**Test Assertions for VVSG 1.0 Section 3.1.1**

**August 24, 2015**

**Requirement 3.1.1**

**VVSG 1.0 Requirement 3.1.1:** 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.

**Test Assertions**

**TA311-1:** The manufacturer SHALL conduct realistic summative usability tests on the voting system with respect to the visual interface implementing the 3.1 requirements.

**TA311-2:** The summative usability tests SHALL be performed upon a completely functioning product.

**TA311-3:** The summative usability tests SHALL use representatives of the population under test not requiring use of accessibility features (as required in section 3.2, VVSG 1.0).

**TA311-3-1:** The population under test SHALL consist of a mix of voters including, but not limited to, users of different ages, genders, ethnicities, levels of education, voting experience.

**TA311-3-2:** The population under test SHALL consist of voters who are eligible to vote in the U.S.

**TA311-3-3:** The population under test SHALL NOT consist of voters who are, or have been, a poll worker, a voting machine manufacturer, a voting machine developer, in the marketing or sales of voting systems, or involved in any other position that is part of the voting process.

**TA311-3-4:** The population under test SHALL NOT consist of voters who are involved with a usability or market research business/company.

**TA311-3-5:** The population under test SHOULD NOT consist of voters who have previously participated in a voting system usability test.

**TA311-4:** The manufacturer SHALL report the total number of participants tested and demographics of the participants.

**TA311-5:** Manufacturers SHOULD describe their recruiting strategy.

**TA311-6:** The manufacturer SHOULD detail any compensation given to participants.

**TA311-7:** The manufacturer SHALL describe how the voters were screened and selected.

**TA311-8:** The manufacturer SHOULD note any differences between the users profiled as recruits and the users who participated in the actual study.

**TA311-9:** The manufacturer SHALL ensure that at least eight test participants are able to complete the testing session, without assistance.

**TA311-9-1:** The manufacturer SHOULD initially target at least 10 - 12 participants, in order to ensure that at least 8 individuals are able to complete the testing sessions.

**TA311-10:** The manufacturer SHOULD ensure that at least 30 test participants are able to complete the testing session.

**TA311-11:** The manufacturer SHOULD include detailed tables of all participant demographics, whether or not they completed the test, as an appendix to the test report.

**TA311-12:** The manufacturer SHALL report the test results for all participants, whether or not they completed the test, using the Common Industry Format.

**TA311-13:** The manufacturer SHOULD use the Modified CIF Template for manufacturers as a template and guidance for the semantics, content and testing.

**TA311-14:** Manufacturers MAY define their own testing protocols for the summative usability tests.

**TA311-15:** The Technical Data Package submitted to the EAC for national certification SHALL contain the summative Usability Test Report.

**TA311-16:** The summative usability tests SHALL measure and report metrics for efficiency, effectiveness, and satisfaction as defined in the ISO/CIF standard (ISO/IEC 25062:2006).

**TA311-17:** The test ballot used in the summative usability tests, conducted by the manufacturer, SHALL be realistic.

**TA311-17-1:** The test ballot used in the summative usability tests SHOULD look like a real ballot, such as the NIST test ballot.

**TA311-17-2:** The test ballot used in the summative usability tests SHOULD have 12 contests.

**TA311-17-3:** The test ballot used in the summative usability tests SHOULD have 2 ballot questions.

**TA311-17-4:** The test ballot used in the summative usability tests SHOULD have 5 propositions.

**TA311-17-5:** The test ballot used in the summative usability tests SHOULD have at least one multiple-vote contest.

**TA311-17-6:** The test ballot used in the summative usability tests SHOULD have at least one write-in contest.

**TA311-18:** The test script used in the summative usability tests, conducted by the manufacturer, SHALL be realistic.

**TA311-18-1:** The test script SHALL enable testing of all valid operations (as specified in the test assertions for 3.1.4bii-1 through 3.1.4bii-9) for the voter interface under test.

**TA311-19:** The testing environment for the summative usability tests, conducted by the manufacturer, SHALL be realistic.

**TA311-19-1:** The testing environment SHOULD be set up as it would be in a polling place.

**TA311-20:** The summative usability tests conducted by the manufacturer MAY use the NIST medium complexity test ballot.

**TA311-21:** The manufacturer SHALL ensure that the summative usability documentation/report is included in the TDP.

**TA311-22:** The manufacturer SHALL ensure that the summative usability documentation/report conforms to the formatting and content requirements of the Common Industry Format (CIF).