U. S. ELECTION ASSISTANCE COMMISSION
VOTING SYSTEM TESTING AND CERTIFICATION PROGRAM
1225 New York Avenue, NW, Suite 1100
Washington, DC. 20005

09/11/2009

Carolyn Coggins, QA Director - Voting
iBeta Quality Assurance
3131 S Vaughn Way, Suite 650
Aurora, CO 80014

Dear Ms. Coggins,

This letter is in response to iBeta Quality Assurance's recommendations (attached) to the Election Assistance Commission (EAC) regarding the reuse of the source code reviewer conducted by SysTest Laboratories as part of the testing campaign for the ES&S Unity 3.2.1.0. EAC has instructed (attached) iBeta, per section 2.10.6.of the EAC's *Testing and Certification Program Manual*, to conduct a review of the source code review conducted by SysTest prior to SysTest's suspension. This review was conducted in an effort to preserve any prior testing that could be relied upon as meeting the EAC's rigorous program requirements.

Source Code Review

In its letter dated August 13, 2009 to the EAC regarding reuse of the source code review conducted by SysTest on the Unity 4.0. M100 precinct scanner for the Unity 3.2.1.0. testing engagement iBeta recommended reuse of the SysTest source code review. Before making this recommendation, and per the EAC's instruction, iBeta conducted a 3% audit of the M100 source code.

In addition to the audit and review conducted by iBeta the EAC Technical Reviewers have conducted a review of the recommendation made by iBeta and the reviews conducted. Based on iBeta's review and this additional technical review the EAC approves iBeta's recommendation for the reuse of the source code review previously conducted by SysTest.

If you should have any questions regarding this approval or the impact it has on the Unity 3.2.1.0. testing engagement please do not hesitate to contact me. Thank you.

Sincerely,

Brian Hancock
Director, Testing and Certification
US Election Assistance Commission

cc: Steve Pearson, Election Systems & Software

U. S. ELECTION ASSISTANCE COMMISSION
VOTING SYSTEM TESTING AND CERTIFICATION PROGRAM
1225 New York Avenue, NW, Suite 1100
Washington, DC. 20005

August 4, 2009

Ms. Sue L. Munguia
Director of Certification
Election Systems and Software (ES&S)
11208 John Galt Boulevard
Omaha, NE 68137

Sent via e-mail

Ms. Munguia:

This letter is being sent to address ES&S's questions regarding the reuse of testing by iBeta Quality Assurance (iBeta) that was conducted by SysTest Laboratories (SysTest) on the Unity 4.0 voting system prior to the suspension of SysTest's accreditation as an EAC Voting System Test Laboratory (VSTL). As you are aware, and as indicated in our letter to all EAC registered manufacturers (attached), section 2.10.6. of the EAC's *Voting System Test Laboratory Program Manual* allows for the reuse of prior testing at the EAC's discretion.

The EAC recognizes the unique circumstances the SysTest suspension has created and the need for the EAC to be diligent in reviewing and deciding on the reuse of this testing. Given these circumstances the EAC approves the following plan for the determination of reuse of testing for the ES&S Unity 3.2.1.0 test campaign:

- The EAC has authorizes the reuse of the hardware testing conducted by SysTest sub-contractors. iBeta will review the reports to confirm any failures resulting in engineering changes are documented and the reports document that all hardware ultimately passed.
- iBeta is to review any TDP documents that have changed since the submission of the Unity 3.2.0.0 TDP. In addition, iBeta is to review all material related to the M100 optical scanner in order ensure all required information is present.
- iBeta will conduct a 3% review of the ES&S source code for the M100 voting system. This review will focus on important functional sections of the code in order to determine the depth and focus of source review conducted by SysTest. iBeta will provide a recommendation to the EAC regarding the reuse of the source code review conducted by SysTest. The EAC will then issue a decision regarding the reuse of the source code review conducted by SysTest.
- The EAC Technical Reviewers will review and assess the Functional, Accessibility, Maintainability, Accuracy, and Reliability test summary reports provided by SysTest on the M100. The EAC will issue a decision regarding the reuse of this testing.

- Applicable areas from the Unity v.4.0.0.0 Test Plan may be used as well as applicable areas from the approved Unity 3.2.0.0 test plan. However, iBeta must issue a Unity v.3.2.1.0 test plan. The EAC will review and approve a full test plan provided by iBeta.
- SysTest shall provide the appropriate test summaries for all items that are accepted for reuse.

If you should have any questions regarding these decisions or the testing to be conducted at iBeta please do not hesitate to contact me. Thank you for your time in resolving these issues.

Sincerely,

Brian J. Hancock
Director, Testing and Certification

Attachment: 10.29.08 EAC ltr. to all EAC registered manufactures

cc: iBeta Quality Assurance
Steve Pearson, Election Systems and Software

U. S. ELECTION ASSISTANCE COMMISSION
VOTING SYSTEM TESTING AND CERTIFICATION PROGRAM
1225 New York Avenue, NW, Suite 1100
Washington, DC. 20005

October 29, 2008

To: Registered Voting System Manufacturers

From: Brian Hancock, Director
United States Election Assistance Commission
Testing and Certification Program

RE: EAC Issuance of Notice of Intent to Suspend SysTest, Laboratories Inc.

The U.S. Election Assistance Commission today notified (attached) SyStest Laboratories Inc. of its intent to suspend the laboratory based upon the suspension of its accreditation by NIST/NVLAP.

As a result of the notice, SysTest has three days to respond to EAC's action. If SysTest cannot refute the fact that NVLAP has suspended the laboratory the EAC will suspend SysTest and all testing under the EAC's program must be halted immediately.

Those manufacturers currently using SysTest as their lead VSTL for testing under the EAC's program should be aware of their options as provided for in the EAC's *Voting System Testing and Certification Program Manual* and the *Voting System Test Laboratory Program Manual*. Per section 4.3.1.2. of the EAC's *Testing and Certification Program Manual*, the EAC Program Director may, at his discretion, allow a manufacturer to change VSTL's provided the manufacturer shows good cause for the change. A manufacturer may request to change its VSTL by providing in writing:

1. A statement indicating the current VSTL conducting testing of their voting system.
2. The reasoning for the request to change VSTL (good cause).
3. A statement indicating the new VSTL the manufacturer wishes to test the voting system.
4. A proposed amended Voting System Certification Application reflecting the proposed VSTL change.

Upon receipt of this information, the EAC Program Director will issue written notice to the manufacturer regarding the proposed change of VSTL. Upon receipt of expressed written permission from the Program Director to change VSTLs the manufacturer may

begin testing at the new VSTL in conformance with the EAC's program requirements. Manufacturers may also choose to halt testing until such time as SysTest Laboratories may become eligible to recommence testing of their voting system. Please be aware that SysTest MAY NOT recommence testing until such time as the EAC provides written notice to SysTest of their ability to begin testing again under the EAC's program.

Many of you may have questions regarding the testing already conducted by SysTest and its use by a new VSTL. Per section 2.10.6. of the EAC's *Voting System Test Laboratory Program Manual* a VSTL may accept prior testing conducted by another VSTL or third party laboratory provided certain conditions are met. These conditions are:

1. The discrete hardware or software component previously tested is demonstrably identical to that presently offered for testing.
2. The voting system standards and relevant EAC interpretations applicable to the prior and current testing are identical.
3. The test methods used are equivalent or identical to current test methods approved by the EAC.
4. The prior testing has been reviewed by the VSTL and no errors or omissions are apparent.
5. The adoption and use of prior testing is noted in the test plan and test report.

Please be aware that the lead VSTL is responsible for ensuring that the prior testing has met these requirements. Like all testing under the EAC's program, all prior testing remains subject to EAC technical review and approval.

If you have any questions regarding the possible suspension of SysTest Labs, the process for the changing of a lead VSTL, or the process for approval of prior testing please do not hesitate to contact myself or my staff.

Sincerely,

Brian J. Hancock
Director, Testing and Certification

August 13, 2009
Mr. Brian Hancock **Sent via E-mail**
U.S. Election Assistance Commission
Voting System Testing and Certification Program
1225 New York Avenue, NW, Suite 110
Washington, DC 20005

Mr. Hancock,
The purpose of this letter is to document the 3% review of the firmware source code for the Unity 3.2.1.0 M100 precinct scanner in accordance with your 4 August 2009 email providing instructions on the reuse of testing for the ES&S certification effort. This letter also provides Beta's recommendation to the EAC regarding the reuse of the source code review conducted by SysTest in Unity 4.0.

Documentation of the Review Process
To conduct the review, iBeta used our PCA Source Code Review Procedure. The source code was delivered from SysTest and configuration managed in the iBeta Source Code Repository. The M100 application is entirely written in C. This coding language had been previously reviewed on other certification test efforts. The previously used interpretation of the generic Voting System Standards 2002 (VSS 2002) requirements to the C review criteria was utilized unmodified. The C review criteria is not attached to this letter but it can be provided if deemed necessary for the EAC determination of reuse. The VSS 2002 requirements applicable to the source code review task are:

Volume	Section(s)
1	4.2.2 through 4.2.7
1	6.2
1	6.4.2
2	2.5.4d
2	5.4.2

To select the 3% for review, iBeta conducted an analysis by first using a static analysis tool to parse each application source code base and provide a list of the files and functions as well as the Lines of Code (LOC) count. (iBeta metrics uses executable LOCs only and does not include comment, blank, or continued lines.)

Once the spreadsheet was populated for the M100 application, a selection of files/functions was made based on the file header information documenting the file purpose. iBeta focused the review by selecting source code files and functions that process vote data, audit logs, and reporting.

During the M100 Source Code Review all requirements were identified as accepted or rejected. Rejection of requirement required further documentation in a discrepancy. A recommendation for reuse would be based upon the discrepancies encountered. Discrepancies dealing with comments, headers, formatting, and style would be deemed non-logic issues and flagged as green with a recommendation for reuse. Any potential logic issues,flagged as yellow, would besubmitted to the EAC for consideration with

iBeta's recommendation. Confirmed logic issues, flagged as red, would result in a recommendation for a 100% source code review.

A peer review of the M100 Source Code Review was conducted by an experienced reviewer who had reviewed source code to the VSS requirements on a minimum of two VSTL test efforts. Based on the instruction in your 4 August 2009 email "*This review will focus on important functional sections of the code in order to determine the depth and focus of source review conducted by SysTest*", the peer reviewer examined the identified results and source code to confirm the accuracy of the review. The matrix of the source code reviewed is provided as Attachment 1.

Summary of 3% Source Code Review Results

Precedence for the iBeta interpretation has been established with testing for other clients and these established interpretations were applied to Unity 3.2.1.0. Zero discrepancies were identified.

Recommendation Regarding the Reuse of the SysTest Source Code Review

In order to provide a recommendation, iBeta evaluated the results of the 3% source code review. As there were zero discrepancies written that potentially impact the source code, iBeta recommends reuse of the results of the SysTest source code.

Sincerely,

Carolyn Coggins
QA Director - Voting

Attachment 1: Matrix of Source Code Reviewed

cc: Steve Pearson, ES&S
Sue Munguia, ES&S