



# Wisconsin Elections Commission

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**DATE:** For the September 7, 2023, Commission Meeting

**TO:** Members, Wisconsin Elections Commission

**FROM:** Meagan Wolfe, Administrator

**SUBJECT: Clear Ballot Group  
Petition for Approval of Electronic Voting System: ClearVote 2.3**

## **Introduction**

Clear Ballot Group (CBG) is requesting approval from the Wisconsin Elections Commission (WEC or Commission) for the ClearVote 2.3 voting system. This approval will allow for the sale and use of this system in the State of Wisconsin. No electronic voting equipment may be offered for sale or utilized in Wisconsin unless first approved by the WEC based upon the certification requirements laid out in Wis Stat. § 5.91 (Appendix A). The WEC has also adopted administrative rules further clarifying the testing and approval processes in Wis. Admin Code Ch. EL 7 (Appendix B).

## **ClearVote 2.3**

ClearVote 2.3 is a federally tested and certified paper-based, digital scan voting system. It consists of the following components:

<b>Component</b>	<b>Function</b>
ClearDesign (Election Management System)	Election management software application that provides ballot design, ballot proofing, ballot production, and generation of voting machine election definition file packages.
ClearCount	A central, high-speed optical scan ballot tabulator coupled with ballot processing applications.
ClearCast	A precinct count optical scan tabulator.
ClearAccess	An accessible touchscreen ballot marking device.

Additional information on system updates and components can be found in the United States Election Assistance Commission's (U.S. EAC or EAC) Scope of Certification document, which is attached to this report as Appendix C.

*Wisconsin Elections Commissioners*

Don M. Millis, chair | Marge Bostelmann | Joseph Czarnecki | Ann S. Jacobs | Robert Spindell | Mark L. Thomsen

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*Administrator*  
Meagan Wolfe

## **Recommendation**

WEC staff is recommending approval of ClearVote 2.3 for sale and use in Wisconsin. Detailed recommendations are listed on pages 12 and 13 following further analysis of the functional testing performed by staff to analyze the voting system under consideration.

## **Application Background**

On February 3, 2023, WEC staff received an Application for Approval of Electronic Voting System for ClearVote 2.3. CBG submitted complete specifications for hardware, firmware, and software related to the voting system. Also included with the submission were technical manuals, documentation, and user manuals necessary for the operation of the system components.

## **System Overview**

The Voting System Test Laboratory (VSTL) responsible for testing ClearVote 2.3, Pro V&V, is based in Huntsville, AL and is one of two test labs currently accredited by the EAC to conduct voting system testing. Pro V&V conducted testing throughout 2022 and issued both their final test report and recommendation for EAC certification on October 17, 2022. ClearVote 2.3's EAC Certification Number is CBG-CV-23.

Following VSTL testing, the EAC issued a Certificate of Conformance and an accompanying Scope of Certification document for this voting system on October 31, 2022. These documents signify that the system has been tested in accordance with current federal certification standards for electronic voting systems and that the system has met or exceeded those standards.

WEC staff conducted state-level certification testing for ClearVote 2.3 in the WEC office from July 31 to August 2, 2023. This period included functional testing, which requires all components of the system to correctly process three mock elections, a meeting of the Wisconsin Voting Equipment Review Panel, which is a body of local election officials and third-party advocates, and a public demonstration of the system.

## **ClearCast**

ClearCast is a digital scan paper ballot tabulator designed for polling place use. This component is compatible with hand-marked paper ballots or with ballots marked by the ClearAccess system. The tabulator uses high speed, high-resolution, commercial scanners to simultaneously image the front and back of the ballot. While CBG recommends that a voter use black ink when marking a ballot, other colors will be read appropriately. This was confirmed both by the VSTL and in WEC in-office functional testing by including ballots marked in black, green, red, and blue ink in the test decks.

When a ballot is inserted into a ClearCast unit, both sides of the ballot are scanned and an image of each side is saved. The unit will interpret voter



marks on the ballot and a variety of feedback screens will be displayed to the voter, ranging from a confirmation that the ballot was accepted to a warning that any ballots containing crossover votes or overvoted contests may lead to the voter's choices not being counted. In these instances, the voter will have the opportunity to have the ballot returned to them for further review or to cast the ballot as they originally marked it. A sample of these voter information screens has been included with this report and can be found in Appendix D.

After a ballot is accepted, the ClearCast unit deposits it into a secure storage receptacle. Purchasing jurisdictions have two options for ballot storage, a collapsible ballot bin or a larger, hard-shell storage case with wheels in which the device is stored and set up at the polling place. ClearCast includes an internal thermal printer for the printing of the zero reports, log reports, polling place and precinct totals as well as an optional write-in report. The ballot images and election results are stored on a removable USB flash drive. This storage drive may be taken to the municipal clerk's office or other central office where the ballot images and election results may be uploaded into an election results management program or transferred to another memory device or machine to facilitate storage. After the election is complete and the memory device is removed, ClearCast does not store any images or data in its internal memory. There is no modem or results transmission component in ClearCast or any other component of this voting system.

## **ClearCount**

ClearCount is a high-speed, optical scan ballot tabulator coupled with ballot processing applications designed for use at central count locations. ClearCount software runs on unmodified COTS laptop or desktop computers running the Windows 10 or Ubuntu Linux operating system and supports specific models of Fujitsu scanners. Throughput capabilities are dependent upon the model of scanner implemented.

All components of the ClearCount system are unmodified commercial off the shelf (COTS) components that are connected via a wired, closed, and isolated network which is not connected to any other systems or the Internet. All files that make up the ClearCount system reside on a single scan server that is shared by a municipality's scan stations. The only software programs installed on the scan stations are the Windows or Linux operating system.

ClearCount also includes software features that support central count tabulation, election results consolidation, and election results reporting. This system also includes ballot and vote adjudication features that allow for the review of each ballot cast on the ClearVote 2.3 system. As with the ClearCast unit, all ballots that are tabulated on the ClearCount unit are scanned on both sides and images of both sides are saved. Ballot images are reviewed by ClearCount based on election definitions created in the EMS and a report is available that indicates how votes on each ballot were counted. Election officials are also able to adjudicate and reconcile problematic ballots by closely evaluating individual errant marks, overvotes, and crossover votes. ClearCount results can be printed or exported in a variety of formats.

## ClearAccess



ClearAccess is an accessible touchscreen ballot marking device (BMD) primarily designed for use by voters who have visual, auditory, or physical limitations or disabilities. ClearAccess components include a touchscreen computer, a printer, and an uninterruptible power supply. All components may be implemented in a single wheeled case that can function both as storage and as a voting station at the polling place.

ClearAccess printers create paper ballots that can be scanned and tabulated by ClearCast and ClearCount. Like other components of the ClearVote 2.3 voting system, ClearAccess uses unmodified, COTS hardware such as laptop and desktop computers, combined with personal assistive devices and printers, to form a ballot marking device.

An election inspector must assist the voter to access the correct ballot style for the election. Once that has been completed, the voter is left to navigate the ballot and cast their votes privately. There are a variety of ways a voter may navigate their ballot and mark their selections, including the touchscreen itself or accessible input devices such as a tactile keypad or a sip-and-puff device. Instructions that guide the voter through the process appear on the screen as text or can be accessed via the audio ballot function. Voters have the option to adjust the text display contrast and text size to suit their preferences.

Each button on the tactile keypad has both Braille and printed text labels designed to indicate function and a related shape to help the voter determine its use. Voters may also use headphones to access the audio ballot function that provides a recording of the ballot instructions and lists candidates and options for each contest. The volume and tempo of this audio recording may also be adjusted to match the voter's preference.

ClearAccess provides a ballot summary screen on which voters can review their selections and return to any contest or referendum question to confirm or change their choice. Once the voter confirms their selections, they are printed on blank ballot stock via the attached printer. The voter will then have a final opportunity to review the marked ballot before it is processed on a ClearCast/ClearCount device or deposited into a secure ballot box to be hand tabulated by election inspectors.

As the ClearAccess printer uses the same ballot stock as the hand-marked paper ballots being used in the polling place, the ballots marked by this device are virtually indistinguishable from hand-marked ballots. After the voter completes this process, the paper ballot is the only record of the voting selections made. ClearAccess does not save any vote or ballot information to its internal memory.

## **ClearDesign**

ClearDesign is an Election Management System (EMS) consisting of an interactive set of applications which are responsible for all activities for preparing, defining, and managing elections. This includes ballot design, proofing, layout, and production. The ClearDesign system consists of the following COTS components:

- DesignServer: a laptop or desktop computer running Ubuntu with the ClearDesign software and hosting the election database.
- DesignStation: one or more laptops or desktops running Windows used to connect to the DesignServer. A user with administrative rights is able to define users and manage elections.
- Network switch: used to connect the DesignStation to the DesignServer using a wired, closed Ethernet-based network.

As the EMS is an integral part of election administration in any electronic voting system, there are security requirements for the client/workstation to which counties and vendors must adhere. The EMS client is required to be deployed on a hardened and air-gapped system, meaning that all software not essential to the proper function of the EMS has been removed and access to the Internet has been restricted. Removing superfluous software and other applications increases the overall security of the system by removing potential access points.

## **Functional Testing**

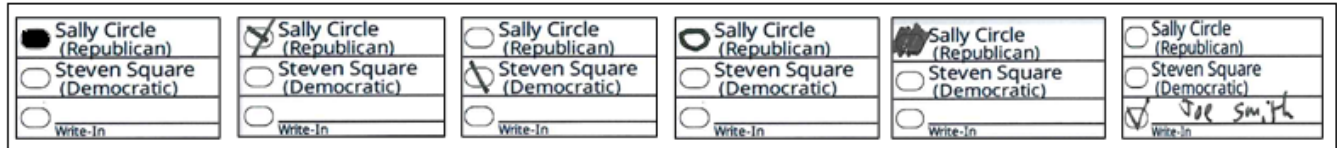
As required by Wis. Admin. Code EL § 7.02(1), WEC staff conducted three mock elections with each component of ClearVote 2.3 to ensure the voting system conforms to all Wisconsin-specific requirements. As in every certification, these mock elections included a partisan primary with a special nonpartisan school board election, a general election with both a presidential and special gubernatorial contest, and a presidential preference vote combined with nonpartisan offices and a special partisan contest.

Staff prepared a series of test decks by marking 1,200 ballots with various configurations of votes, e.g., valid votes, overvotes, crossover votes, etc., across all three mock elections to verify the accuracy and functional capabilities of ClearVote 2.3. Using blank ballot stock provided by CBG, WEC staff utilized a predetermined results set to hand mark 300 ballots for each of the three mock elections. Additionally, 100 ClearAccess ballots were marked in each mock election, bringing the base total for each to 400 ballots. All 400 ballots for each mock election were tabulated via ClearCast and ClearCount. In all cases, staff ensured the results produced by each hardware component matched the predetermined results sets before transitioning to the next mock election.

To ensure the equipment in this voting system is compatible with Wisconsin election law and able to process a variety of marks, the test ballots for each mock election included several ballots purposefully marked in ways not typically recommended by the vendor. In all cases where ballots were intentionally marked with overvotes, all tabulation equipment in this system was able to consistently identify those issues and no overvoted choices were counted. The same was true for crossover votes, which require a

voter to vote in multiple primaries/cross party lines and are only possible in the mock partisan primary and presidential preference elections. Additionally, each mock election has two separate ballot styles, one of which includes a special contest or referendum question and one that does not. Including two separate styles assesses the ability to program multiple election definitions on each piece of equipment and to produce accurate results. In all instances, the equipment accurately tabulated votes between the separate ballot styles.

Test decks were also marked to determine exactly what constitutes a readable mark by each piece of tabulation equipment in this voting system. A subset of ballots for each mock election included “special marks,” shown here:



The first column shows a “typical” mark, i.e., a completed oval. This is the most common way a voter will mark a ballot. The following columns show a selection of ambiguous marks, which include less-common ways a voter may complete an oval to indicate their choices. Per CBG, marks are recognized when at least 20% of the voter target area (the oval) is marked anywhere inside the oval. Each piece of tabulation equipment in this voting system was able to identify the ambiguous marks as valid choices in all three mock elections.

Every voting equipment vendor recommends a specific type of marking device that should be used to complete a ballot. CBG recommends black ink. Staff used black ink to mark most ballots in each test deck, but also included a variety of other marking devices to ensure the system was capable of tabulating votes marked with green ink, red ink, blue ink, and pencil. While past testing has resulted in issues with ballots marked in specific shades of red and green ink, no such discrepancies were found in this round of testing and the tabulation equipment functioned as expected.

Staff also included several ballots with folds and tears. In some cases, a torn ballot may not be read correctly by tabulation equipment. However, this is more common in instances where the tear goes through the timing marks that surround the outside of the ballot. Folded ballots are included to replicate (as closely as possible) an absentee ballot that will be processed either at the polling place or a central count location. Vendors recommend that all absentee ballots be scored in specific places on the ballot to avoid the potential of a particularly heavy crease reading as a “false positive” vote if the crease goes directly through an oval. Staff folded several test ballots to purposefully place the creases through ovals and no such false positive votes or overvotes were read by the tabulation equipment.

As previously mentioned, ClearVote 2.3 does not include a results transmission component. As such, no additional remote telecommunication testing was necessary in the evaluation of this voting system.

### **Testing Anomalies**

Staff did not experience any anomalies during functional testing of the three mock elections. However, a member of the Voting Equipment Review Panel was able to successfully insert two ballots into a ClearCast unit at the same time without issue. Members of WEC staff were able to recreate this multiple

times. Feeding two ballots at the same time requires both to be flush and inserted perfectly so as to resemble a single ballot. This is not an issue that a voter would encounter in the polling place as there are multiple steps poll workers follow to ensure a voter is issued only one ballot and additionally ensuring only one ballot is inserted in the tabulator at a time, but it does present an opportunity for additional training for election inspectors processing absentee ballots during an election.

### **Wisconsin Elections Commission Voting Equipment Review Panel**

To solicit valuable feedback from local election officials and community advocates, the WEC formed the Voting Equipment Review Panel. In accordance with Wis. Admin Code EL § 7.02(2), this panel includes municipal and county clerks, representatives of the disability community, and other advocates for the interest of the voting public.

Members of this panel attended the meeting both in person and virtually via Zoom. The meeting took place at the WEC office in Madison on August 3, 2023, from 2:00 p.m. to 3:30 p.m. CBG representatives provided a demonstration of ClearVote 2.3, and attendees were encouraged to test the equipment themselves by marking ballots and interacting with all the hardware components under consideration. Comments and feedback from the Voting Equipment Review Panel are included as Appendix G.

### **Public Demonstration**

Following the Voting Equipment Review Panel, a public demonstration was held on August 3, 2023, from 4:00 p.m. to 5:00 p.m. This demonstration was appropriately noticed as a public meeting and was held in person in the WEC offices with CBG representatives available to answer questions and guide attendees through the functionality of the equipment. There were no attendees.

### **Statutory Compliance**

Wis. Stat. § 5.91 provides the following requirements voting systems must meet to be approved for use in Wisconsin. Additionally, voting systems must comply with standards set by the Help America Vote Act of 2002 (HAVA). Please see below for each requirement and staff's analysis of ClearVote 2.3's compliance with the standards.

<b>Wis. Stat. § 5.91(1)</b>
The voting system enables an elector to vote in secret.
<b>Staff Analysis</b>
ClearVote 2.3 meets this requirement by allowing a voter to vote a paper ballot in the privacy of a voting booth or at the accessible voting station without assistance (following the activation of the correct ballot style by an election inspector).

<b>Wis. Stat. § 5.91(3)</b>
The voting system enables the elector, for all elections, except primary elections, to vote for a ticket selected in part from the nominees of one party, and in part from nominees from other parties and write-in candidates

**Staff Analysis**

ClearVote 2.3 allows voters to split their ballot among as many parties as they wish during any election that is not a partisan primary.

**Wis. Stat. § 5.91(4)**

The voting system enables an elector to vote for a ticket of his or her own selection for any person for any office for whom he or she may desire to vote whenever write-in votes are permitted.

**Staff Analysis**

ClearVote 2.3 allows write-ins where permitted.

**Wis. Stat. § 5.91(5)**

The voting systems accommodate all referenda to be submitted to electors in the form provided by law.

**Staff Analysis**

ClearVote 2.3 meets this requirement. Referenda included as part of testing were accurately tabulated by all ClearVote 2.3 components.

**Wis. Stat. § 5.91(6)**

The voting system permits an elector in a primary election to vote for the candidates of the recognized political party of his or her choice, and the system rejects any ballot on which votes are cast in the primary of more than one recognized political party, except where a party designation is made or where an elector casts write-in votes for candidates of more than one party on a ballot that is distributed to the elector.

**Staff Analysis**

Components of ClearVote 2.3 can be configured to always reject crossover votes without providing an opportunity for the voter to override. The system can also be programmed to provide a warning screen to the voter that identifies any contest with crossover votes. Either of these programming options allows this system to meet this requirement.

The warning screen gives the elector the option to either cast the ballot without correcting the crossover vote or to have the ballot returned to them for further review and correction. The use of the override function was previously prohibited by statute, but Wis. Stats. §5.85(2)(b) expressly allows for the optional use of the override function in event of an overvote. As in past certifications, WEC has applied the same standard to the use of the override function in the event of crossover vote.

**Wis. Stat. § 5.91(7)**

The voting system enables the elector to vote at an election for all persons and offices for whom and for which the elector is lawfully entitled to vote; to vote for as many persons for an office as the elector is entitled to vote for; to vote for or against any question upon which the elector is entitled to vote; and it rejects all choices recorded on a ballot for an office or a measure if the number of choices exceeds the number



which an elector is entitled to vote for on such office or on such measure, except where an elector casts excess write-in votes upon a ballot that is distributed to the elector.

**Staff Analysis**

Components of ClearVote 2.3 can be configured to always reject overvotes without providing an opportunity for the voter to override or to provide a warning screen to the voter that identifies any overvoted contests/referendum questions. Either of these programming options allows this system to meet this requirement.

The warning screen gives the elector the option to either cast the ballot without correcting the overvote or to have the ballot returned to them for further review and correction. The use of the override function was previously prohibited by statute, but Wis. Stats. §5.85(2)(b) expressly allows for the optional use of the override function in event of an overvote.

**Wis. Stat. § 5.91(8)**

The voting system permits an elector at a General Election by one action to vote for the candidates of a party for President and Vice President or for Governor and Lieutenant Governor.

**Staff Analysis**

ClearVote 2.3 meets this requirement by placing Presidential or Gubernatorial candidates and their respective running mates within the same contest as a single choice. This applies to either hand-marked paper ballots or ballots marked on a BMD.

**Wis. Stat. § 5.91(9)**

The voting system prevents an elector from voting for the same person more than once, except for excess write-in votes upon a ballot that is distributed to the elector.

**Staff Analysis**

ClearVote 2.3 meets this requirement.

**Wis. Stat. § 5.91(10)**

The voting system is suitably designed for the purpose used, of durable construction, and is usable safely, securely, efficiently, and accurately in the conduct of elections and counting of ballots.

**Staff Analysis**

ClearVote 2.3 meets this requirement.

**Wis. Stat. § 5.91(11)**

The voting system records and counts accurately every vote and maintains a cumulative tally of the total votes cast that is retrievable in the event of a power outage, evacuation or malfunction so that the records of votes cast prior to the time that the problem occurs is preserved.

**Staff Analysis**

ClearVote 2.3 meets this requirement.

**Wis. Stat. § 5.91(12)**

The voting system minimizes the possibility of disenfranchisement of electors as the result of failure to understand the method of operation or utilization or malfunction of the ballot, voting system, or other related equipment or materials.

**Staff Analysis**

ClearVote 2.3 can be programmed to provide warning screens to the voter that identify any problem with their ballot. The warning screens provide an explanation of the problem and allow the voter to have their ballot returned to them to review and correct the error. The systems can be configured to always reject overvotes and crossover votes without providing an opportunity for the voter to override. The language on the warning screens can be customized to a format prescribed by the WEC.

**Wis. Stat. § 5.91(13)**

The automatic tabulating equipment authorized for use in connection with the system includes a mechanism which makes the operator aware of whether the equipment is malfunctioning in such a way that an inaccurate tabulation of the votes could be obtained.

**Staff Analysis**

ClearVote 2.3 meets this requirement.

**Wis. Stat. § 5.91(14)**

The voting system does not use any mechanism by which a ballot is punched or punctured to record the votes cast by an elector.

**Staff Analysis**

No component of ClearVote 2.3 uses any such mechanism to record votes.

**Wis. Stat. § 5.91(15)**

The voting system permits an elector to privately verify the votes selected by the elector before casting his or her ballot.

**Staff Analysis**

ClearVote 2.3 meets this requirement by offering hand-marked paper ballots or accessible voting equipment that provides both an electronic ballot review screen and a marked paper ballot that can be further reviewed before tabulation.

**Wis. Stat. § 5.91(16)**

The voting system provides an elector the opportunity to change his or her votes and to correct any error or to obtain a replacement for a spoiled ballot prior to casting his or her ballot.

**Staff Analysis**

ClearVote 2.3 meets this requirement. Hand-marked paper ballots can be changed and/or spoiled at any point up to being placed in the tabulator. Ballots marked on a ClearAccess unit are printed for the voter to review prior to casting in a tabulator and can be spoiled at will by the voter. Per Wis. Stat. § 6.80(2)(c), an elector may spoil up to two ballots and cannot be issued more than three ballots in total.

**Wis. Stat. § 5.91(17)**

Unless the ballot is counted at a central counting location, the voting system includes a mechanism for notifying an elector who attempts to cast an excess number of votes for a single office the ballot will not be counted and provides the elector with an opportunity to correct his or her ballot or to receive a replacement ballot.

**Staff Analysis**

ClearVote 2.3 meets this requirement by including an option to have a voter's ballot returned for review/correction when overvotes are detected.

**Wis. Stat. § 5.91(18)**

If the voting system consists of an electronic voting machine, the voting system generates a complete, permanent paper record showing all votes cast by the elector, that is verifiable by the elector, by either visual or nonvisual means as appropriate, before the elector leaves the voting area, and that enables a manual count or recount of each vote cast by the elector.

**Staff Analysis**

ClearVote 2.3 meets this requirement.

The Help America Vote Act of 2002 (HAVA) also provides the following applicable requirements that voting systems must meet:

**HAVA § 301(a)(1)(A)**

The voting system shall:

- (i) permit the voter to verify (in a private and independent manner) the votes selected by the voter on the ballot before the ballot is cast and counted;
- (ii) provide the voter with the opportunity (in a private and independent manner) to change the ballot or correct any error before the ballot is cast and counted (including the opportunity to correct the error through the issuance of a replacement ballot if the voter was otherwise unable to change the ballot or correct any error); and
- (iii) if the voter selects votes for more than one candidate for a single office –
  - (I) notify the voter that the voter has selected more than one candidate for a single office on the ballot;
  - (II) notify the voter before the ballot is cast and counted of the effect of casting multiple votes for the office; and,
  - (III) provide the voter with the opportunity to correct the ballot before the ballot is cast and counted.

**HAVA § 301(a)(1)(C)**

The voting system shall ensure that any notification required under this paragraph preserves the privacy of the voter and the confidentiality of the ballot.

**HAVA § 301(a)(3)(A)**

The voting system shall—

(A) be accessible for individuals with disabilities, including nonvisual accessibility for the blind and visually impaired, in a manner that provides the same opportunity for access and participation (including privacy and independence) as other voters
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<b>Staff Analysis</b>
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ClearVote 2.3 meets these requirements.
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## **Recommendations**

Staff has reviewed the application materials, including the technical data package and VSTL test report, and examined the results from the functional test campaign to determine if this system is compliant with both state and federal certification laws. ClearVote 2.3 complies with all applicable state and federal requirements. The components of this voting system met all standards over three mock elections and staff determined they can successfully run a transparent, fair, and secure election in compliance with Wisconsin Statutes. The system also enhances access to the electoral process for individuals with disabilities with the inclusion of the ClearAccess ballot marking device.

1. WEC staff recommends approval of Clear Ballot Group's ClearVote 2.3 voting system and the components of this system, set forth in Appendix C. This voting system accurately completed the three mock elections and was able to accommodate the voting requirements of the Wisconsin election process.
2. WEC staff recommends that as a continuing condition of the WEC's approval, Clear Ballot Group may not impose customer deadlines contrary to requirements provided in Wisconsin Statutes, as determined by the WEC. In order to enforce this provision, local jurisdictions purchasing Clear Ballot Group equipment shall also include such a provision in their respective purchase contract or amend their contract if such a provision does not currently exist.
3. WEC staff recommends that as a continuing condition of the WEC's approval, that voting systems purchased and installed as part of ClearVote 2.3 be configured in the same manner in which they were tested, subject to verification by the Commission or its designee. Once installed, the configuration must remain the same and may not be altered by Clear Ballot Group, nor by state, county, or municipal officials except as approved by the Commission.
4. WEC staff recommends that election inspectors continue to check both the write-in bin, where applicable, and main ballot bin for validly cast write-in votes after the close of polls in each election, and not rely upon the optional write-in report.
5. WEC staff recommends that any absentee ballot returned by the tabulation equipment with an overvote or crossover vote notification must be reviewed by election inspectors prior to being overridden or remade. If necessary, ballots must be remade pursuant to approved procedures listed in the Election Day and Election Administration manuals and state statute.
6. WEC staff recommends that any absentee ballot returned which has been marked with non-black ink be remade by election inspectors prior to any attempt at processing on the tabulation equipment.
7. WEC staff recommends that ballots marked with ClearAccess be included as part of the pre-election public test.

8. WEC staff recommends that as a continuing condition of the WEC's approval, that this system must always be configured to include the following options:
  - a. Automatic rejection of crossover and overvoted ballots with or without the option to override.
  - b. Automatic rejection of all improper ballots except blank ballots.
  - c. Digital ballot images shall be captured for all ballots tabulated by the system.
  - d. Provide visual warning messages, utilizing Commission approved language, to voters when overvotes and crossover votes are detected.
9. Only the hardware and software versions included in this system version can be used together to conduct an election in Wisconsin. Any updates to the hardware or software included in this system must be brought before the Commission for review and approval. As part of US EAC certificate: CBG-CV-23, only equipment included in this certificate can be used together to conduct an election in Wisconsin. Previous versions that were approved for use by the Elections Commission are not compatible with the new Clear Ballot Group voting system and are not to be used together with the equipment seeking approval by the WEC, as this would void the US EAC certificate. If a jurisdiction upgrades to ClearVote 2.3, it needs to upgrade each and every component of the voting system to the requirements of what is approved herein.
10. WEC staff recommends that as a condition of approval, Clear Ballot Group shall abide by applicable Wisconsin public records laws. If, pursuant to a proper public records request, the customer receives a request for matters that might be proprietary or confidential, customer will notify Clear Ballot Group, providing the same with the opportunity to either provide customer with the record that is requested for release to the requestor, or shall advise customer that Clear Ballot Group objects to the release of the information, and provide the legal and factual basis of the objection. If for any reason, the customer concludes that customer is obligated to provide such records, Clear Ballot Group shall provide such records immediately upon customer's request. Clear Ballot Group shall negotiate and specify retention and public records production costs in writing with customers prior to charging said fees. In absence of meeting such conditions of approval, Clear Ballot Group shall not charge customer for work performed pursuant to a proper public records request, except for the "actual, necessary, and direct" charge of responding to the records request, as that is defined and interpreted in Wisconsin law, plus shipping, handling, and chain of custody.
11. The Wisconsin application for approval contains a condition that requires the vendor to reimburse the WEC for all costs associated with the testing campaign and certification process. Clear Ballot Group agreed to this requirement on the application submitted to WEC on February 3, 2023, requesting the approval of ClearVote 2.3

### **Proposed Motion**

**MOTION:** The Wisconsin Elections Commission adopts the recommendations for approval of Clear Ballot Group's Application for Approval of ClearVote 2.3 voting system in compliance with US EAC certification number CBG-CV-23, including the conditions described above.

## **Appendices**

- Appendix A: Wisconsin Statutes § 5.91
- Appendix B: Wisconsin Administrative Code Ch. EL 7
- Appendix C: US-EAC Certificate of Conformance / Scope of Certification
- Appendix D: ClearCast Voter Information Screen
- Appendix E: Wisconsin Voting Equipment Review Panel Feedback

## **Appendix A: Wisconsin Statutes § 5.91**

**5.91 Requisites for approval of ballots, devices and equipment.** No ballot, voting device, automatic tabulating equipment, or related equipment and materials to be used in an electronic voting system may be utilized in this state unless it is certified by the commission. The commission may revoke its certification of any ballot, device, equipment, or materials at any time for cause. The commission may certify any such voting device, automatic tabulating equipment, or related equipment or materials regardless of whether any such item is approved by the federal election assistance commission, but the commission may not certify any ballot, device, equipment, or material to be used in an electronic voting system unless it fulfills the following requirements:

- (1) It enables an elector to vote in secrecy and to select the party for which an elector will vote in secrecy at a partisan primary election.
- (3) Except in primary elections, it enables an elector to vote for a ticket selected in part from the nominees of one party, and in part from the nominees of other parties, and in part from independent candidates and in part of candidates whose names are written in by the elector.
- (4) It enables an elector to vote for a ticket of his or her own selection for any person for any office for whom he or she may desire to vote whenever write-in votes are permitted.
- (5) It accommodates all referenda to be submitted to the electors in the form provided by law.
- (6) The voting device or machine permits an elector in a primary election to vote for the candidates of the recognized political party of his or her choice, and the automatic tabulating equipment or machine rejects any ballot on which votes are cast in the primary of more than one recognized political party, except where a party designation is made or where an elector casts write-in votes for candidates of more than one party on a ballot that is distributed to the elector.
- (7) It permits an elector to vote at an election for all persons and offices for whom and for which the elector is lawfully entitled to vote; to vote for as many persons for an office as the elector is entitled to vote for; to vote for or against any question upon which the elector is entitled to vote; and it rejects all choices recorded on a ballot for an office or a measure if the number of choices exceeds the number which an elector is entitled to vote for on such office or on such measure, except where an elector casts excess write-in votes upon a ballot that is distributed to the elector.
- (8) It permits an elector, at a presidential or gubernatorial election, by one action to vote for the candidates of a party for president and vice president or for governor and lieutenant governor, respectively.
- (9) It prevents an elector from voting for the same person more than once for the same office, except where an elector casts excess write-in votes upon a ballot that is distributed to the elector.
- (10) It is suitably designed for the purpose used, of durable construction, and is usable safely, securely, efficiently and accurately in the conduct of elections and counting of ballots.
- (11) It records correctly and counts accurately every vote properly cast and maintains a cumulative tally of the total votes cast that is retrievable in the event of a power outage, evacuation or malfunction so that the records of votes cast prior to the time that the problem occurs is preserved.
- (12) It minimizes the possibility of disenfranchisement of electors as the result of failure to understand the method of operation or utilization or malfunction of the ballot, voting device, automatic tabulating equipment or related equipment or materials.

**(13)** The automatic tabulating equipment authorized for use in connection with the system includes a mechanism which makes the operator aware of whether the equipment is malfunctioning in such a way that an inaccurate tabulation of the votes could be obtained.

**(14)** It does not employ any mechanism by which a ballot is punched or punctured to record the votes cast by an elector.

**(15)** It permits an elector to privately verify the votes selected by the elector before casting his or her ballot.

**(16)** It provides an elector with the opportunity to change his or her votes and to correct any error or to obtain a replacement for a spoiled ballot prior to casting his or her ballot.

**(17)** Unless the ballot is counted at a central counting location, it includes a mechanism for notifying an elector who attempts to cast an excess number of votes for a single office that his or her votes for that office will not be counted and provides the elector with an opportunity to correct his or her ballot or to receive and cast a replacement ballot.

**(18)** If the device consists of an electronic voting machine, it generates a complete, permanent paper record showing all votes cast by each elector, that is verifiable by the elector, by either visual or nonvisual means as appropriate, before the elector leaves the voting area, and that enables a manual count or recount of each vote cast by the elector.



**Appendix B: Wis. Admin. Code Ch. EL 7**

**APPROVAL OF ELECTRONIC VOTING EQUIPMENT**

**EL 7.01** Application for approval of electronic voting system.

**EL 7.02** Agency testing of electronic voting system.

**EL 7.03** Continuing approval of electronic voting system.

**Note:** Chapter EIBd 7 was renumbered chapter GAB 7 under s. 13.92 (4) (b) 1., Stats., and corrections made under s. 13.92 (4) (b) 7., Stats., [Register April 2008 No. 628](#). Chapter GAB 7 was renumbered Chapter EL 7 under s. 13.92 (4) (b) 1., Stats., [Register June 2016 No. 726](#).

**EL 7.01 Application for approval of electronic voting system.**

**(1)** An application for approval of an electronic voting system shall be accompanied by all of the following:

- (a) A signed agreement that the vendor shall pay all costs, related to approval of the system, incurred by the elections commission, its designees and the vendor.
- (b) Complete specifications for all hardware, firmware and software.
- (c) All technical manuals and documentation related to the system.
- (d) Complete instruction materials necessary for the operation of the equipment and a description of training available to users and purchasers.
- (e) Reports from an independent testing authority accredited by the national association of state election directors (NASED) demonstrating that the voting system conforms to all the standards recommended by the federal elections commission.
- (f) A signed agreement requiring that the vendor shall immediately notify the elections commission of any modification to the voting system and requiring that the vendor will not offer, for use, sale or lease, any modified voting system, if the elections commission notifies the vendor that the modifications require that the system be approved again.
- (g) A list showing all the states and municipalities in which the system has been approved for use and the length of time that the equipment has been in use in those jurisdictions.

**(2)** The commission shall determine if the application is complete and, if it is, shall so notify the vendor in writing. If it is not complete, the elections commission shall so notify the vendor and shall detail any insufficiencies.

**(3)** If the application is complete, the vendor shall prepare the voting system for three mock elections, using offices, referenda questions and candidates provided by the elections commission.

**History:** Cr. [Register, June, 2000, No. 534](#), eff. 7-1-00; **correction in (1) (a), (f),**

**(2), (3) made under s. 13.92 (4) (b) 6., Stats., Register June 2016 No. 726.**

**EL 7.02 Agency testing of electronic voting system.**

**(1)** The elections commission shall conduct a test of a voting system, submitted for approval under s. EL 7.01, to ensure that it meets the criteria set out in s. 5.91, Stats. The test shall be conducted using a mock election for the partisan primary, a mock general election with both a presidential and gubernatorial vote, and a mock nonpartisan election combined with a presidential preference vote.

**(2)** The elections commission may use a panel of local election officials and electors to assist in its review of the voting system.

**(3)** The elections commission may require that the voting system be used in an actual election as a condition of approval.

**History:** Cr. Register, June, 2000, No. 534, eff. 7-1-00; correction in (1) to (3) made under s. 13.92 (4) (b) 6., Stats., and correction in (1) made under s. 13.92 (4) (b) 7., Stats., Register June 2016 No. 726.

**EL 7.03 Continuing approval of electronic voting system.**

**(1)** The elections commission may revoke the approval of any existing electronic voting system if it does not comply with the provisions of this chapter. As a condition of maintaining the elections commission's approval for the use of the voting system, the vendor shall inform the elections commission of all changes in the hardware, firmware and software and all jurisdictions using the voting system.

**(2)** The vendor shall, at its own expense, furnish, to an agent approved by the elections commission, for placement in escrow, a copy of the programs, documentation and source code used for any election in the state.

**(3)** The electronic voting system must be capable of transferring the data contained in the system to an electronic recording medium, pursuant to the provisions of s. 7.23, Stats.

**(4)** The vendor shall ensure that election results can be exported on election night into a statewide database developed by the elections commission.

**(5)** For good cause shown, the elections commission may exempt any electronic voting system from strict compliance with this chapter.

**History:** Cr. Register, June, 2000, No. 534, eff. 7-1-00; correction in (1), (4), (5) made under s. 13.92 (4) (b) 6., Stats. and corrections in (5) made under s. 13.92 (4) (b) 7., Stats., and s. 35.17, Stats., Register June 2016 No. 726.

**Appendix C: US-EAC Certificate of Conformance / Scope of Certification**



United States Election Assistance Commission

Certificate of Conformance

**Clear Ballot ClearVote 2.3**



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

Product Name: ClearVote

Model or Version: 2.3

Name of VSTL: Pro V&V

EAC Certification Number: CBG-CV-23

Date Issued: 10/31/2022

*Executive Director*

Scope of Certification Attached

**Manufacturer:** *Clear Ballot Group*  
**System Name:** *ClearVote 2.3*  
**Certificate:** *CBG-CV-23*

**Laboratory:** *Pro V&V*  
**Standard:** *VVSG 1.0*  
**Date:** *October 31, 2022*



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## Scope of Certification

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

### Significance of EAC Certification

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

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

### Representation of EAC Certification

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

### System Overview

The ClearVote 2.3 voting system is a paper-based optical-scan voting system consisting of the following major components: ClearDesign (ballot design and EMS), ClearCount (central count, tabulation, and election reporting), ClearCast (precinct count and tabulation), and ClearAccess (accessible voting and ballot marking device).

#### ClearDesign

ClearDesign is an election management system consisting of an interactive set of applications which are responsible for all pre-voting activities necessary for defining and managing elections.

This includes ballot design, ballot proofing, ballot layout, ballot production, and generation of voting machine election definition file packages. The ClearDesign system consists of the physical components listed below. All the components are unmodified COTS that are connected via a wired, closed, and isolated network not connected to any other systems or the Internet.

- DesignServer: A laptop or desktop computer running Ubuntu with the ClearDesign software and hosting the election database.
- DesignStation(s): One or more laptops or desktops running Microsoft Windows used to connect to the DesignServer. A browser-based interface is used to perform the necessary tasks. A user with administration privileges is able to define users and manage the elections.
- Network Switch: Used to connect the DesignStations to the DesignServer using a wired, closed Ethernet-based network.

### **ClearCount**

ClearCount is a central, high-speed, optical scan ballot tabulator coupled with ballot processing applications. The ClearCount software runs on unmodified COTS laptop or desktop computers running the Microsoft Windows operating system and supports specific models of scanners.

The ClearCount central-count system running on an Ubuntu Linux operating system, with Ethernet connections to workstations running the Windows operating system, consists of the physical components listed below. All components are unmodified COTS that are connected via a wired, closed, and isolated network not connected to any other systems or the Internet.

- CountServer: An Ubuntu Linux laptop or desktop computer running the ClearCount software and hosting its election database and the web server that serves its election reports.
- ScanStation(s): One or more laptop or desktop/scanner pairs used to scan and tabulate ballots.
- Network Switch: Used to connect the ScanStations and CountStations to the CountServer using a wired, closed Ethernet-based network.
- CountStation: One or more Windows laptop or desktop computers installed with browser software, linked by a wired Ethernet connection to the CountServer using the network switch. This station can serve multiple uses: user administration, election administration, adjudication, and reporting. This station is also used to consolidate vote totals and ballot images from the ClearCast precinct tabulator. Vote totals and ballot images are consolidated by the ClearCount Software via the ClearCast USB drive.

All files that make up the ClearCount software reside on a single CountServer that is shared by all client ScanStations. The Tabulator software is executed by the ScanStations at run-time from files that reside on the CountServer. The only software programs that have to be installed on ScanStations, apart from the Windows operating system, are the Fujitsu PaperStream Capture software and drivers required by the scanner hardware. The ClearCount software consists of the following components:

- Tabulator: The Tabulator application handles ballot tabulation. The Tabulator application is stored on the CountServer, and an instance of Tabulator runs on each ScanStation. The Tabulator counts ballots and adjudicates the vote for ballots scanned on that ScanStation. Upon completion of a scanned batch of ballots, the Tabulator application sends its results

and the associated card images to the central election database on the CountServer.

- Election Database: A centralized election database that resides on the CountServer and collects the output of each Tabulator.
- Election Reports: A suite of reports that provides election results and analysis and allows election officials to review individual ballot images.
- Card Resolutions tool: A web application that allows election officials to review and appropriately resolve unreadable voted ballots. It also allows manual adjudication of automatically adjudicated ballots where officials determine changes need to be made to reflect voter intent.
- User and Election Database Management through web applications: On the User Administration dashboard, the administrator can add, rename, or delete users, assign permissions, and change user passwords. On the Election Administration dashboard, the administrator can create or delete an election, set an election as active, merge ClearCast election results, and backup or restore an election.

### **ClearCast**

The ClearCast tabulator is a precinct count ballot scanning solution suitable for early and election in-person voting, including processing ballots printed by the ClearAccess accessible ballot marking device. The ClearCast application runs on the precinct count-based tabulator, and is used to scan, count and tally marked ballots.

ClearCast functionality is divided into three essential modes: Election Mode (Early Voting and/or Election Day), which is used to process voter cast ballots; Pre-Election Mode, which occurs prior to Election Mode, and is used to test all system functionality prior to the start of the election; and Post-Election Mode, which is used to perform administrative functions following the close of the election.

### **ClearAccess**

ClearAccess is an accessible touchscreen ballot marking device (BMD) used for the creation of paper ballots that can be scanned and tabulated by ClearCast or ClearCount. The ClearAccess components of the ClearVote voting system consist of computers combined with personal assistive devices, printers, and uninterruptible power supplies to form a ballot-marking device.

## **Mark Definitions**

Twenty percent or more of the voter target (oval) marked anywhere within the oval (left/right, above, or below its center) provides mark recognition. The manufacturer recommends black ink, but many colors will tally in accordance with VVSG 1.0 accuracy requirements. There are no required dropout colors.

## **Tested Marking Devices**

The manufacturer recommends black ballpoint pens, felt tip pens, gel pens, Sharpie® markers, and number 2 pencils.

## Language Capability

In addition to English, the voting system supports Chinese, Danish, Dutch, Flemish, French, German, Italian, Japanese, Korean, Norwegian, Portuguese, Spanish, Swedish and Vietnamese.

## Components Included

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



System Component	Software or Firmware Version	Hardware Version	Operating System or COTS	Comment
ClearAccess software	2.3.0			ClearAccess
ClearCast software	2.2.9			ClearCast
ClearCast Go software	2.2.a			ClearCast Go
ClearCount software	2.3.1			ClearCount
ClearDesign software	2.3.0			ClearDesign
EloPOS driver pack	2019.12.5		COTS software	ClearAccess
Google Chrome	97.0.4692.99		COTS software	ClearAccess
jquery	1.10.2		COTS software	ClearAccess
jsmin	2019.10.30		COTS software	ClearAccess

System Component	Software or Firmware Version	Hardware Version	Operating System or COTS	Comment
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nsis	3.01		COTS software	ClearAccess
DataTables	1.10.16		COTS software	ClearAccess
pefile	2018.8.8		COTS software	ClearAccess
PyInstaller	3.2		COTS software	ClearAccess
Pyserial	3.2.1		COTS software	ClearAccess
Python	2.7.10		COTS software	ClearAccess
Python-future	0.15.2		COTS software	ClearAccess
pywin	223		COTS software	ClearAccess
webpy	0.38		COTS software	ClearAccess
Zebra CoreScanner Driver	3.07.0004		COTS software	ClearAccess
Windows 10 Pro	Build 1607		Windows 10 Pro	ClearAccess
DataTables	1.10.16		COTS software	ClearCast
chromium-browser	92.0.4515.159		COTS software	ClearCast
jquery	1.12.4		COTS software	ClearCast
jQuery.NumPad	1.4		COTS software	ClearCast
jquery.ui	1.11.3		COTS software	ClearCast
JTSage DateBox	4.0.0		COTS software	ClearCast
libScanAPI.a	2.0.0.0		COTS software	ClearCast
OpenSSL (standard)	1.0.2g		COTS software	ClearCast
OpenSSL - FIPS	2.0.10		COTS software	ClearCast
Pyinstaller	3.2.1		COTS software	ClearCast
Ubuntu	18.04.5 LTS		COTS software	ClearCast
boot_merger	1.31		COTS software	ClearCast Go
chromium-browser	92.0.4515.159		COTS software	ClearCast Go
DataTables	1.10.16		COTS software	ClearCast Go
jQuery	1.12.4		COTS software	ClearCast Go
jQuery.NumPad	1.4		COTS software	ClearCast Go
jquery.ui	1.11.3		COTS software	ClearCast Go
JTSage DateBox	4.0.0		COTS software	ClearCast Go
libScanAPI.a	1.0.0.1		COTS software	ClearCast Go
libssl	1.0_1.0.2n		COTS software	ClearCast Go
Linux kernel	5.4.52		COTS software	ClearCast Go
openssl	1.0.0_1.0.2n		COTS software	ClearCast Go
rk3399_bl31	1.35		COTS software	ClearCast Go

System Component	Software or Firmware Version	Hardware Version	Operating System or COTS	Comment
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Rk3399_dds-800MHz	1.25		COTS software	ClearCast Go
rk3399_loader	1.24.126		COTS software	ClearCast Go
Rk3399_miniloader	1.26		COTS software	ClearCast Go
rkdeveloptool	1.2		COTS software	ClearCast Go
trust_merger	1.0 (2015-06-15)		COTS software	ClearCast Go
U-boot	2020.10		COTS software	ClearCast Go
Ubuntu	18.04.6 LTS		COTS software	ClearCast Go
Apache	2.4.29		COTS software	ClearCount
auditd	2.8.2 - 1		COTS software	ClearCount
debconf	1.5.66		COTS software	ClearCount
Fujitsu fi-6400	PaperStream IP (TWAIN) 2.10.3		Windows 10 Pro	ClearCount
Fujitsu fi-6800	PaperStream IP (TWAIN) 2.10.3		Windows 10 Pro	ClearCount
Fujitsu fi-7180	PaperStream IP (TWAIN) 2.10.3		Windows 10 Pro	ClearCount
Fujitsu fi-7800	PaperStream IP (TWAIN) 2.10.3		Windows 10 Pro	ClearCount
Fujitsu fi-7900	PaperStream IP (TWAIN) 2.10.3		Windows 10 Pro	ClearCount
Google Chrome	87.0.4280.141		COTS software	ClearCount
J JavaScript jQuery-migrate library	1.2.1		COTS software	ClearCount
JavaScript Bootstrap library	2.3.2, & 4.3.1		COTS software	ClearCount
JavaScript bootstrap-vue library	2.0.2		COTS software	ClearCount
JavaScript Chosen library	1.8.7		COTS software	ClearCount
JavaScript DataTables Buttons	1.5.6		COTS software	ClearCount
JavaScript DataTables Buttons ColVis Library	1.0.8		COTS software	ClearCount
JavaScript DataTables Buttons html5 library	1.3.3		COTS software	ClearCount
JavaScript DataTables FixedHeader library	3.1.4		COTS software	ClearCount
JavaScript DataTables library	1.10.18		COTS software	ClearCount
JavaScript DataTables pdfmaker library	0.1.36		COTS software	ClearCount

System Component	Software or Firmware Version	Hardware Version	Operating System or COTS	Comment
JavaScript jQuery hotkeys library	0.8		COTS software	ClearCount
JavaScript jQuery library	1.10.2J		COTS software	ClearCount
JavaScript jQuery splliter library	0.28.3		COTS software	ClearCount
JavaScript jQuery tooltip library	1.3		COTS software	ClearCount
JavaScript vue library	2.6.10		COTS software	ClearCount
libapache2-mod-fcgid	2.3.9-1		COTS software	ClearCount
MySQLdb (part of Ubuntu)	5.7.31		COTS software	ClearCount
OpenSSL (standard)	1.1.1		COTS software	ClearCount
OpenSSL FIPS Object Module	2.0.10		COTS software	ClearCount
pmount	0.9.23		COTS software	ClearCount
PollyReports	1.7.6		COTS software	ClearCount
PyInstaller	3.2.1		COTS software	ClearCount
Python (part of Ubuntu)	2.7.15~rc1-1		COTS software	ClearCount
Python-dateutil	2.8.1		COTS software	ClearCount
Samba	4.7.6		COTS software	ClearCount
Six	1.15.0		COTS software	ClearCount
sqlalchemy	1.3.4		COTS software	ClearCount
Ubuntu	18.04.5 LTS		COTS software	ClearCount
udisks	2.7.6		COTS software	ClearCount
Windows 10 Pro	Build 1607		Windows 10 Pro	ClearCount
Apache	2.4.29		COTS software	ClearDesign
Bootstrap	3.0.0		COTS software	ClearDesign
DataTable	1.10.16		COTS software	ClearDesign
DataTable Buttons	1.4.2		COTS software	ClearDesign
DataTable Buttons JSZip	2.5.0		COTS software	ClearDesign
DataTable Buttons Pdfmake	0.1.32		COTS software	ClearDesign
DataTablePlugins	1.10.16		COTS software	ClearDesign
Google Chrome	87.0.4280.141		COTS software	ClearDesign
jquery	2.2.4		COTS software	ClearDesign
jquery-impromptu	6.2.3		COTS software	ClearDesign
jquery-qrcode	1.0		COTS software	ClearDesign

jquery-splitter	0.27.1		COTS software	ClearDesign
jquery-ui	1.12.1		COTS software	ClearDesign
jscolor	1.4.2		COTS software	ClearDesign
jslibmp3lame	0.5.0		COTS software	ClearDesign
jsmin	4.6		COTS software	ClearDesign
jszip	3.2.0		COTS software	ClearDesign
libapache2-mod-fcgid	2.3.9-1		COTS software	ClearDesign
MySQL	5.7.31		COTS software	ClearDesign
OpenSSL (standard)	1.1.1		COTS software	ClearDesign
OpenSSL FIPS Object Module	2.0.10		COTS software	ClearDesign
paparser	4.6.0		COTS software	ClearDesign
PhantomJS	1.9.8		COTS software	ClearDesign
Pyinstaller	3.2.1		COTS software	ClearDesign
Python	2.7.15		COTS software	ClearDesign
Python DBUtils	1.3		COTS software	ClearDesign
Python Flup	1.0.2		COTS software	ClearDesign
Python FontTools library	3.4.1		COTS software	ClearDesign
Python JSMIN	2.2.1		COTS software	ClearDesign
Python MySQL DB	1.3.10		COTS software	ClearDesign
Python Pillow	5.1.0		COTS software	ClearDesign
Python PIP	9.0.1		COTS software	ClearDesign
Python RTF	0.2.1		COTS software	ClearDesign
Python webpy	0.38		COTS software	ClearDesign
Python XLRD	1.2.0		COTS software	ClearDesign
Samba	4.7.6		COTS software	ClearDesign
SQLAlchemy	1.3.3		COTS software	ClearDesign
tinymce	4.1.9		COTS software	ClearDesign
Ubuntu	18.04.5		COTS software	ClearDesign
Unzip	6.0.21		COTS software	ClearDesign
Windows 10 Pro	Build 1607		Windows 10 Pro	ClearDesign
Zip	3.0.11		COTS software	ClearDesign
ELO 15-inch EloPOS		EPS15E3	COTS hardware	ClearAccess
ELO 15-inch AIO		E-Series (ESY15E2)	COTS hardware	ClearAccess
Dell OptiPlex AIO		5250	COTS hardware	ClearAccess

<b>System Component</b>	<b>Software or Firmware Version</b>	<b>Hardware Version</b>	<b>Operating System or COTS</b>	<b>Comment</b>
ELO 20-inch AIO		X-Series (ESY20X2)	COTS hardware	ClearAccess
Dell Inspiron 15"		7573	COTS hardware	ClearAccess
Oki Data Laser Printer		B432dn	COTS hardware	ClearAccess
Zebra Technologies Bar Code Scanner		DS457-SR	COTS hardware	ClearAccess
Storm EZ Access Keypad		EZ08-22201	COTS hardware	ClearAccess
Storm EZ Access Keypad		EZ08-22000	COTS hardware	ClearAccess
Origin Instruments Sip/Puff Breeze with Headset		AC-0313-MUV, AC-0300-MU	COTS hardware	ClearAccess
Samson Over-Ear Stereo Headphones		SASR350	COTS hardware	ClearAccess
Monoprice Over the Ear Pro Headphones		8323	COTS hardware	ClearAccess
Hamilton Buhl Over-Ear Stereo Headphones		HA7	COTS hardware	ClearAccess
Ergotron Neo-Flex		Widescreen Lift Stand	COTS hardware	ClearAccess
Wearson LCD Stand		Adjustable LCD Monitor Stand	COTS hardware	ClearAccess
Corsair Flash Padlock 3 32 GB		Secure USB 3.0 Flash Drive	COTS hardware	ClearAccess
Corsair Flash Voyager GTX		3.1 USB Drive	COTS hardware	ClearAccess
Kingston Data Traveler Elite G2		3.0 USB Drive	COTS hardware	ClearAccess
SanDisk Extreme Go 64 GB USB		3.0 USB Drive	COTS hardware	ClearAccess
SanDisk Extreme Pro 64 GB USB		3.0 USB Drive	COTS hardware	ClearAccess
SanDisk Ultra Flair 32 GB USB		3.0 USB Drive	COTS hardware	ClearAccess
CyberPower Smart App UPS		PR1500RT2U	COTS hardware	ClearAccess
APC Smart-UPS		SMT2200	COTS hardware	ClearAccess
ClearCast		Model D, Revision 4	COTS hardware	ClearCast
ClearCast Go		Model E Revision 5	COTS hardware	ClearCast
Corsair Flash Padlock 3 32 GB		Secure USB 3.0 Flash Drive	COTS hardware	ClearCast
Corsair Flash Voyager GTX		3.1 USB Drive	COTS hardware	ClearCast

Kingston Data Traveler Elite G2		3.0 USB Drive	COTS hardware	ClearCast
SanDisk Extreme Go 64 GB USB		3.0 USB Drive	COTS hardware	ClearCast
SanDisk Extreme Pro 64 GB USB		3.0 USB Drive	COTS hardware	ClearCast
SanDisk Ultra Flair 32 GB USB		3.0 USB Drive	COTS hardware	ClearCast
Ballot Bag		CV-1032-1.5, CV-1032-2.0	COTS hardware	ClearCast
Ballot Box		CV-1033-1.5, CV-1033-2.0	COTS hardware	ClearCast
Dell Precision Tower (Election Administration)		T3620	Windows 10 Pro	ClearCount
Lenovo ThinkServer (ScanServer)		TS140	Windows 10 Pro	ClearCount
Dell PowerEdge Server (ScanServer)		T130, T140, T330, T440	Ubuntu 18.04.5 LTS	ClearCount
Dell OptiPlex (Election Administration)		7440, XE3 SFF	Windows 10 Pro	ClearCount
Dell Latitude Laptop (ScanStation)		5580, 5590, 5500, 5511	Windows 10 Pro	ClearCount
Fujitsu Scanner		fi-7180	COTS hardware	ClearCount
Fujitsu Scanner		fi-6800	COTS hardware	ClearCount
Fujitsu Scanner		fi-6400	COTS hardware	ClearCount
Fujitsu Scanner		fi-7800	COTS hardware	ClearCount
Fujitsu Scanner		fi-7900	COTS hardware	ClearCount
SanDisk Extreme Go 64 GB USB		3.0 USB Drive	COTS hardware	ClearCount
SanDisk Extreme Pro 64 GB USB		3.0 USB Drive	COTS hardware	ClearCount
SanDisk Ultra Flair 32 GB USB		3.0 USB Drive	COTS hardware	ClearCount
CyberPower Smart App UPS		PR1500RT2U	COTS hardware	ClearCount
Cisco 8-Port Switch		SG250-08	COTS hardware	ClearCount
Cisco Catalyst 8-Port Switch		C1000-8T-2G-L	COTS hardware	ClearCount

Cisco 24-Port Switch		C1000-24T-4X-L	COTS hardware	ClearCount
NetGear 8-Port Switch		FVS318G	COTS hardware	ClearCount
TP-LINK 4-Port Switch		TL-R600VPN	COTS hardware	ClearCount
Cisco 26-Port Switch		SG250-26	COTS hardware	ClearCount
TRENDNet 8-Port Switch		TEG-S80G	COTS hardware	ClearCount
Corsair Flash Padlock 3 32 GB		Secure USB 3.0 Flash Drive	COTS hardware	ClearCount
Corsair Flash Voyager GTX		3.1 USB Drive	COTS hardware	ClearCount
Kingston Data Traveler Elite G2		3.0 USB Drive	COTS hardware	ClearCount
APC Smart-UPS		SMT-1500C	COTS hardware	ClearCount
Dell Latitude Laptop (client)		5580, 5590, 5500, 5511	Windows 10 Pro	ClearDesign
Dell Precision Tower (client)		T3620	Windows 10 Pro	ClearDesign
Dell PowerEdge Server (server)		T130, T140, T440, R440, T630	Ubuntu 16.04.4 LTS	ClearDesign
Dell OptiPlex (client)		7440	Windows 10 Pro	ClearDesign
Cisco 8-Port Switch		SG250-08	COTS hardware	ClearDesign
Cisco Catalyst 8-Port Switch		C1000-8T-2G-L	COTS hardware	ClearDesign
NetGear 8-Port Switch		FVS318G	COTS hardware	ClearDesign
TP-LINK 4-Port Switch		TL-R600VPN	COTS hardware	ClearDesign
TRENDNet 8-Port Switch		TEG-S80G	COTS Hardware	ClearDesign
Corsair Flash Padlock 3 32 GB		Secure USB 3.0 Flash Drive	COTS hardware	ClearDesign
Corsair Flash Voyager GTX		3.1 USB Drive	COTS hardware	ClearDesign
Kingston Data Traveler Elite G2		3.0 USB Drive	COTS hardware	ClearDesign
SanDisk Extreme Go 64 GB USB		3.0 USB Drive	COTS hardware	ClearDesign
SanDisk Extreme Pro 64 GB USB		3.0 USB Drive	COTS hardware	ClearDesign

SanDisk Ultra Flair 32 GB USB		3.0 USB Drive	COTS hardware	ClearDesign
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## System Limitations

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

System Characteristic	Limitation	Limiting Component
Precincts in an election	3200	ClearDesign database
Contests in an election	3200	ClearDesign database
Choices in an election	3200	ClearDesign database
Card Styles in an election	3200	ClearDesign database
Contests in a ballot style	60	ClearDesign database
Choices in a contest	300	ClearDesign database
Card styles in a precinct	50	ClearDesign database
Number of political parties per election	50	ClearDesign database
“Vote for” in a contest	50	ClearDesign database
Supported languages in an election	15	ClearDesign database
Number of write-ins per contest	50	ClearDesign database
Cards per ballot (per language)	5	ClearDesign database
Maximum oval positions per side: 5-inch ballot	60	Ballot length
Maximum oval positions per side: 11-inch ballot	180	Ballot length
Maximum oval positions per side: 14-inch ballot	240	Ballot length
Maximum oval positions per side: 17-inch ballot	300	Ballot length
Maximum oval positions per side: 19-inch ballot	360	Ballot length
Maximum oval positions per side: 22-inch ballot	420	Ballot length
<b>Reporting Name Parameters (Reports Only)</b>		<b>Limitation</b>
Election name (characters)		60
Jurisdiction name (characters)		60
Precinct name (characters)		60
Vote center name (characters)		60
Contest name (characters)		60
Candidate name (characters)		60
Party name (characters)		60
Write-in length (characters)		60
<b>System Parameters</b>		<b>Limitation</b>
Central-count scanners per network		10

Cards per precinct-voting device	10,000
Cards per central-count device	4,000,000

**System Limits for ClearCount**

Scanner Model	Sustained (not burst speed) ballots per hour						Typical county size (Central count)
	8.5x5	8.5x11	8.5x14	8.5x17	8.5x19	8.5x22	
fi-6400	5592	3624	2928	2448	2350	2236	Large (>100k voters)
fi-6800	7822	5508	4155	3352	3000	2800	Large (>100k voters)
fi-7180	3396	2040	1692	1400	1300	1200	Small (<25k voters)
fi-7800	5364	5028	3842	3556	3136	1566	Large (>100k voters)
fi-7900	6746	5635	4129	3926	3175	3108	Large (>100k voters)
ClearCount can have a maximum of 10 ScanStation/Scanner pairs							

**Functionality**

**2005 VVSG Supported Functionality Declaration**

Feature/Characteristic	Yes/No	Comment
<ul style="list-style-type: none"> <li>Precinct and BMD accessible via Parallel (Side) and Forward Approach</li> </ul>	Yes	
Closed Primary		
<ul style="list-style-type: none"> <li>Primary: Closed</li> </ul>	Yes	
Open Primary		
<ul style="list-style-type: none"> <li>Primary: Open Standard (provide definition of how supported)</li> </ul>	Yes	Open Primary
<ul style="list-style-type: none"> <li>Primary: Open Blanket (provide definition of how supported)</li> </ul>	Yes	General "top two"
Partisan & Non-Partisan:		
<ul style="list-style-type: none"> <li>Partisan &amp; Non-Partisan: Vote for 1 of N race</li> </ul>	Yes	
<ul style="list-style-type: none"> <li>Partisan &amp; Non-Partisan: Multi-member ("vote for N of M") board</li> </ul>	Yes	
<ul style="list-style-type: none"> <li>Partisan &amp; Non-Partisan: "vote for 1" race with a single candidate and write-in voting</li> </ul>	Yes	
<ul style="list-style-type: none"> <li>Partisan &amp; Non-Partisan "vote for 1" race with no declared candidates and write-in voting</li> </ul>	Yes	
Feature/Characteristic	Yes/No	Comment
Write-In Voting:		
<ul style="list-style-type: none"> <li>Write-in Voting: System default is a voting position identified for</li> </ul>	Yes	
<ul style="list-style-type: none"> <li>Write-in Voting: Without selecting a write in position.</li> </ul>	Yes	
<ul style="list-style-type: none"> <li>Write-in: With No Declared Candidates</li> </ul>	Yes	

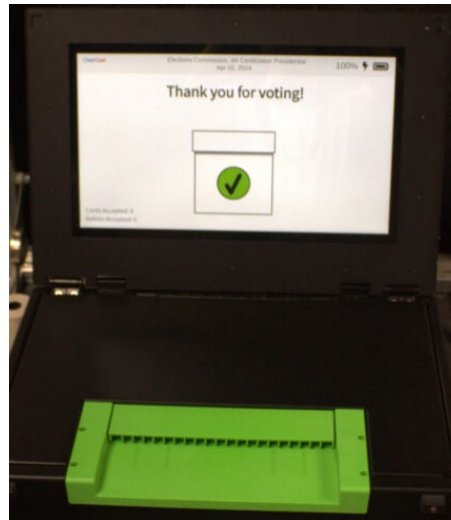


<ul style="list-style-type: none"> <li>• Write-in: Identification of write-ins for resolution at central count</li> </ul>	Yes	
<b>Primary Presidential Delegation Nominations &amp; Slates:</b>		
<ul style="list-style-type: none"> <li>• Primary Presidential Delegation Nominations: Displayed delegate slates for each presidential party</li> </ul>	Yes	
<ul style="list-style-type: none"> <li>• Slate &amp; Group Voting: one selection votes the slate.</li> </ul>	Yes	
<b>Ballot Rotation:</b>		
<ul style="list-style-type: none"> <li>• Rotation of Names within an Office; define all supported rotation methods for location on the ballot and vote tabulation/reporting</li> </ul>	Yes	Rotation by precinct and district
<b>Straight Party Voting:</b>		
<ul style="list-style-type: none"> <li>• Straight Party: A single selection for partisan races in a general</li> </ul>	Yes	
<ul style="list-style-type: none"> <li>• Straight Party: Vote for each candidate individually</li> </ul>	Yes	
<ul style="list-style-type: none"> <li>• Straight Party: Modify straight party selections with crossover votes</li> </ul>	Yes	
<ul style="list-style-type: none"> <li>• Straight Party: A race without a candidate for one party</li> </ul>	Yes	
<ul style="list-style-type: none"> <li>• Straight Party: "N of M race (where "N"&gt;1)</li> </ul>	Yes	
<ul style="list-style-type: none"> <li>• Straight Party: Excludes a partisan contest from the straight party</li> </ul>	Yes	
<b>Cross-Party Endorsement:</b>		
<ul style="list-style-type: none"> <li>• Cross party endorsements, multiple parties endorse one candidate.</li> </ul>	Yes	
<b>Split Precincts:</b>		
<ul style="list-style-type: none"> <li>• Split Precincts: Multiple ballot styles</li> </ul>	Yes	
<ul style="list-style-type: none"> <li>• Split Precincts: P &amp; M system support splits with correct contests and ballot identification of each split</li> </ul>	Yes	
<ul style="list-style-type: none"> <li>• Split Precincts: DRE matches voter to all applicable races.</li> </ul>	N/A	Not a DRE system
<ul style="list-style-type: none"> <li>• Split Precincts: Reporting of voter counts (# of voters) to the precinct split level; Reporting of vote totals is to the precinct level</li> </ul>	Yes	
<b>Vote N of M:</b>		
<ul style="list-style-type: none"> <li>• Vote for N of M: Counts each selected candidate if the maximum is not exceeded.</li> </ul>	Yes	
<ul style="list-style-type: none"> <li>• Vote for N of M: Invalidates all candidates in an overvote (paper)</li> </ul>	Yes	
<b>Recall Issues, with options:</b>		
<ul style="list-style-type: none"> <li>• Recall Issues with Options: Simple Yes/No with separate race/election. (Vote Yes or No Question)</li> </ul>	Yes	
<ul style="list-style-type: none"> <li>• Recall Issues with Options: Retain is the first option, Replacement candidate for the second or more options (Vote 1 of M)</li> </ul>	Yes	
<ul style="list-style-type: none"> <li>• Recall Issues with Options: Two contests with access to a second contest conditional upon a specific vote in contest one. (Must vote Yes to vote in 2nd contest.)</li> </ul>	No	
<ul style="list-style-type: none"> <li>• Recall Issues with Options: Two contests with access to a second contest conditional upon any vote in contest one. (Must vote Yes to vote in 2nd contest.)</li> </ul>	No	
<b>Feature/Characteristic</b>	<b>Yes/No</b>	<b>Comment</b>
<b>Cumulative Voting</b>		
<ul style="list-style-type: none"> <li>• Cumulative Voting: Voters are permitted to cast, as many votes as</li> </ul>	No	
<b>Ranked Order Voting</b>		
<ul style="list-style-type: none"> <li>• Ranked Order Voting: Voters can write in a ranked vote.</li> </ul>	No	

<ul style="list-style-type: none"> <li>Ranked Order Voting: A ballot stops being counting when all ranked choices have been eliminated</li> </ul>	No	
<ul style="list-style-type: none"> <li>Ranked Order Voting: A ballot with a skipped rank counts the vote for the next rank.</li> </ul>	No	
<ul style="list-style-type: none"> <li>Ranked Order Voting: Voters rank candidates in a contest in order of choice. A candidate receiving a majority of the first-choice votes wins. If no candidate receives a majority of first choice votes, the last place candidate is deleted, each ballot cast for the deleted candidate counts for the second-choice candidate listed on the ballot. The process of eliminating the last place candidate and recounting the ballots continues until one candidate receives a majority of the vote</li> </ul>	No	
<ul style="list-style-type: none"> <li>Ranked Order Voting: A ballot with two choices ranked the same, stops being counted at the point of two similarly ranked choices.</li> </ul>	No	
<ul style="list-style-type: none"> <li>Ranked Order Voting: The total number of votes for two or more candidates with the least votes is less than the votes of the candidate with the next highest number of votes, the candidates with the least votes are eliminated simultaneously and their votes transferred to the next-ranked continuing candidate.</li> </ul>	No	
Provisional or Challenged Ballots		
<ul style="list-style-type: none"> <li>Provisional/Challenged Ballots: A voted provisional ballots is identified but not included in the tabulation but can be added in</li> </ul>	Yes	via jurisdiction processes
<ul style="list-style-type: none"> <li>Provisional/Challenged Ballots: A voted provisional ballots is included in the tabulation, but is identified and can be subtracted in the</li> </ul>	No	
<ul style="list-style-type: none"> <li>Provisional/Challenged Ballots: Provisional ballots maintain the secrecy of the ballot.</li> </ul>	Yes	
Overvotes (must support for specific type of voting system)		
<ul style="list-style-type: none"> <li>Overvotes: P &amp; M: Overvote invalidates the vote. Define how overvotes are counted.</li> </ul>	Yes	If the system detects more votes than allowed by the vote rule, it is counted as an overvote
<ul style="list-style-type: none"> <li>Overvotes: DRE: Prevented from or requires correction of overvoting.</li> </ul>	Yes	Yes, for ClearAccess
<ul style="list-style-type: none"> <li>Overvotes: If a system does not prevent overvotes, it must count them. Define how overvotes are counted.</li> </ul>	Yes	If the system detects more votes than allowed by the vote rule, it is counted as an overvote
<ul style="list-style-type: none"> <li>Overvotes: DRE systems that provide a method to data enter absentee votes must account for overvotes.</li> </ul>	N/A	No method to data enter absentee via ClearAccess
Undervotes		
<ul style="list-style-type: none"> <li>Undervotes: System counts undervotes cast for accounting purposes</li> </ul>	Yes	
Blank Ballots		
<ul style="list-style-type: none"> <li>Totally Blank Ballots: Any blank ballot alert is tested.</li> </ul>	Yes	
<ul style="list-style-type: none"> <li>Totally Blank Ballots: If blank ballots are not immediately processed, there must be a provision to recognize and accept them</li> </ul>	Yes	via adjudication in ClearCount
<ul style="list-style-type: none"> <li>Totally Blank Ballots: If operators can access a blank ballot, there must be a provision for resolution.</li> </ul>	Yes	via adjudication in ClearCount
Networking		
<ul style="list-style-type: none"> <li>Wide Area Network – Use of Modems</li> </ul>	No	
<ul style="list-style-type: none"> <li>Wide Area Network – Use of Wireless</li> </ul>	No	
<ul style="list-style-type: none"> <li>Local Area Network – Use of TCP/IP</li> </ul>	Yes	

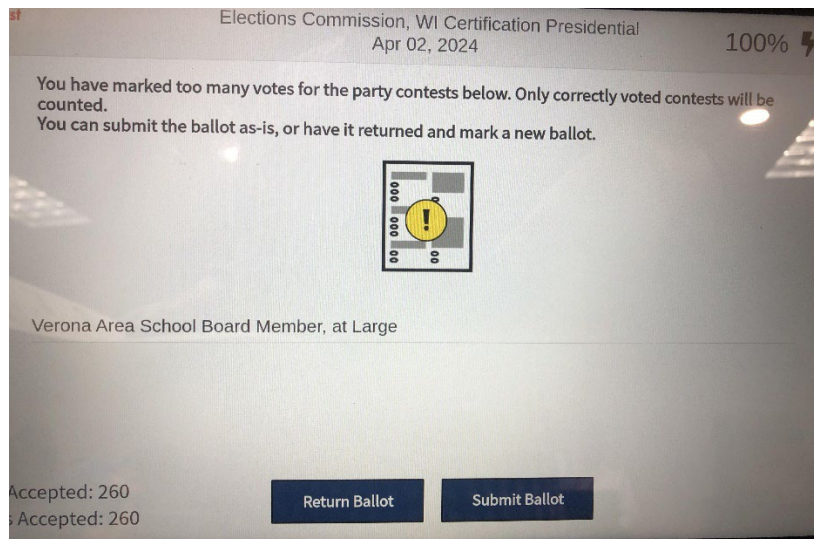
• Local Area Network – Use of Infrared	No	
• Local Area Network – Use of Wireless	No	
• FIPS 140-2 validated cryptographic module	Yes	
Used as (if applicable):		
• Precinct and Central counting devices	Yes	
• Ballot Marking Device	Yes	
Overvotes (must support for specific type of voting system)		
• Overvotes: P & M: Overvote invalidates the vote. Define how overvotes are counted.	Yes	If the system detects more votes than allowed by the vote rule, it is counted as an overvote
• Overvotes: DRE: Prevented from or requires correction of	Yes	Yes for ClearAccess
• Overvotes: If a system does not prevent overvotes, it must count them. Define how overvotes are counted.	Yes	If the system detects more votes than allowed by the vote rule, it is counted as an overvote
• Overvotes: DRE systems that provide a method to data enter absentee votes must account for overvotes.	N/A	No method to data enter absentee via ClearAccess
Undervotes		
• Undervotes: System counts undervotes cast for accounting purposes	Yes	
Blank Ballots		
• Totally Blank Ballots: Any blank ballot alert is tested.	Yes	
• Totally Blank Ballots: If blank ballots are not immediately processed, there must be a provision to recognize and accept them	Yes	via adjudication in ClearCount
• Totally Blank Ballots: If operators can access a blank ballot, there must be a provision for resolution.	Yes	via adjudication in ClearCount
Networking		
• Wide Area Network – Use of Modems	No	
• Wide Area Network – Use of Wireless	No	
• Local Area Network – Use of TCP/IP	Yes	
• Local Area Network – Use of Infrared	No	
• Local Area Network – Use of Wireless	No	
• FIPS 140-2 validated cryptographic module	Yes	
Used as (if applicable):		
• Precinct and Central counting devices	Yes	
• Ballot Marking Device	Yes	

**Appendix D: ClearCast Voter Information Screens**

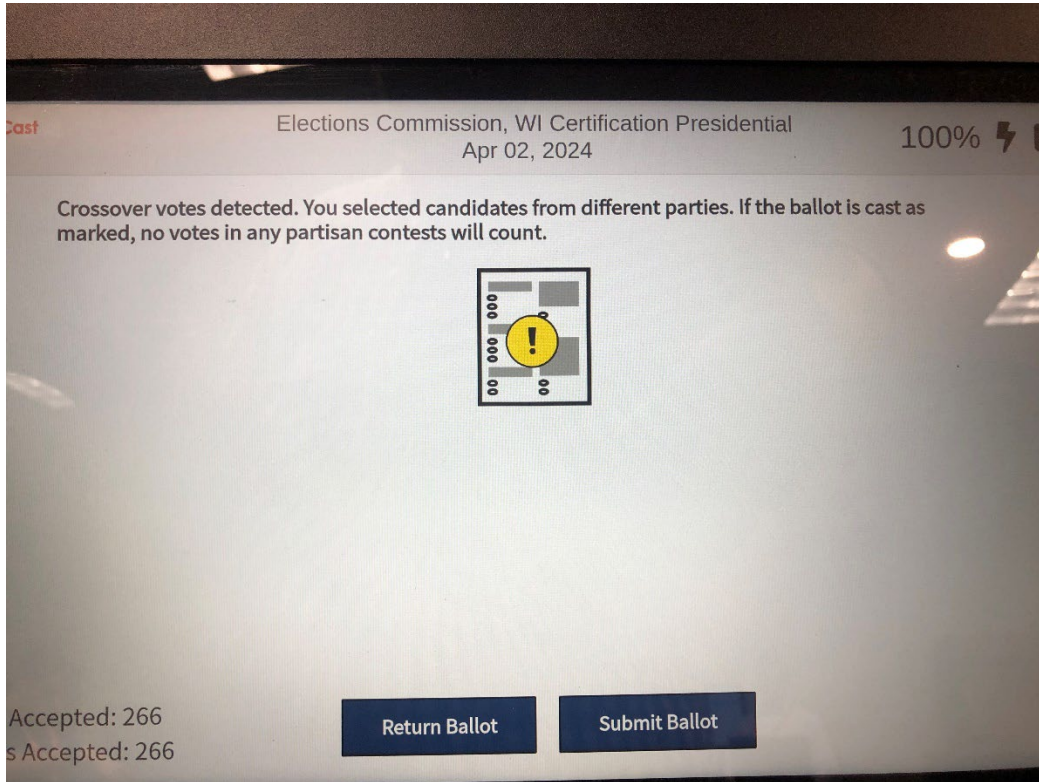


**Insert Ballot/Thank you for voting:** These are the only screens most voters will see in a voting session. The Insert Ballot screen lets a voter know the tabulator is ready to accept their ballot and, if there are no issues with the ballot, the tabulator will accept it and confirm that it has been counted. Upon acceptance, the public count number will increase by one.

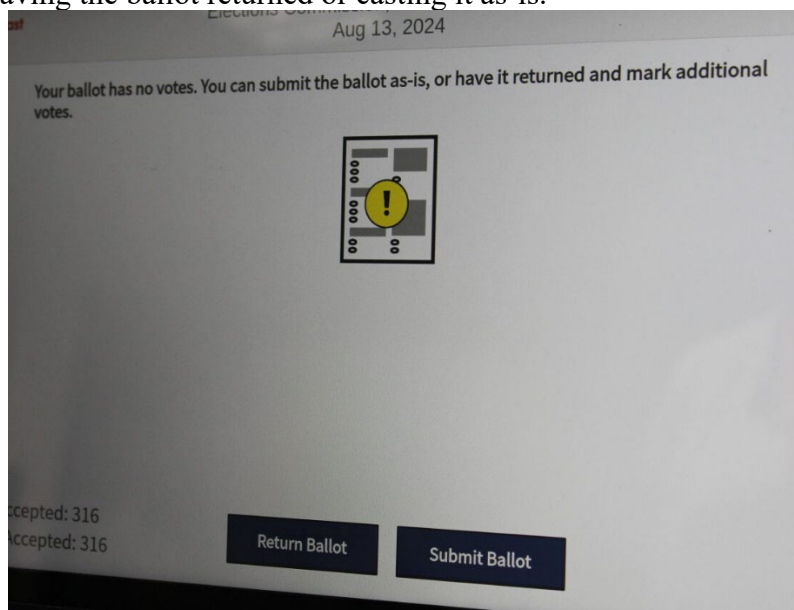
**Overvote Notification:** If the ballot contains an overvote, i.e., the voter has selected more choices than they are eligible to make in a particular contest, the ClearCast will identify the overvoted contest/referendum question. The voter will have the option to either have the ballot returned or override the overvote notification. If the ballot is returned, the voter can spoil their first ballot and vote a new one. If the overvote warning is overridden and the voter chooses to cast the ballot as marked, they are warned that their choices in any overvoted contest will not count. This language reflects the requirements as stipulated by the WEC.



**Crossover Vote Notification:** if a ballot is inserted on which a voter has made choices in more than one party's primary, a warning message will appear advising the voter of such and identifying the contests with crossover votes. As with the overvote warning, the voter has the option of either having their ballot returned or casting it with the crossover votes as marked. If the voter chooses to cast their ballot as-is, any choices in contests with crossover votes will not count. This verbiage also reflects the requirements as stipulated by the WEC.



**Blank Ballot:** if a voter inserts a ballot on which they have made no choices, this warning will appear. The voter has the option of having the ballot returned or casting it as-is.



**Appendix E: Wisconsin Voting Equipment Review Panel Feedback**

These comments were provided via a structured feedback form. Members of the panel also had the opportunity to follow up with additional written comments. For each question, participants were asked to assess the equipment on a scale of 1 to 5, with 1 being very poor and 5 being excellent. The tables below show the number of participants that chose each ranking. Written responses/supplemental comments for each question can be found under each respective table.

**1. How would you rate the functionality of the equipment?**

Very Poor	Poor	Fair	Good	Excellent
			3	2

- One issue I noticed is that the tabulator accepted two ballots at once. It did not jam or reject them. The two ballots were not read individually.
- The tabulator tells the voter about over votes but not under votes.
- Great, the tabulator was able to tell me the exact race I overvoted and gave me the option to submit anyway or have it returned.
- I like that the accessible voting machine uses a standard ballot, this makes it impossible to differentiate between a regular ballot and a ballot from an accessible voting machine.
- I like that the tabulator has the green colored ballot part. This makes it easy to see where the ballot should go.
- The tabulator noises are helpful for when your ballot is not accepted.
- Very functional – similar to other systems in the state for the polling place.
- Voting machine functions well as does the tabulator.

**2. How would you rate the accessible features?**

Very Poor	Poor	Fair	Good	Excellent
			4	1

- There are some issues for voters with visual impairment. Once you get it to start testing the audio does not start automatically, and it is unclear how to start it.
- If you start navigating with the tactile pad and switch to the screen, the prompts seem to have a glitch and does not how the same prompts. Seems to be a logic issue.
- The security features limit the independence of a voter with a disability as they would need to have a poll worker type in a code and initiate the voting session.
- Concern about not having a prompt to start the voting session for accessible voters.
- It takes a little bit to get used to the voting pad.
- I like that it is easy to correct your ballot.
- Voice is clear, contrast choices very helpful, change of font size very useful.
- Prints regular ballot.
- In summary BIG PLUS is getting the same size ballot.
- Concern: needs an audio cue to get the audio started.
- Lots of potential training gaps.
- With the accessible device, I loved that the ballot mirrors the ballot that those using a hand marked ballot This allows for my ballot to be anonymous.

- A concern is that the voter can't begin the session until a poll worker starts it. I understand that this is a security feature, but it dismisses the independence of the voter. No one else in the polling area needs to be walked to their voting area.
- The tactile marking device takes a bit of time to orient. I needed to listen to the help function in order to get the feel for the marking device. Once I got the feel of it, it was easy to use. The device is heavy, so someone with hand weakness may find it difficult to handle. I liked that it had a built-in spot which creates predictability for locating it from election to election.
- The audio output is clear and easy to follow. It is a bit tricky to adjust volume and speech rate. I liked that when I made a selection, I got an audio tone letting me know that I'd voted the contest. It was difficult to get the audio to start playing. I needed to hit a couple of buttons to activate the audio. It would be helpful to have the audio output start while the poll worker is entering data to help the voter feel confident about what is being entered on their behalf, especially if the voter can't see the screen.
- I skipped a contest to see what would happen. When I reviewed the ballot, I was audio cued that I'd skipped a contest. I was able to vote that contest from the review screen.
- I have concerns about wheelchair access since the printer is underneath the ballot marking device. If the voter has any mobility issues that make it difficult to lean forward to access the screen or tactile marking device.
- I do worry about a fully blind voter being able to retrieve their ballot as it leaves the printer. It may not be intuitive where to feel for it. The little printer paper catch would need to be up to avoid the ballot going on the floor.

**3. Rate your overall impression of the system.**

Very Poor	Poor	Fair	Good	Excellent
			4	1

- Appreciate that it isn't connected to the internet.
- Appreciate that it uses off the shelf components.
- Appreciate that the accessible ballot is the same size as the other ballots.
- Easy to use, great accessible features.
- Tabulator makes a happy noise when the ballot is not accepted.
- Accessible voting machine does not allow for a 100% independent process for the voter. Audio doesn't start on its own. Refer to Denise Jess' comments.
- The scanner is not recommended for central count locations. Does not sort overvotes and undervotes on write-ins. Will not comply with our current statutes.
- Overall, it seems good. Concerned that the people with disabilities will need assistance starting the voting process on the screen.
- Voice does not start unless someone clicks on screen or voter pushes buttons several times.
- On the tabulator, I liked that the top of the device is free from clutter. It was easy to feel where the ballot feeder is located. The high contrast with the bright green against the black was very helpful.