

SLI Compliance

Hart Verity ECO-01524 Software Minor Change Evaluation & Review Form

Vendor:	Hart InterCivic	Date:	March 14, 2022
Change ID:	ECO-1524	System(s):	Verify Voting 2.5, Verity Voting 2.6
Product:	Verity Scan and Verity Scan with Relay devices	Relevant Application(s):	Verity Scan and Verity Scan with Relay software

Put an X in the appropriate box(es):

	TDP Change
X	Data Change
X	Software Change

Change Summary Description

The ECO increases the pre-defined reorganization frequency from every 500 files to every 250 files.

Additionally, vDrive signing/validation algorithm optimizations developed in Verity 2.7 are implemented. The algorithm's optimizations reduce the number of system calls needed to perform the signature validation function, further improving performance.

Currently in 2.5 and 2.6, when a folder is signed, the files in the folder must first be validated. For each file added, the individual file is signed and then the entire set of files is signed. The time to digitally sign the full set of saved records is increased, which drives the increased save time. During signature validation, the application accesses the files on the file system more often than is needed. The code was making N2 calls to the file system, however validating N files should require N calls to the file system.

With the proposed change, the CVR and image signing code is refactored to reduce the number of file system calls and improve performance with no change to the function or strength of the hashing algorithm. The time to sign a set of files will increase linearly with each file added rather than exponentially.

The changes are limited to Verity Scan and Verity Scan with Relay device software only and is applicable to Verity Voting 2.5 and 2.6 only. There is no impact to the Base OS master images.

Manufacturer Reasoning for Minor Change Determination

The change described on this ECO improve Verity Scan device performance only.

- These changes do not materially alter the system's reliability.
- These changes do not materially alter the system's functionality.
- These changes do not materially alter the system's capability.
- These changes do not materially alter the system's operation.


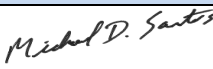

Put an X in the appropriate box:

Change Evaluation		Comments
	The change affects the form, fit or function of the voting system component(s) and therefore requires further testing to be performed.	
	Minor change: a change to a certified voting system's data and/or TDP, the nature of which will not materially alter the system's reliability, functionality, capability, or operation	
X	Software Minor change: a change to the system's software that meets the EAC requirements as identified below.	Two Changes: <ol style="list-style-type: none"> 1. Periodic file reorganization increases from every 500 files to every 250 files. 2. vDrive signing/validation algorithm optimizations developed in Verity 2.7 are incorporated.

Software minor changes should have the following general characteristics:

(1) Update a discrete component of the system and do not impact overall system functionality. (2) Do not modify the counting or tally logic of a component or the system (formatting changes to reports are allowable). (3) Do not affect the accuracy of the component or system. (4) Do not negatively impact the functionality, performance, accessibility, usability, safety, or security of a component or system. (5) Do not alter the overall configuration of the certified system (e.g. adding ballot marking device functionality to a previously certified DRE component). (6) Can be reviewed and/or tested by VSTL personnel in a short amount of time (approximately less than 100 hours)

SLI Evaluation and Minor Change Determination
<p>The pre-defined re-organization frequency of files is a configuration adjustment with no logic affect.</p> <p>The vDrive signing/validation algorithm optimizations implemented reduce the number of system calls needed to perform the signature validation function, as was verified by a source code review of the modifications implemented.</p> <p>The testing of performance, functionality, regression, accuracy and security, as detailed in "ECO-01524 QA Test Report for Verity 2.5 2.6 Verity Security Performance Optimization 4005806 A02 provides sufficient coverage of the implemented updates to verify that the intended performance improvements are attained, no loss of accuracy or functionality is introduced, nor any security concerns found.</p> <p>All testing passed with no issues or anomalies observed.</p> <p>As required under section 3.5.1 of the EAC's Voting System Testing and Certification Program Manual Version 3.0, and in accordance with the instruction provided in <i>NOC 19-01: Software De Minimis Changes</i>, SLI Compliance considers the nature of ECO-01524 to be Minor and therefore not to affect the Federal certification status for the Verity 2.5 and Verity 2.6 voting systems.</p>

	Approved by/Title	Signature:	Date:
	Michael D. Santos Voting Senior Test Manager		March 29, 2022
Traci Mapps Vice President, SLI Compliance		March 29, 2022	