From the Vendor Trace document or declaration, identify all documents that pertain to the **System Maintenance Procedures**. Each submitted (Vol. 1, Sect. 1.1) Technical Data Package document (Vol.2 Sect. 6.6) is reviewed (Vol. 1, Sect. 1.6.2.2).

Note about revisions: The first time a review form is completed, the form revision number is 01. As the review process continues, newer versions of vendor documents, or additional documents, will be submitted to close discrepancies. Each time new versions of documents are examined, the review form is saved with a new revision number. Save the form with the new revision (Save As) before you update the document names, versions and/or file names. Enter your name and date on the new revision.

Applicable TDP Documents table: List each applicable TDP document. Put the Title from inside the document in the first column, along with the version and date. Under "File name," copy the full document file name.

Trace Table: Verify whether the vendor correctly documented each applicable VVSG requirement listed in this template. Use the following notations to indicate results:

- **Traced** column: For each positive finding, enter the document number(s) corresponding to the **Applicable TDP Documents** Table below, with the section number(s) in each applicable document where the requirement is fulfilled. (Example: Doc. 2, Sec. 1.2)
- **Comments** column:
  - "Y" indicates that the document(s) fulfill the requirement.
  - "N" indicates that the document(s) do not fulfill the requirement.
  - "P" indicates that the document(s) partially fulfill the requirement
  - "NT" (not tested) indicates documents that are part of the system configuration but outside the scope of this certification review effort (only if not a full cert).
  - "NS" (not supported) indicates requirements that apply to features that are not supported in the configuration being tested (such as paper ballots).
  - Explain "P", "N", "NT" or "NS" findings here.
  - In addition, use the Comments column to enter any comments that would be helpful throughout the project.
  - **Discrepancies:**
    - List discrepancies in red
    - A Documentation discrepancy is written when a VVSG requirement is not fulfilled or is partially fulfilled in the TDP.
    - An Informational discrepancy is written when the issue is outside the scope of the certification; Informational discrepancies are provided to the client but do not preclude certification.
    - Enter the discrepancy number of any discrepancies written (from the separate discrepancy report), with a short description in the Comments column.

Vendor :	**Hart**	Reviewer(s):	L. Hoppert
Voting System:	**Verity 1.0**	**Review Date:**	2/19/2015

Applicable TDP Documents

Document Title (from cover pg), version, date	Doc #	File name
Verity Service and Maintenance Technical Reference Manual, Rev A03, no date	#1	Verity Service and Maintenance Operations Technical Reference Manual 6610-001 A03.pdf
Verity System Description Technical Document Version A.08 10/31/2014	#2	Verity System Description 4005466 A08.pdf

Document Title (from cover pg), version, date	Doc #	File name
Verity 1.0 Technical Data Package Overview Version A10 1/19/2015	#3	Verity 1.0 TDP Overview 4005511 A10.pdf
Verity System Limits Version A.07, 11/25/2014	#4	Verity System Limits 4005470 A07.pdf
Hart InterCivic Secure Ballot Stock Rev A.00, No Date	#5	Hart Secure Ballot Stock Specification 4005526 A00.pdf
Verity Voting Performance Characteristics Rev A.07 12/6/2014	#6	Verity Performance Characteristics 4005497 A07.pdf
Verity Operational Guide, Rev A.13, no date	#7	Verity Operational Guide 6640001 A13

Trace Table

Req #	VVSG 2005 Testing Standards - Vol.2 unless otherwise specified	Traced	Comments
2	**Technical Data Package**		
2.1	**Scope**		
2.1.1	**Content and Format**		
2.1.1.1	**Required Content for Initial Certification** *(Indicate "*" if this document does not fall into the identified category of documentation.)*		
h.	At minimum, the TDP shall contain the following documentation: System maintenance procedures;	**Doc #1 -** Entire Doc. **Doc #2 -** Entire Doc.	Y
2.1.1.3	**Format**		
	The requirements for formatting the TDP are general in nature; specific format details are of the vendor's choosing. The TDP shall include a detailed table of contents for the required documents, an abstract of each document and a listing of each of the informational sections and appendices presented. A cross-index shall be provided indicating the portions of the documents that are responsive to documentation requirements for any item presented.	**Doc #3 -** Entire Doc.	Y Info DISC **VTY-33** Doc #3 - Section 2.9 Verity Election Preparation, pg. 30 contains the following reference to a document that does not exist in the TDP: Hart's ***Verity Voting End-to-End Operations Guide*** and *Verity Polling Place Operations Guide* provides detailed procedures required to perform and complete election preparation, early voting and Election Day voting activities and post-election activities needed to prepare for the next election. **CLOSED** - L. Hoppert, 12/15/14: The reference to

Confidential

Req #	VVSG 2005 Testing Standards - Vol.2 unless otherwise specified	Traced	Comments
			a "Verity Voting End-to-End Operations Guide" has been removed from the document " Verity 1.0 TDP Overview 4005511 A09"
2.1.3	**Protection of Proprietary Information**		
	The vendor shall identify all documents, or portions of documents, containing proprietary information not approved for public release. Any person or test agency receiving proprietary information shall agree to use it solely for the purpose of analyzing and testing the system, and shall agree to refrain from otherwise using the proprietary information or disclosing it to any other person or agency without the prior written consent of the vendor, unless disclosure is legally compelled.	**Doc #1 -** pg. 2 **Doc #2 -** Entire Doc. **Doc #3 -** Entire Doc. **Doc #4 -** Entire Doc. **Doc #6** - Entire Doc	Y Doc #5 is not identified as proprietary within the document, but is flagged as proprietary on Doc #3 (TDP Overview)
2.9	**System Maintenance Procedures**		
	The system maintenance procedures shall provide information in sufficient detail to support election workers, information systems personnel, or maintenance personnel in the adjustment or removal and replacement of components or modules in the field. Technical documentation needed solely to support the repair of defective components or modules ordinarily done by the manufacturer or software developer is not required.	**Doc 1**: Chapter 1 Servicing pg. 21 Chapter 2 Preventive Maintenance Procedures pgs. 51, 53 Chapter 3 TouchWriter Testing Supplies pg.71 Chapter 4 Post- Election Checklist, pg. 89 Chapter 5 Field Technician Responsibilities and Training pgs. 94-96. Chapter 6 Troubleshooting Procedures for Support Personnel pgs. 101-116.	Y
	Recommended service actions to correct malfunctions or problems shall be discussed, along with personnel and expertise required to repair and maintain the system; and equipment, materials, and facilities needed for proper maintenance. This manual shall include the sections listed below.	**Doc 1**: Chapter 1 Servicing pg. 21 Chapter 2 Preventive Maintenance Procedures pgs. 51, 53 Chapter 3 TouchWriter Testing Supplies pg.71 Chapter 4 Post- Election Checklist, pg. 89 Chapter 5 Field Technician Responsibilities and Training pgs. 94-96. Chapter 6 Troubleshooting Procedures for	Y

Req #	VVSG 2005 Testing Standards - Vol.2 unless otherwise specified	Traced	Comments
		Support Personnel pgs. 101-116.	
2.9.1	**Introduction**		
	The vendor shall describe the structure and function of the equipment (and related software) for election preparation, programming, vote recording, tabulation, and reporting in sufficient detail to provide an overview of the system for maintenance, and for identification of faulty hardware or software.	**Doc #1** Chapter 1 Introduction pgs. 9-22. **Doc #2** Chapter 1 Brief Description pgs. 7-18.	Y
a.	The description shall include a concept of operations that fully describes such items as: The electrical and mechanical functions of the equipment;	**Doc #2 -** Chapter 4 - Section 4.1.1 Verity Voting Devices – Common Design pgs. 61-68.	Y
b.	The description shall include a concept of operations that fully describes such items as: How the processes of ballot handling and reading are performed (paper-based systems);	**Doc #2 -** Chapter 1 - Section 1.2 Verity Voting Software Components pgs. 9-15	Y
c.	The description shall include a concept of operations that fully describes such items as: How vote selection and casting of the ballot are performed (DRE systems);	**Doc #2 -** Chapter 1 - Section 1.3 Verity Voting Hardware Devices pgs. 15-18.	Y
d.	The description shall include a concept of operations that fully describes such items as: How transmission of data over a network is performed (DRE systems, where applicable);	**NS**	**NS**
e.	The description shall include a concept of operations that fully describes such items as: How data are handled in the processor and memory units;	**Doc #1 -** Chapter 1 Section vDrive pg. 16 **Doc #2** - Chapter 3 - Section 3.1.5.7 Memory pgs. 38-39. Chapter 4 - Section 4.1.1.3 Verity Tablet pgs. 63-64.	Y
f.	The description shall include a concept of operations that fully describes such items as: How data output is initiated and controlled;	**Doc #1 -** Chapter 2 Predefine Procedures pgs. 36-44, Chapter 4 Predefining the Touch Writer and Scan pgs. 84-86, Chapter 7 Device Reports pgs. 117-130, Chapter 8 vDrive Processing and Election Night Procedures pgs. 133-136	Y

Req #	VVSG 2005 Testing Standards - Vol.2 unless otherwise specified	Traced	Comments
		Doc #2 - Chapter 1 Section 1.2.5 - Verity Election Management - Election Data Loading and Archiving pg. 14, Chapter 1 Section 1.2.6 - Verity Desktop - Workstation Management pg. 15, Chapter 1 Section 1.3 - Verity Voting Hardware Devices pgs. 15-18, Chapter 2 Section 2.1 Overall System Capabilities pgs. 19-21, Chapter 2 - Section 2.4.1 - Verity Election Management pgs. 24-25, Chapter 2 - Section 2.6.1 Verity Build - Election Definition Capabilities pgs. 25-27, Chapter 2 - Section 2.7 Voting Device Capabilities pgs. 27-28, Chapter 2 - Section 2.8 Post Voting Capabilities pgs. 28-30, Chapter 3 - Section 3.1.1.9 Reports pgs. 32-33.	
g.	The description shall include a concept of operations that fully describes such items as: How power is converted or conditioned;	**Doc #1 -** Chapter 1 - Section - Power Sources, Verity Tablet Caution pg. 21, Chapter 2 Section - Equipment Environmental Standards pg. 33, Chapter 2 Section - Power Accessibility pgs. 34-35, Chapter 2 Section - Hardware pg. 44 **Doc #2** Chapter 3 - Section 3.1.5.12 Device Error Handling, Chapter 4- Section - 4.1.1.5 Power pgs. 65-66.	**Y**
h.	The description shall include a concept of operations that fully describes such items as: How test and diagnostic information is acquired and used.	**Doc #1 -** Chapter 2 Section - Performing Functionality Tests pgs. 58-65, Chapter 2 Section - Calibrating the Scanner pgs. 66-68, Chapter 3 Section - Polling Place Equipment Testing pgs. 69-78. **Doc #2** Chapter 3 - Section 3.2.11 System Validation pgs. 58-60, Chapter 4 Section - 4.1.7 Product Regulatory Compliance and	**Y**

Req #	VVSG 2005 Testing Standards - Vol.2 unless otherwise specified	Traced	Comments
		Environmental Specifications pg. 68	
2.9.2	**Maintenance Procedures**		
	The vendor shall describe preventive and corrective maintenance procedures for hardware and software.	**Doc #1 Preventative:** Chapter 2 Section - Preventative Maintenance Procedures pgs. 51-55 (hardware tasks) Chapter 3 Section - Touch Writer Test Preparation pgs. 73-74, Chapter 3 Section - Scan Test Preparation pgs. 77-78 (software tasks) **Corrective:** Chapter 5 Procedures: Field Techs & Help Desk91 pgs. 91-100. Chapter 6 Troubleshooting Procedures for Support Personnel pgs. 101-116.	Y
2.9.2.1	**Preventative Maintenance Procedures**		
a.	The vendor shall identify and describe: All required and recommended preventive maintenance tasks, including software tasks such as software backup, database performance analysis, and database tuning;	**Doc #1** Chapter 2 Section - Preventative Maintenance Procedures pgs. 51-55 (hardware tasks) Chapter 3 Section - Touch Writer Test Preparation pgs. 73-74, Chapter 3 Section - Scan Test Preparation pgs. 77-78 (software tasks) **Doc #2** Chapter 1 Section - 1.2.5 Verity Election Management – Election Data Loading and Archiving pg. 14	Y
b.	The vendor shall identify and describe: Number and skill levels of personnel required for each task;	**Doc #7** - Section 10	Y DISC VTY-71 Missing the identification and description of the number and skill levels of personnel required for each preventive maintenance task. **CLOSED -** L. Hoppert, 12/15/14: Traced to document "Verity Operational Guide 6640001 A10" section 10

Req #	VVSG 2005 Testing Standards - Vol.2 unless otherwise specified	Traced	Comments
c.	The vendor shall identify and describe: Parts, supplies, special maintenance equipment, software tools, or other resources needed for maintenance;	**Doc #1** Chapter 2 Section - Cleaning Rollers Contaminated With Paper Dust pg. 53 Chapter 2 Section - Cleaning the Equipment Screens pgs. 54-55. Chapter 2 Section - Cleaning the Verity Scan Scanner Path pg. 55.	Y
d.	The vendor shall identify and describe: Any maintenance tasks that must be coordinated with the vendor or a third party (such as coordination that may be needed for off-the-shelf items used in the system).	**Doc #1** Chapter 2 Section - Voting Device Maintenance pg. 51 Chapter 2 Section - Cleaning Rollers Contaminated With Paper Dust pg. 53	Y
2.9.2.2	**Corrective Maintenance Procedures**		
	The vendor shall provide fault detection, fault isolation, correction procedures, and logic diagrams for all operational abnormalities identified by design analysis and operating experience.	**Doc #1** Chapter 5 Procedures: Field Techs & Help Desk91 pgs. 91-100. Chapter 6 Troubleshooting Procedures for Support Personnel pgs. 101-116. Chapter 7 Device Reports pgs. 117-131.	Y
	The vendor shall identify specific procedures to be used in diagnosing and correcting problems in the system hardware (or user-controlled software).	**Doc #1** Chapter 5 Procedures: Field Techs & Help Desk91 pgs. 91-100. Chapter 6 Troubleshooting Procedures for Support Personnel pgs. 101-116. Chapter 7 Device Reports pgs. 117-131.	Y
a.	Descriptions shall include: Steps to replace failed or deficient equipment;	**Doc #1** Chapter 6 Section - Verity Touch Writer Polling Place Troubleshooting Quick Guide pgs. 105-106. Chapter 6 Section - Verity Scan Polling Place Troubleshooting Quick Guide pg. 109. Chapter 6 Section - Scan Replacement pg. 111. Chapter 6 Section - vDrive Removal Error Message pg. 112.	Y

Req #	VVSG 2005 Testing Standards - Vol.2 unless otherwise specified	Traced	Comments
b.	Descriptions shall include: Steps to correct deficiencies or faulty operations in software;	**Doc #1** Chapter 6 Section - Verity Touch Writer Polling Place Troubleshooting Quick Guide - Extra Access Codes pg. 105 - Password does not work - Polling Place and/or Voting Type identified Incorrectly - Polls closed too early pg. 106. - Printing reports after closing or suspending polls and powering off pg. 107. Chapter 6 Section - Verity Scan Polling Place Troubleshooting - Password is invalid - Polling Place and/or Voting Type identified Incorrectly - Polls closed too early pg. 109. Reports after closing or suspending polls AND powering off pg. 110 Chapter 6 Section - Verity Scan Polling Place Troubleshooting Guide - Invalid Password pg. 112 - Polling Place Identified Incorrectly - Polls Closed Too Early pg. 113.	**Y**
c.	Descriptions shall include: Modifications that are necessary to coordinate any modified or upgraded software with other software modules;	**Doc #7 -** Sections 5, 10, 13 Hart build and installation documents (non-customer facing)	**Y DISC VTY-72** Missing description of modifications that are necessary to coordinate any modified or upgraded software with other software modules. **Update 12/15/14:** Still open. Vendor response does not address this item. **Update 1/27/15:** Still open. Vendor response addresses personnel deployment, not modifications to coordinate modified software with other modules. **CLOSED** L. Hoppert, 2/19/15: The Operational Guide explains that only Hart

Req #	VVSG 2005 Testing Standards - Vol.2 unless otherwise specified	Traced	Comments
			personnel can update software in the polling place/scanner equipment and the workstations. Hart's build and installation documents (not customer facing) explain the process.
d.	Descriptions shall include: The number and skill levels of personnel needed to accomplish each procedure;	Doc #7 - Section 13	**Y DISC VTY-73** Missing the description of the number and skill levels of personnel required for each corrective maintenance task. **CLOSED -** L. Hoppert, 12/15/14: Traced to document "Verity Operational Guide 6640001 A10" section 13
e.	Descriptions shall include: Special maintenance equipment, parts, supplies, or other resources needed to accomplish each procedure;	**Doc #1** Chapter 2 Section - Cleaning Rollers Contaminated With Paper Dust pg. 53 Chapter 2 Section - Cleaning the Equipment Screens pgs. 54-55. Chapter 2 Section - Cleaning the Verity Scan Scanner Path pg. 55.	**Y**
f.	Descriptions shall include: Any coordination required with the vendor, or other party, for off the shelf items.	**Doc #1** Section 2.8.2 - Coordination with Hart re commercial printers Section 2.8.3 - Coordination with Hart re commercial scanners Section 2.8.4 - Coordination with Hart re workstation maintenance	**Y DISC VTY-74** Missing the description of any coordination required with the vendor, or other party, for off the shelf items. **Update 12/15/14:** Still open. Vendor response does not address this item. **CLOSED,** L. Hoppert 1/27/15 - located this information as traced.
2.9.3	**Maintenance Equipment**		
	The vendor shall identify and describe any special purpose test or maintenance equipment recommended for fault isolation and diagnostic purposes.	**Doc #1** Chapter 5 Procedures: Field Techs & Help Desk91 pgs. 91-100. Chapter 6 Troubleshooting Procedures for Support Personnel pgs. 101-116.	**Y**
2.9.4	**Parts and Materials**		

Req #	VVSG 2005 Testing Standards - Vol.2 unless otherwise specified	Traced	Comments
	Vendors shall provide detailed documentation of parts and materials needed to operate and maintain the system. Additional requirements apply for paper-based systems.	**Doc #1** Chapter 2 Section - Cleaning Rollers Contaminated With Paper Dust pg. 53 Chapter 2 Section - Cleaning the Equipment Screens pgs. 54-55. Chapter 2 Section - Cleaning the Verity Scan Scanner Path pg. 55.	**Y**
2.9.4.1	**Common Standards**		
	The vendor shall provide a complete list of approved parts and materials needed for maintenance.	**Doc #7** - Section 5.3, table on pg 18: warehouse/field technicians (polling place) Section 7, table on pg 27: Central Section 8, table on pg 28: Count Section 9, table on pg 29: storage Section 10, table on pg. 39: preventive	**Y DISC VTY-75** Missing complete list of approved parts and materials needed for maintenance. **Update 12/15/14:** Still open. Vendor response does not address this item. **Update 1/27/15:** Still open. The vendor PCA trace references the Verity Parts List, which does not contain a complete list of supplies/parts/materials required for maintenance. (Verity Service and Maintenance Operations Technical Reference Manual, Section 5.3 contains a Field Technician Equipment List but this list may not be complete for all maintenance situations and is not as specific about type, size, quantities, etc. as required.) **CLOSED**, L. Hoppert 2/19/15: Addressed in Verity Operational Guide - details were added for various maintenance contexts
a.	This list shall contain sufficient descriptive information to identify all parts by: Type		
b.	This list shall contain sufficient descriptive information to identify all parts by: Size		
c.	This list shall contain sufficient descriptive information to identify all parts by: Value or range		
d.	This list shall contain sufficient descriptive information to identify all parts by: Manufacturer's designation;		
e.	This list shall contain sufficient descriptive information to identify all parts by: Individual quantities needed		
f.	This list shall contain sufficient descriptive information to identify all parts by: Source from which they may be obtained		
2.9.4.2	**Paper-Based Systems**		
	For marking devices manufactured by multiple external sources, the vendor shall provide a listing of sources and model numbers that are compatible with the system.	**Doc #1** - Section 3.3 Touch Writer Printer, pg. 12 **Doc #6** - Section 3.12.2 Verity Build Ballot Production Printer, pg. 16 Section 3.12.4 Verity Touch Writer Printer, pg.	**Y**

Req #	VVSG 2005 Testing Standards - Vol.2 unless otherwise specified	Traced	Comments
		17, Section 3.2.1 Verity Touch Writer, pgs. 8-9	
	The TDP shall specify the required paper stock, size, shape, opacity, color, watermarks, field layout, orientation, size and style of printing, size and location of punch or mark fields used for vote response fields and to identify unique ballot formats, placement of alignment marks, ink for printing, and folding and bleed-through limitations for preparation of ballots that are compatible with the system	**Doc #2 -** Section 3.3 Touch Writer Printer, pg. 12 **Doc #5 -** Entire Doc	**Y**
2.9.5	**Maintenance Facilities and Support**		
	The vendor shall identify all facilities, furnishings, fixtures, and utilities that will be required for equipment maintenance. In addition, vendors shall specify the assumptions made with regard to any parameters that impact the mean time to repair.	**Doc #7 -** Section 5.3, table on pg 18: warehouse/field technicians (polling place) Section 7, table on pg 27: Central Section 8, table on pg 28: Count Section 9, table on pg 29: storage Section 10, table on pg. 39: preventive	**Y DISC VTY-76** Missing the identification of all facilities, furnishings, fixtures and utilities that will be required for equipment maintenance. **Update 12/15/14:** Still open. Vendor response does not address this item. **Update 1/27/15:** Still open. Vendor response does not address furnishings, fixtures and utilities required for equipment maintenance. **CLOSED**, L. Hoppert 2/19/15: Addressed in Verity Operational Guide - details were added for various maintenance contexts
a.	These factors shall include at a minimum: Recommended number and locations of spare devices or components to be kept on hand for repair purposes during periods of system operation;	**Doc #7 -** Section 13 under Spare Equipment Requirements	
b.	These factors shall include at a minimum: Recommended number and locations of qualified maintenance personnel who need to be available to support repair calls during system operation;	**Doc #7 -** Section 13 under Help Desk Personnel Requirements	
c.	These factors shall include at a minimum: Organizational affiliation (i.e., jurisdiction, vendor) of qualified maintenance personnel.	**Doc #7 -** Section 13 under Personnel Requirements	
2.9.6	**Appendices**		
	The vendor may provide descriptive material and data supplementing the various sections of the body of the System Maintenance Manual. The content and arrangement of appendices shall be at the discretion of the vendor. Topics recommended for amplification or treatment in appendix include:	**Doc #1 -** Appendix A Security Best Practices pgs. 137-143 Glossary pgs. 145-174 Index pgs. 175-176.	**Y**

Req #	VVSG 2005 Testing Standards - Vol.2 unless otherwise specified	Traced	Comments
	Glossary: A listing and brief definition of all terms that may be unfamiliar to persons not trained in either voting systems or computer maintenance; **References:** A list of references to all vendor documents and other sources related to maintenance of the system; **Detailed Examples:** Detailed scenarios that outline correct system responses to every conceivable faulty operator input. Alternative procedures may be specified depending on the system state; and **Maintenance and Security Procedures:** This appendix shall contain technical illustrations and schematic representations of electronic circuits unique to the system.		
Vol. 1, 7.9.4	**Equipment Security and Reliability**		
I.	Vendor documentation shall include printer reliability specifications including Mean Time Between Failure estimates, and shall include recommendations for appropriate quantities of backup printers and supplies.	**Doc #7 -** Section 13, table 8 on pg 80	Y DISC VTY-77 Missing the printer reliability specifications including Mean Time Between Failure estimates. Missing recommendations for the appropriate quantities of backup printers and supplies. **Update 12/15/14:** Still open. Vendor response indicates "TBD". **Update 1/27/15:** Still open. Vendor response references file names that differ from those in the TDP. Although equivalent files were found, the specific content of this requirement was not found in the referenced docs. **CLOSED** L. Hoppert, 2/19/15: Monthly duty cycles added to the Verity Operational Guide as a rough equivalent to MTBF

End of Document