

RFP No. 007116B0007029 - VOTING SYSTEM EVALUATION - COMPARATIVE NOTES BY VENDOR

Exhibit A, Attachment 1.1 Voting System HARDWARE Technical Requirements

Category / Requirement #	Requirement	DOMINION		ES&S		Hart InterCivic	
		Strengths	Weaknesses	Strengths	Weaknesses	Strengths	Weaknesses
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.						A.1 The tabulator start up process is lengthy and takes a total of approximately 15-20 minutes.
1.1.A.2	The proposed voting system hardware shall be new. Refurbished or used equipment will not be accepted.						
1.1.A.3	Replacement parts shall be readily available.						
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.						
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.						
1.1.A.6	The system shall produce zero printouts before each election and precinct totals printouts at the close of the polls.						
1.1.A.7	The system shall permit recounts to be conducted pursuant to the Michigan Election Law (MEL).						

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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.	A.8 Error messages for voters offer flexibility in clear, detailed messaging. Flexibility to customize messages.					
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.						
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.						
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.		A.11 Attaching the ballot box to the tabulator was awkward, may need some alignment guides. The addition of alignment arrows or a more prominent groove to slide and secure the tabulator is recommended.			A.11 System components are compact and portable.	
1.1.A.12	The system shall allow for omni-directional feed of the ballot and be fully capable of counting non-oriented ballots.						

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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.						
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).						A.14 The size of the font on the ballot counter appears small. The tabulator lists 3 counts: ballot, sheet, and lifetime which may prove confusing for voters and election inspectors.
1.1.A.15	The system shall provide an auditory and visual notification to the voter that the ballot has been cast.		A.15 Timeframe for auditory message when ballot is cast is lengthy (up to 12 seconds). Volume of audible alert is low and may be difficult for the average voter or worker to hear.				
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.						
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 for additional detail.						

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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.		A.18 Ballot processing speed (20" ballot 3.3/min. image capture enabled or, 4/min image capture disabled) is slow and could require multiple scanners or tabulators for AV counting board (if a high speed option is not used).	A.18 Ballot processing listed speed is 10-12/minute.			
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.						
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.						
1.1.A.21	Proposals shall document the type of printer utilized by the proposed tabulator (external or internal, thermal, inkjet, etc.).						

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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.						
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.	A.23 The tabulators will divert ballots with write-in votes to the write-in bin for easy retrieval after the polls have closed.	A.23 Regular ballots must be removed and secured elsewhere before opening the write-in compartment. If not, ballots will be intermingled			A.23 Electronic adjudication of write-in votes is available centrally and within the AV Counting Board at the city/township level.	A.23 The stored image of recorded write-in votes is limited and problematic if the voter's writing exceeds the space allotted on the ballot.
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.)	A.24 Duplicate memory cards for backup.					

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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.				A.25 Top heavy when transporting fully assembled. ES&S trains users to pull the ballot box rather than push, which should eliminate the possibility of a tip-over.		
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.						
1.1.A.27	Bidders shall document and explain any available special features of the proposed tabulator that demonstrates water resistance features.						
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.						

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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.	B.2 The system can accommodate 462 voting positions and up to 30,000 ballot styles.				B.2 The front and the back of the ballot may have different layouts.	B.2 Vote targets appear to the left of candidate names or proposition choices and are inconsistent with current Michigan ballot production standards and would result in an inconsistency statewide. B.2 The vote targets appear as rectangles instead of ovals and are inconsistent with current Michigan ballot production standards and would result in an inconsistency statewide. B.2 The maximum ballot length is limited to 17". This limitation would guarantee the need for a two-page ballot in many Michigan jurisdictions in statewide general elections in the even years.

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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.						
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.						
1.1.B.5	The proposed system must support ballot layouts in either portrait or landscape orientation.						
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.	B.6 No restrictions on certification of ballot printers.			B.6 "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." Proprietary paper at an additional cost.		B.6 Ballot print vendors must complete and pass an annual Hart ballot printing test using Hart's exclusive official ballot paper for ballot production.

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1.1.B.7	OPTIONAL REQUIREMENT: Proposals shall indicate whether the proposed system offers an optional <i>Ballot on Demand</i> (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.	B.7 Significant flexibility (landscape or portrait orientation, 1 to 4 columns) on ballot size, sizes ranged from 11" to 24". Flexibility of having different size ballots within the election. A single size could be locked in for all precincts or the system could adjust the size based on the individual precincts.					
C. Memory Device							
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).		C.1 Compact Flash Memory Card is older technology, is a major factor in the slower tabulator processing speed.	C.1 Utilizes the Delkin USB 2.0 flash drives for the DS200/ DS450/ExpressVote			

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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).						
1.1.C.3	Proposals shall describe any capabilities for processing additional ballots after the polls have been closed.						
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.						
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.						
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.				D.1 Ballots are required to navigate a C curve from the tabulator into the ballot box.	D.1 Ballot box capacity is 4,000 ballots. Emergency auxiliary bin can hold 1,000 ballots.	

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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.						
1.1.D.3	The ballot box shall allow poll workers the ability to open, re-lock and reseal secure storage compartments.				D.3 Back door remains open for the cord to be plugged in (could be perceived as a negative or questionable by voters). Steps necessary to allow ballots to fall into the ballot box prior to the polls opening are cumbersome for precinct inspectors.		
1.1.D.4	The ballot box shall include a separate compartment for storage of voted ballots while ballot counter is inoperable.		D.4 Location of the auxiliary bin (back) is awkward.				
1.1.D.5	Proposals shall describe any portability features of the ballot box that allow for easy transport.					D.5 Ballot box can be folded to 6 inches thin during transport.	
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.						

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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.						
1.1.D.8	Bidders shall document and explain any available special features of the proposed ballot box that demonstrates water resistance features.						
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).		D.9 Collapsible ballot box is not recommended, not easily assembled.				
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.						

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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.				E.2 ES&S ExpressVote ballot stock is a proprietary paper at an additional cost.		
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.						
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.						
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.						

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1.1.F.2	Proposals shall detail features of the system that are designed to avoid ballot jams.	F.2 The ImageCast tabulators have a short paper path to minimize paper transport and the possibility of ballot jams, and do not mechanically integrate with moving parts of the ballot box.					
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.			F.3 Messages related to ballot jams and ballot tabulation are descriptive and clear for the voters and workers.			
1.1.F.4	In the event of a ballot jam, the ballot track shall be easy to clear.						
1.1.F.5	Voting system components shall be transportable, without damage to internal circuitry.						
1.1.F.6	Voting system components shall provide a method for immediately detecting a malfunction.						
1.1.F.7	Voting system components shall prevent the loss of data during the generation of reports.	F.7 The AuditMark functionality can be used to independently verify the total votes for any particular candidate or ballot issue.					

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1.1.F.8	The tabulator backup battery shall be continually charged while the unit is plugged in.					F.8 Flexibility with respect to the use of required batteries. The same battery can be used in the tabulator and the accessible device (Verity Touch Writer).	F.8 Tabulator batteries must be physically removed and charged prior to every election.
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.						
1.1.F.10	The backup system shall remain in operation during power surges or other abnormal electrical occurrences.						
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.						
1.1.F.12	The proposed system shall have the capability of generating exportable backup files for offsite storage.						

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1.1.F.13	The proposed system shall automatically adjust for changes due to Daylight Savings Time (DST).		F.13 The Democracy Suite system cannot automatically adjust for changes due to Daylight Savings Time (DST). Timezone, date, and time of the election event are pre-set during election programming and election file creation so that the tabulator time is adjusted according to the time of the election. Requires extra programming and adjustments if programming is completed prior to DST and the election occurs after DST.				F.13 The system cannot automatically adjust for changes due to Daylight Savings Time (DST).
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.						
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.						

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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.						
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.						
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: <ul style="list-style-type: none"> 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.). <ul style="list-style-type: none"> o Provide security patches within no more than 72 hours of release. 						

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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.				A.4 Charges extra if software installation is done by ES&S staff; and/or if a planned update installation is not done in conjunction with regular Preventative Maintenance visit (see cost tables).		
1.2.A.5	Allow system administrators to establish different levels of user permissions.						
1.2.A.6	Permit routine users access to the application without requiring administrative privileges on the PC operating system.						
1.2.A.7	Require all users to have a unique login credentials (username and password).						
1.2.A.8	Secure the ballot layout and election configuration data to prevent unauthorized modification or the copying of such data.						
1.2.A.9	Allow manual data entry for election setup and ballot layout.						
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.						

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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.			A.11 Detailed listing of components.			
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.						A.12 Current software does not fully comply with rules for straight-ticket voting (i.e., does not allow selection of alternative party candidates on individual races). Will conform in future release, with availability by late 2017.
1.2.A.13	Be capable of translating the ballot layout and election configuration to multiple languages (in Michigan, Spanish and Bengali are required). Proposals shall indicate current non-English languages that are supported by the proposed system and describe the process for adding other languages not currently supported.						
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:						
	a. the sequence of candidates for each contest;						
	b. the ballot issue;						
	c. the contest title;						

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	d. the contest number;						
	e. the office name and district, if applicable;						
	f. the number of votes for a candidate or ballot issue;						
	g. the number of votes against a ballot issue or other contest where applicable;						
	h. the number of votes for candidates and/or issues by legislative, congressional or election district where applicable;						
	i. the number of ballots tabulated by party for open and closed primary						
	j. the type of result (e.g. precinct, absentee or provisional); and						
	k. the type of election (e.g. Presidential Primary, Presidential General, Gubernatorial Primary, Gubernatorial General).						
1.2.A.15	Shall be capable of utilizing the State Uniform Data Format (refer to Section and Attachment 1.5)						
1.2.A.16	Be capable of storing, maintaining and reloading configurations and data from previous elections.						
1.2.A.17	Accumulate election data for each election by precinct, precinct combinations, district, jurisdiction, and statewide.						
1.2.A.18	Tabulate results for individual groups and integrate the results from selected or all groups into cumulative results.						

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1.2.A.19	Store tabulated results from each absentee and precinct group as separate totals within a precinct.						
1.2.A.20	Save election data configurations with election results data on removable storage media for archiving purposes.						
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).						
1.2.A.22	Permit the re-upload (updating of previous uploads) of election data results from a tabulator device to the EMS.						
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.						
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.	A. 24 The Democracy Suite EMS Results Tally & Reporting module generates standard results reports using SQL Server Reporting Services. These reports can be exported in multiple widely used data formats including .xls, .pdf, .xml, .html, .csv, .doc, .tif, .txt, and ascii.					

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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.						
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).						
1.2.A.27	Only accept uploaded results from removable memory devices specific to the current election.						
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.						A.28 The EMS software has no automated functionality for the development of the chart of predetermined results used in pre-election testing.
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.						

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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.	B.2 Counties are permitted to use third-party programmers (contract employees) at the county's discretion and under county's direction.				B.2 Counties shall be permitted to use third-party programmers.	
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.		B.3 Programming multiple smart cards/keys for each precinct is required. Training issue for inspectors (voters should not be handling smart cards).				
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).						

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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.						
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.				B.6 The ability to report by splits is not yet available and anticipated in the next release, expected to enter Federal certification by mid 2017.		
1.2.B.7	EMS shall accommodate multiple languages (see requirement 1.2.A.11); 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.						

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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.	B.8 The optional Democracy Suite UOCAVA Module allows the military/overseas voter to mark and print a pdf of the voted ballot for mailing, allowing it to be tabulated without requiring duplication.		B.8 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 via use of a printed QR code.			
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.	B.9 Dominion can provide pre-programmed election templates for MI and will work with the State, or its designated representative, in the design of these templates at no additional charge.		B.9 ES&S can provide pre-programmed election templates for MI and will work with the State or its designated representative in the design of these templates at no additional charge.		B.9 Hart can provide pre-programmed election templates for MI and will work with the State or its designated representative in the design of these templates at no additional charge.	

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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.						
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 for additional information.	B.11 Import/export of the state data file was seamless. B.11 Import into Excel file allows for flexibility. B.11 Ability to make corrections in the Excel spreadsheet and ballot design module offers greater flexibility.					
C. Ballot Programming & Layout Requirements	Ballot programming and layout features of the EMS shall:						
1.2.C.1	Produce ballots that meet the requirements of Michigan Election Law, Chapter 168 and Michigan Ballot Production Standards.						
1.2.C.2	Allow changes to font size and style. Proposals shall indicate font packages utilized by the system.						
1.2.C.3	Allow for creation of two-sided and multi-page ballots.						

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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.						
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).						
1.2.C.6	Allow race header shading in multiple shades of gray.						
1.2.C.7	Provide electronic versions of the ballots that are identical to the official ballots in all respects.						
1.2.C.8	Ballot size shall be flexible to allow multiple ballot sizes by precinct/jurisdiction within a single election if desired.						
1.2.C.9	Provide for the export of any ballot to a .pdf file.						
1.2.C.10	Provide a test mode which supports testing to validate the correctness of elections programming for each voting device and ballot.						
1.2.C.11	OPTIONAL REQUIREMENT: Allow for different ballot headers on ballots within the same election (Special Election,						
1.2.C.12	Generate a consolidated sample ballot containing all races, issues and questions.						
1.2.C.13	Include a ballot style indicator.						
1.2.C.14	Be capable of designating the number of write-in lines for each contest.						

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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.						
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.						
1.2.C.17	Provide the ability to copy, edit and delete previously-defined elections or provide customized templates for each election type.						
1.2.C.18	Permit text to be added below a candidate's name for various designations and party affiliation.						
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.	C. 19 There are no limitations on the number of candidate and office rotations.					
1.2.C.20	Provide for rotation only when the number of candidates for an office is greater than the number to be elected.						

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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.						C.21 There is no current process for creating uncommitted presidential primary candidate positions that do not rotate. This capability is on the Verity product roadmap, with an estimated release timeframe of the first quarter of 2018.
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.						
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.						

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D. Election Night Reporting (ENR) Capabilities							
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.						
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.		D.2 Cellular modem is not internal and must be connected by Ethernet cable. The remote transmission process requires the connection of a cellular modem via an Ethernet cable to the tabulator. There is no option for an internal cellular modem (only dial-up internally).				

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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).				D.3 There are no safeguards in Electionware to permit the simultaneous transmission of precinct results and corresponding absentee voter results without overwriting each other. The fix for this problem is planned for a future release expected to enter Federal certification by mid 2017.		
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.						
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.).						
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.						

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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.				D.7 and D.9 Although an optional requirement, the ability to classify precincts as partially reported will be added in the future release expected to enter Federal certification by mid 2017.		
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.).						
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.						
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.						

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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.						
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.				D.12 The system requires use of a 2 nd PC to continuously see precincts reported/not reported on Election Night; if only one PC is used, the user must interrupt the download process to update the EMS system.		
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.						

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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.						
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.						
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.						
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.						
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.						

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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.						
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.						
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.						
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.						
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.						

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E. Reports							
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.				E.1 Reports available in the EMS are inflexible and not visually appealing. Additional enhancements, flexibility, and a modernized look are expected in a future release planned to enter Federal certification by mid 2017.	E.1 Reports available in Verity Count are flexible and visually appealing.	
1.2.E.2	The EMS shall be capable of generating all reports on standard letter size paper (8.5 x 11 inches).						

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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.						
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.						
1.2.E.5	The EMS shall be capable of sorting by fields or permitting the user to customize layout.						

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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.).				E.6 ERM reports can be exported and customized as needed; however, this must be done outside of the EMS system.		
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).						

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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.						
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).						
1.2.E.10	The EMS shall be capable of producing reports on election night, without disrupting the results accumulation process.						
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).						

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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.).						
1.2.E.13	The EMS shall be capable of producing reports that include the following data elements in the body of the report:						
	a. the name of each contest on the ballot (e.g., Governor, Delegate, President);						
	b. the names of each candidate in each contest or race;						
	c. the party affiliation of each candidate in each contest or race;						
	d. the number of choices for each contest or question (e.g., vote for 1);						
	e. the vote totals for each candidate in each contest or race, by precinct, AVCB and combined total;						
	f. the total votes for each contest;						
	g. the winning selection for each contest, indicated by bolding or some other mark;						
	h. the title and number of each question on the ballot (e.g., "County Question A, State Question 1");						
	i. the possible selections for each question or contest, (e.g., "For", "Against", "Yes", "No" or a blank);						
	j. the total number of precincts for the election;						
	k. the percent of reporting precincts versus the total number of precincts;						

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	l. the total number of registered voters;						
	m. the total number of registered voters that voted in the election;						
	n. the total percent of voter turnout;						
	o. the number of overvotes in each contest or race;						
	p. the number of undervotes in each contest or race;						
	q. the total number of votes for all write-in candidates;						
	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;						
	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;						
	t. the capability for the reporting of ballots cast in split precincts;						
	u. OPTIONAL REQUIREMENT: the EMS shall be capable of adding the names of certified write-in candidates to the EMS and reports.						

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Exhibit A, Attachment 1.2 Voting System ELECTION MANAGEMENT SYSTEM (EMS) SOFTWARE Technical Requirements							
Category / Requirement #	Requirement	DOMINION		ES&S		Hart InterCivic	
		Strengths	Weaknesses	Strengths	Weaknesses	Strengths	Weaknesses
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.						
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.						
F. Audit Capabilities							
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.						
1.2.F.2	The EMS shall include an available report that documents information regarding the tabulator, firmware and software versions in use.				F.2 No EMS report to confirm firmware version by tabulator.		
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.						

RFP No. 007116B0007029 - VOTING SYSTEM EVALUATION - COMPARATIVE NOTES BY VENDOR								
Exhibit A, Attachment 1.2 Voting System ELECTION MANAGEMENT SYSTEM (EMS) SOFTWARE Technical Requirements								
			DOMINION		ES&S		Hart InterCivic	
	Category / Requirement #	Requirement	Strengths	Weaknesses	Strengths	Weaknesses	Strengths	Weaknesses
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						

RFP No. 007116B0007029 - VOTING SYSTEM EVALUATION - COMPARATIVE NOTES BY VENDOR							
Exhibit A, Attachment 1.3 Voting System - ABSENT VOTER (AV) PROCESSING Technical Requirements							
Category / Requirement #	Requirement	DOMINION		ES&S		Hart InterCivic	
		Strengths	Weaknesses	Strengths	Weaknesses	Strengths	Weaknesses
AV Processing A. (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.						
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:						
	a. Flat ballots						
	b. Half-folded ballots						
	c. Tri-folded ballots						
	d. Z-folded ballots						
	e. Letter folded ballots of various supported lengths						

RFP No. 007116B0007029 - VOTING SYSTEM EVALUATION - COMPARATIVE NOTES BY VENDOR							
Exhibit A, Attachment 1.3 Voting System - ABSENT VOTER (AV) PROCESSING Technical Requirements							
Category / Requirement #	Requirement	DOMINION		ES&S		Hart InterCivic	
		Strengths	Weaknesses	Strengths	Weaknesses	Strengths	Weaknesses
B. High-Speed AVCB Tabulator							
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.	B.1 Two options for scanners are available. A small and large scanner.	B.1 The smaller scanner was only able to scan the 18" ballot in small batches.	B.1 Two options for scanners are available. A medium and large scanner. Both units are fully self-contained.		B.1 The online adjudication design includes color coded contest(s) with marks that require attention.	
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.	B.2 All-in-one computer/monitor creates a small footprint. A printer is also required.					

RFP No. 007116B0007029 - VOTING SYSTEM EVALUATION - COMPARATIVE NOTES BY VENDOR								
Exhibit A, Attachment 1.3 Voting System - ABSENT VOTER (AV) PROCESSING Technical Requirements								
			DOMINION		ES&S		Hart InterCivic	
Category / Requirement #	Requirement	Strengths	Weaknesses	Strengths	Weaknesses	Strengths	Weaknesses	
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).		B.3 Adjudication must be done on another workstation. The workstation that has the Election files loaded could be used. B.3 The adjudication feature requires a small network to be established. The network would include the ICC computer/monitor, scanner, printer and workstation(s).		B.3 A separate device ("jogger") appears to be needed to be used to align ballots for processing in the most problem free manner.			
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.							

RFP No. 007116B0007029 - VOTING SYSTEM EVALUATION - COMPARATIVE NOTES BY VENDOR							
Exhibit A, Attachment 1.3 Voting System - ABSENT VOTER (AV) PROCESSING Technical Requirements							
		DOMINION		ES&S		Hart InterCivic	
Category / Requirement #	Requirement	Strengths	Weaknesses	Strengths	Weaknesses	Strengths	Weaknesses
1.3.B.5	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).				B.5 Equipment is sensitive and experiences problems with AV Ballots in real world conditions (e.g. folded ballots). Results in halting of the process during scanning.	B.5 The Verity Central scanner processes ballots at a rate of 130 pages per minute.	B.5 Did not provide the suggested replacement rate between proposed high speed scanner and precinct tabulator, e.g. one high speed tabulator in lieu of X precinct tabulators.
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).		B.6 Sensitive – piece of a ballot stub will halt the scanning with an error message. Scans multiple ballots before it discovers and alerts operator/poll worker of the problem which makes reconciliation more complicated.	B.6 The DS450 scanners can also operate as a ballot sorter and can be programmed to separate ballots from a particular precinct to allow for recounts.	B.6 The system only allows for a manual duplication and adjudication process; no online adjudication process is available.		

RFP No. 007116B0007029 - VOTING SYSTEM EVALUATION - COMPARATIVE NOTES BY VENDOR							
Exhibit A, Attachment 1.4 Voting System ACCESSIBLE VOTING SYSTEM COMPONENT Technical Requirements							
Category / Requirement #	Requirement	DOMINION		ES&S		Hart InterCivic	
		Strengths	Weaknesses	Strengths	Weaknesses	Strengths	Weaknesses
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.	A.1 COTS Solution with standard tablet and printer.		A.1 Easy set up.			
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.						A.2 An access code must be manually entered to begin the voting session on the Verity Touch Writer. Current process for setting up the ballot is cumbersome and impractical for some voters.
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)						

RFP No. 007116B0007029 - VOTING SYSTEM EVALUATION - COMPARATIVE NOTES BY VENDOR							
Exhibit A, Attachment 1.4 Voting System ACCESSIBLE VOTING SYSTEM COMPONENT Technical Requirements							
Category / Requirement #	Requirement	DOMINION		ES&S		Hart InterCivic	
		Strengths	Weaknesses	Strengths	Weaknesses	Strengths	Weaknesses
1.4.A.4	The accessible voting system shall be capable of utilizing the maximum size ballot in use with the base voting system.				A.4 Each thermal activation card/ballot must match the length of the standard ballot: 11", 14", 17" or 19". This requirement will necessitate users to purchase all sizes of ExpressVote card stock.		
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.					A.5 Components are compact and portable.	

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Exhibit A, Attachment 1.4 Voting System ACCESSIBLE VOTING SYSTEM COMPONENT Technical Requirements							
Category / Requirement #	Requirement	DOMINION		ES&S		Hart InterCivic	
		Strengths	Weaknesses	Strengths	Weaknesses	Strengths	Weaknesses
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.	A.6 The ImageCast X system can support all available ballot types that are defined in the election by the EMS Election Event Designer (EED) application (up to 30,000 ballot styles).	A.6 Dominion presented a solution that required software to be installed on a laptop within the precinct (suggested EPB). The solution presents a potential problem with line administration and an issue in precincts where EPB isn't utilized. Dominion was asked to present a solution where the county could create a single smart card per split (ballot style) for each precinct and this card could be used multiple times; this change is planned for a future release (estimated availability in 2017).				
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.						

RFP No. 007116B0007029 - VOTING SYSTEM EVALUATION - COMPARATIVE NOTES BY VENDOR							
Exhibit A, Attachment 1.4 Voting System ACCESSIBLE VOTING SYSTEM COMPONENT Technical Requirements							
Category / Requirement #	Requirement	DOMINION		ES&S		Hart InterCivic	
		Strengths	Weaknesses	Strengths	Weaknesses	Strengths	Weaknesses
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.	A.8 ICX voice messages easily customizable.					A.8 No text to speech capability.
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.		A.9 Not much differentiation between the small, normal and large font.	A.9 Allows for up to 24 font on ExpressVote screen.			
1.4.A.10	The proposed accessible voting system shall allow for high-contrast visual display.						
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).						
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.						
1.4.A.13	The accessible voting system shall provide audio and visual instruction on the use of the system.						

RFP No. 007116B0007029 - VOTING SYSTEM EVALUATION - COMPARATIVE NOTES BY VENDOR							
Exhibit A, Attachment 1.4 Voting System ACCESSIBLE VOTING SYSTEM COMPONENT Technical Requirements							
Category / Requirement #	Requirement	DOMINION		ES&S		Hart InterCivic	
		Strengths	Weaknesses	Strengths	Weaknesses	Strengths	Weaknesses
1.4.A.14	The accessible voting system shall present the ballot to the voter in a clear and unambiguous manner.						
1.4.A.15	The accessible voting system shall provide a method for recording write-in votes.						
1.4.A.16	The accessible voting system shall prohibit crossover votes on a partisan primary ballot.						
1.4.A.17	The accessible voting system shall prohibit over votes before a final vote is cast.						
1.4.A.18	The accessible voting system shall allow option to skip races and/or sections (partisan/nonpartisan) of the ballot.					A.18 and A.19 Offers flexibility in the ability to advance to ballot review screen and back to individual races.	Accessible key pad utilizes a wheel for many of the selection steps vs. multiple arrow keys which seem to be preferred by many disabled voters.
1.4.A.19	The accessible voting system shall allow option to "skip to the end" to cast a vote at any point.	A.19 On the ICX, a voter can go straight to the summary ballot at any point in the process.			A.19 The voter must view each contest before going to the summary review and casting the ballot. This may require additional time for the voter to complete the voting process.		
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.						

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Exhibit A, Attachment 1.4 Voting System ACCESSIBLE VOTING SYSTEM COMPONENT Technical Requirements							
Category / Requirement #	Requirement	DOMINION		ES&S		Hart InterCivic	
		Strengths	Weaknesses	Strengths	Weaknesses	Strengths	Weaknesses
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.						
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.						
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.						
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.						

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Exhibit A, Attachment 1.4 Voting System ACCESSIBLE VOTING SYSTEM COMPONENT Technical Requirements							
Category / Requirement #	Requirement	DOMINION		ES&S		Hart InterCivic	
		Strengths	Weaknesses	Strengths	Weaknesses	Strengths	Weaknesses
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.				Straight ticket voting – if a voter votes straight ticket and (as allowed by law) votes for candidates in a different party in a single race, the system maintains the remaining straight ticket choices, but turns off the straight ticket vote indicator on the initial screen. This practice takes away the overall count for straight ticket voting, which is used in statistics summarizing the occurrence of straight ticket voting used for reporting purposes. Note: This has no effect on the tallying of individual votes.		
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.						

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Exhibit A, Attachment 1.4 Voting System ACCESSIBLE VOTING SYSTEM COMPONENT Technical Requirements							
Category / Requirement #	Requirement	DOMINION		ES&S		Hart InterCivic	
		Strengths	Weaknesses	Strengths	Weaknesses	Strengths	Weaknesses
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.						
1.4.C.1.a	Scenario a: Proposed accessible voting system utilizes the same paper ballot as the precinct ballot.						
	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.						
	a.ii. (scenario a.): the accessible system shall allow for omni-directional feed of the ballot.						

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Exhibit A, Attachment 1.4 Voting System ACCESSIBLE VOTING SYSTEM COMPONENT Technical Requirements							
Category / Requirement #	Requirement	DOMINION		ES&S		Hart InterCivic	
		Strengths	Weaknesses	Strengths	Weaknesses	Strengths	Weaknesses
	a.iii. (scenario a): Proposals shall indicate whether manual adjustment is required to accommodate multiple ballot lengths.						
1.4.C.1.b	Scenario b: Proposed accessible voting system prints an entire (marked) optical scan ballot to be tabulated.						
	b.i. (scenario b.): OPTIONAL: Proposals shall indicate whether the accessible voting system includes a self-contained printer (requiring no additional system equipment).						
	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.						
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).						
	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.						

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Exhibit A, Attachment 1.4 Voting System ACCESSIBLE VOTING SYSTEM COMPONENT Technical Requirements							
Category / Requirement #	Requirement	DOMINION		ES&S		Hart InterCivic	
		Strengths	Weaknesses	Strengths	Weaknesses	Strengths	Weaknesses
D.	Reliability Requirements						
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.						
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.						
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.						

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Exhibit A, Attachment 1.4 Voting System ACCESSIBLE VOTING SYSTEM COMPONENT Technical Requirements							
Category / Requirement #	Requirement	DOMINION		ES&S		Hart InterCivic	
		Strengths	Weaknesses	Strengths	Weaknesses	Strengths	Weaknesses
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.						
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.						
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.						
1.4.D.7	OPTIONAL REQUIREMENT: Bidders shall document and explain any available storage-friendly options for the accessible voting system components.						
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.						

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Exhibit A, Attachment 1.4 Voting System ACCESSIBLE VOTING SYSTEM COMPONENT Technical Requirements							
Category / Requirement #	Requirement	DOMINION		ES&S		Hart InterCivic	
		Strengths	Weaknesses	Strengths	Weaknesses	Strengths	Weaknesses
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.						
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.						

RFP No. 007116B0007029 - VOTING SYSTEM EVALUATION - COMPARATIVE NOTES BY VENDOR

Exhibit A, Statement of Work - OTHER FACTORS

	DOMINION		ES&S		Hart InterCivic	
	Strengths	Weaknesses	Strengths	Weaknesses	Strengths	Weaknesses
Service and Maintenance Requirements (Exhibit A-Statement of Work, Section 1.6)						
<u>1.6A Service and Maintenance</u>	Dominion and its subcontractors will offer only one level of service to all of its customers.		Upgrades at no cost for the life of the contract.	A.4 If 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 to install such Updates.		The State requires onsite repair whenever possible. The Hart model proposed seems to indicate that repairs will occur at Hart headquarters (Austin, Texas) and not onsite.
<u>1.6B Preventative Maintenance</u>						
<u>1.6C Technical Support Response Requirements</u>	1.d Election Day support will be from 6:00 a.m. until all counties report in, with live call center to dispatch technician if needed.			Election Day services are less comprehensive. Bidder does not anticipate equipment needing to be replaced on Election Day. (Acceptable term negotiated) "e. These printers are not covered by ES&S's Warranty and/or Service and Maintenance Programs and are therefore subject to the warranty terms and conditions of the COTS purchase source." (Acceptable term negotiated) Locals responsible for shipping costs if COTS components must be returned to the manufacturer.		Loaner equipment will be available to local jurisdictions, but is subject to time and materials pricing

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Exhibit A, Statement of Work - OTHER FACTORS

	DOMINION		ES&S		Hart InterCivic	
	Strengths	Weaknesses	Strengths	Weaknesses	Strengths	Weaknesses
	2.d. Technicians will have parts and loaners available at no cost to the jurisdiction.					
Staffing, Experience and Performance (Exhibit A, SOW §§ 3, 9.6, 9.7 & 9.8, Exhibit B §§ 6 & 7)						
<u>3.1 Contractor Representatives</u>						
<u>3.2 Customer Service Toll-Free Number</u>						
<u>3.3 Disclosure of Subcontractors</u>	Multiple subcontractors, all who have significant and relevant Michigan election experience.					The proposed service subcontractor (PSI) has no current Michigan voting system support and maintenance experience. Proposed service subcontractor is a printer, whose staff will require training to service voting equipment.
<u>3.4 Security</u>						
<u>9.6 Key Personnel</u>						
<u>9.7 Non-Key Personnel</u>						
<u>9.8 Organizational Chart</u>						
<u>B.6 Experience</u>						
<u>B.7 Strategic Relationships</u>						

RFP No. 007116B0007029 - VOTING SYSTEM EVALUATION - COMPARATIVE NOTES BY VENDOR

Exhibit A, Statement of Work - OTHER FACTORS

	DOMINION		ES&S		Hart InterCivic	
	Strengths	Weaknesses	Strengths	Weaknesses	Strengths	Weaknesses
<u>Rollout Plan and Training Requirements (Exhibit A SOW §§ 2.1, 2.2, 2.6, 6, 7 and 9.9</u>						
<u>2.1 Time Frames – Order Placement & Processing</u>		No recognition of local jurisdiction’s role in the testing and acceptance process.				
<u>2.2 Delivery</u>						
<u>2.6 Training</u>	A full suite of eLearning courses are available. Good detail on types of classes, content and duration and flexibility regarding number of participants and county preferences.		Good detail on types of classes, content and duration. Offered to conduct election inspector training.		Structure for user manuals is easy to follow, user friendly, and professional. Detailed layouts of each training course included comparisons to the RFP requirements.	Charges additional fees for initial training (see cost tables).
<u>6. Delivery</u>						
<u>6.1 Delivery Programs</u>						
<u>6.2 Packaging & Palletizing</u>						

RFP No. 007116B0007029 - VOTING SYSTEM EVALUATION - COMPARATIVE NOTES BY VENDOR

Exhibit A, Statement of Work - OTHER FACTORS

	DOMINION		ES&S		Hart InterCivic	
	Strengths	Weaknesses	Strengths	Weaknesses	Strengths	Weaknesses
<u>7. Acceptance</u>						
7.1 Acceptance, Inspection & Testing		Bidder inaccurately assumes that the contractor will have a role in acceptance testing and submission of the acceptance testing form to the State. This is the responsibility of the local jurisdiction.	Bidder proposes testing by both the vendor and local jurisdiction.			
7.2 Final Acceptance						