**Test Assertions for VVSG 1.1, Volume 1, Section 7.6.2.2**

**September 23, 2016**

**VVSG 1.1, Vol 1, Requirement 7.6.2.2:** **Ability to Operate During Interruption of Service**

These systems shall provide the following capabilities to provide resistance to interruptions of telecommunications service that prevent voting devices at the polling place from communicating with external components via telecommunications:

1. Detect the occurrence of a telecommunications interruption at the polling place and switch to an alternative mode of operation that is not dependent on the connection between polling place voting devices and external system components
2. Provide an alternate mode of operation that includes the functionality of a conventional electronic voting system without losing any votes
3. Create and preserve an audit trail of every vote cast during the period of interrupted communication and system operation in conventional electronic voting system mode
4. Upon reestablishment of communications, transmit and process votes accumulated while operating in conventional electronic voting system mode with all security safeguards in effect
5. Ensure that all safeguards related to voter identification and authentication are not affected by the procedures employed by the system to counteract potential interruptions of telecommunications capabilities

**Test Assertions**

**TA7622a-1:** IF a voting system transmits data over at least one public transportation network THEN that voting system SHALL detect the occurrence of a telecommunications interruption at the polling place.

**TA7622a-1-1:** That voting system SHALL switch to an alternative mode of operation that is not dependent on the connection between polling place voting devices and external system components.

**TA7622b-1:** IF a voting system transmits data over at least one public transportation network THEN that voting system SHALL provide an alternate mode of operation that includes the functionality of a conventional electronic voting system without losing any votes.

**TA7622b-1-1:** Such functionality SHALL include, but not be limited to, the ability to cast, store (record), tabulate, and report votes and vote tabulations.

**TA7622c-1:** A voting system SHALL, during any period of interrupted communication, be able to create an audit trail accurately describing events occurring during the period of interrupted communication.

**TA7622c-2:** A voting system SHALL, during any period of interrupted communication, be able to preserve an audit trail accurately describing events occurring during the period of interrupted communication.

**TA7622d-1:** IF a voting system transmits data over at least one public transportation network AND IF communications services are interrupted and then reestablished, THEN that voting system SHALL transmit votes accumulated while operating in conventional electronic voting system mode with all security safeguards in effect.

**TA7622d-2:** IF a voting system transmits data over at least one public transportation network AND IF communications services are interrupted and then reestablished, THEN that voting system SHALL process votes accumulated while operating in conventional electronic voting system mode with all security safeguards in effect.

**TA7622e-1:** IF a voting system transmits data over at least one public transportation network THEN that voting system SHALL ensure that all safeguards related to voter identification are not affected by the procedures employed by the system to counteract potential interruptions of telecommunications capabilities.

**TA7622e-2:** IF a voting system transmits data over at least one public transportation network THEN that voting system SHALL ensure that all safeguards related to voter authentication are not affected by the procedures employed by the system to counteract potential interruptions of telecommunications capabilities.