From the Vendor Trace document or declaration, identify all documents that pertain to Software Design & Specification. Each submitted (Vol. 1, Sect. 1.1) Technical Data Package document (Vol.2 Sect. 6.6) is reviewed (Vol. 1, Sect. 1.6.2.2).

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

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

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

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

Vendor :	Hart InterCivic	Reviewer(s):	Lesley Hoppert, Martin Buchanan
Voting System:	Verity 1.0	Review Date:	1/28/15, 2/6/15

Applicable TDP Documents

Document Title (from cover pg), version, date	Doc #	File name
System Description Technical Document, A.08, 10/31/14	#1	Verity System Description 4005466 A08.pdf
Verity Software Architecture-Design, A.02, 11/22/14	#2	Verity Software Architecture-Design 4005463 A02.pdf

Document Title (from cover pg), version, date	Doc #	File name
Verity Coding Standard, A.09, 12/5/14	#3	Verity Coding Standard 4005498 A09.pdf
Software Design Development Procedure, D.01, 3/7/13	#4	Software Design Development Procedure - 1000566 D01.pdf
SQA Requirements Management Process, A.01, 12/18/14	#5	SQA Requirements Management Process - 1000540 A01.pdf
Verity 1.0 TDP Overview, A.10, 1/19/15	#6	Verity 1.0 TDP Overview 4005511 A10.pdf
Verity Operational Environment, A.06, 1/13/15	#7	Verity Operational Environment 4005515 A06.pdf
The Creation and Configuration of the Trusted Build Environment, A.02, 12/22/14	#8	The Creation and Configuration of the Trusted Build Environment 4005518 A02.pdf
THE VERITY MCU FIRMWARE BUILD PROCEDURE, A.02, 12/11/14	#9	The Verity MCU Firmware Build Procedure 4005519 A02.pdf
Verity 1.0.0.1 Source Documentation, n/a, 12/3/14	#10	Verity 1.0.0.1 Source Documentation.zip
Verity Logging TRD, A.03, 11/14/14	#11	Verity Logging TRD 4005-499 A03.pdf
Verity Security Requirements, A.05, 7/13/14	#12	Verity Security Requirements 4005464 A05.pdf
Voting Systems Acronyms	#13	Voting Systems Acronyms.pdf
Voting Systems Glossary	#14	Voting Systems Glossary.pdf

Trace Table

Req #	VVSG 2005 Testing Standards - Vol.2 unless otherwise specified	Traced	Comments
2	Technical Data Package		
2.1	Scope		
2.1.1	Content and Format		
2.1.1.1	Required Content for Initial Certification *(Indicate "*" if this document does not fall into the identified category of documentation.)*		
d.	At minimum, the TDP shall contain the following documentation: Software design and specifications;	**Doc #1 -** Entire Doc. **Doc #4** - Entire Doc.	**Y**
2.1.1.3	Format		

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	The requirements for formatting the TDP are general in nature; specific format details are of the vendor's choosing. The TDP shall include a detailed table of contents for the required documents, an abstract of each document and a listing of each of the informational sections and appendices presented. A cross-index shall be provided indicating the portions of the documents that are responsive to documentation requirements for any item presented.	**Doc #6 -** Entire Doc.	**Y**
2.1.3	**Protection of Proprietary Information**		
	The vendor shall identify all documents, or portions of documents, containing proprietary information not approved for public release. Any person or test agency receiving proprietary information shall agree to use it solely for the purpose of analyzing and testing the system, and shall agree to refrain from otherwise using the proprietary information or disclosing it to any other person or agency without the prior written consent of the vendor, unless disclosure is legally compelled.	**Doc #1 - Entire Doc.** **Doc #2 - Entire Doc.** **Doc #3 - Entire Doc.** **Doc #4 - Entire Doc.** **Doc #5 - Entire Doc.** **Doc #6 - Entire Doc.** **Doc #7 - Entire Doc.** **Doc #11 - Entire Doc.** **Doc #12 - Entire Doc.**	**Y VTY-92 - INFO** Doc #7 is listed as proprietary within the document but isn't flagged as such in Doc #6 (TDP Overview) under section 2.5.9. Doc #8 and 9 are listed as proprietary on Doc #6 (TDP Overview), but are not listed within the documents Doc #10 is listed as proprietary on Doc #6 (TDP Overview) but it doesn't seem to be displayed on the HTML index page in the zip file or in any obvious files. **Update 1/28/15:** Doc #7 "Verity Operational Environment 4005515 A06.pdf" is still not listed as proprietary in the TDP Overview section 2.5.9. Doc #9, the MCU trusted build doc seems to have been renamed to "The Verity MCU Firmware Build Procedure 4005519" but still is not indicated as proprietary, nor is Doc #8 " The Creation and Configuration of

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			the Trusted Build Environment 4005518".
2.5	**Software Design and Specification**		
	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.	**Doc #1:** 3 et seq **Doc #6:** 2.5.4, 2.5.6, 2.5.7 **Doc #7:** 2.3.1, 2.3.2 **Doc #3:** entire document **Doc #4:** entire document	Y
2.5.1	**Purpose and Scope**		
	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.	**Doc #1:** 3 et seq **Doc #6:** 2.5.6, 2.5.7	Y INFO VTY-89 - "Verity System Description 4005466 A08.pdf" Does not exist in the 2.5.6 folder as stated in Doc #6 (although it does exist in the 2.5.1, 2.5.3 and 2.5.9 folders). The following list of files do not exist in the 2.5.7 folder but are listed in Doc #6 under the 2.5.7 section: UserManagementWireframes.pdf **Update 1/28/15:** The Verity System Description doc was added to folder 2.5.6. However, the TDP Overview document pg. 25 still refers to a document titled "UserManagementWireframes.pdf", which was not delivered in the TDP.
2.5.2	**Applicable Documents**		
	The vendor shall list all documents controlling the development of the software and its specifications. Documents shall be listed in order of precedence.	**Doc #6:** 2.5.4	Y
2.5.3	**Software Overview**		
a.	The vendor shall provide an overview of the software that includes the following items:	**Doc #6:** 2.5.6, 2.5.7	Y INFO VTY-89 - "Verity System

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	A description of the software system concept, including specific software design objectives, and the logic structure and algorithms used to accomplish these objectives.		Description 4005466 A08.pdf" Does not exist in the 2.5.6 folder as stated in Doc #6 (although it does exist in the 2.5.1, 2.5.3 and 2.5.9 folders). The following list of files do not exist in the 2.5.7 folder but are listed in Doc #6 under the 2.5.7 section: UserManagementWireframes.pdf **Update 1/28/15:** The Verity System Description doc was added to folder 2.5.6. However, the TDP Overview document pg. 25 still refers to a document titled "UserManagementWireframes.pdf", which was not delivered in the TDP.
b.	The vendor shall provide an overview of the software that includes the following items: The general design, operational considerations, and constraints influencing the design of the software.	**Doc #6:** 2.5.6, 2.5.7	**Y INFO VTY-89 -** "Verity System Description 4005466 A08.pdf" Does not exist in the 2.5.6 folder as stated in Doc #6 (although it does exist in the 2.5.1, 2.5.3 and 2.5.9 folders). The following list of files do not exist in the 2.5.7 folder but are listed in Doc #6 under the 2.5.7 section: UserManagementWireframes.pdf **Update 1/28/15:** The Verity System Description doc was added to folder 2.5.6. However, the TDP Overview document pg. 25 still refers to a document titled "UserManagementWireframes.pdf", which was not delivered in the TDP.

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c.	The vendor shall provide an overview of the software that includes the following items:
	Identification of all software items, indicating items that were:
	   i. Written in-house;
	   ii. Procured and not modified;
	   iii. Procured and modified, including descriptions of the modifications to the software and to the default configuration options.
		Doc #7: 2.3.1, 2.3.2	Y

d.	The vendor shall provide an overview of the software that includes the following items:
	Additional information for each item that includes:
	   i. Item identification;
	   ii. General description;
	   iii. Software requirements performed by the item;
	   iv. Identification of interfaces with other items that provide data to, or receive data from, the item; and
	   v. Concept of execution for the item;
		Doc #7: 2.3.1, 2.3.2	Y

2.5.3 END	The vendor shall also include a certification that procured software items were obtained directly from the manufacturer or a licensed dealer or distributor.	**Doc #7:** 6	Y
2.5.4	**Software Standards and Conventions**		
	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.	**Doc #3:** entire document **Doc #4:** entire document	Y
a.	The vendor shall provide information that addresses the following standards and conventions: Software system development methodology;	**Doc #3:** entire document **Doc #4:** entire document **Doc #6:** 2.5.6, 2.5.7	Y INFO VTY-89 - "Verity System Description 4005466 A08.pdf" Does not exist in the 2.5.6 folder as stated in Doc #6 (although it does exist in the 2.5.1, 2.5.3 and 2.5.9 folders).

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			The following list of files do not exist in the 2.5.7 folder but are listed in Doc #6 under the 2.5.7 section: UserManagementWireframes.pdf **Update 1/28/15:** The Verity System Description doc was added to folder 2.5.6. However, the TDP Overview document pg. 25 still refers to a document titled "UserManagementWireframes.pdf", which was not delivered in the TDP.
b.	The vendor shall provide information that addresses the following standards and conventions: Software design standards, including internal vendor procedures;	**Doc #3:** entire document **Doc #4:** entire document **Doc #6:** 2.5.6, 2.5.7	**Y INFO VTY-89 -** "Verity System Description 4005466 A08.pdf" Does not exist in the 2.5.6 folder as stated in Doc #6 (although it does exist in the 2.5.1, 2.5.3 and 2.5.9 folders). The following list of files do not exist in the 2.5.7 folder but are listed in Doc #6 under the 2.5.7 section: UserManagementWireframes.pdf **Update 1/28/15:** The Verity System Description doc was added to folder 2.5.6. However, the TDP Overview document pg. 25 still refers to a document titled "UserManagementWireframes.pdf", which was not delivered in the TDP.
c.	The vendor shall provide information that addresses the following standards and conventions: Software specification standards, including internal vendor procedures;	**Doc #3:** entire document **Doc #4:** entire document **Doc #6:** 2.5.6, 2.5.7	**Y INFO VTY-89 -** "Verity System Description 4005466 A08.pdf" Does not exist in the 2.5.6 folder as stated in Doc #6 (although it does exist in the 2.5.1, 2.5.3

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			and 2.5.9 folders). The following list of files do not exist in the 2.5.7 folder but are listed in Doc #6 under the 2.5.7 section: UserManagementWireframes.pdf **Update 1/28/15:** The Verity System Description doc was added to folder 2.5.6. However, the TDP Overview document pg. 25 still refers to a document titled "UserManagementWireframes.pdf", which was not delivered in the TDP.
d.	The vendor shall provide information that addresses the following standards and conventions: Software coding standards, including internal vendor procedures;	**Doc #3:** entire document **Doc #4:** entire document **Doc #6:** 2.5.6, 2.5.7	**Y INFO VTY-89 -** "Verity System Description 4005466 A08.pdf" Does not exist in the 2.5.6 folder as stated in Doc #6 (although it does exist in the 2.5.1, 2.5.3 and 2.5.9 folders). The following list of files do not exist in the 2.5.7 folder but are listed in Doc #6 under the 2.5.7 section: UserManagementWireframes.pdf **Update 1/28/15:** The Verity System Description doc was added to folder 2.5.6. However, the TDP Overview document pg. 25 still refers to a document titled "UserManagementWireframes.pdf", which was not delivered in the TDP.
e.	The vendor shall provide information that addresses the following standards and conventions: Testing and verification standards, including internal	**Doc #5:** entire document	**Y VTY-86 -** Doc 5 has several sections, including the verification section (3.5)

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	vendor procedures, that can assist in determining the program's correctness and ACCEPT/REJECT criteria;		which have the comment "(The following is a template to be populated as the document matures)" **CLOSED 1/29/15:** The document "SQA Requirements Management Process - 1000540 A01.pdf" has been updated to clarify that the "blank" sections are templates to be used in the requirements management process.
f.	The vendor shall provide information that addresses the following standards and conventions: 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.	**Doc #5:** entire document	**Y** VTY-87 - Doc 5 has several sections, including the verification section (3.5) which have the comment "(The following is a template to be populated as the document matures)" **CLOSED 1/29/15:** The document "SQA Requirements Management Process - 1000540 A01.pdf" has been updated to clarify that the "blank" sections are templates to be used in the requirements management process.
2.5.5	**Software Operating Environment**		
	This section shall describe or make reference to all operating environment factors that influence the software design.	**Doc #7:** 3, 5 **Doc #8**: entire document **Doc #9**: entire document	**Y**
2.5.5.1	**Hardware Environment and Constraints**		
2.5.5.1 a.	The vendor shall identify and describe the hardware characteristics that influence the design of the software, such as: The logic and arithmetic capability of the processor;	**Doc #7:** 2.2	**Y**
2.5.5.1 b.	The vendor shall identify and describe the hardware characteristics that influence the design of the software,	**Doc #7:** 2.2	**Y**

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	such as: Memory read-write characteristics;		
2.5.5.1 c.	The vendor shall identify and describe the hardware characteristics that influence the design of the software, such as: External memory device characteristics;	**Doc #7:** 2.2	Y
2.5.5.1 d.	The vendor shall identify and describe the hardware characteristics that influence the design of the software, such as: Peripheral device interface hardware;	**Doc #7:** 2.2	Y
2.5.5.1 e.	The vendor shall identify and describe the hardware characteristics that influence the design of the software, such as: Data input/output device protocols;	**Doc #7:** 2.2	Y
2.5.5.1 f.	The vendor shall identify and describe the hardware characteristics that influence the design of the software, such as: Operator controls, indicators, and displays.	**Doc #1:** 3.1.1.8, 3.1.1.12 **Doc #7:** 2.2	Y
2.5.5.2	**Software Environment**		
	The vendor shall identify the compilers or assemblers used in the generation of executable code, and describe the operating system or system monitor.	**Doc #8:** Requirements **Doc #9:** Requirements	Y
2.5.6	**Software Functional Specification**		
	The vendor shall provide a description of the operating modes of the system and of software capabilities to perform specific functions.	**Doc #1:** 3 et seq **Doc #6:** 2.5.6, 2.5.7	**Y INFO VTY-89 -** "Verity System Description 4005466 A08.pdf" Does not exist in the 2.5.6 folder as stated in Doc #6 (although it does exist in the 2.5.1, 2.5.3 and 2.5.9 folders). The following list of files do not exist in the 2.5.7 folder but are listed in Doc #6 under the 2.5.7 section: UserManagementWireframes.pdf

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			Update 1/28/15: The Verity System Description doc was added to folder 2.5.6. However, the TDP Overview document pg. 25 still refers to a document titled "UserManagementWireframes.pdf", which was not delivered in the TDP.
2.5.6.1	**Configurations and Operating Modes**		
	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.	**Doc #1:** 3 et seq **Doc #6:** 2.5.6, 2.5.7	**Y INFO VTY-89 -** "Verity System Description 4005466 A08.pdf" Does not exist in the 2.5.6 folder as stated in Doc #6 (although it does exist in the 2.5.1, 2.5.3 and 2.5.9 folders). The following list of files do not exist in the 2.5.7 folder but are listed in Doc #6 under the 2.5.7 section: UserManagementWireframes.pdf **Update 1/28/15:** The Verity System Description doc was added to folder 2.5.6. However, the TDP Overview document pg. 25 still refers to a document titled "UserManagementWireframes.pdf", which was not delivered in the TDP.
a.	For each software function or operating mode, the vendor shall provide: A definition of the inputs to the function or mode (with characteristics, tolerances or acceptable ranges, as applicable);	**Doc #1:** 3 et seq **Doc #10:** Verity source code documentation set	Y
b.	For each software function or operating mode, the vendor shall provide: An explanation of how the inputs are processed;	**Doc #1:** 3 et seq **Doc #10:** Verity source code documentation set	Y
c.	For each software function or operating mode, the vendor	**Doc #1:** 3 et seq	Y

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	shall provide: A definition of the outputs produced (again, with characteristics, tolerances, or acceptable ranges as applicable).	**Doc #10:** Verity source code documentation set	
2.5.6.2	**Software Functions**		
a.	The vendor shall describe the software's capabilities or methods for detecting or handling: Exception conditions;	**Doc #1:** 3 et seq **Doc #6:** 2.5.6, 2.5.7 **Doc #10:** Verity source code documentation set	**Y** VTY-93 - INFO Doc's 1 and 6 satisfy the requirements. Doc 10 is too large and cumbersome to search for general methods but since it contains the source, it contains records of all the methods. **CLOSED** 1/28/15: Since docs 1 and 6 satisfy the requirements, no discrepancy was warranted.
b.	The vendor shall describe the software's capabilities or methods for detecting or handling: System failures;	**Doc #1:** 3 et seq **Doc #6:** 2.5.6, 2.5.7 **Doc #10:** Verity source code documentation set	**Y** VTY-93 - INFO Doc's 1 and 6 satisfy the requirements. Doc 10 is too large and cumbersome to search for general methods but since it contains the source, it contains records of all the methods. **CLOSED** 1/28/15: Since docs 1 and 6 satisfy the requirements, no discrepancy was warranted.
c.	The vendor shall describe the software's capabilities or methods for detecting or handling: Data input/output errors;	**Doc #1:** 3 et seq **Doc #6:** 2.5.6, 2.5.7 **Doc #10:** Verity source code documentation set	**Y** VTY-93 - INFO Doc's 1 and 6 satisfy the requirements. Doc 10 is too large and cumbersome to search for general methods but since it contains the source, it contains records of all the methods. **CLOSED** 1/28/15: Since docs 1 and 6 satisfy the requirements, no discrepancy was warranted.
d.	The vendor shall describe the software's capabilities or methods for detecting or handling: Error logging for audit record generation;	**Doc #1:** 3 et seq **Doc #6:** 2.5.6, 2.5.7 **Doc #11:** entire document	**Y**
e.	The vendor shall describe the software's capabilities or	**Doc #1:** 3 et seq	**Y**

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	methods for detecting or handling: Production of statistical ballot data;	**Doc #6:** 2.5.6, 2.5.7	
f.	The vendor shall describe the software's capabilities or methods for detecting or handling: Data quality assessment;	**Doc #1:** 3 et seq **Doc #11:** 4.1	Y
g.	The vendor shall describe the software's capabilities or methods for detecting or handling: Security monitoring and control.	**Doc #1:** 2 et seq, 3 et seq **Doc #12:** entire document	Y
2.5.7	**Programming Specifications**		
	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.	**Doc #1:** 2 et seq, 3 et seq **Doc #2:** entire document	Y
2.5.7.1	**Programming Specifications Overview**		
	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.	**Doc #1:** 3 et seq **Doc #6:** 2.5.6, 2.5.7 **Doc #10:** Verity source code documentation set	Y VTY-93 - INFO Doc's 1 and 6 satisfy the requirements. Doc 10 is too large and cumbersome to search for general methods but since it contains the source, it contains records of all the methods. **CLOSED** 1/28/15: Since docs 1 and 6 satisfy the requirements, no discrepancy was warranted.
2.5.7.2	**Programming Specifications Details**		
	The programming specifications shall describe individual software modules and their component units, if applicable.	**Doc 1:** 3 et seq **Doc 6:** 2.5.6, 2.5.7 **Doc 10:** Verity source code documentation set	Y VTY-93 - INFO Doc's 1 and 6 satisfy the requirements. Doc 10 is too large and cumbersome to search for general methods but since it contains the source, it contains records of all the methods. **CLOSED** 1/28/15: Since docs 1 and 6 satisfy the requirements, no discrepancy was warranted.
a.	For each module and unit, the vendor shall provide the following information:	**Doc #1:** 3 et seq **Doc #6:** 2.5.6, 2.5.7	Y VTY-93 - INFO Doc's 1 and 6 satisfy the requirements. Doc 10 is too large and

Req #	VVSG 2005 Testing Standards - Vol.2 unless otherwise specified	Traced	Comments
	Module and unit design decisions, if any, such as algorithms used;	**Doc #10:** Verity source code documentation set	cumbersome to search for general methods but since it contains the source, it contains records of all the methods. **CLOSED** 1/28/15: Since docs 1 and 6 satisfy the requirements, no discrepancy was warranted.
b.	For each module and unit, the vendor shall provide the following information: Any constraints, limitations, or unusual features in the design of the software module or unit;	**Doc #1:** 3 et seq **Doc #6:** 2.5.6, 2.5.7 **Doc #10:** Verity source code documentation set	**Y** VTY-93 - INFO Doc's 1 and 6 satisfy the requirements. Doc 10 is too large and cumbersome to search for general methods but since it contains the source, it contains records of all the methods. **CLOSED** 1/28/15: Since docs 1 and 6 satisfy the requirements, no discrepancy was warranted.
c.	For each module and unit, the vendor shall provide the following information: The programming language to be used and rationale for its use if other than the specified module or unit language;	**Doc #3:** entire document	**Y**
d.	For each module and unit, 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, on-line 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;	**Doc #1:** 3 et seq **Doc #6:** 2.5.6, 2.5.7 **Doc #10:** Verity source code documentation set	**Y** VTY-93 - INFO Doc's 1 and 6 satisfy the requirements. Doc 10 is too large and cumbersome to search for general methods but since it contains the source, it contains records of all the methods. **CLOSED** 1/28/15: Since docs 1 and 6 satisfy the requirements, no discrepancy was warranted.
e.	For each module and unit, the vendor shall provide the following information: If the software module or unit contains, receives, or outputs data, a description of its inputs, outputs, and other data elements as applicable. (Section 2.5.9 describes the	**Doc 1:** 3 et seq **Doc 6:** 2.5.6, 2.5.7 **Doc 10:** Verity source code documentation set	**Y** VTY-93 - INFO Doc's 1 and 6 satisfy the requirements. Doc 10 is too large and cumbersome to search for general methods but since it contains the source, it contains records of all the methods.

Req #	VVSG 2005 Testing Standards - Vol.2 unless otherwise specified	Traced	Comments
	requirements for documenting system interfaces.) Data local to the software module or unit shall be described separately from data input to, or output from, the software module or unit;		**CLOSED** 1/28/15: Since docs 1 and 6 satisfy the requirements, no discrepancy was warranted.
f.	For each module and unit, the vendor shall provide the following information: If the software module or unit contains logic, the logic to be used by the software unit, including, as applicable: i. Conditions in effect within the software module or unit when its execution is initiated; ii. Conditions under which control is passed to other software modules or units; iii. Response and response time to each input, including data conversion, renaming, and data transfer operations; iv. Sequence of operations and dynamically controlled sequencing during the software module's or unit's operation, including: • The method for sequence control; • The logic and input conditions of that method, such as timing variations, priority assignments; • Data transfer in and out of memory; and • The sensing of discrete input signals, and timing relationships between interrupt operations within the software module or unit;	**Doc #1:** 3 et seq **Doc #6:** 2.5.6, 2.5.7 **Doc #10:** Verity source code documentation set	**Y VTY-93 - INFO** Doc's 1 and 6 satisfy the requirements. Doc 10 is too large and cumbersome to search for general methods but since it contains the source, it contains records of all the methods. **CLOSED** 1/28/15: Since docs 1 and 6 satisfy the requirements, no discrepancy was warranted.
g.	For each module and unit, the vendor shall provide the following information: Exception and error handling	**Doc #1:** 3 et seq **Doc #6:** 2.5.6, 2.5.7 **Doc #10:** Verity source code documentation set	**Y VTY-93 - INFO** Doc's 1 and 6 satisfy the requirements. Doc 10 is too large and cumbersome to search for general methods but since it contains the source, it contains records of all the methods. **CLOSED** 1/28/15: Since docs 1 and 6 satisfy the requirements, no discrepancy was warranted.
h.	For each module and unit, the vendor shall provide the following information:	**Doc #1:** 3 et seq **Doc #6:** 2.5.6, 2.5.7	**Y VTY-93 - INFO** Doc's 1 and 6 satisfy the requirements. Doc 10 is too large and

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	If the software module is a database, provide the information described in Volume II, Section 2.5.8.	**Doc #10:** Verity source code documentation set	cumbersome to search for general methods but since it contains the source, it contains records of all the methods. **CLOSED** 1/28/15: Since docs 1 and 6 satisfy the requirements, no discrepancy was warranted.
2.5.8	**System Database**		
	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.	**Doc #6:** 2.5.8 **Doc #7:** 3	Y
a.	The information provided shall include for each database or external file: The number of levels of design and the names of those levels (such as conceptual, internal, logical, and physical);	**Doc #6:** 2.5.8	Y
b.	The information provided shall include for each database or external file: Design conventions and standards (which may be incorporated by reference) needed to understand the design;	**Doc #6:** 2.5.8	Y
c.	The information provided shall include for each database or external file: Identification and description of all database entities and how they are implemented physically (e.g., tables, files);	**Doc #6:** 2.5.8	Y
d.	The information provided shall include for each database or external file: Entity relationship diagrams and description of relationships;	**Doc #6:** 2.5.8	Y
e.	The information provided shall include for each database or external file: Details of table, record or file contents (as applicable) to include individual data elements and their specifications, including: i. Names/identifiers; ii. Data type (alphanumeric, integer, etc.); iii. Size and format (such as length and punctuation	**Doc #6:** 2.5.8	Y VTY-88 - The provided documentation doesn't include details of table, record or file contents (as applicable) to include individual data elements and their specifications, including: i. Data type (alphanumeric, integer, etc.); ii. Size and format (such as length and

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	of a character string); iv. Units of measurement (such as meters, dollars, nanoseconds); v. Range or enumeration of possible values (such as 0-99); vi. Accuracy (how correct) and precision (number of significant digits); vii. Priority, timing, frequency, volume, sequencing, and other constraints, such as whether the data element may be updated and whether business rules apply; viii. Security and privacy constraints; ix. Sources (setting/sending entities) and recipients (using/receiving entities).		punctuation of a character string); iii. Units of measurement (such as meters, dollars, nanoseconds); iv. Range or enumeration of possible values (such as 0-99); v. Accuracy (how correct) and precision (number of significant digits); vi. Priority, timing, frequency, volume, sequencing, and other constraints, such as whether the data element may be updated and whether business rules apply; vii. Security and privacy constraints; viii. Sources (setting/sending entities) and recipients (using/receiving entities). **CLOSED** 2/6/15, M. Buchanan. Validated vendor response: Update Verity Operational Document, describes Microsoft's SQL Server Management Studio does not provides many of the required attributes required by the VVSG, this is stated in the Hart documentation. It is Hart's observation that the VVSG was written with a certain database implementation or model in mind and that the Verity implementation or model of data management does not follow the expected implementation
f.	The information provided shall include for each database or external file: For external files, a description of the procedures for file maintenance, management of access privileges, and security.	**Doc #6:** 2.5.8	**NS -** Verity doesn't use external files for databases.
2.5.9	**Interfaces**		
	The vendor shall identify and provide a complete description of all internal and external interfaces, using a combination of text and diagrams.	**Doc #1:** 1	**Y**
2.5.9.1	**Interface Identification**		
a.	For each interface identified in the system overview, the	**Doc #7:** 4	**Y**

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	vendor shall: Provide a unique identifier assigned to the interface;		
b.	For each interface identified in the system overview, the vendor shall: Identify the interfacing entities (systems, configuration items, users, etc.) by name, number, version, and documentation references, as applicable;	**Doc #7:** 4	Y
c.	For each interface identified in the system overview, the vendor shall: 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).	**Doc #7:** 4	Y
2.5.9.2	**Interface Description**		
a.	For each interface identified in the system overview, the vendor shall provide information that describes: The type of interface (such as real-time data transfer, storage-and-retrieval of data) to be implemented;	**Doc #7:** 4	Y

b.	For each interface identified in the system overview, the vendor shall provide information that describes:
	Characteristics of individual data elements that the interfacing entity(ies) will provide, store, send, access, receive, etc., such as:
	   i. Names/identifiers;
	   ii. Data type (alphanumeric, integer, etc.);
	   iii. Size and format (such as length and punctuation of a character string);
	   iv. Units of measurement (such as meters, dollars, nanoseconds);
	   v. Range or enumeration of possible values (such as 0-99);
	   vi. Accuracy (how correct) and precision (number of significant digits);
	   vii. Priority, timing, frequency, volume, sequencing, and other constraints, such as whether the data
		Doc #7: 4	Y

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	element may be updated and whether business rules apply; viii. Security and privacy constraints; and ix. Sources (setting/sending entities) and recipients (using/receiving entities);		
c.	For each interface identified in the system overview, the vendor shall provide information that describes: Characteristics of communication methods that the interfacing entity(ies) will use for the interface, such as: i. Communication links/bands/frequencies/media and their characteristics; ii. Message formatting; iii. Flow control (such as sequence numbering and buffer allocation); iv. Data transfer rate, whether periodic/aperiodic, and interval between transfers; v. Routing, addressing, and naming conventions; vi. Transmission services, including priority and grade; and vii. Safety/security/privacy considerations, such as encryption, user authentication, compartmentalization, and auditing;	**Doc #7:** 4	Y
d.	For each interface identified in the system overview, the vendor shall provide information that describes: Characteristics of protocols the interfacing entity(ies) will use for the interface, such as: i. Priority/layer of the protocol; ii. Packeting, including fragmentation and reassembly, routing, and addressing; iii. Legality checks, error control, and recovery procedures; iv. Synchronization, including connection establishment, maintenance, termination; and v. Status, identification, and any other reporting features;	**Doc #7:** 4	Y
e.	For each interface identified in the system overview, the	**Doc #7:** 4	Y

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	vendor shall provide information that describes: Other characteristics, such as physical compatibility of the interfacing entity(ies) (such as dimensions, tolerances, loads, voltages, plug compatibility).		
2.5.10	**Appendices**		

	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:
	   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;
	   B. References: A list of references to all related vendor documents, data, standards, and technical sources used in software development and testing;
	   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.
		Doc #13: Full document
		Doc #14: Full document
			Y

End of Document