Voting Systems Upgrades or New Installations – Best Practices

DE Reference Guide 0022 (Updated 20230808)

These guidelines are for reference only. They are not to be construed as legal advice or representation. For any particular set of facts or circumstances, refer to the applicable state, federal law, and case law, and/or consult a private attorney before drawing any legal conclusions or relying upon this information.

As of 2008, a vendor must notify the State once an upgrade contract for the certified voting system is executed by a county and the vendor. The notice includes an affidavit with installation disks for verification. The Division then verifies the disk(s) for the respective county to ensure that they match the system that was certified by the Secretary of State. When determined to be correct, the installation disks are distributed directly to the county. For purposes of local voting system installation or upgrades, the Division of Elections' Bureau of Voting Systems Certification (BVSC) offers the following guidelines and best practices:

PHYSICAL INVENTORY

Conduct a physical inventory of each piece of equipment to ensure that it is the proper version and that it is complete.

- Perform a complete physical audit of each individual machine, including make, model, serial number, and firmware and software versions.
- Record this data for each piece of equipment.
- Check the data against the voting system's Certificate and the vendor's documentation.
- Document any discrepancies and double-check to ensure that they are resolved before accepting the system.

RESPONSIBILITY FOR INSTALLATION

If the voting system vendor uses a subcontractor or other third party to install or upgrade any item certified for use with the voting system and/or to perform training regarding the use of the system, the vendor is ultimately responsible.

- The vendor's representative should be knowledgeable about the system and responsive to questions or complaints you have about the conduct or activities of anyone working under their support or supervision, regardless of whether they are direct employees or subcontractor personnel.

MEDIA CONTENT

Be knowledgeable of media content used on any voting system component.

- Scan media (e.g., CD, DVD, USB thumb drives, external hard drives, CF cards, SD cards, etc.) for malware.
- Scan media only on a known "clean" computer that is not connected to the Internet or at least not while the scanning is being performed.
- Use the most recent version of a commercial malware scanning software, with the most recent signature updates.
- Do not install or allow any software or firmware to be installed that has not been approved by and received from BVSC.
- Monitor and witness all vendor or third-party activities. Staff should be trained to understand the activities being performed by the vendor or third-party personnel. During all software and firmware installations, ensure that the installer is following the procedures as written in the vendor documentation received on the installation disks from BVSC.

SOFTWARE AND FIRMWARE UPDATES

Make sure that all appropriate updates are completed so that your county's systems have the latest approved versions of all software and firmware.

- It is vital that all approved security patches and Engineering Change Orders (ECO) are installed and configured properly. Equipment should be tested thoroughly to ensure that updates are installed and functioning as they should be.
- Counties should contact their vendor or BVSC to ensure that they have the most up to date approved versions of all software and firmware if they are unsure or have questions regarding the system version in use in their county.

FUNCTIONAL TESTING

Conduct functional testing on each piece of equipment to ensure that it is working properly.

- Functional testing should include every selection on every menu and all options on at least a subset of the equipment, even if these selections are not normally used.
- Test all functions the equipment will perform at any time throughout the election cycle.

END-TO-END SYSTEMS TESTING

- Perform end-to-end systems testing to ensure that the various parts of the system work together and can communicate properly.
- Before final acceptance, all equipment should undergo "end-to-end testing." This should be like a full 100% Logic & Accuracy test and should include at least the following items:
  o Create an election, including creating ballots and burning media, for tabulators and ADA accessible equipment for a minimum of the following voting groups: Early Voting, Election Day, and Vote-By-Mail. If installing a new system and the jurisdictions (districts, precincts, etc.) have not been created, a representative sampling of jurisdictions may be used for this testing if creating all the county's jurisdictions would take an inordinate amount of time.
  o Mark a test desk and scan the marked ballots through the tabulators.
  o Gather the election results using every method that you normally use in an election. These methods could include direct upload from the election media, transmission via landline modem, transmission via wireless cellular modem, and transmission via LAN (for Central Count tabulators).
  o Compare the elections results to expected, pre-determined results and identify/resolve discrepancies, if applicable.
  o Create and upload results in XML format to the Division of Elections (both Election Night Reporting and 30-Day Precinct Reporting).
  o Ensure/Verify that whatever means the county uses to publicly display election results on Election Night functions as expected.
  o Create an election backup and restore the backup to the system.

TRAINING

- Conduct training to encompass the end-to-end operation of the system, as well as the details of operations for each individual type of equipment.
- Train using the county's new equipment, not just by viewing slideshows and/or reviewing handouts.
- Ensure enough supplies exist for everyone being trained and for multiple run-throughs of each training session, e.g., tabulator paper, ballot stock, elections media.
- Cover problem troubleshooting and resolution, not just normal operation.
- If possible, include poll workers (especially precinct clerks or equipment technicians) in the training for the equipment they will be using during an election.

- If the training is, or can be, divided into sections, ask poll workers to attend training on the operations of the equipment they will be using during an election.

VOTING SYSTEM ACQUISITION FORMS (VSAR)

After testing for your county's system and/or equipment upgrade or new voting system has been completed be sure to send updated Voting System Acquisition Forms (VSAR) to BVSC to be kept on file at the Division of Elections. The forms specific to your voting system version are sent to the counties along with the installation disks.

CONTACT

If you have any questions, please feel free to contact the Division's Bureau of Voting Systems Certification:
Phone Number: 850.245.6220
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