

**OHIO BALLOT MARKING DEVICE MATRIX – REMOTE BALLOT DELIVERY AND MARKING SYSTEM  
FOR USE BY A NVLAP-ACCREDITED VOTING SYSTEM TESTING LABORATORY**

NAME OF PRODUCT AND VENDOR:	TESTING LABORATORY:		
SYSTEM REQUIREMENT:	ACCEPTABLE/ COMPLETE:	UNACCEPTABLE/ INCOMPLETE:	REQUIREMENT DOES NOT APPLY TO THE SYSTEM BEING EXAMINED (EXPLAIN):
<p>The Remote Ballot Delivery and Remote Marking System (“System”) has been tested by a National Institute of Standards of Technology (NIST), NVLAP-accredited Voting System Testing Laboratory, and it meets or exceeds the requirements established for use in Ohio.</p>			
<p>The System must support all election types and provide a ballot that permits each voter to vote for all persons and offices for whom and for which the voter is 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 to permit a voter to write-in the name of a person (or persons for a joint candidacy) for whom the voter desires to vote. R.C. 3506.06(B) &amp; (C).</p>			
<p>The System must be able to automate the import of any election information extracted from the county’s Election Management System (EMS) or voter registration system. If a ballot translation tool is required to make the System compatible with the election information extracted from the EMS and a county’s voter registration system, the vendor submitting the System shall also provide the ballot translation tool(s) as part of the application. The ballot translation tool(s) must convert election information from the county’s EMS and voter registration system to a data format for presentation as an online ballot.</p>			

SYSTEM REQUIREMENT:	ACCEPTABLE/ COMPLETE:	UNACCEPTABLE/ INCOMPLETE:	REQUIREMENT DOES NOT APPLY TO THE SYSTEM BEING EXAMINED (EXPLAIN):
The System must transmit a ballot of the appropriate ballot style electronically to the voter upon request.			
The System must be securely accessible through the internet to verified and authorized election officials. The system must allow authorized election officials to set user roles, access controls, and change passwords.			
The System must allow for the authentication of the voter.			
The System must allow the voter to make and verify his/her selections electronically.			
The System must allow the voter to print an unmarked blank ballot on letter, legal, 11x17, or A4-sized paper.			
The System must allow the voter to print detailed, complete jurisdiction-specific instructions for the return by U.S. mail of a marked ballot, to include but not limited to: cover sheets, mailing and security envelope templates, instructions, postal and email addresses, and oath statements.			
The System must validate each voter's email address to identify common errors (e.g., using another character in place of "@," inserting double periods, misspelling of a known email provider) and notify election administration personnel for review and correction, if necessary.			
The System must copy to county election administration personnel all email messages transmitted to voters.			
The System must provide email delivery failure notices to county election administration personnel.			

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USABILITY			
A voter must not be required to manually install any specific election software or hardware on his/her personal computer to access the voting process (Note: Adobe Acrobat is not considered to be specific election software).			
The System must display contests individually on the screen of the device used for marking the ballot, and the voter must be able to navigate easily through the contests.			
The System must provide feedback to the voter before the final casting or printing of the ballot that identifies specific contest for which the voter has undervoted.			
The interface must allow the voter to change a selection within a contest before advancing to the next contest.			
The interface must include navigation controls that allow the voter to advance to the next contest before completing a vote on the contest currently being presented.			
Scrolling must not be the only way to navigate to a contest or through the ballot.			
The System must enable configuration of ballot rotation according to the Ohio Revised Code. Rotation must match the rotation of the voter's home precinct.			
Voting options must support the use of multiple languages. Specifically, the System must support presentation, marking, and printing of the ballot in English and Spanish.			
The System must clearly distinguish between selected voting options from non-selected ones.			
The System must not allow for a voter to over-vote a contest.			

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A voter must select his/her voting options by directly selecting the candidate(s) or vote on a contest.			
The System must allow the authenticated voter to download and to print an unmarked blank ballot.			
The System must provide clear plain language instructions and warning messages.			
The System must require a voter to deselect a choice prior to changing his/her selection in a given race.			
The System must provide the voter with the option of modifying his/her selections by navigating directly to the appropriate race from the review screen. After the voter has reviewed the race, regardless of whether a revision was made, the System must permit the voter to return to the review screen without requiring the voter to re-navigate through other races.			
The System must generate for the voter all the ballot return materials prescribed by the Ohio Secretary of State.			
<b>PROCESSING OF VOTED BALLOTS/BALLOT DUPLICATION</b>			
The System must allow for the voter's name, residential address, and ballot style to be printed on the Statement of Voter (SOS <a href="#">Form 12-A</a> ).			
The System must enable automated ballot transcription for the county board of elections – e.g., by scanning a barcode and printing on a ballot-on-demand printer. The automated process must prohibit the processing of the same ballot more than once.			
The duplication must not require pre-printed ballot styles.			

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The automated ballot duplication process must support write-ins.			
The voter's privacy must be protected throughout the ballot duplication process.			
<b>SECURITY</b>			
The voter's privacy must be protected throughout the voting process.			
The portion of the System hosted for a county board of elections must be on a secured environment and accessible to authorized individuals upon request to perform on-site verification of the applications running on the servers and the data stored in the database. Security requirements should meet, but not be limited to, NIST standards including NISTIR 7682 "Information Security Best Practices for UOCAVA Supporting Systems" and NISTIR 7711 "Security Best Practices for the Electronic Transmission of Election Materials for UOCAVA Voters."			
The vendor must maintain disaster recovery capabilities to ensure the availability of the system within an hour of failure.			
The System components must provide evidence it is compliant with NIST 800-53 (revision 4) moderate impact security controls.			
The system must be capable of role-based authentication, the assignment of individuals or groups of people to specific roles, and the creation of specific permissions to establish appropriate access levels for each role.			
The ballot delivery and return process must be encrypted.			

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The System must be hardened from attack using industry recognized security benchmarks or security technical implementation guides from Center for Internet Security, National Security Agency, Defense Information Systems Agency, or a similar source.			
The System must support the use of the most common Internet browsers and operating systems, including but not limited to: Microsoft Edge, IE7 and newer, FireFox 3.5 and newer, and Chrome version 28 and newer. The System must be able to be kept up to date with both operating system and application security patches after it has been acquired for use by a jurisdiction.			
The System must use a minimum of two-factor authentication for all election official level access. All passwords must be stored in an encrypted format.			
The System must allow a voter to access only the ballot style which he or she is eligible to vote.			
The System must have an intrusion detection system that alerts the system administrator to the presence of a person or entity that is not approved for access to the System.			
The System must prevent the system administrator, system vendor, and anyone else with access from having the ability to tally or count the votes from information created and stored by the action of the voter marking the ballot.			
The System must prevent or detect a man-in-the-middle attack.			

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The servers hosting the System must be protected by common industry practices that include firewalls, web application firewalls, 24/7 monitoring, and limited access protected by proper access controls.			
All personal identifying information must be protected during transmission via encryption or a substantially similar method. The encryption solution must use FIPS 140-2 cryptographic modules.			
The System must track and log session activity for use in forensic processes. All system logs must be protected from manipulation in such a way to prevent manipulation and so that any attempted or actual manipulation of the logs can be detected.			
All logins to the System must be logged. All changes to the System and records must be logged. These include changes to individual records, large-scale or batch updates, source code, database schemas, system configuration, and access control policies.			
The system must be protected by anti-malware protection.			
The systems and all state data, including data backups, must reside within data centers located within the United States.			

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ACCESSIBILITY			
<p>The System must meet the following accessibility standards:</p> <ul style="list-style-type: none"> <li>• Web Content Accessibility Guidelines (WCAG) 2.0; and</li> <li>• Section 508 of the U.S. Rehabilitation Act, Web-based Intranet and Internet Information and Applications (1194.22).</li> </ul>			
<p>The System must be compatible with commercially available off-the-shelf (“COTS”) screen readers (e.g., JAWS, Windows-Eyes, NVDA, ZoomText, Voiceover, etc.</p>			
<p>The System must provide a user-friendly voter interface, so that the voting process is intuitive and no previous training for using this voting channel is necessary.</p>			
<p>The System must allow for the screen to be magnified and for a change in brightness of the screen.</p>			
<p>The System must allow for a change of the contrast from high to low and for a selection of color combinations. The following must be options:</p> <ul style="list-style-type: none"> <li>• Black text on white background;</li> <li>• White text on black background;</li> <li>• Yellow text on black background; and</li> <li>• Light Cyan text on black background.</li> </ul>			