| | A | B | C | D | F | G |
|---|---|---|---|---|---|---|
| 1 | | **Technical Data Package Review per Voluntary Voting System Guidelines (VVSG) Ver. 1.0** | | | | **Compliance Object** |
| 2 | **P R E F A C E** | | # EVS5000<br>This matrix is the most up to date edition as of 3-15-2013 | **Corresponding VVSG requirement(s) reference** | **I. WHVS07 Voting System Test Procedure**<br>**1. Wyle Test Plan**<br>**A. WHVS07.1, Technical Data Package**<br>**B. WHVS07.10 Materials Required for Testing**<br>**C. WHVS07TR, Test Report Template**<br>**D. WHVS07.11, TDP Review Checklist Matrix**<br>**1. WoP2a, Receiving TDP**<br>**a. Vendor Media Receipt Log**<br>**2. WoP 3, TDP Review**<br>**a. WHV07.11TDP, (Review Matrix FINAL) Compliance Matrix**<br>**b. Issues Matrix**<br>**3. WHVS07.A6, Customer Communication Log**<br>**E. WH1066, Notice of Anomaly**<br><br>**According to the Election Systems & Software, EVS5000 Voting System Overview:** ES&S Voting System version 5.0.0.0 (EVS5000) is ES&S″s first voting system to fully comply with the EAC 2005 Voluntary Voting System Guidelines, Version 1.0. The system includes a number of new products and features including ES&S newest election management software solution, ElectionWare, and functionality to network multiple ES&S DS850 central ballot scanners to a single reporting PC for high-speed counting and results accumulation.<br><br>ES&S Voting System version 5.0.0.0 is the next step in providing voting systems capable of meeting the varied needs of every voting jurisdiction, and reaffirms ES&S″s commitment to providing customers with the most accurate, reliable and secure voting systems in the world. | |
| 3 | | | | | ES&S Voting System 5.0.0.0 provides a scalable, end-to-end election system for jurisdictions with widely varied requirements. The system includes:<br><br>- ElectionWare Election Management System software for defining contents, candidates and ballot formats and performing results post-processing.<br>-The DS200 precinct ballot tabulator.<br>- The ES&S AutoMARK, a proven ballot accessible marking system that supports audio, touchscreen and tactile keypad inputs for ballot marking.<br>- The DS850 central ballot scanner for high speed tabulation of mail ballots, absentee ballots or Election Day ballots. Jurisdictions can network multiple DS850 scanners to a central reporting PC for large central count operations.<br>- Election Reporting Manager software for results consolidation and report generation.<br><br>ES&S Voting System 5.0.0.0 system components are divided into the following functional groups:<br><br>- Election Management System<br>- Central Ballot Tabulator<br>- Electronic Ballot Marking Devices<br>- Precinct Ballot Tabulators<br>-Third party computing equipment and peripherals | |
| 4 | | **Volume** | **VVSG Requirement** | | **Location(s) where verified is located/comments by Wyle:** | |
| 5 | | **VII, Sec. 2** | **Description of the Technical Data Package** | | | |
| 6 | | **VII, 2.1** | **Scope** | | | |

| | A | B | C | D | F | G |
|---|---|---|---|---|---|---|
| 7 | | | This subsection [of the VVSG] contains a description of vendor documentation relating to the voting system that shall be submitted with the system as a precondition of national certification testing. **These items are necessary to define the product and its method of operation, to provide technical and test data supporting the vendor's claims of the system's functional capabilities and performance levels; and to document instructions and procedures governing system operation and field maintenance.** Any information relevant to the system evaluation shall be submitted to include **source code, object code, and sample output report formats.** | *also Vol. I, 2.1.7.2 Voting Variations;*<br>*Vol. II, 2.8.4 Operational Features*<br>*EAC VSTL Program Manual Vol. 1.0 Sect. 4.3.1.6* | EAC Approval of Voting System Testing Application Package Letter to ES&S, December 02, 2011 | Letter |
| 8 | | | Both formal documentation and notes of the vendor's system development process shall be submitted for qualification tests. Documentation describing the system development process permits assessment of the vendor's systematic efforts to develop and test the system and correct defects. Inspection of this process also enables the design of a more precise test plan. If the vendor's developmental test data are incomplete, the accredited test lab shall design and conduct the appropriate tests to cover all elements of the system and to ensure conformance with all system requirements. | | EAC Approval of Voting System Testing Application Package Letter to ES&S, December 02, 2011 | Letter |
| 9 | | **VII, 2.1.1** | **Content and Format** | | | |
| 10 | | | The vendor shall provide a list of all documents submitted controlling the design, construction, operation, and maintenance of the system. Documents shall be listed in order of precedence. | | EVS5000_PRE03_TOC<br>EVS5000_PRE01_BinderCover_3-in<br>EVS5000_PRE02_Cover Page<br>EVS5000_PRE05_Requirements Matrix | Spreadsheet |
| 11 | | **VII, 2.1.1.1** | **Description of the Technical Data Package, Required Content for Initial Certification** | *Vol. I, 8.7 Quality Assurance Requirements, Documentation;*<br>*Vol. II, 2.12.4 Quality Assurance Program, Documentation* | | |
| 12 | | | At a minimum, the TDP shall contain the following documentation: | *Vol. I, 3.1.1 Usability Testing;*<br>*Vol. I, 3.2.2.1 Partial Vision;*<br>*Vol. I, 3.2.2.2 Blindness;*<br>*Vol. I, 3.2.3 Dexterity* | | |
| 13 | | a. | System Configuration Overview | | EVS5000_OVR00<br>EVS5000_OVR04_AppxD_CIF-AutoMark<br>EVS5000_OVR05_AppxD_CIF-DS200<br>EVS5000_OVR07_AppxE_ConformityStatement | TDP |
| 14 | | b. | System Functionality Description | | EVS5000_SFD00 | TDP |

| | A | B | C | D | F | G |
|---|---|---|---|---|---|---|
| 15 | | c. | System Hardware Specifications | | EVS5000_SHS00_DS200<br>EVS5000_SHS00_DS850<br>AutoMARK_ESS_System_Hardware_Overview_AQS-18-5002-000-S<br>AutoMARK_ESS_System_Hardware_Specification_AQS-18-5000-001-F<br>EVS5000_SHS00_AutoMARK01_MODELS<br>EVS5000_SHS00_AutoMARK02_BOM<br>EVS5000_SHS00_DS20001_BOM<br>EVS5000_SHS00_DS85001_BOM<br>EVS5000_SHS01_AutoMARK1.1-1.2 BOM<br>EVS5000_SHS01_AutoMARK1.3 BOM<br><br>CABLE_PHASE2<br><br>5K509175-LA<br>5K509177-L-<br>5K509618_SIP_B<br>PEB_RevB<br>PSB_RevB<br>SBC_640117-4000C-2AGP<br>Scanner_PI211MC-B4DR May04<br>SD_GGB_REV_A<br>SIB_A3<br>USD-A-SCH | TDP |
| 16 | | d. | Software Design and Specifications | | AutoMARK ESS Ballot Image Processing Specification AQS-18-5002-003-S.pdf<br>AutoMARK ESS Ballot Scanning and Printing Specification AQS-18-5002-007-S.pdf<br>AutoMARK ESS Driver API Specification AQS-18-5000-002-F.pdf<br>AutoMARK ESS Embedded Database Interface Specifications AQS-18-5002-005-S<br>AutoMARK ESS GUI Design Specifications AQS-18-5001-005-R<br>AutoMARK ESS Operating Software Design Specifications AQS-18-5001-002-R<br>AutoMARK ESS Operations and Diagnostic Log Specs AQS-18-5002-004-S<br>AutoMARK ESS Programming Specifications Details AQS-18-5001-011-R<br>AutoMARK ESS Software Design Spec AQS-18-5001-004-S<br>AutoMARK ESS Software Development Environment AQS-18-5001-006-R<br>AutoMARK ESS Software Diagnostics Specifications AQS-18-5000-004-F<br>AutoMARK ESS Software Standards Specification AQS-18-4000-000-S<br>ESSSYS_D_D_0100_Coding Standards<br>ESSSYS_SG_P_1000_SystemDevProgram<br>EVS5000_SDS00_AutoMARK SDS Overview<br>EVS5000_SDS00_DS200<br>EVS5000_SDS00_DS20001_Flowcharts<br>EVS5000_SDS00_DS20002_Reports<br>EVS5000_SDS00_DS20005_System Messages<br>EVS5000_SDS00_DS20006_Results Media XMLs<br>EVS5000_SDS00_DS850<br>EVS5000_SDS00_ElectionWare<br>EVS5000_SDS00_ElectionWare01_EW Specification and Interfaces<br>EVS5000_SDS00_ElectionWare02_PB Specification and Interfaces<br>EVS5000_SDS00_ElectionWare05_System Process Flowchart<br>EVS5000_SDS00_ElectionWare07_PostGreSQL Description<br>EVS5000_SDS00_ElectionWare08_Reports<br>EVS5000_SDS00_ElectionWare11_DS200 and DS850 Media Desc<br>EVS5000_SDS00_ElectionWare12_AutoMARK Media Description and Structure<br>EVS5000_SDS00_ElectionWare13_ERM Media Description<br>EVS5000_SDS00_ElectionWare14_System Messages<br>EVS5000_SDS00_ERM<br>EVS5000_SDS00_ERM01_Appendices<br>EVS5000_SDS00_UELS | TDP |

| | A | B | C | D | F | G |
|---|---|---|---|---|---|---|
| 17 | TDP DOCUMENTS | e. | System Test and Verification Specifications | *see Vol. I 3.1.1 Usability Testing: per EAC RFI 2007-03 dated 9/5/07 - 2005 VVSG Vol. I Section 3.1.1:* ***summative usability test report must be submitted.*** | EVS5000_STP00<br>EVS5000_TC00_AutoMARK<br>EVS5000_TC00_DS200<br>EVS5000_TC00_DS850<br>EVS5000_TC00_ElectionWare01_Manage<br>EVS5000_TC00_ElectionWare02_Define<br>EVS5000_TC00_Electionware03_Design<br>EVS5000_TC00_Electionware04_Deliver<br>EVS5000_TC00_Electionware05_Resolve<br>EVS5000_TC00_ERM | TDP |
| 18 | | f. | System Security Specifications | | AutoMARK ESS System Security Specification AQS-18-5002-001-S<br>EVS5000_SSS00<br>EVS5000_SSS01_JSP Template<br>EVS5000_SSS002.08_AutoMARK Quick Hash Procedure<br>EVS5000_SSS02.01_EMS_PC_SecScriptDesc<br>EVS5000_SSS02.01_UbuntuLiveCD<br>EVS5000_SSS02.05_EMSWorkstation Validation Guide<br>EVS5000_SSS02.06_DS200Quick Hash Procedure<br>EVS5000_SSS02.07_DS850Quick Hash Procedure<br>EVS5000_SSS02_Hardening Procedures<br>EVS5000_SSS03_Voting System Validation Guide01_File Listing_DS200<br>EVS5000_SSS03_Voting System Validation Guide02_File Listing_AutoMARK<br>EVS5000_SSS03_Voting System Validation Guide04_File Listing_ElectionWare<br>EVS5000_SSS03_Voting System Validation Guide05_File Listing_RMS<br>EVS5000_SSS03_Voting System Validation Guide06_File_Listing_ELS<br>EVS5000_SSS03_Voting System Validation Guide07_File Listing_VATPreview<br>EVS5000_SSS03_Voting System Validation Guide08_File Listing_ERM<br>EVS5000_SSS03_Voting System Validation Guide09_File Listing_DS850<br>EVS5000_SSS07_PhysEquipmentSecurityBestPract<br>EVS5000_SSS09_WinOS_SECBaseSettings<br><br>EVS5000_SSS02.01_HardeningScripts [Folder]<br>EVS5000_SSS02.06.01_DS200Quick Hash Scripts [Folder]<br>EVS5000_SSS02.07.01_DS850QuickHashScripts [Folder]<br>EVS5000_SSS02.08.01_AutoMARKHashTools [Folder]<br>EVS5000_SSS02.09.01_EMS Quick Hash Scripts [Folder] | TDP |
| 19 | | g. | User/System Operations Procedures | | EVS5000_SOP00_AMVAT<br>EVS5000_SOP00_DS200<br>EVS5000_SOP00_DS850<br>EVS5000_SOP00_ElectionWare01_Admin<br>EVS5000_SOP00_ElectionWare02_Define<br>EVS5000_SOP00_ElectionWare03_Design<br>EVS5000_SOP00_ElectionWare04_Deliver<br>EVS5000_SOP00_ElectionWare05_Results<br>EVS5000_SOP00_ELS<br>EVS5000_SOP00_ERM<br>EVS5000_SOP00_NetworkConfigGuide<br><br>EVS5000_SOP00_AMVAT.01_VerficationElection [Folder]<br><br>EVS5000_ORPT02_BallotProductionGuide [In Folder 13_ATTACHMENTS] | TDP |
| 20 | | h. | System Maintenance Procedures | | EVS5000_SMM00_AMVAT<br>EVS5000_SMM00_DS200<br>EVS5000_SMM00_DS850 | TDP |
| 21 | | i. | Personnel Deployment and Training Requirements | | ESSSYS_T_D_1000_TrainingProgram | TDP |

| | A | B | C | D | F | G |
|---|---|---|---|---|---|---|
| 22 | | j. | Configuration Management Plan | | ESSSYS_CM_P_1000_ESSCMProgram<br>ESSSYS_DOC_P_1000_TDProgram<br><br>EVS5000_CMP10_BUILD DOCUMENTATION [Folder]<br>EVS5000_CMP10_BLD00_SEC00_FinalTrustedBuildOutputStagingGuide<br>EVS5000_CMP10_BLD01_SEC01_EMSBuildProcedure<br>EVS5000_CMP10_BLD01_SEC02_EMSBuildEnvironment<br>EVS5000_CMP10_BLD01_SEC03_WindowsAndVirusProtectionUpdates<br>EVS5000_CMP10_BLD02_SEC01_AutoMARKBuildProcedure<br>EVS5000_CMP10_BLD02_SEC02_AutoMARKBuildEnvironment<br>EVS5000_CMP10_BLD03_SEC01_DS200AncillaryBuildProcedure<br>EVS5000_CMP10_BLD03_SEC02_DS200AncillaryBuildEnvironment<br>EVS5000_CMP10_BLD05_SEC01_DS850FirmwareBuildProcedure<br>EVS5000_CMP10_BLD07_SEC01_DS200FirmwareBuildProcedure | TDP |
| 23 | | k. | Quality Assurance Program | | ESSSYS_M_I_0501_WhatRequriesECO<br>ESSSYS_M_P_0500_ECOProcess<br>ESSSYS_M_P_1000_MNFQualityAssurancePlan<br>ESSSYS_Q_P_0100_SoftwareQualityAssuranceProgram<br>EVS5000_QAP00_MN03_ECOPolicies and Procedures<br>EVS5000_QAP00_SWF01_Software_Firmware_Acceptance<br>EVS5000_QAP01_ISO cert Pivot<br>EVS5000_QAP03_QA manual Pivot<br>EVS5000_QAP07_DataWin Quality Assurance Manual<br>EVS5000_QAP08_DATAWIN ISO Certification Certificate<br><br>ESSSYS_M_FM_AcceptanceChecklists [folder]<br>850_AccptChklst_revC<br>850_OAccptChklst_revB<br>AutoMark_AccptChklst_001_Rev.A<br>AutoMark_QC_Chklst_001Rev.A<br>Carrying Case QC sheet rev 1.0<br>DS200_AccptChklst_001Rev.A<br>DS200_AccptChklst_001RevB<br><br>EVS5000_QAP00_MN01_AcceptanceTesting [folder]<br>850_AccptChklst_revB.pdf<br>850_DemoChklst_revA.pdf<br>850_OAccptChklst_revA.pdf<br>AutoMark_AccptChklst_001_Rev.A.pdf<br>AutoMark_QC_Chklst_001Rev.A.pdf<br>DS200_AccptChklst_001Rev.A.pdf<br>EVS5000_QAP00_MN01.01_AcceptanceTestProcedure_DS200.pdf<br>EVS5000_QAP00_MN02.01_AcceptanceTestProcedure_DS850.pdf | TDP |
| 24 | | l. | System Change Notes | | None | TDP |
| 25 | | **VII, 2.1.1.2** | **Required Content for System Changes and Recertification** | | | |
| 26 | | | For systems seeking re-certification, vendors shall submit System Change Notes as described in Subsection 2.13, as well as current versions of all documents that have been updated to reflect system changes. | *see Vol. II, 2.13 System Change Notes;*<br>*Vol. I, Sec. 8.7 Quality Assurance Requirements, Documentation;*<br>*Vol. II, 2.12.4 Quality Assurance Program, Documentation* | N/A - EVS500 is an Initial Certification | TDP |
| 27 | | **VII, 2.1.1.3** | **Format** | | | |
| 28 | **PREFA** | | 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. | | EVS5000_PRE03_TOC<br>EVS5000_PRE01_BinderCover_3-in<br>EVS5000_PRE02_Cover Page<br>EVS5000_PRE05_Requirements Matrix | TDP |

| | A | B | C | D | F | G |
|---|---|---|---|---|---|---|
| 29 | CE | | A cross-index shall be provided indicating the portions of the documents that are responsive to documentation requirements for any item presented. | | EVS5000_PRE03_TOC<br>EVS5000_PRE01_BinderCover_3-in<br>EVS5000_PRE02_Cover Page<br>EVS5000_PRE05_Requirements Matrix | TDP |
| 30 | | **VII, 2.1.3** | **Protection of Proprietary Information** | | | |
| 31 | | | The vendor shall identify all documents, or portions of documents, containing proprietary information not approved for public release. | | Cover Pages & "Proprietary Information" Sections of Individual TDP Core Documents | TDP |
| 32 | | **VII, 2.2** | **System Overview** | | | |
| 33 | | | In the system overview, the vendor shall provide information that enables the accredited test lab to identify the functional and physical components of the system, how the components are structured, and the interfaces between them. | | EVS5000_OVR00<br>EVS5000_OVR04_AppxD_CIF-AutoMark<br>EVS5000_OVR05_AppxD_CIF-DS200<br>EVS5000_OVR07_AppxE_ConformityStatement | TDP |
| 34 | | **VII, 2.2.1** | **System Description** | | | |
| 35 | | | The system description shall include written descriptions, drawings and diagrams that present: | | | |
| 36 | | a. | A description of the functional components (or subsystems) as defined by the vendor (e.g., environment, election management and control, vote recording, vote conversion, reporting, and their logical relationships). | | EVS5000_OVR00, Voting Systems Overview, Section 1.2, Functional Components and Subsystems | TDP |
| 37 | | b. | A description of the operational environment of the system that provides an overview of the hardware, software, and communications structure. | | EVS5000_OVR00, Voting Systems Overview, Section 1.3, Operational Environment | TDP |
| 38 | | c. | A concept of operations that explains each system function, and how the function is achieved in the design. | | EVS5000_OVR00, Voting Systems Overview, Section 1.4, Concept of Operation | TDP |
| 39 | | d. | Descriptions of the functional and physical interfaces between subsystems and components. | | EVS5000_OVR00, Voting Systems Overview, Section 1.5, Functional and Physical Interfaces | TDP |
| 40 | | e. | Identification of all COTS hardware and software products and communications services used in the development and/or operation of the voting system, identifying the name, vendor, and version used for each such component, including: | | | |
| 41 | | | 1) Operating systems | *also Vol. I, 7.5.2 Telecomm., Prot. Against External Threats* | EVS5000_OVR00, Voting Systems Overview, Section 1.6, COTS Hardware and Software | TDP |
| 42 | | | 2) Database software | *see Vol. II, 2.5.8 Sys. Database* | EVS5000_OVR00, Voting Systems Overview, Section 1.6, COTS Hardware and Software | TDP |
| 43 | | | 3) Communications routers | *see Vol. 1, 7.5.2 Prot. Against External Threats* | EVS5000_OVR00, Voting Systems Overview, Section 1.6, COTS Hardware and Software | TDP |
| 44 | | | 4) Modem drivers | *see Vol. 1, 7.5.2 Prot. Against External Threats* | EVS5000_OVR00, Voting Systems Overview, Section 1.6, COTS Hardware and Software | TDP |
| 45 | | | 5) Dial-up networking software | *see Vol. 1, 7.5.2 Prot. Against External Threats* | EVS5000_OVR00, Voting Systems Overview, Section 1.6, COTS Hardware and Software | TDP |
| 46 | OVERVIEW | f. | Interfaces among internal components, and interfaces with external systems. For components that interface with other components for which multiple products may be used, the TDP shall provide an identification of: | *Vol. II, 2.5.9 Interfaces* | | |
| 47 | | | 1) File specifications, data objects, or other means used for information exchange. | | EVS5000_OVR00, Voting Systems Overview, Section 1.7, Interfaces Among Components | TDP |
| 48 | | | 2) The public standard used for such file specifications, data objects, or other means. | | EVS5000_OVR00, Voting Systems Overview, Section 1.7, Interfaces Among Components | TDP |
| 49 | | g. | Benchmark directory listings for all software (including firmware elements) and associated documentation included in the vendor's release in the order in which each piece of software would normally be installed upon system setup and installation. | | EVS5000_OVR00, Voting Systems Overview, Section 1.7, Interfaces Among Components | TDP |
| 50 | | **VII, 2.2.2** | **System Performance** | | | |
| 51 | | | The vendor shall provide system performance information including: | | | |

| | A | B | C | D | F | G |
|---|---|---|---|---|---|---|
| 52 | | a. | The performance characteristics of each operating mode and function in terms of expected and maximum speed, throughput capacity, maximum volume (maximum number of voting positions and maximum number of ballot styles supported), and processing frequency. | *see Vol. I, 2.2.1.1c Ballot Prep., Gen. Capabilities.; see Vol. I, 4.1.5.1a Ballot Handling* | EVS5000_OVR00, Voting Systems Overview, Section 2.1, Performance Characteristics | TDP |
| 53 | | b. | Quality attributes such as reliability, maintainability, availability, usability, and portability. | *see Vol. I, 4.3.5 Availability; Vol. I, 7.9.3 VVPAT Requirements, Electronic and Paper Record Structure; VoI. I, 7.9.4 Equipment Security and Reliability* | EVS5000_OVR00, Voting Systems Overview, Section 2.2, Quality Attributes | TDP |
| 54 | | c. | Provisions for safety, security, privacy, and continuity of operation. | | EVS5000_OVR00, Voting Systems Overview, Section 2.2, Quality Attributes | TDP |
| 55 | | d. | Design constraints, applicable standards, and compatibility requirements. | | EVS5000_OVR00, Voting Systems Overview, Section 2.3, Design Constraints, Applicable Standards and Compatibility Requirements | TDP |
| 56 | | **VII, 2.3** | **System Functionality Description** | | | |
| 57 | | | The vendor shall declare the scope of the system's functional capabilities, thereby establishing the performance, design, test, manufacture, and acceptance context for the system. | | EVS5000_SFD00, Section I-B, Scope | TDP |
| 58 | | | The vendor shall provide a listing of the system's functional processing capabilities, encompassing capabilities required by the Guidelines and any additional capabilities provided by the system. This listing shall provide a simple description of each capability. Detailed specifications shall be provided in other documentation required for the TDP. | *per VVSG V2, 3.2.3, additional capabilities are those added to respond to the requirements of an individual State(s).* | EVS5000_SFD00, Section 2, Functional Requirements | TDP |
| 59 | | a. | The vendor shall organize the presentation of required capabilitie in a manner that corresponds to the structure and sequence of functional capabilities indicated in Volume I, Section 2. The contents of Volume I, Section 2 may be used as the basis for a checklist to indicate the specific functions provided and those not provided by the system. [see below for functional capabilities as listed in Vol. I, Sec. 2.1-2.5] | | EVS5000_SFD00, Section 2.1, Overall System Capabilities | TDP |
| 60 | | | **[Vol. I, 2.1 Overall System Capabilities]:** These functional capabilities apply throughout the election process. They include: | | | |
| 61 | | | 2.1.1 Security | | EVS5000_SFD00, Section 2.1.1, Security | TDP |
| 62 | | | 2.1.2 Accuracy | | EVS5000_SFD00, Section 2.1.2, Accuracy | TDP |
| 63 | | | 2.1.3 Error Recovery | | EVS5000_SFD00, Section 2.1.3, Error Recovery | TDP |
| 64 | | | 2.1.4 Integrity | | EVS5000_SFD00, Section 2.1.4, Integrity | TDP |
| 65 | | | 2.1.5 System Auditability | | EVS5000_SFD00, Section 2.1.5, System Audit | TDP |
| 66 | | | 2.1.6 Election Management System | | EVS5000_SFD00, Section 2.1.6, Election Management System | TDP |
| 67 | | | 2.1.7 Vote Tabulation | | EVS5000_SFD00, Section 2.1.7, Vote Tabulation Program | TDP |
| 68 | | | 2.1.8 Ballot Counters | | EVS5000_SFD00, Section 2.1.8, Ballot Counter | TDP |
| 69 | F | | 2.1.9 Telecommunications | | EVS5000_SFD00, Section 2.1.9, Telecommunications | TDP |

| | A | B | C | D | F | G |
|---|---|---|---|---|---|---|
| 70 | FUNCTIONAL DESCRIPTION | | 2.1.10 Data Retention | *see Vol. I, 2.1.10 Data Retention;*<br>*see Vol. I, 4.1.3.2 Memory Stability;*<br>*see Vol. I, 4.1.6.1 b. Paper-Based System Processing Requirements;*<br>*see Vol. I, 4.1.6.2 c. DRE System Processing Requirements;*<br>*see Vol. I, 4.1.7.1 Removable Storage Media;*<br>*see Vol. I, 5.3 a. Data and Document Retention* | EVS5000_SFD00, Section 2.1.10, Data Retention | TDP |
| 71 | | | **[Vo. I, 2.2 Pre-voting Capabilities]** These functional capabilities are used to prepare the voting system for voting. They include: | | | |
| 72 | | | 2.2.1 Ballot Preparation; 2.2.1.1 General Capabilities; 2.2.1.2 Ballot Formatting; 2.2.1.3 Ballot Production | | EVS5000_SFD00, Section 2.2.1, Ballot Preparation | TDP |
| 73 | | | 2.2.2 Election Programming | | EVS5000_SFD00, Section 2.2.2, Election Programming | TDP |
| 74 | | | 2.2.3 Ballot and Program Installation and Control | | EVS5000_SFD00, Section 2.2.3, Ballot Program Installation and Control | TDP |
| 75 | | | 2.2.4 Readiness Testing | | EVS5000_SFD00, Section 2.2.4, Readiness Testing | TDP |
| 76 | | | 2.2.5 Verification at the Polling Place | | EVS5000_SFD00, Section 2.2.5, Verification at the Polling Place | TDP |
| 77 | | | 2.2.6 Verification at the Central Location | | EVS5000_SFD00, Section 2.2.6, Verification at the Central Count Location | TDP |
| 78 | | | **[Vol. I, 2.3 Voting Capabilities]:** These capabilities include: | | | |
| 79 | | | 2.3.1 Opening the Polls; 2.3.1.1 Precinct Count Systems; 2.3.1.2 Paper-based Systems; 2.3.1.3 DRE System Requirements | | EVS5000_SFD00, Section 2.3.1, Opening the Polls | TDP |
| 80 | | | 2.3.2 Activating the Ballot (DRE Systems) | | EVS5000_SFD00, Section 2.3.2, Activating the Ballots (DRE Systems) | TDP |
| 81 | | | 2.3.3 Casting a Ballot; 2.3.3.1 Common Requirements; 2.3.3.2 Paper-based System Requirements; 2.3.3.3 DRE Requirements | | EVS5000_SFD00, Section 2.3.3, Casting a Ballot | TDP |
| 82 | | | **Vol. I, 2.4 Post-voting Capabilities]:** These capabilities apply after all votes have been cast. They include: | | | |
| 83 | | | 2.4.1 Closing the polls | | EVS5000_SFD00, Section 2.4.1, Closing the Polls | TDP |
| 84 | | | 2.4.2 Consolidating Vote Data | | EVS5000_SFD00, Section 2.4.2, Consolidating Vote Data | TDP |
| 85 | | | 2.4.3 Producing Reports | | EVS5000_SFD00, Section 2.4.3, Producing Reports | TDP |
| 86 | | | 2.4.4 Broadcasting Results | | EVS5000_SFD00, Section 2.4.4, Broadcasting Results | TDP |
| 87 | | | **[Vol. I, 2.5 Maintenance, Transportation and Storage Capabilities]:** | | | |
| 88 | | | 2.5 Maintenance, Transportation, and Storage | | EVS5000_SFD00, Section 2.5, Maintenance, Transportation and Storage | TDP |
| 89 | | b. | Additional capabilities shall be clearly indicated. They may be presented using the same structure as that used for required capabilities (i.e., overall system capabilities, pre-voting functions voting functions, post-voting functions), or may be presented in another format of the vendor's choosing. | *per VVSG V2, 3.2.3, additional capabilities are those added to respond to the requirements of an individual State(s).* | EVS5000_SFD00, Section 2.1.11, Additional Overall Capabilities<br>EVS5000_SFD00, Section 2.2.7, Additional Pre-Voting Requirements<br>EVS5000_SFD00, Section 2.3.4, Additional Voting Capabilities or Requirements<br>EVS5000_SFD00, Section 2.4.5, Additional Post-Voting Capabilities or Requirements<br>EVS5000_SFD00, Section 2.5.1, Additional Maintenance and Transportation Capabilities or Requirements | TDP |
| 90 | | c. | Required capabilities that may be bypassed or deactivated during installation or operation by the user shall be clearly indicated. | | EVS5000_SFD00 | TDP |
| 91 | | d. | Additional capabilities that function only when activated during installation or operation by the user shall be clearly indicated. | | EVS5000_SFD00 | TDP |
| 92 | | e. | Additional capabilities that normally are active but may be bypassed or deactivated during installation or operation by the user shall be clearly indicated. | | EVS5000_SFD00 | TDP |

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| 93 | | **VII, 2.4** | **System Hardware Specification** | | | |
| 94 | | | The vendor shall expand on the system overview by providing detailed specifications of the hardware components of the system including specifications of hardware used to support the telecommunications capabilities of the system, if applicable. | *also Vol. I, 4.1.7.2 Printers;*<br>*Vol. I, 4.2.1 Size;*<br>*Vol. I, 4.2.2 Weight;* | EVS5000_SHS00_DS200<br>EVS5000_SHS00_DS850<br>AutoMARK_ESS_System_Hardware_Overview_AQS-18-5002-000-S<br>AutoMARK_ESS_System_Hardware_Specification_AQS-18-5000-001-F<br>EVS5000_SHS00_AutoMARK01_MODELS<br>EVS5000_SHS00_AutoMARK02_BOM<br>EVS5000_SHS00_DS20001_BOM<br>EVS5000_SHS00_DS85001_BOM<br>EVS5000_SHS01_AutoMARK1.1-1.2 BOM<br>EVS5000_SHS01_AutoMARK1.3 BOM<br><br>CABLE_PHASE2<br><br>5K509175-LA<br>5K509177-L-<br>5K509618_SIP_B<br>PEB_RevB<br>PSB_RevB<br>SBC_640117-4000C-2AGP<br>Scanner_PI211MC-B4DR May04<br>SD_GGB_REV_A<br>SIB_A3<br>USD-A-SCH | TDP |
| 95 | | **VII, 2.4.1** | **System Hardware Characteristics** | | | |
| 96 | **SYSTEM HARDWARE CHARACTERISTICS** | | The vendor shall provide a detailed discussion of the characteristics of the system, indicating how the hardware meets individual requirements defined in Volume I, Section 4, including: | *Vol. I, 4.1-4.1.8.2 Performance Requirements;*<br>*Vol. I, 3.4.2 Durability* | | |
| 97 | | a. | **Performance characteristics:**This discussion addresses basic system performance attributes and operational scenarios that describe the manner in which system functions are invoked, describe environmental capabilities, describe life expectancy, and describe any other essential aspects of system performance. | | EVS5000_SHS00_DS200, Section 1.2, System Performance Characteristics Overview<br>EVS5000_SHS00_DS850, Section 1.2, System Performance Characteristics Overview<br>AutoMARK_ESS_System_Hardware_Specification_AQS-18-5000-001-F, Section 1A, Performance Characteristics | TDP |
| 98 | | b. | **Physical characteristics:**This discussion addresses suitability for intended use, requirements for transportation and storage, health and safety criteria, security criteria, and vulnerability to adverse environmental factors. | *also Vol. I, 4.2-4.2.2 Hdw. Physical Characteristics*<br>*Vol. I, 4.2.3 b.ii Transport and Storage of Precinct Systems* | EVS5000_SHS00_DS200, Section 1.3, System Physical Characteristics Overview<br>EVS5000_SHS00_DS850, Section 1.3, System Physical Characteristics Overview<br>AutoMARK_ESS_System_Hardware_Specification_AQS-18-5000-001-F, Section 1B, Physical Characteristics | TDP |
| 99 | | c. | **Reliability:** This discussion addresses system and component reliability stated in terms of the system's operating functions, and identification of items that require special handling or operation to sustain system reliability. | *Vol. I, 4.3.3 Reliability* | EVS5000_SHS00_DS200, Section 1.4, System Reliability Overview<br>EVS5000_SHS00_DS850, Section 1.4, System Reliability Overview<br>AutoMARK_ESS_System_Hardware_Specification_AQS-18-5000-001-F, Section 1D, Reliablity | TDP |
| 100 | | d. | **Maintainability:**Maintainability represents the ease with which maintenance actions can be performed based on the design characteristics of equipment and software and the processes the vendor and election officials have in place for preventing failures and for reacting to failures. Maintainability includes the ability of equipment and software to self-diagnose problems and make non-technical election workers aware of a problem. Maintainability also addresses a range of scheduled and unscheduled events. | *Vol. I, 4.3.4-4.3.4.2 Maintainability* | EVS5000_SHS00_DS200, Section 1.5, System Maintainability Overview<br>EVS5000_SHS00_DS850, Section 1.5, System Maintainability Overview<br>AutoMARK_ESS_System_Hardware_Specification_AQS-18-5000-001-F, Section 1E, Maintainability | TDP |
| 101 | | e. | **Environmental conditions:**This discussion addresses the ability of the system to withstand natural environments, and operational constraints in normal and test environments, including all requirements and restrictions regarding electrical service, telecommunications services, environmental protection, and any additional facilities or resources required to install and operate the system. | *Vol. I, 4.1.2-4.1.2.15 Environ. Requirements* | EVS5000_SHS00_DS200, Section 1.6, System Environmental Characteristics Overview<br>EVS5000_SHS00_DS850, Section 1.6, System Environmental Characteristics Overview<br>AutoMARK_ESS_System_Hardware_Specification_AQS-18-5000-001-F, Section 1H, Environmental Conditions | TDP |
| 102 | | **VII, 2.4.2** | **Design and Construction** | | | |

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| 103 | | | The vendor shall provide sufficient data, or references to data, to identify unequivocally the details of the system configuration submitted for testing. | *also Vol. I, 4.3 Design, Construction, and Maintenance Characteristics* | EVS5000_SHS00_DS200, Section 3, Design and Construction<br>EVS5000_SHS00_DS850, Section 3, Design and Construction<br>AutoMARK_ESS_System_Hardware_Specification_AQS-18-5000-001-F, Section 2, Design and Constuction | TDP |
| 104 | | | The vendor shall provide a list of materials and components used in the system and a description of their assembly into major system components and the system as a whole. Paragraphs and diagrams shall be provided that describe: | | EVS5000_SHS00_DS200, Section 3, Design and Construction<br>EVS5000_SHS00_DS850, Section 3, Design and Construction<br>AutoMARK_ESS_System_Hardware_Specification_AQS-18-5000-001-F, Section 2, Design and Constuction | TDP |
| 105 | | a. | Materials, processes, and parts used in the system, their assembly, and the configuration control measures to ensure compliance with the system specification. | | EVS5000_SHS00_DS200, Section 2.3.1 Materials , Processes and Parts<br>EVS5000_SHS00_DS850, Section 2.3.1 Materials , Processes and Parts<br>AutoMARK_ESS_System_Hardware_Specification_AQS-18-5000-001-F, Section 2A, Materials, Processes, and Parts | TDP |
| 106 | | b. | The electromagnetic environment generated by the system. | | EVS5000_SHS00_DS200, Section 2.1.2, Environmental Requiremnts<br>EVS5000_SHS00_DS850, Section 2.1.2, Environmental Requiremnts<br>AutoMARK_ESS_System_Hardware_Specification_AQS-18-5000-001-F, Section 1H, Environmental Conditions | TDP |
| 107 | | c. | Operator and voter safety considerations, and any constraints on system operations or the use environment. | | EVS5000_SHS00_DS200, Section 2.3.8, Safety<br>EVS5000_SHS00_DS850, Section 2.3.8, Safety<br>AutoMARK_ESS_System_Hardware_Specification_AQS-18-5000-001-F, Section 2C, Operator and Voter Safety Conditions | TDP |
| 108 | | d. | Human factors considerations, including provisions for access by disabled voters. | | EVS5000_SHS00_DS200, Section 1.3, System Physical Characteristics Overview<br>N/ A- DS850<br>AutoMARK_ESS_System_Hardware_Specification_AQS-18-5000-001-F, Section 2D, Human Engineering Considerations | TDP |
| 109 | | **VII, 2.5** | **Software Design and Specification** | | | |
| 110 | | | The vendor shall expand on the system overview by providing detailed specifications of the software components of the system, including software used to support the telecommunications capabilities of the system, if applicable. | | AutoMARK ESS Ballot Image Processing Specification AQS-18-5002-003-S.pdf<br>AutoMARK ESS Ballot Scanning and Printing Specification AQS-18-5002-007-S.pdf<br>AutoMARK ESS Driver API Specification AQS-18-5000-002-F.pdf<br>AutoMARK ESS Embedded Database Interface Specifications AQS-18-5002-005-S<br>AutoMARK ESS GUI Design Specifications AQS-18-5001-005-R<br>AutoMARK ESS Operating Software Design Specifications AQS-18-5001-002-R<br>AutoMARK ESS Operations and Diagnostic Log Specs AQS-18-5002-004-S<br>AutoMARK ESS Programming Specifications Details AQS-18-5001-011-R<br>AutoMARK ESS Software Design Spec AQS-18-5001-004-S<br>AutoMARK ESS Software Development Environment AQS-18-5001-006-R<br>AutoMARK ESS Software Diagnostics Specifications AQS-18-5000-004-F<br>AutoMARK ESS Software Standards Specification AQS-18-4000-000-S<br>ESSSYS_D_D_0100_Coding Standards<br>ESSSYS_SG_P_1000_SystemDevProgram<br>EVS5000_SDS00_AutoMARK SDS Overview<br>EVS5000_SDS00_DS200<br>EVS5000_SDS00_DS20001_Flowcharts<br>EVS5000_SDS00_DS20002_Reports<br>EVS5000_SDS00_DS20005_System Messages<br>EVS5000_SDS00_DS20006_Results Media XMLs<br>EVS5000_SDS00_DS850<br>EVS5000_SDS00_ElectionWare<br>EVS5000_SDS00_ElectionWare01_EW Specification and Interfaces<br>EVS5000_SDS00_ElectionWare02_PB Specification and Interfaces<br>EVS5000_SDS00_ElectionWare05_System Process Flowchart<br>EVS5000_SDS00_ElectionWare07_PostGreSQL Description<br>EVS5000_SDS00_ElectionWare08_Reports<br>EVS5000_SDS00_ElectionWare11_DS200 and DS850 Media Desc<br>EVS5000_SDS00_ElectionWare12_AutoMARK Media Description and Structure<br>EVS5000_SDS00_ElectionWare13_ERM Media Description<br>EVS5000_SDS00_ElectionWare14_System Messages<br>EVS5000_SDS00_ERM<br>EVS5000_SDS00_ERM01_Appendices<br>EVS5000_SDS00_UELS | TDP |
| 111 | | **VII, 2.5.1** | **Purpose and Scope** | | | |

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| 112 | | | The vendor shall describe the function or functions that are performed by the software programs that comprise the system, including software used to support the telecommunications capabilities of the system, if applicable. | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.1, Purpose and Scope<br>EVS5000_SDS00_DS200, Section 2.5.1, Purpose and Scope<br>EVS5000_SDS00_DS850, Section 1, Purpose and Scope<br>EVS5000_SDS00_ElectionWare, Section 1, Purpose and Scope<br>EVS5000_SDS00_ERM, Section 1, Purpose and Scope<br>EVS5000_SDS00_UELS, Section 1, Purpose and Scope | TDP |
| 113 | | **VII, 2.5.2** | **Applicable Documents** | | | |
| 114 | | | The vendor shall list all documents controlling the development o the software and its specifications. Documents shall be listed in order of precedence. | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.2, Applicable Documents<br>EVS5000_SDS00_DS200, Section 2.5.2, Applicable Documents<br>EVS5000_SDS00_DS850, Section 2, Applicable Documents<br>EVS5000_SDS00_ElectionWare, Section 2, Applicable Documents<br>EVS5000_SDS00_ERM, Section 2, Applicable Documents<br>EVS5000_SDS00_UELS, Section 2, Applicable Documents | TDP |
| 115 | | **VII, 2.5.3** | **Software Overview** | | | |
| 116 | | | The vendor shall provide an overview of the software that includes the following items: | | | |
| 117 | | a. | A description of the software system concept, including specific software design objectives, and the logic structure and algorithms used to accomplish these objectives. | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.3.A, System Software Concept<br>EVS5000_SDS00_DS200, Section 2.5.3.1, System Software Concept<br>EVS5000_SDS00_DS850, Section 3.1, System Software Concept<br>EVS5000_SDS00_ElectionWare, Section 3.1, System Software Concept<br>EVS5000_SDS00_ERM, Section 3.1, System Software Concept<br>EVS5000_SDS00_UELS, Section 3.1, System Software Concept | TDP |
| 118 | | b. | The general design, operational considerations, and constraints influencing the design of the software. | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.3.B, General Design, Operational...<br>EVS5000_SDS00_DS200, Section 2.5.3.2, General Design<br>EVS5000_SDS00_DS850, Section 3.2, General Design<br>EVS5000_SDS00_ElectionWare, Section 3.4, General Design<br>EVS5000_SDS00_ERM, Section 3.2, General Design<br>EVS5000_SDS00_UELS, Section 3.2, General Design | TDP |
| 119 | | c. | Identification of all software items, indicating items that were: | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.3.C, Software Items<br>EVS5000_SDS00_DS200, Section 2.5.3.3, Software Identification<br>EVS5000_SDS00_DS850, Section 3.5, Software Items<br>EVS5000_SDS00_ElectionWare, Section 3.7, Software Item Identification<br>EVS5000_SDS00_ERM, Section 3.5, Software Items<br>EVS5000_SDS00_UELS, Section 3.5, Software Items | TDP |
| 120 | | | 1) Written in-house | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.3.C, Software Items<br>EVS5000_SDS00_DS200, Section 2.5.3.3, Software Identification<br>EVS5000_SDS00_DS850, Section 3.5, Software Items<br>EVS5000_SDS00_ElectionWare, Section 3.7, Software Item Identification<br>EVS5000_SDS00_ERM, Section 3.5, Software Items<br>EVS5000_SDS00_UELS, Section 3.5, Software Items | TDP |
| 121 | | | 2) Procured and not modified | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.3.C, Software Items<br>EVS5000_SDS00_DS200, Section 2.5.3.3, Software Identification<br>EVS5000_SDS00_DS850, Section 3.5, Software Items<br>EVS5000_SDS00_ElectionWare, Section 3.7, Software Item Identification<br>EVS5000_SDS00_ERM, Section 3.5, Software Items<br>EVS5000_SDS00_UELS, Section 3.5, Software Items | TDP |
| 122 | | | 3) Procured and modified, including descriptions of the modifications to the software and to the default configuration options. | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.3.C, Software Items<br>EVS5000_SDS00_DS200, Section 2.5.3.3, Software Identification<br>EVS5000_SDS00_DS850, Section 3.5, Software Items<br>EVS5000_SDS00_ElectionWare, Section 3.7, Software Item Identification<br>EVS5000_SDS00_ERM, Section 3.5, Software Items<br>EVS5000_SDS00_UELS, Section 3.5, Software Items | TDP |
| 123 | | d. | Additional information for each item that includes: | | | |

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| 124 | | | 1) Item identification | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.3.D, Additional Item Information<br>EVS5000_SDS00_DS200, Section 2.5.3.4, Additional Information<br>EVS5000_SDS00_DS850, Section 3.6, Additional Item Information<br>EVS5000_SDS00_ElectionWare, Section 3.8, Additional Item Identification<br>EVS5000_SDS00_ERM, Section 3.6, Additional Item Information<br>EVS5000_SDS00_UELS, Section 3.6, Additional Item Information | TDP |
| 125 | | | 2) General description | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.3.D, Additional Item Information<br>EVS5000_SDS00_DS200, Section 2.5.3.4, Additional Information<br>EVS5000_SDS00_DS850, Section 3.6, Additional Item Information<br>EVS5000_SDS00_ElectionWare, Section 3.8, Additional Item Identification<br>EVS5000_SDS00_ERM, Section 3.6, Additional Item Information<br>EVS5000_SDS00_UELS, Section 3.6, Additional Item Information | TDP |
| 126 | | | 3) Software requirements performed by the item | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.3.D, Additional Item Information<br>EVS5000_SDS00_DS200, Section 2.5.3.4, Additional Information<br>EVS5000_SDS00_DS850, Section 3.6, Additional Item Information<br>EVS5000_SDS00_ElectionWare, Section 3.8, Additional Item Identification<br>EVS5000_SDS00_ERM, Section 3.6, Additional Item Information<br>EVS5000_SDS00_UELS, Section 3.6, Additional Item Information | TDP |
| 127 | | | 4) Identification of interfaces with other items that provide data to, or receive data from, the item | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.3.E, Item Interface Identification<br>EVS5000_SDS00_DS200, Section 2.5.9.1, Interface Identification<br>EVS5000_SDS00_DS850, Section 3.7, Item Interface Identification<br>EVS5000_SDS00_ElectionWare, Section 8, Interfaces<br>EVS5000_SDS00_ERM, Section 3.7, Item Interface Identification<br>EVS5000_SDS00_UELS, Section 3.7, Item Interface Identification | TDP |
| 128 | | | 5) Concept of execution for the item | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.3.F, Concept of Execution<br>EVS5000_SDS00_DS200, Section 2.5.3, Software Overview<br>EVS5000_SDS00_DS850, Section 3.8, Concept of Execution<br>EVS5000_SDS00_ElectionWare, Section 3.8, Additional Item Identification<br>EVS5000_SDS00_ERM, Section 3.8, Concept of Execution<br>EVS5000_SDS00_UELS, Section 3.8, Concept of Execution | TDP |
| 129 | | | The vendor shall also include a certification that procured software items were obtained directly from the manufacturer or a licensed dealer or distributor. | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.3.G, Procured Item Certification<br>EVS5000_SDS00_DS200, Section 2.5.3.5, Certifications<br>EVS5000_SDS00_DS850, Section 3.11, Procured Item Certification<br>EVS5000_SDS00_ElectionWare, Section 3.9, Certificate of Procured Item Certification<br>EVS5000_SDS00_ERM, Section 3.9, Procured Item Certification<br>EVS5000_SDS00_UELS, Section 3.9, Procured Item Certification | TDP |
| 130 | | **VII, 2.5.4** | **Software Standards and Conventions** | | | |
| 131 | | | The vendor shall provide information that can be used by an accredited test lab or state certification board to support software analysis and test design. The information shall address standards and conventions developed internally by the vendor as well as published industry standards that have been applied by the vendor. The vendor shall provide information that addresses the following standards and conventions: | | | |
| 132 | | a. | Software System development methodology. | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.4.A, Software System Development Meth...<br>EVS5000_SDS00_DS200, Section 2.5.4, Software Standards and Conventions<br>EVS5000_SDS00_DS850, Section 4.1, Software System Development Methodology<br>EVS5000_SDS00_ElectionWare, Section II.A, Software Development Methodology<br>EVS5000_SDS00_ERM, Section 4.1, Software System Development Methodology<br>EVS5000_SDS00_UELS, Section 4.1, Software System Development Methodology | TDP |

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| 133 | | b. | Software design standards, including internal vendor procedures. | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.4.B, Software Design Standards, Including...<br>EVS5000_SDS00_DS200, Section 2.5.4, Software Standards and Conventions<br>EVS5000_SDS00_DS850, Section 4.2, Software Design Standards, Including Vender Procedures<br>EVS5000_SDS00_ElectionWare, Section 3.12, Software Design Standards, Including Vendor Procedures...<br>EVS5000_SDS00_ERM, Section 4.2, Software Design Standards, Including Vender Procedures<br>EVS5000_SDS00_UELS, Section 4.2, Software Design Standards, Including Vender Procedures | TDP |
| 134 | | c. | Software specification standards, including internal vendor procedures. | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.4.C, Software Specification Standards<br>EVS5000_SDS00_DS200, Section 2.5.4, Software Standards and Conventions<br>EVS5000_SDS00_DS850, Section 4.3, Software Specification Standards<br>EVS5000_SDS00_ElectionWare, Section 3.13, Software Specification Standards (All Modules)<br>EVS5000_SDS00_ERM, Section 4.3, Software Specification Standards<br>EVS5000_SDS00_UELS, Section 4.3, Software Specification Standards | TDP |
| 135 | | d. | Software coding standards, including internal vendor procedures. | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.4.D, Software Coding Standards<br>EVS5000_SDS00_DS200, Section 2.5.4, Software Standards and Conventions<br>EVS5000_SDS00_DS850, Section 4.4, Software Coding Standards<br>EVS5000_SDS00_ElectionWare, Section 3.14, Software Coding Standards (All Modules)<br>EVS5000_SDS00_ERM, Section 4.4, Software Coding Standards<br>EVS5000_SDS00_UELS, Section 4.4, Software Coding Standards | TDP |
| 136 | | e. | Testing and verification standards, including internal vendor procedures, that can assist in determining the program's correctness and ACCEPT/REJECT criteria. | *also Vol. I, 5.2.6 Software Design and Coding Standards, Coding Conventions* | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.4.E, Test and Verification Standards<br>EVS5000_SDS00_DS200, Section 2.5.4, Software Standards and Conventions<br>EVS5000_SDS00_DS850, Section 4.5, Test and Verification Standards<br>EVS5000_SDS00_ElectionWare, Section 3.15, Test and Verification Standards (All Modules)<br>EVS5000_SDS00_ERM, Section 4.5, Test and Verification Standards<br>EVS5000_SDS00_UELS, Section 4.5, Test and Verification Standards | TDP |
| 137 | | f. | Quality assurance standards or other documents that can be used to examine and test the software. These documents include standards for program flow and control charts, program documentation, test planning, and test data acquisition and reporting. | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.4.F, Quality Assurance Standards<br>EVS5000_SDS00_DS200, Section 2.5.4, Software Standards and Conventions<br>EVS5000_SDS00_DS850, Section 4.6, Quality Assurance Standards<br>EVS5000_SDS00_ElectionWare, Section 3.16, Quality Assurance Standards (All Modules)<br>EVS5000_SDS00_ERM, Section 4.6, Quality Assurance Standards<br>EVS5000_SDS00_UELS, Section 4.6, Quality Assurance Standards | TDP |
| 138 | | **VII, 2.5.5** | **Software Operating Environment** | | | |
| 139 | | | This section shall describe or make reference to all operating environment factors that influence the software design. | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.1, Purpose and Scope<br>EVS5000_SDS00_DS200, Section 2.5.1, Purpose and Scope<br>EVS5000_SDS00_DS850, Section 1, Purpose and Scope<br>EVS5000_SDS00_ElectionWare, Section 1, Purpose and Scope<br>EVS5000_SDS00_ERM, Section 1, Purpose and Scope<br>EVS5000_SDS00_UELS, Section 1, Purpose and Scope | TDP |
| 140 | | **VII, 2.5.5.1** | **Hardware Environment and Constraints** | | | |
| 141 | | | The vendor shall identify and describe the hardware characteristics that influence the design of the software, such as: | | | |
| 142 | | a. | The logic and arithmetic capability of the processor | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.5.1, Hardware Environment and Constraints<br>EVS5000_SDS00_DS200, Section 2.5.5.1, Hardware Environment and Constraints<br>EVS5000_SDS00_DS850, Section 5.1, Hardware Environment and Constraints<br>EVS5000_SDS00_ElectionWare, Section 4.1, Hardware Environment and Constraints<br>EVS5000_SDS00_ERM, Section 5.1, Hardware Environment and Constraints<br>EVS5000_SDS00_UELS, Section 5.1, Hardware Environment and Constraints | TDP |

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| 143 | | b. | Memory read-write characteristics | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.5.1, Hardware Environment and Constraints<br>EVS5000_SDS00_DS200, Section 2.5.5.1, Hardware Environment and Constraints<br>EVS5000_SDS00_DS850, Section 5.1, Hardware Environment and Constraints<br>EVS5000_SDS00_ElectionWare, Section 4.1, Hardware Environment and Constraints<br>EVS5000_SDS00_ERM, Section 5.1, Hardware Environment and Constraints<br>EVS5000_SDS00_UELS, Section 5.1, Hardware Environment and Constraints | TDP |
| 144 | | c. | External memory device characteristics | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.5.1, Hardware Environment and Constraints<br>EVS5000_SDS00_DS200, Section 2.5.5.1, Hardware Environment and Constraints<br>EVS5000_SDS00_DS850, Section 5.1, Hardware Environment and Constraints<br>EVS5000_SDS00_ElectionWare, Section 4.1, Hardware Environment and Constraints<br>EVS5000_SDS00_ERM, Section 5.1, Hardware Environment and Constraints<br>EVS5000_SDS00_UELS, Section 5.1, Hardware Environment and Constraints | TDP |
| 145 | | d. | Peripheral device interface hardware | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.5.1, Hardware Environment and Constraints<br>EVS5000_SDS00_DS200, Section 2.5.5.1, Hardware Environment and Constraints<br>EVS5000_SDS00_DS850, Section 5.1, Hardware Environment and Constraints<br>EVS5000_SDS00_ElectionWare, Section 4.1, Hardware Environment and Constraints<br>EVS5000_SDS00_ERM, Section 5.1, Hardware Environment and Constraints<br>EVS5000_SDS00_UELS, Section 5.1, Hardware Environment and Constraints | TDP |
| 146 | | e. | Data input/output device protocols | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.5.1, Hardware Environment and Constraints<br>EVS5000_SDS00_DS200, Section 2.5.5.1, Hardware Environment and Constraints<br>EVS5000_SDS00_DS850, Section 5.1, Hardware Environment and Constraints<br>EVS5000_SDS00_ElectionWare, Section 4.1, Hardware Environment and Constraints<br>EVS5000_SDS00_ERM, Section 5.1, Hardware Environment and Constraints<br>EVS5000_SDS00_UELS, Section 5.1, Hardware Environment and Constraints | TDP |
| 147 | | f. | Operator controls, indicators, and displays | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.5.1, Hardware Environment and Constraints<br>EVS5000_SDS00_DS200, Section 2.5.5.1, Hardware Environment and Constraints<br>EVS5000_SDS00_DS850, Section 5.1, Hardware Environment and Constraints<br>EVS5000_SDS00_ElectionWare, Section 4.1, Hardware Environment and Constraints<br>EVS5000_SDS00_ERM, Section 5.1, Hardware Environment and Constraints<br>EVS5000_SDS00_UELS, Section 5.1, Hardware Environment and Constraints | TDP |
| 148 | | **VII, 2.5.5.2** | **Software Environment** | | | |
| 149 | | | The vendor shall identify the compilers or assemblers used in the generation of executable code, and describe the operating system or system monitor. | *Vol. I, 9.7.1b Physical Configuration Audit* | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.5.2, Compilers / Assemblers<br>EVS5000_SDS00_DS200, Section 2.5.5.2, Software Environment<br>EVS5000_SDS00_DS850, Section 5.2.1, Compilers / Assemblers<br>EVS5000_SDS00_ElectionWare, Section 4.2, Software Environment<br>EVS5000_SDS00_ERM, Section 5.2.1, Compilers / Assemblers<br>EVS5000_SDS00_UELS, Section 5.2.1, Compilers / Assemblers | TDP |
| 150 | | **VII, VII, 2.5.6** | **Software Functional Specification** | | | |
| 151 | | | The vendor shall provide a description of the operating modes of the system and of software capabilities to perform specific functions. | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.6.1, Configuration and Operating Modes<br>EVS5000_SDS00_DS200, Section 2.5.6.1, Configurations and Operating Modes<br>EVS5000_SDS00_DS850, Section 6.1, Configurations and Operating Modes<br>EVS5000_SDS00_ElectionWare, Section 5.1, Operating Modes<br>EVS5000_SDS00_ERM, Section 6.1, Configurations and Operating Modes<br>EVS5000_SDS00_UELS, Section 6.1, Configurations and Operating Modes | TDP |
| 152 | | **VII, 2.5.6.1** | **Configuration and Operating Modes** | | | |
| 153 | | | The vendor shall describe all software configurations and operating modes of the system, such as ballot preparation, election programming, preparation for opening the polling place, recording votes and/or counting ballots, closing the polling place, and generating reports. For each software function or operating mode, the vendor shall provide: | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.6.1, Configuration and Operating Modes<br>EVS5000_SDS00_DS200, Section 2.5.6.1, Configurations and Operating Modes<br>EVS5000_SDS00_DS850, Section 6.1, Configurations and Operating Modes<br>EVS5000_SDS00_ElectionWare, Section 5.1, Operating Modes<br>EVS5000_SDS00_ERM, Section 6.1, Configurations and Operating Modes<br>EVS5000_SDS00_UELS, Section 6.1, Configurations and Operating Modes | TDP |

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| 154 | | a. | A definition of the inputs to the function or mode (with characteristics, tolerances or acceptable ranges, as applicable). | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.6.1, Configuration and Operating Modes<br>EVS5000_SDS00_DS200, Section 2.5.6.1, Configurations and Operating Modes<br>EVS5000_SDS00_DS850, Section 6.1, Configurations and Operating Modes<br>EVS5000_SDS00_ElectionWare, Section 5.1, Operating Modes<br>EVS5000_SDS00_ERM, Section 6.1, Configurations and Operating Modes<br>EVS5000_SDS00_UELS, Section 6.1, Configurations and Operating Modes | TDP |
| 155 | | b. | An explanation of how the inputs are processed. | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.6.1, Configuration and Operating Modes<br>EVS5000_SDS00_DS200, Section 2.5.6.1, Configurations and Operating Modes<br>EVS5000_SDS00_DS850, Section 6.1, Configurations and Operating Modes<br>EVS5000_SDS00_ElectionWare, Section 5.1, Operating Modes<br>EVS5000_SDS00_ERM, Section 6.1, Configurations and Operating Modes<br>EVS5000_SDS00_UELS, Section 6.1, Configurations and Operating Modes | TDP |
| 156 | | c. | A definition of the outputs produced (again, with characteristics, tolerances, or acceptable ranges, as applicable). | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.6.1, Configuration and Operating Modes<br>EVS5000_SDS00_DS200, Section 2.5.6.1, Configurations and Operating Modes<br>EVS5000_SDS00_DS850, Section 6.1, Configurations and Operating Modes<br>EVS5000_SDS00_ElectionWare, Section 5.1, Operating Modes<br>EVS5000_SDS00_ERM, Section 6.1, Configurations and Operating Modes<br>EVS5000_SDS00_UELS, Section 6.1, Configurations and Operating Modes | TDP |
| 157 | | **VII, 2.5.6.2** | **Software Functions** | | | |
| 158 | | | The vendor shall describe the software's capabilities or methods for detecting or handling: | | | |
| 159 | | a. | Exception conditions | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.6.2.a, Exception Conditions<br>EVS5000_SDS00_DS200, Section, Section 2.5.6.2, Software Functions<br>EVS5000_SDS00_DS850, Section 6.3.1, Exception Condition<br>EVS5000_SDS00_ElectionWare, Section 5.2.1, Exception Conditions (All Modules)<br>EVS5000_SDS00_ERM, Section 6.2.1, Exception Conditions<br>EVS5000_SDS00_UELS, Section 6.2.1, Exception Conditions | TDP |
| 160 | | b. | System failures | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.6.2.b, System Failures<br>EVS5000_SDS00_DS200, Section, Section 2.5.6.2, Software Functions<br>EVS5000_SDS00_DS850, Section 6.3.2, System Failures<br>EVS5000_SDS00_ElectionWare, Section 5.2.2, System Failures (All Modules)<br>EVS5000_SDS00_ERM, Section 6.2.2, System Failures<br>EVS5000_SDS00_UELS, Section 6.2.2, System Failures | TDP |
| 161 | | c. | Data input/output errors | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.6.2.c, Data Input / Output Errors<br>EVS5000_SDS00_DS200, Section, Section 2.5.6.2, Software Functions<br>EVS5000_SDS00_DS850, Section 6.3.3, Data Input/Output Errors<br>EVS5000_SDS00_ElectionWare, Section 5.2.3, Data Input/Output Errors<br>EVS5000_SDS00_ERM, Section 6.2.3, Data Input/Output Errors<br>EVS5000_SDS00_UELS, Section 6.2.3, Data Input/Output Errors | TDP |
| 162 | | d. | Error logging for audit record generation | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.6.2.d, Error Logging for Audit Record Generation<br>EVS5000_SDS00_DS200, Section, Section 2.5.6.2, Software Functions<br>EVS5000_SDS00_DS850, Section 6.3.4, Error Logging for Audit Record Generation<br>EVS5000_SDS00_ElectionWare, Section 5.2.4, Error Logging for Audit Record Generation<br>EVS5000_SDS00_ERM, Section 6.2.4, Error Logging for Audit Record Generation<br>EVS5000_SDS00_UELS, Section 6.2.4, Error Logging for Audit Record Generation | TDP |
| 163 | | e. | Production of statistical ballot data | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.6.2.e, Production of Statistical Ballot Data<br>EVS5000_SDS00_DS200, Section, Section 2.5.6.2, Software Functions<br>EVS5000_SDS00_DS850, Section 6.3.5, Production of Statistical Ballot Data<br>EVS5000_SDS00_ElectionWare, Section 5.2.5, Production of Statistical Ballot Data<br>EVS5000_SDS00_ERM, Section 6.2.5, Production of Statistical Ballot Data<br>EVS5000_SDS00_UELS, Section 6.2.5, Production of Statistical Ballot Data | TDP |

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| 164 | | f. | Data quality assessment | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.6.2.f, Data Quality Assessment<br>EVS5000_SDS00_DS200, Section, Section 2.5.6.2, Software Functions<br>EVS5000_SDS00_DS850, Section 6.3.6, Data Quality Assessment<br>EVS5000_SDS00_ElectionWare, Section 5.2.6, Data Quality Assessment<br>EVS5000_SDS00_ERM, Section 6.2.6, Data Quality Assessment<br>EVS5000_SDS00_UELS, Section 6.2.6, Data Quality Assessment | TDP |
| 165 | | g. | Security monitoring and control | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.6.2.g, Security Monitoring and Control<br>EVS5000_SDS00_DS200, Section, Section 2.5.6.2, Software Functions<br>EVS5000_SDS00_DS850, Section 6.3.7, Security Monitoring and Control<br>EVS5000_SDS00_ElectionWare, Section 5.2.7, Security Monitoring and Control (All Modules)<br>EVS5000_SDS00_ERM, Section 6.2.7, Security Monitoring and Control<br>EVS5000_SDS00_UELS, Section 6.2.7, Security Monitoring and Control | TDP |
| 166 | | **VII, 2.5.7** | **Programming Specifications** | | | |
| 167 | | | The vendor shall provide in this section an overview of the software design, its structure, and implementation algorithms and detailed specifications for individual software modules. | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.7, Programming Specifications<br>EVS5000_SDS00_DS200, Section, Section 2.5.7.1, Programming Specifications Overview<br>EVS5000_SDS00_DS850, Section 7, Programming Specifications<br>EVS5000_SDS00_ElectionWare, Section 6, Programming Specifications<br>EVS5000_SDS00_ERM, Section 7, Programming Specifications<br>EVS5000_SDS00_UELS, Section 7, Programming Specifications | TDP |
| 168 | | **VII, 2.5.7.1** | **Programming Specifications Overview** | | | |
| 169 | | | This overview shall include such items as flowcharts, data flow diagrams, and other graphical techniques that facilitate understanding of the programming specifications. This section shall be prepared to facilitate understanding of the internal functioning of the individual software modules. Implementation of the functions shall be described in terms of the software architecture, algorithms, and data structures. | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.7, Programming Specifications<br>EVS5000_SDS00_DS200, Section, Section 2.5.7.1, Programming Specifications Overview<br>EVS5000_SDS00_DS850, Section 7, Programming Specifications<br>EVS5000_SDS00_ElectionWare, Section 6, Programming Specifications<br>EVS5000_SDS00_ERM, Section 7, Programming Specifications<br>EVS5000_SDS00_UELS, Section 7, Programming Specifications | TDP |
| 170 | | **VII, 2.5.7.2** | **Programming Specifications Details** | | | |
| 171 | | | The programming specifications shall describe individual software modules and their component units, if applicable. For each module and unit, the vendor shall provide the following information: | | | |
| 172 | | a. | Module and unit design decisions, if any, such as algorithms used | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.7, Programming Specifications<br>EVS5000_SDS00_DS200, Section, Section 2.5.7.1, Programming Specifications Overview<br>EVS5000_SDS00_DS850, Section 7, Programming Specifications<br>EVS5000_SDS00_ElectionWare, Section 6, Programming Specifications<br>EVS5000_SDS00_ERM, Section 7, Programming Specifications<br>EVS5000_SDS00_UELS, Section 7, Programming Specifications | TDP |
| 173 | | b. | Any constraints, limitations, or unusual features in the design of the software module or unit | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.7, Programming Specifications<br>EVS5000_SDS00_DS200, Section, Section 2.5.7.1, Programming Specifications Overview<br>EVS5000_SDS00_DS850, Section 7, Programming Specifications<br>EVS5000_SDS00_ElectionWare, Section 6, Programming Specifications<br>EVS5000_SDS00_ERM, Section 7, Programming Specifications<br>EVS5000_SDS00_UELS, Section 7, Programming Specifications | TDP |
| 174 | | c. | The programming language used and rationale for its use, if other than the specified module or unit language | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.7, Programming Specifications<br>EVS5000_SDS00_DS200, Section, Section 2.5.7.1, Programming Specifications Overview<br>EVS5000_SDS00_DS850, Section 7, Programming Specifications<br>EVS5000_SDS00_ElectionWare, Section 6, Programming Specifications<br>EVS5000_SDS00_ERM, Section 7, Programming Specifications<br>EVS5000_SDS00_UELS, Section 7, Programming Specifications | TDP |

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| 175 | SOFTWARE DESIGN AND SPECIFICATION | d. | If the software module or unit consists of, or contains, procedural commands (such as menu selections in a database management system for defining forms and reports, online queries for database access and manipulation, input to a graphical user interface builder for automated code generation, commands to the operating system, or shell scripts), a list of the procedural commands and reference to user manuals or other documents that explain them | *EAC RFI 2010-03 (Data Load) eff. Date 6/14/2010: 2005 VVSG [Vol. II Sec. 5.4 Source Code Review, Vol. II Sec. 5.4.2 a-v Assessment of Coding Conventions]; Vol. II, Sec. 2.5.7.2 d Programming Specifications Details* | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.7, Programming Specifications<br>EVS5000_SDS00_DS200, Section, Section 2.5.7.1, Programming Specifications Overview<br>EVS5000_SDS00_DS850, Section 7, Programming Specifications<br>EVS5000_SDS00_ElectionWare, Section 6, Programming Specifications<br>EVS5000_SDS00_ERM, Section 7, Programming Specifications<br>EVS5000_SDS00_UELS, Section 7, Programming Specifications | TDP |
| 176 | | **EAC RFI 2010-03, effective date June 14, 2010** | **EAC Decision on Request for Interpretation 2010-03: 2005 VVSG [Vol. II Sec. 5.4 Source Code Review, Vol. II Sec. 5.4.2 a-v Assessment of Coding Conventions]; Vol. II, Sec. 2.5.7.2 d Programming Specifications Details** | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.8, System Databases<br>EVS5000_SDS00_DS200, Section 2.5.8, System Databases<br>EVS5000_SDS00_DS850, Section 8, System Databases<br>EVS5000_SDS00_ElectionWare, Section 7, System Databases<br>EVS5000_SDS00_ERM, Section 8, System Databases<br>EVS5000_SDS00_UELS, Section 8, System Databases | TDP |
| 177 | | | Per EAC RFI 2010-03: Question: Shall database definition files be reviewed as source code under the guidelines found in Volume II, Section 5? Per EAC: "*…Volume II, Section 2.5.7.2.d states: The vendor shall provide the following information: If the software module or unit consists of, or contains, procedural commands (such as menu selections in a database management system for defining forms and reports, online queries for database access and manipulation, input to a graphical user interface builder for automated code generation, commands to the operating system, or shell scripts), a list of the procedural commands and reference to user manuals or other documents that explain them. In order to support the evaluation required in VVSG Volume II, Section 2.5.7.2.d, the manufacturer's documentation shall clearly specify:*<br>*1. If the DDL and DML presented for evaluation are using scripts, macros or other executable code.*<br>*2. If the DDL and DML could modify the results reported by modifying the database schema.....* | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.8, System Databases<br>EVS5000_SDS00_DS200, Section 2.5.8, System Databases<br>EVS5000_SDS00_DS850, Section 8, System Databases<br>EVS5000_SDS00_ElectionWare, Section 7, System Databases<br>EVS5000_SDS00_ERM, Section 8, System Databases<br>EVS5000_SDS00_UELS, Section 8, System Databases | TDP |
| 178 | | e. | If the software module or unit contains, receives, or outputs data, a description of its inputs, outputs, and other data elements as applicable. (Subsection 2.5.9 describes the requirements for documenting system interfaces.) Data local to the software module or unit shall be described separately from data input to, o output from, the software module or unit. | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.7, Programming Specifications<br>EVS5000_SDS00_DS200, Section, Section 2.5.7.1, Programming Specifications Overview<br>EVS5000_SDS00_DS850, Section 7, Programming Specifications<br>EVS5000_SDS00_ElectionWare, Section 6, Programming Specifications<br>EVS5000_SDS00_ERM, Section 7, Programming Specifications<br>EVS5000_SDS00_UELS, Section 7, Programming Specifications | TDP |
| 179 | | f. | If the software module or unit contains logic, the logic to be used by the software unit, including, as applicable: | | | |
| 180 | | | 1) Conditions in effect within the software module or unit when its execution is initiated | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.7, Programming Specifications<br>EVS5000_SDS00_DS200, Section, Section 2.5.7.1, Programming Specifications Overview<br>EVS5000_SDS00_DS850, Section 7, Programming Specifications<br>EVS5000_SDS00_ElectionWare, Section 6, Programming Specifications<br>EVS5000_SDS00_ERM, Section 7, Programming Specifications<br>EVS5000_SDS00_UELS, Section 7, Programming Specifications | TDP |
| 181 | | | 2) Conditions under which control is passed to other software modules or units | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.7, Programming Specifications<br>EVS5000_SDS00_DS200, Section, Section 2.5.7.1, Programming Specifications Overview<br>EVS5000_SDS00_DS850, Section 7, Programming Specifications<br>EVS5000_SDS00_ElectionWare, Section 6, Programming Specifications<br>EVS5000_SDS00_ERM, Section 7, Programming Specifications<br>EVS5000_SDS00_UELS, Section 7, Programming Specifications | TDP |

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| 182 | | | 3) Response and response time to each input, including data conversion, renaming, and data transfer operations | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.7, Programming Specifications<br>EVS5000_SDS00_DS200, Section, Section 2.5.7.1, Programming Specifications Overview<br>EVS5000_SDS00_DS850, Section 7, Programming Specifications<br>EVS5000_SDS00_ElectionWare, Section 6, Programming Specifications<br>EVS5000_SDS00_ERM, Section 7, Programming Specifications<br>EVS5000_SDS00_UELS, Section 7, Programming Specifications | TDP |
| 183 | | | 4) Sequence of operations and dynamically controlled sequencin during the software module's or unit's operation, including: | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.7, Programming Specifications<br>EVS5000_SDS00_DS200, Section, Section 2.5.7.1, Programming Specifications Overview<br>EVS5000_SDS00_DS850, Section 7, Programming Specifications<br>EVS5000_SDS00_ElectionWare, Section 6, Programming Specifications<br>EVS5000_SDS00_ERM, Section 7, Programming Specifications<br>EVS5000_SDS00_UELS, Section 7, Programming Specifications | TDP |
| 184 | | | 4.i) The method for sequence control | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.7, Programming Specifications<br>EVS5000_SDS00_DS200, Section, Section 2.5.7.1, Programming Specifications Overview<br>EVS5000_SDS00_DS850, Section 7, Programming Specifications<br>EVS5000_SDS00_ElectionWare, Section 6, Programming Specifications<br>EVS5000_SDS00_ERM, Section 7, Programming Specifications<br>EVS5000_SDS00_UELS, Section 7, Programming Specifications | TDP |
| 185 | | | 4.ii) The logic and input conditions of that method, such as timing variations, priority assignments | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.7, Programming Specifications<br>EVS5000_SDS00_DS200, Section, Section 2.5.7.1, Programming Specifications Overview<br>EVS5000_SDS00_DS850, Section 7, Programming Specifications<br>EVS5000_SDS00_ElectionWare, Section 6, Programming Specifications<br>EVS5000_SDS00_ERM, Section 7, Programming Specifications<br>EVS5000_SDS00_UELS, Section 7, Programming Specifications | TDP |
| 186 | | | 4.iii) Data transfer in and out of memory | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.7, Programming Specifications<br>EVS5000_SDS00_DS200, Section, Section 2.5.7.1, Programming Specifications Overview<br>EVS5000_SDS00_DS850, Section 7, Programming Specifications<br>EVS5000_SDS00_ElectionWare, Section 6, Programming Specifications<br>EVS5000_SDS00_ERM, Section 7, Programming Specifications<br>EVS5000_SDS00_UELS, Section 7, Programming Specifications | TDP |
| 187 | | | 4. iv) The sensing of discrete input signals, and timing relationships between interrupt operations within the software module or unit | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.7, Programming Specifications<br>EVS5000_SDS00_DS200, Section, Section 2.5.7.1, Programming Specifications Overview<br>EVS5000_SDS00_DS850, Section 7, Programming Specifications<br>EVS5000_SDS00_ElectionWare, Section 6, Programming Specifications<br>EVS5000_SDS00_ERM, Section 7, Programming Specifications<br>EVS5000_SDS00_UELS, Section 7, Programming Specifications | TDP |
| 188 | | | 5) Exception and error handling | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.7, Programming Specifications<br>EVS5000_SDS00_DS200, Section, Section 2.5.7.1, Programming Specifications Overview<br>EVS5000_SDS00_DS850, Section 7, Programming Specifications<br>EVS5000_SDS00_ElectionWare, Section 6, Programming Specifications<br>EVS5000_SDS00_ERM, Section 7, Programming Specifications<br>EVS5000_SDS00_UELS, Section 7, Programming Specifications | TDP |
| 189 | | | If the software module is a database, provide the information described in Section 2.5.8 [System Database]. | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.8, System Databases<br>EVS5000_SDS00_DS200, Section 2.5.8, System Databases<br>EVS5000_SDS00_DS850, Section 8, System Databases<br>EVS5000_SDS00_ElectionWare, Section 7, System Databases<br>EVS5000_SDS00_ERM, Section 8, System Databases<br>EVS5000_SDS00_UELS, Section 8, System Databases | TDP |
| 190 | | **VII, 2.5.8** | **System Database** | | | |
| 191 | | | The vendor shall identify and provide a diagram and narrative description of the system's databases, and any external files used for data input or output. The information provided shall include for each database or external file: | *also Vol. II, 2.2.1e. System Description* | | |

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| 192 | | a. | The number of levels of design and the names of those levels (such as conceptual, internal, logical, and physical). | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.8, System Databases<br>EVS5000_SDS00_DS200, Section 2.5.8, System Databases<br>EVS5000_SDS00_DS850, Section 8, System Databases<br>EVS5000_SDS00_ElectionWare, Section 7, System Databases<br>EVS5000_SDS00_ERM, Section 8, System Databases<br>EVS5000_SDS00_UELS, Section 8, System Databases | TDP |
| 193 | | b. | Design conventions and standards (which may be incorporated by reference) needed to understand the design. | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.8, System Databases<br>EVS5000_SDS00_DS200, Section 2.5.8, System Databases<br>EVS5000_SDS00_DS850, Section 8, System Databases<br>EVS5000_SDS00_ElectionWare, Section 7, System Databases<br>EVS5000_SDS00_ERM, Section 8, System Databases<br>EVS5000_SDS00_UELS, Section 8, System Databases | TDP |
| 194 | | c. | Identification and description of all database entities and how they are implemented physically (e.g., tables, files). | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.8, System Databases<br>EVS5000_SDS00_DS200, Section 2.5.8, System Databases<br>EVS5000_SDS00_DS850, Section 8, System Databases<br>EVS5000_SDS00_ElectionWare, Section 7, System Databases<br>EVS5000_SDS00_ERM, Section 8, System Databases<br>EVS5000_SDS00_UELS, Section 8, System Databases | TDP |
| 195 | | d. | Entity relationship diagrams and description of relationships | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.8, System Databases<br>EVS5000_SDS00_DS200, Section 2.5.8, System Databases<br>EVS5000_SDS00_DS850, Section 8, System Databases<br>EVS5000_SDS00_ElectionWare, Section 7, System Databases<br>EVS5000_SDS00_ERM, Section 8, System Databases<br>EVS5000_SDS00_UELS, Section 8, System Databases | TDP |
| 196 | | e. | Details of table, record or file contents (as applicable) to include individual data elements and their specifications, including: | | | |
| 197 | | | 1) Names/identifiers | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.8, System Databases<br>EVS5000_SDS00_DS200, Section 2.5.8, System Databases<br>EVS5000_SDS00_DS850, Section 8, System Databases<br>EVS5000_SDS00_ElectionWare, Section 7, System Databases<br>EVS5000_SDS00_ERM, Section 8, System Databases<br>EVS5000_SDS00_UELS, Section 8, System Databases | TDP |
| 198 | | | 2) Data type (alphanumeric, integer, etc.) | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.8, System Databases<br>EVS5000_SDS00_DS200, Section 2.5.8, System Databases<br>EVS5000_SDS00_DS850, Section 8, System Databases<br>EVS5000_SDS00_ElectionWare, Section 7, System Databases<br>EVS5000_SDS00_ERM, Section 8, System Databases<br>EVS5000_SDS00_UELS, Section 8, System Databases | TDP |
| 199 | | | 3) Size and format (such as length and punctuation of a character string) | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.8, System Databases<br>EVS5000_SDS00_DS200, Section 2.5.8, System Databases<br>EVS5000_SDS00_DS850, Section 8, System Databases<br>EVS5000_SDS00_ElectionWare, Section 7, System Databases<br>EVS5000_SDS00_ERM, Section 8, System Databases<br>EVS5000_SDS00_UELS, Section 8, System Databases | TDP |
| 200 | | | 4) Units of measurement (such as meters, dollars, nanoseconds) | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.8, System Databases<br>EVS5000_SDS00_DS200, Section 2.5.8, System Databases<br>EVS5000_SDS00_DS850, Section 8, System Databases<br>EVS5000_SDS00_ElectionWare, Section 7, System Databases<br>EVS5000_SDS00_ERM, Section 8, System Databases<br>EVS5000_SDS00_UELS, Section 8, System Databases | TDP |

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| 201 | | | 5) Range or enumeration of possible values (such as 0-99) | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.8, System Databases<br>EVS5000_SDS00_DS200, Section 2.5.8, System Databases<br>EVS5000_SDS00_DS850, Section 8, System Databases<br>EVS5000_SDS00_ElectionWare, Section 7, System Databases<br>EVS5000_SDS00_ERM, Section 8, System Databases<br>EVS5000_SDS00_UELS, Section 8, System Databases | TDP |
| 202 | | | 6) Accuracy (how correct) and precision (number of significant digits) | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.8, System Databases<br>EVS5000_SDS00_DS200, Section 2.5.8, System Databases<br>EVS5000_SDS00_DS850, Section 8, System Databases<br>EVS5000_SDS00_ElectionWare, Section 7, System Databases<br>EVS5000_SDS00_ERM, Section 8, System Databases<br>EVS5000_SDS00_ExpressVote, Section 8, System Databases<br>EVS5000_SDS00_UELS, Section 8, System Databases | TDP |
| 203 | | | 7) Priority, timing, frequency, volume, sequencing, and other constraints, such as whether the data element may be updated and whether business rules apply | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.8, System Databases<br>EVS5000_SDS00_DS200, Section 2.5.8, System Databases<br>EVS5000_SDS00_DS850, Section 8, System Databases<br>EVS5000_SDS00_ElectionWare, Section 7, System Databases<br>EVS5000_SDS00_ERM, Section 8, System Databases<br>EVS5000_SDS00_UELS, Section 8, System Databases | TDP |
| 204 | | | 8) Security and privacy constraints | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.8, System Databases<br>EVS5000_SDS00_DS200, Section 2.5.8, System Databases<br>EVS5000_SDS00_DS850, Section 8, System Databases<br>EVS5000_SDS00_ElectionWare, Section 7, System Databases<br>EVS5000_SDS00_ERM, Section 8, System Databases<br>EVS5000_SDS00_ExpressVote, Section 8, System Databases<br>EVS5000_SDS00_UELS, Section 8, System Databases | TDP |
| 205 | | | 9) Sources (setting/sending entities) and recipients (using/receiving entities) | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.8, System Databases<br>EVS5000_SDS00_DS200, Section 2.5.8, System Databases<br>EVS5000_SDS00_DS850, Section 8, System Databases<br>EVS5000_SDS00_ElectionWare, Section 7, System Databases<br>EVS5000_SDS00_ERM, Section 8, System Databases<br>EVS5000_SDS00_UELS, Section 8, System Databases | TDP |
| 206 | | f. | For external files, a description of the procedures for file maintenance, management of access privileges, and security. | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.8, System Databases<br>EVS5000_SDS00_DS200, Section 2.5.8, System Databases<br>EVS5000_SDS00_DS850, Section 8, System Databases<br>EVS5000_SDS00_ElectionWare, Section 7, System Databases<br>EVS5000_SDS00_ERM, Section 8, System Databases<br>EVS5000_SDS00_UELS, Section 8, System Databases | TDP |
| 207 | | **VII, 2.5.9** | **Interfaces** | | | |
| 208 | | | The vendor shall identify and provide a complete description of all internal and external interfaces, using a combination of text and diagrams. | *also Vol. II, 2.2.1.f. System Description* | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.9, Interfaces<br>EVS5000_SDS00_DS200, Section 2.5.9, Interfaces<br>EVS5000_SDS00_DS850, Section 9, Interfaces<br>EVS5000_SDS00_ElectionWare, Section 8, Interfaces<br>EVS5000_SDS00_ERM, Section 9, Interfaces<br>EVS5000_SDS00_UELS, Section 9, Interfaces | TDP |
| 209 | | **VII, 2.5.9.1** | **Interface Identification** | | | |
| 210 | | | For each interface identified in the system overview, the vendor shall: | | | |
| 211 | | a. | Provide a unique identifier assigned to the interface. | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.9.1, Interface Identification<br>EVS5000_SDS00_DS200, Section 2.5.9.1, Interface Identification<br>EVS5000_SDS00_DS850, Section 9.1, Interface Identification<br>EVS5000_SDS00_ElectionWare, Section 8, Interfaces<br>EVS5000_SDS00_ERM, Section 9.1, Interface Identification<br>EVS5000_SDS00_UELS, Section 9.1, Interface Identification | TDP |

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| 212 | | b. | Identify the interfacing entities (systems, configuration items, users, etc.) by name, number, version, and documentation references, as applicable. | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.9.1, Interface Identification<br>EVS5000_SDS00_DS200, Section 2.5.9.1, Interface Identification<br>EVS5000_SDS00_DS850, Section 9.1, Interface Identification<br>EVS5000_SDS00_ElectionWare, Section 8, Interfaces<br>EVS5000_SDS00_ERM, Section 9.1, Interface Identification<br>EVS5000_SDS00_UELS, Section 9.1, Interface Identification | TDP |
| 213 | | c. | Identify which entities have fixed interface characteristics (and therefore impose interface requirements on interfacing entities) and which are being developed or modified (thus having interface requirements imposed on them). | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.9.1, Interface Identification<br>EVS5000_SDS00_DS200, Section 2.5.9.1, Interface Identification<br>EVS5000_SDS00_DS850, Section 9.1, Interface Identification<br>EVS5000_SDS00_ElectionWare, Section 8, Interfaces<br>EVS5000_SDS00_ERM, Section 9.1, Interface Identification<br>EVS5000_SDS00_UELS, Section 9.1, Interface Identification | TDP |
| 214 | | **VII, 2.5.9.2** | **Interface Description** | | | |
| 215 | | | For each interface identified in the system overview, the vendor shall provide information that describes: | | | |
| 216 | | a. | The type of interface (such as real-time data transfer, storage-and retrieval of data) to be implemented | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.9.2, Interface Description<br>EVS5000_SDS00_DS200, Section 2.5.9.2, Interface Description<br>EVS5000_SDS00_DS850, Section 9.2, Interface Description<br>EVS5000_SDS00_ElectionWare, Section 8, Interfaces<br>EVS5000_SDS00_ERM, Section 9.2, Interface Description<br>EVS5000_SDS00_UELS, Section 9.2, Interface Description | TDP |
| 217 | | b. | Characteristics of individual data elements that the interfacing entity(ies) will provide, store, send, access, receive, etc., such as: | | | |
| 218 | | | 1) Names/identifiers | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.9.2, Interface Description<br>EVS5000_SDS00_DS200, Section 2.5.9.2, Interface Description<br>EVS5000_SDS00_DS850, Section 9.2, Interface Description<br>EVS5000_SDS00_ElectionWare, Section 8, Interfaces<br>EVS5000_SDS00_ERM, Section 9.2, Interface Description<br>EVS5000_SDS00_UELS, Section 9.2, Interface Description | TDP |
| 219 | | | 2) Data type (alphanumeric, integer, etc.) | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.9.2, Interface Description<br>EVS5000_SDS00_DS200, Section 2.5.9.2, Interface Description<br>EVS5000_SDS00_DS850, Section 9.2, Interface Description<br>EVS5000_SDS00_ElectionWare, Section 8, Interfaces<br>EVS5000_SDS00_ERM, Section 9.2, Interface Description<br>EVS5000_SDS00_UELS, Section 9.2, Interface Description | TDP |
| 220 | | | 3) Size and format (such as length and punctuation of a character string) | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.9.2, Interface Description<br>EVS5000_SDS00_DS200, Section 2.5.9.2, Interface Description<br>EVS5000_SDS00_DS850, Section 9.2, Interface Description<br>EVS5000_SDS00_ElectionWare, Section 8, Interfaces<br>EVS5000_SDS00_ERM, Section 9.2, Interface Description<br>EVS5000_SDS00_UELS, Section 9.2, Interface Description | TDP |
| 221 | | | 4) Units of measurement (such as meters, dollars, nanoseconds) | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.9.2, Interface Description<br>EVS5000_SDS00_DS200, Section 2.5.9.2, Interface Description<br>EVS5000_SDS00_DS850, Section 9.2, Interface Description<br>EVS5000_SDS00_ElectionWare, Section 8, Interfaces<br>EVS5000_SDS00_ERM, Section 9.2, Interface Description<br>EVS5000_SDS00_UELS, Section 9.2, Interface Description | TDP |
| 222 | | | 5) Range or enumeration of possible values (such as 0-99) | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.9.2, Interface Description<br>EVS5000_SDS00_DS200, Section 2.5.9.2, Interface Description<br>EVS5000_SDS00_DS850, Section 9.2, Interface Description<br>EVS5000_SDS00_ElectionWare, Section 8, Interfaces<br>EVS5000_SDS00_ERM, Section 9.2, Interface Description<br>EVS5000_SDS00_UELS, Section 9.2, Interface Description | TDP |

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| 223 | | | 6) Accuracy (how correct) and precision (number of significant digits) | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.9.2, Interface Description<br>EVS5000_SDS00_DS200, Section 2.5.9.2, Interface Description<br>EVS5000_SDS00_DS850, Section 9.2, Interface Description<br>EVS5000_SDS00_ElectionWare, Section 8, Interfaces<br>EVS5000_SDS00_ERM, Section 9.2, Interface Description<br>EVS5000_SDS00_UELS, Section 9.2, Interface Description | TDP |
| 224 | | | 7) Priority, timing, frequency, volume, sequencing, and other constraints, such as whether the data element may be updated and whether business rules apply | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.9.2, Interface Description<br>EVS5000_SDS00_DS200, Section 2.5.9.2, Interface Description<br>EVS5000_SDS00_DS850, Section 9.2, Interface Description<br>EVS5000_SDS00_ElectionWare, Section 8, Interfaces<br>EVS5000_SDS00_ERM, Section 9.2, Interface Description<br>EVS5000_SDS00_UELS, Section 9.2, Interface Description | TDP |
| 225 | | | 8) Security and privacy constraints | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.9.2, Interface Description<br>EVS5000_SDS00_DS200, Section 2.5.9.2, Interface Description<br>EVS5000_SDS00_DS850, Section 9.2, Interface Description<br>EVS5000_SDS00_ElectionWare, Section 8, Interfaces<br>EVS5000_SDS00_ERM, Section 9.2, Interface Description<br>EVS5000_SDS00_UELS, Section 9.2, Interface Description | TDP |
| 226 | | | 9) Sources (setting/sending entities) and recipients (using/receiving entities) | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.9.2, Interface Description<br>EVS5000_SDS00_DS200, Section 2.5.9.2, Interface Description<br>EVS5000_SDS00_DS850, Section 9.2, Interface Description<br>EVS5000_SDS00_ElectionWare, Section 8, Interfaces<br>EVS5000_SDS00_ERM, Section 9.2, Interface Description<br>EVS5000_SDS00_UELS, Section 9.2, Interface Description | TDP |
| 227 | | c. | Characteristics of communication methods that the interfacing entity(ies) will use for the interface, such as: | | | |
| 228 | | | 1) Communication links/bands/frequencies/media and their characteristics | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.9.2, Interface Description<br>EVS5000_SDS00_DS200, Section 2.5.9.2, Interface Description<br>EVS5000_SDS00_DS850, Section 9.2, Interface Description<br>EVS5000_SDS00_ElectionWare, Section 8, Interfaces<br>EVS5000_SDS00_ERM, Section 9.2, Interface Description<br>EVS5000_SDS00_UELS, Section 9.2, Interface Description | TDP |
| 229 | | | 2) Message formatting | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.9.2, Interface Description<br>EVS5000_SDS00_DS200, Section 2.5.9.2, Interface Description<br>EVS5000_SDS00_DS850, Section 9.2, Interface Description<br>EVS5000_SDS00_ElectionWare, Section 8, Interfaces<br>EVS5000_SDS00_ERM, Section 9.2, Interface Description<br>EVS5000_SDS00_UELS, Section 9.2, Interface Description | TDP |
| 230 | | | 3) Flow control (such as sequence numbering and buffer allocation) | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.9.2, Interface Description<br>EVS5000_SDS00_DS200, Section 2.5.9.2, Interface Description<br>EVS5000_SDS00_DS850, Section 9.2, Interface Description<br>EVS5000_SDS00_ElectionWare, Section 8, Interfaces<br>EVS5000_SDS00_ERM, Section 9.2, Interface Description<br>EVS5000_SDS00_UELS, Section 9.2, Interface Description | TDP |
| 231 | | | 4) Data transfer rate, whether periodic/aperiodic, and interval between transfers | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.9.2, Interface Description<br>EVS5000_SDS00_DS200, Section 2.5.9.2, Interface Description<br>EVS5000_SDS00_DS850, Section 9.2, Interface Description<br>EVS5000_SDS00_ElectionWare, Section 8, Interfaces<br>EVS5000_SDS00_ERM, Section 9.2, Interface Description<br>EVS5000_SDS00_UELS, Section 9.2, Interface Description | TDP |

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| 232 | | | 5) Routing, addressing, and naming conventions | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.9.2, Interface Description<br>EVS5000_SDS00_DS200, Section 2.5.9.2, Interface Description<br>EVS5000_SDS00_DS850, Section 9.2, Interface Description<br>EVS5000_SDS00_ElectionWare, Section 8, Interfaces<br>EVS5000_SDS00_ERM, Section 9.2, Interface Description<br>EVS5000_SDS00_UELS, Section 9.2, Interface Description | TDP |
| 233 | | | 6) Transmission services, including priority and grade | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.9.2, Interface Description<br>EVS5000_SDS00_DS200, Section 2.5.9.2, Interface Description<br>EVS5000_SDS00_DS850, Section 9.2, Interface Description<br>EVS5000_SDS00_ElectionWare, Section 8, Interfaces<br>EVS5000_SDS00_ERM, Section 9.2, Interface Description<br>EVS5000_SDS00_UELS, Section 9.2, Interface Description | TDP |
| 234 | | | 7) Safety/security/privacy considerations, such as encryption, user authentication, compartmentalization, and auditing | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.9.2, Interface Description<br>EVS5000_SDS00_DS200, Section 2.5.9.2, Interface Description<br>EVS5000_SDS00_DS850, Section 9.2, Interface Description<br>EVS5000_SDS00_ElectionWare, Section 8, Interfaces<br>EVS5000_SDS00_ERM, Section 9.2, Interface Description<br>EVS5000_SDS00_UELS, Section 9.2, Interface Description | TDP |
| 235 | | d. | Characteristics of protocols the interfacing entity(ies) will use for the interface, such as: | | | |
| 236 | | | 1) Priority/layer of the protocol | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.9.2, Interface Description<br>EVS5000_SDS00_DS200, Section 2.5.9.2, Interface Description<br>EVS5000_SDS00_DS850, Section 9.2, Interface Description<br>EVS5000_SDS00_ElectionWare, Section 8, Interfaces<br>EVS5000_SDS00_ERM, Section 9.2, Interface Description<br>EVS5000_SDS00_UELS, Section 9.2, Interface Description | TDP |
| 237 | | | 2) Packeting, including fragmentation and reassembly, routing, and addressing | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.9.2, Interface Description<br>EVS5000_SDS00_DS200, Section 2.5.9.2, Interface Description<br>EVS5000_SDS00_DS850, Section 9.2, Interface Description<br>EVS5000_SDS00_ElectionWare, Section 8, Interfaces<br>EVS5000_SDS00_ERM, Section 9.2, Interface Description<br>EVS5000_SDS00_UELS, Section 9.2, Interface Description | TDP |
| 238 | | | 3) Legality checks, error control, and recovery procedures | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.9.2, Interface Description<br>EVS5000_SDS00_DS200, Section 2.5.9.2, Interface Description<br>EVS5000_SDS00_DS850, Section 9.2, Interface Description<br>EVS5000_SDS00_ElectionWare, Section 8, Interfaces<br>EVS5000_SDS00_ERM, Section 9.2, Interface Description<br>EVS5000_SDS00_UELS, Section 9.2, Interface Description | TDP |
| 239 | | | 4) Synchronization, including connection establishment, maintenance, termination | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.9.2, Interface Description<br>EVS5000_SDS00_DS200, Section 2.5.9.2, Interface Description<br>EVS5000_SDS00_DS850, Section 9.2, Interface Description<br>EVS5000_SDS00_ElectionWare, Section 8, Interfaces<br>EVS5000_SDS00_ERM, Section 9.2, Interface Description<br>EVS5000_SDS00_UELS, Section 9.2, Interface Description | TDP |
| 240 | | | 5) Status, identification, and any other reporting features | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.9.2, Interface Description<br>EVS5000_SDS00_DS200, Section 2.5.9.2, Interface Description<br>EVS5000_SDS00_DS850, Section 9.2, Interface Description<br>EVS5000_SDS00_ElectionWare, Section 8, Interfaces<br>EVS5000_SDS00_ERM, Section 9.2, Interface Description<br>EVS5000_SDS00_UELS, Section 9.2, Interface Description | TDP |

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| 241 | | e. | Other characteristics, such as physical compatibility of the interfacing entity(ies) (such as dimensions, tolerances, loads, voltages and plug compatibility) | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.9.2, Interface Description<br>EVS5000_SDS00_DS200, Section 2.5.9.2, Interface Description<br>EVS5000_SDS00_DS850, Section 9.2, Interface Description<br>EVS5000_SDS00_ElectionWare, Section 8, Interfaces<br>EVS5000_SDS00_ERM, Section 9.2, Interface Description<br>EVS5000_SDS00_UELS, Section 9.2, Interface Description | TDP |
| 242 | | **VII, 2.5.10** | **Appendices** | | | |
| 243 | | | The vendor may provide descriptive material and data supplementing the various sections of the body of the Software Specifications. The content and arrangement of appendices shall be at the discretion of the vendor. Topics recommended for amplification or treatment in appendix form include: | | | |
| 244 | | a. | **Glossary:** A listing and brief definition of all software module names and variable names, with reference to their locations in the software structure. Abbreviations, acronyms, and terms should be included, if they are either uncommon in data processing and software development or are used in an unorthodox semantic. | | No glossary appendices were noted in the core SDS TDPs | TDP |
| 245 | | b. | **References:** A list of references to all related vendor documents, data, standards, and technical sources used in software development and testing. | | No reference appendices were noted in the core SDS TDPs | TDP |
| 246 | | c. | **Program Analysis:** The results of software configuration analysis algorithm analysis and selection, timing studies, and hardware interface studies that are reflected in the final software design and coding. | | EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.10, Appendices ("N/A")<br>EVS5000_SDS00_DS200, Section II, Appendixes<br>EVS5000_SDS00_DS850, Section 10, Appendixes<br>EVS5000_SDS00_ElectionWare, Sections 9-22, Appendixes | TDP |
| 247 | | **VII, 2.6** | **System Security Specification** | | | |
| 248 | | | Vendors shall submit a system security specification that addresses the security requirements of Volume I, Section 7. This specification shall describe the level of security provided by the system in terms of the specific security risks addressed by the system, the means by which each risk is addressed, the process used to test and verify the effective operation of security capabilities and, for systems that use public telecommunications networks as defined in Volume I, Section 6, the means used to keep the security capabilities of the system current to respond to the evolving threats against these systems. | *Vol. I, 2.1.1.g. Overall System Capabilities, Security;*<br>*Vol. I, Sec. 7 Security Requirements;*<br>*Vol. I, Sec. 6 Telecommunications Requirements* | AutoMARK ESS System Security Specification AQS-18-5002-001-S<br>EVS5000_SSS00<br>EVS5000_SSS01_JSP Template<br>EVS5000_SSS002.08_AutoMARK Quick Hash Procedure<br>EVS5000_SSS02.01_EMS_PC_SecScriptDesc<br>EVS5000_SSS02.01_UbuntuLiveCD<br>EVS5000_SSS02.05_EMSWorkstation Validation Guide<br>EVS5000_SSS02.06_DS200Quick Hash Procedure<br>EVS5000_SSS02.07_DS850Quick Hash Procedure<br>EVS5000_SSS02_Hardening Procedures<br>EVS5000_SSS03_Voting System Validation Guide01_File Listing_DS200<br>EVS5000_SSS03_Voting System Validation Guide02_File Listing_AutoMARK<br>EVS5000_SSS03_Voting System Validation Guide04_File Listing_ElectionWare<br>EVS5000_SSS03_Voting System Validation Guide05_File Listing_RMS<br>EVS5000_SSS03_Voting System Validation Guide06_File_Listing_ELS<br>EVS5000_SSS03_Voting System Validation Guide07_File Listing_VATPreview<br>EVS5000_SSS03_Voting System Validation Guide08_File Listing_ERM<br>EVS5000_SSS03_Voting System Validation Guide09_File Listing_DS850<br>EVS5000_SSS07_PhysEquipmentSecurityBestPract<br>EVS5000_SSS09_WinOS_SECBaseSettings<br><br>EVS5000_SSS02.01_HardeningScripts [Folder]<br>EVS5000_SSS02.07.01_DS850QuickHashScripts [Folder]<br>EVS5000_SSS02.08.01_AutoMARKHashTools [Folder] | TDP |

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| 249 | SYSTEM SECURITY SPECIFICATIO | | Information provided by the vendor in this section of the TDP may be duplicative of information required by other sections. Vendors may cross-reference to information provided in other sections provided that the means used provides a clear mapping t the requirements of this section. | | AutoMARK ESS System Security Specification AQS-18-5002-001-S<br>EVS5000_SSS00<br>EVS5000_SSS01_JSP Template<br>EVS5000_SSS002.08_AutoMARK Quick Hash Procedure<br>EVS5000_SSS02.01_EMS_PC_SecScriptDesc<br>EVS5000_SSS02.01_UbuntuLiveCD<br>EVS5000_SSS02.05_EMSWorkstation Validation Guide<br>EVS5000_SSS02.06_DS200Quick Hash Procedure<br>EVS5000_SSS02.07_DS850Quick Hash Procedure<br>EVS5000_SSS02_Hardening Procedures<br>EVS5000_SSS03_Voting System Validation Guide01_File Listing_DS200<br>EVS5000_SSS03_Voting System Validation Guide02_File Listing_AutoMARK<br>EVS5000_SSS03_Voting System Validation Guide04_File Listing_ElectionWare<br>EVS5000_SSS03_Voting System Validation Guide05_File Listing_RMS<br>EVS5000_SSS03_Voting System Validation Guide06_File_Listing_ELS<br>EVS5000_SSS03_Voting System Validation Guide07_File Listing_VATPreview<br>EVS5000_SSS03_Voting System Validation Guide08_File Listing_ERM<br>EVS5000_SSS03_Voting System Validation Guide09_File Listing_DS850<br>EVS5000_SSS07_PhysEquipmentSecurityBestPract<br>EVS5000_SSS09_WinOS_SECBaseSettings<br><br>EVS5000_SSS02.01_HardeningScripts [Folder]<br>EVS5000_SSS02.07.01_DS850QuickHashScripts [Folder]<br>EVS5000_SSS02.08.01_AutoMARKHashTools [Folder] | TDP |
| 250 | | | The Security Specification shall contain the sections identified below. | | | |
| 251 | | **VII, 2.6.1** | **Access Control Policy** | | | |
| 252 | | | The vendor shall specify the features and capabilities of the access control policy recommended to purchasing jurisdictions to provide effective voting system security. The access control policy shall address the general features and capabilities and individual access privileges indicated in Volume I, Subsection 7.2. [Access Control] | *also Vol. I, 7.2.1 Security Requirements, General Access Control Policy;*<br>*also Vol. I, 7.2.1.1 Individual Access Privileges* | EVS5000_SSS00, Chapter 1, Access Control Policy | TDP |
| 253 | | **VII, 2.6.2** | **Access Control Measures** | | | |
| 254 | | | The vendor shall provide a detailed description of all system access control measures and mandatory procedures designed to permit access to system states in accordance with the access policy, and to prevent all other types of access to meet the specific requirements of Volume I, Subsection 7.2. | *also Vol. I, 7.2.1.2 Access Control Measures* | EVS5000_SSS00, Chapter 2, Access Control Measures | TDP |
| 255 | | | The vendor also shall define and provide a detailed description of the methods used to preclude unauthorized access to the access control capabilities of the system itself. | *also Vol. I, 7.2.1.2 Access Control Measures* | EVS5000_SSS00, Chapter 2, Access Control Measures | TDP |
| 256 | | **VII, 2.6.3** | **Equipment and Data Security** | | | |
| 257 | | | The vendor shall provide a detailed description of system capabilities and mandatory procedures for purchasing jurisdictions to prevent disruption of the voting process and corruption of voting data to meet the specific requirements of Volume I, Subsection 7.3. [Physical Security Measures] This information shall address measures for polling place security and central count location security. | *Vol. I, 7.3.1 Physical Security Requirements, Polling Place Security;*<br>*also Vol. I, 7.3- 7.3.2 Physical Security Measures* | EVS5000_SSS00, Chapter 3, Equipment and Data Security | TDP |
| 258 | | **VII, 2.6.4** | **Software Installation** | | | |
| 259 | | | The vendor shall provide a detailed description of the system capabilities and mandatory procedures for purchasing jurisdictions to ensure secure software (including firmware) installation to meet the specific requirements of Volume I, Subsection 7.4. [Software Security] This information shall address software installation for all system components. | *also Vol. I, 7.4-7.4.6 Software Security* | EVS5000_SSS00, Chapter 4, Software Installation and Security | TDP |
| 260 | | **VII, 2.6.5** | **Telecommunications and Data Transmission Security** | | | |

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| 261 | N | | The vendor shall provide a detailed description of the system capabilities and mandatory procedures for purchasing jurisdictions to ensure secure data transmission to meet the specific requirements of Volume I, Subsection 7.5: [Telecommunications and Data Transmission]. | *Vol. I, 7.5.2 b. Security Requirements, Telecommunications and Data Transmission, Protection Against External Threats* | EVS5000_SSS00, Section 3.1.9, Network Security Proctices | TDP |
| 262 | | a. | For all systems, this information shall address access control, and prevention of data interception. | *also Vol. I, 7.5.3 Security Requirements, Telecommunications and Data Transmission, Monitoring and Responding to External Threats* | EVS5000_SSS00, Section 3.1.9, Network Security Proctices | TDP |
| 263 | | b. | For systems that use public communications networks as defined in Volume I, Section 6 [Telecommunications Requirements], this information shall also include: | *Vol. I, 7.6.2.1 Security Requirements, Use of Public Communications Networks, Documentation of Mandatory Security Activities;*<br>*also Vol. I, 7.5.2 Protection Against External Threats;*<br>*also Vol. I, 7.5.3 Monitoring and Responding to External Threats*<br>*Wireless: Vol. I, 7.7.1 Controlling Usage; 7.7.2 Identifying Usage* | | |
| 264 | | | i. Capabilities used to provide protection against threats to third party products and services. | | EVS5000_SSS00, Section 3.1.9, Network Security Proctices | TDP |
| 265 | | | ii. Policies and processes used by the vendor to ensure that such protection is updated to remain effective over time. | | EVS5000_SSS00, Section 3.1.9, Network Security Proctices | TDP |
| 266 | | | iii. Policies and procedures used by the vendor to ensure that current versions of such capabilities are distributed to user jurisdictions and are installed effectively by the jurisdiction. | | EVS5000_SSS00, Section 3.1.9, Network Security Proctices | TDP |
| 267 | | | iv. A detailed description of the system capabilities and procedures to be employed by the jurisdiction to diagnose the occurrence of a denial of service attack, to use an alternate method of voting, to determine when it is appropriate to resume voting over the network, and to consolidate votes cast using the alternate method. | | EVS5000_SSS00, Section 3.1.9, Network Security Proctices | TDP |
| 268 | | | v. A detailed description of all activities to be performed in setting up the system for operation that are mandatory to ensure effective system security, including testing of security before an election. | | EVS5000_SSS00, Section 3.1.9, Network Security Proctices | TDP |
| 269 | | | vi. A detailed description of all activities that should be prohibited during system setup and during the timeframe for voting operations, including both the hours when polls are open and when polls are closed. | | EVS5000_SSS00, Section 3.1.9, Network Security Proctices | TDP |
| 270 | | **VII, 2.6.6** | **Other Elements of an Effective Security Program** | | | |
| 271 | | | The vendor shall provide a detailed description of the following additional procedures required for use by the purchasing jurisdiction: | | | |
| 272 | | a. | Administrative and management controls for the voting system and election management, including access controls. | | EVS5000_SSS00, Section 1, Access Control Policy | TDP |
| 273 | | b. | Internal security procedures, including operating procedures for maintaining the security of the software for each system function and operating mode. | | EVS5000_SSS00, Section 1, Access Control Policy | TDP |
| 274 | | c. | Adherence to, and enforcement of, operational procedures (e.g., effective password management). | | EVS5000_SSS00, Section 1, Access Control Policy | TDP |
| 275 | | d. | Physical facilities and arrangements. | | EVS5000_SSS00, Section 1, Access Control Policy | TDP |
| 276 | | e. | Organizational responsibilities and personnel screening. | | EVS5000_SSS00, Section 1, Access Control Policy | TDP |
| 277 | | | This documentation shall be prepared such that these requirements can be integrated by the jurisdiction into local administrative and operating procedures. | | EVS5000_SSS00, Section 1, Access Control Policy | TDP |
| 278 | | **VII, 2.7** | **System Test and Verification Specification** | | | |
| 279 | | | The vendor shall provide test and verification specifications for: | | | |

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| 280 | | | Development test specifications | | EVS5000_STP00<br>EVS5000_TC00_AutoMARK<br>EVS5000_TC00_DS200<br>EVS5000_TC00_DS850<br>EVS5000_TC00_ElectionWare01_Manage<br>EVS5000_TC00_ElectionWare02_Define<br>EVS5000_TC00_Electionware03_Design<br>EVS5000_TC00_Electionware04_Deliver<br>EVS5000_TC00_Electionware05_Resolve<br>EVS5000_TC00_ERM | TDP |
| 281 | | | National certification test specifications | | EVS5000_STP00<br>EVS5000_TC00_AutoMARK<br>EVS5000_TC00_DS200<br>EVS5000_TC00_DS850<br>EVS5000_TC00_ElectionWare01_Manage<br>EVS5000_TC00_ElectionWare02_Define<br>EVS5000_TC00_Electionware03_Design<br>EVS5000_TC00_Electionware04_Deliver<br>EVS5000_TC00_Electionware05_Resolve<br>EVS5000_TC00_ERM | TDP |
| 282 | | **VII, 2.7.1** | **Development Test Specifications** | | | |
| 283 | | | The vendor shall describe the plans, procedures, and data used during software development and system integration to verify system logic correctness, data quality, and security. This description shall include: | | | |
| 284 | | a. | Test identification and design, including: | | | |
| 285 | | | 1) Test structure | | EVS5000_STP00, Section 1.1, Overview | TDP |
| 286 | | | 2) Test sequence or progression | | EVS5000_STP00, Section 1.3, Test Phases | TDP |
| 287 | | | 3) Test conditions | | EVS5000_STP00 | TDP |
| 288 | | b. | Standard test procedures, including any assumptions or constraints | | EVS5000_STP00, Section 2.3.1, Overview / Standard Test Procedures | TDP |
| 289 | | c. | Special purpose test procedures including any assumptions or constraints | | EVS5000_STP00<br>EVS5000_TC00_AutoMARK<br>EVS5000_TC00_DS200<br>EVS5000_TC00_DS850<br>EVS5000_TC00_ElectionWare01_Manage<br>EVS5000_TC00_ElectionWare02_Define<br>EVS5000_TC00_Electionware03_Design<br>EVS5000_TC00_Electionware04_Deliver<br>EVS5000_TC00_Electionware05_Resolve<br>EVS5000_TC00_ERM | TDP |
| 290 | | d. | Test data; including the data source, whether it is real or simulated, and how test data are controlled | | EVS5000_STP00<br>EVS5000_TC00_AutoMARK<br>EVS5000_TC00_DS200<br>EVS5000_TC00_DS850<br>EVS5000_TC00_ElectionWare01_Manage<br>EVS5000_TC00_ElectionWare02_Define<br>EVS5000_TC00_Electionware03_Design<br>EVS5000_TC00_Electionware04_Deliver<br>EVS5000_TC00_Electionware05_Resolve<br>EVS5000_TC00_ERM | TDP |

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| 291 | SYSTEM TEST AND VERIFICATION | e. | Expected test results | | EVS5000_STP00<br>EVS5000_TC00_AutoMARK<br>EVS5000_TC00_DS200<br>EVS5000_TC00_DS850<br>EVS5000_TC00_ElectionWare01_Manage<br>EVS5000_TC00_ElectionWare02_Define<br>EVS5000_TC00_Electionware03_Design<br>EVS5000_TC00_Electionware04_Deliver<br>EVS5000_TC00_Electionware05_Resolve<br>EVS5000_TC00_ERM | TDP |
| 292 | | f. | Criteria for evaluating test results | | EVS5000_STP00<br>EVS5000_TC00_AutoMARK<br>EVS5000_TC00_DS200<br>EVS5000_TC00_DS850<br>EVS5000_TC00_ElectionWare01_Manage<br>EVS5000_TC00_ElectionWare02_Define<br>EVS5000_TC00_Electionware03_Design<br>EVS5000_TC00_Electionware04_Deliver<br>EVS5000_TC00_Electionware05_Resolve<br>EVS5000_TC00_ERM | TDP |
| 293 | | | Additional details for these requirements are provided by MIL-STD-498, Software Test Plan and Software Test Description. In the event that test data are not available, the accredited test lab shall design test cases and procedures equivalent to those ordinarily used during product verification. | | | |
| 294 | | **VII, 2.7.2** | **National Certification Test Specifications** | | | |
| 295 | | | The vendor shall provide specifications for verification and validation of overall software performance. These specifications shall cover: | | | |
| 296 | | a. | Control and data input/output | | EVS5000_STP00<br>EVS5000_TC00_AutoMARK<br>EVS5000_TC00_DS200<br>EVS5000_TC00_DS850<br>EVS5000_TC00_ElectionWare01_Manage<br>EVS5000_TC00_ElectionWare02_Define<br>EVS5000_TC00_Electionware03_Design<br>EVS5000_TC00_Electionware04_Deliver<br>EVS5000_TC00_Electionware05_Resolve<br>EVS5000_TC00_ERM | TDP |
| 297 | | b. | Acceptance criteria | | EVS5000_STP00<br>EVS5000_TC00_AutoMARK<br>EVS5000_TC00_DS200<br>EVS5000_TC00_DS850<br>EVS5000_TC00_ElectionWare01_Manage<br>EVS5000_TC00_ElectionWare02_Define<br>EVS5000_TC00_Electionware03_Design<br>EVS5000_TC00_Electionware04_Deliver<br>EVS5000_TC00_Electionware05_Resolve<br>EVS5000_TC00_ERM | TDP |

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| 298 | | c. | Processing accuracy | | EVS5000_STP00<br>EVS5000_TC00_AutoMARK<br>EVS5000_TC00_DS200<br>EVS5000_TC00_DS850<br>EVS5000_TC00_ElectionWare01_Manage<br>EVS5000_TC00_ElectionWare02_Define<br>EVS5000_TC00_Electionware03_Design<br>EVS5000_TC00_Electionware04_Deliver<br>EVS5000_TC00_Electionware05_Resolve<br>EVS5000_TC00_ERM | TDP |
| 299 | | d. | Data quality assessment and maintenance | | EVS5000_STP00<br>EVS5000_TC00_AutoMARK<br>EVS5000_TC00_DS200<br>EVS5000_TC00_DS850<br>EVS5000_TC00_ElectionWare01_Manage<br>EVS5000_TC00_ElectionWare02_Define<br>EVS5000_TC00_Electionware03_Design<br>EVS5000_TC00_Electionware04_Deliver<br>EVS5000_TC00_Electionware05_Resolve<br>EVS5000_TC00_ERM | TDP |
| 300 | | e. | Ballot interpretation logic | *Vol. I, 7.9.3 e, VVPAT Requirements, Electronic and Paper Record Storage* | EVS5000_STP00<br>EVS5000_TC00_AutoMARK<br>EVS5000_TC00_DS200<br>EVS5000_TC00_DS850<br>EVS5000_TC00_ElectionWare01_Manage<br>EVS5000_TC00_ElectionWare02_Define<br>EVS5000_TC00_Electionware03_Design<br>EVS5000_TC00_Electionware04_Deliver<br>EVS5000_TC00_Electionware05_Resolve<br>EVS5000_TC00_ERM | TDP |
| 301 | | f. | Exception handling | | EVS5000_TC00_AutoMARK<br>EVS5000_TC00_DS200<br>EVS5000_TC00_DS850<br>EVS5000_TC00_ElectionWare01_Manage<br>EVS5000_TC00_ElectionWare02_Define<br>EVS5000_TC00_Electionware03_Design<br>EVS5000_TC00_Electionware04_Deliver<br>EVS5000_TC00_Electionware05_Resolve<br>EVS5000_TC00_ERM | TDP |
| 302 | | g. | Security | | EVS5000_STP00<br>EVS5000_TC00_AutoMARK<br>EVS5000_TC00_DS200<br>EVS5000_TC00_DS850<br>EVS5000_TC00_ElectionWare01_Manage<br>EVS5000_TC00_ElectionWare02_Define<br>EVS5000_TC00_Electionware03_Design<br>EVS5000_TC00_Electionware04_Deliver<br>EVS5000_TC00_Electionware05_Resolve<br>EVS5000_TC00_ERM | TDP |

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| 303 | | h. | Production of audit trails and statistical data | | EVS5000_STP00<br>EVS5000_TC00_AutoMARK<br>EVS5000_TC00_DS200<br>EVS5000_TC00_DS850<br>EVS5000_TC00_ElectionWare01_Manage<br>EVS5000_TC00_ElectionWare02_Define<br>EVS5000_TC00_Electionware03_Design<br>EVS5000_TC00_Electionware04_Deliver<br>EVS5000_TC00_Electionware05_Resolve<br>EVS5000_TC00_ERM | TDP |
| 304 | | | The specifications shall identify procedures for assessing and demonstrating the suitability of the software for election use. | | EVS5000_STP00<br>EVS5000_TC00_AutoMARK<br>EVS5000_TC00_DS200<br>EVS5000_TC00_DS850<br>EVS5000_TC00_ElectionWare01_Manage<br>EVS5000_TC00_ElectionWare02_Define<br>EVS5000_TC00_Electionware03_Design<br>EVS5000_TC00_Electionware04_Deliver<br>EVS5000_TC00_Electionware05_Resolve<br>EVS5000_TC00_ERM | TDP |
| 305 | | **VII, 2.8** | **System Operations Procedures** | | | |
| 306 | | | This documentation shall provide all information necessary for system use by all personnel who support pre-election and election preparation, polling place activities and central counting activities, as applicable, with regard to all system functions and operations identified in Subsection 2.3 above [Ballot Prep. Prep. of Elec.-specific software/firmware; ballot installation and ballot counting software; system and equip. tests; all polling place operations by voters and officials including status message generation; closing the polling place; reports by voting machine, polling place, precinct; consolidated reports; reports of audit trails].<br>The nature of the instructions for operating personnel will depend upon the overall system design and required skill level of system operations support personnel. | | EVS5000_SOP00_AMVAT<br>EVS5000_SOP00_DS200<br>EVS5000_SOP00_DS850<br>EVS5000_SOP00_ElectionWare01_Admin<br>EVS5000_SOP00_ElectionWare02_Define<br>EVS5000_SOP00_ElectionWare03_Design<br>EVS5000_SOP00_ElectionWare04_Deliver<br>EVS5000_SOP00_ElectionWare05_Results<br>EVS5000_SOP00_ELS<br>EVS5000_SOP00_ERM<br>EVS5000_SOP00_NetworkConfigGuide<br><br>EVS5000_SOP00_AMVAT.01_VerficationElection [Folder]<br><br>EVS5000_ORPT02_BallotProductionGuide [In Above Folder] | TDP |
| 307 | | | The system operations procedures shall contain all information that is required for the preparation of detailed system operating procedures, and for operator training, as described below. | | EVS5000_SOP00_AMVAT<br>EVS5000_SOP00_DS200<br>EVS5000_SOP00_DS850<br>EVS5000_SOP00_ElectionWare01_Admin<br>EVS5000_SOP00_ElectionWare02_Define<br>EVS5000_SOP00_ElectionWare03_Design<br>EVS5000_SOP00_ElectionWare04_Deliver<br>EVS5000_SOP00_ElectionWare05_Results<br>EVS5000_SOP00_ELS<br>EVS5000_SOP00_ERM<br>EVS5000_SOP00_NetworkConfigGuide<br><br>EVS5000_SOP00_AMVAT.01_VerficationElection [Folder]<br><br>EVS5000_ORPT02_BallotProductionGuide [In Above Folder] | TDP |
| 308 | | **VII, 2.8.1** | **Introduction** | | | |

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| 309 | | | The vendor shall provide a summary of system operating functions and modes, in sufficient detail to permit understanding of the system's capabilities and constraints. | *Vol. I, 2.5.1 System Audit* | EVS5000_SOP00_AMVAT, Section 1, Overview<br>EVS5000_SOP00_DS200, Section 3, Introduction to the DS200<br>EVS5000_SOP00_DS850, Section 1, DS850 Overview<br>EVS5000_SOP00_ElectionWare01_Admin, Section 1, Overview<br>EVS5000_SOP00_ElectionWare02_Define, Section 1, Home<br>EVS5000_SOP00_ElectionWare03_Design, Section 1, Paper Ballot Overview<br>EVS5000_SOP00_ElectionWare04_Deliver, Section 1, Configure Equipment<br>EVS5000_SOP00_ElectionWare05_Results, Section 1, Results<br>EVS5000_SOP00_ERM, Section 1, Overview<br>EVS5000_SOP00_NetworkConfigGuide, Section 1, Overview<br>EVS5000_SOP00_ELS, Introduction | TDP |
| 310 | | | The roles of operating personnel shall be identified and related to the operating modes of the system. | | EVS5000_SOP00_AMVAT, Section 1, Overview<br>EVS5000_SOP00_DS200, Section 3, Introduction to the DS200<br>EVS5000_SOP00_DS850, Section 1, DS850 Overview<br>EVS5000_SOP00_ElectionWare01_Admin, Section 1, Overiew<br>EVS5000_SOP00_ERM, Section 1, Overview<br>EVS5000_SOP00_NetworkConfigGuide, Section 1, Overview<br>EVS5000_SOP00_ELS, Introduction | TDP |
| 311 | | | Decision criteria and conditional operator functions (such as erro and failure recovery actions) shall be described. | | XXX | TDP |
| 312 | | | The vendor shall also list all reference and supporting documents pertaining to the use of the system during election operations. | | XXX | TDP |
| 313 | | **VII, 2.8.2** | **Operational Environment** | | | |
| 314 | | | The vendor shall describe the system environment, and the interface between the user or operator and the system. The vendor shall identify all facilities, furnishings, fixtures, and utilities that will be required for equipment operations, including equipment that operates at the: | | | |
| 315 | | a. | Polling place | | EVS5000_SOP00_AMVAT, Section 5, Facilites, Furnishings, Fixtures and Utilites<br>EVS5000_SOP00_DS200, Section 5, Open the Polls | TDP |
| 316 | | b. | Central count facility | | EVS5000_SOP00_DS850, Chapter 1, DS850 Overview | TDP |
| 317 | | c. | Other locations | | N/A | |
| 318 | | **VII, 2.8.3** | **System Installation and Test Specification** | | | |
| 319 | | | The vendor shall provide specifications for validation of system installation, acceptance, and readiness. These specifications shall address all components of the system and all locations of installation (e.g., polling place, central count facility), and shall address all elements of system functionality and operations identified in Subsection 2.3 above, including: | *also Vol. I, 5.1.1 Software Requirements, Software Sources* | | |
| 320 | | a. | Pre-voting functions | *Vol. I, 2.2.3 Ballot and Program Installation and Control* | EVS5000_SOP00_AMVAT, Chapter 5, AutoMARK Setup Instructions<br>EVS5000_SOP00_DS200, Chapter 4, Pre-Election Day Tasks<br>EVS5000_SOP00_DS850, Section 5, Pre-Election Day Tasks<br>EVS5000_SOP00_ERM, Section 2, Pre-Election Tasks | TDP |
| 321 | **SYSTEM OP** | b. | Voting functions | | EVS5000_SOP00_AMVAT, Chapter 6, Assisting Voters<br>EVS5000_SOP00_DS200, Chapter 5, Election Day Tasks<br>EVS5000_SOP00_DS850, Section 6, Election Day Tasks<br>EVS5000_SOP00_ERM, Section 3, Election Day Tasks | TDP |
| 322 | | c. | Post-voting functions | | EVS5000_SOP00_AMVAT, Chapter 11, Maintenance<br>EVS5000_SOP00_DS200, Chapter 6, Post Election Day Tasks<br>EVS5000_SOP00_DS850, Section 7, Post-Election Day Tasks<br>EVS5000_SOP00_ERM, Section 4, Post-Election Tasks | TDP |

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| 323 | OPERATIONS PROCECURES | d. | General capabilities | | EVS5000_SOP00_AMVAT<br>EVS5000_SOP00_DS200<br>EVS5000_SOP00_DS850<br>EVS5000_SOP00_ERM | TDP |
| 324 | | **VII, 2.8.4** | **Operational Features** | | | |
| 325 | | | The vendor shall provide documentation of system operating features that meets the following requirements: | | | |
| 326 | | a. | A detailed description of all input, output, control, and display features accessible to the operator or voter | | EVS5000_SOP00_AMVAT<br>EVS5000_SOP00_DS200<br>EVS5000_SOP00_DS850<br>EVS5000_SOP00_ERM | TDP |
| 327 | | b. | Examples of simulated interactions to facilitate understanding of the system and its capabilities | | EVS5000_SOP00_AMVAT<br>EVS5000_SOP00_DS200<br>EVS5000_SOP00_DS850<br>EVS5000_SOP00_ERM | TDP |
| 328 | | c. | Sample data formats and output reports | *Vol. II, 2.1 Desc. Of the TDP, Scope*<br>*Vol. I, 2.1.6 g. Election Management System* | EVS5000_SOP00_AMVAT<br>EVS5000_SOP00_DS200<br>EVS5000_SOP00_DS850<br>EVS5000_SOP00_ERM | TDP |
| 329 | | d. | Illustrate and describe all status indicators and information messages | | EVS5000_SOP00_AMVAT<br>EVS5000_SOP00_DS200<br>EVS5000_SOP00_DS850<br>EVS5000_SOP00_ERM | TDP |
| 330 | | **VII, 2.8.5** | **Operating Procedures** | | | |
| 331 | | | The vendor shall provide documentation of system operating procedures that meets the following requirements: | *also Vol. I, 5.1.1 Software Requirements, Software Sources* | | |
| 332 | | a. | Provides a detailed description of procedures required to initiate, control, and verify proper system operation. | | EVS5000_SOP00_AMVAT<br>EVS5000_SOP00_DS200<br>EVS5000_SOP00_DS850<br>EVS5000_SOP00_ERM | TDP |
| 333 | | b. | Provides procedures that clearly enable the operator to assess the correct flow of system functions (as evidenced by system-generated status and information messages). | | EVS5000_SOP00_AMVAT<br>EVS5000_SOP00_DS200<br>EVS5000_SOP00_DS850<br>EVS5000_SOP00_ERM | TDP |
| 334 | | c. | Provides procedures that clearly enable the operator to intervene in system operations to recover from an abnormal system state. | | EVS5000_SOP00_AMVAT<br>EVS5000_SOP00_DS200<br>EVS5000_SOP00_DS850<br>EVS5000_SOP00_ERM | TDP |
| 335 | | d. | Defines and illustrates the procedures and system prompts for situations where operator intervention is required to load, initialize, and start the system. | | EVS5000_SOP00_AMVAT<br>EVS5000_SOP00_DS200<br>EVS5000_SOP00_DS850<br>EVS5000_SOP00_ERM | TDP |
| 336 | | e. | Defines and illustrates procedures to enable and control the external interface to the system operating environment if supporting hardware and software are involved. Such information also shall be provided for the interaction of the system with other data processing systems or data interchange protocols. | | EVS5000_SOP00_AMVAT<br>EVS5000_SOP00_DS200<br>EVS5000_SOP00_DS850<br>EVS5000_SOP00_ERM | TDP |
| 337 | | f. | Provides administrative procedures and off-line operator duties (if any) if they relate to the initiation or termination of system operations, to the assessment of system status, or to the development of an audit trail. | | EVS5000_SOP00_AMVAT<br>EVS5000_SOP00_DS200<br>EVS5000_SOP00_DS850<br>EVS5000_SOP00_ERM | TDP |

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| 338 | | g. | Supports successful ballot and program installation and control by election officials, provides a detailed work plan or other form of documentation providing a schedule and steps for the software and ballot installation, which includes a table outlining the key dates, events and deliverables. | *also Vol. I, 2.2.3 a. Pre-Voting Capabilities, Ballot and Program Installation and Control* | EVS5000_SOP00_AMVAT<br>EVS5000_SOP00_DS200<br>EVS5000_SOP00_DS850<br>EVS5000_SOP00_ERM | TDP |
| 339 | | h. | Supports diagnostic testing, specifies diagnostic tests that may be employed to identify problems in the system, verifies the correction of maintenance problems; and isolates and diagnoses faults from various system states. | | EVS5000_SOP00_AMVAT<br>EVS5000_SOP00_DS200<br>EVS5000_SOP00_DS850<br>EVS5000_SOP00_ERM | TDP |
| 340 | | **VII, 2.8.6** | **Operations Support** | | | |
| 341 | | | The vendor shall provide documentation of system operating procedures that meets the following requirements: | | | |
| 342 | | a. | Defines the procedures required to support system acquisition, installation, and readiness testing. These procedures may be provided by reference, if they are contained either in the system hardware specifications, or in other vendor documentation. | | EVS5000_SOP00_AMVAT<br>EVS5000_SOP00_DS200<br>EVS5000_SOP00_DS850<br>EVS5000_SOP00_ERM | TDP |
| 343 | | b. | Describes procedures for providing technical support, system maintenance and correction of defects, and for incorporating hardware upgrades and new software releases. | | EVS5000_SOP00_AMVAT<br>EVS5000_SOP00_DS200<br>EVS5000_SOP00_DS850<br>EVS5000_SOP00_ERM | TDP |
| 344 | | **VII, 2.8.7** | **Appendices** | | | |
| 345 | | | The vendor may provide descriptive material and data supplementing the various sections of the body of the System Operations Manual. The content and arrangement of appendices shall be at the discretion of the vendor. Topics recommended for discussion include: | | | |
| 346 | | a. | **Glossary:** A listing and brief definition of all terms that may be unfamiliar to persons not trained in either voting systems or computer operations. | | No glossary appendices were noted in the core SOP TDPs | TDP |
| 347 | | b. | **References:** A list of references to all vendor documents and to other sources related to operation of the system. | | No reference appendices were noted in the core SOP TDPs | TDP |
| 348 | | c. | **Detailed Examples:** Detailed scenarios that outline correct system responses to faulty operator input; Alternative procedures may be specified depending on the system state. | | EVS5000_SOP00_AMVAT, Part 2 (not listed in contents), Appendix<br>EVS5000_SOP00_DS200, Part 4 (not listed in contents), Appendix<br>EVS5000_SOP00_ERM, Part 12 (not listed in contents), Appendix | TDP |
| 349 | | d. | **Manufacturer's Recommended Security Procedures:** This appendix shall contain the security procedures that are to be executed by the system operator. | | No manufacturer's recommended security procedures appendices were noted in the core SOP TDPs | TDP |
| 350 | | **VII, 2.9** | **System Maintenance Manual** | | | |
| 351 | | | 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. | | EVS5000_SMM00_AMVAT<br>EVS5000_SMM00_DS200<br>EVS5000_SMM00_DS850 | TDP |
| 352 | | | 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. | | EVS5000_SMM00_AMVAT<br>EVS5000_SMM00_DS200<br>EVS5000_SMM00_DS850 | TDP |
| 353 | | **VII, 2.9.1** | **Introduction** | | | |

| | A | B | C | D | F | G |
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| 354 | | | 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. The description shall include a concept of operations that fully describes such items as: | | | |
| 355 | | a. | The electrical and mechanical functions of the equipment. | | EVS5000_SMM00_AMVAT, Section 4, System Power<br>EVS5000_SMM00_DS200, Section 1, Electrical Information<br>EVS5000_SMM00_DS850, Section 1, Electrical Information | TDP |
| 356 | | b. | How the processes of ballot handling and reading are performed (paper-based systems). | | EVS5000_SMM00_AMVAT, Section 2, Basic Functionality<br>EVS5000_SMM00_DS200<br>EVS5000_SMM00_DS850 | TDP |
| 357 | | c. | How vote selection and casting of the ballot are performed (DRE systems). | | N/A - Not a DRE System | TDP |
| 358 | | d. | How transmission of data over a network is performed (DRE systems, where applicable. | | N/A - Not a DRE System | TDP |
| 359 | | e. | How data are handled in the processor and memory units. | | EVS5000_SMM00_AMVAT<br>EVS5000_SMM00_DS200<br>EVS5000_SMM00_DS850 | TDP |
| 360 | | f. | How data output is initiated and controlled. | | EVS5000_SMM00_AMVAT<br>EVS5000_SMM00_DS200<br>EVS5000_SMM00_DS850 | TDP |
| 361 | | g. | How power is converted or conditioned. | | EVS5000_SMM00_AMVAT, Section 4, System Power<br>EVS5000_SMM00_DS200, Section 1, Electrical Information<br>EVS5000_SMM00_DS850, Section 1, Electrical Information | TDP |
| 362 | | h. | How test and diagnostic information is acquired and used. | | EVS5000_SMM00_AMVAT<br>EVS5000_SMM00_DS200<br>EVS5000_SMM00_DS850 | TDP |
| 363 | | **VII, 2.9.2** | **Maintenance Procedures** | | | |
| 364 | | | The vendor shall describe preventive and corrective maintenance procedures for hardware and software. | | EVS5000_SMM00_AMVAT, Section 10, Preventive Maintenance Procedures<br>EVS5000_SMM00_DS200, Section 1, Introduction<br>EVS5000_SMM00_DS850, Section 1, Introduction | TDP |
| 365 | | **VII, 2.9.2.1** | **Preventive Maintenance Procedures** | | | |
| 366 | | | The vendor shall identify and describe: | | | |
| 367 | | a. | All required and recommended preventive maintenance tasks, including software tasks such as software backup, database performance analysis, and database tuning. | | EVS5000_SMM00_AMVAT, Section 10, Preventive Maintenance Procedures<br>EVS5000_SMM00_DS200, Section 1, Introduction<br>EVS5000_SMM00_DS850, Section 1, Introduction | TDP |
| 368 | | b. | Number and skill levels of personnel required for each task. | | EVS5000_SMM00_AMVAT, Section 10, Preventive Maintenance Procedures<br>EVS5000_SMM00_DS200, Section 1, Personnel Deployment<br>EVS5000_SMM00_DS850, Section 1, Personnel Deployment | TDP |
| 369 | | c. | Parts, supplies, special maintenance equipment, software tools, or other resources needed for maintenance. | | EVS5000_SMM00_AMVAT<br>EVS5000_SMM00_DS200<br>EVS5000_SMM00_DS850 | TDP |
| 370 | | d. | 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). | | EVS5000_SMM00_AMVAT<br>EVS5000_SMM00_DS200<br>EVS5000_SMM00_DS850 | TDP |
| 371 | | **VII, 2.9.2.2** | **Corrective Maintenance Procedures** | | | |

| | A | B | C | D | F | G |
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| 372 | SYSTEM MAINTENANCE MANUALS | | The vendor shall provide fault detection, fault isolation, correction procedures, and logic diagrams for all operational abnormalities identified by design analysis and operating experience. | | EVS5000_SMM00_AMVAT<br>EVS5000_SMM00_DS200<br>EVS5000_SMM00_DS850 | TDP |
| 373 | | | The vendor shall identify specific procedures to be used in diagnosing and correcting problems in the system hardware (or user-controlled software). Descriptions shall include: | | | |
| 374 | | a. | Steps to replace failed or deficient equipment. | | EVS5000_SMM00_AMVAT<br>EVS5000_SMM00_DS200<br>EVS5000_SMM00_DS850 | TDP |
| 375 | | b. | Steps to correct deficiencies or faulty operations in software. | | EVS5000_SMM00_AMVAT<br>EVS5000_SMM00_DS200<br>EVS5000_SMM00_DS850 | TDP |
| 376 | | c. | Modifications that are necessary to coordinate any modified or upgraded software with other software modules. | | EVS5000_SMM00_AMVAT<br>EVS5000_SMM00_DS200<br>EVS5000_SMM00_DS850 | TDP |
| 377 | | d. | The number and skill levels of personnel needed to accomplish each procedure. | | EVS5000_SMM00_AMVAT<br>EVS5000_SMM00_DS200<br>EVS5000_SMM00_DS850 | TDP |
| 378 | | e. | Special maintenance equipment, parts, supplies, or other resources needed to accomplish each procedure. | | EVS5000_SMM00_AMVAT<br>EVS5000_SMM00_DS200<br>EVS5000_SMM00_DS850 | TDP |
| 379 | | f. | Any coordination required with the vendor, or other party, for off the shelf items. | | EVS5000_SMM00_AMVAT<br>EVS5000_SMM00_DS200<br>EVS5000_SMM00_DS850 | TDP |
| 380 | | **VII, 2.9.3** | **Maintenance Equipment** | | | |
| 381 | | | The vendor shall identify and describe any special purpose test or maintenance equipment recommended for fault isolation and diagnostic purposes. | | EVS5000_SMM00_AMVAT<br>EVS5000_SMM00_DS200<br>EVS5000_SMM00_DS850 | TDP |
| 382 | | **VII, 2.9.4** | **Parts and Materials** | | | |
| 383 | | | Vendors shall provide detailed documentation of parts and materials needed to operate and maintain the system. Additional requirements apply for paper-based systems. | | | |
| 384 | | **VII, 2.9.4.1** | **Parts and Materials, Common Standards** | | | |
| 385 | | | The vendor shall provide a complete list of approved parts and materials needed for maintenance. This list shall contain sufficient descriptive information to identify all parts by: | *Vol. I, 4.3.1 b-c. Hardware Requirements, Design, Construction, and Maintenance Characteristics, Materials, Processes, and Parts* | | |
| 386 | | a. | Type | | EVS5000_SMM00_AMVAT<br>EVS5000_SMM00_DS200<br>EVS5000_SMM00_DS850 | TDP |
| 387 | | b. | Size | | EVS5000_SMM00_AMVAT<br>EVS5000_SMM00_DS200<br>EVS5000_SMM00_DS850 | TDP |
| 388 | | c. | Value or range | | EVS5000_SMM00_AMVAT<br>EVS5000_SMM00_DS200<br>EVS5000_SMM00_DS850 | TDP |
| 389 | | d. | Manufacturer's designation | | EVS5000_SMM00_AMVAT<br>EVS5000_SMM00_DS200<br>EVS5000_SMM00_DS850 | TDP |

| | A | B | C | D | F | G |
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| 390 | | e. | Individual quantities needed | | EVS5000_SMM00_AMVAT<br>EVS5000_SMM00_DS200<br>EVS5000_SMM00_DS850 | TDP |
| 391 | | f. | Sources from which they may be obtained | | EVS5000_SMM00_AMVAT<br>EVS5000_SMM00_DS200<br>EVS5000_SMM00_DS850 | TDP |
| 392 | | **VII, 2.9.4.2** | **Paper-Based Systems** | | | |
| 393 | | | 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. | | EVS5000_SMM00_DS200, Section 1, Marking Supplies | TDP |
| 394 | | | 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 (sic) 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. | *also Vol. I, 2.2.1.3 c. and following paragraph Functional Requirements, Pre-voting Capabilities, Ballot Production;*<br>*Vol. I, 4.1.4.2 a-b. Hardware Requirements, Vote Recording Requirements, Paper Based Recording Requirements* | EVS5000_SMM00_AMVAT, Section 12, Ballot Specifications<br>EVS5000_SMM00_DS200, Section 1, Ballots<br>EVS5000_SMM00_DS850, Section 1, Ballots<br><br>EVS5000_ORPT02_BallotProductionGuide | TDP |
| 395 | | **VII, 2.9.5** | **Maintenance Facilities and Support** | | | |
| 396 | | | 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. These factors shall include at a minimum: | *see Vol. I, 4.3.5 e-g. Hardware Requirements, Design, Construction, and Maintenance, Availability* | | |
| 397 | | a. | Recommended number and locations of spare devices or components to be kept on hand for repair purposes during periods of system operation. | | EVS5000_SMM00_AMVAT, Section 12, Accessories<br>EVS5000_SMM00_DS200, Section 1, Spare Devices<br>EVS5000_SMM00_DS850, Section 1, Spare Devices | TDP |
| 398 | | b. | Recommended number and locations of qualified maintenance personnel who need to be available to support repair calls during system operation. | | EVS5000_SMM00_AMVAT<br>EVS5000_SMM00_DS200, Section 1, Personnel Deployment<br>EVS5000_SMM00_DS850, Section 1, Personnel Deployment | TDP |
| 399 | | c. | Organizational affiliation (i.e., jurisdiction, vendor) of qualified maintenance personnel. | | EVS5000_SMM00_AMVAT<br>EVS5000_SMM00_DS200, Section 1, Personnel Deployment<br>EVS5000_SMM00_DS850, Section 1, Personnel Deployment | TDP |
| 400 | | **VII, 2.9.6** | **Appendices** | | | |
| 401 | | | 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 appendices include: | | | |
| 402 | | a. | **Glossary:** A listing and brief definition of all terms that may be unfamiliar to persons not trained in either voting systems or computer maintenance. | | AMVAT - No Glossary Appendix<br>DS200 - No Glossary Appendix<br>DS850 - No Glossary Appendix | TDP |
| 403 | | b. | **References:** A list of references to all vendor documents and other sources related to maintenance of the system. | | AMVAT - No Referneces Appendix<br>DS200 - No Referneces Appendix<br>DS850 - No Referneces Appendix | TDP |
| 404 | | c. | **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. | | AMVAT - No Detailed Examples Appendix<br>DS200 - No Detailed Examples Appendix<br>DS850 - No Detailed Examples Appendix | TDP |

| | A | B | C | D | F | G |
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| 405 | | d. | **Maintenance and Security Procedures:**This appendix shall contain technical illustrations and schematic representations of electronic circuits unique to the system. | | AMVAT - No Maintenance and Security Procedures Appendix<br>DS200 - No Maintenance and Security Procedures Appendix<br>DS850 - No Maintenance and Security Procedures Appendix | TDP |
| 406 | PERSONNEL DEVELOPMENT AND TRAINING | **VII, 2.10** | **Personnel Deployment and Training Requirements** | | | |
| 407 | | | The vendor shall describe the personnel resources and training required for a jurisdiction to operate and maintain the system. | | ESSSYS_T_D_1000_TrainingProgram | TDP |
| 408 | | **VII, 2.10.1** | **Personnel** | | | |
| 409 | | | The vendor shall specify the number of personnel and skill levels required to perform each of the following functions: | | | |
| 410 | | a. | Pre-election or election preparation functions (e.g., entering an election, contest and candidate information; designing a ballot; generating pre-election reports), | | ESSSYS_T_D_1000_TrainingProgram , Section 1.1.1, Pre-Election Preperation | TDP |
| 411 | | b. | System operations for voting system functions performed at the polling place. | | ESSSYS_T_D_1000_TrainingProgram , Section 1.1.2, System Operations at the Polling Place | TDP |
| 412 | | c. | System operations for voting system functions performed at the central count facility. | | ESSSYS_T_D_1000_TrainingProgram , Section 1.1.3, System Opeations at the Central Count Facility | TDP |
| 413 | | d. | Preventive maintenance tasks. | | ESSSYS_T_D_1000_TrainingProgram , Section 1.1.4, Preventive Maintenance Task | TDP |
| 414 | | e. | Diagnosis of faulty hardware or software. | | ESSSYS_T_D_1000_TrainingProgram , Section 1.1.5, Diagnosis of Faulty Hardware or Software | TDP |
| 415 | | f. | Corrective maintenance tasks. | | ESSSYS_T_D_1000_TrainingProgram , Section 1.1.6, Corrective Maintenance Tasks | TDP |
| 416 | | g. | Testing to verify the correction of problems. | | ESSSYS_T_D_1000_TrainingProgram , Section 1.1.7, Testing to Verify Correction of Problem | TDP |
| 417 | | | A description shall be presented of which functions may be carried out by user personnel, and those that must be performed by vendor personnel. | | ESSSYS_T_D_1000_TrainingProgram , Section 2.1.6, Vendor Personnel | TDP |
| 418 | | **VII, 2.10.2** | **Training** | | | |
| 419 | | | The vendor shall specify requirements for the orientation and training of the following personnel: | | | |
| 420 | | a. | Poll workers supporting polling place operations | | ESSSYS_T_D_1000_TrainingRecommendation, Section 2.1.1, Poll Worker Supporting Polling Place… | TDP |
| 421 | | b. | System support personnel involved in election programming | | ESSSYS_T_D_1000_TrainingRecommendation, Section 2.1.2, System Support Personnel Involved in… | TDP |
| 422 | | c. | User system maintenance technicians | | ESSSYS_T_D_1000_TrainingRecommendation, Section 2.1.3, User System Maintenance Technicians | TDP |
| 423 | | d. | Network/system administration personnel (if a network is used) | | ESSSYS_T_D_1000_TrainingRecommendation, Section 2.1.4, Network/System Administration… | TDP |
| 424 | | e. | Information systems personnel | | ESSSYS_T_D_1000_TrainingProgram , Section 2.1.5, Data Personnel | TDP |
| 425 | | f. | Vendor personnel | | ESSSYS_T_D_1000_TrainingProgram , Section 2.1.6, Vendor Personnel | TDP |
| 426 | | **VII, 2.11** | **Configuration Management Plan** | *Vol. I, Sec. 9 Configuration Management Requirements* | | |
| 427 | | | Vendors shall submit a Configuration Management Plan that addresses the configuration management requirements of Volume I, Section 9 [Configuration Management Requirements]. This plan shall describe all policies, processes, and procedures employed by the vendor to carry out these requirements. The Configuration Management Plan shall contain the sections identified below. | *see Vol. I, 9.1.1 Configuration Management Requirements;*<br>*see Vol. I, 9.1.3 Application of Configuration Management Requirements;*<br>*Vol. II, 7.4 Examination of Configuration Management Practices* | ESSSYS_CM_P_1000_ESSCMProgram<br>ESSSYS_DOC_P_1000_TDProgram<br><br>EVS5000_CMP10_BUILD DOCUMENTATION [Folder]<br>EVS5000_CMP10_BLD01_SEC01_EMSBuildProcedure<br>EVS5000_CMP10_BLD01_SEC02_EMSBuildEnvironment<br>EVS5000_CMP10_BLD01_SEC03_WindowsAndVirusProtectionUpdates<br>EVS5000_CMP10_BLD02_SEC01_AutoMARKBuildProcedure<br>EVS5000_CMP10_BLD02_SEC02_AutoMARKBuildEnvironment<br>EVS5000_CMP10_BLD03_SEC01_DS200AncillaryBuildProcedure<br>EVS5000_CMP10_BLD03_SEC02_DS200AncillaryBuildEnvironment<br>EVS5000_CMP10_BLD05_SEC01_DS850FirmwareBuildProcedure<br>EVS5000_CMP10_BLD07_SEC01_DS200FirmwareBuildProcedure | TDP |
| 428 | | **VII, 2.11.1** | **Configuration Management Policy** | | | |

| | A | B | C | D | F | G |
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| 429 | CONFIGURATION MANAGEMENT PLAN | | The vendor shall provide a description of its organizational policies for configuration management, addressing the specific requirements of Volume I, Subsection 9.2. These requirements pertain to: | *see Vol. I 9.2 Configuration Management Policy; see Vol. II, 7.4.1 Configuration Management Policy* | | |
| 430 | | a. | Scope and nature of configuration management program activities | | ESSSYS_CM_P_1000_ESSCMProgram, Section I.1.1, Scope | TDP |
| 431 | | b. | Breadth of application of vendor's policy and practices to the voting system | | ESSSYS_CM_P_1000_ESSCMProgram, Section 3.1, Breadth of Application | TDP |
| 432 | | **VII, 2.11.2** | **Configuration Identification** | | | |
| 433 | | | The vendor shall provide a description of the procedures and naming conventions used to address the specific requirements of Volume I, Subsection 9.3. These requirements pertain to: | *see Vol. I, 9.3.1 Config. Identification Class. and Naming Config. Items; Vol. I, 9.3.2 a-c. Configuration Identification, Version Conventions; Vol. II 7.4.2 Configuration Identification* | | |
| 434 | | a. | Classifying configuration items into categories and subcategories | | ESSSYS_CM_P_1000_ESSCMProgram, Section 4, Configuration Identification<br>ESSSYS_DOC_P_1000_TDProgram, Section 6, Appendix C: Document Overview, Naming and Versioning | TDP |
| 435 | | b. | Uniquely numbering or otherwise identifying configuration items | | ESSSYS_CM_P_1000_ESSCMProgram, Section 4, Configuration Identification<br>ESSSYS_DOC_P_1000_TDProgram, Section 6, Appendix C: Document Overview, Naming and Versioning | TDP |
| 436 | | c. | Naming configuration items | | ESSSYS_CM_P_1000_ESSCMProgram, Section 4, Configuration Identification<br>ESSSYS_DOC_P_1000_TDProgram, Section 6, Appendix C: Document Overview, Naming and Versioning | TDP |
| 437 | | **VII, 2.11.3** | **Baseline and Promotion** | | | |
| 438 | | | The vendor shall provide a description of the procedures and naming conventions used to address the specific requirements of Volume I, Subsection 9.4. These requirements pertain to: | *Vol. I, 9.4 a-c. Baseline and Promotion Procedures;*<br>*Vol. II, 7.4.3 Baseline, Promotion, and Demotion Procedures* | | |
| 439 | | a. | Establishing a particular instance of a system component as the starting baseline. | | ESSSYS_CM_P_1000_ESSCMProgram, Section 5, Baseline Promotion and Demotion | TDP |
| 440 | | b. | Promoting subsequent instances of a component to baseline throughout the system development process for the first complete version of the system submitted for testing. | | ESSSYS_CM_P_1000_ESSCMProgram, Section 5, Baseline Promotion and Demotion | TDP |
| 441 | | c. | Promoting subsequent instances of a component to baseline status as the component is maintained throughout its life cycle until system retirement (i.e., the system is no longer sold or maintained). | *EAC Testing and Certification Program Manual, Ver. 1.0, Sec. 1.13 Records Retention-Manufacturers* | ESSSYS_CM_P_1000_ESSCMProgram, Section 5, Baseline Promotion and Demotion | TDP |
| 442 | | **VII, 2.11.4** | **Configuration Control Procedures** | | | |
| 443 | | | The vendor shall provide a description of the procedures used by the vendor to approve and implement changes to a configuration item to prevent unauthorized additions, changes, or deletions to address the specific requirements of Volume I, Subsection 9.5. These requirements pertain to: | *Vol. I, 9.5 a-d. Configuration Control Procedures; Vol. II, 7.4.4 Configuration Control Procedures* | | |
| 444 | | a. | Developing and maintaining internally developed items | | ESSSYS_CM_P_1000_ESSCMProgram, Section 6, Configuration Control Procedures | TDP |
| 445 | | b. | Developing and maintaining third party items | | ESSSYS_CM_P_1000_ESSCMProgram, Section 6, Configuration Control Procedures | TDP |
| 446 | | c. | Resolving internally identified defects | | ESSSYS_CM_P_1000_ESSCMProgram, Section 6, Configuration Control Procedures | TDP |
| 447 | | d. | Resolving externally identified and reported defects | | ESSSYS_CM_P_1000_ESSCMProgram, Section 6, Configuration Control Procedures | TDP |
| 448 | | **VII, 2.11.5** | **Release Process** | | | |
| 449 | | | The vendor shall provide a description of the contents of a system release, and the procedures and related conventions by which the vendor installs, transfers, or migrates the system to accredited voting system testing laboratories and customers to address the specific requirements of Volume I, Subsection 9.6. These requirements pertain to: | *see Vol. I, 9.6 Release Process; Vol. II, 7.4.5 Release Process* | | |
| 450 | | a. | A first release of the system to an accredited test lab. | | ESSSYS_CM_P_1000_ESSCMProgram, Section 7, Release Porcess | TDP |

| | A | B | C | D | F | G |
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| 451 | | b. | A subsequent maintenance or upgrade release of a system, or particular components, to an accredited test lab. | | ESSSYS_CM_P_1000_ESSCMProgram, Section 7, Release Porcess | TDP |
| 452 | | c. | The initial delivery and installation of the system to a customer. | | ESSSYS_CM_P_1000_ESSCMProgram, Section 7, Release Porcess | TDP |
| 453 | | d. | A subsequent maintenance or upgrade release of a system, or particular components, to a customer. | | ESSSYS_CM_P_1000_ESSCMProgram, Section 7, Release Porcess | TDP |
| 454 | | **VII, 2.11.6** | **Configuration Audits** | | | |
| 455 | | | The vendor shall provide a description of the procedures and related conventions for the two audits required by Volume I, Subsection 9.7. These requirements pertain to: | | | |
| 456 | | a. | Physical configuration audit that verifies the voting system components submitted for certification testing to the vendor's technical documentation. | *see Vol. I, 9.7.1 a–h. Configuration Audits, Physical Configuration Audit; Vol. II, 6.6 Physical Configuration Audit; Vol. II, 7.4.6 Configuration Audits* | ESSSYS_CM_P_1000_ESSCMProgram, Section 8, Configuration Audits | TDP |
| 457 | | b. | Functional configuration audit that verifies the system performs all the functions described in the system documentation. | *see Vol. I, 9.7.2 a-b. Configuration Audits, Functional Configuration Audit; Vol. II, 6.7 Functional Configuration Audit; Vol. II, 7.4.6 Configuration Audits* | ESSSYS_CM_P_1000_ESSCMProgram, Section 8, Configuration Audits | TDP |
| 458 | | **VII, 2.11.7** | **Configuration Management Resources** | | | |
| 459 | | | The vendor shall provide a description of the procedures and related conventions for maintaining information about configuration management tools required by Volume I, Subsection 9.8. These requirements pertain to information regarding: | *Vol. I, 9.8 Configuration Management Resources; Vol. II, 7.4.7 Configuration Management Resources* | | |
| 460 | | a. | Specific tools used, current version, and operating environment | | ESSSYS_CM_P_1000_ESSCMProgram, Section 9.1, Tools Used | TDP |
| 461 | | b. | Physical location of the tools, including designation of computer directories and files | | ESSSYS_CM_P_1000_ESSCMProgram, Section 9.2, Tools Location | TDP |
| 462 | | c. | Procedures and training materials for using the tools | | ESSSYS_CM_P_1000_ESSCMProgram, Section 9.3, Procedures and Training for Tools | TDP |
| 463 | | **VII, 2.12** | **Quality Assurance** | | | |

| | A | B | C | D | F | G |
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| 464 | QUALITY ASSURANCE | | Vendors shall submit a Quality Assurance Program that addresses the quality assurance requirements of Volume I, Section 8. This plan shall describe all policies, processes, and procedures employed by the vendor to ensure the overall quality of the system for its initial development and release and for subsequent modifications and releases. The Quality Assurance Program shall, at a minimum, address the topics indicated below. | *also Vol. I, 8.2 a-e. Quality Assurance Requirements, General Requirements;*<br>*Vol. II, 7.5 Examination of Quality Assurance Practices;*<br>*Vol. I, 4.3.7 Workmanship;*<br>*Vol. I, 8.3 Components from Third Parties* | ESSSYS_M_I_0501_WhatRequriesECO<br>ESSSYS_M_P_0500_ECOProcess<br>ESSSYS_M_P_1000_MNFQualityAssurancePlan<br>ESSSYS_Q_P_0100_SoftwareQualityAssuranceProgram<br>EVS5000_QAP00_MN03_ECOPolicies and Procedures<br>EVS5000_QAP00_SWF01_Software_Firmware_Acceptance<br>EVS5000_QAP01_ISO cert Pivot<br>EVS5000_QAP03_QA manual Pivot<br>EVS5000_QAP07_DataWin Quality Assurance Manual<br>EVS5000_QAP08_DATAWIN ISO Certification Certificate<br><br>ESSSYS_M_FM_AcceptanceChecklists [folder]<br>850_AccptChklst_revC<br>850_DemoChklst_revA<br>850_OAccptChklst_revB<br>AutoMark_AccptChklst_001_Rev.A<br>AutoMark_QC_Chklst_001Rev.A<br>DS200_AccptChklst_001Rev.A<br>Carrying Case QC sheet rev 1.0<br>EVS5000_QAP00_MN01.01_AcceptanceTestProcedure_DS200<br>EVS5000_QAP00_MN02.01_AcceptanceTestProcedure_DS850<br><br>EVS5000_QAP00_MN01_AcceptanceTesting [folder]<br>850_AccptChklst_revB.pdf<br>850_DemoChklst_revA.pdf<br>850_OAccptChklst_revA.pdf<br>AutoMark_AccptChklst_001_Rev.A.pdf<br>AutoMark_QC_Chklst_001Rev.A.pdf<br>DS200_AccptChklst_001Rev.A.pdf<br>EVS5000_QAP00_MN01.01_AcceptanceTestProcedure_DS200.pdf<br>EVS5000_QAP00_MN02.01_AcceptanceTestProcedure_DS850.pdf | TDP |
| 465 | | **VII, 2.12.1** | **Quality Assurance Policy** | | | |
| 466 | | | The vendor shall provide a description of its organizational policies for quality assurance, including: | *specific requirements listed in Vol. II, 7.5.1 Quality Assurance Policy* | | |
| 467 | | a. | Scope and nature of Quality Assurance activities | | ESSSYS_M_P_1000_MNFQualityAssurancePlan, Section 4.1, Scope<br>ESSSYS_Q_P_0100_SoftwareQualityAssuranceProgram, Section 4.1, Scope | TDP |
| 468 | | b. | Breadth of application of vendor's policy and practices to the voting system | | ESSSYS_M_P_1000_MNFQualityAssurancePlan, Section 4.2, Breadth of Application<br>ESSSYS_Q_P_0100_SoftwareQualityAssuranceProgram, Section 4.3, Breadth of Application | TDP |
| 469 | | **VII, 2.12.2** | **Parts and Materials Test** | | | |
| 470 | | | The vendor shall provide a description of its practices for parts and materials tests and examinations that meet the requirements of Volume I, Subsection 8.5. | *see Vol. I, 8.5 c. Parts and Materials Special Tests and Examinations;*<br>*Vol. II, 7.5.2 Parts and Materials Tests* | ESSSYS_M_P_1000_MNFQualityAssurancePlan, Section 5, Parts and Materials Tests<br>ESSSYS_Q_P_0100_SoftwareQualityAssuranceProgram, Section 9, Parts and Materials Tests | TDP |
| 471 | | **VII, 2.12.3** | **Quality Conformance Inspections** | | | |
| 472 | | | The vendor shall provide a description of its practices for quality conformance inspections that meet the requirements of Volume I, Subsection 8.6. For each test performed, the record of tests provided shall include: | *see also Vol. I 8.6 Quality Conformance Inspections;*<br>*Vol. II, 7.5.3 Quality Conformance Inspections* | | |
| 473 | | a. | Test location | | ESSSYS_M_P_1000_MNFQualityAssurancePlan, Section 3, Responsibility for Tests<br>ESSSYS_Q_P_0100_SoftwareQualityAssuranceProgram, Section 3, Responsibility for Tests | TDP |
| 474 | | b. | Test date | | ESSSYS_M_P_1000_MNFQualityAssurancePlan, Section 3, Responsibility for Tests<br>ESSSYS_Q_P_0100_SoftwareQualityAssuranceProgram, Section 3, Responsibility for Tests | TDP |
| 475 | | c. | Individual who conducted the test | | ESSSYS_M_P_1000_MNFQualityAssurancePlan, Section 3, Responsibility for Tests<br>ESSSYS_Q_P_0100_SoftwareQualityAssuranceProgram, Section 3, Responsibility for Tests | TDP |
| 476 | | d. | Test outcomes | | ESSSYS_M_P_1000_MNFQualityAssurancePlan, Section 3, Responsibility for Tests<br>ESSSYS_Q_P_0100_SoftwareQualityAssuranceProgram, Section 3, Responsibility for Tests | TDP |

| | A | B | C | D | F | G |
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| 477 | | **VII, 2.12.4** | **Documentation** | | | |
| 478 | | | The vendor shall provide a description of its practices for documentation of the system and system development process that meet the requirements of Volume I, Subsection 8.7. | *see Vol. I, 8.7 Quality Assurance Requirements, Documentation;*<br>*Vol. I, 2.1.1.1 Description of TDP, Required Content for Initial Certification;*<br>*Vol. I, 2.1.1.2 Required Content for System Changes and Recertification;*<br>*Vol. II, 7.5.4 Quality Assurance, Documentation* | ESSSYS_M_P_1000_MNFQualityAssurancePlan, Section, 1.3 Documentation of the Hardware and Software Development...<br>ESSSYS_Q_P_0100_SoftwareQualityAssuranceProgram, Section, 1.3 Documentation of the Hardware and Software Develop… | TDP |
| 479 | CHANGE NOTES | **VII, 2.13** | **System Change Notes** | | | |
| 480 | | | Vendors submitting modifications for a system that has been tested previously and received national certification shall submit system change notes. These will be used by the accredited test lab to assist in developing and executing the test plan for the modified system. The system change notes shall include the following information: | *Vol. II, 2.1.1.2 Required Content for System Changes and Recertification* | | |
| 481 | | a. | Summary description of the nature and scope of the changes, and reasons for each change. | | N/A | |
| 482 | | b. | A listing of the specific changes made, citing the specific system configuration items changed and providing detailed references to the documentation sections changed. | | N/A | |
| 483 | | c. | The specific sections of the documentation that are changed (or completely revised documents, if more suitable to address a large number of changes). | | N/A | |
| 484 | | d. | Documentation of the test plan and procedures executed by the vendor for testing the individual changes and the system as a whole, and records of test results. | | N/A | |
| 485 | | | | | | |
| 486 | | **VI Sec. 2** | **Functional Requirements** | | | |
| 487 | | **VI, 2.1** | **Overall System Capabilities** | | | |
| 488 | | **VI, 2.1.1** | **Security** | | | |
| 489 | | | To ensure security, all systems shall: | | | |
| 490 | | g. | Provide documentation of mandatory administrative procedures for effective system security. | *see Vol. I, Sec. 7 Security Requirements*<br>*see Vol. II, 2.6 Software Security Specification* | EVS5000_SFD00, Section 2.1.1, Security | TDP |
| 491 | | **VI, 2.1.5** | **System Audit** | | | |
| 492 | | | Because the actual implementation of [system's] specific characteristics may vary from system to system, it is the responsibility of the vendor to describe each system's characteristics in sufficient detail so that test labs and system users can evaluate the adequacy of the system's audit trail. This description shall be incorporated in the System Operations Manual, which is part of the Technical Data Package. | see Vol. II, 2.8.1 TDP, System Operations Procedures, Introduction | EVS5000_SFD00, Section 2.1.5, System Audit | TDP |
| 493 | | **VI, 2.1.6** | **Election Management System** | | | |
| 494 | | | The Election Management System (EMS) shall generate and maintain a database, or one or more interactive databases, that enables election officials or their designees to perform the following functions: | | | |
| 495 | | g. | Accumulate vote totals at multiple reporting levels as indicated in the system documentation. | *Vol. II, 2.8.4 System Operations Procedures, Operational Features* | EVS5000_SFD00, Section 2.1.6, Election management System | TDP |
| 496 | | **VI, 2.1.7** | **Vote Tabulating Program** | | | |
| 497 | | **VI, 2.1.7.1** | **Vote Tabulating Program, Functions** | | | |
| 498 | | **VI, 2.1.7.2** | **Voting Variations** | | | |
| 499 | | | The Technical Data Package accompanying the system shall specifically identify which of the following items *can* and *cannot* be supported by the voting system, as well as *how* the voting system can implement the items supported: | *Vol. II, 2.1 Description of the Tech. Data Package, Scope* | | |
| 500 | | | Closed primaries | | EVS5000_SFD00, Section 2.1.7.2 (not listed in contents), Voting Variations | TDP |
| 501 | | | Open primaries | | EVS5000_SFD00, Section 2.1.7.2 (not listed in contents), Voting Variations | TDP |

| | A | B | C | D | F | G |
|---|---|---|---|---|---|---|
| 502 | | | Partisan offices | | EVS5000_SFD00, Section 2.1.7.2 (not listed in contents), Voting Variations | TDP |
| 503 | | | Non-partisan offices | | EVS5000_SFD00, Section 2.1.7.2 (not listed in contents), Voting Variations | TDP |
| 504 | | | Write-in voting | | EVS5000_SFD00, Section 2.1.7.2 (not listed in contents), Voting Variations | TDP |
| 505 | | | Primary presidential delegation nominations | | EVS5000_SFD00, Section 2.1.7.2 (not listed in contents), Voting Variations | TDP |
| 506 | | | Ballot rotation | | EVS5000_SFD00, Section 2.1.7.2 (not listed in contents), Voting Variations | TDP |
| 507 | | | Straight party voting | | EVS5000_SFD00, Section 2.1.7.2 (not listed in contents), Voting Variations | TDP |
| 508 | | | Cross-party endorsement | | EVS5000_SFD00, Section 2.1.7.2 (not listed in contents), Voting Variations | TDP |
| 509 | | | Split precincts | | EVS5000_SFD00, Section 2.1.7.2 (not listed in contents), Voting Variations | TDP |
| 510 | | | Vote for N of M | | EVS5000_SFD00, Section 2.1.7.2 (not listed in contents), Voting Variations | TDP |
| 511 | | | Recall issues with options | | EVS5000_SFD00, Section 2.1.7.2 (not listed in contents), Voting Variations | TDP |
| 512 | | | Cumulative voting | | EVS5000_SFD00, Section 2.1.7.2 (not listed in contents), Voting Variations | TDP |
| 513 | | | Support of ranked order voting | | EVS5000_SFD00, Section 2.1.7.2 (not listed in contents), Voting Variations | TDP |
| 514 | | | Provisional or challenged ballots | | EVS5000_SFD00, Section 2.1.7.2 (not listed in contents), Voting Variations | TDP |
| 515 | | **VI, 2.1.10** | **Data Retention** | | | |
| 516 | | | All systems shall maintain integrity of voting and audit data during an election and for at least 22 months thereafter. | *Vol. II, Sec. 2.3 System Functionality Description* | EVS5000_SFD00, Section 2.1.10, Data Retention | TDP |
| 517 | | **VI, 2.2** | **Pre-Voting Capabilities** | | | |
| 518 | | **VI, 2.2.1** | **Ballot Preparation** | | | |
| 519 | | **VI, 2.2.1.1** | **General Capabilities** | | | |
| 520 | | | All systems shall provide the general capabilities for ballot preparation. All systems shall be capable of: | | | |
| 521 | | c. | Supporting the maximum number of potentially active voting positions as indicated in the system documentation. | *Vol. II, 2.2.2a, System Performance* | EVS5000_SFD00, Section 2.2.1.1 (not listed in contents), General Capablities | TDP |
| 522 | | **VI, 2.2.1.3** | **Ballot Production** | | | |
| 523 | | | Vendor documentation for mark sense systems shall include specifications for ballot materials to ensure that vote selections are read from only a single ballot at a time, without detection of marks from multiple ballots concurrently (e.g., reading of bleed-through from other ballots). | *see also Vol. II, 2.9.4.2 TDP, System Maintenance Manual, Parts and Materials, Paper-based Systems Vol. I, 4.1.4.2 a-b, Vote Recording Requirements, Paper-based Systems* | EVS5000_SFD00, Section 2.2.1.3 (not listed in contents), Ballot Production | TDP |
| 524 | | **VI, 2.2.3** | **Ballot and Program Installation and Control** | | | |
| 525 | | | All systems provide a means of installing ballots and programs on each piece of polling place or central count equipment according to the ballot requirements of the election and the jurisdiction. All systems shall include the following at the time of ballot and program installation: | | | |
| 526 | | a. | A detailed work plan or other documentation providing a schedule and steps for the software and ballot installation, including a table outlining the key dates, events, and deliverables. | *see also Vol II, 2.8.5g. TDP, System Operation Procedures, Operating Procedures* | EVS5000_SFD00, Section 2.2.3, Ballot Program Installation and Control | TDP |
| 527 | | **VI, Sec. 3** | **Usability and Accessibility Requirements** | | | |
| 528 | | **3.1** | **Usability Requirements** | | | |
| 529 | | **VI, 3.1.1** | **Usability Testing** | | | |

| | A | B | C | D | F | G |
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| 530 | | | The vendor shall conduct summative usability tests on the voting system using individuals representative of the general population. The vendor shall document the testing performed and report the test results using the Common Industry Format. This documentation shall be included in the Technical Data Package submitted to the EAC for national certification. | *EVS5000_SFD00* | EVS5000_OVR00, Appendix D, Common Industry Format for Usabilty Test Report - AutoMARK<br>EVS5000_OVR00, Appendix D, Common Industry Format for Usabilty Test Report - DS200 | TDP |
| 531 | | | Discussion: Voting system vendors are required to conduct realistic usability tests on the final product. For the present, vendors can define their own testing protocols. | *EAC RFI 2007-03 dated 9/5/07: 2005 VVSG Vol. I Sec. 3.1.1* | EVS5000_OVR00, Appendix D, Common Industry Format for Usabilty Test Report - AutoMARK<br>EVS5000_OVR00, Appendix D, Common Industry Format for Usabilty Test Report - DS200 | TDP |
| 532 | | **EAC RFI 2007-03 dated Sept. 5, 2007** | **EAC Decision on Request for Interpretation 2007-03, 2005 VVSG Vol. I Section 3.1.1** | | | |
| 533 | | | Per EAC RFI 2007-03, the question was asked whether the manufacturer is required to submit the summative usability testing report to the VSTL conducting the testing of the voting system, or to the EAC. The EAC conclusion:*" The EAC concludes that manufacturers must submit the summative usability test report required by Section 3.1.1 of the 2005 VVSG Vol. 1 to the VSTL for review. In addition, the usability test report shall be submitted to the EAC as part of the documentation manufacturers are required to file with the application to test a voting system. (* continued below*)* | | EVS5000_OVR00, Appendix D, Common Industry Format for Usabilty Test Report - AutoMARK<br>EVS5000_OVR00, Appendix D, Common Industry Format for Usabilty Test Report - DS200 | TDP |
| 534 | | | (continued from above)*This interpretation is consistent with the intent of the requirement which was to ensure that the voting system meets the usability requirements of the 2005 VVSG. Consistent with the 2005 VVSG the manufacturer must submit the usability test report to the VSTL as part of the technical data package submitted to the laboratory. The VSTL will then check the technical data package to ensure that the report is present and reported in the common industry format. If the VSTL finds the usability test report to be inconsistent with the common industry format the VSTL shall note the discrepancy in its final report to the EAC".* | | EVS5000_OVR00, Appendix D, Common Industry Format for Usabilty Test Report - AutoMARK<br>EVS5000_OVR00, Appendix D, Common Industry Format for Usabilty Test Report - DS200 | TDP |
| 535 | | **VI, 3.2.2.1** | **Partial Vision** | | | |
| 536 | | a. | The vendor shall conduct summative usability tests on the voting system using partially sighted individuals. The vendor shall document the testing performed and report the test results using the Common Industry Format. This documentation shall be included in the Technical Data Package submitted to the EAC for national certification. | *Vol. II, 2.1.1 Description of the TDP, Required Content…* | EVS5000_OVR00, Appendix D, Common Industry Format for Usabilty Test Report - AutoMARK<br>EVS5000_OVR00, Appendix D, Common Industry Format for Usabilty Test Report - DS200 | TDP |
| 537 | | | Discussion: Voting system vendors are required to conduct realistic usability tests on the final product. For the present, vendors can define their own testing protocols. | | EVS5000_OVR00, Appendix D, Common Industry Format for Usabilty Test Report - AutoMARK<br>EVS5000_OVR00, Appendix D, Common Industry Format for Usabilty Test Report - DS200 | TDP |
| 538 | | **VI, 3.2.2.2** | **Blindness** | | | |
| 539 | | a. | The vendor shall conduct summative usability tests on the voting system using individuals who are blind. The vendor shall document the testing performed and report the test results using the Common Industry Format. This documentation shall be included in the Technical Data Package submitted to the EAC for national certification. | *Vol. II, 2.1.1 Description of the TDP, Required Content…* | EVS5000_OVR00, Appendix D, Common Industry Format for Usabilty Test Report - AutoMARK<br>EVS5000_OVR00, Appendix D, Common Industry Format for Usabilty Test Report - DS200 | TDP |

| | A | B | C | D | F | G |
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| 540 | | | Discussion: Voting system vendors are required to conduct realistic usability tests on the final product. For the present, vendors can define their own testing protocols. | *Fbl* | EVS5000_OVR00, Appendix D, Common Industry Format for Usabilty Test Report - AutoMARK<br>EVS5000_OVR00, Appendix D, Common Industry Format for Usabilty Test Report - DS200 | TDP |
| 541 | | c. | All voting stations that provide audio presentation of the ballot shall conform to the following requirements: | | | |
| 542 | | c. iv. | A sanitized headphone or handset shall be made available to each voter. | | EVS5000_SFD00, Section 2.1.11, Additional Overall Capabilities | TDP |
| 543 | | | Discussion: this requirement can be achieved in various ways, including the use of "throwaway" headphones, or of sanitary coverings. | | EVS5000_SFD00, Section 2.1.11, Additional Overall Capabilities | TDP |
| 544 | | **VI, 3.2.3** | **Dexterity** | | | |
| 545 | | a. | The vendor shall conduct summative usability tests on the voting system using individuals lacking fine motor control. The vendor shall document the testing performed and report the test results using the Common Industry Format. This documentation shall be included in the Technical Data Package submitted to the EAC for national certification. | *Vol. II, 2.1.1 Description of the TDP, Required Content…* | EVS5000_OVR00, Appendix D, Common Industry Format for Usabilty Test Report - AutoMARK<br>EVS5000_OVR00, Appendix D, Common Industry Format for Usabilty Test Report - DS200 | TDP |
| 546 | | | Discussion: Voting system vendors are required to conduct realistic usability tests on the final product. For the present, vendors can define their own testing protocols. | | EVS5000_OVR00, Appendix D, Common Industry Format for Usabilty Test Report - AutoMARK<br>EVS5000_OVR00, Appendix D, Common Industry Format for Usabilty Test Report - DS200 | |
| 547 | | **VI, 4** | **Hardware Requirements** | | | |
| 548 | | **VI, 4.1.2** | **Environmental Requirements** | | | |
| 549 | | | The Technical Data Package supplied by the vendor shall include a statement of all requirements and restrictions regarding environmental protection, electrical service, recommended auxiliary power, telecommunications service, and any other facility or resource required for the proper installation and operation of the system. | *also Vol. II, 2.4.1 TDP, System Hardware Characteristics* | EVS5000_SHS00_DS200, Section 2.1.2, Environmental Requirements<br>EVS5000_SHS00_DS850, Section 2.1.2, Environmental Requirements<br>AutoMARK_ESS_System_Hardware_Specifications_AQS-18-5000-001-F, Section 1B, Physical Character… | TDP |
| 550 | | **VI, 4.1.3.2** | **Memory Stability** | | | |
| 551 | | | Memory devices used to retain election management data shall have demonstrated error-free data retention for a period of 22 months. | *Vol. II, 2.3 System Functionality Description* | EVS5000_SHS00_DS200, Section 2.1.3.2, Memory Stability<br>EVS5000_SHS00_DS850, Section 2.1.3.2, Memory Stability<br>AutoMARK_ESS_System_Hardware_Specifications_AQS-18-5000-001-F | TDP |
| 552 | | **VI, 4.1.4** | **Vote Recording Requirements** | | | |
| 553 | | **VI, 4.1.4.2** | **Paper Based Recording Requirements** | | | |
| 554 | | a.iii. | The Technical Data Package shall specify the required paper stock, size, shape, opacity, color, watermarks, field layout, orientation, size and style of printing, size and location of 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. | *Vol. II, 2.9.4.2 TDP, System Maintenance Manual, Parts and Materials, Paper-based Systems*<br>*also Vol. I, 2.2.1.3 Ballot Production* | EVS5000_SHS00_DS200, Section 2.1.4.2, Paper-based Recording Requirments<br>EVS5000_SHS00_DS850, Section 2.1.4.2, Paper-based Recording Requirments<br>AutoMARK_ESS_System_Hardware_Specifications_AQS-18-5000-001-F | TDP |
| 555 | | b. | The Technical Data Package shall specify marking devices, which, if used to make the prescribed form of mark, produce readable marked ballots such that the system meets the performance requirements for accuracy in Subsection 4.1.1. Marking devices can be either manual (such as pens or pencils) or electronic. These specifications shall identify: | *Vol. II, 2.9.4.2 TDP, System Maintenance Manual, Parts and Materials, Paper-based Systems*<br>*also Vol. I, 2.2.1.3 Ballot Production* | EVS5000_SHS00_DS200, Section 2.1.4.2, Paper-based Recording Requirments<br>EVS5000_SHS00_DS850, Section 2.1.4.2, Paper-based Recording Requirments<br>AutoMARK_ESS_System_Hardware_Specifications_AQS-18-5000-001-F | TDP |
| 556 | | | i. Specific characteristics of marking devices that affect readability of marked ballots | | EVS5000_SHS00_DS200, Section 2.1.4.2, Paper-based Recording Requirments<br>EVS5000_SHS00_DS850, Section 2.1.4.2, Paper-based Recording Requirments<br>AutoMARK_ESS_System_Hardware_Specifications_AQS-18-5000-001-F | TDP |
| 557 | | | ii. Performance capabilities with regard to each characteristic | | EVS5000_SHS00_DS200, Section 2.1.4.2, Paper-based Recording Requirments<br>EVS5000_SHS00_DS850, Section 2.1.4.2, Paper-based Recording Requirments<br>AutoMARK_ESS_System_Hardware_Specifications_AQS-18-5000-001-F | TDP |

| | A | B | C | D | F | G |
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| 558 | | | iii. For marking devices manufactured by multiple external sources, a listing of sources and model numbers that are compatible with the system | | EVS5000_SHS00_DS200, Section 2.1.4.2, Paper-based Recording Requirments<br>EVS5000_SHS00_DS850, Section 2.1.4.2, Paper-based Recording Requirments<br>AutoMARK_ESS_System_Hardware_Specifications_AQS-18-5000-001-F | TDP |
| 559 | | d. | Ballot boxes and ballot transfer boxes, which serve as secure containers for the storage and transportation of ballots, shall: | | | |
| 560 | | | ii. Incorporate locks and seals, the specifications of which are described in the system documentation. | *also Vol. II, 2.9.4.2 TDP, System Maintenance Manual, Parts and Materials, Paper-based Systems* | EVS5000_SSS07_PhysEquipmentSecurityBestPract<br>EVS5000_SHS00_DS200, Section 2.1.4.2, Paper-based Recording Requirments<br>EVS5000_SHS00_DS850, Section 2.1.4.2, Paper-based Recording Requirments<br>AutoMARK_ESS_System_Hardware_Specifications_AQS-18-5000-001-F | TDP |
| 561 | | **VI, 4.1.5** | **Paper-based Conversion Requirements** | | | |
| 562 | | **VI, 4.1.5.1** | **Ballot Handling** | | | |
| 563 | | a. | Ballot handling consists of a ballot card's acceptance, movement through the read station, and transfer into a collection station or receptacle. The capacity to convert the marks on individual ballots into signals is uniquely important to central count systems. **The capacity for a central count system shall be documented by the vendor**. This documentation shall include the capacity for individual components that impact the overall capacity. | *Vol. II, 2.2.2 System Performance* | EVS5000_SHS00_DS200, Section 2.1.5, Paper-based Conversion Requirements<br>EVS5000_SHS00_DS850, Section 2.1.5, Paper-based Conversion Requirements<br>AutoMARK_ESS_System_Hardware_Specifications_AQS-18-5000-001-F | TDP |
| 564 | | **VI, 4.1.6** | **Tabulation Processing Requirements** | | | |
| 565 | | **VI, 4.1.6.1** | **Paper-based System Processing Requirements** | | | |
| 566 | | b. | Paper-based system memory devices, used to retain control programs and data, shall have demonstrated error-free data retention for a period of 22 months, under the environmental conditions for operation and non-operation (i.e., storage). | *Vol. II, 2.3 System Functionality Description* | EVS5000_SHS00_DS200, Section 2.1.6.1, Paper-based System Processing Requirements<br>EVS5000_SHS00_DS850, Section 2.1.6.1, Paper-based System Processing Requirements<br>AutoMARK_ESS_System_Hardware_Specifications_AQS-18-5000-001-F | TDP |
| 567 | | **VI, 4.1.6.2** | **DRE System Processing Requirements** | | | |
| 568 | | | The DRE voting systems processing requirements address all mechanical devices, electromechanical devices, electronic devices and software required to process voting data after the polls are closed. | | | |
| 569 | | c. | DRE system memory devices used to retain control programs and data shall have demonstrated error-free data retention for a period of 22 months. Error-free retention may be achieved by the use of redundant memory elements, provided that the capability for conflict resolution or correction among elements is included. | *Vol. II, 2.3 System Functionality Description* | EVS5000_SHS00_DS200, Section 2.1.6.1, Paper-based System Processing Requirements<br>EVS5000_SHS00_DS850, Section 2.1.6.1, Paper-based System Processing Requirements<br>AutoMARK_ESS_System_Hardware_Specifications_AQS-18-5000-001-F | TDP |
| 570 | | **VI, 4.1.7** | **Reporting Requirements** | | | |
| 571 | | **VI, 4.1.7.1** | **Removable Storage Media** | | | |
| 572 | | | In voting systems that use storage media that can be removed from the voting system and transported to another location for readout and report generation, these media shall use devices with demonstrated error-free retention for a period of 22 months under the environmental conditions for operation and non-operation contained in Subsection 4.1.2. Examples of removable storage media include: programmable read-only memory (PROM), random access memory (RAM) with battery backup, magnetic media, or optical media. | *Vol. II, 2.3 System Functionality Description* | EVS5000_SHS00_DS200, Section 2.1.6.2, DRE System Processing Requirements<br>EVS5000_SHS00_DS850, Section 2.1.6.2, DRE System Processing Requirements<br>AutoMARK_ESS_System_Hardware_Specifications_AQS-18-5000-001-F | TDP |
| 573 | | **VI, 4.1.7.2** | **Printers** | | | |
| 574 | | | All printers used to produce reports of the vote count shall be capable of producing: | *Vol. II, 2.4 System Hardware* | | |
| 575 | | a. | Alphanumeric headers; | | EVS5000_SHS00_DS200, Section 2.1.7.2, Printers<br>EVS5000_SHS00_DS850, Section 2.1.7.2, Printers<br>AutoMARK_ESS_System_Hardware_Specifications_AQS-18-5000-001-F | TDP |

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| 576 | | b. | Election, office and issue labels; and | | EVS5000_SHS00_DS200, Section 2.1.7.2, Printers<br>EVS5000_SHS00_DS850, Section 2.1.7.2, Printers<br>AutoMARK_ESS_System_Hardware_Specifications_AQS-18-5000-001-F | TDP |
| 577 | | c. | Alphanumeric entries generated as part of the audit record. | | EVS5000_SHS00_DS200, Section 2.1.7.2, Printers<br>EVS5000_SHS00_DS850, Section 2.1.7.2, Printers<br>AutoMARK_ESS_System_Hardware_Specifications_AQS-18-5000-001-F | TDP |
| 578 | | **VI, 4.2** | **Physical Characteristics** | *also Vol II, 2.4.1 System Hardware Characteristics* | | |
| 579 | | **VI, 4.2.1** | **Size** | | | |
| 580 | | | There is no numerical limitation on the size of any voting equipment, but the size of each voting should be compatible with its intended use and the location at which the equipment is to be used. | *Vol. II, 2.4 System Hardware* | EVS5000_SHS00_DS200, Section 2.2.1, Size<br>EVS5000_SHS00_DS850, Section 2.2.1, Size<br>AutoMARK_ESS_System_Hardware_Specifications_AQS-18-5000-001-F, Section 1A, Performance.... | TDP |
| 581 | | **VI, 4.2.2** | **Weight** | | | |
| 582 | | | There is no numerical limitation on the weight of any voting equipment, but the weight of each voting machine should be compatible with its intended use and the location at which the equipment is to be used. | *Vol. II, 2.4 System Hardware* | EVS5000_SHS00_DS200, Section 2.2.1, Size<br>EVS5000_SHS00_DS850, Section 2.2.1, Size<br>AutoMARK_ESS_System_Hardware_Specifications_AQS-18-5000-001-F, Section 1A, Performance.... | TDP |
| 583 | | **VI, 4.2.3** | **Transport and Storage of Precinct Systems** | | | |
| 584 | | | All precinct voting systems shall: | | | |
| 585 | | b. | [**precinct voting systems**] Be capable of using, or be provided with, a protective enclosure rendering the equipment capable of withstanding: | | | |
| 586 | | | ii. Stacking loads associated with storage. | *Vol. II, 2.4.1 b, System Hardware* | EVS5000_SHS00_DS200, Section 2.2.3, Transport Storage<br>EVS5000_SHS00_DS850, Section 2.2.3, Transport Storage<br>AutoMARK_ESS_System_Hardware_Specifications_AQS-18-5000-001-F, Section 1H, Environmental... | TDP |
| 587 | | **VI, 4.3** | **Design, Construction, and Maintenance Characteristics** | | | |
| 588 | | **VI, 4.3.1** | **Materials, Processes, and Parts** | | | |
| 589 | | | All voting systems shall: | | | |
| 590 | | b. | Include, as part of the accompanying TDP, an approved parts list. | *see Vol. II, 2.9.4.1 TDP, System Maintenance Manual, Parts and Materials…* | EVS5000_SHS00_DS200, Section 2.3.1, Materials, Processes, and Parts<br>EVS5000_SHS00_DS850, Section 2.3.1, Materials, Processes, and Parts<br>AutoMARK_ESS_System_Hardware_Specifications_AQS-18-5000-001-F, Section 2A, Materials... | TDP |
| 591 | | **VI, 4.3.2** | **Durability** | | | |
| 592 | | | All voting systems shall be designed to withstand normal use without deterioration and without excessive maintenance cost for a period of ten years. | *Vol. II, 2.4.1 System Hardware Design, System Hardware Characteristics;*<br>*EAC RFI 2008-05 eff. Date 7/30/08: 2005 VVSG Vol. I Sec. 4.3.2 Durability* | EVS5000_SHS00_DS200, Section 2.3.2, Durability<br>EVS5000_SHS00_DS850, Section 2.3.2, Durability<br>AutoMARK_ESS_System_Hardware_Specifications_AQS-18-5000-001-F, Section 1C, Durablity | TDP |
| 593 | | **EAC RFI 2008-05, effective date July 30, 2008** | **EAC Decision on Request for Interpretation 2008-05: 2005 VVSG Vol. I Section 4.3.2, Durability** | | | |
| 594 | | | Per EAC RFI 2008-05: Question: How are the VSTLs expected to evaluate this requirement? Per EAC:"*..Until more research is done on this issue and clear scientific guidance is available, voting system manufacturers shall provide the VSTL with a signed statement of compliance for this standard. VSTLs should review the compliance statement and accept the statement unless VSTL engineering analysis and interaction with the system during the testing process would bring the durability of the system into question. In addition, additional review may be required in those instances where experience with fielded versions of the certified voting system show obvious problems related to the lack of durability".* | | April 03, 2012 Attestation Letter from Sue McKay | TDP |
| 595 | | **VI, 4.3.5** | **Availability** | | | |

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| 596 | | | The availability of a voting system is defined as the probability that the equipment (and supporting software) needed to perform designated voting functions will respond to operational command and accomplish each function. The voting system shall meet the availability standard for each of the following voting functions: | *Vol. I, 2.2.2 b. System Performance;*<br>*Vol. II, 2.9.5 a-c TDP, System Maintenance Manual, Maintenance Facilities and Support* | | |
| 597 | | | Vendors shall specify the typical system configuration that is to be used to assess availability and any assumptions made with regard to any parameters that impact the MTTR. These factors shall include at a minimum: | | | |
| 598 | | e. | Recommended number and locations of spare devices or components to be kept on hand for repair purposes during periods of system operation. | | EVS5000_SHS00_DS200, Section 2.3.5, Availability<br>EVS5000_SHS00_DS850, Section 2.3.5, Availability<br>AutoMARK_ESS_System_Hardware_Specifications_AQS-18-5000-001-F, Section 1F, Availability | TDP |
| 599 | | f. | Recommended number and locations of qualified maintenance personnel who need to be available to support repair calls during system operation. | | EVS5000_SHS00_DS200, Section 2.3.5, Availability<br>EVS5000_SHS00_DS850, Section 2.3.5, Availability<br>AutoMARK_ESS_System_Hardware_Specifications_AQS-18-5000-001-F, Section 1F, Availability | TDP |
| 600 | | g. | Organizational affiliation (i.e., jurisdiction, vendor) of qualified maintenance personnel. | | EVS5000_SHS00_DS200, Section 2.3.5, Availability<br>EVS5000_SHS00_DS850, Section 2.3.5, Availability<br>AutoMARK_ESS_System_Hardware_Specifications_AQS-18-5000-001-F, Section 1F, Availability | TDP |
| 601 | | **VI, 4.3.7** | **Workmanship** | | | |
| 602 | | | To help ensure proper workmanship, all manufacturers of voting systems shall: | *Vol. I, 8.2 QA Requirements, General Requirements;*<br>*Vol. II, 2.12 Quality Assurance* | | |
| 603 | | a. | Adopt and adhere to practices and procedures to ensure that their products are free from damage or defect making them unsatisfactory for their intended purpose; and | | EVS5000_SHS00_DS200, Section 2.3.7, Workmanship<br>EVS5000_SHS00_DS850, Section 2.3.7, Workmanship<br>AutoMARK_ESS_System_Hardware_Specifications_AQS-18-5000-001-F, Section 1, System Hardware Char... | TDP |
| 604 | | b. | Ensure that components provided by external suppliers are free from damage or defect making them unsatisfactory for their intended purpose. | *Vol. II, 7.5 Examination of Quality Assurance Practices* | EVS5000_SHS00_DS200, Section 2.3.7, Workmanship<br>EVS5000_SHS00_DS850, Section 2.3.7, Workmanship<br>AutoMARK_ESS_System_Hardware_Specifications_AQS-18-5000-001-F, Section 1, System Hardware Char... | TDP |
| 605 | | **VI, Sec. 5** | **Software Requirements** | | | |
| 606 | | **VI, 5.1.1** | **Software Sources** | | | |
| 607 | | | Configuration of software, both operating systems and applications, is critical to proper system functioning. ... Therefore, the vendors shall submit a record of all user selections made during software installation as part of the Technical Data Package. | *VII, 2.8.3, System Installation and Test Specification* | EVS5000_SOP00_AMVAT<br>EVS5000_SOP00_DS200<br>EVS5000_SOP00_DS850<br>EVS5000_SOP00_ElectionWare01_Admin<br>EVS5000_SOP00_ElectionWare02_Define<br>EVS5000_SOP00_ElectionWare03_Design<br>EVS5000_SOP00_ElectionWare04_Deliver<br>EVS5000_SOP00_ElectionWare05_Results<br>EVS5000_SOP00_ERM<br>EVS5000_SOP00_NetworkConfigGuide<br>EVS5000_SOP00_ELS | TDP |
| 608 | | | The vendor shall also submit a record of all configuration changes made to the software following its installation. | | EVS5000_SDS00_DS200, Section 2.5.6.1, Configurations and Operating Modes<br>EVS5000_SDS00_DS850, Section 6.1, Configurations and Operating Modes<br>EVS5000_SDS00_ERM, Section 6.1, Configurations and Operating Modes<br>EVS5000_SDS00_UELS, Section 6.1, Configurations and Operating Modes<br>EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.6.1, Configurations and Operating Modes | TDP |
| 609 | | **VI, 5.2.6** | **Coding Conventions** | | | |
| 610 | | | Voting system software shall adhere to basic coding conventions. The coding conventions used shall meet one of the following conditions: | *also Vol. II, 2.5.4 e. TDP, Software Design and Specification, Software Standards and Conventions* | | |

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| 611 | | a. | The vendors shall identify the published, reviewed, and industry-accepted coding conventions used and the accredited test lab shall test for compliance. | | EVS5000_SDS00_DS200, Section 2.5.4, Software Standards and Conventions<br>EVS5000_SDS00_DS850, Section 4, Software Standards and Conventions<br>EVS5000_SDS00_ERM, Section 4, Software Standards and Conventions<br>EVS5000_SDS00_UELS, Section 4, Software Standards and Conventions<br>EVS5000_SDS00_AutoMARK SDS Overview, Section 2.5.4, Software Standards and Conventions | TDP |
| 612 | | **VI, 5.3** | **Data and Document Retention** | | | |
| 613 | | | All systems shall: | | | |
| 614 | | a. | Maintain the integrity of voting and audit data during an election, and for at least 22 months thereafter, a time sufficient to resolve most contested elections and support other activities related to the reconstruction and investigation of a contested election. | *Vol. II, Sec. 2.3 System Functionality Description* | EVS5000_SDS00_DS200, Section II, Additional Software Functions Referenced in the VVSG:Volume I, Section 5<br>EVS5000_SDS00_DS850, Section 6.5.1, Data and Document Retention<br>EVS5000_SDS00_ERM, Section 6.3.1, Data and Doucment Retention<br>EVS5000_SDS00_UELS, Section 6.3.1, Data and Doucment Retention<br>EVS5000_SDS00_AutoMARK SDS Overview, Section 5.3, Data and Document Retention | TDP |
| 615 | | **VI, Sec. 7** | **Security Requirements** | *Vol. I, 2.1.1 Overall System, Security;*<br>*Vol. II, 2.6 Security Specifications;*<br>*Vol. I, Sec. 6 Telecommunications Requirements* | | |
| 616 | | **VI, 7.2.1** | **General Access Control Policy** | | | |
| 617 | | | The vendor shall specify the general features and capabilities of the access control policy recommended to provide effective votin system security. | *also Vol. II, 2.6.1 TDP, System Security Specification, Access Control Policy* | EVS5000_SSS00, Section 1, Access Control Policy | TDP |
| 618 | | | Although the jurisdiction in which the voting system is operated i responsible for determining the access policies for each election, the vendor shall provide a description of recommended policies for: | | | |
| 619 | | a. | Software access controls; | | EVS5000_SSS00, Section 2.1.1, Software Access | TDP |
| 620 | | b. | Hardware access controls; | | EVS5000_SSS00, Section 2.1.2, Hardware Access | TDP |
| 621 | | c. | Communications; | | EVS5000_SSS00, Section 2.1.3, Communications | TDP |
| 622 | | d. | Effective password management; | | EVS5000_SSS00, Section 2.1.4, Effective Password Managment | TDP |
| 623 | | e. | Protection abilities of a particular operating system; | | EVS5000_SSS00, Section 2.1.5, Protection Abilities of an Operating System | TDP |
| 624 | | f. | General characteristics of supervisory access privileges; | | EVS5000_SSS00, Section 2.1.6, General Characteristics of Supervisory Access Privileges | TDP |
| 625 | | g. | Segregation of duties; and | | EVS5000_SSS00, Section 2.1.7, Segregation of Duties | TDP |
| 626 | | h. | Any additional relevant characteristics. | | EVS5000_SSS00, Section 2.1.10, Additional Characteristics | TDP |
| 627 | | **VI, 7.2.1.1** | **Individual Access Privileges** | | | |
| 628 | | | Voting system vendors shall: | *also Vol. II, 2.6.1 TDP, System Security Specification, Access Control Policy* | | |
| 629 | | a. | a. Identify each person to whom access is granted, and the specific functions and data to which each person holds authorized access. | | EVS5000_SSS00 Section, 1.10.5, Individual Access Privileges | TDP |
| 630 | | b. | b. Specify whether an individual's authorization is limited to a specific time, time interval, or phase of the voting or counting operations. | | EVS5000_SSS00 Section, 1.10.5, Individual Access Privileges | TDP |
| 631 | | c. | c. Permit the voter to cast a ballot expeditiously, but preclude voter access to all aspects of the vote counting process. | | EVS5000_SSS00 Section, 1.10.5, Individual Access Privileges | TDP |
| 632 | | **VI, 7.2.1.2** | **Access Control Measures** | *Vol. II, 2.6.2 TDP, System Security Specification, Access Control Measures* | | |
| 633 | | | Vendors shall provide a detailed description of all system access control measures designed to permit authorized access to the system and prevent unauthorized access. | | UNY 3020_SSS00 Section 2, Access Control Measures | TDP |
| 634 | | | Examples of such measures include: | | | |
| 635 | | a. | Use of data and user authorization | | UNY 3020_SSS00 Section 2, Access Control Measures | TDP |

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| 636 | | b. | Program unit ownership and other regional boundaries | | UNY 3020_SSS00 Section 2, Access Control Measures | TDP |
| 637 | | c. | One-end or two-end port protection devices | | UNY 3020_SSS00 Section 2, Access Control Measures | TDP |
| 638 | | d. | Security kernels | | UNY 3020_SSS00 Section 2, Access Control Measures | TDP |
| 639 | | e. | Computer-generated password keys | | UNY 3020_SSS00 Section 2, Access Control Measures | TDP |
| 640 | | f. | Special protocols | | UNY 3020_SSS00 Section 2, Access Control Measures | TDP |
| 641 | | g. | Message encryption | | UNY 3020_SSS00 Section 2, Access Control Measures | TDP |
| 642 | | h. | Controlled access security | | UNY 3020_SSS00 Section 2, Access Control Measures | TDP |
| 643 | | | Vendors also shall define and provide a detailed description of th methods used to prevent unauthorized access to the access contro capabilities of the system itself. | | UNY 3020_SSS00 Section 2, Access Control Measures | TDP |
| 644 | | **VI, 7.3** | **Physical Security Measures** | | | |
| 645 | | | Security procedures shall address physical threats and the corresponding means to defeat them. | *Vol. II, 2.6.3 TDP, System Security Specification, Equipment and Data Security* | | |
| 646 | | **VI, 7.3.1** | **Polling Place Security** | | | |
| 647 | | | For polling place operations, vendors shall develop and provide detailed documentation of measures to enable poll workers to physically protect and perform orderly shutdown of voting equipment to counteract vandalism, civil disobedience, and similar occurrences. | *Vol. II, 2.6.3 Equipment and Data Security* | EVS5000_SSS00, Section 3, Equipment and Data Secuirty | TDP |
| 648 | | | The measures shall allow the immediate detection of tampering with vote casting devices and precinct ballot counters. | | EVS5000_SSS00, Section 3.2, Polling Place Equipemnt Security | TDP |
| 649 | | | They shall also control physical access to a telecommunications link if such a link is used. | | EVS5000_SSS00, Section 4.2.2, ES&S Alert Monitoring | TDP |
| 650 | | **VI, 7.3.2** | **Central Count Location Security** | | | |
| 651 | | | Vendors shall develop and document in detail the measures to be taken in a central counting environment. These measures shall include physical and procedural controls related to the handling o ballot boxes, preparing of ballots for counting, counting operations and reporting data. | *Vol. II, 2.6.3 Equipment and Data Security* | EVS5000_SSS00, Section 3, Equipment and Data Secuirty | TDP |
| 652 | | **VI, 7.4** | **Software Security** | | | |
| 653 | | | Voting systems shall meet specific security requirements for the installation and for protection against malicious software. | *Vol.II, 2.6.4 TDP, System Security Specification, Software Installation* | | |
| 654 | | **VI, 7.4.1** | **Software and Firmware Installation** | | | |
| 655 | | | The system shall meet the following requirements for installation of software, including hardware with embedded firmware. | *also Vol.II, 2.6.4 TDP, System Security Specification, Software Installation* | | |
| 656 | | a. | If software is resident in the system as firmware, the vendor shall require and state in the system documentation that every device is to be retested to validate each ROM prior to the start of elections operations. | | EVS5000_SSS00, Section 4.1, Software and Firmware Installation | TDP |
| 657 | | b. | To prevent alteration of executable code, no software shall be permanently installed or resident in the voting system unless the system documentation states that the jurisdiction must provide a secure physical and procedural environment for the storage, handling, preparation, and transportation of the system hardware. | | EVS5000_SSS00, Section 4.1, Software and Firmware Installation | TDP |
| 658 | | **VI, 7.4.2** | **Protection Against Malicious Software** | | | |
| 659 | | | Voting systems shall deploy protection against the many forms of threats to which they may be exposed such as file and macro viruses, worms, Trojan horses, and logic bombs. Vendors shall develop and document the procedures to follow to ensure that such protection against is maintained in a current status. | *Vol. II, 2.6.4 TDP, System Security Specification, Software Installation* | EVS5000_SSS00, Section 4.2, Protection Against Malicious Software | TDP |

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| 660 | | **VI, 7.4.3** | **Software Distribution and Setup Validation** | | | |
| 661 | | | Voting system software is considered to be all executable code and associated configuration files critical for proper operation of the voting system regardless of the location of installation and functionality provided. This includes third party software such as operating systems, drivers, and database management systems. | *Vol.II, 2.6.4 TDP, System Security Specification, Software Installation* | | |
| 662 | | **VI, 7.4.4** | **Software Distribution** | | | |
| 663 | | a. | The vendor shall document all software including voting system software, third party software (such as operating systems and drivers) to be installed on the certified voting system, and installation programs. | *Vol. II, 2.6.4 TDP, System Security Specification, Software Installation* | AutoMARK ESS Ballot Image Processing Specification AQS-18-5002-003-S.pdf<br>AutoMARK ESS Ballot Scanning and Printing Specification AQS-18-5002-007-S.pdf<br>AutoMARK ESS Driver API Specification AQS-18-5000-002-F.pdf<br>AutoMARK ESS Embedded Database Interface Specifications AQS-18-5002-005-S<br>AutoMARK ESS GUI Design Specifications AQS-18-5001-005-R<br>AutoMARK ESS Operating Software Design Specifications AQS-18-5001-002-R<br>AutoMARK ESS Operations and Diagnostic Log Specs AQS-18-5002-004-S<br>AutoMARK ESS Programming Specifications Details AQS-18-5001-011-R<br>AutoMARK ESS Software Design Spec AQS-18-5001-004-S<br>AutoMARK ESS Software Development Environment AQS-18-5001-006-R<br>AutoMARK ESS Software Diagnostics Specifications AQS-18-5000-004-F<br>AutoMARK ESS Software Standards Specification AQS-18-4000-000-S<br>EVS5000_SDS00_AutoMARK SDS Overview<br>EVS5000_SDS00_DS200<br>EVS5000_SDS00_DS20001_Flowcharts<br>EVS5000_SDS00_DS20002_Reports<br>EVS5000_SDS00_DS20005_System Messages<br>EVS5000_SDS00_DS20006_Results Media XMLs<br>EVS5000_SDS00_DS850<br>EVS5000_SDS00_ElectionWare<br>EVS5000_SDS00_ElectionWare01_EW Specification and Interfaces<br>EVS5000_SDS00_ElectionWare02_PB Specification and Interfaces<br>EVS5000_SDS00_ElectionWare05_System Process Flowchart<br>EVS5000_SDS00_ElectionWare07_PostGreSQL Description<br>EVS5000_SDS00_ElectionWare08_Reports<br>EVS5000_SDS00_ElectionWare11_DS200 and DS850 Media Desc<br>EVS5000_SDS00_ElectionWare12_AutoMARK Media Description and Structure<br>EVS5000_SDS00_ElectionWare13_ERM Media Description<br>EVS5000_SDS00_ElectionWare14_System Messages<br>EVS5000_SDS00_ERM<br>EVS5000_SDS00_ERM01_Appendices<br>EVS5000_SDS00_UELS | TDP |

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| 664 | | | i. The documentation shall have a unique identifier (such as a serial number or part number) for the following set of information: documentation, software vendor name, product name, version, the certification application number of the voting system, file names and paths or other location information (such as storage addresses) of the software. | *Vol. II, 2.6.4 TDP, System Security Specification, Software Installation* | AutoMARK ESS Ballot Image Processing Specification AQS-18-5002-003-S.pdf<br>AutoMARK ESS Ballot Scanning and Printing Specification AQS-18-5002-007-S.pdf<br>AutoMARK ESS Driver API Specification AQS-18-5000-002-F.pdf<br>AutoMARK ESS Embedded Database Interface Specifications AQS-18-5002-005-S<br>AutoMARK ESS GUI Design Specifications AQS-18-5001-005-R<br>AutoMARK ESS Operating Software Design Specifications AQS-18-5001-002-R<br>AutoMARK ESS Operations and Diagnostic Log Specs AQS-18-5002-004-S<br>AutoMARK ESS Programming Specifications Details AQS-18-5001-011-R<br>AutoMARK ESS Software Design Spec AQS-18-5001-004-S<br>AutoMARK ESS Software Development Environment AQS-18-5001-006-R<br>AutoMARK ESS Software Diagnostics Specifications AQS-18-5000-004-F<br>AutoMARK ESS Software Standards Specification AQS-18-4000-000-S<br>EVS5000_SDS00_AutoMARK SDS Overview<br>EVS5000_SDS00_DS200<br>EVS5000_SDS00_DS20001_Flowcharts<br>EVS5000_SDS00_DS20002_Reports<br>EVS5000_SDS00_DS20005_System Messages<br>EVS5000_SDS00_DS20006_Results Media XMLs<br>EVS5000_SDS00_DS850<br>EVS5000_SDS00_ElectionWare<br>EVS5000_SDS00_ElectionWare01_EW Specification and Interfaces<br>EVS5000_SDS00_ElectionWare02_PB Specification and Interfaces<br>EVS5000_SDS00_ElectionWare05_System Process Flowchart<br>EVS5000_SDS00_ElectionWare07_PostGreSQL Description<br>EVS5000_SDS00_ElectionWare08_Reports<br>EVS5000_SDS00_ElectionWare11_DS200 and DS850 Media Desc<br>EVS5000_SDS00_ElectionWare12_AutoMARK Media Description and Structure<br>EVS5000_SDS00_ElectionWare13_ERM Media Description<br>EVS5000_SDS00_ElectionWare14_System Messages<br>EVS5000_SDS00_ERM<br>EVS5000_SDS00_ERM01_Appendices<br>EVS5000_SDS00_UELS | TDP |

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| 665 | VOLUNTARY VOTING SY | | ii. The documentation shall designate all software files as static, semi-static, or dynamic. | *Vol. I, 2.6.4 TDP, System Security Specification, Software Installation* | AutoMARK ESS Ballot Image Processing Specification AQS-18-5002-003-S.pdf<br>AutoMARK ESS Ballot Scanning and Printing Specification AQS-18-5002-007-S.pdf<br>AutoMARK ESS Driver API Specification AQS-18-5000-002-F.pdf<br>AutoMARK ESS Embedded Database Interface Specifications AQS-18-5002-005-S<br>AutoMARK ESS GUI Design Specifications AQS-18-5001-005-R<br>AutoMARK ESS Operating Software Design Specifications AQS-18-5001-002-R<br>AutoMARK ESS Operations and Diagnostic Log Specs AQS-18-5002-004-S<br>AutoMARK ESS Programming Specifications Details AQS-18-5001-011-R<br>AutoMARK ESS Software Design Spec AQS-18-5001-004-S<br>AutoMARK ESS Software Development Environment AQS-18-5001-006-R<br>AutoMARK ESS Software Diagnostics Specifications AQS-18-5000-004-F<br>AutoMARK ESS Software Standards Specification AQS-18-4000-000-S<br>EVS5000_SDS00_AutoMARK SDS Overview<br>EVS5000_SDS00_DS200<br>EVS5000_SDS00_DS20001_Flowcharts<br>EVS5000_SDS00_DS20002_Reports<br>EVS5000_SDS00_DS20005_System Messages<br>EVS5000_SDS00_DS20006_Results Media XMLs<br>EVS5000_SDS00_DS850<br>EVS5000_SDS00_ElectionWare<br>EVS5000_SDS00_ElectionWare01_EW Specification and Interfaces<br>EVS5000_SDS00_ElectionWare02_PB Specification and Interfaces<br>EVS5000_SDS00_ElectionWare05_System Process Flowchart<br>EVS5000_SDS00_ElectionWare07_PostGreSQL Description<br>EVS5000_SDS00_ElectionWare08_Reports<br>EVS5000_SDS00_ElectionWare11_DS200 and DS850 Media Desc<br>EVS5000_SDS00_ElectionWare12_AutoMARK Media Description and Structure<br>EVS5000_SDS00_ElectionWare13_ERM Media Description<br>EVS5000_SDS00_ElectionWare14_System Messages<br>EVS5000_SDS00_ERM<br>EVS5000_SDS00_ERM01_Appendices<br>EVS5000_SDS00_UELS | TDP |

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| 666 | EAC TGDC VVSG VOLUME I VERSION 1.0 | | Discussion: Static voting system software such as executable code does not change based on the election being conducted or th voting equipment upon which it is installed. Semi-static voting system software contains configuration information for the voting system based on the voting equipment that is installed and the election being conducted. Semi-static software is only modified during the installation of (a) the voting system software on voting equipment or (b) the election-specific software such as ballot formats. Dynamic voting system software changes over time once installed on voting equipment. However, the specific time or value of the change in the dynamic software is usually unknown in advance, making it impossible to create reference information to verity the software. | | AutoMARK ESS Ballot Image Processing Specification AQS-18-5002-003-S.pdf<br>AutoMARK ESS Ballot Scanning and Printing Specification AQS-18-5002-007-S.pdf<br>AutoMARK ESS Driver API Specification AQS-18-5000-002-F.pdf<br>AutoMARK ESS Embedded Database Interface Specifications AQS-18-5002-005-S<br>AutoMARK ESS GUI Design Specifications AQS-18-5001-005-R<br>AutoMARK ESS Operating Software Design Specifications AQS-18-5001-002-R<br>AutoMARK ESS Operations and Diagnostic Log Specs AQS-18-5002-004-S<br>AutoMARK ESS Programming Specifications Details AQS-18-5001-011-R<br>AutoMARK ESS Software Design Spec AQS-18-5001-004-S<br>AutoMARK ESS Software Development Environment AQS-18-5001-006-R<br>AutoMARK ESS Software Diagnostics Specifications AQS-18-5000-004-F<br>AutoMARK ESS Software Standards Specification AQS-18-4000-000-S<br>EVS5000_SDS00_AutoMARK SDS Overview<br>EVS5000_SDS00_DS200<br>EVS5000_SDS00_DS20001_Flowcharts<br>EVS5000_SDS00_DS20002_Reports<br>EVS5000_SDS00_DS20005_System Messages<br>EVS5000_SDS00_DS20006_Results Media XMLs<br>EVS5000_SDS00_DS850<br>EVS5000_SDS00_ElectionWare<br>EVS5000_SDS00_ElectionWare01_EW Specification and Interfaces<br>EVS5000_SDS00_ElectionWare02_PB Specification and Interfaces<br>EVS5000_SDS00_ElectionWare05_System Process Flowchart<br>EVS5000_SDS00_ElectionWare07_PostGreSQL Description<br>EVS5000_SDS00_ElectionWare08_Reports<br>EVS5000_SDS00_ElectionWare11_DS200 and DS850 Media Desc<br>EVS5000_SDS00_ElectionWare12_AutoMARK Media Description and Structure<br>EVS5000_SDS00_ElectionWare13_ERM Media Description<br>EVS5000_SDS00_ElectionWare14_System Messages<br>EVS5000_SDS00_ERM<br>EVS5000_SDS00_ERM01_Appendices<br>EVS5000_SDS00_UELS | TDP |
| 667 | | **VI, 7.4.6** | **Software Setup Validation** | | | |
| 668 | | b. | The vendor shall have a process to verify that the correct software is loaded, that there is no unauthorized software, and that voting system software on voting equipment has not been modified, using the reference information from the NSRL or from a State designated repository. | *Vol. II, 2.6.4 TDP, System Security Specification, Software Installation* | EVS5000_SSS00, Section 4.3.3, Software Setup Validation | TDP |
| 669 | | | ii. The vendor shall document the process used to verify software on voting equipment. | | EVS5000_SSS00, Section 4.3.3, Software Setup Validation | TDP |
| 670 | | f. | Setup validation methods shall verify that registers and variables of the voting system equipment contain the proper static and initial values. | | EVS5000_SSS00, Section 4.3.3, Software Setup Validation | TDP |
| 671 | | | ii. The vendor shall document the values of all static registers and variables, and the initial starting values of all dynamic registers and variables listed for voting system software, except for the values set to conduct a specific election. | | EVS5000_SSS00, Section 4.3.3, Software Setup Validation | TDP |
| 672 | | **VI, 7.5** | **Telecommunications and Data Transmission** | | | |
| 673 | | **VI, 7.5.2** | **Protection Against External Threats** | | | |
| 674 | | a. | Voting systems that use public telecommunications networks shall implement protections against external threats to which commercial products used in the system may be susceptible. | *Vol. II, 2.6.5 Telecommunications and Data Transmission Security* | | |

| | A | B | C | D | F | G |
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| 675 | | b. | Voting systems that use public telecommunications networks shall provide system documentation that clearly identifies all COTS hardware and software products and communications services used in the development and/or operation of the voting system, including operating systems, communications routers, modem drivers, and dial-up networking software. | *Vol. II, 2.6.5 TDP, System Security Specification, Telecommunications and Data Transmission Security;*<br>*Vol. II, 2.2.1 e. System Description* | N/A - EVS5000 does not use public telecommunications networks | TDP |
| 676 | | | i. Such documentation shall identify the name, vendor, and version used for each such component. | | N/A - EVS5000 does not use public telecommunications networks | TDP |
| 677 | | **VI, 7.5.3** | **Monitoring and Responding to External Threats** | | | |
| 678 | | | Therefore, vendors of such [voting systems that use public telecommunications] shall document how they plan to monitor and respond to known threats to which their voting systems are vulnerable. This documentation shall provide a detailed description, including scheduling information, of the procedures the vendor will use to: | *also Vol. II, 2.6.5 TDP, System Security Specification, Telecommunications and Data Transmission Security* | | |
| 679 | | a. | Monitor threats, such as through the review of assessments, advisories, and alerts for COTS components issued by the Computer Emergency Response Team (CERT), the National Infrastructure Protection Center (NIPC), and the Federal Computer Incident Response Capability (FedCIRC); | | EVS5000_SSS00, Section 4.2.2, ES&S Alert Monitoring | TDP |
| 680 | | b. | Evaluate the threats and, if any, proposed responses; | | EVS5000_SSS00, Section 4.2.2, ES&S Alert Monitoring | TDP |
| 681 | | c. | Develop responsive updates to the system and/or corrective procedures; | | EVS5000_SSS00, Section 4.2.2, ES&S Alert Monitoring | TDP |
| 682 | | d. | Submit the proposed response to test labs and appropriate states for approval, identifying the exact changes and whether or not they are temporary or permanent; | | EVS5000_SSS00, Section 4.2.2, ES&S Alert Monitoring | TDP |
| 683 | | e. | After implementation of the proposed response is approved by th state, assist clients, either directly or through detailed written procedures, how to update their systems and/or to implement the corrective procedures within the timeframe established by the state. | | EVS5000_SSS00, Section 4.2.2, ES&S Alert Monitoring | TDP |
| 684 | | f. | Address threats emerging too late to correct the system by: | | | |
| 685 | | | i. Providing prompt, emergency notification to the accredited test labs and the affected states and user jurisdictions; | | EVS5000_SSS00, Section 4.2.2, ES&S Alert Monitoring | TDP |
| 686 | | | ii. Assisting client jurisdictions directly, or advising them through detailed written procedures, to disable the public telecommunications mode of the system; and | | EVS5000_SSS00, Section 4.2.2, ES&S Alert Monitoring | TDP |
| 687 | | | iii. Modifying the system after the election to address the threat, submitting the modified system to an accredited test lab and the EAC or appropriate state certification authority for approval, and assisting client jurisdictions directly or advising them through detailed written procedures, to update their systems and/or to implement the corrective procedures after approval. | | EVS5000_SSS00, Section 4.2.2, ES&S Alert Monitoring | TDP |
| 688 | | **VI, 7.6** | **Use of Public Communications Networks** | | | |
| 689 | | **VI, 7.6.2** | **Casting Individual Ballots** | | | |
| 690 | | **VI, 7.6.2.1** | **Documentation of Mandatory Security Activities** | | | |
| 691 | | | Vendors of voting systems that cast individual ballots over a public telecommunications network shall provide detailed descriptions of: | *Vol. II, 2.6.5 TDP, System Security Specification, Telecommunications and Data Transmission Security* | | |
| 692 | | a. | All activities mandatory to ensuring effective system security to be performed in setting up the system for operation, including testing of security before an election. | | EVS5000_SSS00 | TDP |
| 693 | | b. | All activities that should be prohibited during system setup and during the time frame for voting operations, including both the hours when polls are open and when polls are closed. | | EVS5000_SSS00 | TDP |
| 694 | | **VI, 7.7** | **Wireless Communications** | | | |

| | A | B | C | D | F | G |
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| 695 | | | Wireless is defined as any means of communications that occurs without wires. This normally covers the entire electromagnetic spectrum. For the purposes of this section, wireless includes radio frequency, infrared, and microwave. | | | |
| 696 | | **VI, 7.7.1** | **Controlling Usage** | *see also Vol. II, 2.6.5 TDP, System Security Specification, Telecommunications and Data Transmission Security* | | |
| 697 | | a. | If wireless communications are used in a voting system, then the vendor shall supply documentation describing how to use all aspects of wireless communications in a secure manner. This documentation shall include: | | N/A - EVS5000 does not use wireless communications | TDP |
| 698 | | | i. A complete description of the uses of wireless in the voting system including descriptions of the data elements and signals that are to be carried by the wireless mechanism. | | N/A - EVS5000 does not use wireless communications | TDP |
| 699 | | | ii. A complete description of the vulnerabilities associated with this proposed use of wireless, including vulnerabilities deriving from the insertion, deletion, modification, capture, or suppression of wireless messages. | | N/A - EVS5000 does not use wireless communications | TDP |
| 700 | | | iii. A complete description of the techniques used to mitigate the risks associated with the described vulnerabilities including techniques used by the vendor to ensure that wireless cannot send or receive messages other than those situations specified in the documentation. Cryptographic techniques shall be carefully and fully described, including a description of cryptographic key generation, management, use, certification, and destruction. | | N/A - EVS5000 does not use wireless communications | TDP |
| 701 | | | iv. A rationale for the inclusion of wireless in the proposed voting system, based on a careful and complete description of the perceived advantages and disadvantages of using wireless for the documented uses compared to using non-wireless approaches. | | N/A - EVS5000 does not use wireless communications | TDP |
| 702 | | | iv. Discussion: In general, convenience is not a sufficiently compelling reason, on its own, to justify the inclusion of wireless communications in a voting system. Convenience must be balanced against the difficulty of working with cryptographic keys. | | N/A - EVS5000 does not use wireless communications | TDP |
| 703 | | b. | The details of all cryptographic protocols used for wireless communications, including the specific features and data, shall be documented. | | N/A - EVS5000 does not use wireless communications | TDP |
| 704 | | e. | If a voting system includes wireless capabilities, then the voting system shall be able to accomplish the same function if wireless capabilities are not available due to an error or no service. | | N/A - EVS5000 does not use wireless communications | TDP |
| 705 | | | i. The vendor shall provide documentation how to accomplish these functions when wireless is not available. | | N/A - EVS5000 does not use wireless communications | TDP |
| 706 | | **VI, 7.7.2** | **Identifying Usage** | | | |
| 707 | | | If a voting system provides wireless capabilities, then the type of wireless communications used (such as radio frequencies) shall be identified either via a label or via the voting system documentation. | *see also Vol. II, 2.6.5 TDP, System Security Specification, Telecommunications and Data Transmission Security* | N/A - EVS5000 does not use wireless communications | TDP |
| 708 | | **VI, 7.9** | **Voter Verifiable Paper Audit Trail Requirements** | | | |
| 709 | | | VVPAT is not required for national certification. However, these requirements will be applied for certification testing of DRE systems that are intended for use in states that require DREs to provide this capability. | | | |
| 710 | | **VI, 7.9.2** | **Voter Verifiable Paper Audit Trail Requirements, Approve o Void the Paper Record** | | | |

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| 711 | | e. | Vendor documentation shall include procedures to enable the election official to return a voting machine to correct operation after a voter has used it incompletely or incorrectly. **This procedure shall not cause discrepancies between the tallies of the electronic and paper records.** | *Vol. II, 2.3 System Functionality Description* | N/A - EVS5000 does not utilze VVPAT | TDP |
| 712 | | **VI, 7.9.3** | **Voter Verifiable Paper Audit Trail Requirements, Electronic and Paper Record Structure** | | | |
| 713 | | e. | iii. The voting system vendor shall provide documentation as to the structure of the exported ballot image records and how they shall be read and processed by software. | *Vol. II, 2.7.2e, National Certification Test Specifications* | N/A - EVS5000 does not utilze VVPAT | TDP |
| 714 | | e. | v. The voting system vendor shall provide full documentation of procedures for exporting electronic ballot image records and reconciling those records with the paper audit records. | *Vol. II, 2.2.2 b. System Performance* | N/A - EVS5000 does not utilze VVPAT | TDP |
| 715 | | **VI, 7.9.4** | **Equipment Security and Reliability** | *Vol. II, 2.2.2 b. System Performance* | | |
| 716 | | k. | Vendor documentation shall include procedures for investigating and resolving printer malfunctions including, but not limited to; printer operations, misreporting of votes, unreadable paper records, and power failures. | | N/A - EVS5000 does not utilze VVPAT | TDP |
| 717 | | l. | 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. | | N/A - EVS5000 does not utilze VVPAT | TDP |
| 718 | | **VI, Sec. 8** | **Quality Assurance Requirements** | | | |
| 719 | | **VI, 8.1** | **Scope** | | | |
| 720 | | **VI, 8.2** | **General Requirements** | | | |
| 721 | | | The voting system vendor is responsible for designing and implementing a quality assurance program to ensure that the design, workmanship, and performance requirements are achieve in all delivered systems and components. At a minimum this program shall: | *also Vol. II, 2.12 TDP, Quality Assurance Program;* *also Vol. II, 7.5 Examination of Quality Assurance Practices* | | |
| 722 | | a. | Include procedures for specifying, procuring, inspecting, accepting, and controlling parts and raw materials of the requisite quality; | | ESSSYS_M_P_1000_MNFQualityAssurancePlan, Section 1, General Quality Assurance Requirements<br>ESSSYS_Q_P_0100_SoftwareQualityAssuranceProgram, Section 1, General Quality Assurance Requirements | TDP |
| 723 | | b. | Require the documentation of the hardware and software development process; | | ESSSYS_M_P_1000_MNFQualityAssurancePlan, Section 1, General Quality Assurance Requirements<br>ESSSYS_Q_P_0100_SoftwareQualityAssuranceProgram, Section 1, General Quality Assurance Requirements | TDP |
| 724 | | c. | Identify and enforce all requirements for: | | | |
| 725 | | | i. In-process inspection and testing that the manufacturer deems necessary to ensure proper fabrication and assembly of hardware | | ESSSYS_M_P_1000_MNFQualityAssurancePlan, Section 1, General Quality Assurance Requirements<br>ESSSYS_Q_P_0100_SoftwareQualityAssuranceProgram, Section 1, General Quality Assurance Requirements | TDP |
| 726 | | | ii. Installation and operation of software and firmware | | ESSSYS_M_P_1000_MNFQualityAssurancePlan, Section 1, General Quality Assurance Requirements<br>ESSSYS_Q_P_0100_SoftwareQualityAssuranceProgram, Section 1, General Quality Assurance Requirements | TDP |
| 727 | | d. | Include plans and procedures for post-production environmental screening and acceptance testing | | ESSSYS_M_P_1000_MNFQualityAssurancePlan, Section 1, General Quality Assurance Requirements<br>ESSSYS_Q_P_0100_SoftwareQualityAssuranceProgram, Section 1, General Quality Assurance Requirements | TDP |
| 728 | | e. | Include a procedure for maintaining all data and records required to document and verify the quality inspections and tests. | | ESSSYS_M_P_1000_MNFQualityAssurancePlan, Section 1, General Quality Assurance Requirements<br>ESSSYS_Q_P_0100_SoftwareQualityAssuranceProgram, Section 1, General Quality Assurance Requirements | TDP |
| 729 | | **VI, 8.3** | **Components from Third Parties** | | | |
| 730 | | | A vendor who does not manufacture all the components of its voting system, but instead procures components as standard commercial items for assembly and integration into a voting system, shall verify that the supplier vendors follow documented quality assurance procedures that are at least as stringent as those used internally by the voting system vendor. | *Vol. II, 2.12 Quality Assurance* | ESSSYS_M_P_1000_MNFQualityAssurancePlan, Section 1, General Quality Assurance Requirements<br>ESSSYS_Q_P_0100_SoftwareQualityAssuranceProgram, Section 1, General Quality Assurance Requirements | TDP |
| 731 | | **VI, 8.4** | **Responsibility for Tests** | | | |

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| 732 | | | The manufacturer or vendor shall be responsible for performing all quality assurance tests, acquiring and documenting test data, and providing test reports for examination by the test lab as part of the national certification process. These reports shall also be provided to the purchaser upon request. | | ESSSYS_M_P_1000_MNFQualityAssurancePlan, Section 1, General Quality Assurance Requirements<br>ESSSYS_Q_P_0100_SoftwareQualityAssuranceProgram, Section 1, General Quality Assurance Requirements | TDP |
| 733 | | **VI, 8.5** | **Parts and Materials Special Tests and Examinations** | | | |
| 734 | | | In order to ensure that voting system parts and materials function properly, vendors shall: | *also Vol. II, 2.12 .2, Quality Assurance Program, Parts and Materials Tests;*<br>*Vol. II, 7.5.2 Parts and Materials Tests* | | |
| 735 | | a. | Select parts and materials to be used in voting systems and components according to their suitability for the intended application. Suitability may be determined by similarity of this application to existing standard practice or by means of special tests. | | ESSSYS_M_P_1000_MNFQualityAssurancePlan, Section 5, Parts and Materials Tests<br>ESSSYS_Q_P_0100_SoftwareQualityAssuranceProgram, Section 9, Parts and Materials Tests | TDP |
| 736 | | b. | Design special tests, if needed, to evaluate the part or material under conditions accurately simulating the actual voting system operating environment. | | ESSSYS_M_P_1000_MNFQualityAssurancePlan, Section 1.2, Specifying, Procuring, Inspecting, Accepting...<br>ESSSYS_Q_P_0100_SoftwareQualityAssuranceProgram, Section 1.2, Specifying, Procuring, Inspecting, Accepting... | TDP |
| 737 | | c. | Maintain the resulting test data as part of the quality assurance program documentation. | | ESSSYS_M_P_1000_MNFQualityAssurancePlan, Section 1.2, Specifying, Procuring, Inspecting, Accepting...<br>ESSSYS_Q_P_0100_SoftwareQualityAssuranceProgram, Section 1.2, Specifying, Procuring, Inspecting, Accepting... | TDP |
| 738 | | **VI, 8.6** | **Quality Conformance Inspections** | | | |
| 739 | | | The vendor performs conformance inspections to ensure the overall quality of the voting system and components delivered to the test lab for national certification testing and to the jurisdiction for implementation. To meet the conformance inspection requirements, the vendor or manufacturer shall: | *see Vol. II, 2.12.3, Quality Assurance Program, Quality Conformance Inspections;*<br>*Vol. II, 7.5.3 Quality Conformance Inspections* | | |
| 740 | | a. | Inspect and test each voting system or component to verify that it meets all inspection and test requirements for the system. | | ESSSYS_M_P_1000_MNFQualityAssurancePlan, Section 6, Quality Conformance Inspection<br>ESSSYS_Q_P_0100_SoftwareQualityAssuranceProgram, Section 10, Quality Conformance Inspection | TDP |
| 741 | | b. | Deliver a record of tests or a certificate of satisfactory completion with each system or component | | ESSSYS_M_P_1000_MNFQualityAssurancePlan, Section 6, Quality Conformance Inspection<br>ESSSYS_Q_P_0100_SoftwareQualityAssuranceProgram, Section 10, Quality Conformance Inspection | TDP |
| 742 | | **VI, 8.7** | **Documentation** | | | |
| 743 | | | Vendors are required to produce documentation to support the independent testing required for their products to be granted national certification. Volume II, Section 2, Description of the Technical Data Package (TDP) required for the national certification testing process. This documentation shall be sufficient to serve the needs of the test lab, election officials, and maintenance technicians. It shall include, at a minimum, the following: | *Vol. II, 2.1.1.1 TDP, Scope, Required Content for Initial Certification;*<br>*Vol. II, 2.1.1.2 Required Content for System Changes and Recertification;*<br>*Vol. II, 2.12.4 Quality Assurance Program, Documentation;*<br>*Vol. II, 7.5.4 Quality Assurance, Documentation* | | |
| 744 | | | System overview | | EVS5000_OVR00<br>EVS5000_OVR04_AppxD_CIF-AutoMark<br>EVS5000_OVR05_AppxD_CIF-DS200<br>EVS5000_OVR07_AppxE_ConformityStatement | TDP |
| 745 | | | System functionality description | | EVS5000_SFD00 | TDP |

| | A | B | C | D | F | G |
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| 746 | | | System hardware specification | | EVS5000_SHS00_DS200<br>EVS5000_SHS00_DS850<br>AutoMARK_ESS_System_Hardware_Overview_AQS-18-5002-000-S<br>AutoMARK_ESS_System_Hardware_Specification_AQS-18-5000-001-F<br>EVS5000_SHS00_AutoMARK01_MODELS<br>EVS5000_SHS00_AutoMARK02_BOM<br>EVS5000_SHS00_DS20001_BOM<br>EVS5000_SHS00_DS85001_BOM<br>EVS5000_SHS01_AutoMARK1.1-1.2 BOM<br>EVS5000_SHS01_AutoMARK1.3 BOM<br><br>CABLE_PHASE2<br><br>5K509175-LA<br>5K509177-L-<br>5K509618_SIP_B<br>PEB_RevB<br>PSB_RevB<br>SBC_640117-4000C-2AGP<br>Scanner_PI211MC-B4DR May04<br>SD_GGB_REV_A<br>SIB_A3<br>USD-A-SCH | TDP |
| 747 | | | Software design and specifications | | AutoMARK ESS Ballot Image Processing Specification AQS-18-5002-003-S.pdf<br>AutoMARK ESS Ballot Scanning and Printing Specification AQS-18-5002-007-S.pdf<br>AutoMARK ESS Driver API Specification AQS-18-5000-002-F.pdf<br>AutoMARK ESS Embedded Database Interface Specifications AQS-18-5002-005-S<br>AutoMARK ESS GUI Design Specifications AQS-18-5001-005-R<br>AutoMARK ESS Operating Software Design Specifications AQS-18-5001-002-R<br>AutoMARK ESS Operations and Diagnostic Log Specs AQS-18-5002-004-S<br>AutoMARK ESS Programming Specifications Details AQS-18-5001-011-R<br>AutoMARK ESS Software Design Spec AQS-18-5001-004-S<br>AutoMARK ESS Software Development Environment AQS-18-5001-006-R<br>AutoMARK ESS Software Diagnostics Specifications AQS-18-5000-004-F<br>AutoMARK ESS Software Standards Specification AQS-18-4000-000-S<br>ESSSYS_D_D_0100_Coding Standards<br>ESSSYS_SG_P_1000_SystemDevProgram<br>EVS5000_SDS00_AutoMARK SDS Overview<br>EVS5000_SDS00_DS200<br>EVS5000_SDS00_DS20001_Flowcharts<br>EVS5000_SDS00_DS20002_Reports<br>EVS5000_SDS00_DS20005_System Messages<br>EVS5000_SDS00_DS20006_Results Media XMLs<br>EVS5000_SDS00_DS850<br>EVS5000_SDS00_ElectionWare<br>EVS5000_SDS00_ElectionWare01_EW Specification and Interfaces<br>EVS5000_SDS00_ElectionWare02_PB Specification and Interfaces<br>EVS5000_SDS00_ElectionWare05_System Process Flowchart<br>EVS5000_SDS00_ElectionWare07_PostGreSQL Description<br>EVS5000_SDS00_ElectionWare08_Reports<br>EVS5000_SDS00_ElectionWare11_DS200 and DS850 Media Desc<br>EVS5000_SDS00_ElectionWare12_AutoMARK Media Description and Structure<br>EVS5000_SDS00_ElectionWare13_ERM Media Description<br>EVS5000_SDS00_ElectionWare14_System Messages<br>EVS5000_SDS00_ERM<br>EVS5000_SDS00_ERM01_Appendices<br>EVS5000_SDS00_UELS | TDP |

| | A | B | C | D | F | G |
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| 748 | | | System security specification | | EVS5000_STP00<br>EVS5000_TC00_AutoMARK<br>EVS5000_TC00_DS200<br>EVS5000_TC00_DS850<br>EVS5000_TC00_ElectionWare01_Manage<br>EVS5000_TC00_ElectionWare02_Define<br>EVS5000_TC00_Electionware03_Design<br>EVS5000_TC00_Electionware04_Deliver<br>EVS5000_TC00_Electionware05_Resolve<br>EVS5000_TC00_ERM | TDP |
| 749 | | | System test and verification specification | | AutoMARK ESS System Security Specification AQS-18-5002-001-S<br>EVS5000_SSS00<br>EVS5000_SSS01_JSP Template<br>EVS5000_SSS002.08_AutoMARK Quick Hash Procedure<br>EVS5000_SSS02.01_EMS_PC_SecScriptDesc<br>EVS5000_SSS02.01_UbuntuLiveCD<br>EVS5000_SSS02.05_EMSWorkstation Validation Guide<br>EVS5000_SSS02.06_DS200Quick Hash Procedure<br>EVS5000_SSS02.07_DS850Quick Hash Procedure<br>EVS5000_SSS02_Hardening Procedures<br>EVS5000_SSS03_Voting System Validation Guide01_File Listing_DS200<br>EVS5000_SSS03_Voting System Validation Guide02_File Listing_AutoMARK<br>EVS5000_SSS03_Voting System Validation Guide04_File Listing_ElectionWare<br>EVS5000_SSS03_Voting System Validation Guide05_File Listing_RMS<br>EVS5000_SSS03_Voting System Validation Guide06_File_Listing_ELS<br>EVS5000_SSS03_Voting System Validation Guide07_File Listing_VATPreview<br>EVS5000_SSS03_Voting System Validation Guide08_File Listing_ERM<br>EVS5000_SSS03_Voting System Validation Guide09_File Listing_DS850<br>EVS5000_SSS07_PhysEquipmentSecurityBestPract<br>EVS5000_SSS09_WinOS_SECBaseSettings<br><br>EVS5000_SSS02.01_HardeningScripts [Folder]<br>EVS5000_SSS02.07.01_DS850QuickHashScripts [Folder]<br>EVS5000_SSS02.08.01_AutoMARKHashTools [Folder] | TDP |
| 750 | | | System operations procedures | | EVS5000_SOP00_AMVAT<br>EVS5000_SOP00_DS200<br>EVS5000_SOP00_DS850<br>EVS5000_SOP00_ElectionWare01_Admin<br>EVS5000_SOP00_ElectionWare02_Define<br>EVS5000_SOP00_ElectionWare03_Design<br>EVS5000_SOP00_ElectionWare04_Deliver<br>EVS5000_SOP00_ElectionWare05_Results<br>EVS5000_SOP00_ELS<br>EVS5000_SOP00_ERM<br>EVS5000_SOP00_NetworkConfigGuide<br><br>EVS5000_SOP00_AMVAT.01_VerficationElection [Folder]<br><br>EVS5000_ORPT02_BallotProductionGuide [In Above Folder] | TDP |
| 751 | | | System maintenance procedures | | EVS5000_SMM00_AMVAT<br>EVS5000_SMM00_DS200<br>EVS5000_SMM00_DS850 | TDP |
| 752 | | | Personnel deployment and training requirements | | ESSSYS_T_D_1000_TrainingProgram | TDP |

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| 753 | | | Configuration management plan | | ESSSYS_CM_P_1000_ESSCMProgram<br>ESSSYS_DOC_P_1000_TDProgram<br><br>EVS5000_CMP10_BUILD DOCUMENTATION [Folder]<br>EVS5000_CMP10_BLD01_SEC01_EMSBuildProcedure<br>EVS5000_CMP10_BLD01_SEC02_EMSBuildEnvironment<br>EVS5000_CMP10_BLD01_SEC03_WindowsAndVirusProtectionUpdates<br>EVS5000_CMP10_BLD02_SEC01_AutoMARKBuildProcedure<br>EVS5000_CMP10_BLD02_SEC02_AutoMARKBuildEnvironment<br>EVS5000_CMP10_BLD03_SEC01_DS200AncillaryBuildProcedure<br>EVS5000_CMP10_BLD03_SEC02_DS200AncillaryBuildEnvironment<br>EVS5000_CMP10_BLD05_SEC01_DS850FirmwareBuildProcedure<br>EVS5000_CMP10_BLD07_SEC01_DS200FirmwareBuildProcedure | TDP |
| 754 | | | Quality assurance program | | ESSSYS_M_I_0501_WhatRequriesECO<br>ESSSYS_M_P_0500_ECOProcess<br>ESSSYS_M_P_1000_MNFQualityAssurancePlan<br>ESSSYS_Q_P_0100_SoftwareQualityAssuranceProgram<br>EVS5000_QAP00_MN03_ECOPolicies and Procedures<br>EVS5000_QAP00_SWF01_Software_Firmware_Acceptance<br>EVS5000_QAP01_ISO cert Pivot<br>EVS5000_QAP03_QA manual Pivot<br>EVS5000_QAP07_DataWin Quality Assurance Manual<br>EVS5000_QAP08_DATAWIN ISO Certification Certificate<br><br>ESSSYS_M_FM_AcceptanceChecklists [folder]<br>850_AccptChklst_revC<br>850_DemoChklst_revA<br>850_OAccptChklst_revB<br>AutoMark_AccptChklst_001_Rev.A<br>AutoMark_QC_Chklst_001Rev.A<br>DS200_AccptChklst_001Rev.A<br>Carrying Case QC sheet rev 1.0<br>EVS5000_QAP00_MN01.01_AcceptanceTestProcedure_DS200<br>EVS5000_QAP00_MN02.01_AcceptanceTestProcedure_DS850<br><br>EVS5000_QAP00_MN01_AcceptanceTesting [folder]<br>850_AccptChklst_revB.pdf<br>850_DemoChklst_revA.pdf<br>850_OAccptChklst_revA.pdf<br>AutoMark_AccptChklst_001_Rev.A.pdf<br>AutoMark_QC_Chklst_001Rev.A.pdf<br>DS200_AccptChklst_001Rev.A.pdf<br>EVS5000_QAP00_MN01.01_AcceptanceTestProcedure_DS200.pdf<br>EVS5000_QAP00_MN02.01_AcceptanceTestProcedure_DS850.pdf | TDP |
| 755 | | | System change notes | | None | TDP |
| 756 | | **VI, Sec. 9** | **Configuration Management Requirements** | *see Vol. II, 2.11 TDP, Configuration Management Plan* | | |
| 757 | | **VI, 9.1** | **Scope** | | | |
| 758 | | | This section contains specific requirements for configuration management of voting systems. Vendors are required to submit these procedures as part of the Technical Data Package for system certification. | | | |
| 759 | | **VI, 9.1.1** | **Configuration Management Requirements** | | | |
| 760 | | | Configuration management addresses a broad set of record keeping, auditing, and reporting activities that contribute to full knowledge and control of a system and its components. These activities include: | *Vol. II, 2.11 TDP, Configuration Management Plan* | | |
| 761 | | | Identifying discrete system components. | | ESSSYS_CM_P_1000_ESSCMProgram, Section 1.1, Identify Discrete System Components | TDP |

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| 762 | | | Creating records of a formal baseline and later versions of components. | | ESSSYS_CM_P_1000_ESSCMProgram, Section 1.2, Creating Records of a Formal Baseline and Later Version of Components | TDP |
| 763 | | | Controlling changes made to the system and its components. | | ESSSYS_CM_P_1000_ESSCMProgram, Section 1.3, Controlling Changes Made to the System and Its Components | TDP |
| 764 | | | Releasing new versions of the system. | | ESSSYS_CM_P_1000_ESSCMProgram, Section 1.4, Releasing New Versions of the System | TDP |
| 765 | | | Auditing the system, including its documentation, against configuration management records. | | ESSSYS_CM_P_1000_ESSCMProgram, Section 1.5, Auditing the System Against Configuration Management Records | TDP |
| 766 | | | Controlling interfaces to other systems. | | ESSSYS_CM_P_1000_ESSCMProgram, Section 1.6, Controlling Interfaces to Other Systems | TDP |
| 767 | | | Identifying tools used to build and maintain the system. | | ESSSYS_CM_P_1000_ESSCMProgram, Section 1.7, Identifying Tools Used to Build and Maintain the System | TDP |
| 768 | | **VI, 9.1.3** | **Application of Configuration Management Requirements** | | | |
| 769 | | | Requirements for configuration management apply to all components of voting systems regardless of the specific technologies employed. These components include: | *Vol. II, 2.11 TDP, Configuration Management Plan* | | |
| 770 | | | Software | | ESSSYS_CM_P_1000_ESSCMProgram, Section 2.1.7.1, System Software/Firmware | TDP |
| 771 | | | Hardware | | ESSSYS_CM_P_1000_ESSCMProgram, Section 2.1.7.2, System Hardware | TDP |
| 772 | | | Communications | | ESSSYS_CM_P_1000_ESSCMProgram, Section 2.1.3, Communications | TDP |
| 773 | | | Documentation | | ESSSYS_DOC_P_1000_TDProgram, 2.1.4, Documentation | TDP |
| 774 | | | Identification and naming and conventions (including changes to these conventions) for software programs and data files; | | ESSSYS_CM_P_1000_ESSCMProgram, Section 4 Configuration Identification | TDP |
| 775 | | | Development and testing artifacts such as test data and scripts | | ESSSYS_CM_P_1000_ESSCMProgram, Section 2.1.6 Development and Testing Artifacts | TDP |
| 776 | | | File archiving and data repositories. | | ESSSYS_CM_P_1000_ESSCMProgram, Section 2.1.7, File Archiving and Data Repositories | TDP |
| 777 | | **VI, 9.2** | **Configuration Management Policy** | | | |
| 778 | | | The vendor shall describe its policies for configuration management in the Technical Data Package. This description shall address the following elements: | *Vol. II, 2.11.1 TDP, Configuration Management Plan, Configuration Management Policy; Vol. II, 7.4.1 Configuration Management Policy* | | |
| 779 | | | Scope and nature of configuration management program activities | | ESSSYS_CM_P_1000_ESSCMProgram, Section I.1.1, Scope | TDP |
| 780 | | | Breadth of application of the vendor's policies and practices to the voting system, i.e., extent to which policies and practices apply to the total system, and extent to which policies and practices of suppliers apply to particular components, subsystems or other defined system elements | | ESSSYS_CM_P_1000_ESSCMProgram, Section 3.1, Breadth and Application | TDP |
| 781 | | **VI, 9.3** | **Configuration Identification** | | | |
| 782 | | | Configuration identification is the process of identifying, naming and acquiring configuration items. Configuration identification encompasses all system components. | | | |
| 783 | | **VI, 9.3.1** | **Structuring and Naming Configuration Items** | | | |
| 784 | | | The vendor shall describe the procedures and conventions used to classify configuration items into categories and subcategories, uniquely number or otherwise identify items and name configuration items. | *Vol. II, 2.11.2 TDP, Configuration Identification; Vol. II, 7.4.2 Configuration Identification* | ESSSYS_CM_P_1000_ESSCMProgram, Section 4.1.1, Classification and Naming Conventions | TDP |
| 785 | | **VI, 9.3.2** | **Version Conventions** | | | |
| 786 | | | When a system component is part of a higher level system element such as a subsystem, the vendor shall describe the conventions used to: | *Vol. II, 2.11.2 TDP, Configuration Identification; Vol. II 7.4.2 Configuration Identification* | | |
| 787 | | a. | Identify the specific versions of individual configuration items and sets of items that are used by the vendor to identify higher level system elements such as subsystems; | | ESSSYS_CM_P_1000_ESSCMProgram, Section 4.1.2, Versioning Conventions | TDP |
| 788 | | b. | Uniquely number or otherwise identify versions; and | | ESSSYS_CM_P_1000_ESSCMProgram, Section 4.1.2.1, Unique Identifiers | TDP |

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| 789 | | c. | Name versions. | | ESSSYS_CM_P_1000_ESSCMProgram, Section 4.1.2.2, Version Naming Conventions | TDP |
| 790 | | **VI, 9.4** | **Baseline and Promotion Procedures** | | | |
| 791 | | | The vendor shall establish formal procedures and conventions for establishing and providing a complete description of the procedures and related conventions used to: | *Vol. II, 2.11.3 TDP, Configuration Management Plan, Baseline and Promotion; Vol. II, 7.4.3 Baseline, Promotion, and Demotion Procedures* | | |
| 792 | | a. | Establish a particular instance of a component as the starting baseline; | | ESSSYS_CM_P_1000_ESSCMProgram, Section 5.4, Establishing Project Baselines | TDP |
| 793 | | b. | Promote subsequent instances of a component to baseline status as development progresses through to completion of the initial completed version released to accredited test lab for qualification testing; and | | ESSSYS_CM_P_1000_ESSCMProgram, Section 5.4.1, Baseline Promotion to VSTL Testing | TDP |
| 794 | | c. | Promote subsequent instances of a component to baseline status as the component is maintained throughout its life cycle until system retirement (i.e., the system is no longer sold or maintained by the vendor). | | ESSSYS_CM_P_1000_ESSCMProgram, Section 5.4.2, Component Maintenance until Retirement | TDP |
| 795 | | **VI, 9.5** | **Configuration Control Procedures** | | | |
| 796 | | | Configuration control is the process of approving and implementing changes to a configuration item to prevent unauthorized additions, changes or deletions. The vendor shall establish such procedures and related conventions, providing a complete description of those procedures used to: | *Vol. II, 2.11.4 TDP, Configuration Management Plan, Configuration Control Procedures; Vol. II, 7.4.4 Configuration Control Procedures* | | |
| 797 | | a. | Develop and maintain internally developed items; | | ESSSYS_CM_P_1000_ESSCMProgram, Section 6.4, Development and Maintenance of Internally Developed Items | TDP |
| 798 | | b. | Acquire and maintain third-party items; | | ESSSYS_CM_P_1000_ESSCMProgram, Section 6.5, Acquisition and Maintenance of Third Party Items | TDP |
| 799 | | c. | Resolve internally identified defects for items regardless of their origin; and | | ESSSYS_CM_P_1000_ESSCMProgram, Section 6.6, Resolving Internally Identified Defects | TDP |
| 800 | | d. | Resolve externally identified and reported defects (i.e., by customers and accredited test labs). | | ESSSYS_CM_P_1000_ESSCMProgram, Section 6.7, Resolving Externally Identified and Reported Defects | TDP |
| 801 | | **VI, 9.6** | **Release Process** | | | |
| 802 | | | The release process is the means by which the vendor installs, transfers, or migrates the system to the accredited test lab and, eventually, to its customers. The vendor shall establish such procedures and related conventions, providing a complete description of those used to: | *Vol. II, 2.11.5 TDP, Configuration Management Plan, Release Process; Vol. II, 7.4.5 Release Process* | | |
| 803 | | a. | Perform a first release of the system to an accredited test lab; | | ESSSYS_CM_P_1000_ESSCMProgram, Section 7.1, First Release to an Accredited Test Lab | TDP |
| 804 | | b. | Perform a subsequent maintenance or upgrade release of the system, or a particular components, to an accredited test lab; | | ESSSYS_CM_P_1000_ESSCMProgram, Section 7.2, Maintenance or Upgrade Release to an Accredited Test Lab | TDP |
| 805 | | c. | Perform the initial delivery and installation of the system to a customer, including confirmation that the installed version of the system matches exactly the certified version | | ESSSYS_CM_P_1000_ESSCMProgram, Section 7.3, Initial Installation and Deliver to a Customer | TDP |
| 806 | | d. | Perform a subsequent maintenance or upgrade release of the system, or a particular component, to a customer, including confirmation that the installed version of the system matches exactly the qualified system version. | | ESSSYS_CM_P_1000_ESSCMProgram, Section 7.4, Maintenance or Upgrade Release to a Customer | TDP |
| 807 | | **VI, 9.7** | **Configuration Audits** | | | |
| 808 | | **VI, 9.7.1** | **Configuration Audits, Physical Configuration Audit** | | | |
| 809 | | | The Physical Configuration Audit is conducted by the accredited test lab to compare the voting system components submitted for certification to the vendor's technical documentation. For the PCA, a vendor shall provide: | *Vol. II, 2.11.6 TDP, Configuration Management Plan, Configuration Audits; Vol. II, 6.6 System Integration Testing, Physical Configuration Audit; Vol. II, 7.4.6 Configuration Audits* | | |
| 810 | | a. | Identification of all items that are to be a part of the software release | | ESSSYS_CM_P_1000_ESSCMProgram, Section 8.1.1, Identification of Items Included in the System | TDP |
| 811 | | b. | Specification of compiler (or choice of compilers) to be used to generate executable programs | *see Vol. II, 2.5.5.2 Software Environment* | ESSSYS_CM_P_1000_ESSCMProgram, Section 8.1.2, Specification of Compilers | TDP |

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| 812 | | c. | Identification of all hardware that interfaces with the software | | ESSSYS_CM_P_1000_ESSCMProgram, Section 8.1.3, Identification of All Hardware Interfaces | TDP |
| 813 | | d. | Configuration baseline data for all hardware that is unique to the system | | ESSSYS_CM_P_1000_ESSCMProgram, Section 8.1.4, Baseline Configuration Data for All Unique Hardware | TDP |
| 814 | | e. | Copies of all software documentation intended for distribution to users, including program listings, specifications, operations manual, voter manual, and maintenance manual | | ESSSYS_CM_P_1000_ESSCMProgram, Section 8.1.5, End User Documentation | TDP |
| 815 | | f. | User acceptance test procedures and acceptance criteria | | ESSSYS_CM_P_1000_ESSCMProgram, Section 8.1.6, User Acceptance Test Procedures and Criteria | TDP |
| 816 | | g. | Identification of any changes between the physical configuration of the system submitted for the PCA and that submitted for the FCA, with a certification that any differences do not degrade the functional characteristics | | ESSSYS_CM_P_1000_ESSCMProgram, Section 8.1.7, Identification of Physical Changes Made Between PCA and FCA Systems | TDP |
| 817 | | h. | Complete descriptions of its procedures and related conventions used to support this audit by: | | | |
| 818 | | | i. Establishing a configuration baseline of the software and hardware to be tested | | ESSSYS_CM_P_1000_ESSCMProgram, Section 8.1.8.1, Establishing a Configuration Baseline of the Software and Hardware | TDP |
| 819 | | | ii. Confirming whether the system documentation matches the corresponding system components | | ESSSYS_CM_P_1000_ESSCMProgram, Section 8.1.8.2, Confirming that Documentation Matches System Components | TDP |
| 820 | | **VI, 9.7.2** | **Configuration Audits, Functional Configuration Audit** | | | |
| 821 | | | The Functional Configuration Audit is conducted by the accredited test lab to verify that the system performs all the functions described in the system documentation. The vendor shall: | *Vol. II, 2.11.6 TDP, Configuration Management Plan, Configuration Audits;*<br>*Vol. II, 6.7 System Integration Testing, Functional Configuration Audit;*<br>*Vol. II, 7.4.6 Configuration Audits* | | |
| 822 | | a. | Completely describe its procedures and related conventions used to support this audit for all system components | | ESSSYS_CM_P_1000_ESSCMProgram, Section 8.2.1, FCA Procedures and Conventions | TDP |
| 823 | | b. | Provide the following information to support this audit: | | | |
| 824 | | | i. Copies of all procedures used for module or unit testing, integration testing, and system testing | | ESSSYS_CM_P_1000_ESSCMProgram, Section 8.2.1, FCA Procedures and Conventions | TDP |
| 825 | | | ii. Copies of all test cases generated for each module and integration test, and sample ballot formats or other test cases used for system tests | | ESSSYS_CM_P_1000_ESSCMProgram, Section 8.2.1, FCA Procedures and Conventions | TDP |
| 826 | | | iii. Records of all tests performed by the procedures listed above including error corrections and retests | | ESSSYS_CM_P_1000_ESSCMProgram, Section 8.2.1, FCA Procedures and Conventions | TDP |
| 827 | | **VI, 9.8** | **Configuration Management Resources** | | | |
| 828 | | | Vendors may choose the specific [automated] tools they use to perform the record keeping, auditing, and reporting activities of the configuration management standards. The resources documentation requirements focus on assuring that procedures are in place to record information about the tools to help ensure that they, and the data they contain, can be transferred effectively and promptly to a third party should the need arise. Within this context, a vendor is required to develop and proved a complete description of procedures and related practices to maintaining information about: | *Vol. II, 2.11.7 TDP, Configuration Management Plan, Configuration Management Resources; VII 7.4.7 Configuration Management Resources* | | |
| 829 | | a. | Specific tools used, current version, and operating environment; | | ESSSYS_CM_P_1000_ESSCMProgram, Section 9.1, Tools Used | TDP |
| 830 | | b. | Physical location of the tools, including designation of computer directories and files; and | | ESSSYS_CM_P_1000_ESSCMProgram, Section 9.2, Tool Location | TDP |
| 831 | | c. | Procedures and training materials for using the tools. | | ESSSYS_CM_P_1000_ESSCMProgram, Section 9.2. Tool Location | TDP |
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