RFP No. 007116B0007029 Election Systems & Software					
Exhibit A, Attachment 1.1 Voting SystemHARDWARETechnical Requirements					
	Category / Requirement #	**Requirement**	**Bidder Complies (Y/N)**	**Bidder Complies with Modifi-cations**	**Please expand on your response in Column D or E.**
A.	**Ballot Counter /Tabulator**				
	1.1.A.1	Bidders must provide a complete description of the proposed voting system, including all components, make/model, covering all functionality and specific abilities of the system to meet all requirements listed in this RFP. Digital optical scan systems are preferred; however, other systems may be considered that meet all other mandatory requirements.	Y		**DS200** The proposed DS200 scanner/tabulator uses a high resolution image scanner with state-of-the art, precise ballot sensors to scan both sides of a ballot simultaneously. The DS200 was designed to meet or exceed all EAC Voluntary Voting Systems Guidelines (VVSG) 2005 requirements. Our solution also includes Election Reporting Manager (ERM) software that will provide you instantaneous results that can be printed or displayed on a monitor or your website. The result of more than 36 years of experience designing poll-based scanning technology, the DS200 combines the security, auditability, and voter confidence of paper ballot voting with the increased accuracy and flexibility of a digital image scanner.
	1.1.A.1 *continued*				*EXCEEDS ACCURACY STANDARDS* DS200 digital scanning technology provides exceptional mark recognition capabilities. Our Intelligent Mark Recognition (IMR™) and Positive Target Recognition & Alignment Compensation (PTRAC™) routines are patented and powerful and the basis for our certified products. This unique technology is available only on ES&S products. IMR™ and PTRAC™ work together to positively track and pinpoint target locations, accommodating for ballot s inserted at irregular angles, smudges, and stray ballot marks to create unparalleled accuracy in determining voter intent. Because of this improved accuracy, fewer ballots need to be manually reviewed or adjudicated. This makes elections smoother, faster, less costly and with less chance for debate and controversy. Unlike less sophisticated vote scanners, the DS200 using PTRAC™ and IMR™ is not fooled by erasures and other stray marks and is not confused by lighter or thinner marks that would be missed by more primitive threshold technology.

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	1.1.A.1 *continued*				*OFFERS GREATEST EASE OF USE* The DS200's unique lid-up, power-on approach allows poll workers to easily open polls. During voting, the device features messages and prompts visually on its interactive 12-inch color LCD screen with accompanying audible signals. All DS200 messages for poll workers and voters are displayed in easily understood text. *BALLOT IMAGING SAFEGUARDS* The system captures and retains digital images and cast vote records of every scanned ballot for auditing and adjudication. ES&S does not alter a single retained and captured digital image. *EQUIPMENT SPECIFICATIONS* • DS200 scanner/tabulator, Version 1.3, 23 pounds, 14" x 16" x 5.5" • DS200 ABS plastic carrying case (included with plastic ballot box) 29 pounds, 27" x 24" x 8"

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	1.1.A.1 *continued*				The included DS200 carrying case made of durable, scratch-resistant Acrylonitrile Butadiene Styrene (ABS) plastic materials features roller wheels and a telescoping handle. This durable construction enables each unit to withstand the effects of frequent loading, unloading, assembly and disassembly. The proposed ballot box is also constructed with ABS plastic materials, steel-reinforced doors, and four (4) swivel caster wheels, two which are lockable. Convenient side handles are designed to enable election workers to pull, rather than push, the ballot box, which provides complete control, therefore, lessening the chance of a tip over. The ballot box also includes an anchor loop that would allow it to be tied or tethered to prevent the unit from tipping during transport.  Another way to prevent the ballot box from tipping over is to place it as deep as possible into the deepest part of the hatch or truck bed and use moving straps or bungee cords across the top and around the side of the equipment, securing the ends of each strap or cord to the hatch or truck bed. Lighter-weight items should be loaded last. With the auxiliary bin removed, the plastic ballot box can be nested five high. The top portion of the plastic ballot box also serves as the included carrying case. When separated from the ballot box, the carrying case can be stacked upright on its base for efficient storage.

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	1.1.A.1 *continued*				**DS450** The DS450 is a world-class central count scanner/tabulator offering digital processing to save you time. Our patented state-of-the-art technology eliminates the need for manual voter intent and secures election accuracy. More than 36 years' experience in the elections industry went into the design and construction of the ES&S DS450, making it the most reliable central scanner on the market. The DS450 enhances the voting experience for voters and officials alike. Because the DS450 handles folded ballots smoothly, it is perfect for processing mailed-in ballots or any time you need a centralized scanner/tabulator. The DS450 is slated to enter EAC certification in June of 2016. *SPEED* The DS450 scans ballots of multiple sizes and is able to handle folded or roughed-up ballots with ease. For example, it scans double-sided ballots at the rate of 50-91 per minute, with next-to-no ballot jams. Faster results can mean lower costs. *EASE OF USE* The durable 15-inch color touch screen and user-friendly interface walk you through every step of the process. It is as simple as placing a stack of ballots on the scanner and pressing START. *FLEXIBILITY* With three (3) separate sorter bins, you can determine whether you want to set apart specific types of ballots for further review. Let the DS450 handle separating write-in votes, overvotes, or blank ballots - all without missing a beat.

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	1.1.A.1 *continued*				*ACCURACY:* ES&S' patented Intelligent Mark Recognition (IMR™) and Positive Target Recognition & Alignment Compensation (PTRAC™) technology ensure ballots are read accurately and consistently, eliminating manual adjudication time. PTRAC™ corrects for variations in ballot alignment and printing, allowing the digital scanners to zero in on the marking area. PTRAC™ digitally subtracts the outline of the voting target to read only the voter's mark. Our competitors' optical scanners require you to set an arbitrary pixel threshold to determine what counts as a mark. The DS450 does the work for you. To determine which marks were intentional, sophisticated algorithms analyze not only the mark's darkness (pixel density) but also its directionality. Unlike other scanners, the DS450 is not fooled by erasures or other stray marks, and is not confused by lighter or thinner marks that would be missed by a simple threshold. IMR™ means faster results for you and assurance for voters that their votes were counted as they intended.
	1.1.A.1 *continued*				*SECURITY* Safeguard your election data with the DS450's system integrity, electronic audits, data encryption, and digital signatures. o Data and system validation: Data encryption and signing ensure integrity of election results. o Strong physical access controls: locks and seals secure data ports and critical hardware components. o Role-based access codes allow varied levels of operator and administrator access. o Full logging creates a complete audit record you can print or view electronically. Motorized input tray provides constant pressure as large stacks of ballots are run through the machines. Multiple paper rollers and counter-rotating belts apply constant control to folded ballots to ensure uninterrupted scanning, with virtually no double feeds and reliable digital image capture. C-curve design in the DS450 enable lightning-quick scanning and smooth ballot flow packaged in compact and easily-maneuvered machines. The open design of the transport paths makes it easy to clear ballot jams when they occur. Motorized output tray facilitates the separation of ballots into three (3) output stacks – you control whether the DS450 separates overvotes, write-in votes, and blank ballots for further review.

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	1.1.A.1 *continued*				*USER INTERFACE DETAILS:* The DS450 can be completely configured using ES&S' Electionware software, which downloads the scanner's configuration settings as part of the digitally signed and encrypted election definition. These settings also can be configured directly on the machine through access code-protected administration screens. Status and settings are clearly displayed on the large touch-screen display and the user interface prompts the operator at every step, greatly reducing learning time as well as questions and errors. The DS450 user interface features five (5) menus: Scanning, Election, Reports, System, and Hardware. 1. Scanning. The Scanning menu is used to scan ballots and clear the ballot transport path. 2. Election. The Election menu is used to load an election definition, view election setup information, export election results, and set scanner configuration options. 3. Reports. The Reports menu is used to print and preview the zero, results, batch/bin, precincts processed and system readiness reports: 4. System. The System menu is used to set the date and time, learn about the firmware version and other information, and review and set user access. 5. Hardware. The Hardware menu is used to calibrate the DS450's touch screen, print test pages to the report and audit log printers, calibrate the camera and other camera settings.

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	1.1.A.1 *continued*				**ExpressVote** The ExpressVote® Universal Voting Device enables voters to vote any ballot in the jurisdiction without the need for traditional paper ballots, saving Michigan taxpayers money. The ExpressVote combines paper-based voting with touch screen technology to create an innovative breakthrough in voting solutions. The ExpressVote is ideal for in-person absentee voting, Election Day voting in precincts and vote centers. Election officials no longer have to guess the number of ballots to print — instead, an inexpensive thermal card stock/ballot determines the ballot style presented on the touch screen. The ExpressVote system can serve every eligible voter, including those with special needs. The ExpressVote was developed with universal design principles applied for use by all voters, with or without visual impairments, hearing issues, or need for physical accommodations. As a fully compliant ADA (Americans with Disabilities Act) voting solution, ExpressVote enables each voter to cast his or her ballot independently. *THERMAL CARD STOCK/BALLOTS* The voter receives a thermal card/ballot to begin the process. Election officials can choose from three options: • If only one ballot is programmed for the election, a blank card activates the ballot. • If the election has multiple ballots, a blank card requires a poll worker to select the correct ballot for the voter. • If the election has multiple ballots, a card with an activation barcode displays the correct ballot for the voter.

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	1.1.A.1 *continued*				*VERIFIABLE PAPER RECORD* After all selections are made, a human- and machine-readable paper record is produced, including text and an optical scan barcode. All votes are digitally scanned for tabulation on ES&S' DS200 and DS450 devices. *EASY TO USE AND SET UP* The easy setup and shutdown process makes the ExpressVote an ideal device for poll workers. The intuitive design offers streamlined simplicity for all voters, poll workers and election staff. There is no expensive technology to manage or program. The ExpressVote is small, lightweight at less than 20 pounds, and easy to carry. *CONTROLLED AND REDUCED COSTS* Traditional ballot printing costs can be reduced significantly by eliminating the need and expense for pre-printed paper ballots. With low operation and maintenance fees, budgeting for recurring expenses becomes easy with the ExpressVote. The system does not use ink, toner, or paper rolls and consumes 70 percent less paper than traditional ballots. *INNOVATIVE DESIGN* Complete and total independence is maintained while voters cast their own records. Voters review a summary page and can make changes before casting ballots. A voter's selection changes will not spoil the voting session. The ExpressVote system produces a verifiable paper record for each voter that is digitally scanned for tabulation. ExpressVote neither stores nor tabulates vote counts. The system is always secure – the election definition USB memory device is protected in a locked environment.

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	1.1.A.1 *continued*				**Compatible with the DS200** With an innovative design for accessibility, voters can place ballots in the DS200 for scanning and tabulating. The interconnected touch screen and navigational keypad buttons are used to complete all required operations. On the touch screen interface, various colors and accessibility-enhancing effects have been selected to prompt and guide the voter. These digital buttons meet all applicable guidelines regarding size and readability. The navigational keypad has been tested and modified through consultation with special needs groups. The keys are arranged to allow for an intuitive voting session. Each key has both Braille and printed text labels designed to indicate function and a related shape to help the voter determine its use. Regardless of whether the voter uses the touch screen or keypad interface, changes can easily be made throughout the voting process by simply navigating back to the appropriate screen and selecting the change. ES&S has a strong development history of innovative solutions for people with disabilities. From concept to construction, ES&S adheres to industry-leading standards for quality and design. ExpressVote meets and exceeds the more rigorous 2005 U.S. Voluntary Voting Systems Guidelines (VVSG) for usability, accessibility, and security requirements.

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	1.1.A.1 *continued*				*ACCESSIBILITY* The ExpressVote allows blind, low-vision, and limited-dexterity voters to privately listen to instructions and selections at a volume, tone, and speed that will meet their unique needs. They cast their votes unassisted, thereby maintaining their privacy and anonymity. Multiple user interfaces that include touch screen, Braille-embossed keypad, sip-and-puff tube, and foot pedal or other two-way switch. Audio voting session via text-to-speech or .wav files. Ability for voter to select speed, tone, and volume. High-visibility on-screen ballots. Voter-selected font size and contrast settings. Verifiable vote record — Allows jurisdictions to maintain hard copies of vote records marked on ADA-compliant systems by marking paper record used for tabulating by the DS200 digital precinct scanner/DS450 central scanner/tabulator, enabling independent verification of paper ballots.

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	1.1.A.2	The proposed voting system hardware shall be new. Refurbished or used equipment will not be accepted.	Y		All hardware equipment will be new and include the latest versions of firmware/software for the certified system.
	1.1.A.3	Replacement parts shall be readily available.	Y		Replacement parts are readily available. ES&S' strong financial standing, vast supplier relationships, large customer base, and extensive research and development capability provide a foundation for long-term availability of our products and parts for our customers. Because ES&S designs and owns all rights to the design and manufacturing of the DS200, DS450, and ExpressVote units, tighter control is possible than allowed by dealing with large commercial off-the-shelf (COTS) vendors. ES&S uses long-life, industrial components that can allow up to seven (7) years of general availability and much longer with end of life buying arrangements. To control the availability of ES&S-certified COTS parts, ES&S requires that our approved vendors agree to the following: • Ship ES&S-only COTS items that have been unmodified from the configuration in which it was initially certified (to Federal and State levels) with ES&S systems. • Notify ES&S at least three months in advance of any changes to be made to COTS item's configuration as it was originally certified (to State and Federal levels) with ES&S systems. • Allow ES&S to place a Purchase Order for a last time buy. • Additionally, any vendor who supplies component or sub-assemblies for an ES&S system must meet the following requirements to maintain good standing on the ES&S Approved Vendor List: • Provide ES&S an opportunity to place a Purchase Order for a last time buy. • Prior to approval on an Approved Vendor List, inform ES&S of its roadmap for transition of components/subassemblies to meet RoHS standards. Upon notification of an EOL component/subassembly, ES&S will follow our Engineering Change Order (ECO) process flow to implement the change and notify state election officials, who will then determine if the ECO is de minimis, or minimal, or requires certification for the changed component/subassembly.

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	1.1.A.4	The proposed system shall permit the voter to verify the votes selected on the ballot in a private and independent manner, before the ballot is cast and counted.	Y		**DS200** Depending on the election definition programming, the voter has the opportunity to review the paper ballot to confirm the selections chosen before the voter's ballot is cast into the DS200. If any ballot handling exceptions are detected by the DS200, the voter will be given the opportunity to cast the ballot as is, or return the ballot to the voter for correction. If the voter opts to cast as is, the DS200 will query the voter to "Accept". When the ballot is accepted by the voter, a text message is displayed to the voter that states, "Thank you for voting. Your ballot has been counted." In the case of ballots that cannot be read by the scanner because they are damaged or are invalid for the election or poll site, the ballot is returned to the voter without the option of casting the unread ballot. **ExpressVote** Before a voter completes the voting session, the ExpressVote provides a summary page with the same language and interface options the voter used to make vote selection. The summary page allows the voter to verify the selections made and even change their choices before the selections are printed on Vote Summary Card. The ExpressVote has an optional post-print verification that allows a voter to visually and audibly validate the data that is read off the marked card before it is cast. Voters may also reinsert the voted card into the ExpressVote and have the selections displayed or read back using the full assistive capabilities. The system produces a verifiable paper record for each voter that is digitally scanned for tabulation in the DS200 or DS450.

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	1.1.A.5	The system shall provide the voter with an opportunity (in a private and independent manner) to change the ballot or correct any error before the ballot is cast and counted.	Y		**DS200** The voter has the opportunity to review the paper ballot to confirm the selections chosen before the voter's ballot is cast into the DS200. If any ballot handling exceptions are detected by the DS200, the voter can be given the opportunity to cast the ballot as is, or return the ballot to the voter for correction. If the voter opts to cast as is, the DS200 will query the voter to "Accept". When the ballot is accepted by the voter, a text message is displayed to the voter that states, "Thank you for voting. Your ballot has been counted." **ExpressVote** Before a voter completes the voting session, the ExpressVote provides a summary page with the same language and interface options the voter used to make vote selection. The summary page allows the voter to verify the selections made and even go back and change their choices before the selections are printed on Vote Summary Card. The ExpressVote has an optional post-print verification that allows a voter to visually and audibly validate the data that is read off the marked card before it is cast. Voters may also reinsert the voted card into the ExpressVote and have the selections displayed or read back using the full assistive capabilities. The system produces a verifiable paper record for each voter that is digitally scanned for tabulation in the DS200 or DS450.

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	1.1.A.6	The system shall produce zero printouts before each election and precinct totals printouts at the close of the polls	Y		**DS200** The State of Michigan can easily program the election so certain DS200 reports are generated automatically when the poll is opened and closed. Reports or additional copies can also be accessed from the Reports menu. • Poll Opening: the DS200 prints the Ballot Status Accounting and Zero reports. • Poll Closing: the DS200 generates a variety of results reports depending on the options configured for your election definition. The scanner may automatically print reports, including precinct totals, when you close the polls or you can manually select reports from the POLLS CLOSED screen. **DS450** Before ballots are scanned on the DS450 scanner, a Zero Report can be generated when no ballots have been scanned. This provides a clear indication that the DS450 has been cleared for the election. Results Reports can be generated for public reporting or with additional detail required by administrators at both an election level or at a vote center. ES&S' Election Reporting Manager (ERM) is used to convert data from ES&S' DS450 tabulator into formatted election reports that can be printed. **ERM** ES&S' ERM module can also print zero reports and results reports.

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	1.1.A.7	The system shall permit recounts to be conducted pursuant to the Michigan Election Law (MEL).	Y		Recounts may be accomplished in any manner allowable under Michigan Election Law 168.871: by a manual tally of paper ballots, tabulation of ballots on a computer using software designed to count only the office or ballot question subject to the recount, or tabulation of ballots on a computer using the same software used in the precinct on Election Day. The paper ballot utilized with the DS200 is the voter-verifiable paper record of all votes cast and provides an audit trail that is available to jurisdictions in the event a recount, including manual recount, is required. In addition to scanning paper ballots, the respective DS200 USB memory devices also retain a digital image of each ballot cast along with the associated vote records, which also can be used for recounts and adjudication. The Electionware Election Management System can quickly identify the precincts and ballot styles associated with the recounted contest. Electionware software provides a powerful means for restricting the election definition to a subset of contests or precincts specified for a particular recount. This definition can be loaded on the DS200, allowing for sorting and/or recounting of the ballots in question as permitted under a jurisdiction's election law.
	1.1.A.7 *continued*				Option No. 1 applies to current Michigan Election Law. However, we've outlined several additional options available with our proposed solution should laws or procedures change to permit their use at any given time. 1. A new removable USB memory device can be programmed for a polling location. The ballots can be rerun on the same device as originally used in the polling location and the results tapes compared. 2. The removable USB memory device used in a DS200 on Election Day can be cleared and the ballots rerun. The results tapes from both ballot tabulation runs can be compared side by side to the actual Election Day results tape. 3. If a DS450 is available, it can be used to rerun the ballots from the polling location and save processing time. Results reports from the DS450 can be compared to the DS200 tapes. 4. Standard paper ballot processing hand counting methods would be used for manual recounts. 5. In addition, the results media can be loaded in Election Reporting Manager (ERM) for more results reporting functionality.

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	1.1.A.7 *continued*				The removable USB memory device used in a DS200 on Election Day can be cleared and the ballots rerun. To clear the USB memory device: 1. If the DS200 scanner is turned off, use the key to open the access door. If you removed the USB memory device, reinsert the USB memory device and turn on the DS200. 2. The Enter Election code screen appears. Enter your code, then press Accept. After the Configuration Report prints, the Poll Closed screen appears. 3. Press Re-Open Poll. The Enter Override Code screen appears. 4. Enter the code assigned to reopen the polls. 5. Press Accept. 6. Press Clear Votes. 7. Press Clear Votes & Continue. The Clear Votes screen appears. 8. Press Go to Open for Voting if you want to proceed with opening the polls. Press Report Options if you want to view the available reports or press Don't Open Turn Off to shut down the scanner. 9. Press Open Poll to open the polls. The Ballot Status Accounting Report and Zero Reports are generated. 10. The Poll is ready to be opened. 11. Press Go to Voting Mode. 12. Close and lock the access panel. After you remove the key, the DS200 scanner is ready to re-scan the ballots.

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	1.1.A.8	The System shall alert voters to any and all voter/ballot errors with clear language describing the error, before accepting the ballot for tabulation. Any notification to the voter during the process of casting a vote must be private and must indicate whether the ballot has been tabulated.	Y		**DS200** The DS200's interactive color LCD touch screen provides concise, easily understandable voting directions/prompts for under-vote, over-vote, cross-over vote and blank ballot flags per the jurisdiction's settings. No staff explanation is required. Alerts are provided on screen in plain text and, depending on the election definition, an audible warning signal may sound. When, an error message is detected on the ballot, the DS200 will retain the ballot thereby maintaining voter's privacy. The DS200 then provides step-by-step instructions on screen for resolving the exception. The voter may return or accept the ballot at this time. The screen clearly indicates whether or not the ballot has been tabulated. **ExpressVote** The ExpressVote alerts voters to any and all voter/ballot errors with clear language on screen or audibly. Voter's privacy is maintained in three ways: 1) Setup of the ExpressVote (ie. facing away from the public) 2) By utilization of the ExpressVote privacy screen, which is included in our proposed solution at no additional cost. 3) Voters may turn off the screen at any time during a voting session, which enables voters to request assistance without allowing the poll worker to see their selections.

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	1.1.A.9	The system shall provide for tabulation of votes cast in split precincts, where all voters are not voting the same ballot format.	Y		ES&S' proposed system includes the DS200 precinct scanner, DS450 central count scanner, ExpressVote ADA device, as well as Electionware and Election Reporting Manager software. This system is capable of scanning, counting and recording ballots cast in split precincts and easily integrating the tallies into all election results and reports. The system will allow up to 99 splits for each precinct. Normally, a ballot style is created for every precinct and split in the election. The DS450 central count scanner is capable of reading, recording and storing results from up to 9,990 precincts and 9,900 ballot styles on a single USB memory stick. The cast vote record and digitized ballot images for all scanned ballots, as well as the election definition and audit logs, were exported and saved to a single DS450 USB memory device. In addition, ES&S designs voting systems to tabulate ballots for the following types of voting: • Closed primaries • Open primaries • Partisan offices • Non-partisan offices • Write-in voting • Primary presidential delegation nominations • Ballot rotation • Straight party voting • Cross-party endorsement • Recall issues (with options) • Provisional or challenged ballots

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	1.1.A.10	The system shall provide printed records regarding the opening and closing of the polls to include identification of the election, including opening and closing date and times; identification of the unit; identification of ballot format; identification of each candidate and/or issue, verifying zero start.	Y		The system can automatically produce printed records with comprehensive information regarding poll opening and closing. The Configuration report prints at start-up and includes identification of the election by name, date, and qualification code; times for open and close; unit serial number, and ballot format ID. A Zero Report and Ballot Status and Accounting Report (optional if selected in Electionware programming) print when POLLS OPEN is selected. The Zero Report validates no ballots have been tabulated and the Ballot Status and Accounting Report shows that no votes have been tabulated for each candidate and issue individually. **See Appendix D** for **Sample Reports**. The DS200 can produce the following reports: • Configuration Reports may be programmed to print automatically upon startup or on demand by the poll worker from the Reports Option prior to opening the polls. • Zero Totals Report prints automatically upon startup. Additional copies can be programmed to print automatically if required by jurisdiction or may be printed upon demand from the Reports Option prior to opening the polls. • Ballot Status Accounting Report can be programmed to print automatically upon startup or may be printed upon demand from the Reports Option prior to opening the polls. • The Event (Audit) Log Report lists all of the scanner events that occur from the time you load your election definition USB memory device into the scanner until you remove the USB memory device after the election is complete. The Event (Audit) Log Report may be programmed to print automatically upon startup and, from the Reports Option menu, prior to opening polls or after the polls close. • The Results Report prints automatically upon poll closing and may be provided in election summary or precinct formats. Additional copies can be programmed to print automatically if required by jurisdiction and may be printed upon demand from the Reports Option menu after polls close and prior to shut down.

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	1.1.A.11	The system shall be easily portable and be transportable without damage to internal circuitry. Bidders shall provide height and weight specifications of all proposed components in the bid response, as well as any features related to portability and ease of transport.	Y		**DS200 - Portability** The DS200 requires the same special handling and transportation considerations as would be afforded to most electronic and computer equipment. The DS200 has been tested and designed to meet specific Voluntary Voting Systems Guidelines (VVSG) minimum performance standards that simulate exposure to physical shock and vibration associated with frequent handling (ex. loading, unloading, stacking, and heavy use) and transportation by surface and air common carriers. The DS200 has been designed with materials and internal components and circuitry to achieve a life of at least 10 years. The DS200's internal components are assembled in a rugged, impact resistant GE C6600 – Polycarbonate Acrylonitrile Butadiene Styrene (ABS) plastic housing. The terminal's outer coloring is integrated into the plastic to prevent chipping or scratching on the outside surface. ES&S recommends the DS200 be stored and transported in its hard shell carrying case whenever possible to further protect against dust, moisture and vibration. The lockable carrying case for the DS200 is capable of withstanding real world impacts, shocks, and vibrations that are experienced when transporting units to the poll site. The carrying case includes roller wheels and a telescoping handle to assist in the easy movement of the DS200 to and from the polling place. ES&S expects that the DS200 will last much longer than 10 years when operated under normal operating and storage conditions.

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	Category / Requirement #	Requirement	Bidder Complies (Y/N)	Bidder Complies with Modifi-cations	Please expand on your response in Column D or E.
	1.1.A.11 *continued*				The DS200 may be used with a plastic ballot box: The DS200 plastic ballot box is compact, portable, and easy to move around the warehouse or polling place. It includes handles and four heavy duty caster wheels; two ballot compartments, one for official ballots and one for auxiliary ballots; and may be nested five (5) high for ease of storage and transportation. The plastic ballot box does not contain a powered diverter to segregate write-in ballots. When using the plastic box, ballots would need to be separated by hand to adjudicate write-in voter intent. It is made of durable ABS (Acrylonitrile Butadiene Styrene) plastic material with steel-reinforced doors and can absorb shocks and impacts associated with all modes of surface transportation. All doors are lockable and sealable. Convenient side handles are designed to enable election workers to pull, rather than push, the ballot box, which provides complete control, therefore, lessening the chance of a tip over. The ballot box also includes an anchor loop that would allow it to be tied or tethered to prevent the unit from tipping during transport. The central scanner is designed to remain in a central location. Jurisdictions that use the central scanner transport ballots from various polling places to a central count location where the ballots are scanned and tabulated. Nonetheless, when the DS450 needs to be moved, it is constructed using rugged, durable materials designed for transport to and from storage and operating locations. The unit rests on a wheeled cart that stores all system components, including the scanner/tabulator, printers, backup power supply and supplies drawer. The wheels lock during operation.
	1.1.A.11 *continued*				**ExpressVote - Portability** The ExpressVote can withstand frequent loading and unloading, stacking, assembling, disassembling, reassembling, and heavy use, without damage to internal circuitry. The ExpressVote comes with a soft-sided carrying case and may be stacked eight (8) units high in storage.
	1.1.A.12	The system shall allow for omni-directional feed of the ballot and be fully capable of counting non-oriented ballots.	Y		The DS200 and DS450 can quickly and simultaneously scan and tabulate both sides of each ballot page submitted in one pass regardless of the orientation of the paper, whether top side up, top side down, header in first, or footer in first.

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	Category / Requirement #	**Requirement**	**Bidder Complies (Y/N)**	**Bidder Complies with Modifi-cations**	**Please expand on your response in Column D or E.**
	1.1.A.13	The system shall include a visible public counter that displays the number of ballots processed; the display must utilize a font and font size that can be clearly read by voters and precinct inspectors.	Y		The DS200 displays a Public Count that tracks the number of ballots cast between opening and closing the polls. The Public Count starts at zero and increases with each cast ballot. The location of the public count appears below:  Both the DS200 and central tabulator display machine counts in a font size easily read by voters or officials. The DS200 Public Count is 14-point Tahoma font.
	1.1.A.13 *continued*				The DS450 scan screen shows the total number of ballots processed and saved on the tabulator as well as the current number of ballots scanned, but not saved.

	Category / Requirement #	Requirement	Bidder Complies (Y/N)	Bidder Complies with Modifi-cations	Please expand on your response in Column D or E.
	1.1.A.14	The system shall be capable of scanning one-sided ballots, two-sided ballots, and multiple page ballots while recording the event as one ballot cast. Bidders must indicate how/when the tabulator's public counter increments (e.g., upon tabulation of page 1, page 2, or both pages 1 and 2)	Y		The DS200 and DS450 can read one-sided, two-sided, and multiple-page ballots. When reading a multiple-page ballot, tabulators record page (1) one in a multiple-page ballot as an indicator of a ballot being cast. The public count will only increment for page (1) one of the ballot. The DS200 has a public counter conveniently located on the large LCD display screen. The font size on the screen is 14-point. After the DS200 scans and securely stores a marked paper ballot, the system displays a confirmation message for the voter and then increments the public counter to confirm the ballot has been counted and the totals have been added to the removable USB memory device. At this time, there is not a way to remove the lifetime ballot counter from the display. However, that feature is planned to be a configurable item in EVS 6.2.0.0. with projected release in fall of 2017.
	1.1.A.15	The system shall provide an auditory and visual notification to the voter that the ballot has been cast.	Y		The DS200 clearly indicates whether a ballot is counted or rejected. When a ballot is successfully cast, the DS200 displays the message “Thank you for voting. Your ballot has been counted.” and advances the on-screen Public Count. No audible alert is provided. If the DS200 detects an issue with the ballot, the system displays a message clearly describing the issue. If the issue prevents casting the ballot, the DS200 returns the ballot to the voter and generates an audible beep to alert the poll worker. The ability to configure audible alerts for different conditions, including successful casting and error conditions, is projected for inclusion in system EVS 6000 with a projected completion of 2017. The ExpressVote does not provide notification because it does not tabulate ballots. It is used as a fully ADA-compliant ballot marking device.
	1.1.A.16	All system visible messages and instructions displayed on the tabulator shall be in simple and plain language and shall be customizable.	Y		**DS200** All messages on the DS200’s touch screen are displayed in easily-understood text. As part of the ES&S proposed base Voting System (EVS) 5.2.1.0., the DS200 supports English, Spanish, Chinese, Korean, Japanese, and Bengali languages. ES&S’ Electionware software is capable of providing customized voter-facing messages for the DS200. This allows customized messages in each County.

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	1.1.A.17	The tabulator hardware shall be capable of transmitting unofficial election results by cellular or analog modem at the close of polls on Election Night. Refer to **Section and Attachment 1.2 EMS SOFTWARE REQUIREMENTS f**or additional detail.	Y		With EVS 5.3.1.0, the DS200 precinct-based tabulator can be configured to remotely transmit unofficial results via a wireless carrier network or wired analog phone line modem to a Secure File Transfer Protocol (SFTP) server once the polls close. Depending on the modem installed, the DS200 is capable of landline modeming at 38,400 bps and wireless modeming (Code Division Multiple Access (CDMA) or Global System for Mobile Communications (GSM)) at 115,200 bps. ***(Note: EVS 5.3.1.0 is not EAC certified but meets Michigan State election code for voting systems.)***** All vote data is digitally signed and encrypted with Federal Information Processing Standard (FIPS)-certified security functions. This includes the data stored on the removable USB memory device or transmitted via wireless or landline modem. The DS450 can transmit results data by either writing encrypted, digitally signed data to a USB memory device, or by transmitting the data via a closed, secure network to the EMS using Secure File Transfer Protocol (SFTP).

	Category / Requirement #	Requirement	Bidder Complies (Y/N)	Bidder Complies with Modifi-cations	Please expand on your response in Column D or E.
	1.1.A.18	Proposals shall document the speed at which ballots are processed (ballots per minute), based on ballot size and number of ballot faces.	Y		**DS200** The DS200 was designed to function primarily as a precinct-based scanner/tabulator. However, jurisdictions with small absentee voter populations use the DS200 to tabulate their absentee ballots. Ballots are manually fed into the DS200, which scans, images and tabulates the ballot with the average throughput of approximately 10-12 ballots per minute or 720 ballots per hour. However, throughput depends on voting variables, including the length of time it takes the voter to insert the ballot into the tabulator for processing. Counts also would vary, but would increase, in an AVCB situation wherein ballot prompts were removed. **DS450** The theoretical run rate of the DS450 is: 11” – 91 bpm 14” – 75 bpm 17” – 63 bpm 19” – 50 bpm Actual ballot throughputs in the field are between 1,000 and 2,000 ballots per hour when scanning, tabulating and generating reports and up to 4,000 ballots per hour when simply scanning and sorting.

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	1.1.A.19	Proposals shall document customizable options for results tape printing - content, format, layout, number, etc. Tabulators must be capable of printing multiple copies of each result tape.	Y		All election results reports include results for all contests and candidates. These results are for one or multiple precincts assigned to a poll. Jurisdictions may customize the number of zero report tapes that automatically print on Election morning. Users have the option of automatically printing between 1 and 9 copies of the zero tape. Poll workers also may print as many reports as needed on the fly at the poll. The Results Report prints automatically upon poll closing and may be provided in election summary or precinct formats. Users have the option of automatically printing between 0 and 9 copies of the Results Report. Additional copies may be printed on demand from the Reports Option menu prior to shut down. The Results Report may or may not include over votes and undervotes depending on the Michigan law. Jurisdictions also can customize affidavit wording on the zero tape as well as the results tape. Within the poll affidavit, users can define how many signature lines (up to 20) and the associated wording. The ES&S system also features an optional Write-in Review Report. This report prints after the Results Report, and prints a graphic image of every write-in vote cast at the polling place. The images are listed in a contest by contest format for ease of review. Additionally, all write-in images may be viewed on the DS200 touchscreen after polls are closed. Lastly , jurisidictions may view the physical ballot to account for write-ins cast.
	1.1.A.20	Proposals shall document all consumables and parts - e.g., printer paper, ink cartridges, memory media, battery, etc. All consumables/parts must be listed in **Exhibit C, Pricing**, along with replacement part costs for each consumable and the estimated shelf life for each consumable/part.	Y		**See Exhibit C, Pricing**, for all consumables/parts, along with replacement part costs for each consumable and the estimated shelf life for each consumable/part.

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	1.1.A.21	Proposals shall document the type of printer utilized by the proposed tabulator (external or internal, thermal, inkjet, etc.)	Y		The DS200 uses an integrated thermal printer, which eliminates the need to replace ink, toner, or drums. The DS200 prints terminal-level vote totals and system audit reports on the Seiko LTPV-345 internal thermal printer. Each DS450 AVCB high speed scanner/tabulator includes two (2) report printers: • A DELL 2810 series laser printer used to generate scanner level results and configuration reports • A continuous feed OKIdata ML420 printer used to print a continuous physical audit report.
	1.1.A.22	Proposals shall provide details on the system's process for determining valid marks on the ballot by the voter (in the target area), and the process for differentiating valid marks from marginal marks; including whether these functions are set by the system/software/program, or are manually adjustable.	Y		The DS200 and DS850/DS450 employ two patented imaging technologies--Intelligent Mark Recognition®, and Positive Target Recognition & Alignment Compensation (PTRAC)--to ensure that ballot target areas are read accurately and consistently, protecting voter intent and significantly reducing adjudication. Positive Target Recognition and Centering (PTRAC) accounts for real-world issues such as skews of the printed ballot or scanned image to accurately find the voter response oval. The oval is then subtracted out, leaving only the voter's mark. Thresholds are then used to count any marks that are clearly marked or unmarked. For those marks that fall into an intermediate or "marginal" band, Intelligent Mark Recognition (IMR) to identify common voter marks such as lines, check marks, and X's while ignoring unintentional marks such as smudges. To determine which marks are intentional, sophisticated algorithms analyze the mark's darkness (pixel density) and its directionality. Our competitors' optical scanners require setting an arbitrary pixel threshold to determine which marks are valid and also requires review of all marginal marks. The use of ES&S' PTRAC and IMR technologies greatly reduce the number of ballots that require review. ES&S' system has been optimized over years of scanning ballots to allow accurate, repeatable reading of the ballots without the need to adjust thresholds.

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	1.1.A.22 *continued*				Specifically, IMR takes the pixel counts and determines which of the following three levels applies. 1. Low level: If black pixels inside the oval are < 13, then no vote is registered. 2. High level – If black pixels inside the oval are >120, then a vote is registered. 3. Marginal level – If black pixels inside oval are <120 and >13, a pattern matching algorithm in IMR is run on the entire rectangle area to determine whether or not a vote is present. IMR looks for patterns of pixels which match a single line passing thought the clipped rectangle at any angle. The DS200 and DS850 mark recognition algorithms do the work for you. Unlike less-sophisticated scanners, the DS200 is not fooled by erasures or other stray marks and is not confused by lighter or thinner marks that would be missed by a simple threshold. PTRAC and IMR mean faster results for you and assurance for voters that their votes were counted as they intended. ES&S strongly discourages the use of systems that rely only on thresholds, especially systems that require a manual adjustment of the threshold for the entire election. Because variations in ballot printing and scanner calibration can be inconsistent across the election, a single threshold setting may resolve issues with some ballots or machines, but introduce issues with others. Large-scale manual ballot counting has been necessary at customers that have used these systems because a single threshold setting would not accurately read all ballots.

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	1.1.A.23	Write-in Votes: Proposals shall describe in detail all aspects of the write-in vote and adjudication process. The tabulator shall allow for the voter to cast a write-in vote by marking the target area and writing the candidate name of their choice in a provided area. The tabulator shall store an image of the write-in vote, which can be separated out (as a group) for later determination and adjudication of valid write-in votes.	Y		The proposed ES&S tabulation system uses our newest state-of–the-art technology to store a graphic image of the front and back sides of each scanned ballot, including write-in text, thus eliminating the need for workers to gather and handle paper ballots when performing the adjudication process for write-in votes. Due to improper function, old-style diverter-type equipment has considerable probability of diverter break-downs, wear-out, and over-looking write-in marked ballots, which results in the greater possibility of write-in ballots not falling into the proper ballot box bin. If the diverter is not recognized during the tabulator opening process and system operation messages such as “diverter not found” are overlooked and/or the wrong buttons are pressed, the diverter is inadvertently turned off/inoperable causing write-in ballots to not fall into the proper write-in bin. It also causes considerable jamming of ballots during the course of the day, which can result in properly marked write-in ballots not being counted during the adjudication process because workers are only reviewing ballots that have dropped into the write-in bin. Diverters to sort ballots are a huge maintenance problem on older technology ballot boxes. For these reasons, ES&S has developed tabulators that scan and store a graphic image of the ballot that can be displayed on screens, tabulator tapes, or on computers through our software programs. This system far outweighs the pitfalls of human error in handling, sorting and visually viewing ballots, and making late-night determinations on what should or should not be counted as valid write-in votes.

	Category / Requirement #	Requirement	Bidder Complies (Y/N)	Bidder Complies with Modifi-cations	Please expand on your response in Column D or E.
	1.1.A.23 *continued*				**DS200** To cast a write-in vote utilizing the DS200, voters would mark the target area/fill in the oval and write the candidate's name of their choice in the provided area. When ballots are scanned, the DS200 stores a graphic image of every scanned ballot, including write-in text, on the system's USB memory device. When the scanner detects a write-in vote, the system stores the write-in ballot image under a special file name to identify the image as a write-in ballot. This file can be: • viewed at the close of the polls on the LED screen • printed (manually or programmed to print automatically after the totals tape) • displayed as a listing on the DS200 tabulator tape • viewed or printed in the reporting application at Election Central Electionware offers the ability to print, view, and display the results in media and summary level reports. The entire content of the USB memory device is archived on the EMS server. The write-in votes are recorded by the DS200 and write-in vote counts are included in all election reports by contest. The DS200 status report displays the total number of write-in votes cast, among other statistics. The DS200 system would continue to allow for end-of-day precinct worker adjudication of write-in votes in different ways, as shown on the next page.

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	1.1.A.23 *continued*				1. PRECINCT ADJUDICATION: Preferred method: All write-in vote images can be printed on a tape, similar to the totals tape, from the DS200 tabulator after the totals tapes are run. This tape can be programmed to print as many copies as requested immediately following the printing of the totals tapes. Included on this tape is the identical image, in the voter's handwriting/print, of the write-in vote cast in each contest that received a write-in vote. This list prints in the identical contest order as the ballot layout/totals tape. Workers will view the tape to determine whether or not they must log-in to complete any required forms for write-in votes, including precinct delegate votes. 2. Each scanned write-in ballot can be viewed on the LCD display screen. An easily identifiable button on the DS200 tabulator reports menu states "Write-Ins." Using this option, the screen displays the graphic image of each ballot processed by the tabulator with a write-in vote to be adjudicated. The adjudication team would navigate this screen one page at a time and review each write-in image in the voter's handwriting/print. If necessary, they would log-in to complete any required forms for write-in votes, including precinct delegate votes. 3. CENTRAL LOCATION ADJUDICATION: Once the precinct is closed, the ballot images are saved to the USB memory device. This device can be read into ERM and various reports, which would list/capture any and all write-ins voted on that USB memory device, can be viewed and/or printed. For example, variations of reports can be achieved, including all write-ins in a certain precinct/contest, for only one precinct, for a mix of precincts, for a local community or all jurisdictions in an entire county. By either viewing election data on the computer screen or obtaining the information from a printed report of varying styles, adjudication could be done at a central location by a local clerk or board, or the county clerk, staff or canvassing board, etc. While changes of this type would be new to Michigan, we feel the options for adjudicating write-in votes are easier and much more accurate than in the past utilizing older, diverter-type equipment.

	Category / Requirement #	Requirement	Bidder Complies (Y/N)	Bidder Complies with Modifi-cations	Please expand on your response in Column D or E.
	1.1.A.23 *continued*				**DS450** The DS450 scans and stores a graphic image of the front and back side of each ballot. These images can be reviewed in Electionware and filtered by various attributes, including displaying only ballots containing write-ins. The Cast Vote Record for the ballot image can be viewed beside the ballot image. Furthermore, Electionware can output a spreadsheet with an entry for each write-in found with the snippet of the image containing the voter's marks. Image files can also be exported in a PDF format for archival or public review. During export, the ballots can be filtered to include the CVR for the image and apply a watermark to the PDF file. The DS450 may also be configured to outstack write-ins. For adjudication, each ballot in the outstack tray would be physically reviewed to determine its validity. From this, a poll worker could log-in and complete any required forms for write-in votes, including precinct delegate votes. Once the polls are closed and that information is received, jurisdictions also may validate the write-ins from the printed report from Electionware. This could be done with the adjudication team in the AVCB (once they receive a report from the USB stick through Electionware) or again at a central location with the jurisdiction clerk/board or at the county level with the clerk, staff or canvassing board. A sample of one style of a printed report is below:
	1.1.A.23 *continued*				**EXPRESSVOTE** ExpressVote thermal card stock/ballots containing write-ins are scanned by the DS200. When tabulated, they are handled in the same manner as described above or the same as regular precinct voted paper ballots. Through visual and/or audio instruction, the ExpressVote voting screen advises voters to press the Write-In tab whenever they choose to cast a vote for a write-in candidate. A typewriter style keyboard appears and the voter types in the name of the candidate they wish to vote for. When the card/ballot is reviewed, approved and printed at the request of the voter, the typed name of the write-in choice as typed by the voter appears on the card/ballot. This ballot is then inserted into the DS200 tabulator for scanning and tabulation and an image of the card/ballot is stored and accounted for by the tabulator in the same manner as regular voted precinct ballots in that tabulator. Both precinct-based and central location write-in adjudication for ExpressVote ballots would be the same as processing write-in ballots/votes from regular precinct ballots tabulated by the DS200.

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	1.1.A.24	The tabulator shall be capable of retaining a record of each voted ballot in a way that protects each voter's privacy. Proposals shall describe in detail, the storage process and storage capabilities and limitations (e.g., the maximum number of ballot records that may be retained on one device.)	Y		**DS200** The Electionware EMS can be used to configure the tabulators to save the front and back images of all processed ballots or just ballots containing write-in votes. For every ballot cast, the tabulator also stores a Cast Vote Record (CVR) file. The ballot CVR and the images are signed by a machine-specific private key. When results are transferred, these CVR files and images are encrypted and signed again to allow for secure transport. The ballot images are stored in a TIFF (Tagged Image File Format) format. Since the image files are encrypted, the files on the election media are not externally viewable. Ballot images can be exported from the DS200 to USB memory devices for electronic review or printing. Every ballot cast is assigned a random 16-byte identifier and all the ballot CVRs and ballot images are stored on the inserted memory media with exactly the same timestamp. This effectively decouples any association of the ballot to the voting order to guarantee voter privacy. If no images are stored, the standard 4GB USB memory device can capture and store approximately 100,000 cast vote records, the election definition, and audit log records. If ballot images are captured and stored, the 4GB drive can store at least 12,000 images (both sides of each ballot sheet), along with the cast vote records, the election definition, and audit log records. **DS450** In a central count solution, voter privacy does not come into question since the voter is not present upon operation of the unit. The DS450 contains a 1-terabyte internal hard drive that stores all of the ballot images and records for the entire election, no matter the size or complexity of the election. ES&S estimates it will take an entire man year of continuous scanning to fill the hard drive.

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	1.1.A.25	The tabulator shall be capable of withstanding transport conditions that may include extremely bumpy roads, exposure to extreme heat, cold, humidity and dust without incurring damage during transportation or becoming inoperable as a result of such transport.	Y		**DS200** The DS200 digital scanner has a protective enclosure that can withstand the transportation and storage requirements outlined in the 2005 Voluntary Voting System Guidelines (VVSG) and adopted by the Election Assistance Commission (EAC). The DS200 should be operated and stored in a temperature and humidity controlled environment, but is capable of performing under less than ideal environmental conditions. Specifically, several thousand DS200s are deployed throughout the State of Florida in areas of high humidity. The units located in 34 Florida counties have operated perfectly in the high temperature, high humidity conditions. In 2012, over 5,700 DS200's were deployed to temporary facilities throughout the boroughs of New York City during Hurricane Sandy's devastation of the Empire State. The DS200 units used in the NYC election post-Hurricane Sandy were exposed to severe storage and transport conditions and yet they performed flawlessly. The lockable carrying case for the DS200 is capable of withstanding impact, shock, and vibration loads accompanying private ground transportation. The DS200 carrying case is made of HDPE (High Density Poly Ethylene) and is provided with a telescoping handle. It becomes the top of the plastic ballot bin and ensures that the DS200 is securely attached to the ballot box and deposits ballots directly into the box once scanned. Some jurisdictions choose to transport their DS200 units while securely attached to the assembled ballot box. A heavy-duty rubber seal in the DS200 carrying case lid protects the DS200 against the elements such as dust, moisture and wind.

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	1.1.A.26	The tabulator shall be capable of withstanding frequent loading and unloading, stacking and unstacking, assembling, disassembling, reassembling, and other routing handling in the course of normal storage and operation.	Y		**DS200/DS450** Election equipment, in general, must be designed to withstand the rigors of the election cycle. The election cycle entails removing equipment from storage, programming and preparing equipment, shipping equipment to the election site, conducting the election, returning equipment to the warehouse/storage. To withstand this, the equipment was designed to be robust through the utilization of materials, mechanical analysis, and, where necessary, added protection in external cases. Verification of the design is through the "Transport and Storage" and "Bench Handling" requirements in the Voluntary Voting System Guidelines **DS200** The DS200 housing is made from impact resistant polycarbonate and acrylonitrile butadiene styrene blend (PC/ABS) (Cycoloy C6600) specified to minimize cracking. Locked doors made from PC/ABS provide easy access for paper and battery replacement, cleaning of contact image sensors, and inserting flash drives. When disassembly is necessary, threaded inserts are molded into the plastic housing to facilitate repeated access without stripping. When setting up for an election, the DS200 has robust rails attached to the bottom that interlock with the rails on the ballot box. If stored on top of the ballot box, the latched carrying case provides impact protection as well as a sand/dust/rain barrier.
	1.1.A.26 *continued*				**DS450** The DS450 central scanner is similar. Construction consists of machined aluminum plates with curved aluminum panels to form the ballot track. Locked doors made from clear polycarbonate provide easy access for inserting flash drives or connecting printers. The imaging head swings up for easy access for cleaning the scanner lenses. When disassembly is necessary, access is through the back. For the DS450, the rear door is removed for access. When setting up an election, the input and output trays are extended to match the corresponding ballot length and held in place via friction or detents. Covers to access the ballot path are held in place with snaps or magnetic catches to assure repeatable removal and reinstallation. When stored, a dust cover is placed over the unit to protect against dust.

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	1.1.A.27	Bidders shall document and explain any available special features of the proposed tabulator that demonstrates water resistance features.	Y		A heavy-duty rubber seal in the DS200 carrying case lid protects the DS200 against the elements such as dust, moisture and wind. The carrying case serves as the top of the DS200 plastic ballot box but also can securely transport the DS200 when it is detached from the ballot box. The case is designed to protect the DS200 from water damage during transport and storage, and has passed rain and dust tests in Florida certifications that are above and beyond any EAC or state requirements.

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B.	**Ballot Requirements**				
	1.1.B.1	The proposed system shall utilize a paper ballot with a voter verifiable paper trail. Ballot-related requirements in this section relate to overall ballot features and functionality; additional technical requirements related to ballots can also be found in **Section and Attachment 1.2, EMS TECHNICAL REQUIREMENTS.**	Y		The paper ballot utilized with the ES&S system is the voter-verifiable paper record of all votes cast and provides an audit trail that is available to jurisdictions in the event a recount, including manual recount, is required. Audit logs provide the supporting documentation for verifying the accuracy of reported election results. They present a concrete, indestructible archival record of all system activity related to the vote tally, and are essential for public confidence in the accuracy of the tally, for recounts, and for evidence in the event of criminal or civil litigation. All paper ballots can be counted and recounted in accordance with Michigan state law. In addition to scanning paper ballots, a digital image of each ballot cast is captured along with the associated vote record, which can be used for recounts and adjudication. When the voter has reviewed and modified vote selections as desired, the ExpressVote prints those choices on a thermal card stock/ballot. The ExpressVote produces ballots for tabulation in the DS200/DS450.
	1.1.B.2	Proposals shall document ballot layout options, including support for number, types and placement of columns, portrait or landscape layout, number and placement of vote targets, header shading options, font types and sizes, independence of front/back designs, etc.	Y		Electionware ballot design software enables complete typographic control over all ballot components for the following ballot lengths: 8.5 x 11" with 4 or 5 targets per inch; 8.5 x 14" with 3, 4, or 5 targets per inch; 8.5 x 17" with 3, 4, or 5 targets per inch; 8.5 x 19" with 3, 4, or 5 targets per inch. Ballots may be two-sided with multiple pages. Electionware provides a flexible and innovative ballot layout system capable of grid-portrait, grid-landscape, and multicolumn-portrait ballot types. The system can produce up to 9,900 ballot types, the ability to place up to 2,184 voter targets per side, and numerous font, header, shading, text, rotational, and column options, as well as, graphics as desired. The 8.5-inch-wide ballot has 24 columns of potential oval positions on each ballot side and is available in four different lengths, each having the potential of different row densities. Ovals can be placed to the right or left of candidate names.

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	1.1.B.3	The proposed system shall support a scalable ballot that ranges, at a minimum, from 8.5" x 11" to 8.5" x 17". Proposals shall specify the range of ballot sizes the proposed system supports, as well as the minimum/maximum number of columns, races/proposals and candidate positions that can be placed on a ballot.			The DS200 and DS450 are certified to tabulate 11”, 14”, 17”, and 19” length ballots in widths of 8.5” and 4.25” (for ExpressVote thermal card stock/ballots). They are capable of accurately reading a landscape ballot with as many as 24 columns front and back. The Electionware software supports both single- and double-sided ballots as well as multi-page ballots. Ballots can be formatted in either portrait or landscape orientation. Customization options for ballot layouts are extensive, and through the use of style sheets can be applied to all, or a subset of ballot styles. Once the ideal layout is achieved, templates can be saved for future use. In our proposed system, Paper Ballot is very flexible. Ovals positions are preset to designated locations depending on which ballot size is selected. There are many options when designing the ballots: 8.5 x 11-inch ballots with 4 or 5 targets per inch; 8.5 x 14-inch ballots with 3, 4, or 5 targets per inch; 8.5 x 17-inch ballots with 3, 4, or 5 targets per inch; 8.5 x 19-inch ballots with 3, 4, or 5 targets per inch. As ovals are drawn on the ballot, there is a protected area surrounding each one and the system will ensure that no text or graphic is too close to that area. Similarly, the system protects the space around the code channel, which is used to identify the ballot style to the tabulator. Contests and candidates may flow from the front side to the back side as needed. However, a single question may not flow from the front to the back. The software will ensure the entire question and its response are moved to the back side.
	1.1.B.3 *continued*				Long questions may wrap from one column to the next on the same side. The user may designate columns and different widths for each ballot side. For example, all ballot front sides may have three columns for contests, while the back sides are one-column wide for long questions. The user can dictate the column widths for each side in the election. This flexibility allows the user to design ballots in Electionware that include large numbers of races, candidates, and questions that are easily read by the DS200 tabulator. Maximum number of races per ballot style: 200 or # of positions on ballot Maximum number of contests per election: Depends on election content (limited by 21,000 maximum counters) Maximum number of candidates per contest: Depends on election content (limited by 21,000 maximum counters)

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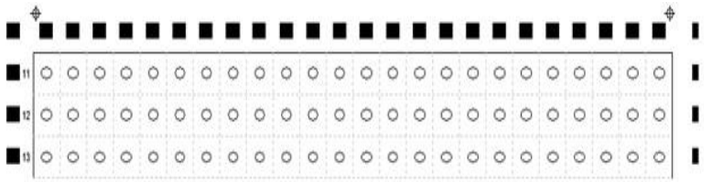
	1.1.B.4	The proposed system shall support ballot layouts that allow for the ballot to be one(1), two (2), three (3) or four (4) columns.	Y		The DS200/DS450 are capable of accurately reading a landscape ballot with as many as 24 columns front and back. The maximum number of columns for a portrait ballot is 24. There are 24 timing marks across the top of the ballot. Each timing mark is a potential start/stop point for a new column. The user can have as many columns as they want (up to 24) as long as their combined width is equal to or less than 24. For example, the user could set up three columns (each eight timing marks wide), or four columns (each six wide). As an additional example, the software is also flexible enough to have one thin column (four wide) plus two wide columns (10 wide).  This flexibility allows the user to design ballots in Electionware that include large numbers of races, candidates, and questions that are easily read by the voters and tabulators.
	1.1.B.5	The proposed system must support ballot layouts in either portrait or landscape orientation.	Y		The ES&S system supports ballot layouts in either portrait or landscape orientation. If desired, the tabulators are capable of reading a ballot with portrait on one side of the ballot and landscape on the other side. The landscape orientation is useful for questions or referendums that require a lot of space on the ballot.

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	1.1.B.6	Proposals shall include all pertinent ballot production specifications (e.g., ink, paper weight/thickness to prevent bleed through, etc.) and all other requirements related to ballot printing to allow counties and local jurisdictions to utilize commercial ballot print vendors of their choice. Any proposed ballot printer certification requirements shall be outlined in detail in the bid response, and are subject to State approval. Proposals must list any pre-approved ballot printing vendors who are certified to print ballots for use with the proposed system. The maximum paper size any county has used to date for a single optical scan ballot page, with 2 faces, is 9.75 x 22 inches. Note that in some jurisdictions, a two-page ballot has sometimes been used.	Y		ES&S recommends that all printers use ES&S CountRight™ ballot stock, which has been specially engineered to run on ES&S tabulators and meets all ES&S specifications for the equipment. As the manufacturer of the scanning equipment, ES&S understands the critical synergy required between the ballot paper, the ink on the paper, and the tabulator logic. CountRight is available to third party printers in two ways: • As the only authorized distributor of CountRight, Veritiv offers parent sheets and rolls in several sizes and formats. • ES&S stocks and markets CountRight Digital Ballot Stock sheets in a variety of lengths. ES&S tabulators require the following ballot specifications to ensure proper tabulation of voter marks: **Ballot ink** ES&S recommends jurisdictions print all machine readable components with commercially available black ink. However, there are no limitations on color applied and any commercial ink may be used on ballots read by ES&S optical scanners. Ink density must remain between a minimum of 0.95 and a maximum of 1.5. For best results, a density of 1.15 should be used. Flat ink should always be used, and powder or varnish should not be used when printing. Following these guidelines will ensure that the ink will not rub off during ballot tabulation or fade, smear or otherwise degrade and obscure or obliterate the paper record over time. The following colored inks are approved only for creating screens on ballots: • Red PMS Warm Red • Orange Pantone 151 • Brown Pantone 472 • Yellow Pantone 107 • Purple Pantone 252 • Green Pantone 344

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	1.1.B.6 *continued*				**Paper** ES&S recommends the use of 80 lb. ES&S CountRight Ballot Stock as our testing and certifications are completed using this type and weight of paper. ES&S tabulators require the following ballot specifications to ensure proper tabulation of voter marks: • Grain direction on finished ballot: Long • Basis weight: 80 lb. text weight (36.2874 kg) • Thickness: 0.0061 in. (0.015494 cm) • Smoothness: 130 Sheffields • Moisture: 5.5 percent • Opacity: 97.0 • Brightness: 96 • PPI: 338 The ExpressVote uses a more densely populated card stock when compared to the conventional three-column ballot, which saves time, pages, and ballot printing costs. A single thermal card stock/ballot can fit up to 102 selections, eliminating multiple-page ballots. The ExpressVote generates vote records on 4 ½ inch x 11-, 14-, 17-, and 19-inch thermal card stock/ballot. The thermal card stock/ballot uses thermal heat-sensitive paper with 134 Microns +/- 6 Microns (0.005275” +/- 0.00236”) thickness. **Ballot sizes:** • Ballot width: 8.50 in. + 0.027 in. or - 0.020 in. (21.59 cm + 0.0762 cm or - .0508 cm) • Ballot height: 11 in., 14 in., 17 in. or 19 in. + 0.030 in. (27.94 cm, 35.56 cm, 43.18 cm or 48.26 +.0762 cm) *Note: The ballot heights above are finished size lengths and do not include ballot stubs.*

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	1.1.B.6 *continued*				**Oval thickness and Color** Electionware's Paper Ballot module offers options for line thickness. ES&S recommends a .005 inch setting, which creates a thicker oval for maximum mark detection performance. Paper Ballot also allows for the oval line color to be updated. ES&S supports many colors, including black, red, orange, blue and purple. **Folding restrictions** Optical scan ballots can be printed on manufactured 80 lb. CountRight ballot stock. This paper is sufficiently durable to withstand repeated handling and folding for the purposes of mandatory random audits and recounts. A folding machine should be used to expedite the process. In addition, roller pressures should be reduced to about 2-3 times the thickness of code stock. DO NOT fold through any timing marks. Scoring followed by folding may result in the ballot separating at the score/fold line. **Printing Ballots** ES&S is the leading ballot service provider in the United States. We offer full offset and digital capabilities at our company-owned print plants in Birmingham, Alabama and Omaha, Nebraska. In addition to our company-owned facilities, we have built an impressive coast-to-coast Partner Printer Program. The Partner Printer Program allows us to meet all our clients' timeframes and deadlines. Our network of in-house and partner printers is unmatched in the industry and provides our print and mail customers with quality service, bench strength, and multiple backup locations in the case of a natural disaster.

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	1.1.B.6 *continued*				In addition to Partner Printers, we also work with the State's and local counties and jurisdictions local chosen printers by providing all ballot specifications and training, when necessary, for them to expertly print ballots for our customers to use on ES&S election equipment. **Third Party Printers** We understand and respect the right of our clients to select a ballot service provider of their choice. There are several third party printers in Michigan at this time. ES&S will provide all of the necessary tools, specifications and rules and regulations that a third party printer must adhere to in order to produce an ES&S finished ballot that will be accepted and recorded accurately by your new ES&S tabulation devices. Until ES&S provides the new print specifications and related information on our proposed voting system solution, there are no pre-approved printing vendors.

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	1.1.B.7	OPTIONAL REQUIREMENT: Proposals shall indicate whether the proposed system offers an optional *Ballot on Demand* (BOD) system; functionality that allows for designated precinct ballots to be printed at the time of issuance to the voter, and a system that allows for the issuance and processing of numerous ballot styles in a single jurisdiction via a single BOD system.	Y		Yes, ES&S offers an option for Ballot on Demand printing, See below for an overview of Balotar Compact, a portable system. The portable Balotar Compact Printing System® consolidates commercially available printing components with ES&S' proprietary software and hardware modifications, enabling the system to fulfill the demanding printing and audit needs of elections. The Balotar Compact is a rugged printer that can be transported, along with an optional foldable lightweight cart and accessories, in the back of a van or hatchback. The printer's light weight and small size of the Balotar Compact eliminates costly manpower and transportation fees normally associated with moving larger on-demand systems between the storage and polling locations. The system enables election staff to print the exact number of ballots needed for each vote center, based on Election Day turnout, increasing efficiency while reducing cost and waste. **Key features include:** • precision alignment feeder, which ensures maximum ballot readability • integration with your voter registration system • provides an easy-to-use interface • eliminates ballot picking and pulling • ballots can be printed as-needed • removes the risk of ballot shortages • contains automated email and fax, overlay, and plug-and-play capability • automatic duplex capability for 19-inch ballots ES&S provides all-inclusive support including installation, setup, and training, hardware and software maintenance, help desk and on-site support, and all ballot stock and consumables.

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	1.1.B.7 *continued*				Advance voting is on the rise as more voters cast their ballots before Election Day – in person at voting centers, at local election offices, and via absentee ballot by mail. ES&S offers around-the-clock support for all your printing needs before, during, and after Election Day. In the 2012 General Election, 39 percent of all ballots were cast before Election Day. Although the State of Michigan doesn't currently allow early voting, this proposed BOD system will fulfill such future needs. The Balotar Compact printing system helps your jurisdiction roll with these changes, saving on costs, relieving stress, reducing environmental impact, and improving efficiency. The system is cost efficient because it limits overtime costs, reduces temporary staffing needs for ballot processing and inventory, and has flexible fees to fit your budget. The Balotar Compact printing system also controls pre-election ballot production, does not cause Election Day delays for ballot deliveries, ensures the correct ballot style for every voter, avoids ballot shortages, and allows UOCAVA and absentee ballots to be ready in an instant. In addition, it is environmentally friendly, eliminates waste from pre-printing too many ballots, creates lower energy use for ballot printing and shipment, and reduces chemical use.
	1.1.B.7 *continued*				The Balotar Printing System® consolidates commercially available printing components with ES&S' proprietary software and hardware modifications, enabling the system to fulfill the demanding printing and audit needs of elections. The system enables election staff to print the exact number of ballots needed for each vote center, based on Election Day turnout, increasing efficiency while reducing cost and waste. The Balotar Printing System controls pre-election ballot production, does not cause Election Day delays for ballot deliveries, ensures the correct ballot style for every voter, avoids ballot shortages, and allows UOCAVA and absentee ballots to be ready in an instant. In addition, it is environmentally friendly, eliminates waste from pre-printing too many ballots, creates lower energy use for ballot printing and shipment, and reduces chemical use. See **Exhibit C, Pricing, Optional Items.**
C.	**Memory Device**				

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	1.1.C.1	Proposals shall describe and detail the proposed memory device utilized by the proposed system. The preferred solution is a commercially-available (COTS) memory device. The preferred memory device would not include batteries or removable parts. Bid responses must indicate make, model, storage capacity and security features of the memory device proposed, and any special requirements related to the use and purchase of the proposed memory device. The proposed memory device must be included and separately listed in **Exhibit C, Pricing** (including component costs for a single additional or replacement memory device).	Y		ES&S utilizes the Delkin USB 2.0 flash drives for the the DS200/ DS450/ExpressVote. These drives are modified-COTS and proprietary. These USB memory devices do not have batteries and do not contain removable parts other than the USB cap. The DS200 and ExpressVote come with the 4GB and the central scanner/tabulators come with the 8GB USB memory devices. Our manufacturer registers each drive with the USB Consortium for added security, allowing the Vendor Identification (VID) and Product Identification (PID) to be coded into our firmware. The Delkin drives selected are certified as Industrial grade memory devices using Single Level Cell (SLC) flash technology. SLC devices operate at faster speeds with 10 times the reliability of standard consumer grade devices. These drives are built with single level cell (SLC) technology allowing for faster access times, a much lower bit error rate and a longer life span than consumer USB drives from retailers. Other COTS USB memory devices are multiple level cell (MLC), which have a higher likelihood of bit error, higher rate of physical failure, slower access time and much lower read/write lifetime. Avoiding bit errors is a big consideration when thinking about election administration; bit errors on consumer devices might cause pixels in a photograph to be rendered or an audit log mismatch, causing the DS200 system to halt. Additionally, our devices are made along the same lines as military and industrial devices, ensuring they are available in the correct specifications for many years.

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	1.1.C.1 *continued*				ES&S memory devices pass the EAC requirement of 22 months archival period, with no data loss; the manufacturer guarantees data retention for 10 years. Key features include: • Available in the following capacities: 4 and 8 GB • High-speed USB 2.0 certified (backward-compatible with all USB 1.1 ports) • Static and dynamic wear-leveling • 8-symbol error correction code (ECC) • Lifetime warranty • “High Speed” transfer rate: up to 480 megabits/second for USB 2.0 • “Full Speed” transfer rate: up to 12 megabits/second for USB 1.1 • Storage temperature: -40 to 85 degrees C • Commercial operating temperature: 0 to 70 degrees C • Industrial extended operating temperature: -40 to 85 degrees C The proposed USB memory devices are included and separately listed in Exhibit C, Pricing including component costs for a single additional or replacement USB memory device).
	1.1.C.2	The proposed system shall provide for multiple ballot styles (multiple precincts and split precincts) to be stored on and processed by a single memory device. Bid responses must indicate any limitations or maximum capacity requirements related to a single memory device (e.g., maximum number of ballot styles on one memory device).	Y		If no images are stored, the standard 4GB USB memory device used with the DS200 scanner can capture and store approximately 100,000 cast vote records, the election definition, and audit log records. If ballot images are captured and stored, the 4GB drive can store at least 12,000 images (both sides of each ballot sheet), along with the cast vote records, the election definition, and audit log records. The 8GB USB memory device used in the DS450 scanner is also available for use with the DS200 scanner and will increase the amount of storage per voting unit and USB memory device, if required by the jurisdiction. ES&S’ proposed solution EVS 5.2.1.0. is capable of reading, recording and storing results from up to 9,900 precincts and 9,900 ballot styles on a single USB memory device.
	1.1.C.3	Proposals shall describe any capabilities for processing additional ballots after the polls have been closed.		Y - bidder complies with modificati ons	Further counting of ballots by the DS200 is prevented once the poll closing sequence is initiated by the election worker, unless an authorized election official conducts the steps to re-open the polls with the use of an authorized access code.

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	1.1.C.4	Proposals shall describe any memory device security features (e.g., encryption, security seals or other features) which are available to secure data stored on the device.	Y		The EQC not only clears the previous election logs and security codes on the tabulators, but also loads the election ID and security codes for the new election allowing for secure loading of the new election definition. **DS200** The DS200 USB memory device is located in a locked compartment. For added security, the USB memory device can be fastened in place with a wire seal and the door of the compartment can be secured with a tamper-evident seal. Election definition files, vote results, and ballot image files on the DS200 removable USB memory device are digitally signed and encrypted using Federal Information Processing Standards (FIPS)-compliant Advanced Encryption Standard (AES) encryption using a certified library from Rivest-Shamir-Adleman (RSA). The results remain encrypted until imported into Election Reporting Manager for results accumulation. All data transmissions to the Data Comm SFTP Server have been designed and configured to be FIPS 140-2 compliant. The DS200 system continuously evaluates whether the hardware and firmware are executing only in the authorized fashion. Any deviations from this execution due to tampering or system issues are immediately logged and reported to the user via the touch-screen interface and the machine Events Log. The DS200 Events Log report lists all events (errors, exceptions, and user-initiated functions) that occur on the system from the time an election worker inserts the unit's removable memory device until the USB memory device is removed. Each event appears in the audit record with a date and time stamp. A user can view the Events Log on the DS200 or print the contents on the thermal printer built into the machine or from the Electionware EMS after a user has closed the polls and transferred the data from the USB memory device to Electionware.

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	1.1.C.4 *continued*				**DS450** The DS450 stores all data to the hard disk drive. Backups of the results are completed by exporting the data to USB memory devices. Data exported is digitally encrypted and signed to prevent tampering with results. From concept to construction, ES&S adheres to industry-leading standards for quality and security. Designed and federally certified to meet the rigorous security standards of the 2005 Voluntary Voting System Guidelines (VVSG), the DS450 operating system controls, limits and detects unauthorized access to all critical system components. The system also implements state-of-the-art safeguards against losses of system integrity, availability, confidentiality and accountability. The DS450 secures all data ports behind clear plastic lockable and sealable access doors to protect access and allow election officials to easily detect unauthorized access. All critical hardware components can be locked and sealed as well. The DS450 logs when the imaging heads are accessed. It provides additional alerts and logs access to the back service door.

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	1.1.C.4 *continued*				DS450 security features ensure the highest level of physical and system-level security for the central count environment: • Data and system validation. The DS450 provides easy validation for all resident firmware against certified versions and generates detailed audit and event logs to support system vetting. In addition, it validates and accepts only data that contains the proper digital data encryption and signing. • Strong physical access controls. The DS450 secures all data ports behind clear plastic lockable and sealable access doors to protect access and allow election officials to easily detect unauthorized access. All critical hardware components can be locked and sealed, as well. The DS450 logs when the imaging heads are accessed. It provides additional alerts and logs access to the back service door. • Role-based access codes. The DS450 provides access codes that allow access for operator and administrative roles. Access code protection is configurable to protect all operations of the applications. Pass codes are required to access all critical functions, including Election Administration, Processing Modes, System and Hardware Maintenance, and Results functions. Supervisor functions are limited to the controls provided in the system menus. • Full logging for complete auditability. The DS450 provides options for both real-time printed and electronic logging of all activity performed, with the ability to reprint logs on demand or export electronic logs for complete review. The DS450 logs all pass code attempts, whether successful or failed, to the digitally signed audit log. In addition, all user actions (such as administrative selections and open and close poll events), whether successful or failed, are written to the audit log. Only the DS450 system can create, read, modify, and delete the audit log/inventory as the user interface is locked out of this functionality. All low-level access to the file systems is protected.

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	1.1.C.4 *continued*				• Digital encryption and signing of key files. The DS450 uses digital encryption and signing of key configuration and data files for complete integrity of the election and results. All DS450 data is signed with Federal Information Processing Standards (FIPS)-compliant digital signature algorithms. All data generated is also signed so the program receiving the data can validate it. • Protection against improper configuration. The system functions will not execute if it is improperly configured. • Redundancy. The DS450 provides the ability to backup vote data to a USB memory device to complement the retention of paper ballots and proper election procedures by election officials as a redundant means of providing system security. • Network security. Each DS450 central tabulator/scanner is assigned a unique user ID and password on the SFTP Server. • Cast Vote Record security. Cast Vote Records (CVRs) can be written to election media for backup purposes without aggregating vote data for reporting purposes. This prevents data from being read into the EMS system for the purposes of reporting. The aggregation of data is access-code controlled and can be locked out until re-enabled by an administrator. All CVRs are digitally signed and are encrypted when exported via USB media or network.
	1.1.C.5	Proposals shall describe any physical security features that secure the memory device to the tabulator to ensure tamper resistance and full security for memory devices with the tabulator from the time of initial testing through Election Day.	Y		**DS200** The DS200 USB memory device is located in a locked compartment. For added security, the USB memory device can be fastened in place with a wire seal and the door of the compartment can be secured with a tamper-evident seal. **DS450** The DS450 secure all data ports behind clear plastic lockable and sealable access doors to protect access and allow election officials to easily detect unauthorized access. All critical hardware components can be locked and sealed as well. The DS450 logs when the imaging heads are accessed. They provide additional alerts and logs access to the back service door.

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D.	**Ballot Box**				
	1.1.D.1	Each voting system must include a ballot box for storage of voted ballots. Proposals shall document the size, weight and volume (ballot capacity of compartment based on ballot size, number of compartments) of the proposed ballot box.	Y		Our proposed solution includes a plastic ballot box has non-flex steel doors and a reinforced base plate, sealed faceplate so it may be loaded with election supplies, oversized durable caster wheels for ease of movement and can be nested to conserve space for storage. The plastic ballot box weighs 45 pounds and is 26" x 36 1/4" x 24." Regardless of length of the ballot, the main ballot bin holds approximately 4,000 ballots. The e-bin, or auxiliary bin, holds approximately 100 ballots. When used with the plastic ballot box, the DS200 carrying case serves as the top of the ballot box. 
	1.1.D.2	The ballot box shall secure the voted paper ballots in locked and sealable compartments. Proposals shall detail the use of all lockable compartments utilized by the proposed ballot box.	Y		The plastic ballot box, with the carrying case installed, provides a variety of locations to lock and seal the ballot box to secure the DS200 and USB memory device during pre-Election and Election Day. Each of the ballot box doors (official ballot compartment, auxiliary bin) can be locked and sealed to secure ballots in those compartments. The ballot box contains seven (7) locks and nine (9) possible seal locations. The DS200 contains three (3) locks and three (3) possible seal locations. **See our response to 1.1.D.3***directly below for more information on all lockable compartments utilized by the proposed ballot box.*

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	1.1.D.3	The ballot box shall allow poll workers the ability to open, re-lock and reseal secure storage compartments.	Y		The DS200 and its ballot box provide multiple keyed locks and wire seal locations to secure storage compartments and ensure the security of your election. If desired, tape seals can also be used for additional security. All lock and seal locations can be easily accessed by poll workers to open and re-lock or re-seal as needed. Many jurisdictions have the DS200 installed on the ballot box before Election Day and delivered to the voting center as a self-contained unit. When properly assembled, the DS200 ballot box ensures the ballot path from the DS200 to the ballot box is completely secure and contained. The only way for a ballot to be deposited in the ballot box is by scanning it through the DS200. For poll workers, setting up the DS200 on Election Day can be a simple three step process: 1. Unlocking and opening the back of the ballot box to access the power cord and plugging it in to a power source. 2. Unlocking and opening the top of the ballot box. 3. Unlocking and opening the touchscreen. If set up according to ES&S recommendations, this will cause the DS200 to automatically power on with the polls open and ready for voting. Complete details about the DS200 lock and seal options follow:
	1.1.D.4 *continued*				On the DS200 scanner, keyed locks secure the main and backup USB memory device compartments, and the touchscreen in a closed position. Up to three (3) USB memory devices can be secured with wire seals, and tape seals can be used across the compartment doors.
	1.1.D.4 *continued*				On the DS200 ballot box, keyed locks secure the doors to the main and auxiliary ballot box compartment. Two more keyed locks, on either side, secure the DS200 carrying case to the ballot box base. Two latches and a keyed lock secure the top of the carrying case in a closed position. Inside, a keyed lock secure the DS200 scanner to metal rails and prevent its removal from the case. If desired, a wire seal can be affixed near each of these keyed locks. Up to four wire seals can be applied to the latches that hold the top of the ballot bin closed.
	1.1.D.4 *continued*				The top back side of the ballot box is also secured with a keyed lock. This compartment is designed to remain open while the DS200 scanner is in use. This provides several advantages: 1) air is allowed to circulate around the power adapter, which prevents overheating and ensures continued operation of the scanner; 2) Election workers can see at a glance whether the ballot path is open or closed; and 3) The ballot path is completely secure, but election observers can witness the DS200 depositing ballots directly into the ballot box.

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	1.1.D.4	The ballot box shall include a separate compartment for storage of voted ballots while ballot counter is inoperable.	Y		The plastic ballot boxes contain an auxiliary bin to store uncounted ballots when the scanner is unavailable. The auxiliary bin weighs approximately 4 pounds, measures 23 ½" H x 26" W x 5" D and can hold approximately 100 ballots. The slot for the auxiliary bin may be sealed and locked and in the closed position, or opened and ready for ballots. When opened, it is designed to easily receive ballots, but prevents removal of them.
	1.1.D.5	Proposals shall describe any portability features of the ballot box that allow for easy transport.	Y		The DS200 ballot box is designed to be compact, portable, and easy to move. The DS200 has two options for easy transport by a single person. The DS200 can be securely transported in its durable hard shell carrying case, or it can be transported on top the DS200 ballot box as an integral unit. The DS200 carrying case is a secure, rain and dust resistant durable hard-sided carrying case. This transport case has luggage type wheels and telescoping spring-loaded handle for ease of transport. When transporting in this mode, the combined weight of the DS200 and carrying case is 52 pounds. The ES&S recommended configuration for transport of the DS200 is mounted on top of the plastic ballot box. The carrying case serves as the top of the plastic ballot box and can be transported as an integral unit and easily maneuvered by a single individual. The DS200 ballot box has four heavy duty caster wheels on the bottom and convenient side handles designed to enable election workers to pull, rather than push, the ballot box. This provides complete control, and therefore, lessens the chance of a tip over during transport. The DS200 ballot box is very durable and can absorb the shocks and impacts that are associated with surface transportation of the equipment. This configuration allows the user to deliver a DS200 to the polling location after it has completed L&A testing and has been secured and ready for transportation to the polling place.

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	1.1.D.6	The ballot box shall be capable of withstanding transport conditions that may include extremely bumpy roads, exposure to extreme heat, cold, humidity and dust without incurring damage during transportation or becoming inoperable as a result of such transport.	Y		The DS200 ballot box is compact, portable, and easy to move around the warehouse or polling place. It includes handles and four heavy duty caster wheels. It is made of durable ABS (Acrylonitrile Butadiene Styrene) plastic material with steel-reinforced doors. Sturdy construction of the ballot box renders it capable of withstanding impact, shock, and vibration loads accompanying transportation. The DS200 ballot box is expected to meet minimum performance standards for exposure to physical shock and vibration associated with handling and transportation by surface and air common carriers.
	1.1.D.7	The ballot box shall be capable of withstanding frequent loading and unloading, stacking and unstacking, assembling, disassembling, reassembling, and other routing handling in the course of normal storage and operation.	Y		The DS200 ballot box is constructed with durable, scratch-resistant Acrylonitrile Butadiene Styrene (ABS) plastic materials, with steel-reinforced base and doors, and four lockable, swivel caster rollers on the bottom of the box for easy transportability. As opposed to a folding ballot that exposes election workers to pinch points and complexity of assembly on election morning, the ES&S plastic ballot box is solid state. The plastic base is designed for strength, and the plastic material complies with the UL 94V-0 specifications for flammability safety.
	1.1.D.8	Bidders shall document and explain any available special features of the proposed ballot box that demonstrates water resistance features.	Y		The DS200 carrying case, which serves as the top of the DS200 plastic ballot box, is hard-sided, dust and moisture proof for transportation and storage of the tabulator. The case is designed to protect the DS200 from water damage during transport and storage, and has passed rain and dust tests in Florida certifications that are above and beyond any EAC or state requirements. The DS200 ballot box is made of durable ABS (Acrylonitrile Butadiene Styrene) plastic material with steel-reinforced base and doors. A heavy-duty rubber seal in the DS200 carrying case lid protects the DS200 against the elements such as dust, moisture and wind.

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	1.1.D.9	OPTIONAL REQUIREMENT: Bidders shall document and explain any available ballot box storage-friendly options (such as the capability of collapsing or stacking boxes for more efficient storage).	Y		The DS200 carrying case and the DS200 scanner are attached to the top of the ballot box during use. Between elections, the scanner and carrying case can be removed from the ballot box and stored separately. In that case, up to five ballot boxes can be nested together to save storage space. It is also possible to store the unit with the carrying case still attached to the ballot box (with or without the DS200 scanner inside).
E.	**COTS (Commercial Off the Shelf) options**				
	1.1.E.1	Bidders shall identify any and all COTS **components** proposed as part of their overall voting systems solution (e.g., printers, tablets, etc.). Replacement purchase sources for all identified COTS components shall be identified in the bid response and Cost Proposal; COTS parts identified shall be made available to counties and local jurisdictions.	Y		COTS components listed in **Exhibit C, Pricing** include replacement purchase sources for all identified COTS components except for those which, it is our understanding, the Counties plan to purchase separately. These are listed in **Extended Response to 1.1.E.1** attached hereto as **Appendix E.**
	1.1.E.2	Bidders shall identify any and all COTS **supplies and replacement parts** that may be utilized by their proposed system (e.g., memory devices, ink cartridges, batteries, etc.). COTS options for supplies/replacement parts are strongly preferred.	Y		In **Exhibit C, Pricing**, please see the listing of all COTS supplies and replacement parts that may be utilized by the proposed system.

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	1.1.E.3	Bidders shall identify and describe in detail any plans under development for upgrades / enhancements to systems that further utilize COTS components, supplies and replacement parts.	Y		ES&S incorporates COTS items where practical. Internal components such as displays, touch screens, motherboards (CPU), and memory modules are some examples where the required functionality is readily available off the shelf. For these, ES&S constantly monitors availability, changes in technology, and opportunities for improvement. Countering this are a handful of election processes that ES&S keeps a tight rein on. These are the imaging of the paper ballot and the transport of election results. By controlling our scanners and election media, we can assure accurate and secure results. ES&S continues to look for COTS alternatives, but so far the risks have outweighed the benefits. All that being said, ES&S constantly monitors the supply chain for new COTS components that offer our customers cost or performance improvements to their existing system. When the team identifies COTS components that decrease product cost or increase product performance, the certification and development costs are weighed against the product benefits. If the benefits outweigh the implementation cost, the new COTS component enters development. We must balance the value of lower-cost COTS components with the requirements of sustainability for the election industry. If the sustainability costs are too high for a COTS component over the 10+ year life of the product, then we decide COTS is not the direction to go for that particular instance. However, ES&S has recently implemented many COTS components into our go-forward suite of voting solutions. Below are some examples of the COTS components and supplies we have recently implemented or will be adding to our suite in future releases: 1. ExpressVote: QR Code Scanners, Thermal Paper Rolls, Headphones (EVS 5.4.0.0, Spring 2016) 2. DS450/DS850: Printers, Universal Power Supply (current release as well as EVS 5.8.0.0, Winter 2016) 3. DS200: Thermal Reverse Wound Paper Rolls (current release)

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	1.1.E.4	Bidders shall identify new COTS options over the course of the contract, as the market changes and/or as existing COTS components become obsolete. COTS options provided to other states must be identified to the State, with an option and plan for implementing other available COTS options through the life of the contract.	Y		The ES&S sustaining engineering department constantly monitors the supply chain for new COTs components that offer cost or performance improvements to an existing system. When the team identifies COTs components that decrease product cost or increase product performance, the certification and development costs are weighed against the product benefits. If the benefits out weight the implementation costs, the new COTs components enters development. Since COTs components become obsolete so quickly, ES&S rarely identifies improved COTs components before the current COTs component is obsolete. ES&S sustaining engineering team has dealt with COTs component obsolesce for years. • DS200 motherboard • DS200 DRAM • DS200 modems • DS200 display • DS200 external power supply ES&S has kept a consistent look and feel of the DS200 overall while replacing all of the internal COTs components. This allows customers to purchase new DS200s, place them alongside existing DS200s, and provide the exact same voter experience to all voters, while taking advantage of improvements in COTs components. Jurisdiction across the nation take advantage of the DS200's upgraded COTs technology while providing consistent voter experience. ES&S' sustaining engineering team will continue to monitor all COTS components in all of our systems. As end of life (EOL) or component improvements become available, we will continue to make wise choices with our customers in mind, to ensure our fielded voting systems remain viable for new and existing customers.

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F.	**Reliability Requirements**				
	1.1.F.1	All proposed voting system components shall be able to perform in a wide range of climates and humidity levels without ballot jams or other malfunctions.	Y		All proposed devices have been designed to meet or exceed 2005 Voluntary Voting Systems Guidelines (VVSG) requirements for performance in a wide range of climates and humidity levels without ballot jams or other malfunctions. **DS200** *OPERATION:* Tested Temperature Range: +60 to +100 degrees Fahrenheit Tested Relative Humidity Range: 10% to 50% *STORAGE:* Storage Temperature Tolerance Range: 0 to +120 degrees Fahrenheit Storage Relative Humidity Tolerance Range: 10% to 85% **DS450** *OPERATION:* Tested Temperature Range: 50 degrees Fahrenheit to 95 degrees Fahrenheit Tested Relative Humidity: 10% to 88% *STORAGE:* Storage Temperature Tolerance Range: -4 degrees Fahrenheit to +140 degrees Fahrenheit Storage Relative Humidity Tolerance Range: 10% to 88% **ExpressVote** *OPERATION:* Tested Temperature Range: +60 to +100 degrees Fahrenheit Tested Relative Humidity Range: 10% to 50% *STORAGE:* Storage Temperature Tolerance Range: 0 to +120 degrees Fahrenheit Tested Relative Humidity Range: 10% to 85%

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	1.1.F.2	Proposals shall detail features of the system that are designed to avoid ballot jams.	Y		The DS200 and DS450 have been uniquely designed to accept ballots that have been folded. The paper transports on both scanners safely guide folded ballots through the read heads to avoid paper jams or misreads. The DS450 uses a patented technology known as TruGrip™, to provide constant contact with each ballot. The DS450 utilizes the same roller technology with 17 rollers. The ExpressVote has been designed to minimize jamming of the thermal card stock/ballots. The easy side door access allows the ability to quickly and simply clear jams of damaged card stock/ballots.
	1.1.F.3	In the event of a ballot jam**,** the tabulator shall accurately state whether the ballot was tabulated; this statement must also be available in the system audit log.	Y		**DS200 BALLOT JAM RECOVERY** The DS200 is designed for easy recovery from errors such as ballot jams, multiple feeds, or any other type of feed error. When a jam occurs, the screen displays instructions about resolving the issue, making it easy for poll workers to know whether a ballot needs to be rescanned or was already successfully tabulated. For example, the following message appears in response to a multiple feed: • Multiple ballots were detected - Please remove ballots and insert them one ballot at a time. Ensure your ballot is not folded or damaged. In the case of a ballot jam, the exact message displayed is determined by the location of the ballot and the conditions that caused the jam. The following are examples of possible messages: • Your ballot has been counted but it didn't drop into the ballot box. • Ensure the ballot causing the jam has been deposited into the ballot box. • Ballot Jam. Please check the paper path. • Your ballot has been counted. The following error has occurred. <a message number appears to help identify the cause of the error> • Ballot Jam - Your ballot has NOT been counted. In general, when a ballot jams while in the scanner, it has not been tabulated. When a ballot travels past the scanner and jams as it enters the ballot box (perhaps with the trailing edge is still trapped in the scanner), the ballot has been tabulated. In either case, the touchscreen provides information about the jam, including whether the jammed ballot needs to be rescanned. Election workers can easily retrieve jammed ballots by lifting up the reader cover to remove the ballot from the scanner. If the ballot jams as it enters the ballot box, Election workers can easily determine whether the ballot path is open or closed, or the ballot box needs to be emptied. The DS200 audit log (Event Log Report) provides a record of every action taken on the DS200 (by poll workers or voters, for example), and of every internal or

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	1.1.F.3 *continued*				system action taken by the DS200. Errors such as ballot jams are captured in the audit log and instructions about recovery from the jam are provided on the touch screen. **DS450 BALLOT JAM RECOVERY** The DS450 central scanner is currently under development, however, one of its planned features is enhanced jam recovery, as described below. When a jam occurs, the screen will present instructions for clearing the jam. Dynamic screens will indicate where the jam occurred and identify which bins contain ballots that were successfully scanned. For example, if the jam occurs in the transport but all ballots in the output bins were successfully scanned, the operator is given the option of retaining the results for the scanned ballots, and rescanning only the other, not-processed ballots. Based on preference or jurisdictional requirements, the operator can still choose to rescan all ballots in the run, even the ones that were scanned successfully. The DS450 will be able to determine if all ballots should be rescanned, or only the ballots in certain bins, or only the ballots remaining in the transport.
	1.1.F.4	In the event of a ballot jam, the ballot track shall be easy to clear.	Y		**DS200** The DS200 is designed to recover from errors such as feed jams, multiple feeds, or any other type of feed error that causes the machine to reject an individual ballot. The DS200 will detail the nature of the error or failure condition and provide the means to correct, without loss or corruption of ballot count or data previously stored. If a ballot is jammed in the DS200, the voter will receive a message on the large LCD screen stating , “Ballot Jammed; the ballot has not been counted.” The DS200 ballot transport mechanism area is easily accessible by the poll official by simply lifting up the reader door to reveal the ballot for easy removal. At that point, all the voter needs to do is feed the ballot back into the scanner for processing. **DS450** In the event of a jam or misfeed, the DS450 user interface guides the user through a step-by-step process to clear the device. All exception messages are displayed on the large LCD screen in easy-to-understand text, along with instructions on how to clear the exceptions. The DS450 user interface ensures users understand which ballots are counted and complete, and which ballots must still be counted. The DS450 has an open transport design that allows for easy jam identification and removal.

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	1.1.F.4 *continued*				**Scanning Menu** Simply clear the ballot transport path in the Scanning menu by selecting Clear Transport. The following is an example of the Scanning menu.  **ExpressVote** The ExpressVote has been designed to minimize jamming of the thermal card stock/ballots. The easy side door access allows the ability to quickly and simply clear jams of damaged thermal card stock/ballots.

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	1.1.F.5	Voting system components shall be transportable, without damage to internal circuitry	Y		**DS200** The DS200 is provided with a protective enclosure rendering the equipment capable of withstanding the transportation and storage requirements outlined in the 2005 Voluntary Voting Systems Guidelines (VVSG), Volume I, section 3, subsections 3.3.3, “Transport and Storage of Precinct Systems,” and 3.2.2.14, “Environmental Control – Transit and Storage.” The DS200 digital scanner’s internal components, including circuitry are enclosed in a rugged, impact resistant GE C6600 – Polycarbonate Acrylonitrile Butadiene Styrene (ABS) plastic housing. The terminal’s outer coloring is integrated into the plastic to prevent chipping or scratching on the outside surface. The DS200 is protected during storage and transportation in the included carrying case. The lockable case is capable of withstanding impact, shock, and vibration loads accompanying private ground transportation. The unit’s durability is further enhanced when the DS200 carrying case is attached atop the DS200 ballot box bin during storage and transit to the polling location.
	1.1.F.5 *continued*				**DS450** ES&S is proposing our cutting-edge, digital image-based central count solution, the DS450, which scans each ballot with unrivaled speed and accuracy—especially folded ballots. Due to its size and intended purpose, the DS450 is not designed for transport from polling place to polling place. However, the DS450 sits on a custom-designed table, which will allow excellent portability within the polling place, provide a user-friendly location for the device printers and ancillary supplies and help prevent damage to internal circuitry. **ExpressVote** Certification testing for EVS 5.2.0.0 requires that the ExpressVote be tested for and pass 2005 Voluntary Voting Systems Guidelines (VVSG) 1.0 Vol 1: 4.3.2, 4.3.3, 4.3.5, 4.3.7; Vol II: 4.7.1, 4.7.2, 4.7.3, and 4.7.4 The lightweight device was designed for easy transportation to/from storage and vote centers. The soft-sided carrying case protects the ExpressVote’s internal circuitry.

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	1.1.F.6	Voting system components shall provide a method for immediately detecting a malfunction.	Y		All of the ES&S system components employ strict software and firmware execution rules and use a sophisticated series of sensors and controls to ensure abnormal operation is detected and reported and the integrity of the data and security is maintained.
	1.1.F.7	Voting system components shall prevent the loss of data during the generation of reports.	Y		All of the ES&S system components have been designed to protect the integrity of the source vote data when reports are being generated, including physical and programmatic lock down key components and features. ES&S performs extensive negative testing to purposely attempt to create issues and designed the system operation to have the greatest chance of recovery.
	1.1.F.8	The tabulator backup battery shall be continually charged while the unit is plugged in.	Y		**DS200** The DS200 internal backup battery is a 21-volt, 10 cell lithium-ion battery that obtains its charge automatically from the system power supply any time the unit is plugged in, whether it is turned on or not. **DS450** The DS450 uninterruptible power supply (UPS) obtains its charge automatically from the system power supply any time the unit is plugged in, whether it is turned on or not. When facility power is lost, the DS450 seamlessly transitions to provide power to allow scanning of the current run to complete and a controlled shutdown when power is exhausted to protect againsts data loss..

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	1.1.F.9	Proposals shall indicate the amount of backup battery life (i.e., number of hours) in the event of a power outage. Proposals shall indicate if there is a difference in battery usage for a tabulator in use vs. a tabulator at rest.	Y		**DS200** The DS200 contains an internal backup battery that maintains the system in the case of a power failure during the election process. The battery is a 21-volt, 10 cell lithium-ion battery that needs no special maintenance. The battery obtains its charge automatically from the system power supply any time the unit is plugged in. It ensures complete protection from power failure and provides a minimum of two (2) consecutive hours of heavy operation in the event of a power failure and can last significantly longer during light scanning. The battery is floating on the system, meaning the battery kicks in immediately without system impact. When the battery gets low, the system will have a graceful shutdown to ensure no ballots are being scanned or data is being written to the USB memory device when it loses power completely. When power returns, a recovery procedure allows voting to continue where it left off. **DS450** When facility power is lost, the DS450 seamlessly transitions to provide power to allow scanning of the current run to complete and a controlled shutdown when power is exhausted to protect againsts data loss.
	1.1.F.10	The backup system shall remain in operation during power surges or other abnormal electrical occurrences.	Y		**DS200, DS450, & ExpressVote** All ES&S components are designed to use their respective backup power features to automatically respond to power issues without impacting the operation of the unit. This includes the seamless switchover to battery power when AC power is lost, as well as a controlled shutdown of the unit when battery power is exhausted. In addition, data from completed voting sessions on precinct devices and from saved batches on central count units is saved to nonvolatile memory and is therefore preserved in the event of a sudden loss of the electrical connection or failure of the backup battery. Significant work has been done to ensure that units can recover from significant failures. No system can account for every possible catastrophic hardware failure. But, ES&S has spent years performing negative testing of such failures to make the system as robust and recoverable as possible.

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	1.1.F.11	The backup system shall engage immediately with no loss of data in the event of disruption of electrical connection or failure of battery backup. In the event of the failure of a unit, the system shall retain a record of all vote totals accumulated prior to failure.	Y		**DS200, DS450 & ExpressVote** All ES&S components are designed to use their respective backup power features to automatically respond to power issues without impacting the operation of the unit. This includes the seamless switchover to battery power when AC power is lost, as well as a controlled shutdown of the unit when battery power is exhausted. In addition, data from completed voting sessions on precinct devices and from saved batches on central count units is saved to nonvolatile memory and is therefore preserved in the event of a sudden loss of the electrical connection or failure of the backup battery. Significant work has been done to ensure that units can recover from significant failures. No system can account for every possible catastrophic hardware failure. But, ES&S has spent years performing negative testing of such failures to make the system as robust and recoverable as possible.
	1.1.F.12	The proposed system shall have the capability of generating exportable backup files for offsite storage.	Y		Electionware provides a method to backup the Election definition and Election Reporting Manager provides a method to backup the election results. Electionware enables the user to backup the entire election database for archiving in off-site storage.
	1.1.F.13	The proposed system shall automatically adjust for changes due to Daylight Savings Time (DST).	Y		**DS200** No special maintenance is required for the DS200 during daylight savings time (DST) changeover. The DS200 automatically adjusts the tabulator clock to DST in compliance with the current DST changeover schedule. **DS450** Although the DS450 does not automatically adjust for daylight savings time, the time can easily be adjusted manually. The user is allowed to change the time when there is no ballot data on the scanner. If there is there is ballot data on the scanner, administrators can follow the process for exporting data, clear the DS450, and then update the time. **ExpressVote** The ExpressVote contains a setting to automatically adjust for DST.

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G.	Security				
	1.1.G.1	The proposed system shall permit the diagnostic testing of all of the major system components. Proposals shall document all types of automatic diagnostic tests that are available to be run before the opening of the polls and while polls are open.	Y		DS200 The DS200 circuitry provides diagnostic testing for verifying the condition of the system. Upon startup, the DS200 automatically performs a series of internal system diagnostic checks. These checks are always executed on startup. Automatic self-tests include checking the scanner software, checking the printer, and other system checks. A report of the test results will be generated automatically. Reports include the automatic printing of the Configuration, Status, and Zero Reports, which provide all the information needed to verify equipment readiness. Users also have the ability to print the Audit Log – a report showing all scanner operations since election definition loading. If any of the system tests fail, the unit will not enter the vote mode. Additionally, the DS200 scanner allows the technician to run a hardware diagnostic routine and report from the Administrative Menu. Selecting Hardware Diagnostics displays the correct hardware settings. Officials can use the options under the Hardware Diagnostics menu before and after an election to verify that all scanner functions work correctly. Users can print a copy of the scanner's hardware settings by pressing Hardware Report. Including power up, the entire diagnostic testing procedure is completed in 3-5 minutes.

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	1.1.G.1 *continued*				To detect and record every event and unrecoverable system error condition, all DS200 errors are displayed on the LCD and if possible, the printer. If the DS200 Election Media is installed and is readable by the tabulator, the error will be recorded in the Audit Log. Exception/Errors are divided into two categories. The first category is the non-system halting category. Errors in this category do not jeopardize the election results, and will allow the user to continue on using the machine. The second category is the system halt category. Errors in the system halt category may jeopardize the election results and thus the system in order to let the machine re-test itself and check the validity of the DS200 Election Media data. System halt errors are logged to the audit log prior to the system shutting down. Events that are time-dependent or programmed, such as the DS200 closing for voting at the designated polls close time, generate an on screen message and are recorded to the system audit log. The DS200 records two types of event reports. One is a summary of critical events, and the other is a printout of all election events (also known as the Audit Log Report). Each event logged includes a timestamp identifying when the event occurred and a brief description of the event. These events are stored on the DS200 Election Media. The Critical Events Report is a report of all the critical events that have occurred thus far in relation to the Election Definition. Examples of such events are Polls Opened, Clear Totals Report, Election Definition Loaded, and Election Test Mode.

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	1.1.G.1 *continued*				The Audit Report is a report of all the events that have taken place during the election process. It also includes the total number of write-ins, reject ballots, and blank ballots. When setting up the machines, the jurisdiction would normally conduct pre-testing to ensure the correct firmware is installed in the voting devices. Firmware version is displayed on statuses and diagnostic reports generated upon machine startup or by running a validation hash check test. A hash check should be run by the jurisdiction prior to logic-and-accuracy (L&A) testing to ensure that the firmware and operating system code on the machine is identical to the hash code approved by certification authorities. Successfully completing this validation on each device to be used during the election provides confidence that the data on the machine exactly matches the files in the certified source code. Using the procedures and scripts provided by ES&S, the election official would validate the code as follows: 1. Using a trusted source, either a trusted Image or files obtained from a trusted machine, by using Step 2 below, create a list of trusted files and their hashes. 2. In the Admin screen of the DS200, select Create Validation Media to extract the files to a USB memory device. 3. Remove all dynamic and/or semi-static files 4. Create a list of file hashes to be validated against the trusted hashes. 5. Compare the trusted hashes against the list of hashes to be validated.

	Category / Requirement #	Requirement	Bidder Complies (Y/N)	Bidder Complies with Modifi-cations	Please expand on your response in Column D or E.
	1.1.G.1 *continued*				Upon initial power-up, the DS200 automatically performs a series of internal system diagnostic checks. These checks are always executed on startup. If any of these checks fail, the failure is logged and system operation may be limited or disallowed. Automatic self-tests include checking the scanner software, checking the printer, and other system checks. As noted, the DS200 can generate and in some cases automatically print various reports including Configuration, Ballot Status, and Zero reports, which provide all the information needed to verify equipment readiness. Users also may print such reports on demand. Additionally, all hardware devices have significant hardware diagnostic capabilities available via administrative menu options, allowing technicians to run and diagnose key hardware components. Users also have the ability to print the Event Log (audit log), which is a report showing all scanner operations since election definition loading. If any of the systems tests fail, the units will not enter the vote mode. If a failure occurs, the DS200 will attempt to display an appropriate error message to the operator and will then shut down. In addition, users will use live, printed ballots to conduct Logic and Accuracy testing of the DS200s to the accuracy of the election programming definition. During this testing, ES&S verifies: • All locations and accepted ballots per location. • The desired handling of over-voted, under-voted, and blank ballots. • That sets of scripted results are transferred correctly into the reporting system. • The types of reports the jurisdiction wants for Election Day and generates the reports using test data.

	Category / Requirement #	Requirement	Bidder Complies (Y/N)	Bidder Complies with Modifi-cations	Please expand on your response in Column D or E.
	1.1.G.1 *continued*				**DS450** The DS450 performs automatic self-tests that verify equipment readiness. In addition, the device has significant hardware diagnostic capabilities available through the administrative menu, allowing technicians to run and diagnose key hardware components. Upon startup, the DS450 automatically performs a series of internal system diagnostic checks. These checks are always executed on startup. If any of these checks fail, the failure is logged and system operation may be limited or disallowed. Automatic self-tests include checking the scanner software, checking the printer, and other system checks. As noted, the DS450 can generate and in some cases automatically print various reports including Configuration, Status, and Zero reports, which provide all the information needed to verify equipment readiness. Users also may print such reports on demand. **ExpressVote** Self-diagnostic tests verify that firmware is properly installed upon system startup. Initial reports identify the installed election program and firmware versions. Any errors loading system firmware or election programming result in equipment shutdown with a clear error message. See ES&S Operator's Guides for a description of equipment startup procedures and instructions for printing and reading equipment initial reports.

RFP No. 007116B0007029 Election Systems & Software					
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	Category / Requirement #	Requirement	Bidder Complies (Y/N)	Bidder Complies with Modifi-cations	Please expand on your response in Column D or E.
	1.1.G.2	The proposed system shall ensure that each voter's ballot is secret and the voter cannot be identified by image, code or other methods.	Y		**DS200/DS450** When a voter casts their ballot on the DS200/DS450, if exceptions exist such as overvotes, the ballot remains in the machine unless the voter requests the ballot be returned. Every ballot cast is assigned a random 16-byte identifier and all the ballot Cast Vote Records (CVR) and ballot images are stored with exactly the same timestamp. This effectively decouples any association of the ballot to the voting order to guarantee voter privacy. The ES&S Voting System (EVS) software can configure the tabulators to save the front and back images of all processed ballots or just ballots containing write-in votes. For every ballot cast, the tabulator also stores a CVR file. The ballot CVR and the images are signed by a machine-specific private key. When results are transferred, these CVR files and images are encrypted and signed again to allow for secure transport. The ballot images are stored in a Tagged Image File Format (TIFF). Since the image files are encrypted, the files on the election media are not externally viewable. **ExpressVote** The ExpressVote has numerous options for protecting a voter’s selection both on the screen and in printed form. In a stand-alone mode, the ExpressVote can be setup with privacy shields to obscure viewing of the ballot on screen. In paper form, the paper summary record is fully inside the unit at all times. In stand-alone mode, the jurisdiction can offer privacy sleeves for transporting the printed vote summary record to be scanned on the DS200.

RFP No. 007116B0007029 Election Systems & Software					
Exhibit A, Attachment 1.2 Voting System ELECTION MANAGEMENT SYSTEM (EMS) SOFTWARETechnical Requirements					
	Category / Requirement #	**Requirement**	**Bidder Complies (Y/N)**	**Bidder Complies with Modifi-cations**	**Please expand on your response in Column D or E.**
A.	**Election Management System (EMS) - General Requirements**	For each listed requirement, bidder response shall provide a detailed description demonstrating how the EMS fulfills each requirement. The proposed EMS shall:			
	1.2.A.1	Be designed to operate in a windows environment (at a minimum Window 7) and have the ability to adapt to upgrades in operating systems.	Y		EVS 5210 is currently certified with Windows 7 64-bit Operating System. Each Microsoft Windows 7 based PC configuration is a single dedicated Election Management System workstation. Operating system upgrades are typically provided along with new system features in subsequent and ongoing releases. However, these cannot be used in MI until a new operating system is included in an EAC-certified release. The Electionware platform provides the infrastructure to use specific COTS software such as for the operating system, printer, print drivers, and power management.
	1.2.A.2	Be designed with several levels of security to detect/resist hacking and unauthorized access and use. Security patches must be released as deemed necessary by the manufacturer, with prompt written notification to the State.	Y		Election Management System (EMS) Election administrators may use access control and role assignment features within the software to restrict access for programs installed. Jurisdictions must physically secure any computer system that contains ballot definition files, data acquisition software, or reporting software from access by unauthorized persons. All ES&S memory devices used are encrypted to prevent unauthorized modifications or copying of data. Our ballot layout and election configuration data are secured to prevent unauthorized modification or copying of the data and to resist hacking and unauthorized access and use. As an original manufacturer, ES&S will release security patches as we deem necessary and provide a prompt, written notification to the State in the event of a necessary release.

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	1.2.A.3	Include an operational support plan for the EMS software for security patches, bug fixes and regular Maintenance Releases. Bidders shall provide information with respect to the Bidder's projected response times to: o Synchronize and implement a regular Maintenance Release, after the Maintenance Release is posted. o Provide bug fixes in a timely manner. Bidder should provide an expected response timeline for different bug severity levels (e.g. Critical bug fix within 1 week, non-critical – next patch period etc.). o Provide security patches within no more than 72 hours of release.	Y		**REGULAR MAINTENANCE RELEASES** ES&S leads the industry in annual new releases. These enhancements accommodate new and different election scenarios, to enhance performance and usability, and to improve security and reliability. ES&S works directly with customers when a new version is available for upgrading. After each release, we work directly with customers to gather feedback regarding the system and identify potential enhancements or bugs that need to be fixed. With each successive release, we incorporate these enhancements whenever possible. **SECURITY PATCHES AND BUG FIXES** Upon learning of a bug or patch, ES&S will immediately engage a risk management team to assess the severity of the issue. This team will likely consist of members from the jurisdiction, ES&S, Voting System Test Labs, and potentially the EAC. In addition to this team, ES&S will engage our Change Control Board for assistance with release planning for a potential fix/patch. At this time, we should have adequate data to supply the jurisdiction with timelines for development, testing, certification (if applicable), and installation of the fix/patch at the jurisdiction's site. ES&S will make every attempt to comply with releasing security patches within no more than 72 hours of release. ES&S' voting systems are EAC-certified as closed networks without exposure to the internet or other outside networks, and therefore not as vulnerable to virus or other attacks. In the event a potential vulnerability is identified, such as the US-CERT National Cyber Awareness System notification regarding the OpenSSL vulnerability known as "Heartbleed" in April 2014, ES&S will take immediate action to assess the impact, report impact of the vulnerability to the system, and steps to be taken to install the appropriate patches for the vulnerability. This information will be provided to Michigan Board of Elections and the EAC.

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	1.2.A.4	Implementation of security upgrades/patches will be available for the life of the contract, with specific plans for each upgrade/patch determined by mutual agreement by the Contractor and State.	Y		During the Initial Service Period and Extended Service Period, ES&S will provide new releases, upgrades or maintenance patches to the System Software or EMS Software, together with appropriate Documentation ("Updates"), on a schedule defined by ES&S as may be mutually agreed upon by the parties. The State or Authorized User is responsible for obtaining any upgrades or purchases of third party items required to operate the Updates. The State or Authorized User may install the Updates in accordance with ES&S' recommended instructions or may request that ES&S install the Updates. If the State or an Authorized User requests that ES&S install the Updates and ES&S is unable to install the Update in conjunction with a routine maintenance event or other previously scheduled repair visit, ES&S may charge the State or Authorized User $1,575 per day (or $2,300 per day if such Update requires a full Election Management System installation) to install such Updates. In addition, in the event the State or Authorized User requests that ES&S train the State or Authorized User on the Updates, ES&S may charge the State or Authorized User $1,575 per day for such training. The State and/or Authorized User shall be responsible for the payment to ES&S for any Update, which is required due to a change in applicable law in accordance with the **Section 1.5D, Modification Requirements of Exhibit A - Statement of Work**.
	1.2.A.5	Allow system administrators to establish different levels of user permissions.	Y		Electionware EMS Administrators use the Electionware Setup module to create and configure different levels of user permissions. There are currently 5 levels of Electionware users: 1. "Administrators"" (access to all modules); 2. "Users" (access to all modules except the Setup module), 3. "Ballot Producers" (access to only modules related to printing ballot PDFs), 4. "Media Creators" (access to only modules related to creating USB memory device tabulator media); and 5. "Ballot Reviewers" (access to only modules related to reviewing ballot images and their corresponding Cast Vote Records). For those users with limited roles, modules not applicable to the user are not displayed in Electionware. This ensures control over your election definition. Each user has a unique name and password. Also, users are assigned to specific user groups to log onto the Windows server and workstations. These Windows–based roles, include three (3) default groups: • ElectAdmin (has access to all ES&S applications installed on the system); • ElectDefine (has access to applications required to define the election); • ElectResult (has access to applications required to create and report election night results).
	1.2.A.6	Permit routine users access to the application without requiring administrative privileges on the PC operating system.	Y		The Windows user accounts and groups are created in the Windows User Management module. An Electionware user is not required to be a Windows operating system administrator.

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	1.2.A.7	Require all users to have a unique login credentials (username and password).	Y		All users must have unique login credentials (username and password). Electionware incorporates the very latest in election security, including heightened audit controls and change management processes that are built in to make sure your election data is safe and secure. • Electionware requires users to enter a valid username and password prior to gaining access to the application. The username and passwords are stored in an encrypted database. Strong password methodology is utilized which requires the password to be at least 8 characters long and include at least one number, one upper case letter, one lower case letter and no spaces. • The system administrator creates unique user IDs for each user allowed to log onto the EMS workstations. Election personnel allowed access to the shared folder on the server receive a second unique share user ID and password. • Access to Election Reporting Manager (ERM) is controlled by system-wide username/password credentials administered and created by the System Administrator. Access privileges to certain features and functions within ERM can be controlled within the application itself.
	1.2.A.8	Secure the ballot layout and election configuration data to prevent unauthorized modification or the copying of such data.	Y		Our ballot layout and election configuration data are secured to prevent unauthorized modification or copying of the data. Electionware incorporates the very latest in election security, including heightened audit controls and change management processes that are built in to make sure your election data is safe and secure. • Electionware requires users to enter a valid username and password prior to gaining access to the application. The username and passwords are stored in an encrypted database. Strong password methodology is used that requires the password to be at least 8 characters long and include at least one number, one uppercase letter, one lowercase letter, and no spaces. • The database data directory is only accessible by the operating system administrator group and not by the regular Electionware user role. • The database server accesses data through a password-protected service account, protecting all Electionware database files from direct access. • Electionware saves a record of all user actions with username to the system audit log. • System security for Electionware limits casual access to system files but security also depends on sound practices at the election office. Officials are required to implement a strong physical and procedural security plan that limits access to Electionware to authorized personnel only. Election officials should also make sure that the PCs running Electionware remain secure before and after each election.

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	1.2.A.9	Allow manual data entry for election setup and ballot layout.	Y		Electionware allows for both manual data entry and import of properly formatted election files. Manual entry is simplified with shortcut keys and certain fields are auto-populated for the user. Each data element allows up to 10 unique additional fields for more flexibility in how the election data can be displayed on the ballot. Electionware's Paper Ballot layout module offers a powerful and versatile ballot layout process. Once ballots are formatted as needed, users can create one or as many ballot templates as needed.
	1.2.A.10	Securely encrypt election configuration data to be exported to the tabulator and accessible voting system component(s) per the 2005 VVSG recommendations.	Y		All election data for our precinct scanner/tabulators, central scanner/tabulators and ADA voting equipment are securely encrypted per 2005 VVSG recommendations. During election creation, a unique Federal Industrial Processing Standard (FIPS) Random Number Generator (RNG) generates an AES key and an election-specific Public/Private key pair. The election definition sent to the devices on the Election Media is encrypted using a password-based derived key of the Election Access Code and signed by the election specific private key. The election-specific AES key sent to the tabulators and accessible voting system component on the Qualification Media is used to encrypt data from the tabulators to the EMS. In addition to encryption, all encrypted data is further signed using a machine-specific private key generated during the Qualification process on the tabulator. The incoming Election Media containing results are sign-verified first to ensure authenticity and then decrypted for results accumulation. This feature is planned to be a configurable item in EVS 6.2.0.0, expected to be released in the Fall of 2017

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	1.2.A.11	Proposals shall identify all software components utilized by the EMS system, including customized vendor software, as well as others (e.g., Adobe) included and utilized by the overall EMS package.	Y		**Note:** *For version numbers, please refer to Exhibit A, ATT 1.5A: Federal Voting System Testing Certification Matrix. Version numbers depend on the cerification of the system beind installed.* **County Option 1 – Full EMS** Our full EMS for the counties and State are listed in Exhibit C, Pricing and consists of: • Electionware Program Your own (PYO) (Home, Capture, Element Library, Paper Ballot, Accessible Ballot, Configure, Package, Print, Acquire, and Produce Modules) • Election Reporting Manager • Electionware Results - Web-based Election Night Reporting • Automated Test Deck Creation (Michigan-specific) • Text to Speech functionality (Synthesized audio for English, Spanish, and Bengali) • ERM Results Export Program (EXP Utility) **Optional:** • Regional Results/Transmission • ExpressLink **County Option 2 - Accumulation Only** Under the license we are providing to the counties listed as Accumulation Only in Exhibit C, Pricing, individual jurisdictions will have a license to cascade down to local jurisdictions: • Electionware Base Package – Reporting Only (Home, Acquire and Produce Modules) • Election Reporting Manager • Electionware Results - Web-based Election Night Reporting • Automated Test Deck Creation (Michigan-specific) • Media Burn (Package Module) • ERM Results Export Program (EXP Utility) **Optional:** • Regional Results/Transmission • ExpressLink **Local Jurisdiction EMS – Accumulation Only** Includes everything listed under County Option 2. Each County would distribute copies of the software to the local jurisdictions as they see fit and at no additional charge.

Exhibit A, Attachment 1.2 Voting System ELECTION MANAGEMENT SYSTEM (EMS) SOFTWARETechnical Requirements

	Category / Requirement #	Requirement	Bidder Complies (Y/N)	Bidder Complies with Modifi-cations	Please expand on your response in Column D or E.
	1.2.A.11 *continued*				• EXP Utility - The ERM Results Export Program (EXP) utility allows for the accumulation of multiple elections throughout the state and is customized to allow results to meet the state's needs. • ExpressLink – Standalone application that can be used to print ballot style barcodes on ExpressVote cards. **Background Utilities:** • Event Logging Service – Control user access and store detailed logs of actions performed in either program. • Removable Media Service (RMS) – Service supporting election media programming. • ExpressVote Previewer – Ballot preview for ExpressVote universal voting system **Commercial Off-The-Shelf (COTS) Software:** • Microsoft Windows 7 Professional 64-bit, SP1 – Operating System for standalone and client workstations • Microsoft Windows Server 2008 R2 SP1 – Operating System for EMS and results servers • WSUS Microsoft Windows Offline Update Utility – Software updates (update utility) • Symantec Endpoint Protection, 64 bit – Anti-virus • Symantec Endpoint Protection Intelligent Updater – Anti-virus • Cerberus SFT Server – Enterprise – File transfer server for precinct results network • Adobe Acrobat Standard XI – Desktop Publishing Software • Microfocus RM/Cobol Runtime – COBOL runtime • IPSwitch File Transfer WS_FTP Professional – File transfer client software for precinct or local results network (EMS Client)
	1.2.A.11 *continued*				• Kiwi Syslog Server - Receives, logs and displays system messages. • Microsoft.NET - .NET Framework • Cisco A5505 Firewall - Firewall
	1.2.A.12	Be capable of creating and defining ballot styles and contest rules in accordance with Michigan Election Law, Promulgated Rules and Ballot Production Standards.	Y		ES&S is familiar with Michigan Election Law, having assisted many Michigan jurisdictions for over 30 years. Our system allows for the creation and definition of all types of elections from Generals to Open Primaries to Closed Primaries. Ballot styles are created within the Capture module and then formatted as needed in the Paper Ballot module.

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	1.2.A.13	Be capable of supporting ballot layout and election configuration to multiple languages (in Michigan, Spanish and Bengali are currently required). Proposals shall indicate current non-English languages that are supported by the proposed system, how the proposed system supports alternative languages, and describe the process for adding other languages not currently supported.	Y		As part of the proposed ES&S Voting System (EVS) 5.2.2.0/5.3.2.0, the DS200 supports English, Spanish, Chinese, Korean, Japanese, and Bengali languages. In accordance with the Voting Rights Act of 1965, our customers are occasionally required to support languages that are currently not featured in the ES&S system. In this situation, the ES&S Product Development division follows a standardized process to design, build, and test the addition of the new language to the required products. ES&S has a solid track record of partnering with affected customers, seeking direct feedback and agreement on translations for voter facing screens and messaging. This release, EVS 5.2.2.0/5.3.2.0, is projected to complete EAC certification by January 15, 2017, per the requirements of this RFP.
	1.2.A.14	Export election data elements and election configuration data to removable memory devices and either a LAN or wireless network; data elements must include but not be limited to:	Y		All data elements and election configuration data can be packaged onto removable memory devices for the purpose of burning media. These actions can be performed using the Media Burn function of ElectionWare (Package module provided to all jurisdictions as part of our proposed solution). The media data can be created from the Package module using a closed network. This data can then be exported via LAN or wireless network, allowing the local jurisdictions to burn their own media. All data elements and election configuration data containing election results are saved on removable memory devices. Election results may also be transferred via wireless network from the DS200. For the DS450, results can be exported or saved to removable memory devices or via a LAN.
		a. the sequence of candidates for each contest;	Y		The sequence of candidates for each contest is written to the USB memory device.
		b. the ballot issue;	Y		All applicable ballot issues are written to the USB memory device.
		c. the contest title;	Y		All contest titles are written to the USB memory device.
		d. the contest number;	Y		Contest numbers are written to the USB memory device.
		e. the office name and district, if applicable;	Y		Office names and districts are written to the USB memory device.
		f. the number of votes for a candidate or ballot issue;	Y		The number of votes for a candidate or ballot issue are captured on the USB memory device (DS200 precinct tabulator) or internal hard drive (DS450 central count tabulator). ES&S central tabulator can export the number of votes for a candidate or ballot issue to a USB memory device or transfer via LAN.

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		g. the number of votes against a ballot issue or other contest where applicable;	Y		The number of votes against a ballot issue or other contests are captured on the USB memory device (DS200 precinct tabulator) or internal hard drive (DS450 central count tabulator). ES&S central tabulators can export the number of votes against a ballot issue or other contests to a USB memory device or transfer via LAN.
		h. the number of votes for candidates and/or issues by legislative, congressional or election district where applicable;	Y		The number of votes for candidates and/or issues by legislative, congressional or election district are written to the USB memory device (DS200 precinct tabulator) or internal hard drive (DS450 central count tabulator). ES&S central tabulators can export the number of votes against a ballot issue or other contests to a USB memory device or transfer via LAN.
		i. the number of ballots tabulated by party for open and closed primary elections;	Y		The number of ballots tabulated by party for open and closed primary elections is written to the USB memory device (DS200 precinct tabulator) or internal hard drive (DS450 central count tabulator).
		j. the type of result (e.g. precinct, absentee or provisional); and	Y		Each removable USB memory device, which is used to load the election onto the DS200 precinct tabulator and/or DS450 central count tabulator, is configured with certain precincts. The USB memory device can include one, some or all precincts as designated by the user. Electionware also allows the user to specify which kind of precincts are applied to a USB memory device (e.g. precincts or non-geographic absentee precincts or provisional non-geographic precincts). Electionware provides many different variations on what type of data is included on the USB memory device. The set-up within the software is designed to be intuitive and easy to use.
		k. the type of election (e.g. Presidential Primary, Presidential General, Gubernatorial Primary, Gubernatorial General).	Y		The type of election (e.g. General or Primary) is written to the USB memory device (DS200 precinct tabulator) or internal hard drive (DS450 central count tabulator). The Election Name (e.g. Presidential Primary, Presidential General, Gubernatorial Primary, Gubernatorial General) also is written to the removable memory device. Electionware provides the user with the flexibility of updating the election name as needed. This information can be included on tabulator reports, on the tabulator screen, and within Electionware and Election Reporting Manager software. This provides complete transparency as to what type of election is being worked on.

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	1.2.A.15	Shall be capable of utilizing the State Uniform Data Format (refer to **Section and Attachment 1.5**)	Y		The ES&S Voting System Election Management product supports the import of industry standard, comma separated values (CSV) files to load election Ballot Definition Data. ES&S has worked with many states and jurisdictions to create import files for a standardized election definition. Michigan's Uniform Data Format could be utilized to design Electionware import files. The format and layout is very similar. ES&S has experience assisting State of Michigan with uniform ES&S Unity election import files. We are happy to assist Michigan in creating uniform import files for Electionware. These files are very simple TXT files, which include field identifiers in each and every file to eliminate any guesswork in how the data is organized. Users can import all or only a part of the election with our simple 1-click election definition Import Wizard.
	1.2.A.16	Be capable of storing, maintaining and reloading configurations and data from previous elections.	Y		Electionware enables the storage, maintenance and reload of configurations and election data. Electionware's Capture module offers a single-entry database that stores all of a jurisdiction's ward/voting location, office, and candidate information. Each individual election can be archived and subsequently restored as needed. Electionware also allows users to save an existing election as a template, which can be used as the basis for future elections. Finally, election templates may be edited similar to an election, allowing users to keep their templates updated between election cycles.

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	1.2.A.17	Accumulate election data for each election by precinct, precinct combinations, district, jurisdiction, and statewide.	Y		ES&S' results reporting program, Election Reporting Manager (ERM) is used to accumulate election results data from the DS200 and DS450 removable USB memory devices. ERM is also capable of receiving DS200 results electronically via wireless or landline modem (**See Exhibit C, Pricing, Optional Items**). Accumulating election night results in ERM is a quick and simple process. The system processes data in mere moments. At any time, users can produce many reports and/or export data in several different formats, some of which can be used for analysis in Microsoft Excel. Examples of ERM's numerous export formats include TXT, HTML, CSV, XML, and ASCII. What's more, Electionware also exports a number of different reports directly to Microsoft Excel (XLSX) format. ERM is capable of creating a variety of hard copy or electronic reports for election night and during canvass operations. The reports can be printed in a variety of formats, displayed on a website, or displayed on a monitor in a central viewing area. ERM's primary function is to accumulate results data from ES&S tabulation devices. ERM has various results reports that can be categorized as Precinct, Election Summary or Canvass (spread sheet style with columns for candidates and rows for precincts) each with a variety of formats. Any election summary or canvass report can be created to only include all or only designated precincts and contests. Thus, reports can be generated for precinct combinations, districts and jurisdictions. If a contest creates a split within a precinct, then the entire precinct's results will be included in the results reports. Also, customized reports that include specific contest and/or precinct selections can be set up in advance or they may be created ad hoc as needed.
	1.2.A.18	Tabulate results for individual groups and integrate the results from selected or all groups into cumulative results.	Y		ES&S scanners and tabulators tabulate all results by poll media. The poll media is processed in ERM with up to 14 unique user definable groups. These results are automatically included in the cumulative results unless the user specifies they are not to be included.
	1.2.A.19	Store tabulated results from each absentee and precinct group as separate totals within a precinct.	Y		ERM aggregates results by precinct into user defined results groups. As election results are read in to the system, they are segregated into the appropriate group. Groups are created at the discretion of the user and keep the results for different types of voting separate from one another. Examples of typical results groups include Absentee, Early Voting, Election Day, etc. The results in the various groups - while remaining separate for reporting purposes - are also automatically combined to provide a grand total for each precinct. Precinct and summary results can be reported in summary with or without group results breakdown. Other options are also available.

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	1.2.A.20	Save election data configurations with election results data on removable storage media for archiving purposes.	Y		The election data configuration with election results data is saved on a removable USB memory device. As results are processed into ERM, the full election data is processed onto the EMS system. This data may be backed up using Windows Explorer for archival purposes. Results in Electionware are automatically included in the 1-step Electionware backup process.
	1.2.A.21	Export data elements from the election configuration and ballot layout records in the following formats: Extensible Markup Language (.xml) (e.g. Oasis EML and IEEE 1622), Comma Separated Value (.csv), and Microsoft Excel Format (.xls).	Y		Data elements can be exported from Electionware using our custom Table View reports in Electionware. Users can select some or all data fields and sort the data as needed. Electionware exports are in Excel (XLSX) and CSV. Data elements, including results, can be exported from ERM or Electionware in an XML format. ERM also offers a number of other export options including ASCII, HTML, TXT and CSV.
	1.2.A.22	Permit the re-upload (updating of previous uploads) of election data results from a tabulator device to the EMS.	Y		Tabulator results can be re-uploaded into ERM if additional ballots are added to the poll or precinct. By design the system will not allow an update of duplicate results.
	1.2.A.23	Be capable of replicating all election configuration and results data to a redundant system in the event of a hardware or software failure.	Y		Electionware backups should be done periodically using the 1-step Electionware backup process: By selecting the “Create” button, the entire Electionware database for this election is backed up to a single file. Electionware will also increment the backup file’s version automatically to ensure that a previous backup file is not overridden. By restoring this backup on another system, this process allows for simple replication of all Electionware data. In addition, ERM results should be periodically backed up to provide a known “checkpoint restart” in the event of system or procedural failure. (For more information, see our response to requirement **1.2.A.20** above). Restoring the archived file set brings ERM back to that point and allows restarting the system at that known point from any server/workstation combination and continuing with the results aggregation and reporting process. After restoration of files, a summary report can be created to document the restart point.

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					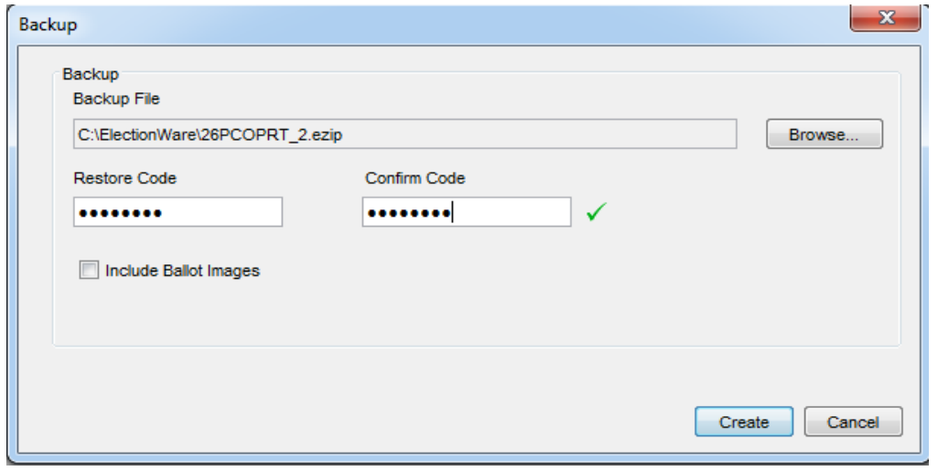
	1.2.A.24	Be capable of exporting election results data in multiple widely used data formats including .mdb, .xls, .pdf, .xml, .html, .csv, .doc, ascii and .txt.	Y		ERM is capable of exporting results in the following formats: .xml, .html, .csv, .ascii, .txt and .lst. Electionware is capable of exporting results in the following formats: .xml or .html

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	1.2.A.25	Accept transmitted uploads of election results data from the tabulator when deployed for elections at precincts, absent voter counting boards (AVCBs) and elections offices using a Local Area Network (LAN), phone or cellular transmission protocols.	Y		ES&S agrees and complies with this requirement. ERM can accept transmitted uploads of election results from the DS200, which can be configured with an internal wireless modem or an analog (landline) modem. In this configuration, the county would be outfitted with a secure server set up to receive results transmissions from any precinct or AVCB in the county. After the poll worker closes the polls at a precinct or AVCB, the DS200 prints the results tape and then automatically displays a screen asking if they would like to begin the modem process. This screen also displays the modem's current signal strength. After the poll worker presses the on-screen button to begin the results transfer process, the DS200 uses its wireless modem to establish a Secure File Transfer Protocol (SFTP) connection to the server at county headquarters. The encrypted results file is deposited on the server and the connection is terminated. Back at county headquarters, an ERM operator begins an automated process that updates results received by the server. This process is typically started near poll closing time and runs throughout the evening. ERM monitors the folder on the receiving server and processes results files in real time as they are received. Reports that help election officials determine which voting locations have yet to transmit their results are available. ES&S also supports the use of regional sending sites with the Regional Results/Transmission application. See **Exhibit C, Pricing, Optional Items**. In this configuration, each regional site would have a Windows 7 PC loaded with Regional Results/Transmission and requires an internet connection of any kind. Regional Results/Transmission establishes a direct, secure connection with the server at county headquarters. As USB memory devices containing results arrive from the various poll sites, they are inserted into the PC. Without any further action by the election official, Regional Results/Transmission recognizes the USB device and automatically delivers the encrypted results file to the county server. The application tracks all USB memory devices that have been processed and which remain outstanding, presenting this information in a simple interface that is
	1.2.A.25 *continued*				easy to understand for election officials. At county headquarters, ERM automatically processes results files from regional sites in the same manner as results files modemed directly from the DS200. Finally, ERM is also capable of receiving results data from ES&S central count tabulators via Local Area Network.
	1.2.A.26	Accept direct uploads of election results data from the removable memory devices of the tabulator (which may be required when deployed for elections at precincts, AVCBs, and election offices).	Y		ERM accepts direct uploads of election results data from USB memory devices.

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	1.2.A.27	Only accept uploaded results from removable memory devices specific to the current election.	Y		ERM accepts only uploaded results from removable USB memory devices specific to the current election. When each election is created, a unique encryption key is created, which is part of a security bundle placed on a special security USB memory devices. This encryption key is used to throughout an election, from the Electionware software to all USB memory devices. It is also included in the election definition for ERM. This process ensures that only results USB memory devices from the current election will be accepted.
	1.2.A.28	OPTIONAL REQUIREMENT: Provide for an automated test deck creation including use of precinct ballots and development of the chart of predetermined results.	Y		Specifically built for Michigan, our Automated Test Deck Creation module found within Electionware Toolbox software provides a spreadsheet chart of predetermined results as well as a set of PDF files with pre-marked ovals. The information needed to create the test deck comes directly from the Electionware election definition. The chart and test deck adhere to Michigan Promulgated Rules for test deck preparation. Some features created specifically for Michigan include an all-fill stray marks ballot, one or multiple blank ballots, a section by section overvote option, Open Primary crossover patterns as defined by MI law, plus a 1 to maximum unique voting pattern. The Canvas style spreadsheet chart includes easy to identify marks plus overvotes, as well as all election specific candidate names. Benefits of using ES&S' test deck feature includes significant time and costs savings for clerks, as well as removing the potential for human error from the equation. Most importantly, any County that partners with ES&S will receive this feature at no additional charge as part of our proposed software solution.
B.	**EMS Programming**				
	1.2.B.1	Elections shall be county-programmable from initial election definition to printer-ready ballots and ready-to-use tabulator media/memory devices without vendor intervention.	Y		Numerous counties and states program their entire election without vendor intervention using ES&S's EMS Software. After attending the full ES&S EMS Software course, County staff will be able to program election hardware and software, produce printer-ready PDFs for ballot printing and produce general election reports. ES&S also provides world-class technical support if questions arise.

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	1.2.B.2	Counties shall be permitted to use third-party programmers (contract employees) at the county's discretion and under county's direction; or utilize other third-party programmers from a list of qualified programmers supplied by the vendor.	Y		ES&S acknowledges this request and agrees to allow counties to use third-party programmers (contract employees) at the county's discretion and under county's direction or use other third-party programmers from a list of qualified programmers supplied by the vendor. ES&S will provide to the state and counties the names of qualified programmers once they have completed the required ES&S ElectionWare Training course, similar to the training course we would provide to Clerks and election personnel in each PYO county. All services provided by such third parties must take place on-site at the counties' designated location and must be through the use of the county-owned secured computers and network system. The third parties shall not be allowed to install or use the EMS Software or System Software on its own computers and/or systems because ES&S' license does not allow for such use for security reasons. System security for ElectionWare depends, in part, on sound practices at the election office. Officials should implement a strong physical and procedural security plan that limits access to ElectionWare to authorized personnel only. Election officials should also make sure that the PCs running ElectionWare remain secure before and after each election. These practices will help ensure secure and successful State elections. The State should enforce these strong security measures as well in order to guarantee the integrity of all programming and election results generated; to further ensure unwanted viruses, changes to base programs, tampering with completed programmed elections, etc.

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	1.2.B.3	Recognizing the decentralized nature of Michigan elections, the EMS shall allow State, county and local officials to generate and maintain a database containing the definitions and descriptions of political subdivisions, offices, candidates, and ballot proposals within the jurisdiction for the production of ballots and ballot tabulation programming and election result accumulation and reporting. Refer to **Section and Attachment 1.5** for additional details on the planned State Uniform Data Format.	Y		The ES&S Voting System (EVS) is a full Election Management product, allowing the user to create a local database containing the definitions and descriptions of political subdivisions, offices, candidates, and ballot proposals within the jurisdiction for the production of ballots and ballot tabulation programming and election result accumulation and reporting. The EVS provides full election data import capability for all election data (e.g. Political subdivisions, Precinct, Contest, and Candidate text data files). Electionware's Import Function supports the import of industry standard comma separated values (CSV) files to load election Ballot Definition Data. Michigan's Uniform Data Format could be utilized to create Electionware import files. The EVS Election Management product supports the import of industry standard, comma separated values (CSV) files to load election Ballot Definition Data. By extracting the Michigan QVF Export File records by type (0 through 9), into individual files, the EVS Election Management product supports import of the Michigan QVF Export File Structure (State Uniform Data Format) as defined in the Attachment 1.5. Following Electionware import of election definition data items, including the State Qualified Voter File (QVF) data items, all data items required by the Michigan Standard Precinct Results File export, flow from their Electionware source into the Election Reporting Manager database. Therefore, QVF values for Office Id, Precinct Id, and Candidate Id are available for export. The EVS ERM provides multiple results export file format options for Election Results reporting (e.g. ERM Results XML file, ERM State transfer file (CSV format). Additionally, ES&S proposes to provide the ERM Results Export Program (EXP) utility to meet the Michigan Standard Results File creation requirement as defined in the Attachment 1.5. The EXP Utility will include the QVF Identifiers for offices, candidates and precincts from QVF data imported into the EVS Electionware module. This functionality is included in our proposed software solution at no additional cost. ES&S' new reporting functionality in Electionware is currently in development and scheduled as a 3-phase project. The first, main phase is anticipated to be ready for certification by the Fall of 2016 as part of EVS 5.8.0.0. The latest phase should be ready for certification by the Summer/Fall of 2017 as part of EVS 6.2.0.0.

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	1.2.B.4	EMS shall provide for the accumulation and reporting of votes cast in all elections including multiple precincts, jurisdictions, counties and districts (allow for results to accumulate and report registered voters and results by split).	Y		The system uses Election Reporting Manager (ERM) software to accumulate results within an election. ERM offers standard and custom reports available in several report formats. ES&S proposes to provide the ERM Results Export Program (EXP) Utility to allow the accumulation of multiple elections throughout the state. The EXP Utility has been used successfully in previous systems in Michigan, plus many other states. This program is customizable to allow results as needed by the State. Registered voter totals and results are accumulated by precinct. The ability to report by splits is anticipated to be ready for certification by the Fall of 2016 as part of EVS 5.8.0.0. The ERM Results Export Program (EXP) utility is included in our proposed software solution at no additional charge as designated in Exhibit C, Pricing.

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	1.2.B.5	EMS shall provide a mechanism to verify the correctness of tabulator programming. The mechanism shall also ensure that the ballot corresponds to the appropriate tabulator program and meets all requirements as prescribed by Electronic Voting Systems - Promulgated Rules and Michigan Election Law.	Y		ES&S EMS offers safeguards within Electionware that reducs human error on the front end of programming and Automated Test Deck Creation assists you with Logic and Accuracy (L&A) testing. This meets all requirements as prescribed by Electronic Voting Systems - Promulgated Rules and Michigan Election Law. Electionware offers many safeguards while programming the election. It will not allow the user to continue if vital information is missing. Electionware also provides alerts or warnings for potential workflows that are not the norm, yet are still allowed by the system for the sake of flexibility. Electionware also offers numerous reports for proofing purposes to ensure that the ballots and system configuration are accurate and able to be verified. ES&S Automated Test Deck Creation functionality makes it easy to complete required L&A testing. This software creates pre-marked ballots specifically for Michigan along with a chart of pre-determined results for easy verification of correct results. Every jurisdiction will receive ES&S' Automated Test Deck Creation software. ES&S recommends complete end-to-end testing. When L&A testing is complete, each scanner should be cleared of all vote totals, a Zero report run to validate the results cleared, and the unit locked and sealed for transport to the polling place. This level of testing ensures the integrity of the entire system. Most importantly, any County that partners with ES&S will receive this feature at no additional charge as part of our proposed software solution. Electionware was designed with the intent of eliminating workflow issues found in Unity Election Data Manager. Many users accidentally set the Type code to zero, which could cause tabulator difficulties. Electionware prevents the user from being able to create a Type, Sequence or Split ballot identifier that may cause problems downstream. In the Unity suite, the tabulators required the Type code to start at one, be sequential and increment only by one. In Electionware, the system
	1.2.B.5 *continued*				creates the Type code automatically. Additionally, the tabulator can accept any Type code in an election. The ES&S tabulators can accept an election with non-sequential Type codes. These changes prevent potential problems prior to production of PDFs and/or ballots.

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	1.2.B.6	Proposals shall describe the method for programming in the case of split precincts. It is preferable to provide data on the number of registered voters and ballots cast by split.	Y		Electionware's Capture module makes it easy to add splits to a precinct and assign them to the appropriate district. Once a split is established, the user may input registered voter totals for each individual split. All of this information - precincts, splits, and registered voters - may also be imported using Electionware's data import feature. The system uses Election Reporting Manager (ERM) software to accumulate ballots cast and report on registered voter data within an election. At this time, registered voter totals and results are accumulated by precinct. The ability to report by splits is anticipated to be ready for certification by the Fall of 2016 as part of EVS 5.8.0.0.
	1.2.B.7	EMS shall accommodate multiple languages (see requirement 1.2.A.13); system shall allow local election officials the ability to download information from software used to translate information to the appropriate language, or the system should perform translations automatically. Michigan presently uses English, Spanish and Bengali.	Y		Electionware's Capture module provides certified support for English, Spanish, Chinese, Korean and Japanese. Our proposed base voting system solution, ES&S Voting Solution 5.2.1.0., which was certified in December 2015, also supports the Bengali language. These languages can be used to produce visual ballots (both paper and onscreen) as well as audio for ExpressVote ballots using the Electionware Toolbox utility. The system can be updated to support other languages, if requested. Electionware can add additional languages to both paper ballots and audio shortly after installation of the program. The Add Language option in the Capture module enables you to add languages to the current election. These languages can later be grouped for application to particular precincts. All English and non-English languages must first be entered into the Capture module of Electionware. Once each language has been identified, the Capture module dynamically creates language-specific data entry screens for all required election information. For the first election setup, the jurisdiction is responsible for all language translations and entering them into Electionware. The software does not automatically translate English into foreign languages. As translations are either entered or imported, the county's unique translations can be re-used from election to election by utilizing Election Templates. The system will automatically make translations available for use by the ES&S tabulators. Our system also allows for variable languages per precinct. For example if a small number of precincts require Bengali, then users can set up one Language Group for English and Bengali (plus any other languages needed) and another Language group for English only (plus any other languages needed). Language Groups are simple to manage, offer more translation flexibility and save users time laying out ballots, checking translations, creating and testing audio.

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	1.2.B.8	OPTIONAL REQUIREMENT: The State prefers a system that is capable of reading a military/overseas voter (MOVE) ballot into a designated precinct without requiring the duplication of the returned ballot for each precinct in the election. Bidders shall provide detailed information related to the system's capability for meeting this requirement for ballots returned via US mail (current process) or electronically (not currently authorized by law); including any ballot format and other requirements related to an outgoing ballots that is transmitted to a MOVE voter electronically.	Y		The ES&S EMS Electionware handles MOVE ballots flexibly. MOVE ballots, marked on an original ballot and returned via US mail, can be tabulated by a DS200 or DS450. As part of the Future of Voting, ES&S has developed the ExpressPass, which allows a voter to mark a sample ballot and print a document with all the voters' selections contained into a QR Code. The voter would mail, email or fax this document to Election Central. The election official would insert a blank card into the ExpressVote and scan the QR Code from the document. A summary screen is displayed in which all selections can be verified. After verification, each voter's selections are printed on the official thermal card stock/ballot for insertion into the DS200/DS450 for tabulation. This system eliminates the need for duplication, thus reducing human error and time/labor costs in the duplication process. States have different regulations and requirements as to the use of this product. Once we understand the State's intended implementation of ExpressPass, we would determine price at that time.
	1.2.B.9	EMS shall be capable of supporting an open primary, closed primary, general election, special/nonpartisan election, statewide special election and any combinations thereof. System shall provide templates (including graphics) for ballot layout to support the above combinations.	Y		Electionware is capable of supporting all of the listed election types and any combinations thereof. Electionware's ability to use data from past elections as well as built-in election and ballot templates (including graphics) eliminates the need to re-enter data or re-create templates with each new election. These powerful capabilities enable election administrators to create error-free elections in less time. Security levels are configurable based on the levels of security required by the jurisdiction. Election templates can be updated similar to an election to ensure they are kept up to date and accurate. If desired, ES&S will create a ballot design template that adheres to all state requirements, allowing for ballot design consistency across the state.
	1.2.B.10	Contractors shall provide onsite/offsite/online training at the discretion of state or county on use of software/programming. Vendor shall provide user-friendly software documentation including step-by-step programming/usage guides including graphical depiction of all major steps in programming process.	Y		ES&S agrees and complies with this requirement.

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	1.2.B.11	Bidders shall demonstrate how data can flow from the State Qualified Voter File (QVF) into EMS and the formats in which data can be imported/exported. Refer to **Section and Attachment 1.5 f**or additional information.	Y		The ES&S Voting System Election Management product supports the import of industry standard TXT files, which can include Pipe "|" or Tab delimiters. All election data from the state can be imported into Electionware. This includes, but is not limited to all precinct data, contests, candidates, questions, question responses, districts, and polls. Also, translations for all election data may be imported, if needed. ES&S customers can import state-assigned IDs for precincts, offices and candidates so that each county may export election night results with the state-assigned ID included. ERM is capable of exporting result in the following formats: .xml, .html, .csv, .ascii, .txt and .lst. Electionware is capable of exporting results in .xml or .htm. formats. Additionally, ES&S proposes to provide the ERM Results Export Program (EXP) utility to meet the Michigan Standard Results File creation requirement as defined in the Attachment 1.5. The EXP Utility will include the QVF Identifiers for offices, candidates and precincts from QVF data imported into the EVS Electionware module. This functionality is included in our proposed software solution at no additional charge as designated in Exhibit C, Pricing.. ES&S new reporting functionality in Electionware is currrently in development and scheduled as a 3-phase project. The first, main phase is anticipated to be ready for certification by the Fall of 2016 as part of EVS 5.8.0.0.. The latest phase should be ready for certification by the Summer/Fall of 2017 as part of EVS 6.2.0.0.. There is no additional fee for this functionality.
C.	**Ballot Programming & Layout Requirements**	**Ballot programming and layout features of the EMS shall:**			

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	1.2.C.1	Produce ballots that meet the requirements of Michigan Election Law, Chapter 168 and Michigan Ballot Production Standards.	Y		ES&S Electionware's Paper Ballot module can accommodate all requirements except different stub sizes within the same election. Electionware provides almost unlimited flexibility in the design and layout of your optical scan paper ballot. The ballot can be designed in grid landscape or portrait as well as the traditional multi-column portrait ballot. In a column-portrait format, users can create various size columns. For example, ballot sides can be set to 1, 2, 3 or 4 columns wide. They can have narrow columns mixed with a wider column. *Note 1:* ES&S tabulators support a variety of ballot sizes that include: 8.5" x 11", 8.5" x 14", 8.5" x 17", and 8.5" x 19". *Note 2:* Users may utilize any font saved on their system and set to any size needed. Various ballot contents can utilize kerning (both positive and negative) plus different formats such as bold, underscoring and italics or any combination.
	1.2.C.2	Allow changes to font size and style. Proposals shall indicate font packages utilized by the system.	Y		Available fonts are limited only by the fonts installed on the ballot layout PC. Electionware contains the utmost ballot creation flexibility to support the varied election rules and regulations of our current and potential customers. Electionware provides complete typographic control over every piece of text that appears on the ballot. Typographic elements under your control in the PaperBallot module, under the Font menu, include font face, font style, font size, line size, strikeout, underline, text color, margins, ruling lines, alignment, text rotation, font kerning, relative and absolute placement, background color, and more. Kerning and leading can be adjusted anywhere in the Paper Ballot layout. Different ballot elements (office titles, candidate names, party names, etc.) can be assigned different fonts and font attribute values. Electionware supports font sizes as small as 4 points and as large as 72. Shading, ruling lines, boxes and color can all be added to enhance ballot appearance.
	1.2.C.3	Allow for creation of two-sided and multi-page ballots.	Y		Electionware allows creation of two-sided and multiple ballot sheets or pages. Different instructions and precinct/ballot style identifiers can be displayed on each sheet and side of the sheet. Contests and referendum can flow naturally from one side and sheet to the next, or they can be set to a specific side and sheet.

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	1.2.C.4	Generate sample (proof) ballots for each precinct (or ballot style) that will not be accepted or counted by the tabulator.	Y		Authorized users can edit the Ballot Setup feature in Paper Ballot and remove the Code Channel to create sample ballots. Without the Code Channel, the optical scanner will not process a paper ballot. Users can also add a Watermark wording on the ballot with any phrase required such as “Sample” or “Michigan Test Ballots.”
	1.2.C.5	Be capable of generating all ballot artwork and all specimen ballot artwork (ex. Political party vignettes, drawing columns, target areas, borders, fonts). The system must be capable of accepting political party image vignettes in standard formats (jpeg, pdf, gif).	Y		Electionware’s Paper Ballot has the ability to place graphics in many different formats onto the ballot. These formats include BMP, GIF, ICON, JPEG, PNG, and TIFF file types. Graphics may be resized as needed once added to the ballot design.
	1.2.C.6	Allow race header shading in multiple shades of gray.	Y		Shading can be added to the ballot header in multiple shades of gray or various colors. Electionware also provides complete typographic control over every piece of text that appears on the ballot. Typographic elements under the user's control include font face, font style, font size, line size, strikeout, underline, text color, margins, ruling lines, alignment, text rotation, font kerning, relative and absolute placement, background color, and more.
	1.2.C.7	Provide electronic versions of the ballots that are identical to the official ballots in all respects.	Y		Users can create an electronic version of the ballot (PDF) in Paper Ballot. These ballots are used to create election day ballots as well as the Test Deck for Logic & Accuracy testing. The ballot layout in Paper Ballot ensures the standard size ballots have identical data to the ADA devices (ExpressVote).
	1.2.C.8	Ballot size shall be flexible to allow multiple ballot sizes by precinct/jurisdiction within a single election if desired.		Y - bidder complies with modificati ons	Electionware provides almost unlimited flexibility in the size, design and layout of your optical scan paper ballot. The ballot can be designed in grid landscape/portrait, and the traditional three-column portrait ballot, only one of the many column layout options. However, there is only one ballot size per election. ES&S is pleased to offer support for multiple ballot sizes in an election in EVS 6.2.0.0, which is expected to be ready for certification by the Summer/Fall of 2017.
	1.2.C.9	Provide for the export of any ballot to a .pdf file.	Y		Users can create an electronic version of the ballot (PDF) in Paper Ballot. These ballots are used to create Election Day ballots as well as the Test Deck for Logic & Accuracy testing. The ballot layout in Paper Ballot ensures that the standard size ballots have identical data to the ADA devices (ExpressVote).

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	1.2.C.10	Provide a test mode which supports testing to validate the correctness of elections programming for each voting device and ballot.	Y		ES&S recommends testing each tabulator and ADA device (ExpressVote) prior to the election in the same mode as is used on Election Day, this serves also our test mode. This ensures an accurate and thorough test environment. The Electionware software is designed to assist and validate the correctness of election programming during the user's data entry workflow. If required fields are missing as the election is programmed, Electionware will notify the user with simple, easy to use instructions. ES&S uses live, printed ballots to test the accuracy of the optical-scan voting units and the Electionware EMS to the accuracy of the election coding. During this testing of DS200 and Electionware, ES&S verifies the following: All locations and accepted ballots per location; the desired handling of over-voted and blank ballots; that sets of scripted results are transferred correctly into the reporting system; the types of reports the jurisdiction wants for Election Day and generates the reports using test data. All test results can be cleared after the L&A process. The Automated Test Deck Creation will assist Michigan counties in the creation of test decks and the required spreadsheet. By allowing the system to automatically generate a PDF of pre-marked ballots, plus a spreadsheet of all results in the Michigan format, the number of potential human errors is significantly decreased. Most importantly, any County that partners with ES&S will receive this feature at no additional charge as part of our proposed software solution.
	1.2.C.11	OPTIONAL REQUIREMENT: Allow for different ballot headers on ballots within the same election (Special Election, General Election, Election).	Y		While the default is for text and graphics to appear on all ballot styles, Electionware also provides the flexibility to allow text and graphics to appear on subsets of ballot styles. You can specify text and graphics to appear on ballot styles according to the following criteria: • By selected party(s)/ballot set(s), or • By selected ballot style(s), or • By selected language group(s), or • By selected precinct(s), or • By selected district(s). These capabilities include the ability to meet the State's header design requirements. Graphics can be imported into the system for design purposes at the same time election data is imported. Our ES&S ballot design team will work closely with the State to ensure your preferences are included in the design of the ballot layout and content.

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	1.2.C.12	Generate a consolidated sample ballot containing all races, issues and questions.	Y		Users can create a consolidated sample ballot containing all races, issues and questions by assigning a single precinct to all the active districts in the election. ES&S is pleased to offer support for consolidated sample ballots in EVS 6.4.0.0, which is expected to be ready for certification by the Spring 2018.
	1.2.C.13	Include a ballot style indicator.	Y		A unique ballot style indicator is printed on each ballot. Jurisdictions can choose from a list of system variables to place a visually readable identification on the ballot as needed. You have many options on how and where you would like to place the readable precinct and/or ballot style label on the ballot. Additionally, you can export the system's ballot styles to a spreadsheet and enter two (2) different identifiers (Alternate IDs) if you would like to include your own ballot style indicator on the ballot. User specific ballot IDs can then be imported back into Electionware to allow even more flexibility on the ballot layout.
	1.2.C.14	Be capable of designating the number of write-in lines for each contest.	Y		Electionware enables jurisdictions to designate the number of write-in lines for each contest. You can even have a different number of write-ins than the vote-for number. (i.e. you can have contest with vote for = 3 but have 1 write-in)
	1.2.C.15	Be capable of adding text to the ballot to instruct the voter to view both sides when it spans more than one face, or other instructions as required.	Y		Electionware enables the user to add a ballot frame with any wording, ruling lines and shading desired.
	1.2.C.16	Provide the ability to create a single county database that contains precincts, office, polling places, etc. that can be imported into each new election.	Y		Electionware allows customers to generate and maintain a single database for the entire election in an intuitive, yet flexible method. The software uses automation instead of repetition. The re-use of previous election contests, data and equipment settings, instead of duplicative data entry, ensures that election administrators can create error-free elections in less time. ES&S uses election templates, which avoid the need for users to export the data and then re-import into a new election. Election templates may be updated easily to keep them current for the jurisdiction, and may be edited similar to editing an election.
	1.2.C.17	Provide the ability to copy, edit and delete previously-defined elections or provide customized templates for each election type.	Y		ES&S uses election templates, which help users avoid the need to export the data and then re-import into a new election. Election templates may be edited similar to editing an election, allowing jurisdictions to keep them updated between election cycles. For example, if a jurisdiction experiences re-districting they may update their election templates so they are current the next time they need to be used.
	1.2.C.18	Permit text to be added below a candidate's name for various designations and party affiliation.	Y		Electionware offers 10 additional text lines (each 255 characters) added to a candidate's wording on the ballot. Similarly each party has 10 additional text fields for various ways to show a party.

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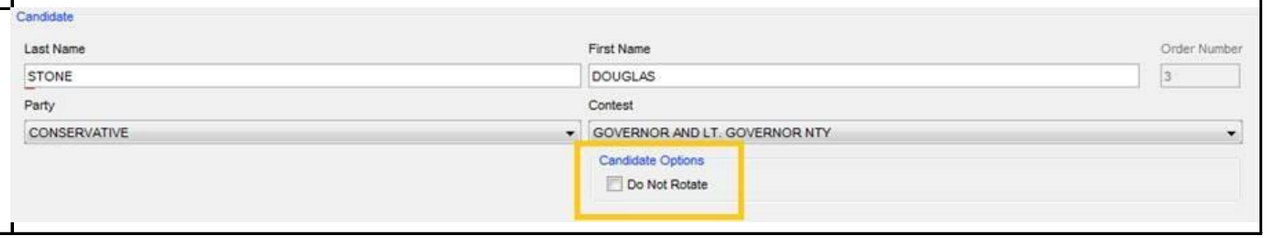
	1.2.C.19	Provide for ballot rotation of candidate names as required under the provisions of Michigan Election Law and the Electronic Voting Systems - Promulgated Rules. Vendor shall disclose any specific limitations on the number of candidate or office rotations.	Y		Electionware provides for candidate name rotation per Michigan Election Law. The maximum number of candidates per office allowed and the maximum number of office rotations (float) allowed are 175.
	1.2.C.20	Provide for rotation only when the number of candidates for an office is greater than the number to be elected.	Y		Electionware provides for rotation only when the number of candidates for an office is greater than the number of candidates to be elected.
	1.2.C.21	Permit the creation of an "uncommitted" candidate that does not rotate like the other candidates in the office for use in a closed Presidential Primary. Bidders shall provide details of the process used to create the "uncommitted" candidate that does not rotate.	Y		Electionware permits the creation of an uncommitted candidate that does not rotate like the other candidates in the office. This option is available for all election types if needed. Uncommitted candidates that are text-only, with no oval printed on the ballot, can be set up as “Candidate Level Text.” These can be created automatically or manually. Both Candidate Level Text elements and Candidates have an option called “Do Not Rotate.” This allows the flexibility needed to ensure certain Candidates or Candidate Level Text are not included in office rotation.
					

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	1.2.C.22	Provide for identification of candidate names, party affiliation and vignettes and ballot questions and their associated language and instructions. Preference will be given to systems that provide the greatest flexibility in inputting ballot question language into EMS; including importing, copying and pasting, spell check and the use of symbols including bullets.	Y		Electionware includes a robust import feature that allows a significant amount of election information to be imported with a single click of the mouse. Types of information that can be imported include Parties, Precincts, Districts, District-to-Precinct relations, Contests, Candidates, Ballot Questions, Polling Places, Poll-to-Precinct relations, and more. You may also import foreign language translations for all of these items. The import files themselves can be formatted as fixed length fields or can be delimited. Both ASCII and Unicode formats can be imported, which provides support for multi-byte character languages such as Chinese. Header rows are used to define the table and field names of the information contained in the import files. Since the import files can be viewed in Microsoft Excel, many of our customers perform spell check in that program prior to performing the Electionware import. Regarding the manual entry of ballot questions, ES&S has made a concerted effort to make this process as user friendly as possible. Our current Michigan customers often receive the official text of a ballot question from an outside source, and that text is contained in a separate document. Electionware allows the user to simply copy the desired text and paste it into the application. Electionware has a specific feature that makes the creation of bullet points very easy. This feature was added to the system specifically to support Michigan elections. All of the ballot question text and special formatting described above can be imported as part of Electionware's powerful import feature. Electionware also allows for up to 10 Additional Text fields for ballot questions, candidate names, contests and parties, which provides even more flexibility.
	1.2.C.23	Corrections to programming/ballot layout (such as adding or removing a candidate or precinct) shall be made in such a way as to permit new ballot proofs to be generated quickly and accurately. PDF's shall be generated by precinct or ballot style (at the request of the user) and shall be in database order front followed by back.	Y		Corrections to programming/ballot layout, such as adding/removing a candidate or precinct, can be made quickly and easily. PDFs can be generated by selecting all, one or some ballot styles based on the user's options elected. Ballots are always printed front then back. Users also have the option to print all fronts, then all backs if they desire.

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D.	Election Night Reporting (ENR) Capabilities				

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	1.2.D.1	The proposed EMS shall have ENR functionality that allows for electronic transmission of unofficial results on Election Night, which can be summarized and displayed electronically online at the State, county and jurisdiction level. Proposals shall describe, in detail, the transmission, reporting, security and electronic display capabilities of their available ENR system.	Y		Our DS200s offer wireless or dialup modem transmission of unofficial results on Election Night to a Secure File Transfer Protocol (SFTP) server. These results are then processed by Election Reporting Manager (ERM) which summarizes and creates results reports in paper and electronic format for distribution to election workers, candidates and the media. As an option, DS200 results can be electronically transmitted on Election Night from regional sending sites utilizing the Regional Results/Transmission application. This is an optional application (See **Exhibit C, Pricing, Optional Items**). All transmitted results are encrypted and digitally signed to ensure secure transmission. Only results from the DS200s programmed for the current election will be accepted by the receiving server. Jurisdictions can configure multiple ERM PCs to display scrolling results, which automatically update as the ERM system processes election night results. ERM can also distribute reports directly to media outlets over a LAN connection. Electionware tracks which USB memory devices have transmitted results on election night and can provide a report of each poll's status. After the election, Electionware can be utilized to report and display equipment logs, Cast Vote Records and ballot images. ES&S' ElectionwareResults™ is a web-based application, which utilizes election night results accumulated in ERM. ElectionwareResults will automatically post the exported batch file to the State of Michigan's website for viewing by voters, candidates, public, and media. This new service is a high-capacity system that allows election administrators the ability to control what and when unofficial and official results are published to the Internet. ElectionwareResults can upload data from Electionware ERM without further need for translation. Furthermore, the system can display results for the election administrator to first view, and then release for public viewing on the Internet. The system even enables the administrator to roll back the results displays, if needed, to datasets received earlier on election night. ElectionwareResults includes both table and graphical displays. Vote percentages, turnout percentages and precincts reported are all included.

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	1.2.D.2	The ENR system shall support the following transmission mediums for reporting unofficial returns on Election Night directly from precinct tabulators to the EMS system: cellular modem, analog/dial-up modem, database import and manual reading of tabulator memory devices. Proposals shall specify and describe any other transmission methods available and/or under development.	Y		The DS200 Precinct Tabulators support transmission of results using analog/dial-up modems, cellular modems, or a combination of the two methods. ES&S offers cellular modems that support Verizon, AT&T, and Sprint carriers. In the event of an outage of either phone or cellular networks, the USB memory device containing the results can be manually processed into the reporting system to generate election night results. Additionally, ES&S central count tabulators can transfer results via a closed network or using a USB memory device. Finally, users have the option of transmitting results on a secure laptop utilizing the Regional Results/Transmission, which is an optional application. (See **Exhibit C, Pricing, Optional Items**).
	1.2.D.3	The ENR system shall support accumulation and transmission of unofficial results by modem (cellular or dial up) from different election groups simultaneously into the same precinct and accumulated automatically (i.e., cellular or dial-up transmitted absentee results as well as cellular or dial-up transmitted election day results). Memory devices shall be programmable to reach proper destination (i.e., Election Day precinct, AV precinct results).	Y		Election Reporting Manager (ERM) is capable of handling the receipt and accumulation of unofficial results transferred by modem (cellular or dial up) into the appropriate election group and precinct. Users have up to 14 different customized groups in ERM to accumulate results. ERM processes results into the group specified when the accumulation process began. Once these unofficial results are processed – whether they are Election Day, Absentee, or other – ERM combines all groups into a single result for a given precinct. Meanwhile, separate totals are still available for the different types of voting should they be required. ES&S is pleased to be adding a new feature to automate this workflow. In the proposed enhancement, the user could specify the proper destination (i.e. Election Day precinct, AV precinct results) on a poll-by-poll basis. This provides even more flexilbility when creating the election setup. With this new feature, the system will automatically assign the group specified during election configuration. It also will allow counties to either use the pre-set destination or override it, if needed. This will decrease in potential human errors on Election Night.This feature is anticipated to be ready for certification by the Fall of 2016 as part of EVS 5.8.0.0.

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	1.2.D.4	Regarding modem transmission of unofficial results, the ENR system shall provide an ability for the user to customize the level of security (custom passwords, custom private networks, etc.). Proposals shall describe in detail all security features of their transmission system and processes that are available, including use of encryption.	Y		The proposed system supports secure wireless network results transmission utilizing a Data Transmission Security bundle configured in the Electionware Configure module. The security bundle is loaded to the DS200 using a USB memory device. The standard election definition file configured in Electionware includes necessary configuration options to support network communications, including server IP address and telephone numbers. The encrypted security bundle contains network access passwords to facilitate secure connection and authentication with the central reporting location. Additional security is achieved by signing the encrypted results bundle with a private key created by the DS200. The encrypted results bundle, in addition to the results, includes the signature file and DS200 created Public key used to verify the results bundle signature. The jurisdiction's election administrator assigns a unique account and password to all users of the EMS PCs. In addition, user accounts and access codes are established for users of Electionware using the built-in Setup module. User customized passwords are also utilized in ERM for the transmission of results data. VVSG 2005 requires protecting vote data using digital signature. Electionware digitally signs every cast vote record and digitally signs the package of cast vote records captured by the tabulators. Additionally, the software exceeds the VVSG requirement by placing a digital signature on all data sent to the tabulators on removable media (from the EMS PC) and all data returned from the tabulators on removable media (to the EMS PC). Tabulator and EMS digital signature processes use the EC-DSA P-384 algorithm within the RSA Crypto library. For more information, please see our response to **1.2.A.2** above.
	1.2.D.5	The ENR system shall provide for centralized programming that allows the county to customize and incorporate specific instructions for transmitting results (IP Address, Phone #, etc.).	Y		Electionware allows for centralized programming, including the ability to specify the IP Address and/or phone number to be used. Customers utilizing dial-up modems may customize the dialing instructions on a poll-by-poll basis, allowing for special circumstances (e.g. dial 9 for an outside line).
	1.2.D.6	ENR Data transmission includes Race Summary report data (total votes for each candidate) and Race Detail report data (results by precinct) report data.	Y		This functionality is available in ERM using Precinct Summary and Election Summary reports after they are electronically transmitted or loaded directly into ERM.

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	1.2.D.7	OPTIONAL REQUIREMENT: The ENR system should have the ability to present a precinct as completely or partially reported based on when election groups (Precinct, Absentee, etc.) are received in EMS.	Y		Currently ERM only possesses the ability to classify a precinct as either counted or not counted; a partially designated classification does not exist within the application. The ability to classify precincts as partially reported will be ready for certification by the Fall of 2016 as part of EVS 5.8.0.0.
	1.2.D.8	OPTIONAL REQUIREMENT: The ENR system should allow users to view data by pre-defined groups (precinct, absentee, combined precinct/absentee, etc.).	Y		ERM allows the user to configure up to 14 defined reporting groups. Examples of commonly used reporting groups might be: Election Day, Absentee Mail Ballots, Absentee Walk-In, Early Vote, and Provisional. User defined groups allow the election staff to tailor their reports for varying audiences to show results by each of the selected categories. ERM reports have the option to either show totals by group or cumulatively.
	1.2.D.9	OPTIONAL REQUIREMENT: The ENR system should allow the public to determine the total number of precincts, the number of precincts completely reported and the number of precincts partially reported.	Y		ERM allows the public to determine the total number of precincts and the total number of precincts reporting. No designation currently exists for completely vs. partially reported. The ability to classify precincts as partially reported will be available in EVS 5.8.0.0, ready for certification in Fall of 2016.
	1.2.D.10	OPTIONAL REQUIREMENT: The ENR system should generate presentable, county and state configurable web results displays listing proportion of precincts (not election groups) reported for each contest and display precinct-level results.	Y		ElectionwareResults is a web-based application that displays county results. Precincts or Summary results are displayed along with the number of precincts reported for each contest. ElectionwareResults is hosted at a third party data center. ElectionwareResults includes both tables and graphical displays. It allows the users to download the reports in PDF directly from the public page. ElectionwareResults displays can be viewed statically or in an automated scrolling mode that continuously rolls and updates itself. This application is included in our proposed solution at no additional cost.
	1.2.D.11	The ENR system shall supply an export utility that extracts current/up-to-date election results from the native data repository in a format that is easily provided to the State, county and/or local jurisdiction (e.g., ASCII), allowing the State, county and/or local jurisdiction to display election results via a third party software vendor.	Y		All ERM Results and Canvass reports may be saved to the system or onto an electronic media. Result data can be exported from ERM in several user selectable formats. These include 4 ASCII files formats (two are precinct-results based and two are summary-results based), an XML format, a CSV file format, and state specific formats used for state results aggregation.

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	1.2.D.12	The ENR system shall provide for a report of precincts reporting and not reporting on election night. The ENR system shall provide for the report to be printed or exported in a CSV or other format prescribed by the State.	Y		ERM offers a number of canvass reports, including the Precincts Counted/Not Counted Report, the Precincts Completed Listing (showing ballots cast totals), and the Precinct Processed Listing (displaying ballots cast for each machine serial number). Each of these reports can be printed as many times as needed or saved and exported.
	1.2.D.13	The ENR reporting system shall provide for the replacement of an already-submitted precinct by the re-submission of that same precinct in the event of errors in transmission or new data. The system should prompt the local administrator to either overwrite data already submitted, or provide an option to ignore new data.	Y		Election Reporting Manager (ERM) allows precinct results to be updated after initial results are updated if more ballots are added to the poll media. For example, if more ballots are found in an emergency bin, the poll may re-opened on a DS200, the additional ballots scanned, and polls closed. As the updated results are re-sent (or re-uploaded), ERM will recognize the change and automatically update using the new results, eliminating any possibility of doubling the totals. Given the "smart" update process, ERM does not need to provide an option to ignore the new data. If the results are identical (i.e the election official processes poll media twice), ERM notifies the user that the results are identical and does not use the data provided in the second transmission. To create Replace/Add To determination, the "smart" update process tracks the following: the machine the polls were closed on and when the first and last ballots, included in the results, were cast. The timestamp of the last ballot processed determines if additional ballots have been cast since the last time it was loaded in ERM. • If the exact same results are re-sent, ERM will not update the results. A message will appear to inform the user the data has already been loaded. • If the user uploads, then re-opens on the same tabulator, then adds more ballots, the results can be re-sent. In this case, ERM will receive the new results and will replace the previous results from that poll media with the updated cumulative total. The intelligence built into this process eliminates the need for an administrative override. The user is not required to make a decision on whether to Add To or Replace results as it did in previous versions of ERM.
	1.2.D.14	The ENR system shall provide for the ability to import the State-provided file of candidate information and statewide ballot proposal information in its entirety. The import must be seamless with a minimal need for manual manipulation after the fact.	Y		The ES&S system will seamlessly import the State-provided file of candidate information and statewide ballot proposal information in its entirety.

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	1.2.D.15	The ENR system shall be capable of passing Michigan ENR Codes into the Vendor EMS and returning the codes in the results file. Codes include precinct, office and candidate codes.	Y		The ES&S system is capable of passing Michigan ENR Codes, including precinct, office, and candidate codes, into the EMS and returning the codes in the results files. Additionally, ES&S will provide the ERM Results Export Program (EXP) utility to meet the Michigan Standard Results File creation requirement as defined in the Attachment 1.5. The EXP Utility include the QVF Identifiers for offices, candidates and precincts from QVF data imported into the EVS Electionware module. This functionality is included in our proposed software solution at no additional charge.
	1.2.D.16	The ENR system shall provide for the ability to import Ballot Definition Data using the Michigan QVF Export File Structure or IEEE Standard for Ballot Definition when implemented by the State. See **Attachment 1.5** for additional details.	Y		The ES&S Voting System Election Management product supports the import of industry standard, comma separated values (CSV) files to load election Ballot Definition Data. Michigan's Uniform Data Format could be utilized to create Electionware import files.
	1.2.D.17	The ENR system shall provide for the import of a replacement file which incorporates any and all changes in the State-provided file. The import of the file cannot affect any of the local candidate information or local ballot proposal information already entered into the system.	Y		Using Electionware's Import Wizard, data can be imported as only a segment of the election or the entirety. The Import Wizard also has the abilty to Add data, Add and Updata data, as well as Add, Update and Delete data.

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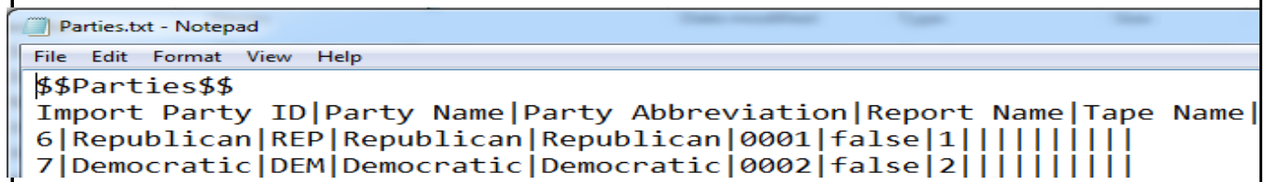
	1.2.D.18	The ENR system shall provide for the manual update of the State-provided file information after it has been imported. The manual update process shall be easy to use with minimal steps.	Y		The ES&S Voting System Election Management product supports the import of industry standard, delimited files to load election ballot data. You can choose which type of Field Delimiter. These files are very simple TXT files that include element and field identifiers in each and every file to eliminate any guesswork in how the data is organized. The first line shows the element type (i.e. parties, contests, candidates, precincts, districts, etc). The second line displays the field identifiers. Here is a sample of a party import, which is delimited by the "|" character:  Parties.txt - Notepad File Edit Format View Help $$Parties$$ Import Party ID|Party Name|Party Abbreviation|Report Name|Tape Name| 6|Republican|REP|Republican|Republican|0001|false|1|||||||||| 7|Democratic|DEM|Democratic|Democratic|0002|false|2|||||||||| Users can import all or only a part of the election with our simple 1-click election definition Import Wizard. By selecting the "Import Data" button, all election data can be imported simultaneously. Once election data is imported, every field imported can be easily edited in Electionware's Capture module. The user can simply type in the data entry fields and update as needed.

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					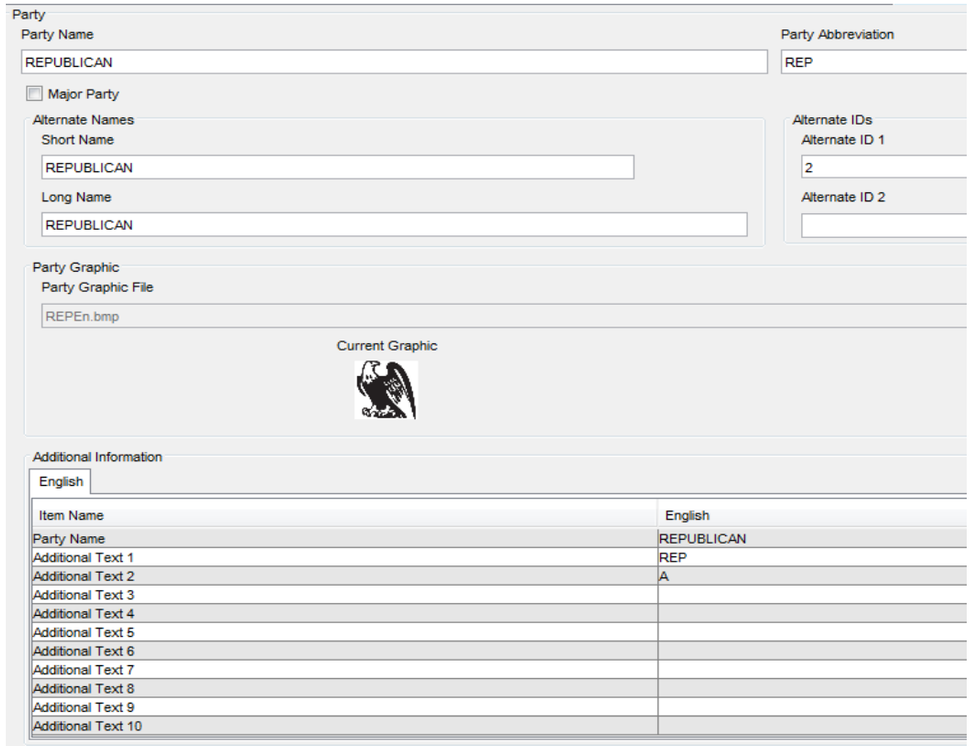
	1.2.D.19	The ENR system shall provide for the ability to produce Election Result Data in the Michigan Standard Results File Format or IEEE (1622.2) Election Results Reporting Data Interchange Format. See **Attachment 1.5** for additional details.	Y		The ES&S system includes an application named ERM Results Export Program (EXP) Utility that exports precinct-by-precinct vote totals. Most often, state-specific versions of the EXP Utility are created that tailor exported data to meet the needs of the state in question. We created a version of EXP that exports precinct-by-precinct vote totals in the exact file format required by the Michigan Standard Results File Format. This functionality is included in our proposed software solution at no additional charge as designated in Exhibit C, Pricing. See the **Example Precinct Results File** and **Example Summary Results File**, attached hereto as **Appendix F,** for files that can be produced by our ERM Results Export Program (EXP) Utility, which is included in our proposed EMS system at no additional cost.

Item Name	English
Party Name	REPUBLICAN
Additional Text 1	REP
Additional Text 2	A
Additional Text 3	
Additional Text 4	
Additional Text 5	
Additional Text 6	
Additional Text 7	
Additional Text 8	
Additional Text 9	
Additional Text 10	

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Exhibit A, Attachment 1.2 Voting System ELECTION MANAGEMENT SYSTEM (EMS) SOFTWARETechnical Requirements					
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	1.2.D.20	The ENR system shall provide for the export of the precinct-by-precinct vote totals of the candidate and proposals as required by the State-provided file format. The export must be seamless with a minimal need for manual manipulation after the fact.	Y		The ES&S system includes an application named ERM Results Export Program (EXP) Utility that exports precinct-by-precinct vote totals. Most often, state-specific versions of the EXP Utility are tailored to meet the needs of the state in question. ES&S created a version of EXP Utility that exports precinct-by-precinct vote totals in the exact file format required by the Michigan Standard Results File Format. In full compliance with this requirement, the export isseamless with a minimal need for manual manipulation of data.
	1.2.D.21	The ENR system shall provide for the export of the county-wide totals of the candidates and proposals as required by the State-provided file format. The export must be seamless with a minimal need for manual manipulation after the fact.	Y		The ES&S system includes an application named ERM Results Export Program (EXP) Utility that exports county-wide totals of the candidates and proposals. Most often, state-specific versions of the EXP Utility are tailored to meet the needs of the state in question. ES&S created a version of EXP Utility that exports county-wide totals of the candidates and proposals in the exact file format required by the State of Michigan. In full compliance with this requirement, the export is seamless with a minimal need for manual manipulation of data.
	1.2.D.22	The ENR system shall provide for the export of precinct by precinct totals, jurisdiction totals and county-wide totals on election night or as the county is able. The EMS shall not limit the number of times a file can be exported.	Y		ERM allows for each report (Precinct Summary, Election Summary, plus canvass reports) to be exported as many times and as often as needed by the jurisdiction. This includes information scheduled in the ERM Results Export Program (EXP) utility planned for the State of Michigan.
	1.2.D.23	The ENR system shall support reporting results in a variety of different election report-style formats, including Summary contest and Precinct Level.	Y		ERM contains a Precinct Report (list of individual precincts and contest results for each precinct) and an Election Summary Report (voting results for all candidates, all contests). For both reports, the user can select the precincts or contests to include in the report. ERM also offers a number of canvass reports to present the election night reports in different formats.
E.	**Reports**				

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	1.2.E.1	The proposed EMS shall include a reporting feature that allows for the creation and customization of election night totals (unofficial results); county and State canvass reports (certified official totals); as well as ad hoc reporting. Specific requirements are outlined below. Proposals shall include a detailed description of all available EMS reporting features, including samples of all available election night (unofficial totals) and canvass (official totals) reports. Bidders shall also respond to each individual requirement in this section to provide details and samples of EMS reports available that meet each individual requirement.	Y		Our EMS includes the creation and customization of election night totals (unofficial results); county and State canvass reports (certified official totals); as well as ad hoc reporting. Please see **Sample Reports,** attached hereto as **Appendix D,** for detailed descriptions of all available EMS features and sample reports.
	1.2.E.2	The EMS shall be capable of generating all reports on standard letter size paper (8.5 x 11 inches).	Y		Electionware and ERM can generate reports on standard 8.5 x 11-inch paper.
	1.2.E.3	The EMS shall provide for unofficial and official reports and canvass documents in a standard format that can also be customized at the option of the county or State user; including the display of both absentee and election day vote totals, as well as grand totals in any given precinct. The system shall be capable of producing official and/or unofficial election result reports consisting of any combination of vote data, and presented in any available format; to be produced at any time during the tabulation of votes, or thereafter.	Y		The user would procedurally change the report heading from "Unofficial Results" to "Official Results" (or any other desired wording). This allows them to use the same exact reports without any data being changed. Each report can be produced at any time (before, during, after tabulation occurs). The status Official/Unofficial is dictated by the user within the reporting heading. All Precinct and Summary reports can be printed with or without group/category subtotals. Group subtotals can be configured for Absentee, Election Day, etc. Canvass reports can also be printed for selected groups if desired.

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	1.2.E.4	The EMS shall provide the ability to custom design an election report to include, at a minimum, the following information in total or in part: name of election; political subdivisions; parties involved; date of election; type of report; total number of registered voters in each political subdivision; total number of registered voters in each voting precinct, including a sub-listing when the precinct is split; and votes by multi-member districts (i.e., vote for two), legislative district or congressional district.	Y		Election report headings can be customized as needed. Reports include the name of the election, political subdivisions, parties included in the election, date of election, type of report, total number of registered voters in each political subdivision, total number of registered voters in each voting precinct. Although sub-listings are not provided by default when a precinct is split, and the legislative or congressional districts are not included by default, those reports could be obtained through customized query.
	1.2.E.5	The EMS shall be capable of sorting by fields or permitting the user to customize layout.	Y		Electionware allows users to sort information by fields and customize the layout of various reports through the use of our unique Table View feature. Table View is available for most elements of Electionware. It displays a wide array of information for a specific type of data in a convenient, sortable table. For example, Table View would allow the user to view information about all of their contests in a single table. Default information that is displayed for each contest includes: • Contest order • Contest Title • Contest Type • Party Affiliation • District Information • Vote for number • Number of Write-ins • Candidate Rotation The user is able to customize Table View adding or removing columns of information. For example, there are over 35 different types of information that can be included in Table View for Contests. Each of these columns is fully sortable, and the information presented in Table View can be exported at any time to XLSX or CSV.

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	1.2.E.6	The EMS shall provide flexibility in printable reports showing results containing candidates and/or questions in alphanumeric format/ ballot order, etc. next to the vote totals. Proposals shall include details on the available options for customizable reporting and customizable printing (e.g., font availability and sizes, page layout, etc.).	Y		ERM reports offer many reporting options. Users can customize report headings as needed. It provides the ability to print candidates in vote sequence, listing candidates in order of the greatest vote tally first vs the order that candidates appear on the ballot. When displaying reports, ERM also allows the user to update the font size. ERM reports can be exported and customized as needed outside of our EMS system. Users can define the precincts, and contests that are included, whether or not overvote & undervotes are included, whether vote totals are included for each contest and how candidate percentages are calculated (percentage of votes cast or eligible votes). ES&S has planned even more enhancements to increase the flexibility of customizing these reports, many of which will be part of EVS 5.8.0.0. Software licensing fees include future enhancements. In Electionware, the jurisdiction can load election results data, filter, and export poll place and ballot records, and generate different types of reports. Also in Electionware, the user can view, save, and print HTML and XML versions of the Election Summary Results report. When printed from the CSV, RTF, PDF and XLS formats, the font, text size, and page layout can be adjusted within the programs the data is exported to.
	1.2.E.7	The EMS shall provide for the official report of countywide vote totals for State offices and proposals in a form prescribed by the State. The report shall provide for the vote totals to be reported in numeric and written form (linked to the official canvass report).	Y		The ES&S system includes an application named ERM Results Export Program (EXP) Utility that exports totals as defined by the state. Most often, state-specific versions of the EXP Utility are tailored to meet the needs of the state in question. ES&S created a version of EXP Utility that provides vote totals in the exact file format required by the Michigan Standard Results File Format. This functionality is included in our proposed software solution at no additional charge as designated in **Exhibit C, Pricing.**

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	1.2.E.8	The EMS shall generate pre- and post-election reporting with the following data: 1) contests and candidates in election, 2) precinct attributes such as Voter Registration totals, modem numbers, etc., 3) candidate rotations by contest and precinct with Voter Registration totals, 4) Voter Registration totals, 5) precincts reported, 6) linked precincts and districts, 7) contest by precinct, 8) ballot styles by precinct and by district, 9) headers by precinct, 10) export codes, 11) statement of votes cast detailing all contests and precincts, 12) election "milestones" by precinct such as programming, memory device, reporting results, 13) proofing report for proofing candidates and contests.	Y		1. Contests and candidates are displayed in numerous reports in Electionware as well as the ERM Precinct or Election Summary report. 2. Precinct voter registration totals can be displayed and reviewed in ERM canvass reports. Modem numbers can be proofed from Electionware's Configure report. Electionware can also report on Voter Registration totals if entered in this portion of the EMS system. 3. Candidate rotations by precinct are reported in Electionware's Capture Rotation report. 4. Voter Registration totals are provided in Electionware Capture Table Views as well as ERM Canvass reports. 5. Precincts reported totals appear in various ERM reports (Precinct Summary and Election Summary) as well as exports (ASCI, XML Results export). 6. Linked precincts and districts appear in Electionware's Capture Precinct by District report and District by Precinct report. 7. Contest by precinct can be reviewed in Electionware's Configure Ballot Detail Report. 8. Ballot styles by precinct and by district can be reviewed in Electionware's Configure Jurisdiction Ballot Style Listing. 9. Headers can be reviewed in Electionware's Capture Header Table View. 10. Export codes are available for proofing in Capture's Table View. Additionally, the ES&S EXP Utility offers reports for proofing state export codes. 11. ERM offers reports with statement of votes cast detailing all contests and precincts. 12. These milestones can be found in a number of Electionware reports. Users can see which media is burned in Package reports and exactly how tabulators are set up with Configure reports. Everything that is entered or configured in Electionware can be displayed in an Electionware report. 13. Capture's contests and candidates Table View can be customized and sorted to show whichever fields you would like to proof/report.
	1.2.E.9	The EMS shall be capable of generating election results reports in standard electronic formats for distribution (.docx, .pdf, .html, .csv, .txt, ascii, xml).	Y		Electionware reports can be saved in several formats including PDF, .xlsx, .html, etc. Additionally, Electionware tables can be customized by the user and then exported to Excel spreadsheets, which allows reporting on user defined sub-sets of data. Result data can be exported from ERM in several user selectable formats. These include 4 ASCII files formats (two are precinct-results based and two are summary-results based), an XML format, a CSV file format, and state specific formats used for statewide results aggregation (Statewide EXP format as described above).
	1.2.E.10	The EMS shall be capable of producing reports on election night, without disrupting the results accumulation process.	Y		ERM reports can be produced on election night on one PC while another ERM PC is processing results. As the reports are prepared, they will always display a timestamp and date to show the results as of that time period.

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	1.2.E.11	The EMS shall be capable of producing reports that include user customizable report headers and/or footers (election type, date of election, county name, jurisdiction name, date/time of report, results status).	Y		ERM reports and canvasses offer user customizable report headers, including fields to show election type, date of election, county name, jurisdiction name, and report status. ERM and Electionware provide the time/date that the report was generated. Electionware's powerful Table View tool also allows for custom reporting of all pre-election elements such as precincts, district, contests, ballot styles and candidates. These table views can be exported to Excel spreadsheets and contain all election data attributes handled by the Capture module. Information in the Table View can be organized for viewing, sorted, and customized by changing the column headers. Each Table View can then be exported as needed. The lower half of the Table View screen also displays the relationship of various selected items. This is a powerful tool in Electionware, allowing for custom reporting of all information that will apply to the voting equipment and reporting software.
	1.2.E.12	The EMS shall be capable of producing a report that includes the jurisdiction, precinct number and the type of election results (Total, Precinct, Absentee, Provisional, etc.).	Y		Election Reporting Manager (ERM) is capable of producing reports that include the jurisdiction, precinct number, and the type of election results captured in the report. Users also have the ability to customize the group names (Precinct, Absentee, Provisional, etc.).
	1.2.E.13	The EMS shall be capable of producing reports that include the following data elements in the body of the report:	Y		
		a. the name of each contest on the ballot (e.g., Governor, Delegate, President);	Y		ERM and Electionware reports contain the name of each contest.
		b. the names of each candidate in each contest or race;	Y		ERM and Electionware reports contain the name of each candidate in each contests or race.
		c. the party affiliation of each candidate in each contest or race;	Y		ERM and Electionware reports contain the name of each candidate in each contest or race and the party affiliation.
		d. the number of choices for each contest or question (e.g., vote for 1);	Y		ERM and Electionware reports contain the number of choices for each contest or question.
		e. the vote totals for each candidate in each contest or race, by precinct, AVCB and combined total;	Y		The ERM Precinct Summary report contains the vote totals for each candidate in each contest or race, by precinct, AVCB and combined total.
		f. the total votes for each contest;	Y		The ERM Precinct Summary report contains the total votes for each contest.
		g. the winning selection for each contest, indicated by bolding or some other mark;	Y		ERM has a user selectable option to print the Election Summary report in descending candidate vote order. This places the winning candidate(s) at the top of the list. In addition to total votes it also shows the percentage of votes cast for each candidate. The ERM summary results scrolling screen provides an option to identify winners and display them accordingly.

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		h. the title and number of each question on the ballot (e.g., "County Question A, State Question 1");	Y		ERM and Electionware reports contain the name of each question on the ballot as entered in Electionware's Capture module.
		i. the possible selections for each question or contest, (e.g., "For", "Against", "Yes", "No" or a blank);	Y		ERM and Electionware reports contain the possible selections of each question on the ballot as entered in Electionware's Capture module.
		j. the total number of precincts for the election;	Y		The ERM Election Summary report contains the total number of precincts in the election
		k. the percent of reporting precincts versus the total number of precincts;	Y		The ERM Election Summary reports the percent of reporting precincts versus the total number of precincts.
		l. the total number of registered voters;	Y		The ERM Election Summary report contains the total number of registered voters.
		m. the total number of registered voters that voted in the election;	Y		The ERM Election Summary report displays the number of registered voters that voted in the election.
		n. the total percent of voter turnout;	Y		The ERM Election Summary report displays a total percent of voter turnout.
		o. the number of overvotes in each contest or race;	Y		The ERM Election Summary report contains an option to include the total number of overvotes in each contest or race.
		p. the number of undervotes in each contest or race;	Y		The ERM Election Summary report contains an option to include the total number of undervotes in each contest or race.
		q. the total number of votes for all write-in candidates;	Y		The ERM Election Summary report contains the total number of votes for all write-in candidates.

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		r. overall "Election Results Reports" - reports of election results filtered by congressional district, legislative district, custom districts (e.g. council district, commission, school board, county/jurisdiction, wards), precinct including precinct splits, candidate political party affiliation, and by the number of partisan and non-partisan ballots cast;	Y		Users may create ad hoc reports filtering certain precincts and/or contests by district as needed. These ad hoc reports may also be saved for reuse for various elections. Reports display the district name assigned to a contest automatically. Precinct split totals will display on the overall precinct level in ERM. Candidate political party affiliation can be viewed on the ERM reports. Ballots cast by partisan and non-partisan totals are included for Primary elections. ERM produces a large variety of standard election reports and displays that can be tailored in accordance with specific requirements. High-speed printers are configured as part of the system to print hard copies of reports when desired. ERM reports include: • Precinct Results Report • Precinct Results Report with Group Detail • Election Summary • Election Summary with Group Detail • Number Key – Statistics Only Canvass • Number Key – Districts Only Canvass • Candidate Name Heading Canvass • District Totals – Election Day A/V Combined Canvass • Block Style Canvass • Jurisdictional Canvass • Local Office Canvass • Precincts Counted/Not Counted Canvass • Precincts Completed Listing • Precincts Processed Listing • System Log • Manual Entry Log
		s. a list, capable of being produced at any point in the process, showing which precinct or absentee/memory devices have been uploaded to the EMS, and which have not been uploaded to the EMS;	Y		At any time during the election, ERM offers a Precincts Processed Listing displaying all serial numbers uploaded to the EMS as well as the ballots cast. When modeming is used, a DS200 Media Transmitted versus Not Transmitted report is used so the jurisdiction can quickly see which tabulator media has not been transmitted yet. However, this is not available if the jurisdiction is not transmitting results electronically from the poll. ERM can report which memory devices have been processed in one of the canvass reports. As images and equipment logs are archived in ERM, the Electionware Acquire Module will display/report the media status (loaded and not loaded) per precinct.

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		t. the capability for the reporting of ballots cast in split precincts;	Y		Although ERM does not have the ability to report ballots cast or contest results by split in a split precinct, Electionware has the ability to export an Excel file containing all Cast Vote records. Using Excel's sort and count functions, ballots cast and/or contest results by split can be determined. The ability to report ballots cast by split precincts is anticipated to be ready for certification by the Fall of 2016 as part of EVS 5.8.0.0.
		u. OPTIONAL REQUIREMENT: the EMS shall be capable of adding the names of certified write-in candidates to the EMS and reports.	Y		ERM allows the name of a write-in candidate to be updated within the system. The updated name can be displayed on reports if needed. ES&S is pleased to report that we are adding the ability to provide multiple certified write-in names to be applied to the same write-in count. These certified names, plus a tally of the number of times they are chosen on ballots, will be included in Electionware's upcoming reporting module as part of EVS 5.8.0.0..
	1.2.E.14	The EMS shall prevent the printing of summary reports before the sequence of events required for closing of the polls are completed.	Y		This is typically handled procedurally in the EMS software. Since all EMS users are given user names and passcodes, each step, including printing summary reports, is logged and transparent within the system. The DS200 will prevent the printing of summary reports before the sequence of events required for closing polls are completed. ES&S central count tabulators include an option that would require a password before printing summary reports. ES&S will add this requirement to automate the prevention of system reports from the EMS software as part of EVS 6.4.0.0, which is expected to be ready for certifications by the Spring of 2018..
	1.2.E.15	OPTIONAL REQUIREMENT: (For use if an 'Early Voting' option is implemented in the future) - The EMS shall be capable of producing reports including the number of ballots cast or read into each precinct without closing the polls or revealing any preliminary results data.	Y		Currently, the ES&S Voting System is only capable of producing reports, including the number of ballots cast or read into each precinct, after closing the polls. In ERM, each group can be removed procedurally from reports and re-enabled as needed. This allows the user to have complete control over which results can appear on the ERM reports.
F.	**Audit Capabilities**				

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	1.2.F.1	The EMS shall provide an audit log stored on the memory device that records all pre-Election, Election Day and post-election actions performed; the audit log must be kept / stored and available for printing.	Y		Electionware maintains an Election Audit Events log for every action the user performs within the application, including system prompts to the user and the user's response to these prompts. They are persisted in the audit schema of the election database. Each event tracks the timestamp of the event and the user who performed the action. Additionally, an Admin Audit Events log is maintained. This log stores all of the events that are generated when an election is not currently open (e.g., user creation, user login/logout, etc.). This log also contains the timestamp and name of the user who performed the action. Both logs can be filtered by date and event type and printed in a variety of file formats including .pdf, .rtf, .html, .xls, and .csv. With regard to hardware, the DS200 audit log report lists all events (errors, alarm conditions, ballot handling exceptions, and user initiated functions) that occur on the system from the time an election worker inserts the USB memory device into the machine until it is removed. Each event appears in the audit record with a date and timestamp. The DS200 audit log also retains entries from all internal components capable of producing an audit log entry, including the power management board, the scanner hardware board and the election processing firmware. Once DS200 results have been transferred to Electionware, the DS200 audit logs from every unit used in the election are available to be centrally viewed or printed. The DS450 also maintains an internal audit log that records all major events that occur in the course of an election. The DS450 audit log can be exported to a USB memory device and, like the DS200, be viewed, printed and archived using Electionware. Additionally, the DS450 features an optional dot matrix printer that records audit events in real time. The ExpressVote maintains an internal audit log that records all major events that occur in the course of an election. Audit logs are constantly updated in the system background and saved to the inserted ES&S USB memory device in a circular buffer. Stored audit records are not affected by system power interruptions. Poll workers can view audit logs on the unit's touch screen or printed sheet. Machine level audit reports may be generated at any time from each of the system's administrative menus, and each log entry is numbered and includes event details. Finally, ERM maintains a robust audit log that tracks all actions taken within the application. Like Electionware,

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	1.2.F.2	The EMS shall include an available report that documents information regarding the tabulator, firmware and software versions in use.	Y		All firmware version information is part of a configuration report that generates each time a unit is powered on. These reports are checked against the expected version. ES&S does not certify nor recommend using multiple versions simultaneously such that a customer would need to track which version a machine has installed. The ES&S proposed voting system audit log provides sufficient information to allow the auditing of all operations related to ballot tabulation, results consolidation, and report generation.
	1.2.F.3	The EMS shall provide an error message log that documents error messages; the error message log must be kept/stored and available for printing.	Y		Electionware meets all of the above audit log file requirements. All activity, including application errors, log to the Electionware internal audit log database. User logs record each activity including type, date, time, ES&S application, and user ID. They can be printed based on a user specified date range.
G.	**System / Software Ownership**				
	1.2.G.1	Bidders shall include a standard Software License Agreement which includes the following provisions: o State and County will be granted a non-exclusive, perpetual, royalty-free, irrevocable, and transferable license to use the software and related documentation according to the terms of the Contract o State and County may make and maintain an archival copy of each item of software	Y		The State and Authorized Users will be provided a nonexclusive, nontransferable, royalty-free, perpetual, and irrevocable license to use the software and documentation. This license is to be used only on the Authorized User's owned computer and network system and is only to be used on-site at authorized locations, including county, city, or town. Only bona fide full-time, part-time and temporary employees, as well as its authorized representatives, will be permitted to use the EMS Software and documentation. ES&S' license does not allow the State or Authorized Users to transfer the provided license. If there is a specific reason or need for the license to be transferable, ES&S will work with the State and/or Authorized Users to determine if such a transfer of license will be permitted. ES&S agrees to allow the State and Authorized Users to make and maintain an archival copy of each item of software.

RFP No. 007116B0007029 Election Systems & Software					
Exhibit A, Attachment 1.3 Voting System ABSENT VOTER (AV) PROCESSINGTechnical Requirements					
	Category / Requirement #	Requirement	Bidder Complies (Y/N)	Bidder Complies - with Modifications	Please expand on your response in Column D or E.
A.	**AV Processing (General)**				
	1.3.A.1	All requirements listed in Attachment 1.1 (HARDWARE requirements) also apply to hardware used with absent voter (AV) ballots and AV voting, including jurisdictions in which separate Absent Voter Counting Boards (AVCBs) are used to process AV ballots on Election Day. The following requirements in this section are requirements related to AV processing, in addition to all requirements listed in **Attachment 1.1, HARDWARE Technical Requirements.**			
	1.3.A.2	AV ballots shall be the same ballot type and size as that used in the Election Day precinct.	Y		Our proposed solution would use the same ballot type and size in AV voting as those used in precincts on Election Day. Because our proposed solution uses our Electionware EMS, the ballot type and size would be consistent for AV ballots and Election Day ballots.
	1.3.A.3	Bidders shall provide information in the bid response indicating the ballot processing speed for each of the following types of ballots:	Y		

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Exhibit A, Attachment 1.3 Voting System ABSENT VOTER (AV) PROCESSINGTechnical Requirements					
	Category / Requirement #	Requirement	Bidder Complies (Y/N)	Bidder Complies - with Modifications	Please expand on your response in Column D or E.
		a. Flat ballots	Y		**DS200** The DS200 nominal processing speed for flat ballots in ballots per minute (bpm): 11 inches - 12 bpm; 14 inches - 11 bpm; 17 inches – 10.5 bpm; 19 inches - 10 bpm. Throughput depends on voting variables, including the length of time it takes the operator to insert the ballot into the tabulator for processing. Throughput would increase in an AVCB situation wherein ballot prompts were removed. The DS200 was designed to function primarily as a precinct-based scanner/tabulator. However, jurisdictions with small absentee voter populations use the DS200 to tabulate their absentee ballots. Ballots are manually fed into the DS200, which scans, images and tabulates the ballot. **DS450** The DS450 nominal processing speed for flat ballots in ballots per minute (bpm): 11 inches - 92 bpm; 14 inches - 75 bpm; 17 inches - 63 bpm; 19 inches - 50 bpm.

RFP No. 007116B0007029 Election Systems & Software					
Exhibit A, Attachment 1.3 Voting System ABSENT VOTER (AV) PROCESSINGTechnical Requirements					
	Category / Requirement #	**Requirement**	**Bidder Complies (Y/N)**	**Bidder Complies - with Modifications**	**Please expand on your response in Column D or E.**
	1.3.A.3 *continued*	b. Half-folded ballots	Y		**DS200** The DS200 nominal processing speed for half-folded ballots in ballots per minute (bpm): 11 inches - 12 bpm; 14 inches - 11 bpm; 17 inches – 10.5 bpm; 19 inches - 10 bpm. Throughput depends on voting variables, including the length of time it takes the operator to insert the ballot into the tabulator for processing. Throughput would increase in an AVCB situation wherein ballot prompts were removed. The DS200 was designed to function primarily as a precinct-based scanner/tabulator. However, jurisdictions with small absentee voter populations use the DS200 to tabulate their absentee ballots. Ballots are manually fed into the DS200, which scans, images and tabulates the ballot. **DS450** With the DS450 TruGrip and patented design, the nominal processing speed for half-folded ballots is the same as that for flat ballots, assuming the appropriate level of ballot preparation has been performed to allow the ballots to be separated from the input stack at high speed. The DS450 nominal processing speed for half-folded ballots in ballots per minute (bpm): 11 inches - 92 bpm; 14 inches - 75 bpm; 17 inches - 63 bpm; 19 inches - 50 bpm.

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Exhibit A, Attachment 1.3 Voting System ABSENT VOTER (AV) PROCESSINGTechnical Requirements					
	Category / Requirement #	**Requirement**	**Bidder Complies (Y/N)**	**Bidder Complies - with Modifications**	**Please expand on your response in Column D or E.**
	1.3.A.3 *continued*	c. Tri-folded ballots	Y		**DS200** The DS200 nominal processing speed for tri-folded ballots in ballots per minute (bpm): 11 inches - 12 bpm; 14 inches - 11 bpm; 17 inches – 10.5 bpm; 19 inches - 10 bpm. Throughput depends on voting variables, including the length of time it takes the operator to insert the ballot into the tabulator for processing. Throughput would increase in an AVCB situation wherein ballot prompts were removed. The DS200 was designed to function primarily as a precinct-based scanner/tabulator. However, jurisdictions with small absentee voter populations use the DS200 to tabulate their absentee ballots. Ballots are manually fed into the DS200, which scans, images and tabulates the ballot. **DS450** With the DS450 TruGrip and patented design, the nominal processing speed for tri-folded ballots is the same as that for flat ballots, assuming the appropriate level of ballot preparation has been performed to allow the ballots to be separated from the input stack at high speed. The DS450 nominal processing speed for tri-folded ballots in ballots per minute (bpm): 11 inches - 92 bpm; 14 inches - 75 bpm; 17 inches - 63 bpm; 19 inches - 50 bpm.

RFP No. 007116B0007029 Election Systems & Software					
Exhibit A, Attachment 1.3 Voting System ABSENT VOTER (AV) PROCESSINGTechnical Requirements					
	Category / Requirement #	**Requirement**	**Bidder Complies (Y/N)**	**Bidder Complies - with Modifications**	**Please expand on your response in Column D or E.**
	1.3.A.3 *continued*	d. Z-folded ballots	Y		**DS200** The DS200 nominal processing speed for Z-folded ballots in ballots per minute (bpm): 11 inches - 12 bpm; 14 inches - 11 bpm; 17 inches – 10.5 bpm; 19 inches - 10 bpm. Throughput depends on voting variables, including the length of time it takes the voter to insert the ballot into the tabulator for processing. Counts also would vary, but would increase, in an AVCB situation wherein ballot prompts were removed. The DS200 was designed to function primarily as a precinct-based scanner/tabulator. However, jurisdictions with small absentee voter populations use the DS200 to tabulate their absentee ballots. Ballots are manually fed into the DS200, which scans, images and tabulates the ballot. **DS450** With the DS450 TruGrip and patented design, the nominal processing speed for Z-folded ballots is the same as that for flat ballots, assuming the appropriate level of ballot preparation has been performed to allow the ballots to be separated from the input stack at high speed. The DS450 nominal processing speed for Z-folded ballots in ballots per minute (bpm): 11 inches - 92 bpm; 14 inches - 75 bpm; 17 inches - 63 bpm; 19 inches - 50 bpm.

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	Category / Requirement #	**Requirement**	**Bidder Complies (Y/N)**	**Bidder Complies - with Modifications**	**Please expand on your response in Column D or E.**
	1.3.A.3 *continued*	e. Letter folded ballots of various supported lengths	Y		**DS200** The DS200 nominal processing speed for letter folded ballots in ballots per minute (bpm): 11 inches - 12 bpm; 14 inches - 11 bpm; 17 inches – 10.5 bpm; 19 inches - 10 bpm. Throughput depends on voting variables, including the length of time it takes the operator to insert the ballot into the tabulator for processing. Throughput would increase in an AVCB situation wherein ballot prompts were removed. The DS200 was designed to function primarily as a precinct-based scanner/tabulator. However, jurisdictions with small absentee voter populations use the DS200 to tabulate their absentee ballots. Ballots are manually fed into the DS200, which scans, images and tabulates the ballot. **DS450** With the DS450 TruGrip and patented design, the nominal processing speed for letter folded ballots of various supported lengths is the same as that for flat ballots, assuming the appropriate level of ballot preparation has been performed to allow the ballots to be separated from the input stack at high speed. The DS450 nominal processing speed for letter folded ballots of various supported lengths in ballots per minute (bpm): 11 inches - 92 bpm; 14 inches - 75 bpm; 17 inches - 63 bpm; 19 inches - 50 bpm.
B.	**High-Speed AVCB Tabulator**				

RFP No. 007116B0007029 Election Systems & Software					
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	Category / Requirement #	Requirement	Bidder Complies (Y/N)	Bidder Complies - with Modifications	Please expand on your response in Column D or E.
	1.3.B.1	OPTIONAL REQUIREMENT: Bidders shall describe available options for a high-speed tabulator used to process AV ballots in an AVCB. If a high-speed AVCB option is available, bidders shall describe in detail, the specifications, components, features and functionality of the proposed high-speed AVCB tabulator system. If available, also provide details on the process for electronically transmitting unofficial election night totals from the high-speed AVCB tabulator.	Y		**DS450/DS850** The DS450/DS850 provide high-speed digital processing. The tabulators scan and automatically sort ballots, separating them into one of three (3) discrete bins without interrupting scanning. The DS450/DS850 can read ballots in all four orientations. The DS450/DS850 are designed with a series of rollers so ballots that were originally folded may be tabulated at the same rate of speed as flat ballots. The DS450/DS850 use Intelligent Mark Recognition technology to determine what constitutes as a mark for a candidate. The easy-to-use DS450/DS850 central scanner can be configured with ES&S' Electionware Election Management System and used with ES&S' DS200 precinct-level scanners and the ExpressVote, an Americans with Disabilities Act (ADA)-compliant voter assistance device, to create a complete end-to-end election solution. Key features of the DS450/DS850 include the following: *SPEED:* The DS450/DS850 central scanner/tabulator are some of the fastest scanners in the industry and can handle roughed-up ballots with ease. *EASE OF USE:* The durable 15-inch color touch screen and user-friendly interface walk you through every step of the process. It is as simple as placing a stack of ballots on the scanner and pressing START. *FLEXIBILITY:* With three separate sorter bins, you can determine whether you want to set apart specific types of ballots for further review. Let the DS450/DS850 handle separating write-in votes, overvotes, or blank ballots without missing a beat.

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	1.3.B.1 *continued*				*ACCURACY:* ES&S' patented Intelligent Mark Recognition (IMR™) and Positive Target Recognition & Alignment Compensation (PTRAC™) technology ensure ballots are read accurately and consistently, protecting voter intent and eliminating manual adjudication time. PTRAC™ corrects for variations in ballot alignment and printing, allowing the digital scanners to zero in on the marking area. IMR™ digitally subtracts the outline of the voting target to read only the voter's mark. Our competitors' optical scanners require you to set an arbitrary pixel threshold to determine what counts as a mark. The DS450/DS850 do the work for you. To determine which marks were intentional, sophisticated algorithms analyze not only the mark's darkness (pixel density) but also its directionality. Unlike other scanners, the DS450/DS850 are not fooled by erasures or other stray marks, and is not confused by lighter or thinner marks that would be missed by a simple threshold. IMR™ means faster results for you and assurance for voters that their votes were counted as they intended. *SECURITY:* Safeguard your election data with the DS450's/DS850's system integrity, electronic audits, and digital signatures. • Strong physical access controls: locks and seals secure data ports and critical hardware components • Role-based access codes allow varied levels of operator and administrator access • Full logging creates a complete audit record you can print or view electronically

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	1.3.B.1 *continued*				*RESULTS TRANSMISSION:* Results can be transmitted from the DS450/DS850 AVCBs using the following methods: a. Manual Transfer: The DS450/DS850 writes encrypted, digitally signed data to a USB memory device. The memory device is manually transferred to the PC with Election Reporting Manager (ERM) via the USB memory device. b. Local Network Transfer: The DS450/DS850 transmit data via a closed, secure local area network using Secure File Transfer Protocol (SFTP) to a central reporting PC with ERM. All vote data is digitally signed and encrypted with Federal Information Processing Standards-certified (FIPS) security functions. For high-speed mass ballot counting and results consolidation, multiple DS450s/DS850s can be connected in this manner to the EMS network via an SFTP Server hosted on the EMS Server. Each DS450/DS850 is given a unique User ID and Password. The SFTP Server is set up so that the DS450/DS850-transmitted data is stored directly into the proper election data folder on the EMS Server. All physical connections to the network are standard, physical, network connections. There are no connections to the Internet or outside data lines. Multiple DS450/DS850 tabulators can also optionally be networked to a central reporting PC for high-speed mass ballot counting and results consolidation. This local reporting network has no connections to the Internet or outside data lines. When transferring data from the AVCB to the EMS and reporting software using either a USB memory device or closed network, the jurisdiction has the option to transmit only the results collection file or may send the results file along with all of the image and vote data files from each individual counted ballot.

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	Category / Requirement #	**Requirement**	**Bidder Complies (Y/N)**	**Bidder Complies - with Modifications**	**Please expand on your response in Column D or E.**
	1.3.B.2	The State prefers an AVCB high-speed tabulator option that utilizes Commercial Off The Shelf (COTS) equipment. If a high-speed AVCB tabulator is proposed, bidders shall indicate whether COTS options are available and shall provide detail related to the COTS components in the response to this section, and in the Cost Proposal (**Exhibit C**), including make/model of proposed COTS equipment.	N		ES&S has chosen to develop a family of proprietary scanners specifically for the election industry. By doing so, we have complete ownership and control of the intellectual property, the design, and the manufacturing. We do not depend on large COTS vendors that change ownership, product designs, parts, and features based on their overall customer base rather than what is best for elections. For example, other election companies who used Kodak as a COTS scanner had to switch scanners mid-stream when Kodak left the scanner business and sold it to an investment firm in another country. This scenario could occur with any COTS provider. Additionally, COTS parts and firmware versions change very frequently, which is difficult to manage and impossible to control. A particular model of scanner may last a few years, but the parts may change every six (6) months. In contrast, ES&S uses industrial components whenever possible, so the exact unit with the same parts can be available for 10-15 years. Additionally, we have the option to manufacture the unit with a different partner if the partner chooses not to stay in the business or is not able to maintain the quality we demand. When you buy a scanner from ES&S, you deal with ES&S, not the manufacturer. We can and do support our scanners through the entire life of the scanner. This includes new features requested from users. The DS450 AVCB high speed tabulator employs readily available COTS supplies listed in **Exhibit C, Pricing**, along with the following two (2) report printers: • A DELL 2810 series laser printer used to generate scanner level results and configuration reports • A continuous feed OKIdata ML420 continuous feed printer used to print a continuous physical audit report *(These printers are included in the cost of the DS450 unit.)*

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	Category / Requirement #	**Requirement**	**Bidder Complies (Y/N)**	**Bidder Complies - with Modifications**	**Please expand on your response in Column D or E.**
	1.3.B.3	Proposals shall indicate whether the high-speed AVCB tabulator system requires or utilizes special software or components that differ, or are in addition to, the requirements for the bidders' proposed Election Day tabulator system (as outlined in the response to the **HARDWARE requirements, Attachment 1.1)**. Any additional components and/or costs must also be identified in the Cost Proposal (**Exhibit C**).	Y		ES&S proposes the DS450 as our central AVCB tabulator and our DS200 as our Election Day tabulator. The DS200/DS450 use the same software and components. No additional components or costs are applicable.
	1.3.B.4	Proposals must provide detailed information on the maximum number of ballot styles that can be processed by a single high-speed AVCB tabulator. Bidders are encouraged to propose multiple high-speed equipment options that allow for different-sized jurisdictions with differing volumes of AV ballots, and therefore differing ballot processing speeds.	Y		The **DS450** and also the **DS850** central scanners/tabulators are capable of reading, recording, and storing results from up to 9,900 precincts and 9,900 ballot styles on a single USB memory device. ES&S' DS850 is unrivaled in speed, accuracy, and the ability to process folded ballots. Our digital-imaging solution allows for smooth, continuous ballot scanning from start to finish, which will save jurisdictions valuable time in processing mail-in ballots. *SPEED* The DS850 is more than three times faster than any other central scanner in the election industry. The system can scan ballots of multiple sizes and hand folded and roughed-up ballots with ease. For example, the DS850 can scan 14-inch, double-sided ballots at the rate of 300 per minute. Even when you consider the time to load the hopper and unload the finished ballots, the DS850 will scan 10,000 mail-in ballots in an hour. Faster results can mean lower costs due to fewer resources necessary to accomplish the same task.

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	1.3.B.4 *continued*				*EASE OF USE* The durable 15-inch color touch screen and user-friendly interface guide election workers through every step of the process. It is as simple as placing a stack of ballots on the scanner and pressing the Start button. *FLEXIBILITY* With three separate sorter bins, you can determine whether you want to sort specific types of ballots for further review. The DS850 can separate ballots with write-in votes, over-votes, or blank ballots without missing a beat. *ACCURACY* ES&S' patented Intelligent Mark Recognition (IMR™) and Positive Target Recognition & Alignment Compensation (PTRAC™) technology ensure ballots are read accurately and consistently, protecting voter intent and eliminating manual adjudication time. PTRAC™ corrects for variations in ballot alignment and printing, allowing the digital scanners to zero in on the marking area. IMR™ digitally subtracts the outline of the voting target to read only the voter's mark. Our competitors' optical scanners require you to set an arbitrary pixel threshold to determine what counts as a mark. To determine which marks were intentional, sophisticated algorithms analyze not only the mark's darkness (pixel density) but also its directionality. Unlike other scanners, the DS850 is not fooled by erasures or other stray marks, and is not confused by lighter or thinner marks that would be missed by a simple threshold.

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<tr><td colspan="3">RFP No. 007116B0007029 Election Systems & Software</td><td></td><td></td><td></td></tr>
<tr><td colspan="6">Exhibit A, Attachment 1.3 Voting System ABSENT VOTER (AV) PROCESSINGTechnical Requirements</td></tr>
<tr><td></td><td>Category / Requirement #</td><td>Requirement</td><td>Bidder Complies (Y/N)</td><td>Bidder Complies - with Modifications</td><td>Please expand on your response in Column D or E.</td></tr>
<tr><td></td><td>1.3.B.5</td><td>Proposals must document the speed at which ballots are processed (ballots per minute) and must provide comparative detail of the processing speed of the proposed high-speed AVCB tabulator vs. the processing speed of the bidder's proposed Election Day tabulator system; including a suggested replacement rate between precinct tabulators and high-speed tabulators (e.g., one high speed tabulator in lieu of X precinct tabulators).</td><td>Y</td><td></td><td>The throughput and equivalency comparison will assume that both are being used to centrally count absentee ballots. The throughputs themselves can vary widely depending on the process and procedures used to organize and scan the ballots and the reports that need to be generated. Assuming that ballots are scanned continuously with minimal reports generated, the various scanners can provide the following nominal throughputs for a 19” ballot or ExpressVote card.

<table><tr><th>Scanner/Tabulator</th><th>Throughput (ballots/hour)</th><th>Throughput (ballots/minute)</th></tr><tr><td>DS850</td><td>12,000</td><td>200</td></tr><tr><td>DS450</td><td>3,000</td><td>50</td></tr><tr><td>DS200</td><td>600</td><td>10</td></tr></table>
If the full throughput of either the DS450 is needed, e.g., the State would require one high speed tabulator in lieu of 6 precinct tabulators.

If the full throughput of either the DS850 is needed, e.g., the State would require one high speed tabulator in lieu of 18 precinct tabulators.</td></tr>
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	Category / Requirement #	Requirement	Bidder Complies (Y/N)	Bidder Complies - with Modifications	Please expand on your response in Column D or E.
	1.3.B.6	Bidders shall provide details related to any available special ballot sorting options available with the proposed high-speed AVCB tabulator system (e.g., ballot processing by precinct, outstacking/separation of write-ins, ambiguous marks and blank ballots that may require specialized handling by election inspectors).	Y		**BALLOTS FOR ADJUDICATION** The DS450 outputs counted ballots to a high-capacity motorized output bin. Additionally, two (2) configurable outstack bins are available. The jurisdiction is able to program what ballot criteria sorts to a particular outstack bin and in the case of the middle bin, can choose whether sorted ballots are counted or not counted. Ballots can be sorted for overvotes, undervotes (setup for particular contests), blanks, write-ins, invalid ballot, unreadable ballot, or wrong precinct. A typical setting might have all unreadable ballots outstacked to the top bin, all ballots that require review for voter intent go to the middle bin, and all ballots that don't meet a sort criteria and are counted would go to the bottom bin. The DS450 firmware reports why each ballot is outstacked either on screen or on a printed report, which can be programmed to print automatically each time a batch is saved. The DS450 scanners can also operate as a ballot sorter and can be programmed to separate ballots from a particular precinct to allow for quick, easy recounts. They can also be setup to count all ballots from a particular precinct and outstack ballots from other precincts to ensure like ballots are grouped together. Finally, ballot data can be exported to the Electionware EMS and filters applied to perform reviews like write-in capture.

RFP No. 007116B0007029 Election Systems & Software					
Exhibit A, Attachment 1.4 Voting System ACCESSIBLE VOTING SYSTEM COMPONENTTechnical Requirements					
	Category / Requirement #	**Requirement**	**Bidder Complies (Y/N)**	**Bidder Complies - with Modifi-cations**	**Please expand on your response in Column D or E.**
A.	**Accessible Voting System Requirements (General)**				
	1.4.A.1	All requirements listed in **Attachment 1.1 (HARDWARE requirements)** also apply to hardware used with proposed accessible voting system components for use by individuals with disabilities. The following requirements in this section are additional system requirements related to the bidder's proposed ACCESSIBLE VOTING COMPONENT.	Y		
	1.4.A.2	Bidders shall provide a complete description of the proposed accessible voting system, including all components, make/model, detailed functionality and specific abilities of the system to allow disabled voters to vote independently, privately, and in the same manner as other voters in a way meets all other requirements listed in this RFP.	Y		The ES&S ExpressVote Universal Voting System is a leading-edge technology touch screen device that enables voters to vote any ballot style in the jurisdiction using generic unprinted thermal card stock/ballots, saving money for the State of Michigan taxpayers. The ExpressVote combines paper-based voting with touch screen technology to create an innovative breakthrough in voting solutions. Election officials no longer have to guess the number of ballots to print. The inexpensive thermal card stock/ballot can determine the ballot style presented on the touch screen. The ExpressVote system can serve every eligible voter, including those with special needs. The ExpressVote was developed with universal design principles applied to be used by all voters, with or without visual impairments, hearing issues, or need for physical accommodations. As a fully compliant ADA (Americans with Disabilities Act) voting solution, ExpressVote enables each voter to cast his or her ballot independently.

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	Category / Requirement #	**Requirement**	**Bidder Complies (Y/N)**	**Bidder Complies - with Modifi-cations**	**Please expand on your response in Column D or E.**
	1.4.A.2 *continued*				KEY FEATURES: Thermal card stock/ballots — The voter receives a voting session thermal card stock/ballots to begin the process. Election officials can choose from three (3) options: 1. If only one ballot is programmed for the election, a blank card activates the ballot. 2. If the election has multiple ballot styles, a blank card requires a poll worker to select the correct ballot for the voter. 3. If the election has multiple ballot styles, a thermal card stock/ballot with a precinct-specific barcode printed at the top triggers the selection of the correct ballot for the voter. This option would require use of ES&S's ExpressVote Activation Card Printer which can be integrated with Michigan's existing electronic poll book system. Please see Exhibit C, Pricing. Verifiable paper record — After all selections are made, a human- and machine-readable paper record is produced, including text and an optical scan barcode. All votes are digitally scanned for tabulation on ES&S' DS200/DS450 devices. Easy to set up and use — The simple startup and poll-closing procedures make the ExpressVote an ideal device for poll workers. The intuitive design offers streamlined simplicity for all voters, poll workers and election staff. The paper card is the thermal card stock/ballot – there is no expensive technology to manage or program. The ExpressVote is small, lightweight at approximately 20 pounds, and easy to carry.

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	Category / Requirement #	**Requirement**	**Bidder Complies (Y/N)**	**Bidder Complies - with Modifi-cations**	**Please expand on your response in Column D or E.**
	1.4.A.2 *continued*				Controlled and reduced costs — Traditional ballot printing costs can be reduced significantly by eliminating the need and expense for pre-printed paper ballots. With low operation and maintenance, budgeting for recurring expenses becomes easy with the ExpressVote. The ExpressVote system reduces waste as it does not use pre-printed ballots, ink, toner, or paper rolls and, as a result, consumes 70 percent less paper than traditional ballots. Innovative design — Complete and total independence is maintained while voters cast their own records. Voters review a summary page and can make changes before casting ballots. The ExpressVote system produces a verifiable paper record for each voter that is digitally scanned for tabulation. ExpressVote neither stores nor tabulates vote counts. The election definition on the USB removable memory device is secured behind a lockable, sealable door. Casting the ballot — After ejecting their marked ballots, voters must manually place ballots in the DS200 for scanning and tabulating. The ExpressVote allows blind, low-vision, and limited-dexterity voters to privately listen to instructions and selections at a volume, tone, and speed that will meet their unique needs. They cast their votes unassisted, thereby maintaining their privacy and anonymity.

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Exhibit A, Attachment 1.4 Voting System ACCESSIBLE VOTING SYSTEM COMPONENTTechnical Requirements					
	Category / Requirement #	Requirement	Bidder Complies (Y/N)	Bidder Complies - with Modifi-cations	Please expand on your response in Column D or E.
	1.4.A.2 *continued*				ADDITIONAL FEATURES INCLUDE: Multiple user interfaces including touch screen, Braille-embossed keypad, sip-and-puff tube, and foot pedal or other two-way switch. Audio voting session via text-to-speech or .wav files Ability for voter to select speed, tone, and volume High-visibility on-screen ballots. Voter-selected font size and contrast settings. Verifiable vote record — Allows jurisdictions to maintain hard copies of vote records marked on ADA-compliant systems by: Marking paper record used for tabulating by the DS200 digital precinct scanner or DS450, enabling independent verification of paper ballots. Providing a more densely populated card (24 columns) versus the current conventional ballot with three columns, which saves time, pages, and traditional ballot-printing costs. A single card can fit up to 102 ballot selections.

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	1.4.A.2 *continued*				The ExpressVote's internal thermal printer eliminates ink and toner expenses. The integrated printer: • Generates vote records on 4½-inch x 11-, 14-, 17-, and 19-inch thermal card stock/ballot. • Offers highly reliable thermal-printing technology that eliminates ink and ribbon costs, maintenance, and downtime. • Summary page verification process — Reduces the risk of under-voting and incorrectly marked selections and prevents over-voting. This innovative process presents voters with the option to review choices, modify/change selections, or fill in any skipped races before printing the record. • Multilingual capability — Ensures all citizens in a diverse population can exercise their privilege to vote in their native languages: • Multiple languages can be stored on a single machine for use with both audio and visual voting sessions. Audit logs provide operational information and time/date stamps for printed vote records.
	1.4.A.3	Proposals must provide a full listing of supplies utilized by the proposed accessible voting component, including paper, ink cartridges, batteries, etc. Proposals shall indicate whether such supplies are available via commercial off-the-shelf (COTS) sources; prices for supplies must be included and listed in the Cost Proposal **(Exhibit C)**	Y		In **Exhibit C, Pricing**, please see the full listing of supplies utilized by the proposed accessible voting component. The list of supplies in **Exhibit C, Pricing** indicates whether the supplies are COTS and includes prices.
	1.4.A.4	The accessible voting system shall be capable of utilizing the maximum size ballot in use with the base voting system.	Y		The ExpressVote is designed to present the voter with the same ballot content as the maximum size ballot in use with the base voting system. Each thermal activation card/ballot is the length of a standard ballot: 11", 14", 17" or 19".

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	1.4.A.5	The accessible voting system component shall be easily portable and be transportable without damage to internal circuitry. Bidders shall provide height and weight specifications of all proposed accessible components in the bid response, as well as any features related to portability and ease of transport.	Y		The ExpressVote was designed to be a portable, tabletop type of device in order to allow for ease of transportation to/from polling place. Unit size - in use 19" W x 5.5" D x 17" H/Unit Size - stowed for transport or storage: 22.5" W x 17" D x 11" H/Unit Weight: approximately 20 lbs. The ExpressVote comes with a soft-sided, padded carrying case with a shoulder strap for ease of transport. These features are to protect against shock damage to internal circuitry during transport.
	1.4.A.6	The accessible voting system shall allow the option of programming multiple precincts or single precincts on each device. Proposals shall indicate the maximum number of precincts/split precincts on a single unit.	Y		The ExpressVote is capable of being programmed for a single precinct, multiple precincts, or all precincts in the election. The unit also is capable of handling up to 9,900 different ballot styles or precincts.
	1.4.A.7	Proposals shall document the size, weight, volume and any other pertinent size and dimension information related to the proposed accessible voting system and any/all related components.	Y		Unit size - in use: 19" W x 5.5" D x 17" H/Unit Size - stowed for transport or storage: 22.5" W x 17" D x 11" H/ Unit Weight: approximately 20 lbs. The ExpressVote has a 15" color LCD touch screen display. The ExpressVote comes with a padded, soft-sided carrying case for ease of transport. Carrying case dimensions (WxDxH): 22.5"x17"x11".

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	1.4.A.8	The proposed accessible voting system shall accommodate visually impaired voters by presenting the ballot to a voter in an audio format. Bidders shall describe the procedures for constructing an audio version of the ballot, whether it is through text to speech synthesis, voice recording, or any other technology utilized by the proposed voting system.	Y		The ExpressVote provides voters with an audio ballot option. An audio voting session can be created using text-to-speech or .wav files. The audio ballot is created using the Electionware EMS Design module. The audio ballot is created in .wav format. The audio production process involves the recording of all of the audio files for the current election. This process can be completed in either a professional studio environment or in the average office environment using a dedicated audio production computer, digital USB microphone, and audio editing software. It is recommended that the audio files be recorded in one long stream. After recording is complete, the audio files are broken down into individual files and named accordingly, and then processed through audio editing software. After editing is complete, the audio recordings can be imported into Electionware. Text-to-speech and automated test deck are the software modules offered within the Electionware Toolbox. ES&S has included English, Spanish, and one additional language (ie. Bengali) in our EMS PYO (Program Your Own) software package. Should a jurisdiction select EMS Accumulation Software Only, the text-to-speech software can be licensed separately.
	1.4.A.9	The proposed accessible voting system shall accommodate visually impaired voters by magnifying the ballot. Proposals shall detail the available functions for magnification of the ballot, including the various options and process for increasing/decreasing the size of the ballot display.	Y		The type size for the millimeters specified relating to the size on the screen is as follows: The default Title text is 6 millimeters in height. The default text size is 5 millimeters in height. The voter can use the zoom feature by simply pressing the zoom button found at the lower edge of the ExpressVote screen to enlarge or reduce the size of the screen display. 
	1.4.A.10	The proposed accessible voting system shall allow for high-contrast visual display.	Y		The ExpressVote provides voters the ability to change the contrast of the touch screen by selecting the contrast button.

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	1.4.A.11	The proposed accessible component must support the same alternative (non-English) languages as the proposed base voting system (at a minimum, Spanish and Bengali).	Y		If applicable, after inserting their thermal card stock/ballot into the ExpressVote, a language screen will appear, which allows the voter to select the language they wish to view and/or hear for the audio ballot. The ExpressVote can provide recorded audio playback of each ballot style in the selected language. The audio files can be created by recording human voice or automatically generated using Text-to-Speech (TTS) features in ES&S' Electionware Toolbox. The Language selection screen only appears if the election contains multiple languages. When multiple languages are available, the default choice is English. The ExpressVote supports the same alternative languages as the base voting system. ES&S has supported the Bengali language for other ES&S Voting System (EVS) customers as recently as 2014, and added Bengali to the list of supported languages in EVS 5.2.2.0, our primary proposed voting system solution for Michigan, and EVS 5.2.1.0/5.3.1.0, our proposed base voting system. EVS 5.2.1.0. was EAC-certified December 18, 2015. EVS 5.3.1.0. was VSTL-certified January 22, 2016.
	1.4.A.12	The proposed accessible voting system shall accommodate voters unable to physically indicate a voting choice by using a pointer, sip/puff device, A/B switch, braille, audio, etc.	Y		The ExpressVote allows blind, low-vision, and limited-dexterity voters to privately listen to instructions and selections at a low volume, tone, and speed that will meet their unique needs. They cast their votes unassisted, thereby maintaining their privacy and anonymity. Features included in our pricing are: Multiple user interfaces that include touch screen, Braille-embossed keypad, audio voting session via text-to-speech or .wav files, high-visibility on-screen ballots, and voter-selected font size and contrast settings. Other available features not included in our pricing, and normally brought by the voter, that the ExpressVote can accomodate are: sip-and-puff tube and foot pedal or other two-way switch.
	1.4.A.13	The accessible voting system shall provide audio and visual instruction on the use of the system.	Y		The ExpressVote provides both visual prompts and instructions on the screen and corresponding audio instructions to voters.

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	1.4.A.14	The accessible voting system shall present the ballot to the voter in a clear and unambiguous manner.	Y		The ExpressVote combines paper voting with a large, easy-to-read touch screen, providing a clear and unambiguous ballot.
	1.4.A.15	The accessible voting system shall provide a method for recording write-in votes.	Y		Candidates are either on the ballot or can be written in by the voter by typing any name after selecting a write-in position in a contest.
	1.4.A.16	The accessible voting system shall prohibit crossover votes on a partisan primary ballot.	Y		The ExpressVote prohibits crossover voting. Once the voter makes a choice in the party selection contest – or makes their first choice in a partisan contest – only that party's contests are displayed to the voter for the remainder of the voting session. This prevents the voter from making a crossover selection. In an open primary, the first contest that is displayed by the ExpressVote is a party selection contest. Once a party selection is made, only that party's contests are displayed to the voter for the remainder of the voting session. If the voter bypasses the party selection contest without making a choice, partisan contests are displayed in the same order as they appear on the paper ballot. Once the voter makes a choice in any partisan contest, only that party's contests are displayed to the voter for the remainder of the voting session.
	1.4.A.17	The accessible voting system shall prohibit over votes before a final vote is cast.	Y		The ExpressVote system will not allow a contest to be overvoted. Any attempt to overvote a multiple vote for a contest will prevent the selection and generate a warning prompting the voter to remove a selection prior to selecting another choice. In a vote-for-one contest, depending on the election definition setting, a new selection will either automatically remove the previous selection or behave the same as the multiple vote-for contest.
	1.4.A.18	The accessible voting system shall allow option to skip races and/or sections (partisan/nonpartisan) of the ballot.	Y		Voters must view each race before they are allowed to skip a race and proceed to the next race.
	1.4.A.19	The accessible voting system shall allow option to "skip to the end" to cast a vote at any point.	N		The voter must view each contest before going to the summary review and casting the ballot.

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	1.4.A.20	The accessible voting system shall issue a warning of undervotes during the **final review of votes screen only** (not on a contest-by-contest basis); and shall allow a voter to choose to cast the ballot if undervoted races are included.	Y		The ExpressVote offers a Summary Page verification screen that summarizes the voter's selections in each contest or question. For each occurrence where the voter did not make the maximum number of choices in an individual contest (i.e., undervoted the contest) the Summary Page will display two warning messages -- "Contest Not Fully Voted" and for each undervote "No Selection Made." Undervoted contests also are accompanied by an orange exclamation point, whereas fully voted contests display a green checkmark. Finally, the phrases "Contest Not Fully Voted" and "No Selection Made" can be customized by the user when creating the election in Electionware. The voter may revisit races to cast their maximum number of votes or choose to print their voted ballot as is.
	1.4.A.21	Once the ballot is cast, the accessible voting system shall confirm to the voter that the action has occurred and that the voter's process of voting is complete.	Y		The ExpressVote works in conjunction with the DS200 tabulator. Upon completing a voting session on the ExpressVote, the thermal card stock/ballot is printed. The voter then inserts the card into the DS200 for tabulation. A confirmation screen provides clear feedback to the voter that their ballot has been successfully tabulated.
	1.4.A.22	Votes cast using the accessible voting system shall be accumulated with all other votes and reported as a single total within each precinct.	Y		Ballot choices marked with the ExpressVote are tabulated with an ES&S tabulator along with all other votes and reported as a single total within each precinct.
	1.4.A.23	The accessible voting system shall ensure that each voter's ballot is secret and the voter cannot be identified by image, code or other methods.	Y		Because voters vote independently and cast their votes unassisted, privacy and anonymity are maintained. When properly set up at the polling place to protect voter privacy and the activation card is inserted within the ExpressVote, all ballot information and input controls are visible only to the voter during the voting session. The ExpressVote also allows voters using the audio ballot to turn off the screen so it is not visible to others. Once the ballot is marked and printed, voters should place the ballot in a secrecy sleeve prior to tabulation on an ES&S tabulator. When the ballot is cast, there is no link between the ballot or ballot image to a specific voter that would compromise the voter’s secrecy.

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	1.4.A.24	The accessible voting system shall provide a method by which a voter can verify his/her choices prior to the ballot being marked or vote cast, either by print or audio and visual display.	Y		At the end of a voting session, ExpressVote provides a ballot summary using the same language and interface selected during voting to allow the voter to verify the selections made before they are printed on a paper ballot. Additionally, the ExpressVote has an optional post-print verification that allows the voter to visually validate the data printed on the marked ballot or card before it is cast. After completing making selections, the voter is presented with a summary screen of those selections. To return to a previous race or contest, the voter: 1. Touches the contest listing on the summary screen. The same screen used to vote the race appears. 2. The voter can modify selections, if desired, and then touch Next. 3. The voter is returned to the summary screen.
B.	**Accessible System - Use of Touch-Screen Interface**				
	1.4.B.1	The proposed accessible voting system shall utilize a touch-screen interface for voters to use in voting a ballot.	Y		The ExpressVote features a touch screen interface with various colors and accessibility-enhancing effects that prompt and guide the voter.
	1.4.B.2	Proposals shall indicate how the accessible voting system integrates with the precinct tabulator, including whether it is physically tethered to the precinct tabulator; if tethered, it should have a minimum of a 15' connection to the OS tabulator.	Y		The ExpressVote is a fully integrated component of the proposed system. ExpressVote summary cards are tabulated on the DS200 and DS450 scanners. The ExpressVote is not physically tethered to the precinct tabulator.

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C.	**Accessible System - Use of Paper Ballot (possible scenarios)**				
	1.4.C.1	Proposals shall indicate whether the proposed accessible voting system utilizes a paper ballot and shall indicate whether the proposed accessible voting system follows any or all of the four scenarios listed in this section (scenarios a-d listed below). For each applicable proposed scenario, bidders shall provide details on how the ballot is marked and tabulated by the accessible voting system, including a detailed description of the system functionality, steps in the ballot marking and voting process, and all other pertinent points related to the voting and processing of ballots under each applicable scenario.	Y		The proposed accessible voting system utilizes a paper ballot.
	1.4.C.1.a	Scenario a: Proposed accessible voting system utilizes the same paper ballot as the precinct ballot.	N		The ExpressVote does not utilize the same paper ballot as the precinct paper ballot, but rather utilizes a smaller, less expensive, thermal card stock/ballot that is inserted by either the voter or poll worker, which activates the voting session. The voted thermal card stock/ballot is printed and then inserted into the DS200 for tabulation.

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		a.i. (scenario a.) - Proposals shall indicate whether the voter must physically insert the marked ballot into the tabulator, or if there is an automated function that does not require the voter to physically handle the ballot.	Y		The voter must insert the printed paper record into the DS200 for the ballot to be cast.
		a.ii. (scenario a.): the accessible system shall allow for omni-directional feed of the ballot.	Y		The ExpressVote uses durable thermal card stock to record voters' selections. The top right corner of the card is cut to serve as a visual indicator, or tactile indicator for voters with impaired vision, to indicate the direction and orientation when inserting into the ExpressVote. If the voter inserts the thermal card stock/ballot in the wrong orientation, the thermal card stock/ballot is returned for proper insertion. The DS200 does allow for omni-directional feed of the printed paper record produced by the ExpressVote.
		a.iii. (scenario a): Proposals shall indicate whether manual adjustment is required to accommodate multiple ballot lengths.	Y		No manual adjustments are needed. The length of the ballot is determined by the election definition.
	1.4.C.1.b	Scenario b: Proposed accessible voting system prints an entire (marked) optical scan ballot to be tabulated.	Y		When the voter has reviewed and modified vote choices as desired, the ExpressVote prints those choices on a thermal card stock/ballot. The ExpressVote produces thermal card stock/ballots for tabulation in the DS200/ DS450.
		b.i. (scenario b.): OPTIONAL: Proposals shall indicate whether the accessible voting system includes a self-contained printer (requiring no additional system equipment).	Y		The ExpressVote includes a self-contained, internally integrated thermal printer, requiring no additional external printer or other device. Thermal technology eliminates all consumables and does not require ink, toner, or cartridges to be replaced, reducing and eliminating expenses.

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		b.ii. (scenario b.): For proposed accessible voting systems that print a full marked paper ballot - bidders shall provide data, system checks and other features that clearly validate and demonstrate that printed votes are an exact (100%) match to original voter input.	Y		If the voted thermal card stock/ballot is reinserted into the ExpressVote, the device reads the data on the thermal card stock/ballot and generates a summary screen, enabling voters to ensure votes are an exact match to original voter input.
	1.4.C.1.c	Scenario c: Proposed accessible voting system creates a modified summary ballot (e.g., listing only votes cast and a differently sized and laid-out ballot than the precinct ballot).	Y		The ballot layout that appears on the ExpressVote screens is created at the same time as the standard paper ballot. The ExpressVote prints a modified summary of the ballot that includes ALL ballot contests and voter candidate selections, including write-ins and undervotes. The printed paper record is 4 ¼ inches wide with a length of 11, 14, 17 or 19 inches, matching the precinct ballot length. Once a voter has reviewed and approved their vote selections, a thermal card stock/ballot is printed, which contains a list of the votes cast with all contests in the same order as the precinct ballot.
		c.i. (scenario c): the tabulator shall have the ability to scan and tabulate votes from the modified ballot and combine vote totals into the overall vote totals in the precinct.	Y		The ExpressVote is a marking device only. The DS200/DS450 tabulator scans and tabulates the printed paper ballot from the ExpressVote and combines vote totals from this card into the overall precinct totals.
D.	**Reliability Requirements**				

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	1.4.D.1	The accessible voting system shall permit diagnostic testing of all major components, including self-diagnostics (automatically generated) and error reports. Proposals shall provide details of diagnostic testing available and related reports.	Y		The ExpressVote executes automated diagnostics on system startup. ExpressVote records errors and major events and tags these incidents with the date and time the incident occurred based on ExpressVote's real-time clock to time-and-date stamp settings. Audit logs are constantly updated in the system background and saved to the inserted ES&S USB memory device in a circular buffer. Stored audit records are not affected by system power interruptions. Poll workers can view audit logs on the unit's touch screen or printed sheet. Machine level audit reports may be generated at any time from each of the system's administrative menus. This information provides for immediate identification and resolution of error conditions. ExpressVote displays and reports critical and non-critical status message in real-time and in the voter's selected language or in English along with the international warning symbol depending on the nature of the error at the time of occurrence. In addition, each log entry is numbered and includes event details to facilitate recognition, segregation, and retention. ExpressVote does not tabulate results or generates output reports, so the printing of audit logs does not interfere. The following reports are produced by the ExpressVote: 1. System Readiness Report (Descriptive list of system settings that you can use to verify that the ExpressVote unit is ready to begin processing. Shows hardware configuration, media storage capability, firmware version, and election status. 2. Status Messages (critical and non-critical messages)
	1.4.D.2	Audit log requirements for the accessible voting system are the same as those listed for base system EMS; for additional components specific to accessible voting component, audit capabilities shall include identification of program and version being run; identification of the election file being used; record of all options entered by the operator (election official); number of voters by precinct and ballot style who have used the system.	Y		The number of voters by precinct and ballot style is generated by the DS200 and can be printed automatically or on-demand using the integrated report printer. A system and operational log of audit events is available from each machine. The EMS (Electionware) also provides reporting of the machine configuration. Records of voting are all tracked by the tabulator at the time of scanning.

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	1.4.D.3	For proposed accessible voting systems utilizing a touch screen interface, the proposal shall provide details specifying methods used to calibrate and maintain calibration at acceptable levels.	Y		ES&S recommends that the touch screen be calibrated before each election. The option to calibrate the touch screen appears when the machine is powered on and begins the boot up process. Screen Calibration can also be accessed from the Main Menu and step-by-step directions are listed on-screen as follows: 1. On the Touch Screen Calibration screen, press Start. 2. A crosshair target will appear in three successive locations on the screen. 3. Press the center of each target as it appears. 4. If the calibration was successful, press Exit. If the calibration failed, press Redo and repeat the calibration process. If the touch screen is calibrated incorrectly and cannot be used to select the calibrate option, the calibration procedure can be initiated during the machine power up by simply tapping the screen.
	1.4.D.4	The accessible voting system and all related components shall be capable of withstanding transport conditions that may include extremely bumpy roads, exposure to extreme heat, cold, humidity and dust without incurring damage during transportation or becoming inoperable as a result of such transport.	Y		The ExpressVote device was designed for easy transportation to/from storage and vote centers and can withstand typical, real-world election transport conditions without damage or loss of calibration. The device comes with a durable, padded, soft-sided carrying case with a shoulder strap. Durability of the machine has passed all environmental and physical ‘drop’ tests required by the federal standards.
	1.4.D.5	The accessible voting system and all related components shall be capable of withstanding frequent loading and unloading, stacking and unstacking, assembling, disassembling, reassembling, and other routing handling in the course of normal storage and operation.	Y		The ExpressVote device was designed for easy transportation to/from storage and vote centers. The device comes with a durable, padded, soft-sided carrying case with a shoulder strap.

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	1.4.D.6	OPTIONAL REQUIREMENT: Bidders shall document and explain any available special features of the proposed accessible voting system that demonstrates water resistance features.	N		The ExpressVote does not have water resistant features.
	1.4.D.7	OPTIONAL REQUIREMENT: Bidders shall document and explain any available storage-friendly options for the accessible voting system components.	Y		The lightweight, compact design of the ExpressVote makes it easier to transport and requires minimal storage space in comparison to other accessible voting systems. These units can be easily stacked for storage purposes.
	1.4.D.8	If applicable - proposals shall indicate whether the accessible voting system components utilize a backup battery; if so, the backup battery must meet the same requirements as those listed for the tabulator backup batter included in **Attachment 1.1 HARDWARE requirements.**	Y		If external power is lost, the ExpressVote seamlessly reverts to a backup battery that provides sufficient capacity to allow normal operation for at least four (4) hours. The internal battery backup has been thoroughly tested to meet and exceed the Voluntary Voting System Guidelines (VVSG) requirement of a minimum of two (2) hours battery operation in case of power loss. Additionally, the battery recharges anytime the unit is plugged in, whether the unit is powered up or not.
	1.4.D.9	If a table or other type of base is utilized, proposals must describe the design, shape and use of the table/base, as well as durability features of the table/base.	Y		The ExpressVote is designed so that standard tables, existing voting booths, existing AutoMARK tables, or countertops, etc., can be used as a table/base during operation. The design and shape are best shown in the product pictures/brochures. With the exception of a countertop, the recommended options are designed and built for easy transportation to and from the poll site, simple set-up and take-down without the use of tools or special technical skills. 

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	1.4.D.10	If a privacy screen is utilized, proposals must describe the design, shape and use of the privacy screen, as well as durability features of the privacy screen.	Y		The ExpressVote privacy screen is specifically designed to provide maximum privacy and easy access by voters. It is made of heavy corrugated plastic with interlocking tab construction, providing long lasting strength and durability when deploying, or folding and for storage. The AutoMARK tables currently owned by the jurisdictions can be used for the ExpressVote with the addition of the privacy screen designed specifically for this ADA unit. The privacy screen is included in our proposed solution at no additional cost. If the privacy screen is not used, a blind voter using the ExpressVote always has the option to turn off the display using only audio eliminating the possibility of others seeing the voters' selections. Additionally, any voter can utitilize this featureto protect their privacy when seeking assistance from a poll worker. The ExpressVote can be setup and positioned so the display screen is viewable to only that voter eliminating the need for a privacy screen altogether.