RFP No. 007116B0007029 Dominion Functional Requirements					
Exhibit A, Attachment 1.1 Voting System HARDWARE Technical Requirements					
	Category / Requirement #	**Requirement**	**Bidder Complies (Y/N)**	**Bidder Complies - with Modifi-cations**	**ImageCast Precinct**
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		Please see Appendix 1 for a complete description of the proposed voting system.
	1.1.A.2	The proposed voting system hardware shall be new. Refurbished or used equipment will not be accepted.	Y		The proposed voting system provided by Dominion Voting Systems will be new. No refurbished or used equipment will be provided.
	1.1.A.3	Replacement parts shall be readily available.	Y		Replacement parts are readily available.

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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		The ImageCast Precinct tabulator is a voting device which scans paper ballots, including both hand-marked ballots and ballots marked by the ImageCast X. For hand-marked ballots, the voter will be given a marking pen, and make their ballot selections privately and independently in a booth or private area provided in the polling location. If the ImageCast tabulators have “Ballot Review” enabled, when the voter inserts their ballot they will be given the opportunity to review their ballot on the LCD screen, and confirm that the tabulator is correctly interpreting their vote selections. When “Ballot Review” is enabled, inserting a valid ballot will result in a review screen with both 'CAST' and 'RETURN' buttons enabled. The voter can choose to cast their ballot by either pressing the 'CAST' button, or returning it for further review, or to spoil it and request a new paper ballot by pressing 'RETURN'. For verifiable vote summary ballots for voters with accessibility needs, once the voter reaches the end of the ballot, they can review their choices through audio playback on the ImageCast X, and can choose to print or return to voting their ballot. Once their ballot is printed by the ImageCast X, the voter can insert it into the ImageCast Precinct, similar to voters who have marked their ballot by hand.
	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		If "Ballot Review" is enabled, the voter can review their ballot on the LCD screen of the tabulator, and should the voter decide to change or correct an error on their ballot, the voter will hit the 'RETURN' button to have their ballot returned to them. For hand-marked ballots, the voter can potentially add a vote or selection to the paper ballot, and simply return to scan it on the ImageCast Precinct. If a hand-marked ballot has errors or changes that require a new paper ballot, a new paper ballot will have to be issued. For verifiable choice summary ballots needing correction, a new voting session will take place on the ImageCast X. In both cases, the erroneous/spoiled ballot is handled as per jurisdictional rules.

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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		The ImageCast Precinct will 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).	Y		The Democracy Suite system will permit recounts to be conducted pursuant to the Michigan Election Law (MEL).
	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		The ImageCast tabulator has the ability to alert voters about any voter/ballot errors, such as overvotes, undervotes, blank ballots, and ambiguous marks. The tabulator provides clear language describing the error and instructions to the voter about how to proceed. With overvotes, undervotes, and blank ballots, the units can be configured to behave in any of three different ways when this occurs: • In the most common configuration, the ImageCast tabulator unit will generate an audible warning in the form of a series of beeps and will display a message on the LCD screen explaining to the voter that an overvote or blank ballot has been detected. With an overvoted ballot, if the 'show ballot error details' feature is enabled, the voter will have the option to press a 'More' button on the LCD screen in order to display a list indicating which contests have been overvoted. If the 'show ballot error details' feature is disabled, the 'More' button will not appear. If the 'ballot review' feature is enabled, the LCD will display a complete listing of all contests contained on the ballot and will indicate the results that will be recorded for each contest once the ballot is cast. In all cases, the ImageCast tabulator unit will ask the voter to confirm its interpretation by pressing either the 'CAST' or 'RETURN' button. If the voter presses the 'CAST' button, the ballot is accepted and placed in the ballot box, and no votes will be recorded for the overvoted contest. However, any valid voter markings for other contests on the ballot will still be tallied. If the voter presses the 'RETURN' button, the ballot will be returned to the voter for correction. • A second configuration option is to have the ImageCast tabulator unit automatically accept the ballot 'as is,' without displaying a warning message or alerting the voter. In this case, the ballot is accepted and placed in the ballot box, and no votes are recorded for the overvoted contest. However, any valid voter markings for other contests on the ballot will still be counted. This configuration is rarely utilized for precinct deployment. • A third configuration option is to have the ImageCast tabulator unit generate an audible warning in the form of a series of beeps, display a warning message on the LCD screen and automatically return the ballot to the voter for correction. With an overvoted ballot, if the 'show ballot error details' feature is enabled, the voter will have the option to press a 'More' button on the LCD screen in order to display a list indicating which contests have been overvoted. If the 'show ballot error details' feature is disabled, the 'More' button will not appear. Please see Appendix 1, Voting System Description, for an example screenshot of a voter alert on the ImageCast Precinct.

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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		All ImageCast tabulators 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.	Y		The ImageCast Precinct will provide printed records regarding the opening and closing of the pollst, including: identification of the election; opening and closing date and times; identification of the unit; identification of ballot format; identification of each candidate. Sample zero tapes for the ImageCast Precinct tabulator are provided in Appendix 1 - Voting System Description.
	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		The weight of the ImageCast Precinct tabulator unit with battery is 14 pounds. The dimensions of the ImageCast Precinct are 16.5" (W) x 12.75" (D) x 3.5" (H). The overall size of the ballot box is 27” (W) by 58” (D) by 48” (H) and the weight is 85 pounds. The overall weight of the tabulator and ballot box together is 99 pounds.The ImageCast Precinct is designed to be delivered to and from the polling site mounted to the ballot box. The ballot box has 4 lockable swivel wheels for easy handling and also has convenient handles on all four sides of the box to enable lifting or positioning as required. The ballot box is designed to fit through standard doorframes.
	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 ImageCast Precinct is able to read single and double-sided ballots in 4 orientations.
	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		On the ImageCast Precinct, there are two types of counter, one that tracks the total number of voters and one that tracks the number of scanned ballot cards. Only the ballot counter (showing the number of ballot cards cast) is visible on the LCD screen. A sample screenshot is provided in Appendix 1, Voting System Description. The display uses a font and font size that are clearly readable by voters and precinct inspectors.

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	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 system is capable of scanning one-sided ballots, two-sided ballots, and multiple page ballots while recording the event as one ballot cast. The voter counter increments when the first ballot card is cast. The ballot counter increments with each ballot card cast.
	1.1.A.15	The system shall provide an auditory and visual notification to the voter that the ballot has been cast.	Y		The system can provide an auditory and visual notification to the voter that the ballot has been cast.
	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		All system visible messages and instructions displayed on the tabulators are in simple and plain language and can 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 f**or additional detail.	Y		The ImageCast Tabulators are capable of transmitting unofficial election results by cellular or analog modem at the close of polls on Election Night. Please refer to Appendix 1, Voting System Description, for further information about results transmission.
	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		**With ballot image capture enabled:** 11" - 6/min, 360/hr 14" - 4.5/min, 280/hr 17" - 3.5/min, 230/hr 20" - 3.3/min, 198/hr **With ballot image capture disabled:** 11" - 7.5/min, 450/hr 14" - 6/min, 360/hr 17" - 5/min, 300/hr 20" - 4/min, 240/hr

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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		The ImageCast Precinct allows for a configurable number of copies of each zero/results tape to be printed automatically upon opening and closing of polls, as well as the options to print additional copies and to reprint any tape. Results tapes can be created as summary or precinct-level reports. Zero and results tapes can be customized independently to show a number of statistics, including (but not limited to): total ballots cast, total voters, tabulator name/ID, voting location name/ID, overvotes, undervotes, number of signature lines, ballot styles accepted by the tabulator, ballots cast per style, software version, unit model and serial number, and protective counter. Certification text can be customized to meet the jurisdiction's requirements. Sample zero and results tapes for the ImageCast Precinct can be found in Appendix 1 - Voting System Description.
	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		Please refer to Exhibit C Pricing Voting System Cost Table 4.
	1.1.A.21	Proposals shall document the type of printer utilized by the proposed tabulator (external or internal, thermal, inkjet, etc.)	Y		ImageCast Precinct tabulators feature an internal thermal printer.
	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 ImageCast Precinct tabulator will identify and reject ballots that are unreadable due to ambiguous marks. Dual Threshold ambiguous mark detection is a Dominion exclusive technology. The pixel count of each mark is compared with two thresholds (which are defined through the EMS by the Election Official) to determine if the mark constitutes a vote. If a mark falls above the upper threshold, it is tallied as a valid vote. If a mark falls below the lower threshold, it will not be counted as a vote. However, if a mark falls between the two thresholds (known as the “ambiguous zone”), it will be deemed as a marginal mark and the ballot will be returned to the voter for corrective action (in a precinct level deployment). With this feature, the voter is given the ability to display his or her intent by re-marking the ballot to make an unambiguous selection, rather than a recount board or some other “after the fact” attempt to determine voter intent. Please refer to Appendix 1- Voting System Description for more information about Dominion's Dual Threshold Technology.

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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 ImageCast Precinct allows 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 tabulators will divert ballots with write-in votes to the write-in bin for easy retrieval after the polls have closed. Additionally, all tabulators save the ballot image which includes the write-in name. Ballot images can be sorted by all conditions including write-in votes, allowing election officials to separate write-in votes as a group for later determination and adjudication. The Results Tally & Reporting module allows the manual entry of qualified write-in candidates and the associated vote totals which appear on the results reports.
	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		The ImageCast Precinct uses Compact Flash memory cards. The memory cards are removable media storage and the tabulator relies on redundant memory (two memory cards). All results files are encrypted and digitally signed. Ballot images are given a random ID number as their file name, and when the images are extracted by the Results Tally & Reporting client application, they are randomized, thus ensuring the ballot images are de-coupled from voter order. Please see Appendix 1, Voting System Description (Security Overview sub-section) for table depicting memory card size and capacity for the maximum number of ballot records that may be retained on one device).
	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		The ImageCast Precinct and the ImageCast X are durable, rugged units, which were designed to be able to withstand 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. The ImageCast Precinct has years of proven reliability in all weather conditions including cold dry climates where static electricity is prominent and hot humid conditions where moisture is prevalent.

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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		The ImageCast Precinct is capable of withstanding frequent loading and unloading, stacking and unstacking, assembling, disassembling, reassembling, and other routine handling in the course of normal storage and operation. The ImageCast tabulator may also be secured to the ballot box/lid assembly and during election preparations and operations can easily be installed on and removed from the ballot box and placed in storage by any trained and authorized person. Routine maintenance such as installing paper rolls and ink cartridges is easily accomplished by trained technicians. The inherent design of the ballot box renders it well-balanced during usage and transport, while empty or loaded.
	1.1.A.27	Bidders shall document and explain any available special features of the proposed tabulator that demonstrates water resistance features.	Y		During warehouse storage, the ImageCast Precinct can be protected by a fitted, lockable, and sealable hard plastic lid (the ballot box cover) that completely covers the unit, protecting it from direct water contact. Please see Appendix 1, Voting System Decription, for a picture of the ImageCast Precinct with ballot box lid. The ballot box features ample ground clearance to protect the interior of the ballot box from minor flooding. In humid areas, or areas prone to heavy rains which the unit may be exposed to during storage and/or transport, Dominion Voting offers an optional box/sealable bag combination in which to store and/or transport ImageCast products.
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 proposed Democracy Suite voting system utilizes a paper ballot with voter verifiable paper trail (the ballot itself) on both the precinct and central tabulators. The paper ballot is either a full-paper ballot showing all the data (header information, contest, candidates, etc.) or is a verifiable choice summary ballot showing the voter's choices by contest, and header information. Both ballots are fully human readable with all information in plain language for the voter to verify.

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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.	Y		The Democracy Suite voting system is designed to offer elections officials a maximun of 30,000 ballot styles and flexibility in the design and layout of the paper ballot. The number of voting positions depends on the ballot style and the length of the ballot. The system can generate and process a 22” double-sided portrait ballot that can accommodate 462 voting positions. It also allows the generation of all ballot artwork and all specimen ballot artwork (e.g. drawing columns, ovals, borders, fonts, header shading in multiple colors, etc.). The font selection and styling capabilities of our system are only limited by those in Microsoft Windows operating system itself. Sample ballots are provided in Appendix 2, Sample Ballots & Reports.
	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.	Y		Ballot width for the ImageCast Precinct is fixed at 8.5" wide. The ImageCast Precinct tabulator can process a one, two, three, or four column, single or double-sided ballot. Standard ballot lengths for ImageCast Precinct are 11", 14", 17", 20", and 22" ballots. The number of voting positions depends on the ballot style and the length of the 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.	Y		The Democracy Suite system allows for the ballot to be one (1), two (2), three (3) columns or, four (4) columns. Sample ballots are provided in Appendix 2, Sample Ballots & Reports.
	1.1.B.5	The proposed system must support ballot layouts in either portrait or landscape orientation.	Y		The Democracy Suite system supports ballot layouts in either portrait or landscape orientation.

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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		To ensure our customers receive high quality ballots for successful elections, Dominion operates a ballot printer qualification program, where ballot printers are licensed and certified to produce and sell ballots for Dominion ImageCast tabulators. Dominion will be happy to work closely with ballot printer(s) of the State of Michigan's choosing, to ensure they receive the certification and are able to print Dominion's licensed ImageCast ballots. The printer training and certification program is designed to ensure the production of high quality ballots, with low defect rates and high levels of customer satisfaction. Qualifiication includes on-site ballot production instruction, ballot inspection procedures and tools, ballot QA programs and ballot printing tests. The program offers a fair and open ballot printer training and qualification process, geared for a range of commercial or governmental print operations. Dominion encourages customers to require the use of certified ballot printers for all print contracts. A document summarizing ballot printing specifications is provided as part of this RFP response submission (Exhibit A - 1.1. - 1.1.B.7 - Dominion Print Specifications - April 2015).
	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		The Democracy Suite system offers an optional Mobile Ballot Printing Module that alows for printing ballots on a demand basis. For more information please refer to the complete voting system description in Appendix 1, Voting System Description.

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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).	Y		The ImageCast Precinct tabulators have sockets for two removable, non-volatile Compact Flash cards (Primary and Administration), both of which are accessible from the unit and stored behind sealable doors. Compact Flash cards are commercially-available (COTS) memory devices, and do not use batteries or removable parts. The Compact Flash cards certified for use with Democracy Suite system are: SanDisk Extreme, SanDisk or RiData. The Compact Flash memory card is included and separately listed in Exhibit C, Pricing (including component costs for a single additional or replacement memory device). Storage capacity varies with memory card size (available in 4GB, 8GB and 16GB).
	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		ImageCast tabulators have a stated capacity of 1,000 Ballot Styles (i.e. Precincts and Split-Precincts) that can be programmed onto one tabulator (but the units have been tested to much larger elections).
	1.1.C.3	Proposals shall describe any capabilities for processing additional ballots after the polls have been closed.	Y		The ImageCast tabulators have the option for reopening polls with the use of a supervisor password, to process additional ballots.
	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		All tabulator definition files and results files stored on the memory device are digitally signed and encrypted. All memory card access doors are secured with tamper-evident security seals. Please refer to response 1.1.C.5 for more details.
	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.			The Compact Flash cards are located behind locked access covers, protecting against unauthorized access to these components on all ImageCast tabulator units. Each cover is secured with an appropriate locking mechanism (small padlocks or hasp-type tamper-evident seals) and ensures tamper resistance and full security for Compact Flash cards with the tabulator from the time of initial testing through Election Day.

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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		The ImageCast Precinct has a complementary ballot box. The Dominion Ballot Box is: • Made from solid extruded plastic. • Built to the requirements of the EAC, the ballot box capacity is sized to US polling place requirements, with 3 bins (main bin, write-in bin, and auxiliary/emergency bin). • The tabulator locks and seals onto the ballot box, which features a cover that provides additional security and ease of transportation. • Features a sealed plastic base and is water resistant. • Offers multiple deployment and warehousing options, including the possibility of nesting the boxes up to three units deep. The Dominion ballot box is large by industry standards. The main compartment will easily take 1,500 large 22-inch ballots. For 11-inch ballots, the main compartment can hold 3,000 ballots. The diverter (or write-in) bin can hold 300 22”-inch ballots, and the auxiliary bin (for use when the tabulator is inoperable) can hold 200 22-inch ballots. The ballot box is designed to fit through standard doorframes, and its overall size is 27” (W) by 58” (D) by 48” (H). It weighs 85 pounds.
	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 Dominion ballot box features a locked access door to all compartments. The door is easily opened and closed, allowing poll workers to easily access the three internal compartments as needed.
	1.1.D.3	The ballot box shall allow poll workers the ability to open, re-lock and reseal secure storage compartments.	Y		The ballot box allows poll workers the ability to open, re-lock and reseal secure storage compartments.
	1.1.D.4	The ballot box shall include a separate compartment for storage of voted ballots while ballot counter is inoperable.	Y		The Dominion plastic ballot box has a separate, secure storage compartment (auxiliary/emergency bin) for storage of voted ballots while ballot counter is inoperable.

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	Category / Requirement #	Requirement	Bidder Complies (Y/N)	Bidder Complies - with Modifi-cations	ImageCast Precinct
	1.1.D.5	Proposals shall describe any portability features of the ballot box that allow for easy transport.	Y		Dominion has designed an innovative, complementary ballot box. It is built of sturdy plastic, and features four large lockable swivel wheels and handles on all sides for ease of movement, allowing the units to be securely transported to and from the polling place. The ballot box has a well balanced footprint. Since it has no internal moving parts, the ballot box can also accommodate Election Day supplies when it is not storing ballots. For security purposes, the ballot box features five locks and multiple security seal points to limit access and prevent tampering. The tabulators lock and seal onto the ballot box, which features a cover that provides additional security and ease of transportation. Collapsible ballot box option: Collapsed size is 6" (W) by 28" (D) by 35" H. The overall weight of the tabulator and box together is 63 pounds. With this option the ImageCast Precinct is designed to be delivered to and from the polling site detached from the base. The ballot box is a one piece design that is easily assembled and the ImageCast Precinct is attached on top of the base by sliding it on to the mounting plate and securing it with the latch and security seal.
	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 ballot box is a durable and 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. The ballot box is manufactured with injection molded plastic and does not have any hinges or pins to maintain structure making it capable of withstanding damage due to non-ideal transport conditions.
	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 ballot box is capable of withstanding frequent loading and unloading, stacking and unstacking, assembling, disassembling, reassembling, and other routine handling in the course of normal storage and operation. The ImageCast tabulators are an integrated tabulator/ballot box/lid assembly and in normal election prep and election operations can easily be installed on and removed from the ballot box and placed in storage by any trained and authorized person. Routine maintenance such as installing paper rolls and ink cartridges is easily accomplished by trained technicians.
	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 plastic ballot box has a sealed plastic base and is a rugged plastic water resistant ballot box.
	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 plastic ballot box can be nested up to three boxes deep to facilitate storage. Collapsible ballot box option: The collapsed size is 6" (W) by 28" (D) by 35" H. The collapsible ballot box allows it to be trasported in most cars trunks and sets up in minutes. The box can be stacked for efficient storage and has handles for transport. All accesses points have locks and the abliity to use a security seal.

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	Category / Requirement #	**Requirement**	**Bidder Complies (Y/N)**	**Bidder Complies - with Modifi-cations**	**ImageCast Precinct**
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		Dominion's Democracy Suite is designed so that parts of the system's software operates using open source software, such as the use of Linux for the development of ImageCast Precinct optical scan tabulator. In addition, due to the fact that many COTS components form part of the voting system, additional system components operate on open source software. Both the ImageCast Central and ImageCast X are software-driven voting system components, which rely completely on COTS hardware. The ImageCast Central (High Speed AVCB Tabulator) makes use of industry-leading COTS hardware – namely, the Canon DR-G1130 and DR-M160-II scanners. The ImageCast Central workstation is also comprised of COTS hardware (Windows PC). The ImageCast X BMD (touchscreen in-person voting terminal, which prints a paper ballot for tabulation by the ImageCast tabulator) is a full COTS hardware solution including: tablet, casing, switches and routers, accessible voting peripherals, cables, and printer.
	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		Please refer to "Cost Table 5: Component Replacement / Additional Parts".

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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		Dominion has incorporated COTS components in various elections technologies and solutions (see 1.1.E.1). Dominion's Democracy Suite platform is designed as a comprehensive solution for election officials who seek modern, efficient, accurate, accessible and secure voting technology. Dominion has developed a stable portfolio of elections technology solutions, developed based on customer and market demand. This portfolio is enhanced through continuous product improvement whereby we often develop new features and update our products based on customer feedback. Dominion has been listening to its customers and developing new modules to streamline the entire election process. In addition to continuously improving our existing ImageCast product line, Dominion will be focusing on taking advantage of COTS-based technologies for our new product offerings. Dominion is gradually leveraging more commercially available off-the-shelf hardware to deliver greater convenience, transparency, and accessibility to voters – as well as sustainability and greater efficiency for election officials – ultimately leading to significant cost-savings for constituents.

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	Category / Requirement #	**Requirement**	**Bidder Complies (Y/N)**	**Bidder Complies - with Modifi-cations**	**ImageCast Precinct**
	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		Commercial Off-the-Shelf (COTS) products are tightly integrated within Dominion's products and various product configurations. Therefore we routinely embark on researching, selecting and qualifying suitable COTS components and are impacted by the flow of the COTS product lifecycle. “Life Cycle” refers to the period of time during which a COTS hardware or software product remains attainable and remains useful to an election jurisdiction. For example, the demand for more economical, higher performance and faster processing capabilities makes new models of COTS computers obsolete in a relatively short amount of time, which has resulted in an estimated lifespan of between 3 to 4 years for items such as laptops. The proliferation of COTS products and the volatility of the commercial marketplace in dictating a product’s end-of-life (EoL), or component obsolescence, constitute a challenge to our configuration management. Dominion has implemented rigorous configuration management procedures in order to mitigate COTS related issues and EoL risks to our customers including: • Life cycle analysis – including BOM analysis, certified system configuration review and component pre-sourcing. • Proactive visibility – maintaining direct contact with OEMs across the supply chain, signing up for LTB notifications and Product Change Notification (PCN), especially if components are not sourced from the original manufacturer and publishing a list of EoL and soon-to-be sunsetted products/components in a shared location within Dominion. • Up-to-date processes – including how EoL components are identified in a timely manner, replacement candidate identification, qualification testing procedure per product category, steps to prove traceability, effective communication across teams/departments, supplier audit/change notes, and listed trusted suppliers for EoL components. • Proactive product management – taking into account upcoming strategic maintenance schedules when managing the COTS component/products EoL life cycle and impacts to customers. These processes are implemented on National, State, and Jurisdictional levels (as applicable). As such, over the life of the contract, Dominion will identify COTS options as a result of changing market conditions and EoL issues to ensure sustainability of the products we support. These options will be discussed and presented to the State of Michigan for consideration to implement as applicable.

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	Category / Requirement #	**Requirement**	**Bidder Complies (Y/N)**	**Bidder Complies - with Modifi-cations**	**ImageCast Precinct**
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		The ImageCast Precinct tabulator and ImageCast X are durable units, designed to be able to perform in a wide range of climates and humidity levels without ballot jams or other malfunctions. The ImageCast tabulator has been deployed in tropical, mountainous, desert, and humid conditions and has operated normally and successfully under all conditions.
	1.1.F.2	Proposals shall detail features of the system that are designed to avoid ballot jams.	Y		The ImageCast Precinct tabulators feature a ballot entry slot specifically designed to receive 8 1/2 inch wide paper along with paper guides throughout the ballot path. The ImageCast tabulators have a short paper path to minimize paper transport and do not mechanically integrate with moving parts of the ballot box. If a potential paper jam is detected, tabulators will attempt to reverse the ballot to avoid jamming and operator intervention. In addition to being designed to avoid ballots being jammed in the slot, the ImageCast tabulators feature an ultrasonic multi-feed detector that prevents the device from accepting more than one ballot at a time.
	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		After detecting a paper jam, the tabulator LCD screen will clearly inform the user whether the jammed ballot has been counted or not, so that the user can take appropriate action to have the ballot tabulated. All ballot jam and ballot cast events are recorded in the system audit log. Please see Appendix 1, Voting System Description, for a sample screenshot of the ImageCast Precinct's message regarding paper jams.
	1.1.F.4	In the event of a ballot jam, the ballot track shall be easy to clear.	Y		In the event of a ballot jam, the ballot track is easy to clear and requires minimun effort with access to the entry and exit slots of the paper path.
	1.1.F.5	Voting system components shall be transportable, without damage to internal circuitry	Y		All voting system components are transportable, without damage to internal circuitry.

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	Category / Requirement #	**Requirement**	**Bidder Complies (Y/N)**	**Bidder Complies - with Modifi-cations**	**ImageCast Precinct**
	1.1.F.6	Voting system components shall provide a method for immediately detecting a malfunction.	Y		The ImageCast Precinct provides methods for immediately detecting a malfuction. During operation, constant diagnostics run against key subsystems to ensure that no malfunction goes undetected and is subsequently allowed to affect election operations. The ImageCast tabulator also has three onboard diagnostics tests that authorized users can execute: Simple: This basic test will confirm that each of the subsystems are receiving power and can communicate with the main processor. Once the Simple diagnostic test is selected, the system will automatically run through each component in succession, and will show the test status of that component onscreen (i.e. whether it passed, failed, was not found, etc.). When testing of all the components is complete, the screen will ask the attendant to choose the preferred Diagnostic Report Type (i.e. Print the report on the thermal printer, Display the report on the LCD screen, or Cancel to print no report). If the attendant chooses to generate a report, a summary of the diagnostics test will appear, displaying each component tested and whether it passed, failed, was not found, etc. Individual: This allows the operator to test individual subsystems, one at a time. Once the Individual diagnostic test has been selected, buttons will appear on the LCD screen for the various relevant components. The operator will choose the component of interest. The system will test it, and report the status of the component (i.e. passed, failed, not found, etc.) on the LCD screen. When finished testing individual components, the operator will press the Done button. Complete: This thorough set of diagnostics tests confirms the correct operation of each of the subsystems of the ImageCast tabulator. This test is an interactive test that requires confirmation input. Once the Complete diagnostic test is selected, the system automatically runs through each component in succession, and will show the test status of that component onscreen (i.e. whether it passed, failed, was not found, etc.). Sample onboard diagnostic report tapes for the ImageCast Precinct tabulator can be found in Appendix 1, Voting System Description.

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	Category / Requirement #	**Requirement**	**Bidder Complies (Y/N)**	**Bidder Complies - with Modifi-cations**	**ImageCast Precinct**
	1.1.F.7	Voting system components shall prevent the loss of data during the generation of reports.	Y		The ImageCast Precinct features dual removable compact flash memory cards. The system saves election and voting data simultaneously to both locations, keeping the content of both memory cards in sync. The entire set of data files supporting the election are contained on the primary CF card. The administrative memory card holds a copy of the election results and audit log from the primary card. The files stored on these cards allow for recovery from external conditions that cause equipment to become inoperable. The election results, device logs and scanned ballot images are recoverable from the secondary memory card. Further, the AuditMark functionality can be used to independently verify the total votes for any particular candidate or ballot issue.
	1.1.F.8	The tabulator backup battery shall be continually charged while the unit is plugged in.	Y		The tabulator backup battery is continually charging while the unit is plugged in.
	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		The ImageCast tabulators units have an internal Lithium Ion rechargeable battery, which provides two (2) hours of use (scanning) during a power failure, and an additional 30 minutes of standby time. The battery life for an ImageCast Precinct at rest is at least 3.5 hours.
	1.1.F.10	The backup system shall remain in operation during power surges or other abnormal electrical occurrences.	Y		If power surges or other abnormal electrical occurrences were to happen, the backup system will remain in operation. The ImageCast tabulators have full surge and power anomaly protection integrated into its internal circuitry. This integrated protection covers the unit when running under AC power, or when running under battery power. These ImageCast electrical anomaly protection features have passed the stringent testing of the U.S. Federal EAC VVSG 2005 voting system specifications, and have been successfully tested in a U.S. federally certified test laboratory.The system is tested to standards for Electrical Power Disturbance, Electrical Fast Transient, Lightning Surge, Electrostatic Disruption, Electromagnetic Emissions, Electromagnetic Susceptibility, Conducted RF Immunity, and Magnetic Fields Immunity. ImageCast tabulator has internal surge absorbers, which have been tested successfully against 2-Kilovolt line-surge by third-party test lab. ImageCast power adaptor is a Class 2 adaptor, and has internal fusing to protect against surges.
	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		The backup system engages 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 in the Compact Flash cards.

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	Category / Requirement #	**Requirement**	**Bidder Complies (Y/N)**	**Bidder Complies - with Modifi-cations**	**ImageCast Precinct**
	1.1.F.12	The proposed system shall have the capability of generating exportable backup files for offsite storage.	Y		Dominion Voting recommends using the system's capacity to backup election files both on and off the Election Management System server throughout the election event. Election data and results can always be produced and/or reproduced for offsite storage, or loading into the Results Tally and Reporting module.
	1.1.F.13	The proposed system shall automatically adjust for changes due to Daylight Savings Time (DST).	N		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.

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	Category / Requirement #	Requirement	Bidder Complies (Y/N)	Bidder Complies - with Modifi-cations	ImageCast Precinct
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		A number of diagnostic tests of all the major system components can be performed from the Administrative menu, and reports generated from those tests before the opening of the polls and while polls are open: -Simple Diagnostics Test Report: The basic test will confirm that each of the subsystems are receiving power and can communicate with the main processor. Once the Simple diagnostic test is selected, the system will automatically run through each component in succession, and will show the test status of that component onscreen (i.e. whether it passed, failed, was not found, etc.). When testing of all the components is complete, the screen will ask the operator to choose the preferred Diagnostic Report Type (i.e. Print the report on the thermal printer, Display the report on the LCD screen, or Cancel to print no report). If the operator chooses to generate a report, a summary of the diagnostics test will appear, displaying each component tested and whether it passed, failed, was not found, etc. -Individual Diagnostics Test Report: This allows the operator to test individual subsystems, one at a time. Once the Individual diagnostic test has been selected, buttons will appear on the LCD screen for the various relevant components. The operator will choose the component of interest. The system will test it, and report the status of the component (i.e. passed, failed, not found, etc.) on the LCD screen. When finished testing individual components, the operator will press the Done button. -Complete Diagnostics Test Report: This thorough set of diagnostics tests confirms the correct operation of each of the subsystems of the ImageCast tabulator. This test is an interactive test that requires confirmation input. Once the Complete diagnostic test is selected, the system automatically runs through each component in succession, and will show the test status of that component onscreen (i.e. whether it passed, failed, was not found, etc.).
	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		The Democracy Suite system ensures that each voter's ballot is secret and the voter cannot be identified by image, code or other methods.

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Exhibit A, Attachment 1.1 Voting System HARDWARE Technical Requireme				
	Category / Requirement #	**Requirement**	**ImageCast X**	**ImageCast Central**
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.	Please see Appendix 1 for a complete description of the proposed voting system.	Please see Appendix 1 for a complete description of the proposed voting system.
	1.1.A.2	The proposed voting system hardware shall be new. Refurbished or used equipment will not be accepted.	The proposed voting system provided by Dominion Voting Systems will be new. No refurbished or used equipment will be provided.	
	1.1.A.3	Replacement parts shall be readily available.	Replacement parts are readily available.	Replacement parts are readily available.

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	Category / Requirement #	**Requirement**	**ImageCast X**	**ImageCast Central**
	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.	The ImageCast Precinct tabulator is a voting device which scans paper ballots, including both hand-marked ballots and ballots marked by the ImageCast X. For hand-marked ballots, the voter will be given a marking pen, and make their ballot selections privately and independently in a booth or private area provided in the polling location. If the ImageCast tabulators have “Ballot Review” enabled, when the voter inserts their ballot they will be given the opportunity to review their ballot on the LCD screen, and confirm that the tabulator is correctly interpreting their vote selections. When “Ballot Review” is enabled, inserting a valid ballot will result in a review screen with both 'CAST' and 'RETURN' buttons enabled. The voter can choose to cast their ballot by either pressing the 'CAST' button, or returning it for further review, or to spoil it and request a new paper ballot by pressing 'RETURN'. For verifiable vote summary ballots for voters with accessibility needs, once the voter reaches the end of the ballot, they can review their choices through audio playback on the ImageCast X, and can choose to print or return to voting their ballot. Once their ballot is printed by the ImageCast X, the voter can insert it into the ImageCast Precinct, similar to voters who have marked their ballot by hand.	N/A
	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.	If "Ballot Review" is enabled, the voter can review their ballot on the LCD screen of the tabulator, and should the voter decide to change or correct an error on their ballot, the voter will hit the 'RETURN' button to have their ballot returned to them. For hand-marked ballots, the voter can potentially add a vote or selection to the paper ballot, and simply return to scan it on the ImageCast Precinct. If a hand-marked ballot has errors or changes that require a new paper ballot, a new paper ballot will have to be issued. For verifiable choice summary ballots needing correction, a new voting session will take place on the ImageCast X. In both cases, the erroneous/spoiled ballot is handled as per jurisdictional rules.	N/A

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	Category / Requirement #	**Requirement**	**ImageCast X**	**ImageCast Central**
	1.1.A.6	The system shall produce zero printouts before each election and precinct totals printouts at the close of the polls	N/A	The ImageCast Central will 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).	The Democracy Suite system will permit recounts to be conducted pursuant to the Michigan Election Law (MEL).	The Democracy Suite system will permit recounts to be conducted pursuant to the Michigan Election Law (MEL).
	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.	The ImageCast X Ballot Marking Device alerts voters to any and all ballot errors before printing the ballot.	The ImageCast Central can be configured to stop scanning on various types of voting errors and conditions. These errors include overvotes, undervotes, blank ballots, write-ins, and ambiguous marks.

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	Category / Requirement #	**Requirement**	**ImageCast X**	**ImageCast Central**
	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.	All ImageCast tabulators provide for tabulation of votes cast in split precincts, where all voters are not voting the same ballot format.	All ImageCast tabulators 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.	N/A	The ImageCast Precinct will provide printed records regarding the opening and closing of the pollst, including: identification of the election; opening and closing date and times; identification of the unit; identification of ballot format; identification of each candidate. Sample zero tapes for the ImageCast Central tabulator are provided in Appendix 2d - Sample ImageCast Central Reports.
	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.	The ImageCast X Voting Terminal includes enclosure, tablet, card reader, etc. There are two options for the ImageCast X voting terminal: 15” Avalue tablet dimensions: 17” (H) x 9.5” (W) x 7” (D) 15” Avalue tablet weight: Approx 13.5 lbs 12.2" Samsung tablet in enclosure dimensions: 14” x 12” x 12” 12.2" Samsung tablet in enclosure weight: 11lbs The ImageCast X also comes with a Canon ImageClass LBP6230dw Laser Printer Dimensions: 11.5" x 9.6" x 14.9" Weight: 16.7 lbs. (with ink cartridge) The ImageCast X has an optional transport case for portability.	The following components make up the ImageCast Central: Canon DR-G1130 scanner (Dimensions with tray closed: 18.9 x 21.1 x 12.4 inches, Weight: 50 lbs). Canon DR-M160II scanner (Dimensions with tray closed : 280mm (W) x 172 (D) x 178 (H) mm; Dimensions with tray opened: 280 (W) x 606 (D) x 366.4 (H) mm; Weight: 3.2 kg) A PC workstation is also required: Dell Optiplex 24 7440 all-in-one workstation is also required (Weight 24 lbs, Approx Dimensions - 15 x 22.34 x 2.31 inches).
	1.1.A.12	The system shall allow for omni-directional feed of the ballot and be fully capable of counting non-oriented ballots.	N/A	The ImageCast Central is able to read single and double-sided ballots in 4 orientations.
	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.	The ImageCast X keeps track of the total number of ballots printed. The ballot counter is maintained from the moment the poll opens and increases with every ballot printed successfully.	On the ImageCast Cecntral, there are two types of counter, one that tracks the total number of voters and one that tracks the number of scanned ballot cards. Only the ballot counter (showing the number of ballot cards cast) is visible on the workstation's monitor.

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	Category / Requirement #	**Requirement**	**ImageCast X**	**ImageCast Central**
	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)	N/A	The system is capable of scanning one-sided ballots, two-sided ballots, and multiple page ballots while recording the event as one ballot cast. The voter counter increments when the first ballot card is cast. The ballot counter increments with each ballot card cast.
	1.1.A.15	The system shall provide an auditory and visual notification to the voter that the ballot has been cast.	N/A	N/A
	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.	All system visible messages and instructions displayed on the tabulators are in simple and plain language and can be customizable.	N/A
	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.	N/A	N/A
	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.	N/A	**Canon DR-G1130** 11" - 80/min, 4800/hr 14" - 64/min, 3840/hr 17" - 53/min, 3180/hr 20" - 45/min, 2700/hr **Canon DR-M160II** 11" - 60/min, 3600/hr 14" - 47/min, 2820/hr 17" - 38/min, 2280/hr 20" - 33/min, 1980/hr

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	Category / Requirement #	**Requirement**	**ImageCast X**	**ImageCast Central**
	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.	N/A	The ImageCast Central creates a results report in plain text (.txt) format which can be saved and printed as many times as desired. Results reports can be created by precinct, ballot style or as a summary report. Zero and results tapes can be customized independently to show a number of statistics, including (but not limited to): total ballots cast, total voters, tabulator name/ID, voting location name/ID, overvotes, undervotes, number of signature lines, ballot styles accepted by the tabulator, ballots cast per style, software version, unit model and serial number, and protective counter. Certification text can be customized to meet the jurisdiction's requirements. Sample ImageCast Central zero and results reports can be found in Appendix 2d - Sample ImageCast Central Reports
	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.	Please refer to Exhibit C Pricing Voting System Cost Table 4.	Please refer to Exhibit C Pricing Voting System Cost Table 4.
	1.1.A.21	Proposals shall document the type of printer utilized by the proposed tabulator (external or internal, thermal, inkjet, etc.)	The ImageCast X uses a Canon ImageClass LBP6230dw Laser Printer.	Optionally, a COTS printer can be available on the network for the ImageCast Central system.
	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.	N/A	The ImageCast Central system will identify and reject ballots that are unreadable due to ambiguous marks. Dual Threshold ambiguous mark detection is a Dominion exclusive technology. The pixel count of each mark is compared with two thresholds (which are defined through the EMS by the Election Official) to determine if the mark constitutes a vote. If a mark falls above the upper threshold, it is tallied as a valid vote. If a mark falls below the lower threshold, it will not be counted as a vote. However, if a mark falls between the two thresholds (known as the “ambiguous zone”), it will be deemed as a marginal mark. Please refer to Appendix 1- Voting System Description for more information about Dominion's Dual Threshold Technology.

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Exhibit A, Attachment 1.1 Voting System HARDWARE Technical Requireme				
	Category / Requirement #	**Requirement**	**ImageCast X**	**ImageCast Central**
	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.	The ImageCast X allows the voter to enter a write-in name which is printed on the Verifiable Choice Summary Ballot. The image of the write-in name is saved by the ImageCast Precinct tabulator.	Similarly to the ImageCast Precinct, the ImageCast Central also saves the ballot image which includes the write-in name. Ballot images can be sorted by all conditions including write-in votes, allowing election officials to separate write-in votes as a group for later determination and adjudication. The Results Tally & Reporting module allows the manual entry of qualified write-in candidates and the associated vote totals which appear on the results reports.
	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.)	N/A	The ImageCast Central comes with a 500 GB hard drive installed, so it is unlikely that the jurisdiction would run out of space. As an example, a single-sided 17” ballot image and result file takes approximately 300KB to store, so one million ballots would take up 300GB of storage space. If more space than the recommended 500GB is required, ICC workstations are available with a larger hard drive (1TB or more).
	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.	The ImageCast Precinct and the ImageCast X are durable, rugged units, which were designed to be able to withstand 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. The ImageCast Precinct has years of proven reliability in all weather conditions including cold dry climates where static electricity is prominent and hot humid conditions where moisture is prevalent.	N/A

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Exhibit A, Attachment 1.1 Voting System HARDWARE Technical Requireme				
	Category / Requirement #	**Requirement**	**ImageCast X**	**ImageCast Central**
	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.	The ImageCast X is capable of withstanding frequent loading and unloading, stacking and unstacking, assembling, disassembling, reassembling, and other routine handling in the course of normal storage and operation.	N/A
	1.1.A.27	Bidders shall document and explain any available special features of the proposed tabulator that demonstrates water resistance features.	N/A	N/A
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.**	The proposed Democracy Suite voting system utilizes a paper ballot with voter verifiable paper trail (the ballot itself) on both the precinct and central tabulators. The paper ballot is either a full-paper ballot showing all the data (header information, contest, candidates, etc.) or is a verifiable choice summary ballot showing the voter's choices by contest, and header information. Both ballots are fully human readable with all information in plain language for the voter to verify.	

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Exhibit A, Attachment 1.1 Voting System HARDWARE Technical Requireme				
	Category / Requirement #	**Requirement**	**ImageCast X**	**ImageCast Central**
	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.	The Democracy Suite voting system is designed to offer elections officials a maximun of 30,000 ballot styles and flexibility in the design and layout of the paper ballot. The number of voting positions depends on the ballot style and the length of the ballot. The system can generate and process a 22” double-sided portrait ballot that can accommodate 462 voting positions. It also allows the generation of all ballot artwork and all specimen ballot artwork (e.g. drawing columns, ovals, borders, fonts, header shading in multiple colors, etc.). The font selection and styling capabilities of our system are only limited by those in Microsoft Windows operating system itself. Sample ballots are provided in Appendix 2, Sample Ballots & Reports.	
	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 ImageCast X produces a verifiable choice summary ballot on paper stock that is 8.5" x 11".	The size of the ballot is fixed at 8.5” wide with possible lengths ranging from 11” to 22”.The unit can process a one, two, three, or four column, single or double-sided 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.	The Democracy Suite system allows for the ballot to be one (1), two (2), three (3) columns or, four (4) columns. Sample ballots are provided in Appendix 2, Sample Ballots & Reports.	
	1.1.B.5	The proposed system must support ballot layouts in either portrait or landscape orientation.	The Democracy Suite system supports ballot layouts in either portrait or landscape orientation.	The Democracy Suite system supports ballot layouts in either portrait or landscape orientation.

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Exhibit A, Attachment 1.1 Voting System HARDWARE Technical Requireme				
	Category / Requirement #	**Requirement**	**ImageCast X**	**ImageCast Central**
	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.	We recommend 100# text paper stock for use with the ImageCast X.	Dominion complies with this requirement. Please see response1.1.B.6 for the ImageCast Precinct.
	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.	The Democracy Suite system offers an optional Mobile Ballot Printing Module that alows for printing ballots on a demand basis. For more information please refer to the complete voting system description in Appendix 1, Voting System Description.	

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Exhibit A, Attachment 1.1 Voting System HARDWARE Technical Requireme				
	Category / Requirement #	**Requirement**	**ImageCast X**	**ImageCast Central**
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).	No voting results are stored directly on the ImageCast X device (ballots are only marked). Tabulator election files are stored on internal memory.	The ImageCast Central is not deployed with removable memory media. Instead, results files are saved to the local hard disk drive.
	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).	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).	ImageCast Central unit can be programmed to accept as many ballot styles as can be defined in EMS (30,000 ballot styles).
	1.1.C.3	Proposals shall describe any capabilities for processing additional ballots after the polls have been closed.	The ImageCast tabulators have the option for reopening polls with the use of a supervisor password, to process additional ballots.	
	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.	All tabulator definition files stored on the internal memory device are digitally signed and encrypted. All memory card access doors are secured with tamper-evident security seals. Please refer to response 1.1.C.5 for more details.	ImageCast Central data storage is on application computer(s) hard drives and can be backed up to a removable storage 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.	The ImageCast X uses an internal memory device that is not directly accessible. Devices are programmed using removable media and access to the USB ports for the removable media are secured with an appropriate locking mechanism (small padlocks or hasp-type tamper-evident seals)	N/A

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	Category / Requirement #	**Requirement**	**ImageCast X**	**ImageCast Central**
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.		N/A
	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.	N/A	N/A
	1.1.D.3	The ballot box shall allow poll workers the ability to open, re-lock and reseal secure storage compartments.	N/A	N/A
	1.1.D.4	The ballot box shall include a separate compartment for storage of voted ballots while ballot counter is inoperable.	N/A	N/A

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	Category / Requirement #	**Requirement**	**ImageCast X**	**ImageCast Central**
	1.1.D.5	Proposals shall describe any portability features of the ballot box that allow for easy transport.	N/A	N/A
	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.	N/A	N/A
	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.	N/A	N/A
	1.1.D.8	Bidders shall document and explain any available special features of the proposed ballot box that demonstrates water resistance features.	N/A	N/A
	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).	N/A	N/A

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Exhibit A, Attachment 1.1 Voting System HARDWARE Technical Requireme				
	Category / Requirement #	**Requirement**	**ImageCast X**	**ImageCast Central**
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.	Dominion's Democracy Suite is designed so that parts of the system's software operates using open source software, such as the use of Linux for the development of ImageCast Precinct optical scan tabulator. In addition, due to the fact that many COTS components form part of the voting system, additional system components operate on open source software. Both the ImageCast Central and ImageCast X are software-driven voting system components, which rely completely on COTS hardware. The ImageCast Central (High Speed AVCB Tabulator) makes use of industry-leading COTS hardware – namely, the Canon DR-G1130 and DR-M160-II scanners. The ImageCast Central workstation is also comprised of COTS hardware (Windows PC). The ImageCast X BMD (touchscreen in-person voting terminal, which prints a paper ballot for tabulation by the ImageCast tabulator) is a full COTS hardware solution including: tablet, casing, switches and routers, accessible voting peripherals, cables, and printer.	
	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.		

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	Category / Requirement #	**Requirement**	**ImageCast X**	**ImageCast Central**
	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.	Dominion has incorporated COTS components in various elections technologies and solutions (see 1.1.E.1). Dominion's Democracy Suite platform is designed as a comprehensive solution for election officials who seek modern, efficient, accurate, accessible and secure voting technology. Dominion has developed a stable portfolio of elections technology solutions, developed based on customer and market demand. This portfolio is enhanced through continuous product improvement whereby we often develop new features and update our products based on customer feedback. Dominion has been listening to its customers and developing new modules to streamline the entire election process. In addition to continuously improving our existing ImageCast product line, Dominion will be focusing on taking advantage of COTS-based technologies for our new product offerings. Dominion is gradually leveraging more commercially available off-the-shelf hardware to deliver greater convenience, transparency, and accessibility to voters – as well as sustainability and greater efficiency for election officials – ultimately leading to significant cost-savings for constituents.	

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	Category / Requirement #	**Requirement**	**ImageCast X**	**ImageCast Central**
	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.	Commercial Off-the-Shelf (COTS) products are tightly integrated within Dominion's products and various product configurations. Therefore we routinely embark on researching, selecting and qualifying suitable COTS components and are impacted by the flow of the COTS product lifecycle. “Life Cycle” refers to the period of time during which a COTS hardware or software product remains attainable and remains useful to an election jurisdiction. For example, the demand for more economical, higher performance and faster processing capabilities makes new models of COTS computers obsolete in a relatively short amount of time, which has resulted in an estimated lifespan of between 3 to 4 years for items such as laptops. The proliferation of COTS products and the volatility of the commercial marketplace in dictating a product’s end-of-life (EoL), or component obsolescence, constitute a challenge to our configuration management. Dominion has implemented rigorous configuration management procedures in order to mitigate COTS related issues and EoL risks to our customers including: • Life cycle analysis – including BOM analysis, certified system configuration review and component pre-sourcing. • Proactive visibility – maintaining direct contact with OEMs across the supply chain, signing up for LTB notifications and Product Change Notification (PCN), especially if components are not sourced from the original manufacturer and publishing a list of EoL and soon-to-be sunsetted products/components in a shared location within Dominion. • Up-to-date processes – including how EoL components are identified in a timely manner, replacement candidate identification, qualification testing procedure per product	

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Exhibit A, Attachment 1.1 Voting System HARDWARE Technical Requireme				
	Category / Requirement #	**Requirement**	**ImageCast X**	**ImageCast Central**
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.	The ImageCast Precinct tabulator and ImageCast X are durable units, designed to be able to perform in a wide range of climates and humidity levels without ballot jams or other malfunctions. The ImageCast tabulator has been deployed in tropical, mountainous, desert, and humid conditions and has operated normally and successfully under all conditions.	
	1.1.F.2	Proposals shall detail features of the system that are designed to avoid ballot jams.	N/A	N/A
	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.	N/A	The unit will inform election workers of a jammed ballot condition. The unit's tabulation software does not capture or process jammed ballots, and as such, jammed ballots would be rescanned by the operator after becoming unjammed, or remade and scanned if the original ballot is damaged, dependent on jurisdiction regulations.
	1.1.F.4	In the event of a ballot jam, the ballot track shall be easy to clear.	N/A	In the event of a ballot jam, the ballot track is easy to clear and requires minimun effort with access to the entire paper path by opening the scanner.
	1.1.F.5	Voting system components shall be transportable, without damage to internal circuitry	All voting system components are transportable, without damage to internal circuitry.	All voting system components are transportable, without damage to internal circuitry.

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Exhibit A, Attachment 1.1 Voting System HARDWARE Technical Requireme				
	Category / Requirement #	**Requirement**	**ImageCast X**	**ImageCast Central**
	1.1.F.6	Voting system components shall provide a method for immediately detecting a malfunction.	Warning messages indicate whether the voter has performed or attempted an invalid operation, or whether the voting equipment itself has malfunctioned in some way. The ImageCast X can run an automated self-diagnostics test to ensure all components are functioning optimally.	For ImageCast Central, there is an automated test that performs a diagnostic check and records this information in the audit log. These tests includle: • Detecting and reporting the system's status and degree of operability • Confirmation that there are no hardware or software failures • Identification of the software release • Status of all data paths and memory locations to be used in vote recording to protect against contamination of voting data • Other information needed to confirm the readiness of the equipment and to accommodate administrative reporting requirements • Confirmation that the device is ready for the poll to be opened; Upon conclusion of the tests, the software provides evidence in the audit record.

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Exhibit A, Attachment 1.1 Voting System HARDWARE Technical Requireme				
	Category / Requirement #	**Requirement**	**ImageCast X**	**ImageCast Central**
	1.1.F.7	Voting system components shall prevent the loss of data during the generation of reports.	Voting system components shall prevent the loss of data during the generation of reports.	Ballot images generated through the ImageCast Central can also be retained in redundant memory locations: on the EMS server, or on an external hard drive. Dominion recommends that the redundant location be set to the EMS server.
	1.1.F.8	The tabulator backup battery shall be continually charged while the unit is plugged in.	ImageCast X has an external uninterruptible power supply (UPS) that is continually while the unit is plugged into an AC power outlet.	The ImageCast Central system can be deployed with a backup UPS system which is continually charging while the unit is plugged in.
	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.	The ImageCast X is deployed with a backup UPS system, to allow for continued operation in the event of a power failure. The recommended UPS provides a minimum of 2 hours of operation of the system. Larger UPS devices may be deployed to extend the operation and standby time.	The ImageCast Central system can be deployed with a backup UPS system, to prevent data loss in the event of a power failure. The recommended UPS provides a minimum of 2 hours of operation of the system. Larger UPS devices may be deployed to extend the operation and standby time.
	1.1.F.10	The backup system shall remain in operation during power surges or other abnormal electrical occurrences.	The UPS has protection against power surges or other abnormal electrical occurrences.	The ImageCast Central system is typically deployed in the jurisdiction's central site, and will be able to draw from the optional UPS. The UPS has protection against 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.	The backup system will engage immediately with no loss of data in the event of disruption of electrical connection or failure of battery backup. The ImageCast X stores no vote totals.	The backup system engages 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 on the internal hard disk drive.

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Exhibit A, Attachment 1.1 Voting System HARDWARE Technical Requireme				
	Category / Requirement #	**Requirement**	**ImageCast X**	**ImageCast Central**
	1.1.F.12	The proposed system shall have the capability of generating exportable backup files for offsite storage.	Dominion Voting recommends using the system's capacity to backup election files both on and off the Election Management System server throughout the election event. Election data and results can always be produced and/or reproduced for offsite storage, or loading into the Results Tally and Reporting module.	
	1.1.F.13	The proposed system shall automatically adjust for changes due to Daylight Savings Time (DST).	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.	

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	Category / Requirement #	**Requirement**	**ImageCast X**	**ImageCast Central**
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.	When Opening Polls, the ImageCast X goes through several stages to verify that the system is properly functioning: when powering on, a set of internal diagnostics, and software verification tests and procedures are performed. While in operation, the system monitors all devices.	For ImageCast Central, there is an automated test that performs a diagnostic check and provides a formal report on the system. • Confirmation that the scanner is present and initialized • Confirmation that all necessary election files are present • Detecting an unexpected shutdown when ImageCast Central was last run • Detecting missing batch folders or results • Any errors in this automated portion will be reported directly to the user via pop-up message.
	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.	The Democracy Suite system ensures that each voter's ballot is secret and the voter cannot be identified by image, code or other methods.	

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Exhibit A, Attachment 1.2 Voting System ELECTION MANAGEMENT SYSTEM (EMS) SOFTWARE Technical 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		Democracy Suite EMS software operates on the Windows Server 2012 R2 Standard and Windows 8.1 Professional platforms and has the ability to adapt to upgrades in operating systems, subject to the certification process.
	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		To protect against any modification of software by malicious users, the Democracy Suite Election Management System integrates the Microsoft .NET Framework code signing process, within which, Dominion Voting digitally signs every executable and library (DLL) during the software build procedure. After the installation of Election Management software, only successfully verified EMS software components will be available for use. Digital signature verification is performed by the .NET Framework runtime binaries. If a malicious user tries to replace or modify any EMS executables or library files, the digital signature verification will fail and the user will not be able to start the EMS application. Security patches will be released as deemed necessary by Dominion, with prompt written notification to the State. As required by the State of Michigan, any software or system changes or upgrades must be certified prior to installation. Description of all changes or upgrades,
	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		As required by the State of Michigan, any software or system changes or upgrades must be certified prior to installation. As such, system changes can only be provided according to these timeframes without permission from the State.
	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		As required by the State of Michigan, any software or system changes or upgrades must be certified prior to installation. In the event that Dominion certifies a software upgrade under the applicable laws and regulations of the State of Michigan, Dominion will make the certified software upgrade available to the State and end users at no additional cost.

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Exhibit A, Attachment 1.2 Voting System ELECTION MANAGEMENT SYSTEM (EMS) SOFTWARE Technical 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.5	Allow system administrators to establish different levels of user permissions.	Y		The Democracy Suite system allows system administrators to establish different levels of user permissions. For more detail on the security features of the Democracy Suite system please see the System Security Overview section of Appendix 1- Voting System Description
	1.2.A.6	Permit routine users access to the application without requiring administrative privileges on the PC operating system.	Y		Client applications on the EMS workstations are designed to be used with non-administrator user accounts. Higher level administrative functions are restricted to system administrators.
	1.2.A.7	Require all users to have a unique login credentials (username and password).	Y		The Democracy Suite System requires all users to have unique login credentials (username and password). For more detail on the security features of the Democracy Suite system, please see the System Security Overview section of Appendix 1- Voting System Description.
	1.2.A.8	Secure the ballot layout and election configuration data to prevent unauthorized modification or the copying of such data.	Y		The Democracy Suite secures the ballot layout and election configuration data to prevent unauthorized modification or copying of such data. For more detail on the security features of the Democracy Suite system, please see the System Security Overview section of Appendix 1- Voting
	1.2.A.9	Allow manual data entry for election setup and ballot layout.	Y		Elections officials can define the election project either manually or by importing data from external sources in the Election Event Designer module of the EMS. The system also allows users to define ballot styling parameters and 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.	Y		Election configuration data to be exported to the tabulator and accessible voting system component(s) is encrypted per the 2005 VVSG recommendations.

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Exhibit A, Attachment 1.2 Voting System ELECTION MANAGEMENT SYSTEM (EMS) SOFTWARE Technical Requirements					
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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		Democracy Suite EMS consists of the following software components: EMS Datacenter Manager EMS Application Server EMS Service EMS Election Event Designer EMS Results Tally & Reporting EMS Election Data Translator EMS Audio Studio EMS File System Service ImageCast Listener (EMS Shell Service, Cartridge Manager Service, Listener Service, Transmission Dashboard) EMS Result Transfer Manager EMS Mobile Ballot Printing Democracy Suite EMS uses the following third-party prerequisite software: Microsoft Windows Server 2012 R2 Standard Microsoft Windows 8.1 Professional Microsoft SQL Server 2012 Standard w/SP2 Microsoft .NET Framework 4.5 Microsoft IIS 7.5 Microsoft Visual J# 2.0 Microsoft Visual C++ 2013 x86 Redistributable Microsoft Access Database Engine Java Runtime Environment 6.0 Cepstral Voice Synthesizer 6.2.3 Avast! anti-virus Dallas 1-Wire driver Adobe Reader 10 Optional components: Microsoft Excel 2010 or later
	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		The Democracy Suite system is capable of creating and defining ballot styles and contest rules in accordance with Michigan Election Law, Promulgated Rules and Ballot Production Standards.

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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	The Democracy Suite system features full support for multi-language configurations including Spanish and English. The ImageCast tabulators can be extended to support additional languages that are part of the Latin-1 character set, with the addition of custom language packs, containing translated audio files and voter screens. The Election Event Designer module can create paper ballots in most languages.
	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:			Democracy Suite will export election data elements and election configuration data to removable memory devices (Compact Flash memory cards) or LAN network, including but not limited to the data elements listed in 1.2.A.14.a-k.
		a. the sequence of candidates for each contest;	Y		
		b. the ballot issue;	Y		
		c. the contest title;	Y		
		d. the contest number;	Y		
		e. the office name and district, if applicable;	Y		
		f. the number of votes for a candidate or ballot issue;	Y		
		g. the number of votes against a ballot issue or other contest where applicable;	Y		
		h. the number of votes for candidates and/or issues by legislative, congressional or election district where applicable;	Y		
		i. the number of ballots tabulated by party for open and closed primary elections;	Y		
		j. the type of result (e.g. precinct, absentee or provisional); and	Y		
		k. the type of election (e.g. Presidential Primary, Presidential General, Gubernatorial Primary, Gubernatorial General).	Y		
	1.2.A.15	Shall be capable of utilizing the State Uniform Data Format (refer to **Section and Attachment 1.5**)	Y		Democracy Suite EMS is capable of importing election definition data from the QVF using the Election Data Translator module. Results data is exported from the Results Tally & Reporting module using the Michigan Standard Results File Format (MSRFF).
	1.2.A.16	Be capable of storing, maintaining and reloading configurations and data from previous elections.	Y		Democracy Suite EMS is capable of creating a complete election project backup containing all data relating to the election project, including but not limited to, the database, results, election
	1.2.A.17	Accumulate election data for each election by precinct, precinct combinations, district, jurisdiction, and statewide.	Y		The Democracy Suite EMS Results Tally and Reporting module is capable of accumulating election data for each election by precinct, precinct combinations, district, jurisdiction, and statewide.

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	1.2.A.18	Tabulate results for individual groups and integrate the results from selected or all groups into cumulative results.	Y		The Democracy Suite EMS Results Tally and Reporting module is capable of Integrating election data from selected or all groups into cumulative results.
	1.2.A.19	Store tabulated results from each absentee and precinct group as separate totals within a precinct.	Y		The Democracy Suite EMS Results Tally and Reporting module can tabulate 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.	Y		Democracy Suite EMS is capable of creating a complete election project backup containing all data relating to the election project, including but not limited to, the database, results, election configuration, ballot images. Election project backups can be stored on external and removable
	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		The Democracy Suite EMS Election Data Translator module is capable of exporting all election definition data, including ballot style and tabulator information to Microsoft Excel format (.xls). This powerful platform allows for the definition of an entire election within the spreadsheet, and rapid proofing of existing election definition data. The Democracy Suite EMS Election Event Designer module is also capable of exporting election data using customized XML export packages.
	1.2.A.22	Permit the re-upload (updating of previous uploads) of election data results from a tabulator device to the EMS.	Y		The Democracy Suite system permits the re-upload (updating of previous uploads) of election data results from a tabulator device to the EMS. The back-end ImageCast Listener results transmission system tracks the number of uploads from each tabulator and informs the adminstrator of duplicated
	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		The Democracy Suite system can be configured to include an EMS backup server, which could be manually switched to in case of 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.	Y		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, .mhtml, .csv, .doc, .tif. txt, and ascii. The Results Tally & Reporting module exports results data in XML by default. In addtion, the application can import customized XSLT transformations, thus allowing election results to be presented in any format such as Microsoft Excel Format (.xls) and Comma Separated Value (.csv). W3C defines a language that transforms XML files into more readable formats, such as clear text files, HTML, XHTML, other XML formats, SVGPDF, etc. Any number of XSLT transformations can be defined. When an XSLT transformation is created, it is automatically attached to all transfer points set within the system. This means that, in addition to the XML results file, the system will
	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		ImageCast Precinct tabulators are able to support results transmission using cellular and analog dial-up modems from the precinct. The optional Results Tranfer Manager module allows results files to be loaded from memory cards and transmitted within a Local Area Network (LAN) or over the Internet to the ImageCast Listener (TCP/IP).

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	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		The Democracy Suite EMS Results Tally & Reporting module accepts direct uploads of election results data from the removable memory cards of the tabulator.
	1.2.A.27	Only accept uploaded results from removable memory devices specific to the current election.	Y		The Democracy Suite EMS Results Tally & Reporting module will 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.	Y		Democracy Suite has an optional, stand-alone test deck generation utility that can be used for the automated creation of pre-marked test decks. BallotChart parses the data from Democracy Suite EMS, running it through the systems algorithms and generate a chart, which satisfies Michigan's promulgated rules. This chart is then used to digitally mark the corresponding races on the ballot and all ballots are zipped up into one PDF document, which is then delivered to the customer for them to
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		Elections can be county-programmable from initial election definition to printer-ready ballots and ready-to-use tabulator media/memory cards without vendor intervention.
	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		Counties are 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 Dominion Voting.
	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 Democracy Suite system allows the 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.
	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 Democracy Suite EMS provides for the accumulation of votes cast in all elections including multiple precincts, jurisdictions, counties and districts. Summary and precinct-level reports can be filtered by contests, precincts and districts (reporting by split precinct is not supported at this time). Results can be displayed as totals and as breakdowns by counting group. Sample reports are provided in Appendix 2, Sample Ballots & Reports.

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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		Logic and accuracy testing should be performed on each tabulator to verify the correctness of tabulator programming. To facilitate the L&A process, Democracy Suite has an optional, stand-alone test deck generation utility that can be used for the automated creation of pre-marked test decks.
	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		The Democracy Suite EMS Election Event Designer module allows for the automatic creation of split precincts when two or more districts of the same type are connected to a given precinct. The user also has the option to define split precincts manually, as they would define regular precincts. Precincts and split precincts may be named and given external IDs according to the jurisdictions requirements and conventions. The number of registered voters is tracked by split precinct.
	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	The Democracy Suite EMS Election Event Designer module is capable of incorporating multiple translated languages (including English and Spanish) for presentation on the paper and audio ballots. Bengali is not currently supported.
	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 optional Democracy Suite UOCAVA Module allows the military/overseas voter to vote an online ballot, print their ballot and mail it back to be scanned, without requiring duplication. As with all other Democracy Suite voting channels (precinct, accessible, central) ballots for military/overseas voters are programmed in the same database, Election Event Designer and can be scanned on all ImageCast tabulators (precinct and central).
	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		The Democracy Suite system is capable of supporting an open primary, closed primary, general election, special/nonpartisan election, statewide special election and any combinations thereof. For templates of ballot layout for support of the combinations please see Appendix 2, Sample Ballots & Reports.

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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.	Y		Dominion Voting and its subcontractors offer onsite/offsite/online training at the discretion of the State or county on the use of hardware operations, Democracy Suite EMS, poll worker training, election day technician training and train the trainer. All of these classes include quick reference guides, step-by-step training manuals, and technical reference manuals that include various graphical descriptions 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 f**or additional information.	Y		Election definition data can be imported and exported in the Democracy Suite EMS Election Data Translatror format (Excel). The QVF file is converted into Excel format by the Election Data Translatror module; data that is missing from the QVF file (contest headings and ballot styling template assignments) is added to the spreadsheet, then imported into Election Event Designer. Data can be exported from the project in Excel format to quickly verify all election definition data.
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.	Y		The Election Event Designer module of the Democracy Suite EMS can 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.	Y		The Democracy Suite EMS Election Event Designer module uses any of the fonts loaded on the Windows system. The default font family is Arial, with Arial Narrow being the most common choice for ballot styling. Additional fonts can be loaded into Windows and used by Election Event Designer
	1.2.C.3	Allow for creation of two-sided and multi-page ballots.	Y		The Democracy Suite EMS Election Event Designer module allows for the creation of two-sided and multi-page ballots.
	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		The Democracy Suite EMS Election Event Designer module can 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).	Y		The Democracy Suite EMS Election Event Designer module is 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.	Y		The Democracy Suite EMS Election Event Designer module allows race header shading in multiple
	1.2.C.7	Provide electronic versions of the ballots that are identical to the official ballots in all respects.	Y		The Democracy Suite EMS Election Event Designer module can 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.	Y		The Democracy Suite EMS Election Event Designer module is flexible to allow multiple ballot sizes by precinct/jurisdiction within a single election if desired.

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	1.2.C.9	Provide for the export of any ballot to a .pdf file.	Y		The Democracy Suite EMS Election Event Designer module can provide exports of any ballot to a
	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	The Democracy Suite EMS Election Event Designer module supports testing to validate the correctness of election programming for each voting device and ballot. See response to 1.2.B.5 for more information.
	1.2.C.11	OPTIONAL REQUIREMENT: Allow for different ballot headers on ballots within the same election (Special Election, General Election, Election).	Y		The Democracy Suite EMS Election Event Designer module allows for different ballot headers on ballots within the same election (Special Election, General Election, Election).
	1.2.C.12	Generate a consolidated sample ballot containing all races, issues and questions.	Y		The Democracy Suite EMS Election Event Designer module can generate a consolidated sample ballot containing all races, issues and questions.
	1.2.C.13	Include a ballot style indicator.	Y		Ballot artwork files are full-sized press-ready ballots containing all required ballot elements and the unique ballot ID barcode that distinguishes each ballot style.
	1.2.C.14	Be capable of designating the number of write-in lines for each contest.	Y		The Democracy Suite EMS Election Event Designer module is capable of designating the number of write-in lines for each contest.
	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		The Democracy Suite EMS Election Event Designer module is 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.	Y		The Democracy Suite EMS Election Event Designer module has 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.	Y		The Democracy Suite EMS Election Event Designer module has 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.	Y		The Democracy Suite EMS Election Event Designer module permits 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.	Y		The Democracy Suite EMS Election Event Designer module has the ability to define candidate and rotation data at the discretion of the county or State as required under the provisions of Michigan Election Law and the Electronic Voting Systems - Promulgated Rules. There are no limitations on the number of candiate and office rotations. The number of offices and candidates are limited only by the physical size of the ballot.
	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		Rotation can be enabled or disabled for any office as required.
	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		The Democracy Suite EMS Election Event Designer module 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.

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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		The EMS Eleciton Event Designer module features an advanced ballot styling engine, allowing all text presented on the ballot to be customized, such as candidate names, party affiliation, designations, office titles, office headings, ballot headers, instructions, ballot question language. Election Event Designer incorporates full RTF (Rich Text Format) support, allowing the display of any element that can be included in Microsoft Word including symbols, tables, images/vignettes, numbering and bullet points.
	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		The Election Event Designer module of the Democracy Suite EMS makes it easy to make corrections to programming/ballot layout (such as adding or removing a candidate or precinct) and permits new ballot proofs to be generated quickly and accurately. PDF's can be generated by precinct or ballot style (at the request of the user), and will be generated in database order front followed by back.
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.	Y		Democracy Suite has fully integratable end-to-end 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. Please see Appendix 1 - Voting System Description for more information about our Election Night Reporting module.
	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 Democracy Suite system supports cellular modem, dial-up modem, and manual reading of tabulator memory devices as transmission options for reporting unofficial results on Election Night, directly from the tabulators to the EMS system. Additionally, Dominion is proposing an optional Results Transfer Module, which is a stand-alone application used to transfer results files from remote locations to one or more central locations, from where the results can be tallied and reported. Please see Appendix 1- Voting System Description for further details concerning the results transmission options available in Democracy Suite.

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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).	Y		The Democracy Suite system supports the 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).
	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		Democracy Suite can optionally allow for results transmission from internal and external modems for election night results reporting. The Democracy Suite EMS Results Transfer Module (RTM) provides the ability to the user to customize the level of security including custom passwords and custom private networks. All results transmissions from RTM client workstations and ImageCast Precinct tabulators using wireless or dial-up modems are performed with the ImageCast Communications Manager system at the receiving end. The ImageCast Communicaitons Manager uses a proprietary, SSL encrypted TCP/IP protocol to secure communication between the tabulators and RTM client workstations, verifies the completeness of the results package and sends a confirmation message back to the sender. The content of the transmission (the results files) are encrypted using FIPS-compliant AES algorithms and signed with a SHA-256 hash. The ImageCast Listener system uses a dedicated server to receive transmissions, and is separated
	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		The Democracy Suite system provides 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.	Y		The Democracy Suite system provides Race Summary report data (total votes for each candidate) and Race Detail report data (results by precinct) report data.
	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		The Democracy Suite system has the ability to present a precinct as completely or partially reported based on when election groups (Precinct, Absentee, etc.) are received in EMS.
	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		The Democracy Suite system allows users to view data by pre-defined groups (precinct, absentee, combined precinct/absentee, etc.).

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	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		The Democracy Suite Election Night Reporting module can allow the public to determine the total number of precincts, the number of precincts completely reported, and the number of precincts partially reported when installed on a customer's webserver environment.
	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		The Democracy Suite system can 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.
	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		The Results Tally & Reporting of the Democracy Suite EMS allows for the export of election data in various formats, including Michigan Standard Results File Format (MSRFF), giving a variety of options to third-party vendors. The Results Tally & Reporting module supports customized XSLT transformations, which can transform results data into any format required. See responses to Section 1.2.A.24 for more details.
	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		The Democracy Suite system provides a report of precincts reporting and not reporting on election night. The system produces printed or exported reports in a CSV or other format prescribed by the State.
	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		The Results Tally & Reporting module of the Democracy Suite EMS allows the administrator to control which precincts' or tabulators' results data is uploaded to the reporting system. In the event of transmission errors or new data, the export can be updated as required. New results data manually uploaded to the system or transmitted by tabulators is not included in reports until explicily approved by the administrator for publication.
	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 Democracy Suite provides for the ability to import the State-provided file of candidate information and statewide ballot proposal information in its entirety. The import is 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.	Y		Michigan ENR codes are imported from the QVF file during the election definition phase and can be updated as needed. The Results Tally & Reporting module of the Democracy Suite EMS exports the results data in the Michigan Standard Results File Format, containing the ENR codes.

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Exhibit A, Attachment 1.2 Voting System ELECTION MANAGEMENT SYSTEM (EMS) SOFTWARE Technical 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.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		Democracy Suite EMS is capable of importing election definition data from the QVF using the Election Data Translator module.
	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		The Democracy Suite EMS import facility allows for all election definition data to be imported at once. Any local ballot proposal information which is separate from the State-provided file may be saved in a separate file and incorporated into the State-provided file prior to import.
	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 State-provided file, once converted to the EMS Election Data Translator format, can be easily updated in Excel before being imported. Election definition data can be modified after import using the EMS Election Event Designer module.
	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		Results data is exported from the Results Tally & Reporting module using the Michigan Standard Results File Format (MSRFF). Support for the IEEE (1622.2) Election Results Reporting Data Interchange Format is scheduled for implemention in a future release of Democracy Suite, once the specification is finalized by the IEEE.
	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 Democracy Suite system provides 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 is seamless and requires no manual manipulation.
	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 Democracy Suite system provides 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 is seamless and requires no manual manipulation.
	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		The Democracy Suite system provides for the export of precinct by precinct totals, jurisdiction totals and county-wide totals on election night or as the county is able. The Democracy Suite system does 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.	Y		The Democracy Suite system supports reporting results in a variety of different election report-style formats, including Summary contest and Precinct Level.

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Exhibit A, Attachment 1.2 Voting System ELECTION MANAGEMENT SYSTEM (EMS) SOFTWARE Technical Requirements					
	Category / Requirement #	**Requirement**	**Bidder Complies (Y/N)**	**Bidder Complies - with Modifi-cations**	**Please expand on your response in Column D or E.**
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.	Y		The Results Tally & Reporting module of the Democracy Suite EMS uses SQL Server Reporting Services to produce the following standard reports: Election Summary Report Statement of Votes Cast (precinct-level results) Cards Cast Report These three reports allow filtering by Polling Location, Tabulator and Counting Group. Election Summary and SOVC reports can be customized to include a number of statistics including: Times Cast, Undervotes, Overvotes, Total Votes, Counting Group breakdown, Write-ins, Percentage by ballots cast or by votes cast, sorting of candidates by global order or by votes received. Filters by contest, precincts or districts can be applied. Report titles can be modified to indicate unofficial or canvass results. Report profiles can be saved, loaded and exported between election projects. Additional reports include: Results per precinct (simplified precinct-level report) Contest overview data (simplified summary report) Located Scanned Ballots Results per Tabulator Canvass Write-ins per Tabulator Registration and Turnout Contests on Margin Tabulator Status Ballots Cast Per ballot Style Ballots Cast Per Tabulator
	1.2.E.2	The EMS shall be capable of generating all reports on standard letter size paper (8.5 x 11 inches).	Y		The Results Tally & Reporting module of the Democracy Suite EMS generates all reports on standard letter size paper (8.5 x 11 inches), when exported in PDF format. When exported in other formats, the reports can be printed on standard letter size paper using the computer's printer

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Exhibit A, Attachment 1.2 Voting System ELECTION MANAGEMENT SYSTEM (EMS) SOFTWARE Technical Requirements					
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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.	Y		The Results Tally & Reporting module of the Democracy Suite EMS is capable of providing 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 is capable of producing official and/or unofficial election result reports consisting of any combination of vote data, and presented in any available format. This can 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.	Y		The Democracy Suite system has the ability to custom design an election report including the following: name of election; political subdivisions; date of election; type of report; total number of registered voters in each political subdivision; total number of registered voters in each voting precinct; 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.	Y		The Democracy Suite system is capable of sorting by fields or permitting the user to customize layout.
	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		The Results Tally & Reporting module of the Democracy Suite EMS allows the user to have flexibility in printable reports showing results containing candidates and/or questions in alphanumeric format/ ballot order, etc. next to the vote totals. The standard reports allow filtering by Polling Location, Tabulator and Counting Group. Election Summary and SOVC reports can be customized to include a number of statistics including: Times Cast, Undervotes, Overvotes, Total Votes, Counting Group breakdown, Write-ins, Percentage by ballots cast or by votes cast, sorting of candidates by global order or by votes received. Filters by contest, precincts or districts can be applied. Reports can be exported in a variety of formats including .pdf, .xls and .doc and printed on standard letter size paper.
	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 Results Tally & Reporting module of the Democracy Suite EMS allows the user to produce official reports of countywide vote totals for State offices and proposals in a form prescribed by the State, as well as data exports using the Michigan Standard Results File Format (MSRFF). Customized report transformations can be created and added to the application to comply with future State format requirements.

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Exhibit A, Attachment 1.2 Voting System ELECTION MANAGEMENT SYSTEM (EMS) SOFTWARE Technical 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.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		The Election Event Designer and Results Tally & Reporting modules of the Democracy Suite EMS are capable of generating pre- and post-election reports 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. Please see Appendix 2, Sample Ballots & Reports for sample reports.
	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		The Results Tally & Reporting module of the Democracy Suite EMS is 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.	Y		The Results Tally & Reporting module of the Democracy Suite EMS is 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).	Y		The Results Tally & Reporting module of the Democracy Suite EMS is capable of producing reports that include user customizable report headers (election type, date of election, county name, jurisdiction name, date/time of report, results status).
	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		The Results Tally & Reporting module of the Democracy Suite EMS is capable of producing a report that includes the jurisdiction, precinct number and the type of election results (Total, Precinct, Absentee, Provisional).
	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);	Y		The Results Tally & Reporting module of the Democracy Suite EMS Democracy Suite is capable of producing reports, including but not limited to the data elements listed in 1.2.E.13.a-u (except for sub-requirements g. and r. as indicated in column E)
		b. the names of each candidate in each contest or race;	Y		
		c. the party affiliation of each candidate in each contest or race;	Y		
		d. the number of choices for each contest or question (e.g., vote for 1);	Y		

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Exhibit A, Attachment 1.2 Voting System ELECTION MANAGEMENT SYSTEM (EMS) SOFTWARE Technical Requirements					
	Category / Requirement #	Requirement	Bidder Complies (Y/N)	Bidder Complies - with Modifi-cations	Please expand on your response in Column D or E.
		e. the vote totals for each candidate in each contest or race, by precinct, AVCB and combined total;	Y		
		f. the total votes for each contest;	Y		
		g. the winning selection for each contest, indicated by bolding or some other mark;		Y	
		h. the title and number of each question on the ballot (e.g., "County Question A, State Question 1");	Y		
		i. the possible selections for each question or contest, (e.g., "For", "Against", "Yes", "No" or a blank);	Y		
		j. the total number of precincts for the election;	Y		
		k. the percent of reporting precincts versus the total number of precincts;	Y		
		l. the total number of registered voters;	Y		
		m. the total number of registered voters that voted in the election;	Y		
		n. the total percent of voter turnout;	Y		
		o. the number of overvotes in each contest or race;	Y		
		p. the number of undervotes in each contest or race;	Y		
		q. the total number of votes for all write-in candidates;	Y		
		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	
		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		
		t. the capability for the reporting of ballots cast in split precincts;	Y		
		u. OPTIONAL REQUIREMENT: the EMS shall be capable of adding the names of certified write-in candidates to the EMS and reports.	Y		

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Exhibit A, Attachment 1.2 Voting System ELECTION MANAGEMENT SYSTEM (EMS) SOFTWARE Technical 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.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	Currently, the Results Tally & Reporting module of the Democracy Suite EMS does not prevent the printing of summary reports before the sequence of events required for closing of the polls are completed. However, no data is present in the application until polls are closed. Essentially, the summary reports that could potentially be printed would show zero results.
	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		The Cards Cast report in the Results Tally & Reporting module of the Democracy Suite EMS shows the number of ballots cast by precinct or district and the turnout data, without revealing any 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.	Y		The Democracy Suite EMS provides an audit log stored on the memory device that records all pre-Election, Election Day and post-election actions performed; the audit log is stored in the database 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.	Y		The Results Tally & Reporting module of the Democracy Suite EMS loads the log files from each tabulator and stores them in the election database. The user may generate a report based on the individual tabulator's log file, which contains the tabulator model number, tabulator serial number and firmware and software versions in use.
	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		There are three types of EMS system logs, which are system errors, warnings and information. Each Democracy Suite EMS application records its own set of log files. These logs account for activities that are not specific to a particular election database. Some of this information is also logged in the Windows Event Viewer.
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		Please see edits to State Term and Conditions provided in Exhibit D. The sample Software Licence Agreement is also provided as part of this RFP response submission (Exhibit A - 9.5 Sample Software License Agreement).

RFP No. 007116B0007029 Dominion Functional Requirements					
Exhibit A, Attachment 1.3 Voting System - ABSENT VOTER (AV) PROCESSING Technical 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.**	Y		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. Please refer to the responses 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		AV ballots are 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	Y		The ImageCast Central with Canon DR-G1130 processes ballots at a rate of 15 inches per second, ~80 11-inch ballots per minute, ~4,900 11-inch ballots per hour. The ImageCast Central with Canon DR-M160II processes ballots at a rate of 11 inches per second, ~60 11-inch ballots per minute, ~3,600 11-inch ballots per hour. The ImageCast Precinct tabulator processes ballots at a rate of 1.1 inches per second, 6 11-inch ballots per minute, 360 11-inch ballots per hour (processing rate with image capture disabled is 1.4 inches per second, 455 ballots per hour). All ImageCast tabulators process ballots at the same speed regardless of folding method.
		b. Half-folded ballots	Y		
		c. Tri-folded ballots	Y		
		d. Z-folded ballots	Y		
		e. Letter folded ballots of various supported lengths	Y		

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Exhibit A, Attachment 1.3 Voting System - ABSENT VOTER (AV) PROCESSING Technical Requirements					
	Category / Requirement #	**Requirement**	**Bidder Complies (Y/N)**	**Bidder Complies - with Modifications**	**Please expand on your response in Column D or E.**
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.	Y		Dominion is proposing the ImageCast Central optical scan tabulator for use as a high-speed tabulator to process AV ballots. There are two possible scanner options - the Canon DR-G1130 scanner and the smaller Canon DR-M160II. The ImageCast Central is described in detail - including specifications, components, features and functionality in Appendix 1- Voting System Description.
	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.	Y		Dominion's ImageCast Central uses industry-leading COTS hardware. Specifically: Workstation: Dell Optiplex 24 7440 All-in-One workstation Scanner: Canon DR-G1130 scanner or the Canon DR-M160II scanner
	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		The proposed high-speed AVCB tabulator system, the ImageCast Central, is different from the Election Day tabulator system. However, all tabulators - ImageCast Precinct, ImageCast X and ImageCast Central - are programmed by the same Democracy Suite EMS Election Event Designer software, and do not require separate databases for programming or results reporting. The ImageCast Central system includes Dominion's ImageCast Central software application as well as Kofax imaging software. Dominion has provided information regarding the hardware requirements for the ImageCast Central system in Attachement 1.1. Exhibit C - Pricing provides details regardings the costs and components.
	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		ImageCast Cenral can process up to 30,000 ballot styles per election project.

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Exhibit A, Attachment 1.3 Voting System - ABSENT VOTER (AV) PROCESSING Technical Requirements					
	Category / Requirement #	**Requirement**	**Bidder Complies (Y/N)**	**Bidder Complies - with Modifications**	**Please expand on your response in Column D or E.**
	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).	Y		Please see response 1.3.A.3 for comparative detail of the processing speed of all proposed ImageCast tabulators (Central and Precinct). The replace rate for precinct tabulators vs. the high-speed tabulator is as follows: ImageCast Precinct Replace Rate: ImageCast Central with DR-G1130: 14 ICP ImageCast Central with DR-M160II: 10 ICP
	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		The ImageCast Central Canon DR-G1130 and DR-M160II each have one motorized input hopper and one output hopper. The output hopper cannot be assigned a specific ballot category; however, the ImageCast Central can be configured to stop scanning on various types of voting errors and conditions, such as blank ballots, overvotes, undervotes, write-ins, and ambiguous marks. An authorized user will need to manually remove the ballot. The ballot can either be reproduced and rescanned, or otherwise physically adjudicated.

RFP No. 007116B0007029 Dominion Functional Requirements					
Exhibit A, Attachment 1.4 Voting System ACCESSIBLE VOTING SYSTEM COMPONENT Technical 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		Both precinct optical scan tabulators- ImageCast Precinct and the ImageCast X- offer integrated accessible voting capabilities. Therefore, 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.
	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 proposed accessible voting system options included in this proposal allow disabled voters to vote independently, privately, and in the same manner as other voters in a way that meets all other requirements listed in the RFP. These options are: • ImageCast Precinct (Dominion ICP 321C) • ImageCast X BMD (Dominion ICX + Accessories: Audio Tactile Interface, headphones). A complete description of the accessible voting system components is provided in Appendix 1- Voting System Description.
	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		Please refer to Exhibit C Pricing Voting System Cost Table 4.
	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 accessible voting component is capable of utilizing the maximum size ballot in use with the base voting system (22 inches).
	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 accessible voting system component is easily portable and transportable without damage to internal circuitry. Please refer to 1.4.A.7 for height and weight specifications and a complete description of the accessible voting system components in Appendix 1- Voting System Description.

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	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 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).
	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		Please refer to response 1.1.A.11 for weight and dimensions of voting system components.
	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 proposed accessible voting system options accomodate visually impaired voters by presenting the ballot in audio format during an accessible voting session. The Democracy Suite Election Event Designer module uses a third-party text-to-audio synthesizer to automatically generate audio ballots for the ImageCast X Ballot Marking Device. Users also have the option to import human-recorded audio, with or without the help of the Audio Studio application, or fine tune pronunciation of the synthesized audio using the third-party application. The system outputs audio ballots and election definition files required to program the ImageCast X.
	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 ImageCast X display can be magnified using the zoom buttons.There are three different zoom levels in order to provide an enlarged ballot for voters with visual impairments. In addition to the magnification features, the contrast button allows the voter to display the screen image in high contrast (high contrast is a figure-to-ground ambient contrast ratio for text and informational graphics of at least 6:1). Every voter-configurable option is automatically reset to its default value with the initiation of each new voting session. Please see Appendix 1, Voting System Description for screenshots of these features.
	1.4.A.10	The proposed accessible voting system shall allow for high-contrast visual display.	Y		Please refer to answer 1.4.A.9.
	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	The ImageCast X supports the same alternative (non-English) language: Spanish. Currently Democracy Suite does not support 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.	Y		The ImageCast X accommodates voters unable to indicate a voting choice by using a wide range of optional personal assistive devices, such as: binary paddles, sip and puff device, in addition to Dominion's Audio Tactile Interface (ATI) for audio/braille.
	1.4.A.13	The accessible voting system shall provide audio and visual instruction on the use of the system.	Y		The ImageCast X provides audio and/or visual instruction on the use of the system at the beginning of the voting session.

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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 ImageCast X presents 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.	Y		The ImageCast X provides a method for recording write-in votes either using an onscreen keyboard or through the audio and tactile AVS devices.
	1.4.A.16	The accessible voting system shall prohibit crossover votes on a partisan primary ballot.	Y		The ImageCast X prohibits 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.	Y		The ImageCast X prohibits overvotes 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.	Y		The ImageCast X allows for an option to skip races and/or sections (partisan/nonpartisan) of the ballot.
	1.4.A.19	The accessible voting system shall allow option to "skip to the end" to cast a vote at any point.	Y		The ImageCast X allows the option to skip to the end of the ballot and the voter is prompted to review their ballot before printing.
	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 ImageCast X issues a warning of undervotes during the final review of votes. The ImageCast X allows the user to print their verifiable choice summary ballot with undervoted contests. The ImageCast Precinct allows a voter to cast the ballot if undervoted races are included.
	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		Once the ballot is cast, the ImageCast Precinct confirms to the voter that the ballot has been successfully cast.
	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		Votes cast using the accessible voting system are 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.	Y		No voter identifying information is printed on the ballot produced by the ImageCast X.
	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		The ImageCast X provides a method by which a voter can verify his/her choices prior to the ballot being marked, either by audio and/or visual display.
B.	**Accessible System - Use of Touch-Screen Interface**				

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	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 ImageCast X is a COTS based device which provides voters with a touchscreen interface for accessible voting.
	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 ImageCast X is not tethered to the ImageCast Precinct tabulator. The accessible voting system prints ballots which are then scanned on the precinct tabulator. With both the ImageCast X and ImageCast Precinct, the precinct tabulator is an integral part of the system, and all paper ballots are scanned in the same way on the same unit. The ImageCast X operates independently from the ImageCast Precinct tabulator and therefore does not require any additional physical connections.
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 includes the ImageCast X that uses a paper ballot. Details regarding these proposed options are provided in Appendix 1- Voting System Description.
	1.4.C.1.a	Scenario a: Proposed accessible voting system utilizes the same paper ballot as the precinct ballot.	N/A		N/A
		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.	N/A		N/A
		a.ii. (scenario a.): the accessible system shall allow for omni-directional feed of the ballot.	N/A		N/A

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		a.iii. (scenario a): Proposals shall indicate whether manual adjustment is required to accommodate multiple ballot lengths.	N/A		N/A
	1.4.C.1.b	Scenario b: Proposed accessible voting system prints an entire (marked) optical scan ballot to be tabulated.	N/A		N/A
		b.i. (scenario b.): OPTIONAL: Proposals shall indicate whether the accessible voting system includes a self-contained printer (requiring no additional system equipment).	N/A		N/A
		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.	N/A		N/A
	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 ImageCast X creates a verifiable choice summary ballot on an 8.5"x11" sheet of paper that can be reviewed by the voter prior to being inserted into the tabulator for scanning and tabulation.
		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 ImageCast Precinct tabulator has the ability to scan and tabulate votes from the verifiable choice summary ballot and combine vote totals into the overall vote totals in the precinct.
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.	Y		The ImageCast X has self-diagnostics for all major components. Detailed reports will be available upon certification.

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	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 ImageCast X has an audit log that includes identification of the election file being used, a record of all options entered by the operator (election official), as well as the 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.	Y		The COTS tablets used with the ImageCast X maintain the appropriate touchscreen calibration and do not require any maintenance. In the unlikely event that a tablet's touchscreen falls out of an acceptably calibrated state, it would be considered defective and should be serviced by an authorized third-party technician or replaced.
	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 ImageCast Precinct and ImageCast X and accessible voting components are durable, rugged units, designed to be able to withstand 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.	Y		The ImageCast Precinct and ImageCast X and accessible voting components are 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.	Y		Dominion offers an optional protective case that encloses the ImageCast X and protects it from water damage while in storage and during transport. For excesive humid conditions, we can also provide optional silica gel packets.
	1.4.D.7	OPTIONAL REQUIREMENT: Bidders shall document and explain any available storage-friendly options for the accessible voting system components.	Y		The ImageCast X transport case has a compartment to store accessible voting system components (such as the headphones, tactile devices, etc.)
	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		All accessible voting components that require a battery back-up use the same battery back-up as used by the accessible voting system (a backup UPS). The back-up UPS allows for the continued operation in the event of a power failure. The recommended UPS provides a minimum of 2 hours of operation of the system. Larger UPS devices may be deployed to extend the operation and standby time.

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	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		There is no need for a specific type of table or base for the ImageCast X. It is recommended that an optional privacy booth be used with the accessible voting component of the ImageCast X.
	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		Dominion recommends the use of ADA-compliant voting booths for the ImageCast X to preserve voter privacy during vote selection and ballot marking. Additionally, voters listening to an audio-only voting session can disable the display for additional privacy.