Election Assistance Commission (EAC)
Interim Accreditation
Independent Test Authorities (ITA)

Assessment Report

CIBER & Wyle

Conducted: Jul 17-22, 2006
Huntsville, AL

Assessor: Steven V. Freeman

Introduction

This accreditation assessment was conducted to support an interim program pending implementation of the full EAC Accreditation program in cooperation with the National Voluntary Laboratory Accreditation Program (NVLAP) under NIST Handbook 150-2006, NVLAP Procedures and General Requirements and NIST Handbook 150-22- 2005 NVLAP Voting System Testing (HB 150-22). The interim program is designed to accredit ITAs formerly authorized under the National Association of State Election Directors (NASED) accreditation program to continue voting system testing under an EAC accreditation until such time as the NVLAP/EAC joint accreditation has qualified one or more testing laboratories as Voting System Test Laboratory (VSTL).

Summary of Findings

Under NASED, Wyle Laboratories and CIBER, Inc. were separately accredited as Hardware and Software ITAs. Under those roles, Wyle tested the principle voting devices—those components that received the votes of the voter and performed the basic tally operation. CIBER tested the Election Management System (EMS) and Reporting System components that performed consolidation of voting results from multiple voting devices on a general purpose computer such as a Commercial Off The Shelf (COTS) workstation or server. Wyle and CIBER have since formed an exclusive team agreement to work with each other as a joint testing cooperative to perform the full voting system certification testing. The source code review of software resident to the voting or vote tallying device which had been Wyle's responsibility has actually been performed by CIBER or source code reviewers working with CIBER in the last year or more.

Wyle has a long identity as a voting system testing lab being the first accredited under the NASED program. Wyle brought to the program a strong background in environmental testing of DOD systems and holds separate accreditation such as the American Association for Laboratory Accreditation (A2LA) for the major hardware test methods required for voting system accreditation. Wyle has a well-defined quality management system in the terms of ISO/IEC 17025 which is generally exercised and used. The corporate culture and higher level management support are compatible with and help support quality management practices.

The CIBER ITA operation is actually a small branch office, *ITA Practice, CIBER, Inc*, operating independently from the corporate CIBER operations. Corporate CIBER's quality management system (which is ISO 9001 compliant) places the responsibility to define and implement the quality program under the ISO/IEC 17025 requirements at the ITA Practice Director's level but places the QA Manager responsible at a branch office (PPQA Group) located remotely from ITA Practice locatoin. ITA Practice's *Process and Project Quality Assurance Plan (PPQAP) [Apr 2005]* policy document and supporting processes and procedures were created last year but critical processes were not implemented nor procedures followed. ITA Practice, CIBER is unable to follow their own defined processes and procedures to ensure the quality of their work.

Although Wyle and CIBER are working together, they have distinctly different quality management programs and different levels of proficiency about following those programs. In the Hardware/Software division, Wyle tests only to the boundaries of the device—they do not, as a rule, perform any operations on the EMS or Reporting system components and limit the interaction with transfer media to the input/output ports of the specific device.. CIBER performs more of the system integration testing by producing variations of election definitions which they either provide to Wyle or operate the voting devices to produce results to use in the Reporting system testing but generally do not exercise a wide function of the voting device, leaving that testing to Wyle. Wyle reports follow ISO/IEC guidelines and tend to be reasonably complete

descriptions of what testing was performed although they don't always indicate where a test was only done in an earlier version. In a number of reports over the last year, Wyle has indicated that CIBER is expected to complete certain tests involving the EMS or Reporting systems. CIBER's reports provide limited or no descriptions of the testing performed so a reader or reviewer can not tell if all the testing was completed. Cross checking between CIBER and Wyle reports has revealed at times that neither ITA has performed certain tests, expecting that the test was done by the other.

Wyle has a demonstrated capability to do well in the limited scope of hardware testing and some related functional testing but does not have the internal resources to perform what is being identified for the new VSTLs as the core requirement testing. With the right partner Wyle could potentially be a full scale test lab but needs to develop the internal resources to be able to take a lead in system integration testing and end-to-end functional testing including more aggressive security testing.

CIBER has not shown the resources to provide a reliable product. The current quality management plan requires more time to spend on managing the process than they appear to have available and it was clear during the assessment visit that they had not accepted that they have a responsibility to provide quality reviewed reports that show what was done in testing. The ITA Practice Director indicated during the assessment that their difficulties were that corporate CIBER did not allow for the personnel resource time for quality management functions but there may be other alternatives for allocating the resources.

In addition, during the review, ITA Practice Director indicated that the testing for a product tends to either use vendor developed tests or new tests developed specifically for the product—they have no standard test methods defined. This makes their testing dependent on the vendor input and vulnerable to unique vendor interpretations rather than a core validated set of internal references for training and testing.

A proposal was made that Wyle take the lead and provide direction on qualify management reviews, audits, test planning, and report writing. CIBER would add software review and election definition experience with possibly some security expertise through corporate CIBER. Wyle, under this proposal, would be fully responsible for the coordination of testing and the final report. CIBER/Wyle would need to work out additional criteria to standardized test plans, determine the who and how review of the TDP would be conducted, and the contract oversight relations.

All the ITAs need to complete a review of the VSS 2002 and new VVSG 2005 and update the requirements cross-reference matrix to be used to identify which requirements have been tested and where or when. The former matrix developed jointly between the ITAs is missing significant requirements and variations on requirements. (Note: Shawn Southworth, ITA Practice Director, reports that CIBER does not have that version of the checklist.)

Recommendation

Wyle to continue as a Hardware ITA, eventually serving as a resource lab for environmental hardware testing for new VSTLs or move to becoming a VSTL by taking responsibility for full system testing with possible subcontracting to CIBER or another qualified group.

CIBER ITA Practice continues only with the support of Wyle or a commitment from corporate CIBER to provide management assistance in getting the quality system functioning and fuller reporting of results with a review in 120 days.

(signed)

Steven V. Freeman

Attachments:

1. CIBER Organization
    a. ITA Organization
    b. Corporate Organization