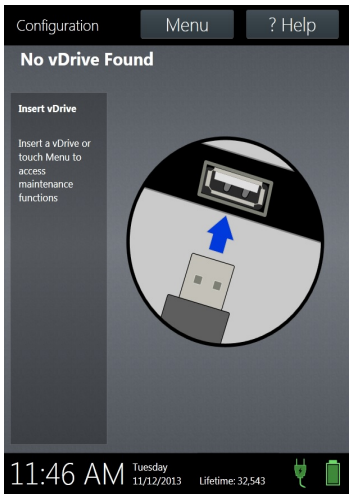
2.6.1 Programming Verity Key to the Verity Device

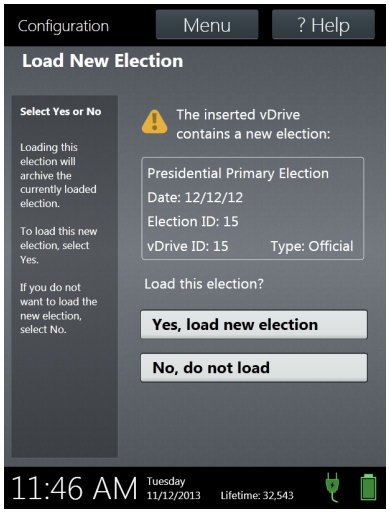
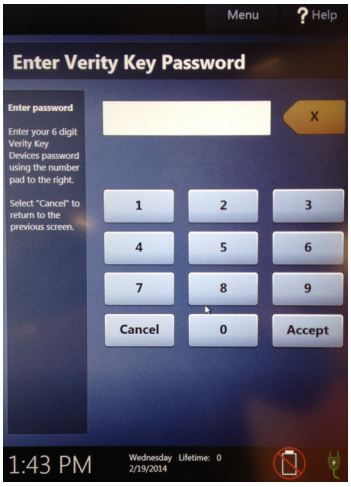
vDrives and Keys are created at the same time in Build, so they contain compatible election information. When an election is loaded into the Verity Device, the device is programmed to ensure that the vDrive is authentic. Both the vDrive and the Key are required in order to load an election. The vDrive contains the election data, and the Key contains Verity secrets. To load the election, you need to have the vDrive and the Verity Key. Once the Verity Key has been successfully read, it should be removed from the device.

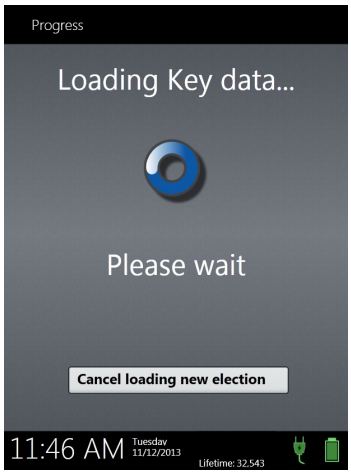
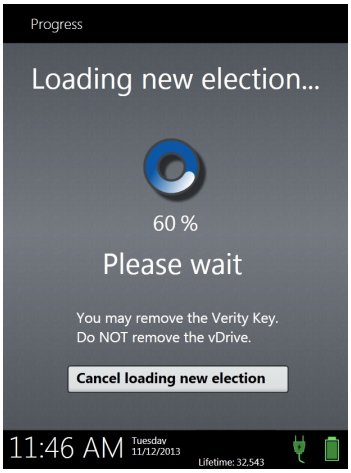
2.6.2 Loading the Election

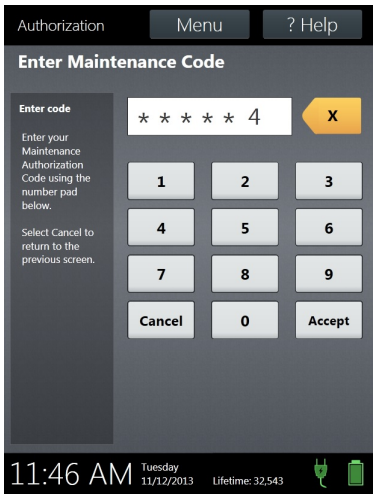
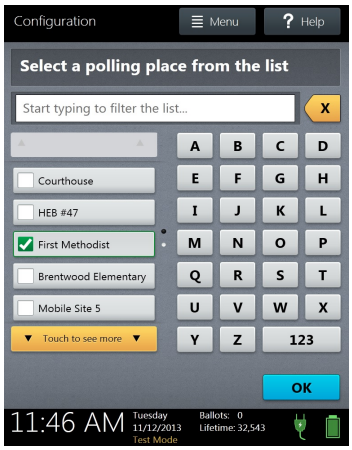
Note: Both the vDrive and Verity Key are required in order to load an election; Loading the election is performed once, at the warehouse after the initial Loading of the election which requires the

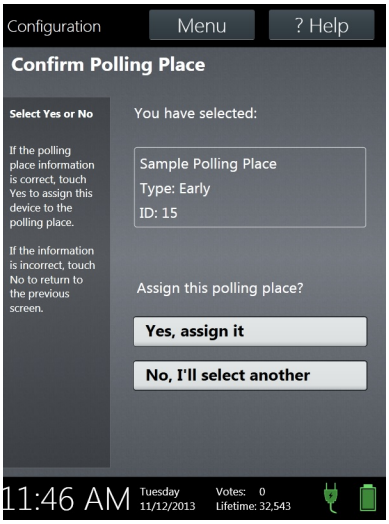
Key, after the Key is removed and the device is re-started the election "Setup" is performed..

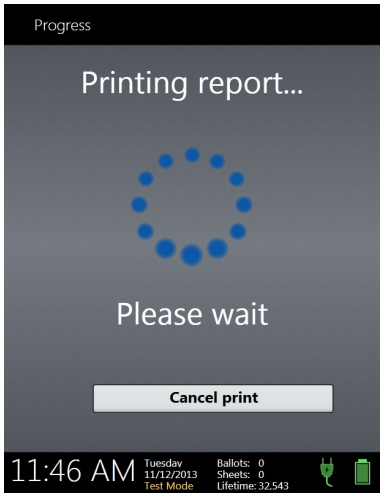
On-Screen	Steps
	1. Press the green Power Button to turn on Verity Device. Wait while Verity starts. This may take a few minutes. The Verity wall paper displays. The Verity Device Initializing screen displays. Wait while the rotating progress wheel spins. This may take a few minutes. The Power-On Self Test Report prints on the thermal paper. Then the Insert vDrive screen displays.
	2. Insert the vDrive for the current election. NOTE: if the vDrive is not recognized by the device, remove the vDrive, wait 10 seconds and then re-insert the vDrive. If the vDrive continues not to be recognized, log the vDrive ID that cannot be read by the device and request a new vDrive.

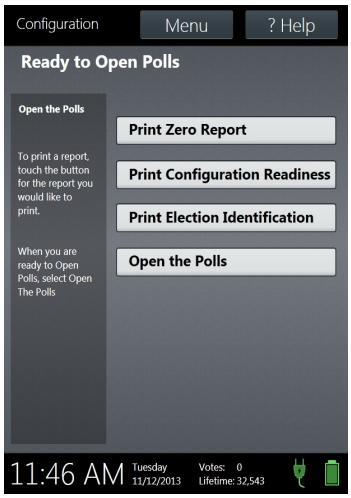
On-Screen	Steps
	3. The Load New Election screen displays. Click **Yes, load new election**.
	4. The Insert Verity Key screen displays. Insert the Verity Key.
	5. The Enter Verity Key Password screen displays. Enter the password for the Verity Key and tap **Accept**.

On-Screen	Steps
 	6. The Loading Key Data screen displays, and then the Loading New Election screen displays. You may remove Verity Key now. *Do not remove the vDrive* because the election is loading from it. Wait throughout this setup period. The Setting Up Election screen displays. Continue to wait. Election setup can take some time.

On-Screen	Steps
	7. When the election is finished loading, the Enter Maintenance Code screen displays. Enter the Maintenance Code and tap **Accept**.
	8. The Select Polling Place screen displays. Tap a polling place to select it. 9.

On-Screen	Steps
	10.The Confirm Polling Place screen displays. Tap **Yes, Assign it** to confirm.

On-Screen	Steps
  	11.The Verity Device then asks you to print the Zero Report. It is required. Click **Print Zero Report**. The Zero Report prints.

On-Screen	Steps
	12.The Ready to Open Polls screen displays.This is the point at which the warehouse sends you the equipment, including the vDrive installed in the device. The Zero Report should still be attached. If not, print a new Zero Report.

2.6.3 Print Zero Report

When the Verity equipment arrives from the warehouse, it should have a Zero Report attached on the thermal paper roll. If it is not there, print a Zero Report.

	Steps
☐	1. Press the Power Button on the Touch Writer. Wait while it powers up. The Power-On Self Test Report prints.
☐	2. Tap in the maintenance code using the keypad on the Enter Maintenance Code screen and tap **Accept**. Wait while the election loads.
☐	3. On the Ready to Open Polls screen, tap **Print Zero Report**. Check the Zero Report to verify the polling place and/or precincts. Leave the Zero Report on the Touch Writer; it will be filed at the end of Opening Polls.

2.6.4 Hardware

	Item	Number
☐	Scan	3005350
☐	Touch Writer (includes tablet)	3005352
☐	Tablet	2005302
☐	Access	2005010
☐	Headphones	1001-275
☐	Power Brick	2005332
☐	vDrive	1005324
☐	Key	2005361
☐	Ballot Box	3005357
☐	Standard Booth	3005358
☐	Accessible Booth	3005359
☐	Uninterruptible Power Supply	2005362

2.7 Delivery Procedures

2.7.1 Preparation

After all testing has been finalized, begin preparing the system for delivery to the polls. The procedures to move the voting system vary by jurisdiction, so the need to organize the process is essential.

- It is very useful to work with other staff members to create a survey to be mailed to your polling locations far in advance of the election. Ascertain basic information such as availability of AC power, tables and chairs, phone, access during voting hours.
- Create a checklist of polling places and ALL items that are to be shipped to minimize shortage calls on Election Day.
- If you use a moving company to deliver your voting system, arrangements must be made in advance.
- Keep in mind that AC power must be available at the polls and you may need extension cords and/or 2-prong adapters for some polling places.
- Provide the mover with the list of polling locations and the equipment assigned to each.
- If there are locations with special delivery requirements, let the mover know in advance.
- If you have assigned the equipment as suggested previously, you should have everything needed for a polling place on one pallet.
- It is very helpful to have a spreadsheet showing the equipment numbers and the polling places to which they are assigned (equipment serial number is located on the bottom of all units).
- Keep logs of voting devices sent to each polling place. Track by device serial numbers. Also log the wire seal serial number for each device.
- Keep your facility organized. Move polling place equipment to loading area in the reverse order it comes off the truck; first on, last off.

2.7.2 Voting Device Delivery and Deployment

2.7.2.1 Transportation and Storage

Verity Scan and Touch Writer are electro-mechanical pieces of equipment and need to be protected when transporting or storing. Moving parts, optics within the scanner, and tablet computers are sensitive to excessive dust, moisture, and vibration.

Always use a Hart-approved shipping container, such as the original cardboard Verity Device box, when transporting the Device between facilities (for example, to or from a polling place).

Heavy-duty shipping containers are available for purchase from the Hart catalog.

Do not store Verity Devices in high humidity or dusty environments; this causes moisture to collect on the glass surfaces of the scanner and may reduce the quality of scanned ballot images.

2.7.2.2 Polling Place Deployment, Verity Touch Writer

Verity Touch Writer setup.

	Tasks
☐	Ensure sufficient electricity is available in the area. **Do not connect Verity Touch Writer to AC Power at this time.**
☐	Open and remove Verity Touch Writer case from shipping carton.
☐	Remove booth from carrying case.
☐	Ensure the booth is assembled properly. 1. Booth legs are properly attached 2. Booth is opened and Booth top is secure. 3. Properly seat Verity Touch Writer on top of the booth 4. Secure Verity Touch Writer to booth
☐	Open Verity Touch Writer case and secure lid in upright position.
☐	Remove the tablet from its storage location.
☐	Remove the battery cover and press the battery check button on the battery.

	Tasks
☐	The battery charge indicator should indicate a battery charge >=80% **If it does not contact the appropriate election personnel.** Place the battery cover back on the tablet case.
☐	Place the tablet in the Verity Touch Writer tablet cradle.
☐	Lock the tablet in place.
☐	Retrieve the power supply from the case's storage compartment, ensure the power supply is the XP Power Model AHM85PS24.
	Touch Writer Printer Setup
☐	On a table or second booth must be setup for the printer. The Hart specific USB printer cable is 2 meters long. The printer must be located close to the Touch Writer.
☐	Remove printer from shipping carton.
☐	Set the printer on the 2nd booth or table.
☐	Retrieve Hart USB Printer cable for Touch Writer storage compartment. Connect the Hart USB Printer cable into printer's USB port.
☐	Connect the USB printer cable in to the Touch Writer Printer port.
☐	If the election's ballot style is 8.5x11" or 8.5x14" • Open Tray 1 • Adjust Tray1 to accept the required ballot stock size • Place blank ballot stock in Tray 1 • Completely close Tray1 If the election's ballot style is 8.5x17 • Open Tray 1 • Adjust Tray1 to accept 8.5x11' • Place blank paper in Tray 1 • Completely close Tray 1 • Open the Multi-Purpose Tray (MPT), above Tray1 • Extend the paper holders • Place the 8.5x17" ballot stock in the MPT and secure the paper in place
☐	Connect the printer into AC Power source.
☐	Turn the printer On.
☐	If a Verity Booth is used for the printer, attach the privacy screens to the booth.
	Touch Writer Setup Completion

	Tasks
☐	Connect the power supply (XP Power Model AHM85PS24) to Verity Touch Writer.
☐	Connect the Verity Touch Writer's power brick to an AC Power source, DO NOT USE 3-to-2 prong AC adapter.
☐	Attach the privacy screens to the booth.
☐	Turn on Verity Touch Writer

2.7.2.3 Polling Place Deployment, Verity Scan

Verity Scan setup.

	Tasks
☐	Ensure sufficient electricity is available in the area. **Do not connect Verity Scan to AC Power at this time.**
☐	Open and remove Verity Scan case from shipping carton.
☐	Ensure the ballot box is assembled properly. 1. Unlatch sides 2. Spread panels 3. Lower floor 4. Release straps 5. Lift and rotate lid to flat position 6. Unlock front door 7. Secure floor 8. Properly seat Verity Scan on top of the ballot box 9. Secure Verity Scan to ballot box 10.Close and lock front door
☐	Open Verity Scan case and secure lid in upright position.
☐	Remove the tablet from its storage location.
☐	Remove the battery cover and press the battery check button on the battery. The battery charge indicator should indicate a battery charge >=80% **If it does not contact the appropriate election personnel.** Place the battery cover back on the tablet case.
☐	Place the tablet in the Verity Scan tablet cradle.
☐	Lock the tablet in place.

	Tasks
☐	Retrieve the power supply from the case's storage compartment, ensure the power supply is the XP Power Model AHM85PS24.
☐	Connect the power supply to Verity Scan.
☐	Connect the Verity Scan's power brick to an AC Power source. DO NOT USE 3– to 2–prong AC adapters.
☐	Attach the privacy screens to the ballot box.
☐	Turn on Verity Scan

2.7.2.4 Polling Place Disassembly, Verity Touch Writer

Verity Touch Writer disassembly.

	Tasks
☐	Turn off Touch Writer and allow it to shut down.
☐	Remove and store the privacy screens from the Booth(s).
☐	Unplug Touch Writer from AC Power source.
☐	Unplug power cord on back of Touch Writer.
☐	Turn off printer. Unplug printer from AC Power source. Unplug power cord from printer.
☐	Unplug USB Printer cable from Touch Writer and printer.
☐	Place printer in shipping carton. Place printer power cord in printer shipping carton.
☐	Close printer shipping carton and that it is ready for transportation
☐	Properly store USB printer cable in Touch Writer case's storage compartment.
☐	Properly store AC Power brick and cords in Touch Writer case's storage compartment.
☐	On back of Touch Writer securely seal the USB Printer port cover.
☐	Unlock and remove Verity Touch Writer tablet from the cradle.
☐	Store Verity Touch Writer tablet in shipping carton.

	Tasks
☐	Close and lock Verity Touch Writer case.
☐	Unlock the Touch Writer from the booth.
☐	Place the Touch Writer in the shipping carton.
☐	Ensure both Touch Writer case and tablet are in the shipping container. Close carton and ensure it is ready for transportation
☐	Properly collapse booth and place in carrying case. Close case and ensure it is ready for transportation.

2.7.2.5 Polling Place Disassembly, Verity Scan

Verity Scan disassembly.

	Tasks
☐	Turn off Verity Scan and allow it to shut down.
☐	Remove and store the privacy screens from the Ballot Box.
☐	Unplug Verity Scan from AC Power source. Unplug power connection on back of Verity Scan.
☐	Properly store AC Power brick and cords in storage compartment.
☐	Unlock, remove, and store the Verity Scan tablet in shipping carton.
☐	Store Verity Scan tablet in shipping carton.
☐	Close and lock Verity Scan case.
☐	Properly disassemble Ballot Box 1. Unlock ballot box door 2. Unlock Verity Scan from ballot box 3. Lift Verity Scan off the top of the ballot box 4. Raise ballot box floor 5. Close and lock front door 6. Lift and rotate lid 7. Secure straps 8. Push to collapse the box 9. Secure latches
☐	Ensure ballot box is ready for transportation
☐	Place Verity Scan in shipping carton. Ensure both Verity Scan case and tablet are in carton

	Tasks
☐	Close carton and ensure it is ready for transportation

2.8 Preventative Maintenance Procedures

Maintenance procedures for the Verity Scan and Touch Writer devices are minimal. Retest and record any problems detected in functionality testing and return damaged equipment to Hart for replacement. There are only a few regularly scheduled maintenance procedures necessary:

- Cleaning the Equipment Screens
- Cleaning the Verity Scan Scanner Path
- Calibrating the Verity Scan
- Checking battery levels and charging batteries
- Performing functionality tests
- Other repair, replacement, and miscellaneous maintenance procedures
- Verity Touch Writer ballot printers, Verity workstation printer,s Verity Central workstation scanners, and workstation peripheral maintenance

2.8.1 Voting Device Maintenance

Verity Scan may be stored for long periods of time between uses, and the scanner's moving parts and optics are sensitive to dust, moisture, and vibration. To keep Verity devices in good condition, perform these steps at least once per year, or prior to every election:

- Always clean the upper and lower glass plates on each scanner with lint-free isopropyl alcohol wipes.
- Never pour or spray liquids on the glass plates as this can cause streaking on the bottom surface of the glass plates.
- Have Hart replace the internal CMOS battery every 3 to 4 years through the preventative maintenance program.

2.8.2 Maintenance for Commercial Printers

Dust and debris are the main causes of poor-quality printing. Although these can never fully be eliminated, much can be done to reduce their effects.

Ensure that printing and storage rooms are kept clean and dust-free.

Perform all of the manufacturer's recommended printer cleaning and maintenance on schedule, even during the election off-season.

Prior to each election event, conduct full preventative maintenance on ballot printing equipment, including checking for proper paper and toner supplies.

Hart offers preventative maintenance programs for paper ballot printers that provide on-site visits from the printer vendor with preferred response times. Contact the Customer Support Center (CSC) for additional details.

Use only original equipment manufacturer (OEM) toner cartridges.

Re-manufactured toner cartridges may have premature failures, leading to printer downtime. They may also produce low quality images.

2.8.2.1 During Ballot Printing

If printing on-demand, make certain that the printer has been serviced and maintained.

If printing with a contract print vendor, make certain that the vendor is Hart-certified or qualified.

Always use high-quality paper stock that satisfies the Hart Secure Ballot Stock specification.

Paper dust problems can increase with large variations in moisture, poor formation (especially in 100% recycled-content grade), excessive variability of roll hardness (probably caused by poor winding at the mill) and other large variations in process parameters (caliper, weight, etc.).

Use the same weight paper for all ballots in the election.

Consult your printer model's manual for paper weight calibration information.

Never double-print ballots for custom stub printing (paper that runs through the printer twice may contain fuser oil or lubricant, making it more susceptible to slippage).

When printing ballots on demand, use only a Hart-approved printer.

2.8.2.2 Reducing Paper Dust

Paper dust accumulates in the printer fuser area and creates image-quality issues by contaminating components, and causing a variety of difficult-to-diagnose problems.

Perforated paper should be as free as possible of paper dust and chaff, which can cause machine contamination.

Fan paper thoroughly on all four sides to remove any dust or shavings from edges.

Using paper specifically designed for laser printing will ensure high-quality images and proper printer maintenance.

For best results, always use paper stock that satisfies the Hart Secure Ballot Stock specification.

2.8.2.3 Cleaning Rollers Contaminated With Paper Dust

Always follow the printer manufacturers suggested cleaning practices, consult the printer's maintenance section in the user manual. Rollers can usually be cleaned with a damp lint-free cloth and in some cases isopropyl alcohol solution may be used. Always follow the instructions in the printer's operator guide when replacing the feed rollers.

If the fuser rollers cannot be cleaned or replaced by the operator, call for service.

Keep printers in a dust-free environment, closed off from outside and manufacturing areas. Ensure doors and windows remain closed.

2.8.2.4 Printing issues

There may be times when a printer is not recognized by the Verity application or Verity Touch Writer.

If there are Error messages displayed in the application or device, make note of these messages.

Ensure the USB connection between the printer and the workstation/ device is properly connected at both ends of the cable.

Ensure the printer power cord is properly plugged in to both the AC outlet and printer. If the printer is used with Touch Writer and the printer is connected to an uninterpretable power supply (UPS), ensure the UPS is plugged into the AC wall outlet and that it is not indicating any issues (see manufacturers user guide).

Power cycle the printer, if the error clears then the system is ready to use. If the error persists, then the workstation or device may be required to be rebooted to recover the printer-to-workstation/device connection.

If issues persist, call Hart Customer Services, 866.275.4278

2.8.3 Maintenance for Commercial Scanners

Dust and debris are the main causes of poor-quality scanner, that may result in higher percentage of instances requiring ballot adjudication. Although debris can never fully be eliminated, much can be done to reduce their effects.

Ensure that scanner and storage rooms are kept clean and dust-free.

Perform all of the manufacturer's recommended scanner cleaning and maintenance on schedule, even during the election off-season.

Prior to each election event, conduct full preventative maintenance on ballot scanner equipment as describe in the manufacturers maintenance guide, including cleaning glass lenses, paper path, and depending on amount of use roller replacement may be recommended.

During each election event, conduct full maintenance on ballot scanner equipment as describe in the manufacturers maintenance guide, as required to provide the highest quality scanning function.

Hart offers preventative maintenance programs for paper ballot scanners that provide on-site visits from the scanner vendor with preferred response times. Contact the Customer Support Center (CSC) for additional details.

Use only original equipment manufacturer (OEM) replacement parts.

2.8.3.1 During Ballot Scanning

Make certain that the scanner has been serviced and maintained.

Always use high-quality paper stock that satisfies the Hart Secure Ballot Stock specification.

Paper dust problems can increase with large variations in moisture, inferior quality (especially in 100% recycled-content grade), excessive variability of roll hardness and other large variations in process parameters (caliper, weight, etc.).

Consult your scanner model's manual for paper weight calibration information.

2.8.3.2 Reducing Paper Dust

Paper dust accumulates throughout the scanner paper path and creates image-quality issues by contaminating components, and causing a variety of difficult-to-diagnose problems.

Perforated paper should be as free as possible of paper dust and chaff, which can cause machine contamination.

Fan paper thoroughly on all four sides to remove any dust or shavings from edges.

Using high-quality paper stock will promote high-quality images and proper printer maintenance.

For best results, always use paper stock that satisfies the Hart Secure Ballot Stock specification.

2.8.3.3 Cleaning Rollers Contaminated With Paper Dust

Rollers can usually be cleaned with a damp lint-free cloth and the suggested roller cleaner solution. Always follow the instructions in the scanner's operator guide for cleaning and replacing the rollers.

If the rollers cannot be cleaned or replaced by the operator, call for service.

Keep scanners in a dust-free environment, closed off from outside and manufacturing areas. Ensure doors and windows remain closed.

2.8.3.4 Scanner Cleaning Frequency

Clean the scanner in accordance with the suggestions in the scanner manual (or approximately every 5,000 to 7,000 ballots). More frequent cleaning may be needed throughout an election event as different environmental variables affect a scanner's performance. These variables include:

- Larger quantities of ballots printed on a ballot marking device, excessive toner used to mark the voter's options.
- Excessive handling of ballots, particularly by oily or dirty hands.
- Larger ballot sizes such as tabloid, excess toner used in printing, and ballots spanning multiple sheets.
- Paper particles resulting from stub removal.

- Excess dirt that can stick to ballots in a high-humidity environment.
- Low humidity, highly static environments, where static electricity can cause the scanner to attract dust and other particulates.
- Use an anti-static mat at the ballot sorting stations and the Ballot o Now scanning stations.
- Dusty or dirty scanning rooms and areas that can contribute to • accumulated scanner dirt through contact with ballots, hands, and dust.
- Have Hart regularly perform your Scanner Preventative Maintenance to keep scanners in top working condition.

2.8.3.5 Scanner components that require particular attention:

- Main pick-up roller

  Excessive dust on the main pick-up roller will make it appear worn o and smooth to the touch, causing the roller to skim across the page instead of grabbing properly.

- Feed rollers

  Excessive dust on feed rollers along the inside of the scanner path o will result in a squeaking sound as the scanner feeds.

- Automatic document feeder

  A worn automatic document feeder (ADF) pad will not push the o paper fully against the main pick-up roller, causing multiple pages to be fed at one time.

- Image guides

  Excessive dirt or marks on the image guides may create lines o across the scanned ballot image.

2.8.3.6How to detect that the scanner requires cleaning:

- Ballots jam during scanning.•
- The pick-up roller grabs multiple sheets at one time or does not grab sheets at all.
- A squeaking noise is audible as the scanner feeds the paper through.
- Lines or other evidence of particulate matter appear on the scanned image in the ballot preview window.
- Watch the scanned ballot preview in Verity Central while scanning.
  - Stop and clean the scanner if ballot o images look “dirty” or appear to have lines or streaks.

2.8.3.7 How to practice proper maintenance and cleaning:

- When a ballot has been partially fed into the scanner or is trapped, never attempt to remove the ballot by pulling it back through the hopper. This places unneeded strain on and damage to the rollers.
- Always open the scanner door before removing jammed ballots.o
- Refer to the manufacturers' documentation for instructions on • maintaining scanner rollers, glass and ADF pads.
- Purchase a scanner care kit for your particular scanner model. These care kits typically include cleaning pads and replacement rollers.
- Purchase a dust cover fitted for your scanner to keep out dust and debris during storage.

Schedule training and maintenance visits from the manufacturer or through Hart's Scanner Preventative Maintenance service plan.

2.8.3.8 Scanning issues

There may be times when a scanner is not recognized by the Verity Central application/workstation.

If there are Error messages displayed in the application, make note of these messages.

Ensure the USB connection between the scanner and the workstation is properly connected at both ends of the cable.

Ensure the scanner power cord is properly plugged in to both the AC outlet and scanner.

Power cycle the scanner, if the error clears then the system is ready to use. If the error persists, then the workstation may be required to be rebooted to recover the scanner-to-workstation connection.

If issues persist, call Hart Customer Services, 866.275.4278

2.8.4 Verity Workstation Maintenance

Verity Build, Central, and Count workstations may be stored for long periods of time between uses. To keep Verity workstations in good condition, perform these steps at least once per year, or prior to every election:

- Always clean the exterior of the workstation, keyboard, mouse, and display with moist lint-free cloth.
- Never pour or spray liquids on the glass plates as this can cause streaking on the bottom surface of the glass plates.
- Have Hart replace the internal CMOS battery every 3 to 4 years through the preventative maintenance program.
- NOTE: Only Hart personnel can upgrade software on the Verity workstations, call Hart Customer Services, 866.275.4278.

2.8.4.1 Workstation issues

There may be times when a scanner/printer is not recognized by the Verity application/workstation.

If there are Error messages displayed in the application, make note of these messages.

Ensure the USB connection between the printer/scanner and the workstation is properly connected at both ends of the cable.

Ensure the printer/scanner power cord is properly plugged in to both the AC outlet and scanner.

Power cycle the printer/scanner, if the error clears then the system is ready to use. If the error persists, then the workstation may be required to be rebooted to recover the printer/scanner-to-workstation connection.

If issues persist, call Hart Customer Services, 866.275.4278

2.8.5 Voting Device Storage

Storing the Scan power supply (or “brick”) inside the storage compartment:

- Simplifies transporting the Scan to and from the polling place.
- Lessens the chance for damage to the brick caused by handling errors. Because the fuse inside the power brick is fragile, sudden jarring can cause the fuse to break (such as when dropped on the floor).

2.8.6 Paper Storage

Paper is very sensitive to moisture changes, and this fluctuation can cause print quality issues. The temperature of the room where paper is stored can have a significant effect on how that paper performs in the machine. Humidity control is essential to ensure proper paper handling and performance.

Optimum paper storage and printer operating temperature is 68 to 76 degrees Fahrenheit.

Optimum storage conditions include areas with a relative humidity of 35% to 55%. Overloading of the storage or work area with external air from open doors and excessive in-and-out traffic may defeat environmental control systems.

Never store paper directly on the floor, since that increases the possibility of moisture absorption. Store paper on pallets, shelves, or in cabinets in an area protected from extremes of temperature and humidity.

Only open sealed reams of paper when they are ready to be loaded into the printer.

2.8.7 Conditioning Paper

When paper is moved from a storage area to a location with a different temperature and humidity, allow the paper to acclimate to the new location before use.

2.8.8 Cleaning the Equipment Screens

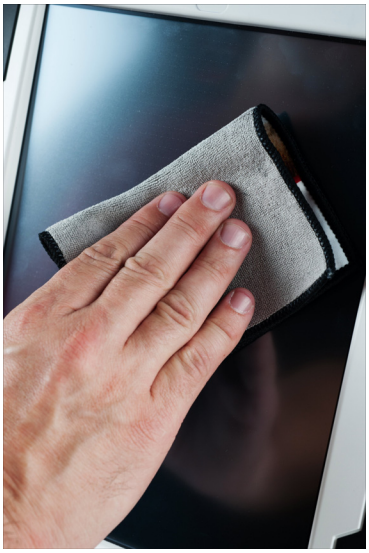


Table 11. Cleaning the equipment screens.

	Tasks
☐	Use, at a minimum, 50% isopropyl alcohol and lint-free wipes. Never use ammonia-based and detergent-based formulas.
☐	Wipe the Verity Scan and Touch Writer screens clean.
☐	Include a minimum 50% isopropyl alcohol and lint-free wipes with the polling place supplies, and ask poll workers to clean the screens at least once daily during election events.

2.8.9 Cleaning the Verity Scan Scanner Path

Table 12. Cleaning the scanner and ballot entry paths and the scanner glass and heads.

	Tasks
☐	Raise the top cover to the scanner section of the Verity Scan.
☐	Raise the inside cover to the scanner.
☐	Use, at a minimum, 50% isopropyl alcohol and lint-free wipes. **Never use ammonia-based and detergent-based formulas.**
☐	Wipe the upper and lower plates on the scanner path clean of small paper debris. **NOTE**: Never use a pressurized air canister. Doing so may result in debris becoming trapped under the scanner glass.
☐	Clean the transport mechanism (rollers under the inside cover) using a minimum 50% isopropyl alcohol and lint-free wipes. **Never use ammonia-based and detergent-based formulas.**

2.9 Battery Maintenance

The following battery maintenance procedures apply for Verity system hardware components.

2.9.1 Battery Design

The battery is fully rechargeable with built-in test and protection circuitry built by the manufacturer. The battery supports 500+ charging cycles. Hart provides two options for the charging bay for the batteries, a one-to-one and a one-to-six battery bay.

2.9.2 Manufacturer's Caution

Never discharge, short circuit, or dispose of battery/ies in water.

Never expose battery module to temperatures above 140F (60C).

Never mishandle or disassemble battery module.

Failure to follow these instructions may present risk of explosion, fire, or high temperatures.

Table 13. Battery maintenance.

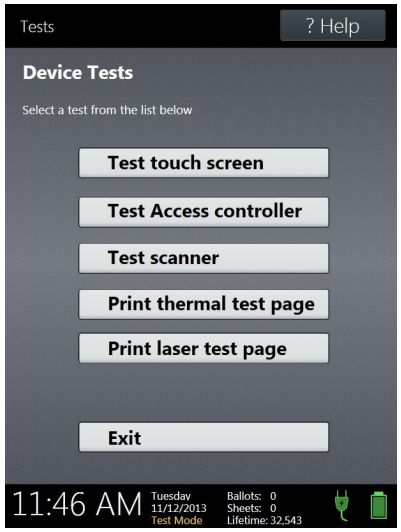
Visual Cue	Definition	Notes
<80%	Recommended time to recharge battery.	To test the charge level, press and hold the test button on the battery.
Red pulsing light on battery	Battery cannot be charged	When the battery is fully drained, it may indicate a pulsing red light. Try leaving it in the charger for 30 minutes to see if it will begin pulsing green (take a charge).
Green pulsing light on battery	Battery is charging	
Green solid light on battery	Battery is fully charged	

Table 14. Battery charge and drain statistics.

Battery Statistics	Timeline	Notes
Battery charge time	4-5 hours	for a fully discharged battery
approx. 0.5%/month	on-shelf drain rate	
approx. 2.0%/week	plugged-in drain rate	

2.10 Performing Functionality Tests

Figure 1. Device Tests Menu screen.



Device Tests Menu Screen	
Description	Allows the user to run device tests.
Tab order	Buttons, top to bottom

Test Touch Screen Button	
Description	Navigates to the **Touchscreen Test** screen

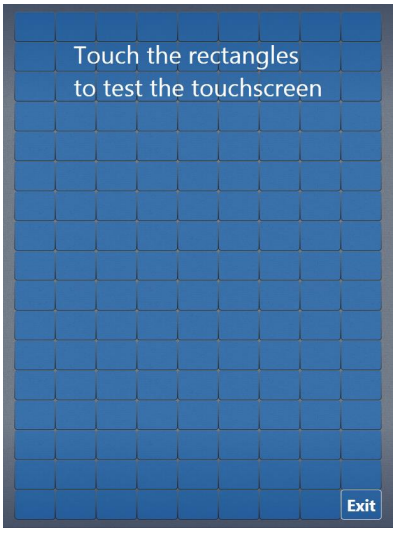
Test Access Controller Button	
Description	Navigates to the Access Controller Test screen
Dependencies	This option is only available on the Verity Touch and Touch Writer

Test Scanner Button	
Description	Navigates to the Scanner Test screen
Dependencies	This option is only available on the Verity Scan

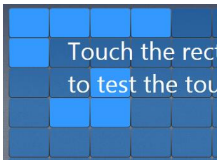
Print Thermal Test Page Button	
Description	Prints a test page to the thermal printer. Transitions to a **Progress** screen during printing. Transitions to the **Device Tests Menu** screen after printing.

Print Laser Test Page Button	
Description	Prints a test page to the COTS printer. Transitions to a **Progress** screen during printing. Transitions back to the **Device Tests Menu** screen after printing.
Dependencies	This option only appears on Verity Touch Writer and Verity Ballot.

Figure 2. Touchscreen Test Screen.



Touchscreen Test Screen	
Description	Allows users to test the touch screen to ensure it registers touches accurately
Tab order	Buttons, left to right then top to bottom

Rectangular toggle buttons	
Description	Toggles color when touched 
Allowed values	Unchecked = Checked =

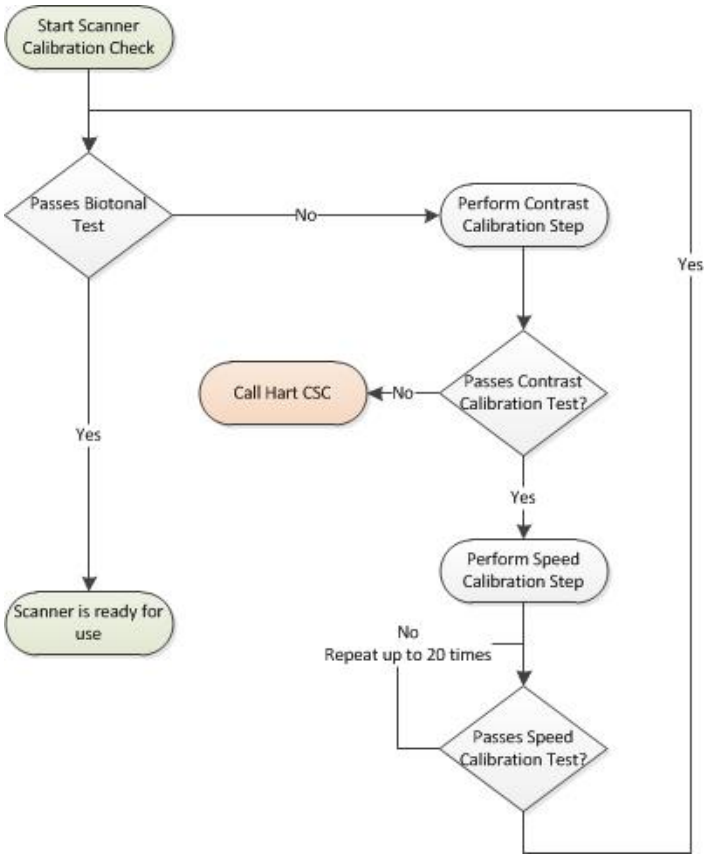
Exit button	
Description	Toggles the background when touched Transitions the UI to the **Device Tests** screen
Allowed values	Unchecked = Checked =

Figure 3. Verity Access test screen.

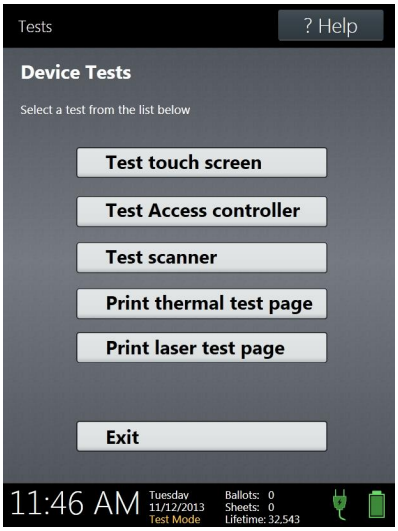
Test Access Controller Screen	
Description	Allows the user to test that the Access buttons, peripherals, and audio functionality are working correctly. When a button is pushed on the Access, the UI will: 1. Briefly light up the button with a yellow overlay 2. Toggle a green check mark to indicate success. The check mark state will be persistent until the button is pushed again. 3. Play the name of the pressed button so that the user can verify correct audio functionality **Note**: See wireframe project for a working example with animations, icons, etc. ***Figure 4. Button test highlight and success icons.***
Tab order	N/A

2.10.1 Testing the Scanner

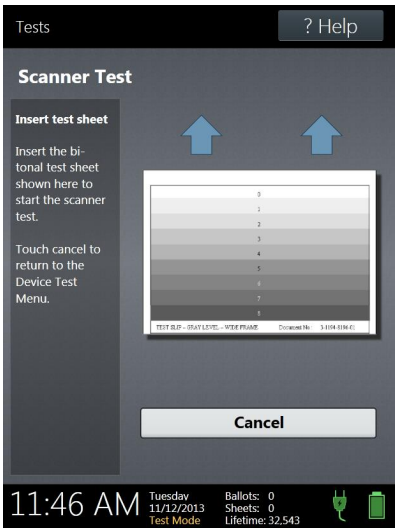
The scanner within the Scan unit should have the calibration checked at least once per year. The following flow chart depicts the calibration process.



To test if the scanner is within calibration, press **Test Scanner** on the Device Tests screen.



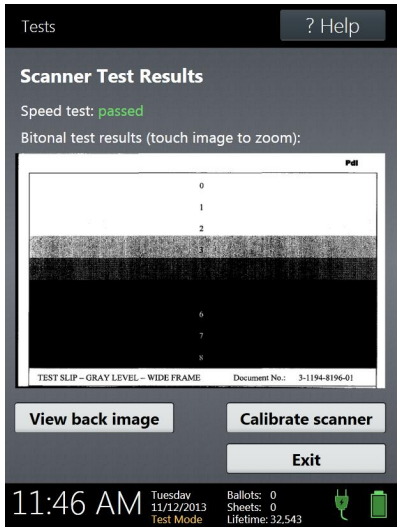
Insert Bitonal Sheet, as shown.



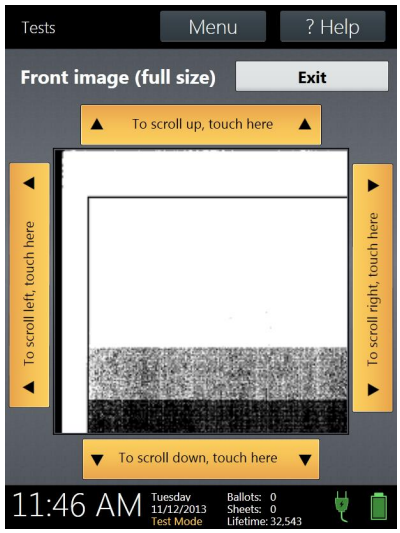
If results of Speed Test are **passed**, the next step is to view the upper and lower images at full scale.

As part of the image review, you must view the entire screen to look for any potential flaws. The following image is a reduced-size view. It must be enlarged to visually see any small size indicators of potential issues.

To view the entire screen, click **View Back Image** on the Scanner Test Results screen.



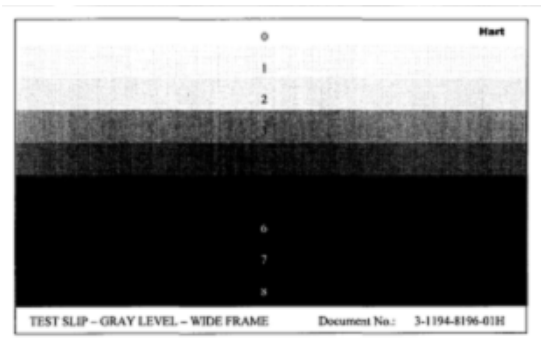
Use the scroll buttons to view the various regions of the image.



The output images should be as follows:

- Zone 0: Always white.
- Zones 1-4: Can be white or speckled.
- Zones 5-8: Should be completely black.

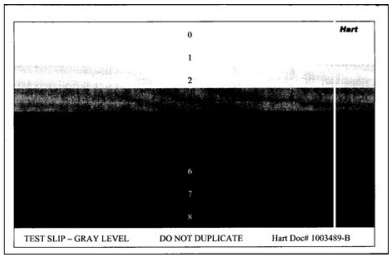
Following is an example of a good image.



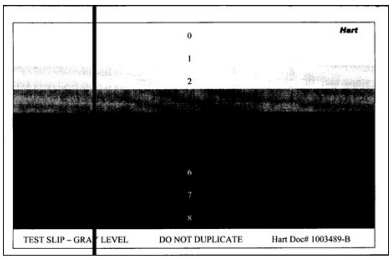
If the results of the Speed Test are **passed** and if images are approved, no calibration is required. The scanner is ready for use.

Following are some examples of bad images.

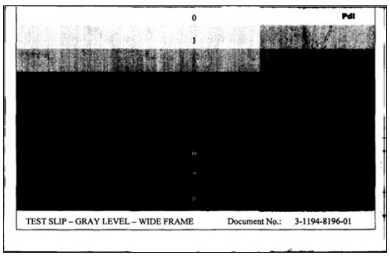
Bad pixel (always off)



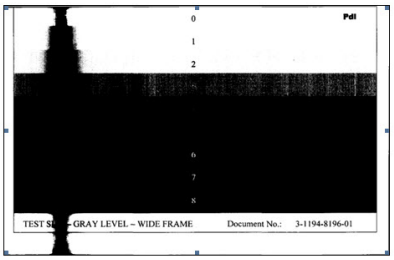
Bad pixel (always on) or debris on glass



Bad read head



Bad red LED sector



If the scanner test does not pass, the next step is to attempt calibrating the scanner for speed and image contrast.

2.11 Calibrating the Scanner

2.11.1 Scanner Calibration Supplies

The following supplies are needed in order to perform the Scanner Calibration:

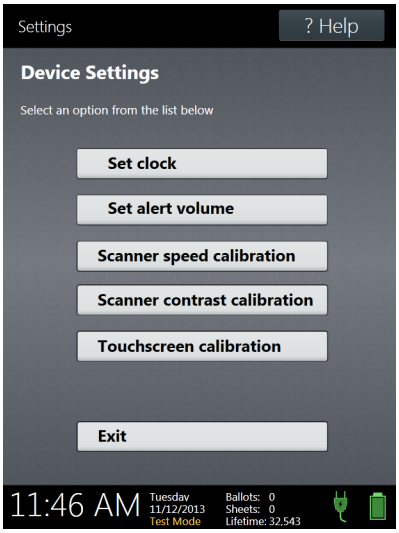
- Bitonal Sheet provided by Hart InterCivic (part # 1003489)-do not duplicate
- Speed Calibration Sheet provided by Hart InterCivic (part # 1003494)-do not duplicate
- Letter-size white paper, 92 brightness – clean no smudges

2.11.2 Performing Scan Calibration

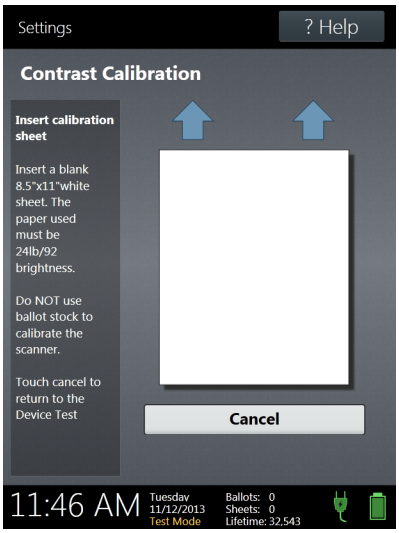
Whenever you perform calibration, you should perform both the white sheet calibration and the speed calibration in the order below:

- White Sheet Calibration: This option sets the white-level values for the scanner to ensure uniform contrast on scanned ballots. This test must be performed using an 8.5 x 11 sheet of white paper with a brightness of 92 or greater that is clear of marks.
- Speed Calibration: This option allows you to calibrate the scanner motors. You will need to use the Speed Calibration Sheet.

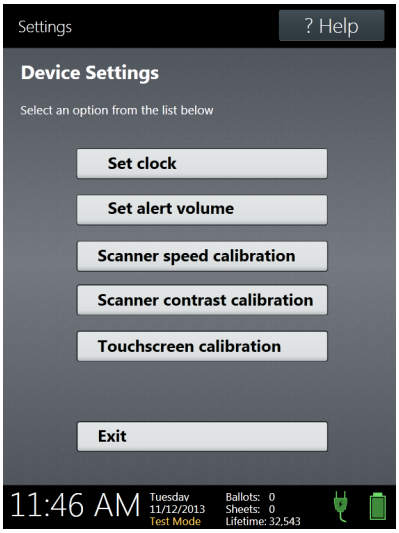
First perform the Scanner Contrast Calibration and if it passes then perform the **Scanner Speed Calibration** step.



Select **Scanner Contrast Calibration**, and then—within 2 to 10—seconds insert a clean, blank white sheet of paper with a brightness of 92 into the scanner. The sheet will be returned to you after the test is done. If the test *passes*, proceed to the Speed Calibration step. If the test does *not pass*, contact Hart Customer Service and Care..

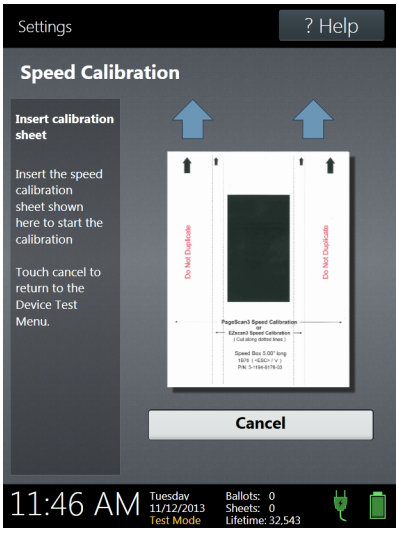


Next select **Scanner Speed Calibration**, and then—within 2 to 10—seconds insert a **Speed Cal** form into the scanner. The sheet will be returned to you after the test is complete.



If **Scanner Speed Calibration** fails, simply re-run the Scanner Speed Calibration tests until it is successful, this may take up to 20 speed calibrations to be performed.

Insert **Speed Cal** sheet as shown.



Note: Use only clean, crisp forms with no smudges or lines. Poor-quality forms will negatively affect the calibration of the unit.

If the test *passes*, repeat the Bitonal Test.

If the test does not pass, contact Hart Customer Service and Care.

CHAPTER 3

Polling Place Equipment Testing

This section details the equipment acceptance and functionality tests performed on all devices and workflows at polling places.

This chapter describes the following:

Overview 78

Touch Writer Testing Supplies 79

Touch Writer Acceptance and Functionality Test Workflow . . . 80

Touch Writer Test Preparation 81

Scan Testing Supplies 83

Scan Acceptance and Functionality Test Workflow 84

Scan Test Preparation 85

3.1 Overview

This chapter covers testing the equipment. There are several types of tests, such as Acceptance, Functional, and Logic and Accuracy. The Acceptance Test is a comprehensive test of the functionality of the polling place equipment when you receive it. By performing an Acceptance Test, you are verifying that you have received the equipment in good working order.

The Functionality Test is a test that you perform between election cycles to verify that the equipment is still operating correctly and is election-ready. Functionality Tests can be performed as often as you want. Hart recommends that you perform functionality tests a minimum of once per year.

Neither of these tests is a Logic and Accuracy Test or a ballot proofreading exercise.

Refer to the *Polling Place Operations Guide* for complete equipment operations as performed in the polling place.

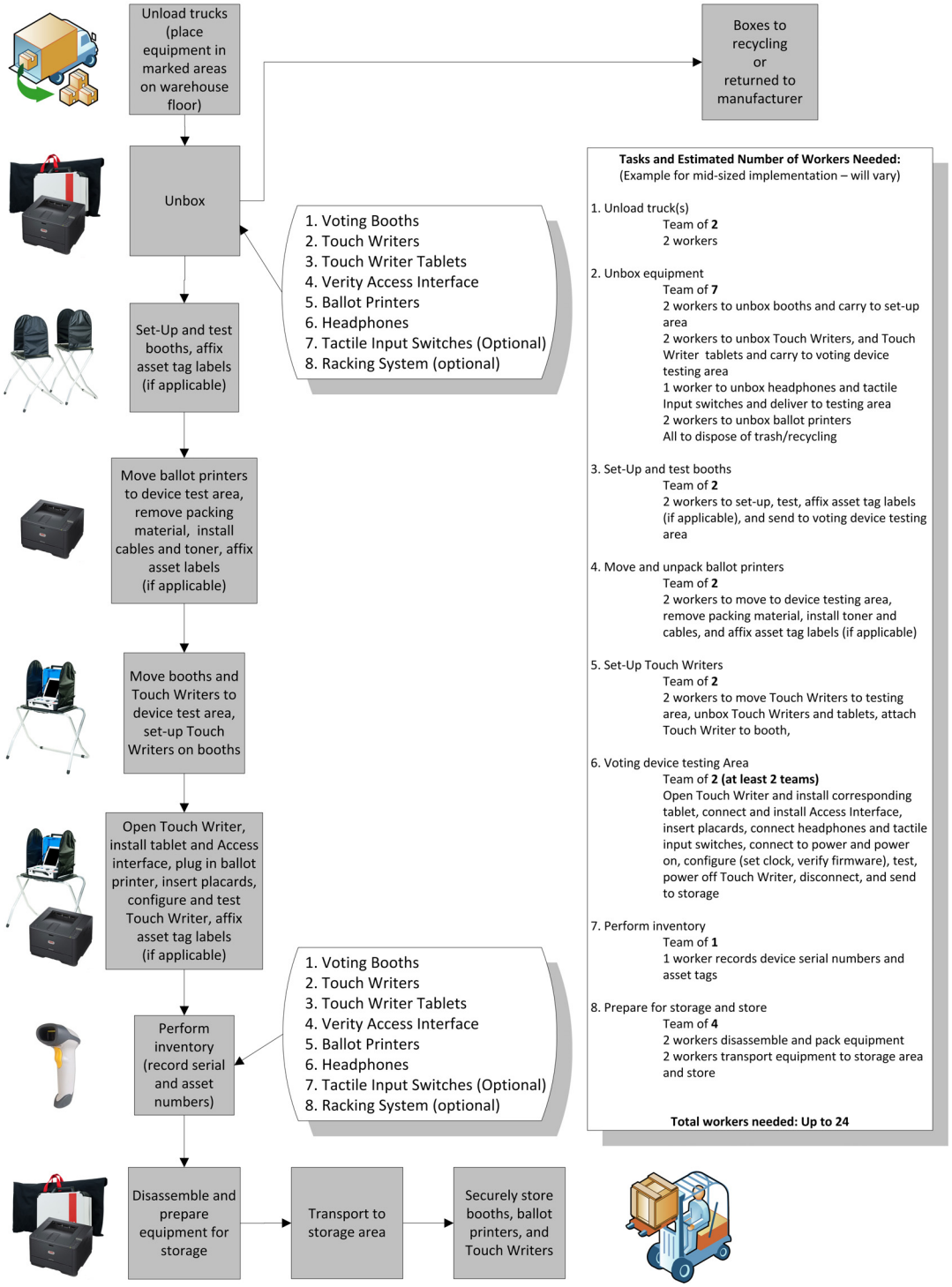
3.2 Touch Writer Testing Supplies

Table 1. Testing supplies checklist: Verity Touch Writer.

	Supplies	Details
☐	1 Verity Touch Writer	
☐	1 set of headphones per Verity Touch Writer	
☐	1 Verity Access booth per Verity Touch Writer	
☐	1 set of tactile input switches (jelly switches) per Verity Touch Writer	Optional
☐	1 Verity Touch Writer Ballot Printer per Verity Touch Writer	
☐	1 ream of ballot paper per Verity Touch Writer Ballot Printer.	
☐	1 test Verity vDrive per testing line	The Verity vDrive holds the ballot information. The vDrive should include both Early Voting and Election Day polling places with more than 6 precincts assigned to each, and it should be accompanied by the "Polling Place List <EV or ED> Summary" report.
☐	Spare Verity Scan/Touch Writer printer paper roll	If the printer roll is near its end, replace it while testing.
☐	1 Verity Key with local security data	
☐	Extension cords, as necessary	
☐	1 surge protector/plug bar per testing line	Optional – **AVOID SURGE PROTECTORS WITH ON/OFF SWITCHES**
☐	Envelopes or file system for device reports	Optional
☐	Shipping and inventory lists	
☐	Functionality Documentation	Refer to the Election Logs

3.3 Touch Writer Acceptance and Functionality Test Workflow

Verity Touch Writer System Acceptance Test Staffing Workflow



3.4 Touch Writer Test Preparation

Use this checklist when performing Touch Writer acceptance and functionality tests.

Table 2. Acceptance and functionality test procedures checklist: Verity Touch Writer.

	Steps	Details
☐	Set up teams and assignments for each member within each team. Teams will vary per implementation, and they will vary depending on the task – an initial acceptance test is much more involved than later functional tests.	This process is simple if tasks are separated into distinct areas and teams. Team members should each have distinct tasks within their teams. Assignments might include: • Unloading trucks • Unboxing equipment • Setting up Touch Writers • Testing (inspecting) Touch Writers, affixing serial number, and inserting instructional placards • Moving Touch Writers to testing area • Connecting Touch Writers, setting up Verity Access peripherals, taking down Touch Writers • Assign a ballot printer to be shipped with each Touch Writer • Adding equipment to local inventory list
☐	Set up an area where Touch Writers will be inspected, serial number labels will be affixed, and instructional placards will be inserted.	Refer to the Election Logs tab for a booth inspection checklist.

	Steps	Details
☐	Verity firmware validation.	1. Unlocked the vDrive Bay and remove the door. 2. Insert (non-vDrive) USB drive into USB port in Secure vDrive Bay 3. Push button. the blue Validation button in the Secure vDrive bay 4. Allow manifest file to be written to USB drive 5. Remove USB drive 6. Retrieve Verity file manifests from the NSRL reference files from the NSRL Voting website. http://www.nsrl.nist.gov/vote.html 7. Manually compare the Verity Manifest file provided by the NSRL to the manifest file stored on the USB drive 8. The comparison should indicate that the file names, file versions, and file checksums are identical
☐	Program key device steps.	A factory security key has been programmed to the voting devices. This key must match the key on the vDrives being used in testing equipment. This key should be used only for initial testing. If necessary, program each Verity Touch Writer with the key that matches the key on the vDrives being used in the test.
☐	Verify quantity of each product.	Compare to shipment list for accuracy.

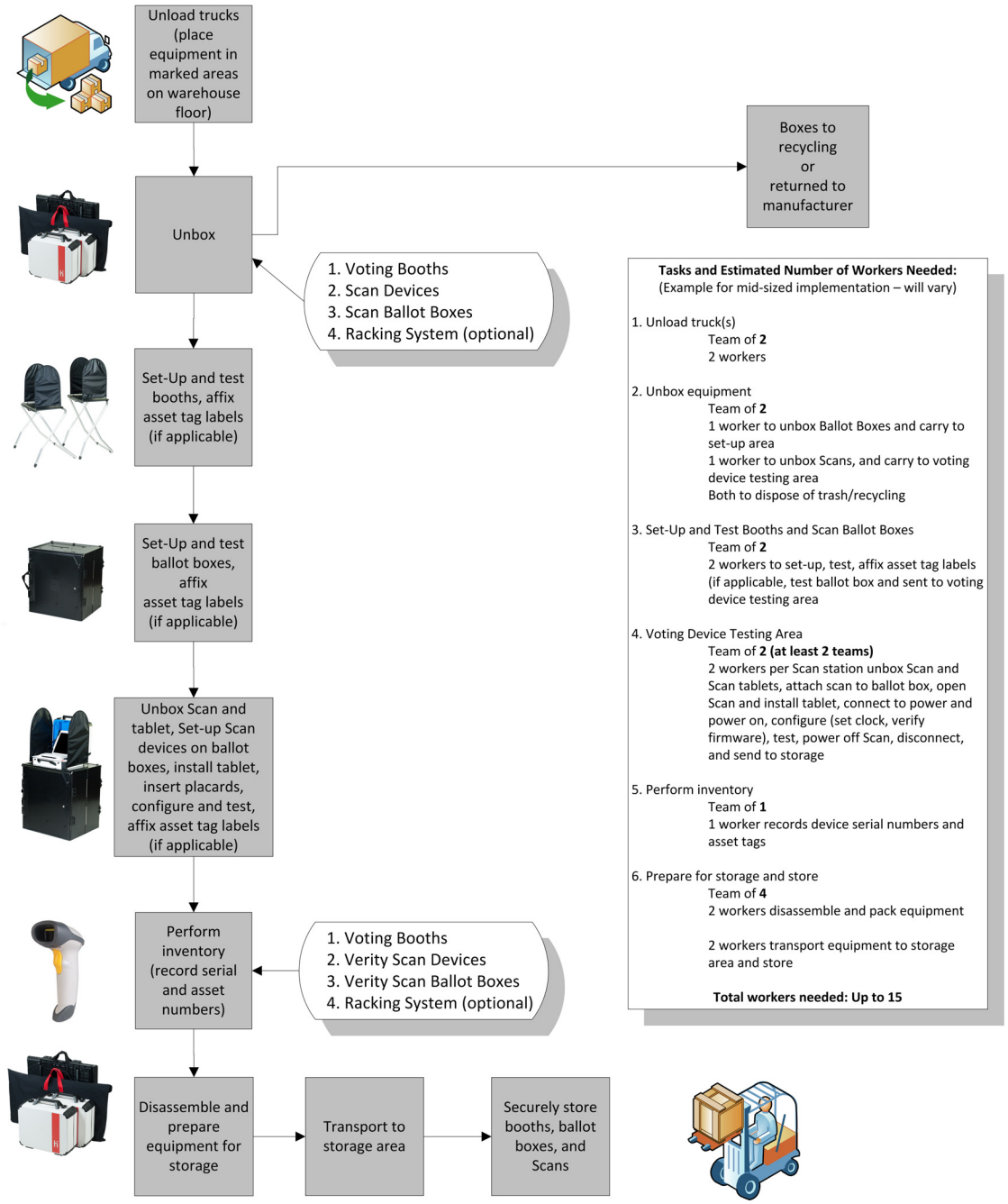
3.5 Scan Testing Supplies

Table 3. Verity Scan testing supplies checklist.

	Supplies	Details
☐	Verity Scan devices	
☐	Verity Scan ballot boxes	
☐	Verity Scan booths	
☐	Booth storage racks	
☐	1 test vDrive per Scan device	
☐	Voted and blank Test ballots	
☐	Spare printer paper rolls	
☐	1 Verity Key with Acceptance Testing security data	
☐	1 Verity Key with local security data	
☐	Extension cords, as necessary	
☐	1 surge protector/plug bar per testing line	
☐	Alcohol wipes	For cleaning Scan scanner path
☐	Envelopes or file system for device reports.	Optional
☐	Shipping and inventory lists	
☐	Functionality Documentation	
☐	1 table per work area	Testing areas must have AC power available
☐	PostIt notes and pens for team members	Various uses
☐	The *Polling Place List Election Day Summary* report.	This report is used to identify the Polling Place.
☐	Bar code scanner	Optional – if supported by local inventory control process

3.6 Scan Acceptance and Functionality Test Workflow

Verity Scan System Acceptance Test Staffing Workflow



3.7 Scan Test Preparation

Use this checklist when performing Scan acceptance and functionality tests.

Table 4. Acceptance and functionality test procedures checklist: Verity Scan.

	Supplies	Details
☐	Set up teams and assignments for each member within each team. Teams will vary per implementation, and they will vary depending on the task – an initial Acceptance Test is much more involved than later functional tests.	This process is simple if tasks are separated into distinct areas and teams. Team members should each have distinct tasks within their teams. Assignments might include: • Unloading trucks • Unboxing equipment • Setting up booths • Testing (inspecting) booths, inserting instructional placards, and taking down booths • Testing (inspecting) Scan ballot boxes • Moving Scan ballot boxes to testing area • Setting up Scans atop Scan ballot boxes and operating Scans • Adding equipment to local inventory list • Testing and loading storage racks, if used
☐	Set up area where Scan Ballot Boxes will be inspected.	Refer to the Scan ballot box inspection checklist.
☐	Set up an area where booths will be inspected and instructional placards will be inserted.	Refer to the Election Logs tab for a booth inspection checklist.

	Supplies	Details
☐	Verity firmware validation.	1. Unlocked the vDrive Bay and remove the door. 2. Insert (non-vDrive) USB drive into USB port in Secure vDrive Bay 3. Push button. the blue Validation button in the Secure vDrive bay 4. Allow manifest file to be written to USB drive 5. Remove USB drive 6. Retrieve Verity file manifests from the NSRL reference files from the NSRL Voting website. http://www.nsrl.nist.gov/vote.html 7. Manually compare the Verity Manifest file provided by the NSRL to the manifest file stored on the USB drive 8. The comparison should indicate that the file names, file versions, and file checksums are identical
☐	Program key device steps.	A factory security key has been programmed to the voting devices. This key must match the key on the vDrives being used in testing equipment. This key should be used only for initial testing. If necessary, program each Verity Scan with the key that matches the key on the vDrives being used in the test.
☐	Verify quantity of each product.	Compare to shipment list for accuracy.

CHAPTER 4

Procedures: Pre- and Post-Election

This chapter describes the following:

Overview 88
Pre-Election Checklist 89
Planning Polling Place Layout 91
Predefining the Touch Writer and Scan 92
Predefining Procedure for Touch Writer and Scan 93
Battery-Only Operations 95
Post-Election Checklist 97

4.1 Overview

This chapter details Pre-Election and Post-Election procedures. These procedures include the following:

- Preparing polling place equipment before distribution to the polling sites
- Planning polling place layout and equipment requirements per polling place, based on prior turnout
- Establishing and implementing optional equipment setup procedures
- Cleaning, performing an inventory analysis, and repairing equipment after an election event

4.2 Pre-Election Checklist

The following checklist is a guide for warehouse use when preparing for an election.

Table 1. Pre-election procedures checklist.

	Tasks
☐	Perform Verity Scan, Touch Writer, and/or Central scanner Functionality Testing.
☐	Perform Verity Scan, Touch Writer, and/or Central scanner cleaning, including device screens and cleaning accessible parts of Verity Scan scanner paper path with a lint-free cloth and isopropyl alcohol.
☐	Make sure the printers in all Verity Scan and Touch Writers have a new roll of paper.
☐	Test and charge all battery packs and label with test date and battery level.
☐	Install and connect the battery packs.
☐	Insert the official election vDrive into the secure vDrive bay
☐	Insert the official election Verity Key into the secure vDrive bay
☐	Power up the system and allow it to Setup the election.
☐	Verify Firmware on the systems by reviewing the Power-Up Report
☐	Turn-off the system
☐	Remove the Verity Key
☐	Identify Polling Place equipment needs and plan layouts.
☐	Prepare Scans and Touch Writers.
☐	Prepare headphones for each Touch Writer and tactile input switches if necessary and stow them within the equipment compartment.
☐	Prepare printers and Verity USB cable for each Touch Writer, as well as uninterpretable power supplies (UPS) if required.
☐	Distribute polling place layout plans to deployment area.
☐	Distribute spare equipment to emergency use deployment area.
☐	Receive Device/vDrive Tracking Log.

	Tasks
☐	Install seals in Scans and/or Touch Writers, enter serial number, and seal number information in.
☐	Organize Scans and/or Touch Writers for polling place deployment based on the number needed per polling place.
☐	Set up Scans and/or Touch Writers with polling place identification information, predefining polling places.
☐	Distribute Scans and/or Touch Writers to deployment area (specific to polling places and labeled per polling place, if predefined).
☐	Distribute spare Scans and/or Touch Writers, (without predefined polling places) to emergency use deployment area and keep under lock and key.
☐	Distribute spare battery packs, headphones, and tactile input switches to emergency use deployment area.
☐	Configure Touch Writer ballot printers to print the proper ballot size for the election.
☐	All polling places with Touch Writers must be supplied the official ballot stock required for the election. All ballot stock quantities delivered to each polling place must be logged.

4.2.1 Equipment Allocation

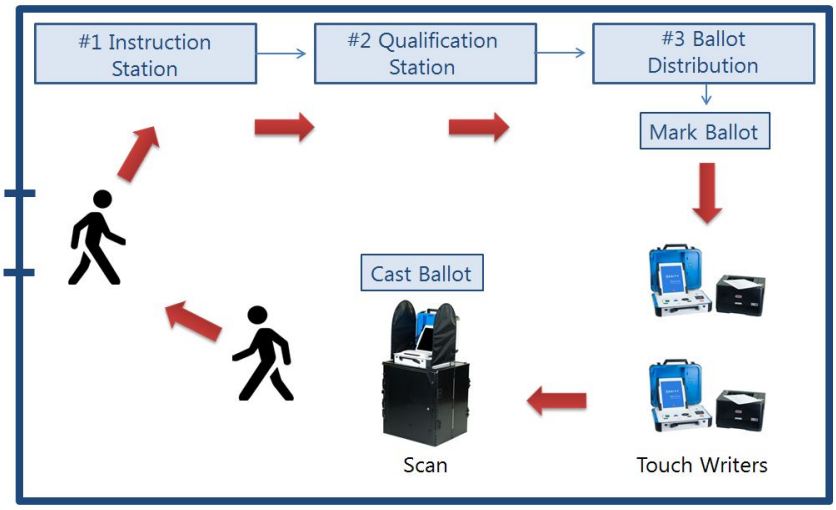
Create a spreadsheet that shows registered voters by precinct and precincts assigned per polling place. This helps to determine the equipment requirements for each polling place. The use of the term “Precinct” to also define an Election Day polling place varies by jurisdiction. Also, requirements vary by state in regard to machine allocation versus voter registration.

You should maintain the polling place components in precinct sequence if at all possible. While the Verity Scan and Touch Writer do not require this, it is much easier to allocate and access units stored in this manner since most assignments to the system are done by precinct.

At this time you need your spreadsheet showing allocation of equipment to polling places. The easiest layout is to begin with the first precinct/polling place first and increment until you have all precincts/ polling places accounted for. If you need one Verity Scan and six Verity Touch Writers in Polling Place #1, load them and other items sent to polling places together on a pallet or other type of transfer container designated for Polling Place #1. Include items such as a transfer case, cell phones, signs, tape, pens, and other items that are not dated. Continue this process until all polling places are completed. One way to identify polling place locations within the facility is by painting the numbers on the floor to insure the proper placement when the polling place equipment is being moved.

4.3 Planning Polling Place Layout

Use voter turnout records to determine equipment needed per polling place, if possible. Before setting up booths and equipment, plan the layout of the polling place to accommodate a flow of traffic that is efficient. Plan a traffic pattern that allows poll workers to monitor the polling place constantly. We recommend mapping the polling place layout and traffic patterns. If the Elections Office has already set up the layout, follow that plan.



4.4 Predefining the Touch Writer and Scan

Using this procedure, the Verity customer warehouse personnel can define the polling place on each Scan and/or Touch Writer. This is a recommended procedure that reduces the number of steps poll workers must complete when opening polls.

The Polling Places are associated with the precincts for the polling place, and the precincts have contests associated with them, determining the ballot style. By predefining the Polling Place at the warehouse you:

- Ensure that each polling place has the correct ballot styles.
- Decrease the number of steps that the poll worker must complete in order to open polls.
- Create a paper trail (reports printed at the warehouse) to verify that the Scan and/or Touch Writer remained in a standby condition between the time it left the warehouse and the time that polls opened.

After predefining the Scan and/or Touch Writer, unplug the power cable and disconnect the battery. You may plan to keep the battery connected to reduce steps for poll workers.

4.5 Predefining Procedure for Touch Writer and Scan

4.5.1 Equipment and Information Needed

Table 2. Predefining equipment and information needed: Scan and Touch Writer.

	Requirements
☐	Scans with power cable
☐	Touch Writers with power cable Ballot Printer with Verity USB cable and power cable Official blank ballot stock
☐	Device batteries
☐	A Verity Key for the election
☐	Election Mode vDrives
☐	Maintenance Code
☐	Ballot box security seals
☐	A copy of a serial number tracking log

4.5.2 Predefining Procedure Checklist

Table 3. Predefining procedures checklist: Scan and Touch Writer.

	Tasks
☐	Install and connect the device battery.
☐	Connect AC power.
☐	Power on the Scan or Touch Writer.
☐	Insert Election Mode vDrive.
☐	Insert Verity Key for this election.

	Tasks
☐	When Device ask to load New Election? Review Election ID and Election Name to ensure it is the correct election Tap **Yes, load new election**.
☐	Type the Maintenance Code. The new election will begin loading.
☐	**Remove Verity Key**
☐	Select the appropriate polling place from the list. **Note**: Begin typing the polling place name to filter the list.
☐	Tap **Accept**.
☐	Tap **Yes, assign it** to confirm the polling place.
☐	Tap **Configuration Readiness Report** and tear off (optional).
☐	Tap **Print Zero Report** to print the Zero Report. **Note**: The poll worker will be required to print the Zero Report again when powering on the device at the polling place.
☐	Turn off the device.
☐	Ensure Verity Key has been removed. Lock the vDrive compartment.
☐	Attach a security seal to the vDrive compartment. When attaching the security seal, log the seal number and the device serial number on the tracking log.
☐	Prepare the device for shipping to the polling place according to local procedures.
☐	Repeat for remaining devices.

4.6 Battery-Only Operations

This table provides background information on device battery-only operations, including timeout period (that is, period of inactivity allowed before battery automatically shuts off).

Table 4. Battery-only operations and timeout.

State	Screen	Timeout Period
Open Polls	Printer Error	2 minutes
	No vDrive Found	2 minutes
	Load New Election	2 minutes
	Enter Maintenance Code	2 minutes
	Remove vDrive	2 minutes
	Select Polling Place	2 minutes
	Confirm Polling Place	2 minutes
	Print Zero Tape	N/A
	Please Wait (Zero Tape)	N/A
	Ready to Open Polls	N/A
	Enter Open Polls Code	N/A
	Password Incorrect	N/A
	Polls Open	N/A
Polls Suspended or Closed	Confirmation required	2 minutes
	Enter Close/Suspend Polls Code	2 minutes
	The Polls are Closed	2 minutes
Other	Main Menu	2 minutes
	Administrator Menu	2 minutes
	Ballot Processing Rules	2 minutes
	Create Recovery vDrive	2 minutes
	Device Settings	2 minutes
	Device Tests	2 minutes

If the device times-out, battery power is restored by either connecting to AC power or by disconnecting the battery pack and then reconnecting the battery pack. To reset the timeout period, press any key, print a report, or process a report.

4.7 Post-Election Checklist

The following checklist is a guide for warehouse use after an election.

Table 5. Post-election procedures checklist.

	Tasks
☐	Tag, inventory, and log problems for devices from election that are in need of maintenance or replacement.
☐	Remove vDrives from spare Scans and Touch Writers (if installed). (These vDrives may already have been removed and processed in Count as a security measure.)
☐	Perform inventory and store vDrives from spare Scans and Touch Writers (if installed and available).
☐	Disconnect, remove, and charge device battery packs.
☐	Remove, inventory, and warehouse headphones and tactile input switches.
☐	Perform inventory for Scan and Touch Writers
☐	Clean Scan and Touch Writer screens. Use, at a minimum, 50% isopropyl alcohol and lint-free wipes. **Never use ammonia-based and detergent-based formulas.**
☐	Clean Scan scanner path. Use, at a minimum, 50% isopropyl alcohol and lint-free wipes. **Never use ammonia-based and detergent-based formulas.**
☐	Perform an inventory on Touch Writer Printers.
☐	Perform maintenance on Touch Writer Printers. Remove any remaining ballot stock and entry quantity into log.
☐	Store Scans, Touch Writers, and Touch Writer Printers.
☐	Perform routine maintenance tasks.
☐	Ship damaged Scan and/or Touch Writers for maintenance or replacement.
☐	Test equipment functionality before next election cycle.

CHAPTER 5

Procedures: Field Techs & Help Desk

This section details how to establish and run procedures for support staff including field technicians and help desk operators. The section provides information on how to work with polling place equipment, with a focus on troubleshooting software, hardware, and peripherals.

This chapter describes the following:

Overview 100

Field Technician Responsibilities and Training 102

Field Technician Equipment List 104

Help Desk Operator 105

Help Desk Log Management 107

Help Desk Operator Equipment List 108

5.1 Overview

Field technicians and Help Desk operators should be personnel taken from the ranks of staff and temporary employees who are experienced with the polling place equipment. Local poll worker trainers, for example, make excellent Help Desk operators. Field technicians are often hired as part-time technical support.

5.1.1 Recommendations

Field technicians and Help Desk operators should receive the Verity Troubleshooting Course training specific to locally implemented equipment immediately prior to the election event.

5.1.1.1 Logs

Field technicians and Help Desk operators should keep detailed logs. These logs should be cross-referenced whenever possible. Help Desk Logs should be serially numbered per operator. Calls from polling places should come into the Help Desk. Help Desk operators should attempt to solve problems over the phone. If a field technician is dispatched, that call should come from the Help Desk, and the field technician should be given the Help Desk log number to use as a Troubleshooting Log number. A real-time Help Desk database set up to track calls and equipment movement (e.g., equipment moved due to high turnout at a particular polling place) is an excellent tool. Logs are useful sources of historical data that can help to prevent problems during future election events.

5.1.1.2 Field Technicians

Field technicians should have appropriate documentation and equipment. Refer to the following pages in this section for these details. Field technicians should be assigned a group of polling places in a geographical area. Depending on the implementation, there should be one field technician per 5-25 polling places. Technicians should start the day at an assigned polling place. It is essential for field technicians to begin the day by introducing themselves to lead poll workers. It is good practice to start technicians at a polling place where poll workers have a history of problems, did not do well in their courses, have voiced

concern, and/or are short-handed. Technicians may use the Troubleshooting Logs to document observations. Technicians should visit their assigned polling places several times a day. Technicians should end the day at a polling place that has displayed a need for assistance at poll closing time. Situations that require true troubleshooting activities should be handled by the technician calling the Help Desk for a log number (document at the Help Desk, and the Help Desk supplies the technician with that log number).

5.1.1.3 Help Desk Operators

The Help Desk should have one phone per operator. The Help Desk number should be shared with poll workers often, both in training and in documentation. The Help Desk number should roll to an open phone when operators are on other calls. Depending on the implementation, there should be one Help Desk operator per 25-100 polling places. Each operator should have a series of uniquely numbered logs (e.g., “1-001” through “1-100”). There should be at least one Help Desk manager in charge of general management and dispatch of field technicians. It is imperative that the Help Desk is set up with at least one replica of a polling place system in use in the jurisdiction supported (e.g., a Verity Scan with the current election in TEST mode, and/or a Verity Touch Writer). Help Desk operators will use this setup to walk through problems poll workers are reporting in order to provide real-time solutions. It is also important that Help Desk operators remain calm and courteous.

The following Field Support Responsibilities and Help Desk Operator Responsibilities sections are also available as separate documents appropriate for customization and dispersal during Troubleshooting Course training.

5.2 Field Technician Responsibilities and Training

This section outlines the basic equipment responsibilities of the field technicians assigned to support polling places for an election event.

- Technicians are responsible for troubleshooting assistance on equipment at the polling places, as well as subsequent documentation and record-keeping.
- Troubleshooting should occur in a timely manner.
- As little time as possible should be spent at each polling place in order to reduce possible distractions to voters.
- Technicians should only communicate with Election Judges or their designees, NOT with voters.
- Technicians should not leave a cell phone number with poll workers.
- Technicians should speak to poll workers calmly and respectfully.
- Technicians should dress in business casual attire, displaying no visible printed messages.
- Technicians should refer media to the office of the Registrar of Voters.

The responsibilities outlined in the following page are only examples. Field technician responsibilities will vary per implementation.

Table 1. Field technician responsibilities and training.

Task		Department Responsible	Notes
Start of Day	Deliver equipment.	County or Individual Entities	
	Start with a screwdriver set, needle-nosed pliers, and a flashlight.	Technician	Technician Provides
	Start with 1 Verity Scan and/or 1 Verity Touch Writer.	Technician	Also batteries, printer paper, seals, Troubleshooting Log, as necessary
	Start the day at an assigned polling place and call in.	Technician	Call number assigned by jurisdiction.
	Set up booths.	Poll Workers	
	Set up voting equipment.	Poll Workers	
	Open polls.	Poll Workers	

Task		Department Responsible	Notes
End of Day	Close polls.	Poll Workers	
	Print device reports. Tally Report for Election Day.	Poll Workers	
	Deliver sealed device/vDrive to the appropriate drop-off location.	Poll Workers	
	Take down booths.	Poll Workers	
	Set booths and all other equipment aside in designated area for pick up.	Poll Workers	
	End the day at an assigned polling place and call in.	Technician	Call number assigned by jurisdiction.
	At the end of the day, deliver excess replacement equipment and troubleshooting logs to the designated site and call in once delivery is complete.	Technician	Return equipment. Call number assigned by jurisdiction.
Trouble-shooting	Reply to calls from the central Help Desk and obtain log numbers for cross-reference.	Technician	Record log number
	Throughout the day, check in at assigned polling places and ask Election Judge if any technical assistance is needed.	Technician	Log; no log number necessary
	Complete troubleshooting/ observation log per call and/or site visit.	Technician	Fill in log number from Help Desk for troubleshooting, NOT for observations.
	Assist in equipment problems at polling places (not procedures).	Technician	If call did not come from Help Desk, do not fill in log number. If you need to contact the Help Desk for assistance, a log number will be assigned.
	Pull faulty equipment out of service if necessary: • Tag equipment • Secure booths with a seal • NEVER remove equipment from the polling place	Technician	Replace equipment only under direction from Help Desk operators. Tag equipment. Secure booths that are pulled off line with a seal. Record both the ballot box seal number and equipment serial number in the troubleshooting log. Leave original equipment at the polling place.

5.3 Field Technician Equipment List

- Field technicians should receive training just prior to the election event.
- Use documentation during training and send that documentation with technicians after training.
- An efficient way to distribute replacement equipment is to check it out to technicians after training.
- An efficient way to collect replacement equipment at the end of the election event (e.g., Election Night) is to set up a check-in station specifically for field technicians at the central counting station and/or at substations.

5.3.1 Documentation

- Responsibilities document
- Troubleshooting procedures section of this document
- Applicable troubleshooting addenda
- Maps
- Polling Place Assignments list
- *Polling Place Operations Guide*
- Troubleshooting Log

5.3.2 Hardware

- Cell phone
- Screwdrivers, needle-nose pliers, and a flashlight
- Verity Scan (sealed with vDrive, not predefined)
- Verity Touch Writer with Access (sealed with vDrive, not predefined)
- Voting device printer paper
- Equipment battery packs
- Extra seals

5.4 Help Desk Operator

This section outlines the basic responsibilities of Help Desk operators assigned to support polling places on Election Day.

- Help Desk operators are responsible for providing phone line troubleshooting assistance on equipment at polling places, documenting assistance provided, determining when on-site support is needed, and contacting technicians for on-site support.
- Operator attire during Help Desk hours should be both comfortable and professional.

5.4.1 Hours

Help Desk hours of operation vary by jurisdiction. Typically, one hour before polls open and two hours after polls close.

Schedule breaks as needed and as time allows. Ideally, operators will get two 30–45-minute meal breaks during the day.

5.4.2 Procedures for Help Desk Operators

Table 2. Help Desk operator procedures checklist.

	Tasks
☐	Receive calls from the polling places. Answer with: "<Jurisdiction Name> Help Desk, this is <Your First Name Here>." No matter what the situation is, be calm and courteous.
☐	Log every call on a separate Help Desk Log. Use the Help Desk Log packet specific to your assignment. Fill in the log completely as you proceed through providing assistance.
☐	Use your *Polling Place Operations Guide* as a first resource and walk poll workers through procedures, referring to page numbers in the Desk Reference.
☐	Use your Troubleshooting Procedures guide as a second reference.
☐	If the poll worker is still having trouble, tell him/her that you will send a technician out. Managers will call for technicians. Temporarily transfer the Help Desk Log to a manager so that the information therein can be communicated. The name of the technician dispatched should be recorded on the Help Desk Log, and the log should be returned to you. File the logs sequentially and retain the file folder.

	Tasks
☐	If you do not hear back from the troubleshooting technician or the polling place within the hour, make a follow-up call and record it on the original Help Desk Log.

5.5 Help Desk Log Management

Each Help Desk operator should have a set of uniquely numbered logs. These logs should be assigned per operator, so that questions can be directed back to the operators, should questions arise later.

Table 3. Sample Help Desk log.

Log Series	Assigned to Operator Name
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	

5.6 Help Desk Operator Equipment List

Help Desk operators should receive training just prior to the election event. Even though documentation may be used in training, provide new sets of documentation at the Help Desk.

5.6.1 Documentation

- Responsibilities document
- Troubleshooting Procedures section from this document
- Applicable Troubleshooting addenda
- Polling Place Assignment list
- *Polling Place Operations Guide*
- Help Desk Log
- Maps (at least one set per Help Desk)
- Index to field technician clusters and cell phone numbers (for Help Desk manager)
- Index to polling place names, addresses, phone numbers, and lead poll worker names (for Help Desk manager)

5.6.2 Hardware

- One set of polling place equipment set up in TEST mode (Early Voting or Election Day, as applicable)
- White board and markers

CHAPTER 6

Troubleshooting Procedures for Support Personnel

This section details troubleshooting and support information for all support personnel for the Verity Voting system.

This chapter describes the following:

Overview 110

Systematic Troubleshooting 111

Touch Writer Quick Troubleshooting 112

Scan Quick Troubleshooting 117

Scan Troubleshooting Guide 119

6.1 Overview

The Help Desk Call Log is included here for use by trained local support personnel at the Elections Office Help Desk. The log includes fields for documentation of the Help Desk operator name, time, date, polling place site calling, caller, problem, resolution, and call back confirmation. This log, or one like it, should be used to document and track problems encountered.

Field personnel providing technical support should also use a log, and for that reason the Polling Place Troubleshooting & Observation Log is included here. Information recorded in this log should be cross-referenced to the Help Desk Call Logs used. Log serial numbers should be used for this purpose.

Post-election debriefing meetings should include an analysis of logs to determine issues that need resolution and how those resolutions will take place, and to identify issues that can be prevented in future election events.

6.2 Systematic Troubleshooting

When faced with a troubleshooting situation, apply this systematic troubleshooting approach.

Table 1. Troubleshooting guidelines.

	Tasks
☐	Remain calm.
☐	Identify the issue, or the symptoms, as reported.
☐	Gather further information. Think broadly. Do not jump to conclusions. Ask questions.
☐	Establish a theory to explain the source of the problem.
☐	Research resolution steps, based on your theory.
☐	Use documentation available to you to identify the resolution steps necessary.
☐	Attempt resolution.
☐	Check for success.
☐	Repeat.

Remember, as with all electronics systems, many equipment issues can be solved by simply checking connections.

6.3 Touch Writer Quick Troubleshooting

This is the Verity Touch Writer troubleshooting quick guide for the polling place.

Problem	Resolution Steps	Reference
AC power fails without battery backup	1. Check all power connections. 2. Call the Elections Office or Help Desk to notify them of the situation. 3. Unplug the device from the wall outlet. 4. When AC power returns, refer to the "Ballots Not Complete" report to print new access codes for voters.	• Power fails • Ballots Not Complete report
AC power fails, but battery power takes over	No resolution needed. Be aware that the device may get warm if running on battery for an extended period of time.	• Battery operations • Power fails • Power status
Battery does not work	1. Check that the battery is present. 2. Check that the battery is connected correctly. 3. Check that the battery is fresh by pressing and holding the Test button. Battery should have a power indicator of at least 80%. 4. If necessary, request a new battery.	• Connecting device battery • When device battery does not work
Battery shuts off before close polls reports are printed.	1. Press the power button to turn the device on. 2. Enter the appropriate passwords to return to the Polls Closed screen. 3. Finish printing reports.	• Device battery power when closing polls.
"Corrupt vDrive" or "Invalid vDrive" error message.	Replace the device.	• Corrupt or Invalid vDrive
Darkened display screen	1. If the unit has been in direct sunlight, or in a closed vehicle, move it to a shaded, cooler, area. 2. Check that the device is not running on battery power alone, if AC power is accessible. 3. Verify that the docking indicator light is illuminated. 4. If it still does not respond, replace the device.	• Darkened device screen

Problem	Resolution Steps	Reference
Device does not work	1. Look at the "Power-On Self Test Report" and check that the correct version is installed (check with jurisdiction for correct version). If the version is incorrect contact the jurisdiction for a replacement device. 2. Restart the system. If there was an error message on the malfunctioning device, disconnect the battery pack after powering off the device, reconnect the battery pack, then power on the device. 3. If the device is still unresponsive, replace the device.	• Device does not work • Device replacement
Device is hot or smells hot	1. Verify that the battery pack is connected correctly, not in reverse polarity. 2. If problem persists, replace the device.	• Screen on device is dark • Power status • Device replacement
Error displays	1. Follow procedures for the specific error. 2. Check power and tablet connections and restart the device. 3. Call the Elections Office or Help Desk for assistance.	• Device replacement
Extra Access Codes	1. On the back of the extra access code, write a note explaining what happened. 2. File the access code in the appropriate envelope. The access code will appear as Expired on the end-of-day reports. 3. Press the Poll Worker Button on the back of the device. 4. Enter the Poll Worker password. 5. Tap the button to "Deactivate an Access Code". 6. Follow the prompts to deactivate the Access Code.	• Extra Access Codes

Problem	Resolution Steps	Reference
Headphones and/or Tactile Input Switches do not work	1. Check that volume control on headphones is pushed up. 2. Check that the connection to headphone jack and/or tactile input switches jack is secure. 3. Verify that the plug is connected to the correct jack. 4. On the device, tap the Options button to verify the volume settings. 5. If the peripheral is still not functioning, reboot the device. 6. If the peripheral is still not functioning after the reboot, replace the device.	• Headphones and/or Tactile Input Switches do not work • Device replacement
Password does not work	Verify you are using the correct password.	• Password is invalid
Polling Place and/or Voting Type identified incorrectly	1. Refer to the "Election Identification" report to confirm polling place name and voting type. **OR** 1. Refer to any report header to confirm the Polling Place name. 2. If the Polling Place name or voting type is incorrect, call the Elections Office or Help Desk to verify and replace Scan.	• Polling Place and/or Voting Type identified incorrectly • Device replacement
Polls closed too early	1. In Early Voting, restart the system. 2. On Election Day, verify that a Polls Closed screen is displayed and then replace the device.	• Polls closed too early
Printer out of Ballot paper	1. Pull the paper tray of the printer open. 2. Add additional ballot stock. 3. Slide the paper tray until it is closed 4. Insure Touch Writer is indicating the printer is OK	• Printer ballot stock

Problem	Resolution Steps	Reference
Printing reports after closing or suspending polls and powering off	1. If you must restart the device to print reports after polls are suspended or closed: 2. Power on the device. 3. Type the password requested and tap Accept. 4. In Early Voting mode, press the Poll Worker Button and follow prompts to type passwords, suspend polls, and print Ballot Count. **OR** In Election Day mode, follow prompts to print a Tally report.	• Reports, printing
Report Printer error	1. Respond to the error message, as appropriate. 2. Check paper orientation. 3. Ensure the paper is properly installed in Tray 1 or MPT. 4. If the problem persists, power cycle the printer. 5. If the power cycle of the printer does not resolve the issue, contact Hart Customer Service and Care.	• Printer errors • Printer paper, changing
Report Printer paper, changing	1. Open the lid of the printer compartment and note printer paper routing. 2. Remove old paper and insert and route new paper. 3. Feed paper through lid and close lid.	• Printer paper, changing
Restarting the device	1. Make certain voters have access to the emergency slot on the Scan ballot box. 2. Press the power button until the device shuts down. 3. Wait 15-30 seconds. 4. Press the power button to turn the device on. 5. Follow prompts on the device screen.	• Restarting the device
vDrive error	1. Check connections and restart the system. 2. Call the Elections Office or Help Desk.	• vDrive error
vDrive removal error message	1. Restart the device. 2. If the problem persists, replace the device.	• vDrive removal

Problem	Resolution Steps	Reference
Voter issues	(Not equipment issues, but may not be applicable to troubleshooters)	• Voter enters wrong language choice • Voter gets wrong ballot style • Voter needs Verity Access features • Voter's precinct I.D. is incorrect. • Voter requests a receipt

6.4 Scan Quick Troubleshooting

This is the Verity Scan troubleshooting quick guide for the polling place.

Table 2. Verity Scan troubleshooting at the polling place: Quick Guide.

Problem	Resolution Steps	Reference
AC power fails without battery backup	1. Check all power connections. 2. Call the Elections Office or Help Desk to notify them of the situation. 3. Unplug Scan from the wall outlet. 4. Use the emergency ballot slot to deposit ballots until the power returns.	• Power fails
Error displays	1. Follow the procedures for the specific error. 2. Check connections and restart the system. 3. Call the Elections Office or Help Desk.	• Scan replacement
Scan does not work	1. Check all power connections. 2. Restart the system.	• Scan does not work Scan replacement
"vDrive removal" error message	Reboot. If this message persists, replace the unit.	• vDrive removal
Paper (ballot) jammed in Scan	1. Lift the scanner cover. 2. Remove the ballot and wipe the scanner path clean with an alcohol wipe. Use, at a minimum, 50% isopropyl alcohol and lint-free wipes. **Never use ammonia-based and detergent-based formulas.** 3. Close the cover and rescan the ballot (or the replacement ballot if the original was spoiled).	• Paper (ballot) jam
Password is invalid	1. Verify the password.	• Invalid password
Polling Place and/or Voting Type identified incorrectly	1. Refer to the "Election Identification" report to confirm the polling place name and voting type. OR 1. Refer to any report header to confirm the Polling Place name. 2. If the Polling Place name or voting type is incorrect, call the Elections Office or Help Desk to verify and replace Scan.	• Polling Place and/or Voting Type identified incorrectly • Scan replacement
Polls closed too early	1. In Early Voting, restart the system. 2. On Election Day, verify that a **Polls Closed** screen is displayed and replace Scan.	• Polls closed too early

Problem	Resolution Steps	Reference
Printer error	1. Check the paper orientation. It should be rolling out from the bottom. 2. Select **RETRY**.	• Printer error • Printer paper, changing
Printer paper, changing	1. Open the lid of the printer compartment and note the printer paper routing. 2. Remove the old paper and insert and route the new paper. 3. Feed paper through lid and close lid.	• Printer paper, changing
Reports after closing or suspending polls AND powering off	If you must restart Scan to print reports after polls are suspended/closed: 1. Power on Scan. 2. Type the password requested and tap **Accept**. 3. In Early Voting mode, press the **Poll Worker** button and follow the prompts to type passwords, suspend polls, and print **Ballot Count**. OR In Election Day mode, follow the prompts to print the **Tally** report or to print the **Ballot Count**.	• Reports, printing
Restarting	1. Make certain voters have access to the emergency slot on the Scan ballot box. 2. Press the power button briefly to Scan off. The lights on the report printer will darken. 3. Wait 30 seconds. 4. Press the power button to turn Scan on. The lights on the report printer will illuminate. Follow the prompts on the Scan screen.	• Restarting the Scan

6.5 Scan Troubleshooting Guide

This is the standard Scan Troubleshooting Guide for the polling place.

6.5.1 Scan Does Not Work

Table 3. Troubleshooting: Scan does not work.

	Tasks
☐	Check the Scan power connections. • Make certain that the Scan cable connections are seated and firmly connected. • Check the AC power connection on the back of Scan, at the power brick, and at the wall. • If Scan is plugged into a switched surge protector, check the switch.
☐	If Scan shows an error or alert message, try restarting the device: 1. Press the power button briefly to Scan off. The lights on the report printer will darken. 2. Wait 30 seconds. 3. Press the power button to turn Scan on. The lights on the report printer will illuminate.
☐	Enter the required password and follow the prompts.
☐	If Scan still does not work, use the ballot box emergency slot for ballots and call the Elections Office or Help Desk.

6.5.2 Scan Replacement

CAUTION: Never close polls to replace equipment.

Table 4. Troubleshooting: Replacing Scan.

	Tasks
☐	1. Reboot the device.
☐	2. If the error persists, replace the device.

6.5.3 vDrive Removal Error Message

Table 5. vDrive Removal error message.

	Tasks
☐	Reboot the device.
☐	If error persists, replace the device.

6.5.4 Ballot Jam

Table 6. Troubleshooting: A ballot is jammed in Scan.

	Tasks
☐	If a ballot causes a paper jam in the scanner path, carefully lift the scanner cover and remove all pieces of paper. Take care not to touch any glass surfaces in the scanner path.
☐	Using a lint-free cloth, wipe the scanner path clean of small paper debris.
☐	Replace the scanner cover. Spoil the voter's ballot if it is damaged, and have the voter mark a replacement ballot.
☐	Rescan either the original ballot (if not damaged/spoiled) OR the replacement ballot.
☐	If the problem persists, call the Elections Office or Help Desk.

6.5.5 Invalid Password

Table 7. Troubleshooting: Password is not accepted.

	Tasks
☐	If you get an error message after entering a Scan password, verify the password.
☐	From the error message screen, tap Continue and follow the screens to restart the sequence you were attempting to perform.
☐	If you still get an error message, call the Elections Office or Help Desk.

6.5.6 Polling Place Identified Incorrectly

If the device has been assigned to the wrong polling place:

Table 8. Polling place identified incorrectly.

	Tasks
☐	1. Call the election office as it may just have been swapped with another polling place.
☐	2. If the polls have not been opened, swap the equipment.
☐	3. If the device truly was predefined incorrectly, replace the device.

6.5.7 Polls Closed Too Early

If polls have been closed in Election Day mode, Scan must be replaced in order to continue processing voters.

If Scan contains any cast votes, it must be replaced. Check for cast votes by looking at the Ballots total at the bottom of the screen.

6.5.8 Power Fails

Table 9. Troubleshooting: Scan power failure.

	Tasks
☐	Check all power connections to the Scan. • Make certain that the Scan cable connections are firmly seated. • Check the AC power connection on the back of the Scan device, at the power brick, and at the wall. • If Scan is plugged into a surge protector that has a switch, check the switch.
☐	If power to the facility fails, call the Elections Office or Help Desk and report the power failure.
☐	Have voters use the emergency slot in the Scan ballot box until power resumes.
☐	Unplug Scan from the outlet in order to avoid a power surge to the device when power returns.

	Tasks
☐	File the tapes printed upon restart in the appropriate envelope.

Ballots deposited in the emergency slot will need to be scanned at the central counting station and/or according to local protocol.

6.5.9 Report Printer Error

Table 10. Troubleshooting: Printer error.

	Tasks
☐	If the Printer error screen displays, check the Scan printer.
☐	Open the printer cover and check the paper path. It should roll out from the bottom.
☐	Pull some paper out and close the printer cover.
☐	Tap **Retry** on the screen.
☐	If the printer error message continues to display tap Cancel Print and call the Elections Office or Help Desk and report the problem.

Scan will continue to function properly for all tasks other than report printing. If deemed necessary, replace Scan.

6.5.10 Changing the Report Printer Paper

The printer is on the right side of the Scan device. It works with a special type of thermal rolled paper. Follow these steps to change printer paper.

Table 11. Troubleshooting: Changing the paper roll in Scan.

	Tasks
☐	Open the lid to the printer compartment. Before removing the old roll. Observe the routing of the paper under the rubber roller. It should roll out from the bottom.
☐	Take out the old paper and insert the new roll of paper. Gently peel the free end of the paper off the roll and insert the new roll into its place in the printer compartment so that the roll feeds from the bottom.

	Tasks
☐	Pull some extra paper out so that you have some lead when you close the lid.
☐	Close the lid. You are ready to print.

6.5.11 Printing Reports

If you must print additional copies of reports immediately after closing polls, tap the appropriate report from either the Polls Closed or the Polls Suspended screen.

6.5.12 Restarting Scan

If you need to restart (cycle power to) Scan because of an error, follow these steps.

Table 12. Troubleshooting: Restarting Scan.

	Tasks
☐	Make certain that all voters currently voting have access to the emergency ballot slot on the Scan Ballot Box.
☐	Press the Scan power button until Scan turns off.
☐	Wait 30 seconds.
☐	Press the Scan power button until Scan turns on.
☐	Type the required password.
☐	File all reports that print in the appropriate envelope.
☐	Continue normal operations.

Ballots deposited in the Scan Ballot Box emergency slot will need to be scanned at the central counting station and/or according to local procedures.

CHAPTER 7

Device Reports

This section provides samples of Verity Scan and Verity Touch Writer reports.

This chapter describes the following:

Overview. 126
Sample Verity Touch Writer Reports 127
Sample Verity Scan Reports 133

7.1 Overview

This section provides sample report data using Verity Scan and Touch Writer reports.

The reports are printed on the devices thermal printer. Reports with appropriate information are automatically printed at the appropriate time:

Power-up Self Test Reports are printed after the device has started and has determined the status of several system components that are shown in the report.

Open Polls Reports are automatically printed once the device has successfully loaded an election and the poll worker has requested the device to open polls.

Close Polls Reports are automatically printed once the poll worker has requested the device to close (or suspend) polls.

7.2 Sample Verity Touch Writer Reports

7.2.1 Touch Writer Power-On Self Test Report

Power-On Self Test Report

02/07/2014 6:05 PM

S/N:

Verity Writer

Version:

Power On Diagnostics

MCU FW:13 PV:2	Pass
Battery (85% capacity)	High
Main Power	Present
vDrive Ports	Pass
Touch Screen	Pass
BallotPrinter (OKI B411 (Copy 3))	Present

Notes

None

7.2.2 Touch Writer Open Polls Report

VOTING MACHINE SURVEY
BALLOT
Election Date: 1/23/2014

County of Fairfax
Sample Polling Place
Early Voting

Verity Writer
S/N: 345642
Version: 01.01.45

Ballot Counter: 0
Lifetime Counter: 11

Open Polls Report

02/07/2014 1:44 PM

Polls are Open.
Ready to issue ballots

Official Signatures

7.2.3 Early Voting Touch Writer Zero Report Summary

VOTING MACHINE SURVEY
BALLOT
Election Date: 1/23/2014

County of Fairfax
Sample Polling Place
Early Voting

Verity Writer
S/N: 345642
Version: 01.01.45

Ballot Counter:	0
Lifetime Counter:	11

Zero Report

02/07/2014 1:43 PM

Access Code Summary Report

Total Codes Issued	0
Ballots Printed	0
Open	0
In Progress	0
Expired	0
Deactivated	0
Spoiled	0

All ZEROS

Official Signatures

7.2.4 Touch Writer Access Code Ticket

ACCESS CODE

56516

02/07/2014 1:46 PM

Sample Polling Place

St. Anthony's

7.2.5 Touch Writer Close Polls Report

VOTING MACHINE SURVEY
BALLOT
Election Date: 2/22/2014

County of Fairfax
Sample Polling Place
Election Day Voting

Verity Writer
S/N: 345642
Version: 01.01.45

Ballot Counter:	3
Lifetime Counter:	15

Close Polls Report

02/07/2014 6:43 PM

Polls are Closed

Ballot Count Precinct Report

Precincts/Splits Included:	5
Total Precincts Voted:	2
Total Ballots Printed:	3

Precinct	Total
Greenspring Village	0
Mt. Vernon	0
St. Anthony's	2
Tyson's Corner Mall	1
Reston Comm. Ctr.	0
Total	3

Official Signatures

7.3 Sample Verity Scan Reports

7.3.1 Scan Power-On Self Test Report

Power-On Self Test Report

02/07/2014 1:38 PM

S/N: Not Implemented
Verity Scan
Version: Not Implemented

Power On Diagnostics

MCU FW:13 PV:2	Pass
Battery (93% capacity)	High
Main Power	Present
vDrive Ports	Pass
Touch Screen	Pass
Scanner	Pass

Notes

None

7.3.2 Scan Open Polls Report

VOTING MACHINE SURVEY
BALLOT
Election Date: 1/23/2014

County of Fairfax
Sample Polling Place
Early Voting

Verity Scan
S/N: 345642
Version: 01.01.45

Ballot Counter:	0
Lifetime Counter:	5034

Open Polls Report

02/07/2014 1:46 PM

Polls are Open.
Ready to accept ballots

Official Signatures

7.3.3 Early Voting Scan Zero Report

VOTING MACHINE SURVEY BALLOT
Election Date: 1/23/2014

County of Fairfax
Sample Polling Place
Early Voting

Verity Scan
S/N: 345642
Version: 01.01.45

Ballot Counter:	0
Lifetime Counter:	5034

Zero Report

02/07/2014 1:43 PM

Tally Summary Report By Contest

Precincts/Splits Included: 5

Mayor of Mount Rushmore	
George Washington	0
Thomas Jefferson	0
Abraham Lincoln	0
Theodore Roosevelt	0
Write-ins	0
Undervotes	0
Overvotes	0

Member Mount Rushmore Park Authority	
Benjamin Franklin	0
Patrick Henry	0
Betsy Ross	0
John Hancock	0
Paul Revere	0
Alexander Hamilton	0
Write-ins	0
Undervotes	0
Overvotes	0

Proposed Change to Mount Rushmore	
Yes	0
No	0
Undervotes	0
Overvotes	0
Total Ballots	0

All ZEROS

Official Signatures

_____

_____

_____

7.3.4 Configuration Readiness Report

VOTING MACHINE SURVEY
BALLOT
Election Date: 1/23/2014

County of Fairfax
Sample Polling Place
Early Voting

Verity Scan
S/N: 345642
Firmware Version: 01.01.45

Ballot Counter: 0
Lifetime Counter: 5034

Configuration Readiness Report

02/07/2014 1:44 PM

vDrive ID: 1

Sample Polling Place

Tamper Evident Seal # _____
Tamper Evident Seal # _____
Tamper Evident Seal # _____

Prepared By: _____

7.3.5 Election Identification Report

VOTING MACHINE SURVEY
BALLOT
Election Date: 1/23/2014

County of Fairfax
Sample Polling Place
Early Voting

Verity Scan
S/N: 345642
Firmware Version: 01.01.45

Ballot Counter:	0
Lifetime Counter:	5034

Election Identification

02/07/2014 1:45 PM

Precincts/Splits Enabled	5

Precincts Enabled:

Tyson's Corner Mall
Reston Comm. Ctr.
Greenspring Village
Mt. Vernon
St. Anthony's

7.3.6 Scan Close Polls Report

VOTING MACHINE SURVEY
BALLOT
Election Date: 2/22/2014

County of Fairfax
Sample Polling Place
Election Day Voting

Verity Scan
S/N: 345642
Version: 01.01.45

Ballot Counter:	3
Lifetime Counter:	5038

Close Polls Report

02/07/2014 6:37 PM
Polls are Closed

Tally Summary Report By Contest

Precincts/Splits Included: 5

Member Mount Rushmore Park Authority	
Benjamin Franklin	1
Patrick Henry	0
Betsy Ross	1
John Hancock	1
Paul Revere	0
Alexander Hamilton	1
Write-ins	1
Undervotes	1
Overvotes	0
Proposed Change to Mount Rushmore	
Yes	1
No	1
Undervotes	1
Overvotes	0
Total Ballots	3

Official Signatures

CHAPTER 8

vDrive Processing and Election Night Procedures

This section serves as a guide for vDrive processing procedures during Early Voting and Election Day.

This chapter describes the following:

Recommended Procedures 143

8.1 About

This section serves as a guide for vDrive processing procedures at a Central Counting Station during Early Voting and Election Day. Follow these procedures to process vDrives at the end of Election Day.

8.2 Recommended Procedures

If you like to use Verity logs, the recommended procedures are as follows.

The vDrive Transfer Envelope label goes on the vDrive Transfer Envelope after the vDrive is removed from the device. The envelope contains the vDrive, the device seal, and the Ballot & Seal Certificate. After processing, the envelope goes to the counting station.

8.2.1 Materials and Supplies Needed

Table 1. Materials and supplies checklist: Election night.

	Tasks
☐	Paperwork from Predefine process of devices for checking seal and serial numbers
☐	Extra paper for Tally printing (in case Verity Scan or Touch Writer has no paper)
☐	Pens, black and red permanent markers, and Post-It Notes
☐	Surge strips and extension cords
☐	Folding tables and chairs

8.2.2 vDrive Processing

Table 2. Early Voting Ballot Board procedures checklist.

	Tasks
☐	Receive sealed devices, Reconciliation Logs, Spoiled Ballot log, and the appropriate envelopes from Early Voting sites no earlier than the close of Early Voting and from Election Day sites no earlier than the close of polls.
☐	Verify Ballots Cast on Scan tape matches the expected count and total number voters checked in (signatures). If tape was not left on device, power up and print tape.
☐	If Ballots Cast on the Scan report and total number of voters checked in do not match, reconcile using the daily device reports and the device Reconciliation Log from the polling place.

	Tasks
☐	Record total Ballots Cast on vDrive transfer envelope.
☐	Record the number of ballots in black permanent marker on each Verity Scan device tape (pull extra tape through and mark).
☐	Record the total number of Scan Ballots Cast on Ballot & Seal Certificate.
☐	Verify seal numbers from Device/vDrive Tracking Log, and record seal numbers on Ballot & Seal Certificate. Collect signatures. Make a copy to go in the vDrive transfer envelope and keep the original certificate.
☐	Break device seal and remove vDrive from device. Place vDrive in transfer envelope.
☐	Place broken device seal into the vDrive transfer envelope.
☐	Deliver vDrives to Count Station.
☐	Store Verity Scan and Touch Writer equipment securely.

8.2.3 Election Day Count Procedures

Table 3. Election Day procedures checklist: Count.

	Tasks
☐	Print Count zero report.
☐	Open vDrive envelope. Inspect original device seal numbers and confirm with Ballot & Seal Certificate, which also serves as the receipt (for by-mail system, printed report in envelope serves as receipt).
☐	Read Early Voting in-person (and by-mail, if applicable) vDrives into Count. Return vDrives to envelopes after they are read, and then mark vDrives and envelopes "processed."
☐	After each vDrive is read, print Polling Place Status and/or vDrive Status reports to verify that the total number of votes cast match the number of Ballots Cast (optional step).
☐	Read and process Election Day vDrives in Count. Mark vDrives Processed. Return vDrives to envelopes after they are read, and mark envelopes Processed.
☐	After each vDrive is processed in Count, print Polling Place Status and/or vDrive Status reports to verify that the total number of votes cast matches the number of Ballots Cast (optional step).
☐	Process Write-In votes in Count, if applicable.
☐	Print cumulative results reports to be certified and signed by Central Count Station Official.
☐	Print and prepare Count application reports. Verify reports.
☐	Read and process late by-mail vDrives in Count, if applicable, process provisional ballots, and print final official Canvass reports at the appropriate date and time.

APPENDIX A

Security Best Practices

This appendix provides best practices for implementing and maintaining proper security. It is not intended to be exhaustive and does not replace other best practices.

General Security Recommendations 148

Computer Security Recommendations 149

Voting Device Security Recommendations 150

vDrive Security Recommendations 153

A.1 General Security Recommendations

- Have members of the election staff work in pairs. This will greatly reduce the potential for accidental errors and opportunity for deliberate mischief or fraud by a rogue employee.
- Use surveillance cameras, motion sensors and other advanced means to monitor both access and usage of computers for additional security.
- Review voting equipment storage and work areas to ensure that only authorized personnel have access to them.
- Maintain a list of personnel with door keys or electronic access badges to election office work areas and voting equipment storage locations. Ensure all door keys are accounted for and only authorized personnel have them.
- Document the controlled physical access to voting systems and the facility where the systems are stored. Document all security-related repairs and modifications to the physical components of the facility where voting systems are stored.
- Develop and apply procedures and policies requiring that keys or combination locks be changed periodically.
- Review election office work areas to ensure that office space is appropriately visible and that undetected access by unauthorized individuals is not possible.
- Preview polling places and identify secure areas for equipment drop-off, storage and pickup.
- Ensure that blank ballot paper stocks are controlled at all times.
- Have an impartial third party conduct a security review and establish and implement applicable election management system security measures. Resources might be found in county and municipal information technology staff, or local community college or technical school staff.
- Maintain staffing levels adequate to monitor voting booths.
- Allow only qualified voters, persons assisting voters, and poll workers entrance to the voting booth area.
- Queue the line of voters at the ballot issuing station, not at the voting area. Do not issue voters Access Codes or paper ballots, or allow them to enter the voting booth area, until a booth is open and available for use.
- Report any suspicious activity in or around voting machines to the local election officer.

A.2 Computer Security Recommendations

- Keep computer equipment in locked facilities, and use a log to monitor access.
- Log and limit access to Verity Keys.
- Remove Verity Keys from equipment when not in use.
- Maintain an accurate inventory of all voting system computers and peripherals by make, model, location and serial number.
- Maintain an accurate inventory of vDrives.
- Keep vDrives secured at all times.
- Keep computers running at optimal performance by following these guidelines:
  - Use a properly grounded anti-static mat beneath each computer.
  - Make sure the system is plugged into a surge protector.
  - Make sure the system is in a secure, stable position to avoid vibration.
  - Make sure the system has proper ventilation to prevent over-heating.
- In general, it is best not to abort a process that is midstream. Instead let the process complete, and then take corrective action.
- Performing hard shut down of equipment, disconnecting cables to avoid a data transfer, or other process-interruptive steps can lead to equipment failures. This is a common best practice when working with any technology, not just the Verity equipment.
- For mission-critical computer systems, such as the Count computer, use an uninterruptable power supply (UPS) to prevent the loss of data in the event of a power outage during Election Night reporting.
- Always exit Windows by choosing “Shutdown” from the Start menu.

A.3 Voting Device Security Recommendations

Early Voting or Absentee-In-Person Equipment:

- Cover and seal all unused connections on the voting systems, devices, and hardware, including USB, parallel, and other ports.
- Ensure that blank ballot paper stocks are controlled at all times.
- Use security cameras in the voting system storage facility.
- Use a secure access system and limit the number of keys or access badges to the voting system storage facility.
- Use a burglar and fire alarm system in the storage facility. Periodically test their functionality.
- Use chain-of-custody forms when transporting equipment for any reason.
- Verify that all voting devices are returned to storage after each election; confirm that the device seals have not been tampered with during transport and sign the chain-of-custody document upon receipt of the voting devices.
- Maintain an inventory of election materials, including voting devices, vDrives, security seals, voter registration (poll) lists, election results tapes and printouts, field supervisors' reports, poll workers' daily logs, reconciliation reports, audit data, and other items.
- Store voting equipment on racks and off the floor. Cover racks to protect voting devices from water damage from above (e.g., leaking roofs) and below (e.g., building flooding).
- When returning equipment to Hart for repair, seal the inner box with serialized tamper-evident tape, log the seal number on the chain-of-custody form, and use an outer shipping box.
- When equipment is returned from repair, perform acceptance testing within 10 business days to confirm functionality and firmware version. Perform hash code testing to confirm that the certified firmware has not been compromised, where applicable.
- Maintain an accurate inventory of all voting system equipment by type, location and serial number.
- Prior to the Early Voting period or Election Day, maintain polling place devices under the chief election officer's close supervision at all times.
- Require the lead poll worker to verify the numbers of all seals or tamper-resistant tape on all voting devices and inspect the voting devices for any evidence of tampering.

- Require the lead poll worker and all poll workers to use and sign a checklist to verify that all opening procedures were followed.
- Control access to the voting device power control, power supply, and election results storage media.
- Maintain a physical barrier between the voter and the undistributed ballots to limit unauthorized access.
- Arrange the polling place with the exterior of each voting device in plain view of the poll workers at all times.
- Allow only poll workers and registered voters in the voting device area. Allow voters to enter this area only when a voting device is available for use.
- Train lead poll workers to operate ballot activation devices (e.g., the Touch, Touch Writer, or Controller).
- Treat the Voting devices with the same sensitivity as you would a secure ballot box containing paper ballots.
- Never leave the voting devices unattended at any time (e.g., in an automobile, an unlocked room, etc.).
- Only break or remove the security seal from the voting devices in strict accordance with close polls or central count tabulation procedures.
- Throughout the voting day, monitor voting devices closely to protect against malicious tampering.
- Pay especially close attention to ports, cable connections, and external power supplies on voting devices. Do not allow unauthorized persons access to these areas.
- Establish times for poll workers to verify the number of voters processed with the number of votes recorded (the ballot count) on the voting devices. Train poll workers to log and reconcile inconsistencies.
- Early Voting or Absentee-In-Person Equipment:
  - Record the ballot and lifetime counts of all devices at the beginning and the end of each voting day using a reconciliation log.
  - At the end of each voting day, close and secure all voting devices with tamper-evident seals. Store all devices in a locked location.
  - Verify the numbers on all protective seals and public counters before using the voting devices the next day.
  - Follow all Election Day voting security Best Practices.
- Pay especially close attention to ports on the back of voting devices and keep all storage compartments closed to restrict access to cables. Do not allow unauthorized persons access to these areas.

- Monitor the security and integrity of all voting system cable connections to ensure that voting will not be disrupted because the connection inserted is inadvertently broken. Ensure that cable connections are firmly tightened and that cables are placed where they will not be tripped over or pulled upon.

A.4 vDrive Security Recommendations

- Secure vDrives within the voting device vDrive compartment with a tamper-evident security seal.
- Record voting device serial numbers, as well as security seal numbers, during official election events so deployed equipment can be physically authenticated at the polling place.
- At the end of Election Day, follow local procedures to transport the voting devices and/or vDrives from the voting location to the jurisdiction elections office by a sworn election official or a law enforcement officer.
- Establish procedures to secure the voting devices and ballot boxes each day after suspending polls. Voting devices may be sealed, locked and/or chained, and paper ballot marking booths may remain assembled.
- Conduct the delivery of voting equipment to polling place locations with the same degree of control as applied to warehouse storage of sensitive election equipment.
- Require that the delivery person or company (or in some cases the supervising poll worker) use a chain-of-custody document that contains the voting device serial numbers, and security seal numbers for each voting location where equipment has been delivered.
- Use the chain-of-custody form in triplicate. Delivery personnel may require training on its proper use.
- Use only lockable buildings or locations that are capable of monitoring the secure storage of voting equipment at polling places.
- Tightly strap all equipment being delivered in place both horizontally and vertically inside delivery vehicles to avoid damage to the voting units (in-transit damage may appear to be a security violation, when in fact it is simply the mishandling of equipment).
- Always keep doors on delivery vehicles locked when unattended.

APPENDIX B

Functional Testing

B.1 Functionality Tests

A Functionality Test tests the ability of the voting equipment to work as intended; Functionality tests should be completed at least once per year or before every election.Functionality Test

A functionality test may consist of:

- Testing the touchscreen
- Testing Access Controller
- Testing the Verity Scan
- Testing Thermal printer
- Testing Laser printer
- Checking the system battery

Functionality Tests are accessed via the Device Tests menu.

Touch Screen Test:

- Touch the screen to illuminate the boxes.
- Tests the accuracy of the touch screen.

Access Controller Test:

- Push each button to test response.
- Attach headphones to test audio.

Scanner Test:

- Insert the bitonal sheet as shown.
- If speed test passes, view the image to check contrast.
- Zone 0 should be white
- Zone 5-8 should be black

Printer Tests:

- Touch the Print thermal test page and/or Print laser test page to test the printers.

Battery Test:

- Battery located in door at the back of the tablet.
- Press button on the battery to see current charge level.

APPENDIX C

Acceptance Testing

C.1 Acceptance Test Checklist

Table 1. Acceptance test checklist.

	Tasks
☐	Record device serial numbers.
☐	Perform device functionality tests.
☐	Verify device firmware.
☐	Set device clock, if necessary.
☐	Check booth/ballot box functionality.
☐	Predefine and vote equipment with a test election.
☐	Inventory devices, accessories and supplies.
☐	Affix asset labels.

C.2 Acceptance Testing Supplies

Table 2. Acceptance testing supplies.

	Tasks
☐	Thermal/ballot printer paper
☐	Scanner test/calibration sheets
☐	Device/equipment keys
☐	Verity Key, Test vDrive & ballots

	Tasks
☐	Logs, forms and asset labels
☐	Acceptance test checklists
☐	Power supply

C.3 Acceptance Test: Verity Touch Writer

Table 3. Verity Touch Writer acceptance test.

	Tasks
☐	Physical condition
☐	Button functionality
☐	Battery functionality
☐	Screen functionality
☐	Access functionality
☐	Headphones
☐	Thermal & Ballot printers
☐	Tactile switches
☐	Access code/Ballot functionality
☐	Verify firmware

C.4 Acceptance Test: Verity Scan

Table 4. Verity Scan acceptance test.

	Tasks
☐	Button functionality
☐	Battery functionality
☐	Screen functionality

	Tasks
☐	Scanner
☐	Thermal printer
☐	Ballot (cast ballot recorded)
☐	Verify firmware

C.5 Acceptance Test: Verifying Device Firmware

Table 5. Verifying device firmware in acceptance testing.

	Tasks
☐	The Firmware version can be verified by looking at a device report tape.

C.6 Acceptance Test

Table 6. The acceptance test.

	Tasks
☐	Setting Device Clocks
☐	The Clock settings are accessible via the Settings menu.
☐	From the startup screen, tap the Menu button, then tap Change Settings.
☐	Enter the Maintenance Code and tap Accept.
☐	Tap Set clock.

C.7 Acceptance Test: Performing Inventory

Performing inventory in acceptance testing.

	Tasks
☐	Record serial numbers/asset numbers for all devices.
☐	Confirm that each device has a power cord/power brick.
☐	Confirm that the thermal printer for each device has paper.
☐	For Touch Writer with Access, confirm that each device has headphones and a set of Tactile switches.

Glossary

A

abandoned ballot

Ballot that the voter did not place in the ballot box or record as cast on DRE before leaving the polling place.

absentee ballot

Ballot cast by a voter unable to vote in person at his or her polling place on Election Day.

acceptance testing

Examination of a voting system and its components by the purchasing election authority (usually in a simulated-use environment) to validate performance of delivered units in accordance with procurement requirements, and to validate that the delivered system is, in fact, the certified system purchased.

Access Board

Independent federal agency whose primary mission is accessibility for people with disabilities and a leading source of information on accessible design.

accessibility

Measurable characteristics that indicate the degree to which a system is available to, and usable by, individuals with disabilities. The most common disabilities include those associated with vision, hearing and mobility, as well as cognitive disabilities.

accessible voting station

Voting station equipped for individuals with disabilities.

accreditation

Formal recognition that a laboratory is competent to carry out specific tests or calibrations.

accreditation body

(1) Authoritative body that performs accreditation.

(2) An independent organization responsible for assessing the performance of other organizations against a recognized standard, and for formally confirming the status of those that meet the standard.

accuracy

(1) Extent to which a given measurement agrees with an accepted standard for that measurement.

(2) Looseness of the agreement between the result of a measurement and a true value of the particular quantity subject to measurement. Accuracy is a qualitative concept and is not interchangeable with precision.

accuracy for voting systems

Ability of the system to capture, record, store, consolidate and report the specific selections and absence of selections, made by the voter for each ballot position without error. Required accuracy is defined in terms of an error rate that for testing purposes represents the maximum number of errors allowed while processing a specified volume of data.

active in count

When a Locked for Tabulation election is opened in Verity Count, the state will change to Active in Count for tabulating and determining the winner of the election categories.

adequate security

Security commensurate with the risk and the magnitude of harm resulting from the loss, misuse, unauthorized access to, or modification of, information. This includes ensuring that systems and applications operate effectively and provide appropriate confidentiality, integrity, and availability, through the use of cost-effective management, personnel, operational, and technical controls.

Air Gap

A physical separation that describes how non-certified and certified voting system components relate to each other and manage data. A variety of methods can support a physical “air gap,” primarily the absence of any network connection between non-certified and certified components. These air gaps act as a physical firewall for all data and access ensuring integrity and security.

alternative format

The ballot or accompanying information is said to be in an alternative format if it is in a representation other than the standard ballot language and format. Examples include, but are not limited to, languages other than English, Braille, ASCII text, large print, recorded audio.

application

The main process that modules run in.

application audit log

Captures information for activities resulting from using the application or device, such as Verity login or logout, casting votes, poll worker interaction with a device, and inserting or removing vDrives.

The application audit log travels with CVR data and is used to track all of the activities that occur or are attempted on all machines along the voting process path. This log records every activity performed on or by the machine, indicating the event and when it happened.

audio ballot

A ballot in which a set of offices is presented to the voter in spoken, rather than written, form.

audio-tactile interface (ATI)

Voter interface designed to not require visual reading of a ballot. Audio is used to convey information to the voter and sensitive tactile controls allow the voter to communicate ballot selections to the voting system.

audit

Systematic, independent, documented process for obtaining records, statements of fact or other relevant information and assessing them objectively to determine the extent to which specified requirements are fulfilled.

audit trail

Recorded information that allows election officials to review the activities that occurred on the voting equipment to verify or reconstruct the steps followed without compromising the ballot or voter secrecy.

audit trail for direct-recording equipment

Paper printout of votes cast, produced by direct-recording electronic (DRE) voting machines, which election officials may use to crosscheck electronically tabulated totals.

availability

The percentage of time during which a system is operating properly and available for use.

B

ballot

The official presentation of all of the contests to be decided in a particular election. Also, a collection of one or more ballot sheets. See also, application audit log, ballot image, video ballot, electronic voter interface.

ballot configuration

Particular set of contests to appear on the ballot for a particular election district, their order, the list of ballot positions for each contest, and the binding of candidate names to ballot positions

ballot counter

Process in a voting device that counts the votes cast in an election.

ballot counting logic

The software logic that defines the combinations of voter choices that are valid and invalid on a given ballot and that determines how the vote choices are totaled in a given election.

ballot format

The concrete presentation of the contents of a ballot appropriate to the particular voting technology being used. The contents may be rendered using various methods of presentation (visual or audio), language or graphics.

ballot image

Electronically produced record of all votes cast by a single voter. See also cast vote record (CVR).

ballot instructions

Information provided to the voter during the voting session that describes the procedure for executing a ballot. Such material may (but need not) appear directly on the ballot.

ballot measure

(1) A question that appears on the ballot for approval or rejection.

(2) A contest on a ballot where the voter may vote yes or no.

ballot page

A ballot page is a single side of a sheet, and always contains ballot content (we do not number sides marked “This page left intentionally blank”).

ballot position

A specific place in a ballot where a voter's selection for a particular contest may be indicated. Positions may be connected to row and column numbers on the face of a voting machine or ballot, particular bit positions in a binary record of a ballot (for example, an electronic ballot image), the equivalent in some other form. Ballot positions are bound to specific contests and candidate names by the ballot configuration.

ballot preparation

Ballot preparation includes a series of procedures prior to running elections. Select the specific contests and questions to be contained in a ballot format and related instructions. Prepare and test election-specific software containing these selections. Produce all possible ballot formats. Finally, validate the correctness of ballot materials and software containing these selections for an upcoming election.

ballot production

Process of generating ballots for presentation to voters, e.g., printing paper ballots or configuring the ballot presentation on a DRE.

ballot rotation

Process of varying the order of the candidate names within a given contest.

ballot scanner

Device used to read the voter selection data from a paper ballot or ballot card.

ballot sheet

A ballot sheet is a single piece of paper on which one or both sides of the sheet have ballot content.

ballot style

See ballot configuration.

BLM

Ballot Layout Management (BLM) is the Verity Election Office module used to manage data such as ballot content, ballot formats, and ballot style previews.

BMD

Ballot Marking Device (BMD) is an electronic vote-capture device via an electronic voter interface that allows the voter to alter previously made choices without spoiling the ballot. After selections are marked and reviewed, the BMD produces a printed, human-readable paper ballot that reflects the voter’s selections. The BMD does capture or retain any cast vote record data.

BPS

The Hart InterCivic Ballot Production Service (BPS) is a fee-based service that provides ballot programming and ballot printing service for customers who use Hart InterCivic voting devices.

C

candidate

Person contending in a contest for office. A candidate may be explicitly presented as one of the choices on the ballot or may be a write-in candidate.

candidate register

Record that reflects the total votes cast for the candidate. This record is augmented as each ballot is cast on a DRE or as digital signals from the conversion of voted paper ballots are logically interpreted and recorded.

canvass

Compilation of election returns and validation of the outcome that forms the basis of the official results by political subdivision.

cast ballot

Ballot that has been deposited by the voter in the ballot box or electronically submitted for tabulation.

cast vote record (CVR)

Permanent record of all votes produced by a single voter whether in electronic, paper or other form. Also referred to as ballot image when used to refer to electronic ballots.

catastrophic system failure

Total loss of function or functions, such as the loss or unrecoverable corruption of voting data or the failure of an on board battery of volatile memory.

central count voting system

A voting system that tabulates ballots from multiple precincts at a central location. Voted ballots are placed into secure storage at the polling place. Stored ballots are transported or transmitted to a central counting place which produces the vote count report.

certification

Procedure by which a third party gives written assurance that a product, process or service conforms to specified requirements. See also state certification and national certification.

certification testing

Testing performed under either national or state certification processes to verify voting system conformance to requirements.

challenged ballot

Ballot provided to an individual who claim they are registered and eligible to vote but whose eligibility or registration status cannot be confirmed when they present themselves to vote. Once voted, such ballots must be kept separate from other ballots and are not included in the tabulation until after the voter's eligibility is confirmed. Michigan is an exception in that they determine voter eligibility before a ballot is issued. See also provisional ballot.

checksum

Value computed from the content of a document or data record. Typically this is the sum of the numeric representations of all the characters in the text. Checksums are used to aid in detecting errors or alterations during transmission or storage.

claim of conformance

Statement by a vendor declaring that a specific product conforms to a particular standard or set of standard profiles. For voting systems, NASED qualification or EAC certification provides independent verification of a claim.

closed primary

Primary election in which voters receive a ballot listing only those candidates running for office in the political party with which the voters are affiliated. In some states, non-partisan contests and ballot issues may be included. In some cases, political parties may allow unaffiliated voters to vote in their party's primary.

commercial off-the-shelf (COTS)

Commercial, readily available hardware devices (such as card readers, printers or personal computers) or software products (such as operating systems, programming language compilers, or database management systems).

Common Industry Format (CIF)

Refers to the format described in ANSI/INCITS 354-2001 "Common Industry Format (CIF) for Usability Test Reports."

component

Element within a larger system; a component can be hardware or software. For hardware, it is a physical part of a subsystem that can be used to compose larger systems (e.g., circuit boards, internal modems, processors, computer memory). For software, it is a module of executable code, that can be moved around as a whole that performs a well-defined function and interacts with other components.

confidentiality

Prevention of unauthorized disclosure of information.

configuration management

Discipline applying technical and administrative direction and surveillance to identify and document functional and physical characteristics of a configuration item, control changes to these characteristics, record and report change processing and implementation status, and verify compliance with specified requirements.

configuration management plan

Document detailing the process for identifying, controlling and managing various released items, such as code, hardware and documentation.

configuration status accounting

An element of configuration management, consisting of the recording and reporting of information needed to manage a configuration effectively. This includes a listing of the approved configuration identification, the status of proposed changes to the configuration, and the implementation status of approved changes.

conformance

Fulfillment of specified requirements by a product, process or service.

conformance testing

Also known as certification testing, this is the process of testing an implementation against the requirements specified in one or more standards. The outcomes of a conformance test are generally a pass or fail result, possibly including reports of problems encountered during the execution.

contest

Decision to be made within an election, which may be a contest for office or a referendum, proposition and/or question. A single ballot may contain one or more contests.

count

Process of totaling votes. See tabulation.

counted ballot

Ballot that has been processed and whose votes are included in the candidates and measures vote totals.

corrective action

Action taken to eliminate the causes of an existing deficiency or other undesirable situation in order to prevent recurrence.

cross filing

Also referred to as cross-party endorsement, this is the endorsement of a single candidate or slate of candidates by more than one political party. The candidate or slate appears on the ballot representing each endorsing political party.

cryptographic key

Value used to control cryptographic operations, such as decryption, encryption, signature generation or signature verification.

cryptography

Discipline that embodies the principles, means, and methods for the transformation of data in order to hide their semantic content, prevent their unauthorized use, prevent their undetected modification and establish their authenticity.

cumulative voting

A method of voting exclusive to multi-member district election (e.g. county board) in which each voter may cast as many votes as there are seats to be filled and may cast two or more of those votes for a single candidate.

CCOS

Central Count Optical Scan (CCOS). Paper ballot scanning system that processes marked paper ballots at a central location. CCOS systems are capable of reading marked ballots and saving cast vote records based on voter marks. Note: "Central Count Optical Scan" is a standard VVSG term that makes no assumptions about the technology used for scanning purposes. More specifically, "optical scan" may include digital scanning technology.

COTS

Commercial-off-the-shelf hardware and software products.

CVR

See *cast vote record*.

D

data accuracy

(1) Data accuracy is defined in terms of ballot position error rate. This rate applies to the voting functions and supporting equipment that capture, record, store, consolidate and report the specific selections, and absence of selections, made by the voter for each ballot position.

(2) The system's ability to process voting data absent internal errors generated by the system. It is distinguished from data integrity, which encompasses errors introduced by an outside source.

data integrity

Invulnerability of the system to accidental intervention or deliberate, fraudulent manipulation that would result in errors in the processing of data. It is distinguished from data accuracy that encompasses internal, system-generated errors.

decertification

Revocation of national or state certification of voting system hardware and software.

decryption

Process of changing encrypted text into plain text.

device

Functional unit that performs its assigned tasks as an integrated whole.

digital signature

An asymmetric key operation where the private key is used to digitally sign an electronic document and the public key is used to verify the signature. Digital signatures provide data authentication and integrity protection.

direct-recording electronic (DRE) voting system

An electronic voting system that utilizes electronic components for the functions of ballot presentation, vote capture, vote recording, and tabulation which are logically and physically integrated into a single unit. A DRE produces a tabulation of the voting data stored in a removable memory component and in printed hard copy.

directly verifiable

Voting system feature that allows the voter to verify at least one representation of his or her ballot with his/her own senses, not using any software or hardware intermediary. Examples include a mark-sense paper ballot and a DRE with a voter verifiable paper record feature.

disability

With respect to an individual, a disability is a physical or mental impairment that substantially limits one or more of the major life activities of such individual, with a record of such an impairment as per the definition from the Americans with Disabilities Act.

dynamic voting system software

Software that changes over time once it is installed on the voting equipment. See also voting system software.

DRE

Direct-Record Electronic. A voting system that records votes by means of a ballot display provided with mechanical or electro-optical components that can be activated by the voter; that processes data by means of a computer program; and that records voting data and ballot images in memory components. A DRE produces a tabulation of the voting data stored in a removable memory component and as printed copy.

E

EAC

Election Assistance Commission (EAC). Federal agency created by HAVA chartered with, among other things, overseeing the testing and certification of voting systems.

early voting

Voting conducted before Election Day where the voter completes the ballot in person at a county office or other designated polling place or ballot drop site prior to Election Day.

EDM

Election Data Management (EDM). Verity Election Office module used to manage data such as election types, contest information, voting logic, audio recordings, and multi-language data.

election

A formal process of selecting a person for public office or of accepting or rejecting a political proposition by voting.

election databases

Data file or set of files that contain geographic information about political subdivisions and boundaries, all contests and questions to be included in an election, and the candidates for each contest.

election day voting

Voting conducted on Election Day where the voter completes the ballot in person at a county office or other designated polling place or ballot drop site on Election Day.

election definition

Definition of the contests and questions that will appear on the ballot for a specific election.

election district

Contiguous geographic area represented by a public official who is elected by voters residing within the district boundaries. The district may cover an entire state or political subdivision, may be a portion of the state or political subdivision, or may include portions of more than one political subdivision.

election management system (EMS)

Set of processing functions and databases within a voting system that defines, develops and maintains election databases, performs election definitions and setup functions, format ballots, count votes, consolidates and report results, and maintains audit trails

election officials

The people associated with administering and conducting elections, including government personnel and poll workers.

Election Preferences Profile

A profile that retains jurisdiction-specific preferences concerning election rules and settings. The purpose of the profile is to minimize a user's need to keep re-entering data that is applicable to most of the user's elections. Information stored in an election preferences profile typically does not change frequently, and the profile is user-editable.

election programming

Process by which election officials or their designees use voting system software to logically define the ballot for a specific election.

electronic cast vote record

An electronic version of the cast vote record.

electronic voter interface

Subsystem within a voting system which communicates ballot information to a voter in video, audio or other alternative format which allows the voter to select candidates and issues by means of vocalization or physical actions

electronic voting machine

Any system that utilizes an electronic component. Term is generally used to refer to Direct-Record Electronics (DREs). See also voting equipment, voting system.

electronic voting system

An electronic voting system is one or more integrated devices that utilize an electronic component for one or more of the following functions: ballot presentation, vote capture, vote recording, and tabulation. A DRE is a functionally and physically integrated electronic voting system which provides all four functions electronically in a single device. An optical scan (also known as mark-sense) system where the voter marks a paper ballot with a marking instrument and then deposits the ballot in a tabulation device is partially electronic in that the paper ballot provides the presentation, vote capture and vote recording functions. An optical scan system employing a ballot marking device adds a second electronic component for ballot presentation and vote capture functions.

EMS

Election management system (EMS). Appendix A – Glossary of VVSG 1.1 defines an election management system as "[a] set of processing functions and databases within a voting system that defines, develops and maintains election databases, performs election definitions and setup functions, format ballots, count votes, consolidates and report results, and maintains audit trails."

encryption

Process of obscuring information by changing plain text into ciphertext for the purpose of security or privacy. See also cryptography and decryption.

error correcting code

Coding system that allows data being read or transmitted to be checked for errors and, when detected, corrects those errors.

F

Federal Information Processing Standards

Standards for federal computer systems developed by NIST. These standards are developed when there are no existing industry standards to address federal requirements for system interoperability, portability of data and software, and computer security.

firmware

Computer programming stored in programmable read-only memory thus becoming a permanent part of the computing device. It is created and tested like software.

Functional Configuration Audit (FCA)

Exhaustive verification of every system function and combination of functions cited in the vendor's documentation. The FCA verifies the accuracy and completeness of the system's Voter Manual, Operations Procedures, Maintenance Procedures, and Diagnostic Testing Procedures.

functional test

Test performed to verify or validate the accomplishment of a function or a series of functions.

G

general election

Election in which voters, regardless of party affiliation, are permitted to select candidates to fill public office and vote on ballot issues.

guidelines

See product standard.

GUI

Graphic User Interface (GUI). The human-computer interface in software applications.

H

hash

Algorithm that maps a bit string of arbitrary length to a fixed-length bit string.

hash function

A function that maps a bit string of arbitrary length to a fixed length bit string. Approved hash functions satisfy the following properties:

1. (One-way) It is computationally infeasible to find any input that maps to any prespecified output.

2. (Collision resistant) It is computationally infeasible to find any two distinct inputs that map to the same.

I

indirectly verifiable

Voting system feature that allows a voter to verify his or her selections via a hardware or software intermediary. An example is a touch screen DRE where the voter verifies the ballot selections through the assistance of audio stimuli.

implementation statement

Also known as implementation conformance statement, this is the statement by a vendor indicating the capabilities, features, and optional functions as well as extensions that have been implemented.

Independent Testing Authority (ITA)

Replaced by "accredited testing laboratories" and "test labs." Prior usage referred to independent testing organizations accredited by the National Association of State Election Directors (NASED) to perform voting system qualification testing.

information security

Protecting information and information systems from unauthorized access, use, disclosure, disruption, modification, or destruction in order to provide integrity, confidentiality, and availability.

inspection

Examination of a product design, product, process or installation and determination of its conformity with specific requirements or, on the basis of professional judgment, with general requirements. Inspection of a process may include inspection of staffing, facilities, technology and methodology.

integrity

Guarding against improper information modification or destruction, and ensuring information non-repudiation and authenticity.

J

JDM

Jurisdiction Data Management. Verity Election Office module used to associate politically significant geographic units with specific variable data. For Verity 1.0, JDM requirements are not defined, as any jurisdiction information relevant to a specific election will be managed through EDM.

K

key management

Activities involving the handling of cryptographic keys and other related security parameters (e.g., passwords) during the entire life cycle of the keys, including their generation, storage, establishment, entry and output, and zeroization.

L

logic and accuracy testing

Testing of the tabulator setups of a new election definition to ensure that the content correctly reflects the election being held (i.e., contests, candidates, number to be elected, ballot styles) and that all voting positions can be voted for the maximum number of eligible candidates and that results are accurately tabulated and reported.

logical correctness

Condition signifying that, for a given input, a computer program will satisfy the program specification and produce the required output.

M

mark-sense

System by which votes are recorded by means of marks made in voting response fields designated on one or both faces of a ballot card or series of cards. Mark-sense systems may use an optical scanner or similar sensor to read the ballots. Also known as optical scan.

measure register

Record that reflects the total votes cast for and against a specific ballot issue. This record is augmented as each ballot is cast on a DRE or as digital signals from the conversion of voted paper ballots are logically interpreted and recorded.

mechanical lever voting machine

Machine that directly records a voter's choices via mechanical lever-actuated controls into a counting mechanism that tallies the votes without using a physical ballot.

multi-seat contest

Contest in which multiple candidates can run, up to a specified number of seats. Voters may vote for no more than the specified number of candidates.

MRD

Market Requirements Document (MRD) articulating the market opportunity, requirements, business justification for pursuing it and the required solution to exploit it.

N

NASED

National Association of State Election Directors, (www.nased.org)

national certification testing

Examination and testing of a voting system to determine if the system complies with the performance and other requirements of the national certification standards and with its own specifications.

national certification test report

Report of results of independent testing of a voting system by an accredited test lab delivered to the EAC with a recommendation regarding granting a certification number.

NIST

National Institute of Standards and Technology (NIST)

non-partisan office

Elected office for which candidates run without political party affiliation.

nonvolatile memory

Memory in which information can be stored indefinitely with no power applied. ROMs and PROMs are examples of nonvolatile memory.

NVLAP

The National Voluntary Laboratory Accreditation Program (NVLAP) operated by NIST.

O

open primary

Primary election in which any voters can participate, regardless of their political affiliation. Some states require voters to publicly declare their choice of party ballot at the polling place, after which the poll worker provides or activates the appropriate ballot. Other states allow the voters to make their choice of party ballot within the privacy of the voting booth.

operational environment

All software, hardware (including facilities, furnishings and fixtures), materials, documentation, and the interface used by the election personnel, maintenance operator, poll worker, and voter, required for voting equipment operations.

optical scan, optical scan system

System by which votes are recorded by means of marks made in voting response fields designated on one or both faces of a ballot card or series of cards. An optical scan system reads and tabulates ballots, usually paper ballots, by scanning the ballot and interpreting the contents. Also known as mark-sense.

overvote

An overvote is an abundance of vote options over the allowed limit for the race, such as voting for two candidates in the same race. This amount is used with undervotes to determine the accuracy of voting.

P

paper-based voting system

Voting system that records votes, counts votes, and tabulates the vote count, using one or more ballot cards or paper ballots.

paper record

Paper cast vote record that can be directly verified by a voter. See also ballot image, cast vote record.

partisan office

An elected office for which candidates run as representatives of a political party.

personal assistive device

A device that is carried or worn by an individual with some physical impairment whose primary purpose is to help compensate for that impairment.

Physical Configuration Audit (PCA)

Inspection by an accredited test laboratory that compares the voting system components submitted for certification testing to the vendor's technical documentation and confirms that the documentation submitted meets the national certification requirements. Includes witnessing of the build of the executable system to ensure that the certified release is built from the tested components.

political subdivision

Any unit of government, such as counties and cities, school districts, and water and conservation districts having authority to hold elections for public offices or on ballot issues.

polling location

Physical address of a polling place.

polling place

Facility to which voters are assigned to cast in-person ballots.

precinct

Election administration division corresponding to a contiguous geographic area that is the basis for determining which contests and issues the voters legally residing in that area are eligible to vote on.

precinct count

Counting of ballots in the same precinct in which those ballots have been cast.

precinct count voting system

A voting system that tabulates ballots at the polling place. These systems typically tabulate ballots as they are cast and print the results after the close of polling. For DREs, and for some paper-based systems, these systems provide electronic storage of the vote count and may transmit results to a central location over public telecommunication networks.

precinct split

Some entities represented on the ballot do not follow precinct boundaries when determining voter eligibility. For example, half of a precinct could lay in School District A and the other half in School District B. In this case, the precinct must be split to accommodate the need to deliver different ballots to voters in each half of the precinct. In jurisdictions with multiple overlapping election entities, a precinct may need to be split multiple times.

precision

(1) Extent to which a given set of measurements of the same sample agree with their mean. Thus, precision is commonly taken to be the standard deviation estimated from sets of duplicate measurements made under conditions of repeatability, that is, independent test results obtained with the same method on identical test material, in the same laboratory or test facility, by the same operator using the same equipment within short intervals of time.

(2) Degree of refinement in measurement or specification, especially as represented by the number of digits given.

primary election

Election held to determine which candidate will represent a political party for a given office in the general election. Some states have an open primary, while others have a closed primary. Sometimes elections for nonpartisan offices and ballot issues are held during primary elections.

primary presidential delegation nomination

Primary election in which voters choose the delegates to the presidential nominating conventions allotted to their states by the national party committees.

privacy

The ability to prevent others from determining how an individual voted.

private key

The secret part of an asymmetric key pair that is typically used to digitally sign or decrypt data.

product standard

Standard that specifies requirements to be fulfilled by a product or a group of products, to establish its fitness for purpose.

provisional ballot

Ballot provided to individuals who claim they are registered and eligible to vote but whose eligibility or registration status cannot be confirmed when they present themselves to vote. Once voted, such ballots must be kept separate from other ballots and are not included in the tabulation until after the voter's eligibility is confirmed. In some jurisdictions called an affidavit ballot. See also challenged ballot.

public key

Public part of an asymmetric key pair that is typically used to verify digital signatures or encrypt data.

public network direct-recording electronic (DRE) voting system

A DRE that transmits vote counts to a central location over a public telecommunication network.

PPM

Polling Place Data Management. Verity Election Office module used to manage data such as polling place names polling place facility information. For Verity 1.0, PPM requirements are not defined, as any polling-place information relevant to a specific election will be managed through EDM. In future versions of Verity, PPM may manage data that is not election specific, such as facility information, poll workers associated with polling places, and so forth.

PRD

Product Requirements Document (this document) follows an MRD and specifies use cases, functional and non-functional requirements for a system component.

Q

qualification number

A number issued by NASED (National Association of State Election Directors) to a system that has been tested by an accredited Independent Testing Authority for compliance with the voting system standards. Issuance of a qualification number indicates that the system conforms to the national standards.

qualification test report

Report of results of independent testing of a voting system by an Independent Test Authority documenting the specific system configuration tested, the scope of tests conducted and when testing was completed.

qualification testing

Examination and testing of a voting system by a NASED-accredited Independent Test Authority to determine if the system conforms to the performance and other requirements of the national certification standards and the vendor's own specifications.

R

ranked order voting

Practice that allows voters to rank candidates in a contest in order of choice 1, 2, 3 and so on. A candidate receiving a majority of the first choice votes wins that election. If no candidate receives a majority, the last place candidate is deleted, and all ballots are counted again, with each ballot cast for the deleted candidate applied to the next 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. The practice is also known as instant runoff voting, preferences or preferential voting, or choice voting.

recall issue with options

Process that allows voters to remove elected representatives from office prior to the expiration of their terms of office. The recall may involve not only the question of whether a particular officer should be removed, but also the question of naming a successor in the event that there is an affirmative vote for the recall.

recertification

Re-examination, and possibly retesting of a voting system that was modified subsequent to receiving national and/or state certification. The object of is to determine if the system as modified still conforms to the requirements.

recount

Retabulation of the votes cast in an election.

referendum

Process whereby a state law or constitutional amendment may be referred to the voters before it goes into effect.

reproducibility

Ability to obtain the same test results by using the same test method on identical test items in different testing laboratories with different operators using different equipment.

requirement

Provision that conveys criteria to be fulfilled.

residual vote

Total number of votes that cannot be counted for a specific contest. There may be multiple reasons for residual votes (such as declining to vote for the contest, overvoting in a contest).

risk assessment

The process of identifying the risks to system security and determining the probability of occurrence, the resulting impact, and safeguards that would mitigate this impact.

runoff election

Election to select a winner following a primary or a general election, in which no candidate in the contest received the required minimum percentage of the votes cast. The two candidates receiving the most votes for the contest in question proceed to the runoff election.

S

secure receptacle

The container for storing VVPAT paper audit records.

security analysis

An inquiry into the potential existence of security flaws in a voting system. Includes an analysis of the system's software, firmware, and hardware, as well as the procedures associated with system development, deployment, operation and management.

security controls

Management, operational, and technical controls (such as safeguards or countermeasures) prescribed for an information system to protect the confidentiality, integrity, and availability of the system and its information.

semi-static voting system software

Software that may change in response to the voting equipment on which it is installed or to election-specific programming.

Smart clients

Smart clients are easily deployed and managed client applications that provide an adaptive, responsive and rich interactive experience by leveraging local resources and intelligently connecting to distributed data sources.

split precinct

A precinct that contains an election district subdivision, e.g., a water district or school board district, requiring an additional ballot configuration spoiled ballot.

Software Independent System

A voting system in which independent verification is facilitated by producing multiple records of ballot selections that can be audited to a high level of precision. At least two records of voter selections are produced with one stored such that it cannot be modified by the voting system and where the verification process for each is independent of the other and at least one of the records is verified directly by the voter.

staged election acceptance

Selectively accepting only certain portions of an election data set

state certification

State examination and possibly testing of a voting system to determine its compliance with state requirements for voting systems.

static voting system software

Software that does not change based on the election being conducted or the voting equipment upon which it is installed such as executable code for straight party voting.

symmetric (secret) encryption algorithm

Encryption algorithms using the same secret key for encryption and decryption.

system audit log

Captures system-specific information, such as operating system login or logout and operating system alerts, faults, and failures (i.e., running on battery).

T

tabulation

Process of totaling votes. See also count.

t-coil

Inductive coil used in some hearing aids to allow reception of an audio band magnetic field signal, instead of an acoustic signal. The magnetic or inductive mode of reception is commonly used in conjunction with telephones, auditorium loop systems and other systems that provide the required magnetic field output.

tabulator

Device that counts votes.

technical data package

Vendor documentation relating to the voting system required to be submitted with the system as a precondition of certification testing.

telecommunications

Transmission, between or among points specified by the user, of information of the user's choosing, without change in the form or content of the information as sent and received.

test

Technical operation that consists of the determination of one or more characteristics of a given product, process or service according to a specified procedure.

test campaign

Sum of the work by a voting system test lab on a single product or system from contract through test plan, conduct of testing for each requirement (including hardware, software, and systems), reporting, archiving, and responding to issues afterwards.

testing standard

Standard that is concerned with test methods, sometimes supplemented with other provisions related to testing, such as sampling, use of statistical methods or sequence of tests.

test method

Specified technical procedure for performing a test.

test plan

Document created prior to testing that outlines the scope and nature of testing, items to be tested, test approach, resources needed to perform testing, test tasks, risks and schedule.

touch screen voting machine

A voting machine that utilizes a computer screen to display the ballot and allows the voter to indicate his or her selections by touching designated locations on the screen.

U

undervote

Occurs when the number of choices selected by a voter in a contest is less than the maximum number allowed for that contest or when no selection is made for a single choice contest. This amount is used with overvotes to determine the accuracy of voting.

usability

Effectiveness, efficiency and satisfaction with which a specified set of users can achieve a specified set of tasks in a particular environment. Usability in the context of voting refers to voters being able to cast valid votes as they intended quickly, without errors, and with confidence that their ballot choices were recorded correctly. It also refers to the usability of the setup and operation in the polling place of voting equipment.

usability testing

Encompasses a range of methods that examine how users in the target audience actually interact with a system, in contrast to analytic techniques such as usability inspection.

V

valid vote

Vote from a ballot or ballot image that is legally acceptable according to state law

validation

Process of evaluating a system or component during or at the end of the development process to determine whether it satisfies specified requirements verification

Verity Access

Verity's Audio-Tactile Interface device.

Verity Ballot

Verity polling place ballot on demand device. Ballot provides an interface for preparing ballots for use, including configurations, internationalization, recording audio for disabilities and exporting ballots.

Verity Build

Verity ballot production software. Build allows you to review and proof elections, create ballots and generate media for running the elections.

Verity Central

Verity Central processes high volumes of paper ballot scanning to compile and send to Verity Count for tabulation and results. These results can be adjudicated within the Central application if required.

Verity Controller

Verity's polling place controlling device that provide election officials to control a daisy-chained configuration.

Verity Count

Verity vote tabulation software. Count receives, reads, aggregates and reports on election results. The system analyzes results, providing deeper details based on specified options such as the types of votes and elections.

Verity Key

Verity election crypto module.

Verity Relay

Verity election data transmission software. Relay provides remote transmission of election results through a series of sending stations connected to a receiving station. All collected results are delivered to Verity Count for faster submission and tabulation.

Verity Scan

Verity polling place scanning device. These devices scan physical printed and marked ballots for collecting and tabulating votes.

Verity Touch

Verity polling place direct recording electronics (DRE) device.

Verity Touch Writer

Verity polling place ballot marking device, with print capabilities for paper ballots.

Verity vDrive

Electronic media for transferring election definitions, election data, and cast vote records; provides an method to transfer information over an air gap between systems.

video ballot

Electronic voter interface which presents ballot information and voting instructions as video images. See also ballot.

vote for N of M

A ballot choice in which voters are allowed to vote for a specified number (“N”) of candidates in a multi-seat (“M”) contest.

voted ballot

Ballot that contains all of a voter's selections and has been cast.

voter verifiable

A voting system feature that provides the voter an opportunity to verify that his or her ballot selections are being recorded correctly, before the ballot is cast.

voter verifiable audit record

Human-readable printed record of all of a voter's selections presented to the voter to view and check for accuracy.

voting equipment

All devices, including the voting machine, used to display the ballot, accept voter selections, record voter selections, and tabulate the votes.

voting machine

The mechanical, electromechanical and electric components of a voting system that the voter uses to view the ballot, indicate their selections, verify their selections. In some instances, the voting machine also casts and tabulates the votes. See voting equipment.

voting officials

Term used to designate the group of people associated with elections, including election personnel, poll workers, ballot designers and those responsible for the installation, operation and maintenance of the voting systems.

voting position

Specific response field on a ballot where the voter indicates the selection of a candidate or ballot proposition response.

voting station

The location within a polling place where voters may record their votes. A voting station includes the area, location, booth or enclosure where voting takes place as well as the voting machine. See voting machine.

voting system

The total combination of mechanical, electromechanical or electronic equipment (including the software, firmware, and documentation required to program, control, and support the equipment) that is used to define ballots, cast and count votes, report or display election results; and to maintain and produce any audit trail information; and the practices and associated documentation used to identify system components and versions of such components; to test the system during its development and maintenance; to maintain records of system errors and defects; to determine specific system changes to be made to a system after the initial qualification of the system; and to make available any materials to the voter (such as notices, instructions, forms or paper ballots).

voting system software

All the executable code and associated configuration files needed for the proper operation of the voting system. This includes third party software such as operating systems, drivers, and database management tools. See also dynamic voting system software, semi-static voting system software, and static voting system software.

voting system testing
Examination and testing of a computerized voting system by using test methods to determine if the system complies with the requirements in the Voluntary Voting System Guidelines and with its own specifications.

voting system test laboratory

Test laboratory accredited by the National Voluntary Laboratory Accreditation Program (NVLAP) to be competent to test voting systems. When NVLAP has completed its evaluation of a test lab, the Director of NIST will forward a recommendation to the EAC for the completion of the accreditation process.

VSTL

Voting System Test Laboratory. Independent non-federal test laboratory accredited by the Election Assistance Commission and qualified to test voting systems to approved voting system standards.

VVPAT

Voter-Verifiable Paper Audit Trail. Human-readable printed record of all voter selections presented to the voter to review and check for accuracy.

VVSG

Voluntary Voting System Guidelines. Standards created by the National Institute of Science and Technology and used by the EAC to test and certify voting systems.

W

write-in voting

To make a selection of an individual not listed on the ballot. In some jurisdictions, voters may do this by using a marking device to physically write their choice on the ballot or they may use a keypad, touch screen or other electronic means to enter the name.

WYSIWYG

What You See Is What You Get. Term used to describe a visual method of rendering ballot styles, to see an accurate representation of how ballots are laid out. As used in Verity PRDs, WYSIWYG refers to rendering only, and not to edit functions.

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