April 15, 2019

U.S. Election Assistance Commission
1335 East West Highway, Ste. 4300
Silver Spring, MD 20910

Re: ECO 01325 Verity Relay Kit Modem - MTD-MNA1

Dear Mr. Macias, and Mr. Lovato

At the request of Hart InterCivic, SLI is providing an assessment of ECO-01325, including supporting documentation provided by Hart InterCivic, to determine if this change is De Minimis, and no additional testing is required.

Summary Description:

The COTS Cellular Dongle USB modem used in the Verity relay kit is obsolete, due to Verizon and AT&T's end-of-support of all non-4G modems from their networks. The manufacturer, MultiTech, has recommended another modem model number that is a part of the same QuickCarrier (Cellular Dongle) series, with same form factor, as the existing modems in use in the Verity Relay kit for AT&T and Verizon, the MTD-MNA1 modem. A new modem kit is created for the new modem model. Three DLL files are updated on the Verity Scan 2.2.2 CFast to support the new modem model number. The Verity Scan application itself is unchanged.

Reference Documents:

- EAC 2005 Voluntary Voting System Guidelines (VVSG) Volume II, Sec. 1 & 4
- EAC Voting System Testing and Certification Program Manual V. 2, Sec. 3.4 & 3.5
- NOC 12-01 COTS Computer Equivalency for de minimis Change

Documentation used in SLI's Assessment:

- ECO-01325 Summary - Verity Relay Kit Modem Obsolescence 4005645 A01
- Datasheet: MultiTech QuickCarrier Series Datasheet.pdf
- User Guide: S000710 (MultiTech QuickCarrier MTD-MNA1)
- Assembly Drawings: 2005248-REVA.PDF, 2005251-REVA.PDF, 3005251-REVA.PDF
- BOM: 3005251 REV A.pdf
- Label Drawing: 1005286-REVA.PDF

- EMC Test Data:
  - 20691-10_Hart InterCivic_Verity Scan with Relay Kit_EMC Test Report_Final.pdf
- QA Test Data:
  - Verity Scan 2.2.2 with Relay MTD-MNA1 Modem Test Report 4005646 A01.pdf
- Hash Validation:
  - Scan222-ValidatedManifest.csv
  - Scan222Update-ValidatedManifest.csv
  - Scan222_vs_Scan222Update-ValidatedManifestComparison.pdf

Conclusion:

The existing Cellular USB dongles used in Verity Relay will no longer be supported by the AT&T and Verizon networks and has been discontinued. The replacement MTD-MNA1 and the existing MTD-H5-2.0 have same regulatory Radio and EMC compliance certifications, and environmental operating conditions.

During EMI/EMC testing the modem was activated and dialed out to the cellular carrier. After connection, the modem pings a packet to google.com continuously.

- A command line is used to continuous send and receive 100 bytes of packet data from the modem to "google.com" and then has Google send that back to the modem, called an echo request. This runs until it is stopped by the operator.

Operating Modes:

To fully exercise all the features of Verity Scan with Relay, EMC diagnostic tools were used. All testing was completed in the Windows environment. The following applications were executed to run continuously during EMI/EMC testing:

- Audio Test application – Play audio (8-hour loop continuously)
- USB Media Test application - Write to vDrive (100 bytes, every 10s)
- Printer Test application - Print to the 2.5" thermal printer (8-hours, one line approximately every 20s)
- Shoeshine Test application - Shoeshine a ballot (Continuous until cancelled, approximately every 30s)
- LED Test application - Flash paper path indicator LEDs.
- Ping Test application - Connect the modem and ping Google.com continuously

SLI has assessed the hardware change in ECO 01325, including supporting documentation. The requested changes do not affect the system's reliability, functionality, capability, operation or software. SLI considers the nature of this change to be De Minimis and therefore not to affect the **Verity Voting 2.2.2** Federal certification status. SLI reviewed the **Verity Scan 2.2.2** source code and no discrepancies were observed. The code changes are to three DLL files present on the Verity Scan CFast and are fully limited to support of recognizing and operating the MTD-MNA1 modem. Verity Scan functionality is unaffected by the modem change. EMI/EMC testing performed by PTI, Hart's updated internal QA testing including security and hash validation testing is adequate, and no additional testing is required.

As required under section 3.4.3 of the EAC's Voting System Testing and Certification Program Manual Version 2.0, Hart InterCivic has provided the necessary information to verify the ECO 01325 change is De Minimis.

If you have questions regarding this assessment, please contact Darrick Forester.

Sincerely,

Traci Mapps
Director of Operations