RFP No. 007115B0005741 Hart					
Exhibit A, Attachment 1.1 Voting System HARDWARE 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.	**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		**Yes.** Only Hart delivers truly modern, tested technology that meets Michigan's needs today while enabling adaptability for the future. Verity is designed to be easy, versatile and trustworthy. Our proposed turnkey Verity solution for the State of Michigan fulfills the functionality of an optical scan system, using superior digital scan technology. Hart introduced digital technology to the elections arena more than a decade ago. Today, Verity is the only second-generation digital scanning system in the marketplace. It incorporates best practices gained over the years we have worked with the technology to support successful elections across the nation. Verity includes accessible ballot marking devices and paper ballot scanning at polling places, and high-speed paper ballot scanning at the central elections office and/or Absent Voter Counting Boards (AVCBs). In addition, it includes electronic transmission of Cast Vote Records directly from the precinct tabulator to the central elections office, and central count tabulation and reporting software. For additional information about the proposed Verity for Michigan's counties, please see **Attachment 1.1 Hardware – Supplement, pages A1.1-2 - 11.**
	1.1.A.2	The proposed voting system hardware shall be new. Refurbished or used equipment will not be	Y		**Yes.** All hardware will be new.
	1.1.A.3	Replacement parts shall be readily available.	Y		**Yes.** Hart maintains a ready supply of all replacement parts. In addition, because Verity Voting is the first all-new platform to achieve EAC certification in several years, the supply chain for Verity parts is robust and current.
	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		**Yes.** All voters, including those voting on the accessible ballot marking device, receive second-chance notifications that allow them to correct any ballot mismarks before the ballot is cast. If ballots contain any marks that require voter attention (such as undervotes or overvotes), Verity Scan uses a combination of large-font, plain-language instructions, large graphic images, and unique audible sounds to indicate ballots that require voter attention This gives voters a chance to make corrections before final votes are cast. For detailed information about this requirement, and screenshots, please see **Attachment 1.1 Hardware – Supplement, pages A1.1-12 -13.**
	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	Y		**Yes.** Please see our response to requirement **1.1.A.4,** above.

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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		**Yes.** Verity Scan complies with this requirement. Scan includes an onboard thermal reporting printer. For a photograph, please see **Attachment 1.1 Hardware – Supplement**.
	1.1.A.7	The system shall permit recounts to be conducted pursuant to the Michigan Election Law (MEL).	Y		**Yes.** Recount Mode on Verity Scan was designed to accommodate recount laws like those that exist in the State of Michigan. In accordance with Michigan Election Law Section 168.871, Verity Scan recount functionality allows users to specifically count only the office or ballot question subject to the recount. Additionally, it gives the user control over additional settings that support workflow changes needed during a recount. This includes the ability to change second-chance voting rules and report behaviors, so that ballots with undervotes, overvotes, invalid votes, blank ballots, and marked write-ins can also be subject to visual inspection by recount authorities, if desired. We look forward to working closely with the State of Michigan to make additional optimizations or modifications to current procedures based on the capabilities of the Verity system, particularly if greater efficiencies can be realized, compared to the rules devised for the State's current voting system.
	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		**Yes.** Verity Scan uses a combination of large-font, plain-language instructions, large graphic images, and unique audible sounds to indicate ballots that require voter attention. All voters receive second-chance notifications that allow them to correct any ballot mismarks before the ballot is cast. Voter messages follow a disciplined, plain-language philosophy and are presented through friendly, intuitive, highly usable Design for Democracy-based interfaces. For a screenshot, please see **Attachment 1.1 Hardware – Supplement, page A1.1-14.**
	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		**Yes.** In Verity's data management and election definition software applications, precinct splits are entered as separate precincts on individual line items. (For example, if Precinct 101 is split into A and B splits, 101-A and 101-B are entered as separate precincts.) Then the appropriate contests are assigned to each split, respectively. Paper and electronic formats of the ballot include the precinct label and the split identifier, so voters are always given access only to the contests that are appropriate for their ballot style. Device settings which are configured before the election allow election administrators to specify whether totals are consolidated, "rolled up" into the parent precinct, or reported down to the separate precinct split level.
	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	Y		**Yes.** Verity Scan and Verity Touch Writer both comply with this requirement.

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	1.1.A.11	The system shall be easily portable and be transportable without damage to internal circuitry. Bidders shall provide **height and weight specifications of all proposed components in the bid response**, as well as any features related to portability and ease of transport.	Y		**Yes.** All Verity hardware components are compact and portable – easy to transport in ordinary cars. Verity Scan and Verity Touch Writer include an integrated durable, convenient carrying/storage case. Corrugated plastic cases are also available for transportation and storage, as well as durable canvas bags for the voting booth and ballot box. Height and weight specifications are as follows (heights are for each unit when stored): **Verity Scan (with battery)** Height: 7.7 inches Weight: 29.1 pounds **Ballot Box (with bag)** Height: 28 inches Weight: 31.8 pounds **Touch Writer (with battery)** Height: 7.7 inches Weight: 28.5 pounds **Accessible Voting Booth (with bag)** Height: 36 inches Weight 17.1 pounds **Verity Ballot Printer (Okidata B43)** Height: 12 inches Weight: 31 pounds For photos, please see **Attachment 1.1 Hardware – Supplement, page A1.1-15.**
	1.1.A.12	The system shall allow for omni-directional feed of the ballot and be fully capable of counting non-	Y		**Yes.** Verity Scan accepts ballots in a portrait orientation inserted face up, face down, header first, or footer first.
	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		**Yes.** Verity Scan complies with this requirement. Each time a voter's ballot is successfully scanned and a CVR is created, Verity Scan displays the count at the bottom of the screen. For a screenshot, please see **Attachment 1.1 Hardware – Supplement, page A1.1-17.**

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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		**Yes.** Verity Scan scans two-sided ballots and multiple-page ballots while recording the event as one ballot cast. To preserve the security and multi-sheet feeding protection capabilities of the system, ballots that have content on only one side include security barcodes on the blank side of the sheet. In addition to the public counter that indicates the number of ballots cast for the election on the Scan device, Scan provides a sheet counter that indicates the number of sheets that have been scanned on the device for that election. The public counter increments upon tabulation of the first sheet of a multi-sheet ballot.
	1.1.A.15	The system shall provide an auditory and visual notification to the voter that the ballot has been cast.	Y		**Yes.** Verity Scan complies with this requirement by displaying a visual message and auditory tone to notify the voter that the ballot has been cast. For a screenshot, please see **Attachment 1.1 Hardware – Supplement, page A1.1-18.**
	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	**Yes, with modifications**. Verity Scan displays messages and instructions in plain language. The thoroughly modern user interface is based on EAC-commissioned Design for Democracy templates, and incorporates what we've learned from working with voters and elections staff across the nation over many years. Messages and instructions are not customizable due to the system's certified configuration status. We are open to working with the State regarding this issue in the future.
	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		**Yes.** Hart's proposed Verity Scan with Relay option provides electronic transmission of results from precinct scanning tabulators to the central elections office via cellular modem. VSTL testing was recently completed for this solution, finalized for Michigan with input from key county and local election officials. The solution provides for an automated process to be launched with Close of Polls and requires no technical engagement by poll workers. Detailed information is included in our response to requirement **1.1.A.1**; please see **Attachment 1.1 Hardware – Supplement, pages A1.1-4 - 7.**
	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		**Yes.** Verity Scan reads both sides of the ballot at once, and its "tested to" ballot processing speed is a minimum of ten 8-1/2 x 11-inch sheets per minute; however, real-world processing is faster. Processing varies according to elements such as the number of write-in votes and images that must be saved.
	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		**Yes.** The printed results tape produced by Verity Scan can be customized in Verity Build. Scan can print as many copies of the results as needed. For more information, please see **Attachment 1.1 Hardware – Supplement, pages A1.1-19 - 20.**

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	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	Y		**Yes.** Please see **Exhibit C, Pricing.**
	1.1.A.21	Proposals shall document the type of printer utilized by the proposed tabulator (external or	Y		**Yes.** The Verity Scan tabulator uses an integrated 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		**Yes.** Verity is Hart's second-generation digital scanning solution. As the only such solution in the marketplace, the system embodies best practices gained over the more than 10 years Hart has worked with this technology. We have consciously chosen to design our scanning logic without a customizable marginal mark threshold. As the leader in digital scanning technology since 2003, Hart InterCivic has developed a high degree of confidence in our system's documented threshold, and our customers appreciate that this threshold is not customizable, because it allows for consistent performance. In our experience, customers do not want the risk of an election being called into question because of inconsistencies that create the possibility of contention about voter intent. All settings must be consistent across the election to ensure fairness and transparency. Verity Scan is capable of recognizing any mark of at least 2 square millimeters within a configured mark-recognition area on the ballot. As part of the election definition process in Verity Build, election managers set parameters that will trigger notification that adjudication is required (write-ins, mismarks, overvotes, undervotes, blanks).

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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		**Yes.** In addition to printing write-in images on the device reporting tape, write-in images can also be consolidated and managed in Verity Count tabulation and reporting software. When the vDrives containing write-in images are loaded into Verity Count tabulation and reporting software, users are informed of the number of write-in votes that require review and adjudication. The images are listed as Unresolved and are associated with specific contest titles. Users then have the ability to select from the available unresolved items and review each image. Based on the handwritten entry (or blank line), each write-in can be accepted and included in the tabulated totals by assigning it to a specific candidate name, or it can be rejected. When Verity Scan detects a marked target area for a write-in selection on a paper ballot, the system automatically stores an image of the small cross-section of the ballot that includes the target area and the line on which voters can write their response. Images can be printed in the polling place, from the same reporting printing tape that is used for election results. On the printed tape, write-in images are sorted by contest within precincts, and the Write-In report includes an area where election officials can indicate whether the submitted write-in is accepted and included in totals, or not. Furthermore, these images are stored on the portable flash memory drives (vDrives) that also store cast vote records and audit logs.
	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		**Yes.** Verity Scan complies with this requirement. Cast vote records are stored in random order. They are assigned a random file name, and the modified/created timestamps are all set to be identical. It is impossible to reconstruct voting order. Cast vote records are digitally signed. If saved on the vDrive, ballot images are stored in PNG format. When a voter casts a ballot, the information is recorded in three physically separate locations: internal memory (a compact flash card that is housed inside the device, and which is not customer accessible), paper ballot, and on the vDrive removable memory device. The different handling and usage profiles of these data storage components yield different risk profiles. These diverse risk profiles significantly increase the difficulty of compromising vote records in all three locations. Verity Scan has the memory capacity to store 9,999 ballots.

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	1.1.A.25	The tabulator shall be capable of withstanding transport conditions that may include extremely bumpy roads, exposure to extreme heat, cold, humidity and dust without incurring damage during transportation or becoming inoperable as a result of such transport.	Y		**Yes.** Verity Scan includes a compact, rugged, and durable integrated storage case, for secure transportation and storage. And as part of its EAC federal certification testing campaign, the Verity Voting system underwent rigorous power and temperature variation testing, in accordance with Volume 2 of the VVSG 2005 standard. Operational Ballot Logic and Accuracy testing is performed for 95 hours straight across power range of 105VAC to 129VAC, nominal 117VAC, and a temperature 50F to 95F. Verity Scan and all other Verity devices have been tested and comply with a series of environmental stress standards defined by the U.S. Military. For details, please see **Attachment 1.1 Hardware – Supplement, pages A1.1-22 - 24.**
	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	Y		**Yes.** Verity Scan and all other Verity devices have been tested and comply with a series of environmental stress standards defined by the US Military. The full list is included in the table in our response to requirement **1.1.A.25**.
	1.1.A.27	Bidders shall document and explain any available special features of the proposed tabulator that demonstrates water resistance features.	Y		**Yes.** Verity Scan is designed to withstand real-world conditions. As with many electronic devices, however, Verity Scan is not water resistant and should be protected from water and humidity.
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**	Y		**Yes.** The Verity Voting system meets this requirement.

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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		**Yes**. Verity ballot templates, which are based on EAC/AIGA Design for Democracy templates and recommendations from the Brennan Center for Justice, are designed for superior usability and accurate recording of voter intent. • The Verity Central high-speed scanning solution reads paper ballots of the following sizes: - 8 ½" x 11" (letter) - 8 ½" x 14" (legal) - 8 ½" x 17" (super legal) - 11" x 17" (ledger) • Ballots can include 1, 2, 3 or 4 columns. • Verity Scan can accept ballots in portrait orientation (not landscape orientation). • Ballot templates support use of grayscale and color images, which can also be used to customize headers and shading. • Vote targets appear to the left of candidate names or proposition choices. • Verity provides flexible design capabilities and a high degree of user control of specific ballot elements (including order on the ballot, forced column or page breaks, and applicability to paper vs. electronic ballot designs). Verity also enables creation of front and back designs that can be independent of each other. • Within limitations in keeping with best practices as outlined by the EAC/AIGA Design for Democracy initiative. Verity supports a single font style on the ballot. Font sizes, however, can be adjusted without limitation other than the natural limits imposed by the physical size of the ballot. And if a separate font style is absolutely needed, this can be achieved through an image on the ballot.

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	1.1.B.3	The proposed system shall support a scalable ballot that ranges, at a minimum, from 8.5" x 11" to 8.5" x 17". Proposals shall specify the range of ballot sizes the proposed system supports, as well as the minimum/maximum number of columns, races/proposals and candidate positions that can be placed on a ballot.	Y		**Yes.** The Verity Central high-speed scanning solution includes the following capabilities: • Reads paper ballots of the following sizes: - 8 ½" x 11" (letter) - 8 ½" x 14" (legal) - 8 ½" x 17" (super legal) - 11" x 17" (ledger) • Ballots can include 1, 2, 3 or 4 columns. • Supports a maximum of 200 contests and propositions, combined. • Supports a maximum of 600 total voting positions.
	1.1.B.4	The proposed system shall support ballot layouts that allow for the ballot to be one(1), two (2), three	Y		**Yes**. Verity complies with this requirement.
	1.1.B.5	The proposed system must support ballot layouts in either portrait or landscape orientation.	N		**No.** Verity Scan and Verity Central scanners accept only portrait-format ballots. However, Verity Data offers a wide variety of templates – including templates for creating ballots with one, two, three, or four columns. Verity's templates offer greater flexibility in ballot design than is possible with other vendors' solutions. We designed Verity Data for adaptability that will provide Michigan the flexibility to create ballots for every election configuration and to adapt to changing requirements over time.

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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.	Y		**Yes.** Hart has a certified printer program that allows us to manage ballot print quality. We recommend Hart Official Ballot Paper, and we share specifications for that paper so that customers can use certified Hart printers either with this official stock or with paper that meets our paper's specifications. PSI is Michigan's Hart-certified printer. Ballot production specifications follow: • 28#/70# bond paper • Virgin wood fiber with no recycled content • Finish: Smooth Xerography • Sheffield: 100-120 • Brightness: 91-96 • Florescent level: 4 percent • Moisture content: 4.5 percent • Packaging: Moisture resistant ream wrap • Tolerance for trim and squareness: +/- 0.025 inches • Ink: Any industry-standard black toner. Hart certified ballot printers are usually professional print shops with production-level equipment. These printers must complete and pass an annual Hart ballot printing test using Hart's exclusive official ballot paper for ballot production. The testing Hart performs as part of the ballot printer certification program includes ballot quality assurance testing, paper analysis, and ballot scanning and tabulation on the appropriate voting equipment. Hart provides the print shop with quality assurance guidelines and tools.
	1.1.B.7	OPTIONAL REQUIREMENT: Proposals shall indicate whether the proposed system offers an optional *Ballot on Demand* (BOD) system; functionality that allows for designated precinct ballots to be printed at the time of issuance to the voter, and a system that allows for the issuance and processing of numerous ballot styles in a single jurisdiction via a single BOD system.	Y		**Yes.** The proposed system does offer an optional on-demand ballot printing system. This component is currently in final development with a target date of May 2016 for EAC certification. Verity Print is an on-demand ballot printer designed on the same compact platform shared by other Verity devices. Verity Print will use an attached COTS printer to print full ballots from blank stock. Verity Print is ideally suited for central office use or for convenience voting locations, where there is a need to manage many ballot styles electronically, with the correct style, on an as-needed basis. Ballots printed from Verity Print can be processed by Verity Scan or Verity Central. The proposed system currently includes Verity Touch Writer for accessible ballot marking. This device may also print blank ballots one at a time and can be configured to host numerous ballot styles in a single jurisdiction or multiple jurisdictions.
C.	**Memory Device**				

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	1.1.C.1	Proposals shall describe and detail the proposed memory device utilized by the proposed system. The preferred solution is a commercially-available (COTS) memory device. The preferred memory device would not include batteries or removable parts. Bid responses must indicate make, model, storage capacity and security features of the memory device proposed, and any special requirements related to the use and purchase of the proposed memory device. The proposed memory device must be included and separately listed in **Exhibit C, Pricing** (including component costs for a single additional or replacement	Y		**Yes.** The Verity Voting system utilizes two types of memory devices that can be accessed by the user: • Disk drive in each workstation • vDrives, which are USB flash drives that store election configuration information and the results of an election These memory devices, like all components of the Verity Voting system, are configured by Hart as part of the integrated, holistically tuned voting system and must be obtained from Hart – not from any other source. For detailed information about this requirement, please see **Attachment 1.1 Hardware – Supplement, page A.1.1-29.**
	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	Y		**Yes.** All election configuration information created in Verity Build, including multiple ballot styles for multiple precincts and split precincts, is written to a flash media vDrive,. This method allows the shared election definition to be transferred to Verity Scan and other Verity Voting devices and applications. Each vDrive has a capacity of 1TB and can contain an unlimited number of ballot styles.
	1.1.C.3	Proposals shall describe any capabilities for processing additional ballots after the polls have been closed.	Y		**Yes.** Verity is flexible, with several easy methods available for processing ballots after the polls close: • Simply insert a fresh vDrive into the same precinct tabulator that was originally used. It is very easy to “re-enable” the device. Just use a new memory device and scan more ballots. (For photographs, see **Attachment 1.1 Hardware - Supplement.**) • Suspend the polls and take the device to the AVCB to continue processing. • Paper ballots from that same election can be scanned centrally with Verity Central. • Ballots can be scanned on a different Verity Scan device configured for the same polling place as the original device. • Unprocessed ballots can be manually recorded in Verity Count, using the Manual Vote Recording feature.

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	1.1.C.4	Proposals shall describe any memory device security features (e.g., encryption, security seals or other features) which are available to secure data stored on the device.	Y		**Yes.** Verity Voting devices have a variety of physical access controls and safeguards to ensure that sensitive equipment is accessed only by authorized personnel – not by voters. These access controls include keyed locks, features to support the use of tamper-evident seals, port protection, and non-standard electrical wiring in strategic areas. For detailed information about this requirement, please see **Attachment 1.1 Hardware – Supplement, pages A1.1-31 - 33.**
	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	Y		**Yes.** Please see our response to item **1.1.C.4**.
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		**Yes.** The dimensions of the ballot box and bag (when stored) are 28”H x 25”W x 6”D. It weighs 27 pounds, and the volume is 2.4 cubic feet. The ballot box accommodates up to 4,000 sheets of 8 ½ x 17 inch paper. The ballot box has a separate, secure “emergency” storage compartment to accept voted ballots that cannot be scanned at that time (i.e., due to loss of power, etc.). Access to the ballot box’s emergency storage compartment is protected by a lock on the ballot box’s rear maintenance panel, and the box has two places for tamper-evident seals. The ballot box’s secure emergency ballot compartment accommodates up to 1,000 8-½ x 17 inch ballots.
	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	Y		**Yes.** The Verity ballot box secures the voted paper ballots in locked and sealable compartments. For details, please see **Attachment 1.1 Hardware – Supplement, page A1.1-35.**
	1.1.D.3	The ballot box shall allow poll workers the ability to open, re-lock and reseal secure storage	Y		**Yes.** Both the Ballot Box main door and the emergency ballot door can be locked and sealed.
	1.1.D.4	The ballot box shall include a separate compartment for storage of voted ballots while ballot counter is inoperable.	Y		**Yes.** The ballot box has a separate, secure “emergency” storage compartment to accept voted ballots that cannot be scanned at that time (due to power failure, etc.). Access to the ballot box’s emergency storage compartment is protected by a lock on the ballot box’s rear maintenance panel, and the box has two places for tamper-evident seals. The ballot box’s secure emergency ballot compartment accommodates up to 1,000 8-½” x 17” ballots.

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	1.1.D.5	Proposals shall describe any portability features of the ballot box that allow for easy transport.	Y		**Yes.** To assist users in transporting the ballot box and maneuvering it into position, Hart designed the ballot box to be thin and lightweight. Because the ballot box can be folded to just 6 inches thin during transport, and because it includes a carrying handle, the box can be placed into position relatively easily before the simple assembly process. In this way, easy placement of the ballot box is facilitated. Like all Verity Voting devices and accessories, the ballot box can also be easily transported in typical private vehicles driven by polling place officials. For a photograph, please see **Attachment 1.1 Hardware – Supplement, page A1.1-35.**
	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	Y		**Yes.** Because the ballot box is designed to be stored in a thin, flat position, it facilitates compact stacking, with a compressed, durable design that easily accommodates the rigors of typical storage and 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		**Yes.** The design of Verity ballot boxes is based on our understanding of the needs of elections staff and poll workers we have gained from years of experience implementing voting systems across the country. The ballot boxes are extremely durable, and as compact a size as possible – significantly smaller than other solutions currently available in the marketplace. Their compact size creates greater efficiencies and cost savings in storage and transportation, by reducing the need for warehouse and trucking space. It also allows more flexible deployment by poll workers, as Verity Voting devices were specifically designed to comfortably fit within the confines of typical private vehicles. These design considerations create a stark contrast that is immediately visible between Verity Voting devices and other alternatives. We also believe they significantly enhance usability.
	1.1.D.8	Bidders shall document and explain any available special features of the proposed ballot box that demonstrates water resistance features.	Y		**Yes.** The Verity Ballot Box is designed to withstand real-world election conditions and is primarily constructed of durable, water-resistant plastic. However, to preserve the mechanisms that allow it to be collapsible, the ballot box should be protected from direct contact with water.
	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		**Yes.** Designed to work seamlessly with the Verity Scan device, the Verity Ballot Box is secure, light-weight, and easy to deploy. Using an innovative folding design, the durable ballot box includes separate secure compartments for scanned and un-scanned ballots, and it folds to just 6 inches thin for easy transportation and storage. Because the digital Verity Scan captures and segregates marked write-in images electronically, a mechanical diverter is not needed in the secure ballot box.
E.	**COTS (Commercial Off the Shelf) options**				

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	Category / Requirement #	**Requirement**	**Bidder Complies (Y/N)**	**Bidder Complies - with Modifi-cations**	**Please expand on your response in Column D or E.**
	1.1.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	Y		**Yes.** The full list of COTS components is listed in **Exhibit C, Pricing**.
	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		**Yes.** All supplies and replacement parts are included in **Exhibit C, Pricing.** Hart will maintain an in-state repair depot at our Taylor, Michigan site. This location will have a ready supply of all replacement parts and will be linked to a central inventory management system in our Austin headquarters. It will allow us to expedite the service and support desired by Michigan counties and local jurisdictions.
	1.1.E.3	Bidders shall identify and describe in detail any plans under development for upgrades / enhancements to systems that further utilize	Y		**Yes.** As described in our response to question **1.1.B.7** above, a new release of the Verity Voting system is currently under development. This new release includes Verity Print, an on-demand ballot printer. Verity Print will use an attached commercial printer to print full ballots from blank stock.
	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	Y		**Yes.** Hart will comply with this requirement. Hart continuously leverages the availability of commercial component upgrades to take advantage of improvements offered by new versions. Verity's use of enterprise-grade commercial components makes the system reliable and cost-effective over the long term, while providing a look-and-feel that is familiar to users.
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		**Yes.** All Verity Voting system components comply with this requirement. As part of its EAC federal certification testing campaign, the Verity Voting system underwent rigorous power and temperature variation testing, in accordance with Volume 2 of the VVSG 2005 standard. Operational Ballot Logic and Accuracy testing is performed for 95 hours straight across power range of 105VAC to 129VAC, nominal 117VAC, and a temperature 50F to 95F. For more information, please see our response to requirement **1.1.A.25**.

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	1.1.F.2	Proposals shall detail features of the system that are designed to avoid ballot jams.	Y		**Yes.** Paper jams are rare with Verity Scan. Verity Scan incorporates a number of features to help prevent ballot jams, including: • Patented indicator landing lights inform the user when the system is ready for a ballot to be inserted. Lights blink red for “Do Not Present Ballot” and green for “Present Ballot.” These indicator lights keep the paper path clear, preventing ballot jams. • The system entryway guides the ballot into the scan head, greatly reducing the possibility for ballots to be presented in a misaligned way. If a user tries to present a crooked ballot, the scan head automatically sends the ballot back to the user. • The path for the exit of the scanned ballot into the ballot box is designed to prevent static buildup on ballots. Static buildup can cause ballot stock to stick to a surface during transit from the scanner into the ballot box, causing a jam. • No physical diverter that can cause jams. • Collapsible ballot box design means nothing is stored inside for transport – and nothing to block ballots as they enter the box. • Verity uses common paper stock for ballots – not card stock that is susceptible to moisture/humidity. For a photograph, please see **Attachment 1.1 Hardware – Supplement, page A1.1-38.**
	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		**Yes.** Yes. In the rare event of a jam, Verity Scan’s intuitive, plain-language screens indicate to the voter and poll worker exactly what happened. For screenshots, please see **Attachment 1.1 Hardware – Supplement, page A1.1-39.**
	1.1.F.4	In the event of a ballot jam, the ballot track shall be easy to clear.	Y		**Yes.** Verity Scan complies with this requirement. Paper Jams are easily resolved on Verity Scan. • If the ballot is still visible: - Pull the jammed ballot out of the scanner feed path. The device resets automatically and is ready to accept ballots. • If the ballot has jammed inside: 1. Check the display to confirm if the ballot was counted or not. 2. Open the back compartment door on the ballot box and physically clear the jam. or - Restart the machine. The rollers will reverse upon reboot to clear the scan path. Note: The rollers will be attempting to clear the scanner path for a few seconds after the jam has occurred and that may clear it without the need to restart.

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	1.1.F.5	Voting system components shall be transportable, without damage to internal circuitry	Y		**Yes.** All Verity Voting system components are easily transportable and include durable, protective containers. Verity Scan and Verity Touch Writer include compact and durable integrated storage cases for secure, easy transportation and storage. In addition to the convenient carrying/storage case that is an integrated part of the Scan design, corrugated plastic cases are available for transportation and storage. The rugged Verity Ballot Box folds to just 6 inches thin for easy transportation and storage. A sturdy canvas bag is also available for transporting and storing the Ballot Box. The lightweight Voting Booth includes a heavy canvas bag for protection during transport and storage.
	1.1.F.6	Voting system components shall provide a method for immediately detecting a malfunction.	Y		**Yes.** Verity Voting devices display plain language warnings for system-level alerts and/or malfunctions. Verity Voting devices do not lose or corrupt any recorded data in the event of a sudden power failure. If applicable, Verity Voting devices display the action to take in response to an error condition. If the error caught by the device cannot be resolved by user interaction, a message displays to contact the Hart Customer Support Center or return the hardware for repair as applicable.
	1.1.F.7	Voting system components shall prevent the loss of data during the generation of reports.	Y		**Yes.** The Verity Voting system includes features to ensure that data is protected at all times, including during generation of reports. For more information, please see **Attachment 1.1 Hardware – Supplement, pages A1.1-41 - 43.**
	1.1.F.8	The tabulator backup battery shall be continually charged while the unit is plugged in.	Y		**Yes.** While the Verity Scan or Verity Touch Writer operate on AC power (i.e. while the unit is plugged in), any installed charged batteries will not have any measurable depletion of power. Verity Scan includes an internal, rechargeable battery capable of providing backup power for a minimum of two hours. While one battery is in use, an extra battery can be recharging at a nearby electrical outlet, ensuring a reliable source of continuous power for the unit. This system can be more reliable than systems that depend on an integrated battery for power. In case of battery failure, poll workers can simply replace the battery – not the entire device. For more information, please see **Attachment 1.1 Hardware – Supplement, pages A1.1-43 - 44.**
	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		**Yes.** Verity Scan includes an internal, rechargeable battery capable of providing backup power for a minimum of two hours. The device includes a battery indicator icon that provides election judges or officials the status of the current battery state. The battery supports 500+ charging cycles. While the unit is plugged in, the battery does not discharge power.

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	1.1.F.10	The backup system shall remain in operation during power surges or other abnormal electrical occurrences.	Y		**Yes.** As part of the VVSG testing required for all polling place devices, Verity Touch Writer and Verity Scan devices underwent stringent testing to ensure protection from power surges or other abnormal activities, including: • During power surges. IEC 61000-4-4 Electrical Fast Transients (Burst) and IEC 61000-4-5 AC Surge (Lightning Surge) and IEC 61000-4-11 Electrical Power Disturbance (which includes power interruptions, brown-outs and over voltages) • Abnormal Electrical Occurrences. AC dropouts and interruptions à IEC 61000-4-11 Electrical Power Disturbances. For details, please see **Attachment 1.1 Hardware – Supplement, page A1.1-45.**
	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	Y		**Yes.** Verity Scan complies with these requirements.
	1.1.F.12	The proposed system shall have the capability of generating exportable backup files for offsite storage.	Y		**Yes.** The Verity Voting system supports archiving of the selected election, creating a backup of data from the database without causing a change of election state. The archive takes a full snapshot of data associated to the election ID from the database into a zipped file. This zipped archive includes all data in specific formats with content “as is” at the time of archiving. The archived data is system-based, and only capable of being restored to that specific system. (A “system” is all Verity components installed on a workstation.)
	1.1.F.13	The proposed system shall automatically adjust for changes due to Daylight Savings Time (DST).	N		**No.** Our customers appreciate the ability to change date/time settings at any time; without the limitation of depending on automatic changes. With Verity, setting the date/time is part of the election checklist. The manual method is more reliable for voting system equipment than the automatic method, which is dependent on changeable state and federal definitions of time zones.
G.	**Security**				

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	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		**Yes.** Verity Scan and Verity Touch Writer perform diagnostics at every boot and reports these diagnostics on the Power-On Self-Test Report that prints automatically at every boot. The voting device components run continuous background monitoring to ensure the integrity of the executable firmware. Firmware is stored inside the device in non-volatile memory along with a verification table that provides a cyclic redundancy check (CRC) code for each of several code sections. When code execution begins, an operating system task performs a CRC calculation of each code section. The system is halted with a failure message if the calculated CRC does not match the expected value from the verification table. This verification operation is performed continuously while the system is active and provides protection against hardware failures and attempts to corrupt the device application. Both the COTS scanners and the PCs run self-tests upon startup and report results in the event of an error. In addition to these startup tests, Central allows the user to run a test scan at any point in the process to validate that the scanner is functioning properly.
	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		**Yes.** Please see our response to requirement **1.1.A.24**.

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A.	**Election Management System (EMS) - General Requirements**	For each listed requirement, bidder response shall provide a detailed description demonstrating how the EMS fulfills each requirement. The proposed EMS shall:			
	1.2.A.1	Be designed to operate in a windows environment (at a minimum Window 7) and have the ability to adapt to upgrades in operating systems.	Y		**Yes.** Verity operates in a Windows 7 environment and was designed for adaptability. For an election solution to remain viable over its years of use, it must be able to adapt to accommodate changes. When we designed Verity, adaptability was one of its core values, and from the outset we consciously sought to architect a platform that will be extended in the future.
	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		**Yes.** From the outset, security has been a core design goal for Verity. Indeed, this is one of the greatest benefits of Verity's status as a uniquely modern voting system. Throughout the design, development and testing process for this all-new system, unlike older, first-generation voting technology, Hart has been able to leverage the newest, most up-to-date technologies and best practices for security. Hart will release security patches as deemed necessary, and will promptly provide written notification to the State. For more information, please see **Attachment 1.2 EMS Software – Supplement, pages A1.2-1 - 7**.
	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		**Yes.** Maintenance releases and software updates are provided per the License Agreement. Support for any software update is provided on a time and materials basis. Additionally, engineering support for software enhancements are on a time and materials basis. After a software update is available, the customer and Hart will determine the best timeframe (to avoid unnecessary impacts on upcoming elections) and distribution plan for the software update. (See **Exhibit A – 9.5 Software License Agreement.**) **Yes.** Bug fixes will be provided in a timely manner per the License Agreement. If true critical bug fixes are necessary, corrections will be available for the next election cycle, depending on certification timelines and impacts. **Yes.** Hart will meet this requirement. Security patches are rarely necessary since Verity employs white listing software that restricts the programs that can be executed.
	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		**Yes.** Hart will comply with this requirement. Please see **Exhibit A – 9.5 Software License Agreement.**

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	1.2.A.5	Allow system administrators to establish different levels of user permissions.	Y		**Yes.** Verity employs Role Based Access Control (RBAC). Access to voting system data, programs, and components is restricted so that they are only accessible to authorized personnel. Authentication is internal to Verity. User accounts and passwords are managed by Verity and are set by Verity system administrators. Authorization to access voting system components and to perform specific operations is role-based; each user has a role based on the level of access they need.
	1.2.A.6	Permit routine users access to the application without requiring administrative privileges on the PC operating system.	Y		**Yes.** Authorization to access voting system components and to perform specific operations is role-based, and account management is governed separately from typical software application functions. Each user has a role based on the level of access they need, enabling users to access components they need – and only those components.
	1.2.A.7	Require all users to have a unique login credentials (username and password).	Y		**Yes.** Each user is required to have a unique username and password.
	1.2.A.8	Secure the ballot layout and election configuration data to prevent unauthorized modification or the copying of such data.	Y		**Yes.** Ballot layout and election configuration data is secure from unauthorized modification or copying of such data. Verity implements an AAA security model separate from the host operating system and the State's infrastructure. This includes role-based access control (RBAC). To reduce network-based risks, Verity Build, Central, and Count are physically separated from the intranet and extranet. The Verity Data workstations can be additionally configured to be part of the State's access control infrastructure. All the data, including logs, cast vote records, and election definitions, are digitally signed using FIPS 140-2 SHA-2 NIST approved methods to ensure non-repudiation. For detailed information about this requirement, please see **Attachment 1.2 EMS Software – Supplement, pages A1.2-8 - 9.**
	1.2.A.9	Allow manual data entry for election setup and ballot layout.	Y		**Yes.** Jurisdiction- and election-specific data can be manually entered in Verity Data, and election settings can be manually entered in Verity Build.
	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		**Yes.** Ballot layout and election configuration data is secure from unauthorized modification. Verity employs digital signatures to protect election data, cast vote records, and audit logs from modification; digital signatures provide both tamper evidence and non-repudiation. The VVSG 2005 requires encryption only for transmission across telecommunication networks or wireless communication, and the Relay option for electronic transmission from Verity Scan complies with these standards.

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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		**Yes.** Hart components of the VVSG 2005-compliant Verity Voting system are as follows: • **Verity Data** – election data management software • **Verity Build** – election definition software • **Verity Central** – high-speed scanning software, for Absent Voter Counting Boards • **Verity Count** – tabulation and reporting software Verity is provided as a turnkey computing system with all required third-party software preinstalled by Hart. All third-party components used are integrated into the Verity software and cannot be accessed outside of Verity. Local entities are not required to add or maintain any software components. For more information, please see **Attachment 1.2 EMS Software – Supplement, pages A1.2-9 - 14.**
	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		**Yes.** Hart has performed a close review of Michigan Election Law, Promulgated Rules, and the Ballot Production Standards. Based on our understanding of these requirements, Verity Voting system can meet the State's needs in ballot design, different election types (closed primaries, open primaries, general elections), pre-election testing, rotation, and recount capabilities, among others. With respect to ballot layouts in particular, Verity Data enables users to define ballot styles that meet the specified requirements. During the pre-voting ballot programming and formatting phase, Verity Data and Verity Build support ballot templates that permit a wide array of user-definable customizations, which allows more user control and greater ballot design efficiencies that can obviate the need for longer ballots or multiple ballot pages (both of which can also contribute to higher costs). For a sample Preview Ballot, please see **Attachment 1.2 EMS Software – Supplement, page A1.2-15.**
	1.2.A.13	Be capable of translating the ballot layout and election configuration to multiple languages (in Michigan, Spanish and Bengali are required). Proposals shall indicate current non-English languages that are supported by the proposed system and describe the process for adding other languages not currently supported.		Y	**Yes, with modifications.** Verity Voting currently supports English and Spanish. Although Verity does not currently support Bengali, Verity was designed with the capability to support multiple languages, including English, non-English languages using a Western European font, and ideographic languages. The system's capability to support new languages in the future, including Bengali, is based upon architectural features associated with template design, character sets, audio, and features that accommodate updates to data. These features are described below more fully. For complete details on Verity Voting system language features, please see **Attachment 1.2 EMS Software – Supplement, page A1.2-16.**

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	1.2.A.14	Export election data elements and election configuration data to removable memory devices and either a LAN or wireless network; data elements must include but not be limited to:	Y		**Yes.** The Verity Voting system securely exports all the specified required data to removable memory devices (vDrives). Using vDrives for transferring election configuration data to Verity Scan and, after polls close, CVR data to Verity Central and Verity Count, creates an “air-gap,” a non-networked transfer method that provides more secure exchange of election data.
		a. the sequence of candidates for each contest;	Y		**Yes.** See detailed response to **1.2.A.14** (**row 18**) above.
		b. the ballot issue;	Y		**Yes.** See detailed response to **1.2.A.14** (**row 18**) above.
		c. the contest title;	Y		**Yes.** See detailed response to **1.2.A.14** (**row 18**) above.
		d. the contest number;	Y		**Yes.** See detailed response to **1.2.A.14** (**row 18**) above.
		e. the office name and district, if applicable;	Y		**Yes.** See detailed response to **1.2.A.14** (**row 18**) above.
		f. the number of votes for a candidate or ballot issue;	Y		**Yes.** See detailed response to **1.2.A.14** (**row 18**) above.
		g. the number of votes against a ballot issue or other contest where applicable;	Y		**Yes.** See detailed response to **1.2.A.14** (**row 18**) above.
		h. the number of votes for candidates and/or issues by legislative, congressional or election district where applicable;	Y		**Yes.** See detailed response to **1.2.A.14** (**row 18**) above.
		i. the number of ballots tabulated by party for open and closed primary elections;	Y		**Yes.** See detailed response to **1.2.A.14** (**row 18**) above.
		j. the type of canvass (e.g. precinct, absentee or provisional); and	Y		**Yes.** See detailed response to **1.2.A.14** (**row 18**) above.
		k. the type of election (e.g. Presidential Primary, Presidential General, Gubernatorial Primary, Gubernatorial General).	Y		**Yes.** See detailed response to **1.2.A.14** (**row 18**) above.
	1.2.A.15	Shall be capable of utilizing the State Uniform Data Format (refer to **Section and Attachment 1.5**)	Y		**Yes.** Verity will be capable of complying with this requirement in a seamless manner, through the use of a file format converter that translates QVF data into formats compatible for import into Verity Data. Data is imported into Verity Data for both ballot production and for reporting, in one seamless action. This “single channel” approach can increase efficiency and reduce the need for double-work data entry (i.e., through separate and/or parallel paths for ballot definition and reporting). If further customization is required beyond the data structure of the ballot, (that is, if the structure of data for reporting purposes needs to differ from the structure of the ballot) those edits can be accomplished in Verity Count by means of aliases and other customization features that are native to Verity Count. For complete details on Verity Voting System data exchange, including five relevant case studies from successful client implementations, please see **Attachment 1.2 EMS Software – Supplement, pages A1.2-17 - 21**. Information on Hart’s extensive experience with custom solutions is also included.

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	1.2.A.16	Be capable of storing, maintaining and reloading configurations and data from previous elections.	Y		**Yes.** Data from a previous election can be copied and used as a template which can be modified for the new election.
	1.2.A.17	Accumulate election data for each election by precinct, precinct combinations, district, jurisdiction, and statewide.	Y		**Yes.** The proposed solution envisions that counties will accumulate data for purposes of ENR reporting requirements. The accumulation and tabulation of data at the local entity level will be performed by Verity Count. Verity Count, in turn, can export all results data, and through the use of a data conversion utility, appropriate data desired for statewide reporting can be formatted and uploaded according to the State's needs. As noted above, Hart has years of proven experience in integrating and reporting data from different software infrastructures into cohesive, clear sets of results and reports. Hart's design and development team includes experienced application design, engineering, and programming staff to support custom integration with other systems.
	1.2.A.18	Tabulate results for individual groups and integrate the results from selected or all groups into cumulative results.	Y		**Yes.** Verity Count reports allow the user to specify reports by individual reporting groups (i.e., AVCBs, Election Day) or to report all groups together for cumulative results. In addition, Verity Count includes a wide array of user-definable features that allow data to be grouped according to customized needs. Samples of Verity Count reports are included in our response to requirement **1.2.E.1**, below.
	1.2.A.19	Store tabulated results from each absentee and precinct group as separate totals within a precinct.	Y		**Yes.** Verity can store tabulated results from each absentee and precinct group as separate totals within a precinct.
	1.2.A.20	Save election data configurations with election results data on removable storage media for archiving purposes.	Y		**Yes.** Verity complies with this requirement.
	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		**Yes.** The Verity Data data management application can export pre-voting data in .XML or CSV format. Microsoft Excel can directly import CSV files from Verity Data The Verity Build election definition application can export election definition data in XML format. With respect to Oasis EML and IEEE 1622, based on Hart's research, the IEEE 1622 committee has not published a format for election configuration and ballot layout records. Oasis EML is general format and needs to be extended for the specific needs of U.S. elections; that is part of the work that IEEE 1622 is doing, but that process has not been completed.

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.22	Permit the re-upload (updating of previous uploads) of election data results from a tabulator device to the EMS.	N		**No.** Verity addresses this requirement as follows: To ensure the most accurate reporting of election results and to minimize the possibility of operator error, Verity is designed to allow vDrives from polling place devices to be uploaded (or read) into Verity Count tabulation and reporting software only once within a given tabulation and reporting session. Because each vDrive portable USB memory device has a unique identification number which is validated when the device is inserted into the Verity Count workstation, vDrives cannot be uploaded to a given tabulation database more than once. If a vDrive is erroneously inserted more than once, the software application generates a message to the user that the memory device has already been read, and should be removed. If circumstances necessitate the upload of an “updated” version of a given vDrive (e.g. one with additional results gathered, for example), Verity allows users to create a new tabulation database and re-read all vDrives as necessary.
	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		**Yes.** Verity PCs include RAID disks, which are an automated fail-over for the hard drives. In the event of other hardware failures, the removable hard drives can be manually moved to backup PCs. In addition, as long as Cast Vote Records are written to vDrives regularly, the vDrives can also serve as redundant storage for the votes.
	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		**Yes, partially.** Verity Count produces reports in PDF, CSV and XLSX formats. Additionally, Verity Count produces results reports (cumulative, canvassing, precinct and selected others) in HTML. Given the State of Michigan’s ENR reporting needs, which are managed through separate software infrastructure, we look forward to working closely with the State to deliver a tailored solution.
	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		**Yes.** The Verity Voting solution for Michigan will include Verity Scan with the Relay option, to allow electronic transmission of cast vote records from Scan devices located in precincts or in AVCBs, via secure broadband technology. Detailed information, including photographs and a diagram of the electronic transmission workflow, is included in our response to requirement 1.1.A.1, Exhibit A, **Attachment 1.1 Voting System Hardware Technical Requirements, pages A1.1-1 - 11.**
	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		**Yes.** Verity complies with this requirement.
	1.2.A.27	Only accept uploaded results from removable memory devices specific to the current election.	Y		**Yes.** When a vDrive is read, the application verifies that the Election identifier on the media device matches the Election identifier of the currently open election. If this verification fails, the application notifies the user of the failure and asks the user to remove the device. No Cast Vote Records will be uploaded from the device.

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	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		**Yes.** Verity Build offers a method to automate ballot printing, including the production of pre-marked test decks for logic and accuracy testing. As an alternative to manually selecting desired precinct styles and quantities from the graphic user interface, Verity Build allows users to automate the printing process by importing a print queue file, which specifies ballots to be printed in batches. The print queue file can accommodate user-specified marking patterns for each contest on the ballots included in the print job. Verity saves users hours – or even days – of tedious labor that might typically be spent hand-marking printed ballots for purposes of logic and accuracy testing. For more information, please see **Attachment 1.2 EMS Software – Supplement, page A1.2-25.**
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		**Yes.** The Verity Voting system is designed to enable elections staff to conduct every aspect of the elections process independently. For those counties that choose to program their own elections, our proposal includes Verity Data election data management software and Verity Build election definition software. These counties will also receive training in how to use these intuitive, easy-to-use tools to program their elections. Hart provides a unique level of choice in our product and service offerings, allowing customers to choose the level of independence that best serves their needs. Our training, implementation, and customer support services are all designed to provide elections staff with the confidence and knowledge they need to conduct elections from start to finish on their own, if they choose. Our proposal also includes the **option** for Hart to provide ballot production and election definition services.
	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		**Yes.** Hart agrees to this requirement.

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	1.2.B.3	Recognizing the decentralized nature of Michigan elections, the EMS shall allow State, county and local officials to generate and maintain a database containing the definitions and descriptions of political subdivisions, offices, candidates, and ballot proposals within the jurisdiction for the production of ballots and ballot tabulation programming and election result accumulation and reporting. Refer to **Section and Attachment 1.5** for additional details on the planned State Uniform Data Format.	Y		**Yes.** Hart agrees to this requirement.
	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		**Yes.** Among the many reports available from Verity Count is the Cumulative Report, which can include all the information specified in this requirement.
	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		**Yes.** Verity provides multiple levels of verification for correctness of ballot and tabulator programming through reports, logic and accuracy test functionality, and device settings. All jurisdiction and contest options can be proofed and verified using standard reports from the software and the devices. Verity supports “test mode” functionality, which allows for testing of the election logic and vote capture while ensuring that test results and official results can never be mixed. Additionally, the voting devices are programmed to accept only the associated ballot styles for a particular precinct or polling place. In addition to Verity’s general support of these capabilities, Hart has also performed a close review of Michigan Election Law, Promulgated Rules, and the Ballot Production Standards. Based on our understanding of these requirements, we are confident that Verity Voting system can meet the State’s needs in ballot design, different election types (closed primaries, open primaries, general elections), pre-election testing, rotation, and recount capabilities, among others. We also look forward to working with the State closely to make any additional optimizations or modifications to current procedures based on the capabilities of the Verity system, particularly if greater efficiencies can be realized, compared to the rules devised for the State’s current voting system.

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	1.2.B.6	Proposals shall describe the method for programming in the case of split precincts. It is preferable to provide data on the number of registered voters and ballots cast by split.	Y		**Yes.** In Verity's data management and election definition software applications, precinct splits are entered as separate precincts on individual line items. (For example, if Precinct 101 is split into A and B splits, 101-A and 101-B are entered as separate precincts.) Then the appropriate contests are assigned to each split, respectively. Paper and electronic formats of the ballot include the precinct label and the split identifier, so voters are always given access only to the contests that are appropriate for their ballot style. Device settings which are configured before the election allow election administrators to specify whether totals are consolidated, "rolled up" into the parent precinct, or reported down to the separate precinct split level.
	1.2.B.7	EMS shall accommodate multiple languages (see requirement 1.2.A.11); system shall allow local election officials the ability to download information from software used to translate information to the appropriate language, or the system should perform translations automatically. Michigan presently uses English, Spanish and Bengali.	Y		**Yes.** Translation information can be imported or copied/pasted into Verity from external applications. Verity does not currently support Bengali. See our response to requirement **1.2.A.13**.
	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.	N		**No.** While the current version of Verity does not have this capability, we have demonstrated experience with MOVE ballots and are open to incorporating this feature in a future version of Verity.
	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		**Yes.** Verity supports the election types specified above. Verity Data and Build include pre-defined ballot templates that support all the combinations listed in this requirement, and which permit a wide array of user-definable customizations, including variable numbers of columns, nuanced controls over the placement of ballot elements, different styles of rich text formatting, and support for images and background shading.

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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		**Yes.** In the "Verity Data Operator Training Course," elections staff will work with the Hart Ballot Production Specialist to learn how to import data and lay out ballots according to State and local guidelines and for the best voter experience. In the course "Verity Build Operator Training Course," elections staff learn how to generate ballot databases and print files for offsite printer(s). Elections staff also learn how to create polling place device media. Training manuals meet the specifications required. Please see **Attachment 1.2 EMS Software – Supplement**, for a sample section from the *Verity Administrator's Guide* .
	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		**Yes.** Hart InterCivic will be pleased to demonstrate a proof of concept to illustrate how Verity is capable of complying with this requirement in a seamless manner, though the use of a file format converter that translates QVF data into formats compatible for import into Verity Data. Election Data is imported into Verity Data for **both** ballot production ***and*** for reporting, in one seamless action. This "single channel" approach can increase efficiency and reduce the need for double-work data entry (i.e., through separate and/or parallel paths for ballot definition and reporting). If further customization is required beyond the data structure of the ballot (if the structure of data for reporting purposes needs to differ from the structure of the ballot), those edits can be accomplished in Verity Count by means of aliases and other customization features that are native to Verity Count. For additional details concerning Hart's extensive experience with data integration, please see our response to requirement **1.2.A.15**.
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		**Yes.** Verity complies with this requirement. Hart has also performed a close review of Michigan Election Law, Promulgated Rules, and the Ballot Production Standards. Based on our understanding of these requirements, we are confident that Verity Voting system can meet the State's needs in ballot design. We also look forward to closely working with the State to make any additional optimizations or modifications to current ballot production procedures based on the capabilities of the Verity system, particularly if greater efficiencies can be realized, compared to the rules devised for the State's current voting system.

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

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	1.2.C.2	Allow changes to font size and style. Proposals shall indicate font packages utilized by the system.	Y		**Yes.** The Verity Data application allows users to make changes to font sizes and other ballot attributes prior to final proof and acceptance of the election in Verity Build. In addition, the published XML specification for the Verity Build application can accommodate changes to font sizes and style. Verity Voting uses the Segoe UI font package.
	1.2.C.3	Allow for creation of two-sided and multi-page ballots.	Y		**Yes.** Verity complies with this requirement.
	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		**Yes.** Sample ballots are printed with a watermark and with a special designation in the barcode that disallow them from being accepted on Verity Scan or Verity Central. For a screenshot, please see **Attachment 1.2 EMS Software – Supplement, page A1.2-39.**
	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		**Yes.** Verity Build supports ballot templates that permit a wide array of user-definable customizations, including political party vignettes and other types of artwork.
	1.2.C.6	Allow race header shading in multiple shades of gray.	Y		**Yes.** Verity complies with this requirement.
	1.2.C.7	Provide electronic versions of the ballots that are identical to the official ballots in all respects.	Y		**Yes.** Electronic versions of paper ballot styles and electronic ballot styles can be exported from the system.
	1.2.C.8	Ballot size shall be flexible to allow multiple ballot sizes by precinct/jurisdiction within a single election if desired.		Y	**Yes, with modifications.** This capability is on the Verity product roadmap, estimated for completion in Q1 2018.
	1.2.C.9	Provide for the export of any ballot to a .pdf file.	Y		**Yes.** Verity complies with this requirement.
	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		**Yes.** Verity complies with this requirement.
	1.2.C.11	OPTIONAL REQUIREMENT: Allow for different ballot headers on ballots within the same election (Special Election, General Election, Election).	Y		**Yes.** Verity complies with this requirement.
	1.2.C.12	Generate a consolidated sample ballot containing all races, issues and questions.	Y		**Yes.** Due to the large number of races that could be included in an election definition, a true “bed sheet” style ballot layout for all races is unwieldy; however, Verity Voting can produce an “All Contests” report that includes all the information requested, and more. Alternatively, users could assign all contests in the election definition to a fictional “consolidated sample ballot” precinct for purposes of generating the desired output.

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	1.2.C.13	Include a ballot style indicator.	Y		**Yes.** Verity's ballot styles are identified according to specific precinct labels. The precinct number is printed in the header of the ballot and is encoded in the barcode of the ballot.
	1.2.C.14	Be capable of designating the number of write-in lines for each contest.	Y		**Yes.** Verity complies with this requirement.
	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		**Yes.** Verity complies with this requirement. Furthermore, Verity has the capability to allow users to specify whether particular instructions or ballot text are to be included on paper ballots only, or on accessible electronic ballots for the ballot marking device, or both. This enhanced level of user control ensures that ballots can be tailored for the best voter experience, regardless of the specific medium used.
	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		**Yes.** Verity complies with this requirement.
	1.2.C.17	Provide the ability to copy, edit and delete previously-defined elections or provide customized templates for each election type.	Y		**Yes.** Verity complies with this requirement.
	1.2.C.18	Permit text to be added below a candidate's name for various designations and party affiliation.	Y		**Yes.** Verity complies with this requirement.
	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 limitations on the number of candidate or office rotations.	Y		**Yes.** Hart has performed a close review of Michigan Election Law and Promulgated Rules, and based on our understanding of these requirements, we conclude that Verity Voting provides for the rotation of candidate names as required.
	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		**Yes.** Hart has performed a close review of Michigan Election Law and Promulgated Rules, and based on our understanding of these requirements, we are confident that Verity Voting provides for the rotation of candidate names as required. To support this requirement, Verity Data offers users the ability to specify which contests provide for rotation, and which do not.
	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	**Yes, with modifications.** Hart is committed to providing this functionality in time to support the 2020 Presidential Primary Elections. This capability is on the Verity product roadmap, with an estimated release timeframe of Q1 2018.

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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		**Yes.** Verity Data provides for the identification of candidate names, party affiliation and vignettes and ballot questions and their associated language and instructions. Verity Data also offers a variety of other features to maximize flexibility in how ballot data is entered and presented. This wide array of customizations allows more user control and greater ballot design efficiencies that can obviate the need for longer ballots or multiple ballot pages (both of which can also contribute to higher costs). For a screenshot, please see **Attachment 1.2 EMS Software – Supplement, page A1.2-42.**
	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		**Yes.** Verity Data supports this requirement. Verity Data's user-friendly interface enables elections staff to easily make changes as necessary, view a proof, and create PDFs immediately. Ballots are in the database front first, 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		**Yes.** Menus available in Verity Count's user-friendly interface provide numerous options for generating reports, viewing precinct and polling place status and results, exporting cast vote records, and more: • **Options:** Set reporting options for Count. Settings made in the Reporting Options menu affect all tasks for the current election. • **Reports:** Generate reports from the list of available options or create a custom report, and create reporting runs. • **Precincts:** View reporting precincts and manually change precinct reporting status. • **Polling Places:** View reporting polling places, set the number of vDrives expected per polling place, and manually change polling place reporting status. • **Registered Voters:** Set the number of registered voters for reporting voter turnout. • **Vote Recording:** Perform manual vote recording. • **Auditing Dashboard:** Filter ballot data to review and export cast vote records. Please see **Attachment 1.2 EMS Software – Supplement, pages A1.2-44 - 49**, for further details on reporting options, viewing and saving reports, customized reports, reporting runs, results, and electronic transmission of results.

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	1.2.D.2	The ENR system shall support the following transmission mediums for reporting unofficial returns on Election Night directly from precinct tabulators to the EMS system: cellular modem, analog/dial-up modem, database import and manual reading of tabulator memory devices. Proposals shall specify and describe any other transmission methods available and/or under development.		Y	**Yes, with modifications**. For Michigan, Verity Scan will include Relay, which will utilize secure broadband technology to enable electronic transmission of cast vote records directly from the Scan device at the polling place to the election office. From the PC at the election office that receives the CVR data, the data is written to a vDrive, which is then used to physically transport the data to the Count tabulation and reporting software. This method creates a secure "air gap" for transmission of CVR data. (Detailed information, including photographs and a diagram of the electronic transmission workflow, is included in our response to requirement **1.1.A.1** in **Attachment 1.1, Hardware – Supplement**.) In addition to electronic transmission of results, Verity Voting supports manual reading of Verity Scan tabulator vDrives, by inserting the vDrives into a Verity Count tabulation and reporting workstation. Verity Voting does not support transfer of results via dial-up modem or via database import.
	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		**Yes.** Verity complies with this requirement.
	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		**Yes.** The user can set a username and password for modem transmission connections. If HSPDA wireless networks are used (more commonly known as 3G or 4G, such as ATT or T-Mobile), APN (Access Point Name) is fully supported through private network establishment with the carrier. Other Relay intrinsic security features are shown in the table in **Attachment 1.2 EMS Software – Supplement, pages A1.2-50 - 51.**
	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		**Yes.** Verity Relay provides the ability to configure up to three destination hosts for transmission data per transmission device (Verity Scan with Relay). This allows the transmission devices to have "round robin" failover capabilities if a receiving station is not available. In addition to configuring the destination host IP address (or URL), Relay allows the configuration of an optional APN, username, and password for stricter transmission security, if used. This information is compiled into an XML-based "host file" which is digitally protected to ensure data integrity and nonrepudiation when read by the transmission devices.

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	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		**Yes.** Verity complies with this requirement.
	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		**Yes.** Verity complies with this requirement.
	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		**Yes.** Verity Count includes options for reporting by pre-defined groups such as Precinct, Election Day, or Absentee results, separately or combined.
	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		**Yes.** Verity Count enables staff to choose for reports to include the total number of precincts, the number of precincts completely reported, and the number of precincts partially reported. For a screenshot, please see **Attachment 1.2 EMS Software – Supplement, page A1.2-52.**
	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		**Yes.** Verity Count produces cumulative and precinct-level results in PDF, CSV, XLSX, and HTML formats.
	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		**Yes.** Verity complies with this requirement. After vDrives have been read and tabulated in Verity Count, Verity Count is capable of exporting a comprehensive “all results” data file in .CSV format, which can be managed using commonly available third party tools.
	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		**Yes.** Verity includes a Precincts Reporting Report that includes this information and can be printed or exported in PDF, CSV and XLSX formats. Additionally, Verity Count’s dashboard dynamically displays precincts reporting and not reporting. For a screenshot of the Verity Count dashboard, please see **Attachment 1.2 EMS Software – Supplement, page A1.2-53.**

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.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	**Yes, with modifications.** Verity does not meet the requirement in the exact manner described. Verity does have the capability, however, to add new precinct data to existing precinct data that has already been read (e.g. if additional votes are read into tabulation software on separate memory modules). For reasons of security and to protect the integrity of data, Verity does not have the capability to remove and substitute data associated with a precinct whose memory module has already been read in Verity Count.. If circumstances necessitate the upload of an "updated" version of a given vDrive (e.g. one with additional results gathered), Verity allows users to create a new tabulation database, or separate "tasks," and re-read vDrives as necessary. Finally, it should be noted that Verity's modern data validation capabilities and digital signatures for cast vote records make it impossible for data with errors to be accepted into the system, thereby obviating the need to remove and substitute data that might be partially accepted, or accepted with errors, in older first-generation voting systems.
	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		**Yes.** Verity complies with this requirement in a seamless manner. Data is imported into Verity Data for both ballot production and for reporting. One dataset instead of two mitigates reconciliation issues. If further customization is required beyond the original data structure of the ballot (that is, if the structure of data for reporting needs must differ from the structure of the ballot), those edits can be accomplished in Verity Count by means of aliases. The alias feature in Verity Count's Reporting Options tab enables the user to change the name that displays on reports for various elements (precincts, districts, parties, voting types, contests, or choices). For a screenshot, please see **Attachment 1.2 EMS Software – Supplement**.
	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		**Yes.** Verity complies with this requirement in a seamless manner. With one step at the front end, data is imported into Verity Data for both ballot production and for Election Night reporting – data is imported once to address both datasets. This "single channel" approach can increase efficiency and reduce the need for double-work data entry (i.e., through separate and/or parallel paths for ballot definition and reporting), and it mitigates having to reconcile two data sets. For a visual representation of this concept, please see **Attachment 1.2 EMS Software – Supplement, page A1.2-55.**
	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		**Yes.** Please see our response to requirement **1.2.A.15**.

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	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		**Yes.** Verity can integrate data from Verity Count into the State's format. If additional customization is required to Verity's integration functions to accommodate changes to the State's data, we will be glad to work with the State to address that issue.
	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		**Yes.** Verity Count enables manual updates for precincts, parties, voting types, contests, and choices (candidates and propositions) by means of aliases. For a screenshot, please see **Attachment 1.2 EMS Software – Supplement**.
	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		**Yes.** Hart InterCivic will be pleased to demonstrate a proof of concept to illustrate how Verity is capable of complying with this requirement in a seamless manner, through the use of a file format converter that translates results data from Verity Count's "all results" CSV export into a format compatible for import into the statewide ENR system. For additional details concerning Hart's extensive experience with data integration, please see our response to requirement **1.2.A.15**.
	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		**Yes.** Totals can be exported from Verity Count; then Verity's integration tools can integrate that data into the State's format. If additional customization is required to Verity's integration functions to accommodate changes to the State's data, we will be glad to work with the State to address that issue. Please also see our response to requirement **1.2.D.19.**
	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		**Yes.** Please see our response to requirement **1.2.D.19**.
	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		**Yes.** Verity complies with this requirement.
	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		**Yes.** Please see our answers in **Category E – Reports**, below.

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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		**Yes.** Verity meets all the specified requirements. Verity Count is the Verity software application that tabulates and reports cast vote records stored on flash memory devices from Verity Scan and Verity Central. Once the vDrives have been read and tabulated, Count can produce a variety of standard and customized reports and exports for dissemination to the public and to statewide outlets. Verity Count's abundance of user-defined options and easy-to use interface allow jurisdictions to create customized reports without requiring professional data processing assistance or the use of an external tool or report writer. Verity Count produces reports in PDF, CSV and XLSX formats. Additionally, Verity Count produces results reports (cumulative, canvassing, precinct and selected others) in HTML. Reports can be organized according to individual reporting groups (such as Absentee Voting, Election Day) or to report all groups together for cumulative results. Verity Count also includes intuitive, attractive, easy to use dashboards to monitor progress on Election Night, or to perform post-election audits, in a highly filterable way. Please see **Attachment 1.2 EMS Software – Supplement, pages A1.2-58 - 66** for further details on standard reports, Verity Build (election definition and deployment) reports, and Verity Central (high-speed scanning and on-screen ballot adjudication) reports.
	1.2.E.2	The EMS shall be capable of generating all reports on standard letter size paper (8.5 x 11 inches).	Y		**Yes.** Verity Count produces reports in PDF, CSV and XLSX formats. Additionally, Verity Count produces results reports (cumulative, canvassing, precinct and selected others) in HTML. These reports can be formatted to fit standard letter size paper.

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	Category / Requirement #	**Requirement**	**Bidder Complies (Y/N)**	**Bidder Complies - with Modifi-cations**	**Please expand on your response in Column D or E.**
	1.2.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		**Yes.** Verity complies with this requirement. Please see our response to requirement **1.2.D.1**.
	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		**Yes.** Verity complies with this requirement. Please see our response to requirement **1.2.D.1**.
	1.2.E.5	The EMS shall be capable of sorting by fields or permitting the user to customize layout.	Y		**Yes.** Verity Count's customized reporting feature allows users to customize report header information, inclusion of exclusion of specific data contained in standard reports, and other methods to customize layout compared to the standard reports.
	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		**Yes.** Verity Count includes numerous reporting options for printable reports, as detailed in our response to requirement **1.2.D.1**. Users can select whether to report results "by winners," or in the choice order that originally appeared on the ballot. In addition, the customized reporting engine allows users to create customized report headers with non-standard titles and to include user-defined data sets selected from a wide range of filters.

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.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		**Yes.** Verity Count can provide for the official report of countywide vote totals for State offices and proposals in a form prescribed by the State and linked to the official canvass. The report can provide vote totals in numeric characters, but not in alphabetic characters. Totals can be exported from Verity Count and then Verity's integration tools can integrate that data into the State's format. If additional customization is required to Verity's integration functions to accommodate changes to the State's data, we will be glad to work with the State to address that issue. For complete details on Verity Voting System data exchange, including five relevant case studies from successful client implementations, please see our response to requirement **1.2.A.15**, in **Attachment 1.2 EMS Software – Supplement, pages A1.2-17 - 21**. Information on Hart's extensive experience with custom solutions is also included.
	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		**Yes.** Verity can generate reports that comply with all the specified requirements.
	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		**Yes.** The Verity system can generate reports and/or data exports in standard electronic formats including PDF, XML, XMLS and CSV for distribution.
	1.2.E.10	The EMS shall be capable of producing reports on election night, without disrupting the results accumulation process.	Y		**Yes.** Verity complies with this requirement.
	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		**Yes.** Verity Count enables elections staff to customize headers and footers of reports as specified in this requirement.

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	Category / Requirement #	**Requirement**	**Bidder Complies (Y/N)**	**Bidder Complies - with Modifi-cations**	**Please expand on your response in Column D or E.**
	1.2.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		**Yes.** Verity Count reports can include the information specified in this requirement.
	1.2.E.13	The EMS shall be capable of producing reports that include the following data elements in the body of the report:	Y		**Yes.** Verity complies with **all** these requirements. Please see our response to requirement **1.2.D.1**.
		a. the name of each contest on the ballot (e.g., Governor, Delegate, President);	Y		**Yes.** Verity complies with this requirement. Please see our response to requirement **1.2.D.1.**
		b. the names of each candidate in each contest or race;	Y		**Yes.** Verity complies with this requirement. Please see our response to requirement **1.2.D.1.**
		c. the party affiliation of each candidate in each contest or race;	Y		**Yes.** Verity complies with this requirement. Please see our response to requirement **1.2.D.1.**
		d. the number of choices for each contest or question (e.g., vote for 1);	Y		**Yes.** Verity complies with this requirement. Please see our response to requirement **1.2.D.1.**
		e. the vote totals for each candidate in each contest or race, by precinct, AVCB and combined total;	Y		**Yes.** Verity complies with this requirement. Please see our response to requirement **1.2.D.1.**
		f. the total votes for each contest;	Y		**Yes.** Verity complies with this requirement. Please see our response to requirement **1.2.D.1.**
		g. the winning selection for each contest, indicated by bolding or some other mark;	Y		**Yes.** Verity complies with this requirement. Please see our response to requirement **1.2.D.1.**
		h. the title and number of each question on the ballot (e.g., "County Question A, State Question 1");	Y		**Yes.** Verity complies with this requirement. Please see our response to requirement **1.2.D.1.**
		i. the possible selections for each question or contest, (e.g., "For", "Against", "Yes", "No" or a blank);	Y		**Yes.** Verity complies with this requirement. Please see our response to requirement **1.2.D.1.**
		j. the total number of precincts for the election;	Y		**Yes.** Verity complies with this requirement. Please see our response to requirement **1.2.D.1.**
		k. the percent of reporting precincts versus the total number of precincts;	Y		**Yes.** Verity complies with this requirement. Please see our response to requirement **1.2.D.1.**
		l. the total number of registered voters;	Y		**Yes.** Verity complies with this requirement. Please see our response to requirement **1.2.D.1.**
		m. the total number of registered voters that voted in the election;	Y		**Yes.** Verity complies with this requirement. Please see our response to requirement **1.2.D.1.**
		n. the total percent of voter turnout;	Y		**Yes.** Verity complies with this requirement. Please see our response to requirement **1.2.D.1.**
		o. the number of overvotes in each contest or race;	Y		**Yes.** Verity complies with this requirement. Please see our response to requirement **1.2.D.1.**
		p. the number of undervotes in each contest or race;	Y		**Yes.** Verity complies with this requirement. Please see our response to requirement **1.2.D.1.**

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	Category / Requirement #	**Requirement**	**Bidder Complies (Y/N)**	**Bidder Complies - with Modifi-cations**	**Please expand on your response in Column D or E.**
		q. the total number of votes for all write-in candidates;	Y		**Yes.** Verity complies with this requirement. Please see our response to requirement **1.2.D.1.**
		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		**Yes.** Verity complies with this requirement. Please see our response to requirement **1.2.D.1.**
		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		**Yes.** Verity complies with this requirement. Please see our response to requirement **1.2.D.1.**
		t. the capability for the reporting of ballots cast in split precincts;	Y		**Yes.** Verity complies with this requirement. Please see our response to requirement **1.2.D.1.**
		u. OPTIONAL REQUIREMENT: the EMS shall be capable of adding the names of certified write-in candidates to the EMS and reports.	Y		**Yes.** Verity complies with this requirement. Please see our response to requirement **1.2.D.1.**
	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		**Yes.** Verity complies with this requirement. Verity Count can be configured to disallow the ability to tabulate and report results prior to the date and time specified for the closing of polls.
	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		**Yes.** Verity Scan can generate a Ballot Count report that indicates the number of ballots cast and scanned by the Scan unit, without closing the polls or revealing any preliminary results data. These features make Verity Scan easily configurable and ideally suited for Early Voting use.

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	Category / Requirement #	**Requirement**	**Bidder Complies (Y/N)**	**Bidder Complies - with Modifi-cations**	**Please expand on your response in Column D or E.**
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		**Yes.** Throughout all phases of operation, all Verity System components maintain complete audit logs. Every Verity application logs all user authorization/authentication, data entry, user interaction, and system events, and error messages. Application logs can be printed or exported from each application. On the Verity Scan and Verity Touch Writer voting devices, audit logs and cast vote records are redundantly stored to the vDrive and to a partition on the compact flash card. For detailed information about this requirement, please see **Attachment 1.2 EMS Software – Supplement, page A1.2-71.**
	1.2.F.2	The EMS shall include an available report that documents information regarding the tabulator, firmware and software versions in use.	Y		**Yes.** A report containing the required information is available from Verity Scan.
	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		**Yes.** Verity audit logs comply with this requirement. Please see our response to requirement **1.2.F.1**.
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		**Yes.** Hart will comply with this requirement. Please refer to **Exhibit A 9.5 Software License Agreement**.

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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 Modifi-cations**	**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		**Yes.** Verity complies with this requirement.
	1.3.A.2	AV ballots shall be the same ballot type and size as that used in the Election Day precinct.	Y		**Yes.** With the Verity Voting system, the same ballot type and size is used for both AV and Election Day.
	1.3.A.3	Bidders shall provide information in the bid response indicating the ballot processing speed for each of the following types of ballots:	Y		**Yes.** Verity Central uses enterprise-grade, commercial Canon scanners with throughput speeds of 100 and 130 pages per minute, respectively, for a letter-size ballot. These scanners can also handle ballots that have been half-folded, tri-folded, z-folded, creased and/or wrinkled. Ballot folds do not affect processing speed.
		a. Flat ballots	Y		**Yes.** Verity complies with this requirement. Please see our response to requirement **1.3.A.3**.
		b. Half-folded ballots	Y		**Yes.** Verity complies with this requirement. Please see our response to requirement **1.3.A.3**.
		c. Tri-folded ballots	Y		**Yes.** Verity complies with this requirement. Please see our response to requirement **1.3.A.3**.
		d. Z-folded ballots	Y		**Yes.** Verity complies with this requirement. Please see our response to requirement **1.3.A.3**.
		e. Letter folded ballots of various supported lengths	Y		**Yes.** Verity complies with this requirement. Please see our response to requirement **1.3.A.3**.

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	Category / Requirement #	**Requirement**	**Bidder Complies (Y/N)**	**Bidder Complies - with Modifi-cations**	**Please expand on your response in Column D or E.**
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		**Yes.** Yes. Verity Central provides high-speed scanning of absentee ballots and can be located at central ballot processing locations anywhere in the State. The Verity AVCB solution is completely integrated with the rest of the Verity Voting system, and it includes a commercial high-speed scanner, one or more PC workstations, and Verity Central software. Verity Central provides the processed cast vote records to the Verity Count component of the system for tabulation and reporting. Every aspect of Verity Central is designed for efficiency, fast throughput, and a high degree of transparency in working with scanned ballot images. To accommodate the varying ballot volumes different-sized jurisdictions manage, Hart has included three options for AVCB processing. For small jurisdictions (those with fewer than 49,000 registered voters), we offer the option of using the precinct tabulator for AVCB use. The Verity Scan precinct tabulator with the Relay option provides electronic transmission of unofficial election night totals. For additional details, please see **Attachment 1.3 AV – Supplement, pages A1.3-2 - 3.**
	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		**Yes.** Verity complies with this requirement. Three models of commercial high-speed scanners are available with Verity. We have noted further details, including make and model, in Exhibit C, Pricing
	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		**Yes.** The optional Verity Central high-speed AVCB consists of Verity Central software, a workstation and an enterprise-grade commercial scanner. The components and associated costs are provided in **Exhibit C, Pricing.**

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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 Modifi-cations**	**Please expand on your response in Column D or E.**
	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		**Yes.** With Verity Central, any ballot style included in a given election definition can be processed by a single AVCB tabulator. As a digital system, Verity Central provides maximum flexibility to accommodate multiple styles and precincts, without the need to "predefine" the high speed tabulator, and it removes the burden of pre-sorting ballots into specific batches before scanning. If a ballot style is included in the election definition created in Verity Build, Verity Central can process it, without limitation. To accommodate the needs of different-sized jurisdictions, we have included a variety of options with varying throughputs in **Exhibit C, Pricing**. As a security measure, Verity Central also exclusively recognizes ballots associated with a specific election ID, and it ensures that only those ballots styles specific to the current election are recorded and tabulated. Central rejects ballots that are not printed for the election that is currently defined and open on the system. The election identifier is embedded into the security barcodes on the ballots. Verity Central checks this election identifier on each ballot that is scanned and rejects any ballots that do not contain the correct election identifier.
	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		**Yes.** The Verity Central scanner processes ballots at a rate of 130 pages per minute. The Verity Scan scanner typically used for precinct voting scans ballots at the rate of approximately 10 pages per minute.
	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		**Yes.** Verity Central has powerful capabilities that greatly accelerate the processing of ballots. Where older systems rely on time-consuming "outstacking," physical segregation of ballots, and the need to perhaps re-make ballots, Verity Central handles such situations far more efficiently, through the user of digital image management. For more information and a screenshot, please see **Attachment 1.3 AV – Supplement, pages A1.3-5 - 6.**

RFP No. 007115B0005741 Hart					
Exhibit A, Attachment 1.4 Voting System ACCESSIBLE VOTING SYSTEM COMPONENT Technical Requirements					
	Category / Requirement #	**Requirement**	**Bidder Complies (Y/N)**	**Bidder Complies - with Modifications**	**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		**Yes.** The Verity Voting system complies with this requirement. Verity Touch Writer, the accessible ballot marking device solution, is a fully integrated part of the overall Verity Voting system.
	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		**Yes.** The Verity Voting system uses no “segregated” or “special” components for accessible voting – all components are designed to be accessible to all voters. Accessibility is built in to the design of the Verity Touch Writer ballot marking device, the Voting Booth, and the Verity Scan ballot scanner. For more information about this requirement, including detailed descriptions of accessibility features, photographs, and screenshots, please see **Attachment 1.4 Accessible Voting – Supplement, pages A1.4-1 - 5.**
	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		**Yes.** Supplies are listed, with prices, in the **Exhibit C, Pricing**.

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Exhibit A, Attachment 1.4 Voting System ACCESSIBLE VOTING SYSTEM COMPONENT Technical Requirements					
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	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		**Yes.** Verity Touch Writer is capable of printing the largest ballot that can be processed by the base voting system for in-person voting; more specifically, the Verity Scan device, with which the Touch Writer is typically paired, can accommodate an 8.5" x 17" ballot as its maximum, and Verity Touch Writer is capable of printing that size. Note: The Verity Voting system can produce an 11" x 17" ballot, but it is typically used only for by-mail voting and is processed by Verity Central; the in-person voting solution, made up of Verity Scan and Verity Touch Writer, and does not accommodate that exceptional size of ballot.
	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		**Yes.** Verity Voting devices are designed for secure, easy transportation and storage. More specifically, the voting devices were purposely designed to be as compact in size as possible (with a small footprint) and are significantly smaller than other solutions currently available in the marketplace. Their compact size not only creates greater efficiencies and cost savings in storage and transportation by reducing the need for warehouse and trucking space, but also allows more flexible deployment by poll workers, because Verity Voting devices were specifically designed to comfortably fit within the confines of typical private vehicles. In addition to the convenient carrying/storage case that is an integrated part of the Scan design, corrugated plastic cases are available for transportation and storage. The lightweight Voting Booth includes a heavy canvas bag for protection during transport and storage. For height and weight specifications, see **Attachment 1.4 Accessible Voting – Supplement, page A1.4-6.**
	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		**Yes.** All election configuration information is created in Verity Build, including multiple ballot styles for single or multiple precincts and split precincts, and is written to a flash media vDrive. That election information is then transferred from the vDrive to Verity Touch Writer and Verity Scan. The accessible voting system can accommodate a maximum of 2000 ballot styles on a single device; the limiting factor is Verity Build, not the software or hardware on the Touch Writer itself.
	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		**Yes.** Please see our response to requirement **1.4.A.5,** above, and **Attachment 1.4 Accessible Voting – Supplement, page A1.4-6**

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	1.4.A.8	The proposed accessible voting system shall accommodate visually impaired voters by presenting the ballot to a voter in an audio format. Bidders shall describe the procedures for constructing an audio version of the ballot, whether it is through text to speech synthesis, voice recording, or any other technology utilized by the proposed voting system.	Y		**Yes.** Touch Writer provides audio ballot capability to enable voters who cannot see to vote independently and privately, in a manner compliant with the requirements of the Americans with Disabilities act. All displayed content is also available through the audio interface. In keeping with an overall design and implementation philosophy that seeks to maximize user and jurisdiction independence, the accessible voting system uses audio files that can be easily recorded in Verity Data by election staff or third-party voice talent. Verity Data offers an easy-to-use software interface so that during the ballot programming process, each discrete text string that appears on the ballot can have a dedicated audio string associated with it. Hart believes that allowing users to create their own audio files with human recorded voice, instead of text-to-speech synthesis, results in a richer, more authentic audio ballot experience for voters, since jurisdictions can record text with the correct pronunciation and any other localized stylistic variables. If users want to use third-party text-to-speech tools to create their own audio recordings in automated fashion, Verity Data can accept the import of those files, or any other files that meet our published specifications. For detailed information about this requirement, see **Attachment 1.4 Accessible Voting – Supplement, pages A1.4-7 - 8.**
	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		**Yes.** Verity Touch Writer complies with this requirement. Touch Writer allows voters to select a suitable font size, according to the federal VVSG 1.0 requirements for accessibility. Available font size settings are: • Standard size setting – Font sizes vary from 21-32 points. • Large size setting – All text is 40-point font. • Small size setting: Font sizes vary from 18-22 points. For a screenshot, please see **Attachment 1.4 Accessible Voting – Supplement, page A1.4-9.**

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	1.4.A.10	The proposed accessible voting system shall allow for high-contrast visual display.	Y		**Yes.** Verity Touch Writer allows voters to adjust display contrast settings and to mask the display entirely for non-sighted voter use. Two high-contrast modes are available: black text on white background and white text on black background. For a screenshot, please see **Attachment 1.4 Accessible Voting – Supplement, page A1.4-10.**
	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		**Yes.** Please see our response to requirement **1.2.A.13** in **Attachment 1.2, EMS Software Technical Requirements.**
	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		**Yes.** Touch Writer is equipped with the Verity Access controller, which includes tactile buttons, audio ballot capability and compatibility with other adaptive devices, such as jelly switches or sip-and-puff devices. The Verity Access controller also includes dishing on every button, to support voters who use mouthpieces. Verity Access buttons are raised, with beveled edges to facilitate tactile use, and all buttons include raised Braille markings.
	1.4.A.13	The accessible voting system shall provide audio and visual instruction on the use of the system.	Y		**Yes.** Verity Touch Writer complies with this requirement. Unlike many older examples of first-generation voting technology, all Verity Voting device user interface screens have been designed with a disciplined, plain language philosophy to provide the highest, best usability and an approachable, intuitive voting experience. This design philosophy alone sets Verity apart from most other voting solutions in the marketplace today.
	1.4.A.14	The accessible voting system shall present the ballot to the voter in a clear and unambiguous manner.	Y		**Yes.** Verity Touch Writer and Verity Scan use a modern, intuitive, plain-language interface based on EAC/AIGA Design for Democracy styles. For screenshots, please see **Attachment 1.4 Accessible Voting – Supplement, page A1.4-12.**
	1.4.A.15	The accessible voting system shall provide a method for recording write-in votes.	Y		**Yes.** User-friendly menus make it easy for voters to enter write-in votes. The voter selects the write-in option, uses the touchscreen keypad or the Select button and Move wheel on the Access device to type the name of their desired write-in candidate, and then selects Accept. The write-in option appears selected with a green box and check mark to the left of the choice, showing the write-in candidate name. This functionality is also fully integrated with the system's audio ballot prompts, to allow voters who are blind or visually impaired to follow the same process. For screenshots, please see **Attachment 1.4 Accessible Voting – Supplement, page A1.4-13.**
	1.4.A.16	The accessible voting system shall prohibit crossover votes on a partisan primary ballot.	Y		**Yes.** Verity Touch Writer provides a filterable ballot interface when configured with an Open Primary election, to prohibit crossover votes in a partisan primary.

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	1.4.A.17	The accessible voting system shall prohibit over votes before a final vote is cast.	Y		**Yes.** Verity Touch Writer does not permit voters to enter more selections than the valid number of choices available in any given contest – it is impossible to over vote on a Verity Touch Writer.
	1.4.A.18	The accessible voting system shall allow option to skip races and/or sections (partisan/nonpartisan) of the ballot.	Y		**Yes.** The Touch Writer interface includes a Next option that enables the voter to skip ahead in the ballot. For a screenshot, please see **Attachment 1.4 Accessible Voting – Supplement, page A1.4-14.**
	1.4.A.19	The accessible voting system shall allow option to "skip to the end" to cast a vote at any point.	Y		**Yes.** The Touch Writer interface includes a “Review your choices” option that enables the voter to skip to the end of the voting session and print the ballot after reviewing all choices.
	1.4.A.20	The accessible voting system shall issue a warning of undernotes 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 undernoted races are included.	Y		**Yes.** Verity Touch Writer complies with this requirement.
	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		**Yes.** Verity Touch Writer complies with this requirement.by presenting clear and unambiguous visual and/or audio messages to the voter, indicating that the voting session is complete. For a screenshot, please see **Attachment 1.4 Accessible Voting – Supplement, page A1.4-15.**
	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		**Yes.** Verity complies with this requirement. All voters use the same Touch Writer ballot marking device and all ballots are scanned and recorded by Verity Scan, accumulated with all other votes, and reported as a single total within the 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		**Yes.** Verity Touch Writer complies with this requirement. Each ballot produced is anonymous and cannot be identified by image, code or other methods. As noted earlier, it was a core tenet of the voting system design that paper ballots produced by the accessible ballot marking device should be equal to, and indistinguishable from, ballots printed for hand-marking.
	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		**Yes.** Verity Touch Writer complies with this requirement. As noted previously, unlike many older examples of first-generation voting technology, all Verity Voting device user interface screens have been designed with a disciplined, plain language philosophy to provide the highest, best usability and an approachable, intuitive voting experience. This design philosophy alone sets Verity apart from most other voting solutions in the marketplace today. For a screenshot, please see **Attachment 1.4 Accessible Voting – Supplement, page A1.4-16.**

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B.	**Accessible System - Use of Touch-Screen Interface**				
	1.4.B.1	The proposed accessible voting system shall utilize a touch-screen interface for voters to use in voting a ballot.	Y		**Yes.** Verity Touch Writer complies with this requirement.
	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		**Yes.** After a voter uses the Verity Touch Writer ballot marking device, he/she retrieves the printed ballot from the commercial laser printer next to the Touch Writer and takes it to the nearby Verity Scan device to cast the ballot. The Verity Scan device is not tethered to the Touch Writer device. Hart has made a conscious design choice to provide separate scanning and ballot marking devices on a shared, universal platform, rather than on a combined, all-in-one device. Hart believes that most all-in-one devices make compromises for physical access and general accessibility. In addition, all-in-one scanning devices that also include accessibility features can create bottlenecks in the polling place, as standard scanning and fully accessible voting sessions cannot both take place simultaneously. The resulting bottlenecks can delay voting, resulting in longer lines at the polling place. For a photograph, please see **Attachment 1.4 Accessible Voting – Supplement, page A1.4-17.**
C.	**Accessible System - Use of Paper Ballot (possible scenarios)**				

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	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		**Yes.** Please see our responses below.
	1.4.C.1.a	**Scenario a:** Proposed accessible voting system utilizes the same paper ballot as the precinct ballot.	Y		**Yes.** All voters use the same paper ballot.
		a.i. (scenario a.) - Proposals shall indicate whether the voter must physically insert the marked ballot into the tabulator, or if there is an automated function that does not require the voter to physically handle the ballot.	Y		**Yes.** After a voter uses the Verity Touch Writer ballot marking device, he/she retrieves the printed ballot from the laser printer next to the Touch Writer and takes it to the nearby Verity Scan device to cast the ballot. Verity Scan includes tactile features to facilitate ballot insertion, even for non-sighted voters, an accessible ballot box orientation that complies with ADA requirements for parallel wheelchair approach, and unique audible sounds to notify voters of second-chance voting messages. Hart has made a conscious design choice to provide separate scanning and ballot marking devices on a shared, universal platform, rather than on a combined, all-in-one device. Hart believes that most all-in-one devices make compromises for physical access and general accessibility. In addition, all-in-one scanning devices that also include accessibility features can create bottlenecks in the polling place, as standard scanning and fully accessible voting sessions cannot both take place simultaneously. The resulting bottlenecks can delay voting, resulting in longer lines at the polling place.
		a.ii. (scenario a.): the accessible system shall allow for omni-directional feed of the ballot.	Y		**Yes.** Verity Scan allows ballots to be fed in in any portrait orientation, face down or face up; and header-first or footer-first.
		a.iii. (scenario a): Proposals shall indicate whether manual adjustment is required to accommodate multiple ballot lengths.	Y		**Yes.** Verity Scan requires no manual adjustment to accommodate multiple ballot lengths.

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	1.4.C.1.b	**Scenario b:** Proposed accessible voting system prints an entire (marked) optical scan ballot to be tabulated.	Y		**Yes.** Verity Touch Writer and attached commercial off-the-shelf printer comply with this requirement.
		b.i. (scenario c.): OPTIONAL: Proposals shall indicate whether the accessible voting system includes a self-contained printer (requiring no additional system equipment).	N		**No.** For reduced cost and easy maintenance, Touch Writer is paired with a commercial printer. After the voter uses the electronic interface to mark and review selections, the device prints a marked, full ballot from blank stock. This innovative hybrid of on-demand printing with the best electronic interface for accessibility means that no preprinted ballots are necessary, there are no ballots to load into the machine, and Touch Writer prints only the ballots you need, reducing waste.
		b.ii. (scenario b.): For proposed accessible voting systems that print a full marked paper ballot - bidders shall provide data, system checks and other features that clearly validate and demonstrate that printed votes are an exact (100%) match to original voter input.	Y		**Yes.** The Verity Touch Writer offers voters an easy to use review screen that allows voters to review all selections and voter input prior to printing the marked ballot. Once the marked ballot is printed, because the ballot is identical to all other ballots produced for the Verity Voting system, voters who printed their ballots on the accessible device can take advantage of all of the second-chance voting features that exist on the easy-to-use Verity Scan. This allows voters to ensure that the printed ballot accurately reflects their intent, prior to casting the ballot.
	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).	N/A		**N/A.** The proposed Verity Touch Writer accessible voting solution creates a full printed ballot that is equal and identical to ballots that are preprinted for hand-marking at the precinct.
		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.	N/A		**N/A**. The proposed Verity Touch Writer accessible voting solution creates a full printed ballot that is equal and identical to ballots that are pre-printed for hand-marking at the precinct. All ballots are scanned and recorded by Verity Scan, accumulated with all other votes, and reported as a single total within the precinct.
D.	**Reliability Requirements**				

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	1.4.D.1	The accessible voting system shall permit diagnostic testing of all major components, including self-diagnostics (automatically generated) and error reports. Proposals shall provide details of diagnostic testing available and related reports.	Y		**Yes.** Verity Touch Writer performs diagnostics at every boot and reports these diagnostics in the Power-On Self-Test Report that prints automatically at every boot. Audit logs for each Verity Voting system component include results of data integrity checks and diagnostic tests, as well as: • All security, authentication, and authorization attempts, such as access by users, Verity Key usage, and network connectivity and data transfer • All user account creation, information and password updates, and deletion events. • All data changes to user accounts, election definition, CVR records, media usage, and reporting • All components start-up, shutdown, and interruptions in running • All election actions taken on Verity components, including loading elections, value of counters, the assigned polling place, and user interactions with devices and ballots
	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		**Yes.** Verity Touch Writer and Verity Scan comply with this requirement.
	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		**Yes.** See the supplemental attachment, **Exhibit A-1.6B Preventative Maintenance Checklist.**
	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		**Yes.** In addition to the durable, convenient carrying/storage case that is an integrated part of the Verity Touch Writer and Verity Scan design, corrugated plastic cases are also available for transportation and storage, as well as durable canvas bags for the voting booth and ballot box. Furthermore, Hart will be pleased to provide the State with documentation and best practices to assist with the transportation, storage, and deployment of Touch Writer and Verity Scan voting devices.

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	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		**Yes.** All Verity Voting devices are designed for secure, easy transportation and storage. More specifically, the voting devices were purposely designed to be as compact in size as possible (with a small footprint) and significantly smaller than other solutions currently available in the marketplace. Their compact size creates greater efficiencies and cost savings in storage and transportation by reducing the need for warehouse and trucking space. It also allows more flexible deployment by poll workers, because Verity Voting devices were specifically designed to comfortably fit within the confines of typical private vehicles. These design considerations create a stark contrast that is immediately visible between Verity Voting devices and other alternatives. We think you will find that they significantly enhance usability. In addition, all Verity devices have been tested and comply with a series of environmental stress standards defined by the US Military. The full list is included in our response to requirement **1.1.A.25** in **Attachment 1.1 Hardware – Supplement, page A1.1-23.**
	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		**Yes.** Verity Scan is designed to withstand real-world conditions. As with many electronic devices, however, Verity Scan is not water resistant and should be protected from water and humidity.
	1.4.D.7	OPTIONAL REQUIREMENT: Bidders shall document and explain any available storage-friendly options for the accessible voting system components.	Y		**Yes.** All Verity Voting system components are easily transportable and include durable, protective containers for transport and storage. Verity Scan and Verity Touch Writer include a compact and durable integrated storage case for secure, easy transportation and storage. In addition to the convenient carrying/storage case that is an integrated part of the Scan design, corrugated plastic cases are available for transportation and storage. The rugged Verity Ballot Box folds to just 6 inches thin for easy transportation and storage. A sturdy canvas bag is also available for transporting and storing the Ballot Box. The lightweight Voting Booth includes a heavy canvas bag for protection during transport and storage.

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	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		**Yes.** Please see our response to requirement **1.1.F.8** in **Attachment 1.1 Hardware Requirements.**
	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		**Yes.** The accessible Voting Booth for Touch Writer is light-weight and easy to set up. The booth includes minimal parts for quick setup and it can be locked into place in one easy motion. The Verity Voting booth includes durable fabric privacy screens and complies with VVSG requirements for accessibility and controls within reach. Because Verity Touch Writer is a standalone device with its own purpose-built booth, jurisdictions have the freedom to locate the accessible voting station in the most optimal part of each individual polling place to allow for best physical access and a peaceful, quiet voting experience. Alternatively, Verity Touch Writer can be deployed separately from the accessible booth, and can be placed on a surface that is the most convenient height and in the most convenient location for voters and poll workers.
	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		**Yes.** The privacy screens included in the Verity Touch Writer accessible booth are U-shaped and made of lightweight, durable ripstop nylon. They include durable wire frames to support the screens in an upright position while they are installed, and they are easily inserted or removed from purpose-built connection points in the booth platform. When not installed, the privacy screens can be laid flat and easily stored inside the canvas carrying bag for the accessible booth. For a photograph, please see **Attachment 1.4 Accessible Voting – Supplement, page A1.4-24.**