	DEPARTMENT OF COMMERCE National Institute of Standards and Technology National Voluntary Laboratory Accreditation Program	ISSUE DATE: June 30, 2015
	LAB BULLETIN	NUMBER: LB-87-2015
		LAP: Cryptographic and Security Testing
SUBJECT: Restructuring of the On-Site Assessment Process in the Cryptographic and Security Testing (CST) Laboratory Accreditation Program (LAP)		

Purpose

The purpose of this NVLAP Lab Bulletin is to publish revisions to NIST Handbook 150-17, subclauses 3.1.2 and 3.3.1 with regard to the activities associated with the proficiency/round-table quizzing and the on-site assessment process for accreditation in the CST LAP. This bulletin becomes part of the NIST Handbook 150-17, *Cryptographic and Security Testing*, until such time as the next edition of the handbook is published.

Overview

NIST Handbook 150 -17 describes the general accreditation process for accreditation in the NVLAP CST LAP. As part of the process, an initial assessment and periodic reassessment of a laboratory is required through an on-site assessment. The on-site assessment has required a team of two to three assessors to visit the laboratory over a two- to three-day period to conduct an assessment of the accreditation requirements published in NIST Handbook 150 and NIST Handbook 150-17 (including its applicable annexes). As part of the on-site assessment process, the assessor team has conducted a proficiency/round-table quiz of the laboratory staff to determine the technical competence of the laboratory to perform testing associated with the proposed scope of accreditation.

Background

Due to concerns with the quality of the report submissions to the Cryptographic Module Validation Program (CMVP), the NVLAP team and its associated stakeholders recently held several meetings to review options to make changes in the CST LAP to promote improvement. Specifically, the meetings focused upon methods to improve the quality of the laboratory testing and the associated test reports, the assessment of the level of competency of the laboratories accredited or seeking accreditation in the program, and the effectiveness of the resources available to support the accreditation program. As a result, the meeting attendees concluded that the typical reporting concerns being raised were attributable to laboratory testing competency and/or laboratory business practices.

In the case of testing competency, improvement plans were developed to increase the level of rigor of the proficiency/round-table quizzing while maximizing the resources for conducting the on-site assessments. The plan addresses the concerns through use of a remote proficiency/round-table quizzing process prior to the on-site assessment visit. The remote assessment tool will allow for use of the on-site assessment visit for an improved review of the technical requirements outlined in NIST Handbook 150 and NIST Handbook 150-17, as well as a specific focus on technical areas of concern that may have been raised during the remote quizzing process.

For those concerns that are attributable to laboratory business practices, the improvement plan developed will address concerns through the Extended Cost Recovery (ECR) fees and the ECR with Points system (see NVLAP Lab Bulletin LB-86-2015).

Planned remote proficiency/round-table quizzing and on-site assessment changes

As previously noted in this bulletin, the proficiency/round-table quiz is utilized to assess the technical competency of testers at the accredited laboratories or at laboratories seeking accreditation. In lieu of conducting the proficiency/round-table quiz during the on-site assessment visit, the updated process will require a remote quiz as a prerequisite for the on-site assessment visit. Successful completion of the quizzing with a score of 75 % or better shall be achieved by the laboratory in order to be eligible for the on-site assessment visit.

The remote proficiency/round-table quiz will be scheduled upon receipt and review of a laboratory's complete NVLAP application for accreditation as well as payment of any associated NVLAP accreditation fees. The remote proficiency/round-table quiz is intended to be the primary quizzing mechanism and is expected to be conducted as follows:

1. NVLAP will notify the CMVP of the completed application and assign a technical assessor as the point of contact (POC). The technical POC coordinates and schedules the remote quiz. Coordination includes ensuring the laboratory and its testers, the technical assessors, and any technical experts are available for the proposed date(s), preparing the quiz questions, preparing the NVLAP form for capturing the results of the quiz, reserving a video teleconferencing (VTC)-enabled conference room, and sending the Outlook invitation to all parties.
2. At the time of the scheduled remote proficiency/round-table quiz, the technical POC leads the meeting to include review of the quiz instructions prior to the start of the quiz. The POC also has the responsibility to document the laboratory responses for the NVLAP assessment record.

The following instructions and criteria apply to the quiz:

- The NVLAP CST proficiency/round-table quiz is open book and designed to determine technical proficiency in the areas defined in NIST Handbook 150-17, Annex B.
- The laboratory shall have access to VTC and Internet web browsing capabilities for the quiz.
- Prior to the quiz, the laboratory shall send an email to the POC and NVLAP with a list of all laboratory staff, by name and title, who will participate in the quiz. At the time of the VTC, the technical POC will confirm the attendance of each person on the provided list.
- All laboratory testers are expected to be visible via VTC and may participate from one or more locations.
- Muting of the laboratory discussion when formulating a response to a quiz question is not allowed. The assessment team must hear all discussion as the laboratory prepares answers to quiz questions in order to gain an understanding of a laboratory's tester dynamics.
- Quiz participants shall identify themselves prior to providing an answer. This ensures participants are correctly documented in the quiz record.
- The laboratory may have access to the FIPS 140-2 specification, derived test requirements, implementation guidance, and any other resources typically used when testing modules.

- The laboratory is encouraged to ask for clarification if the question is not understood. Although discussion is encouraged among the laboratory personnel, the laboratory must make the final answer clear to the assessment team. The assessment team will not provide coaching or leading information during the quiz.
 - The laboratory must complete the quiz in 6 hours or less and may opt to schedule the quiz in two 3-hour sessions.
 - The technical POC may reschedule, terminate, or extend the quiz (with agreement of all involved parties), as necessary.
3. The quiz is administered to the laboratory with questions presented to the laboratory one at a time via an Internet web browser.
 4. The laboratory shall pass the quiz with a score of 75 % or higher. Areas where minimum proficiency was not demonstrated shall be noted as a nonconformity and shall require corrective action(s) by the laboratory using the laboratory's management system process.
 5. If a score of less than 75 % is obtained, the laboratory may retake the quiz at a later, scheduled date once corrective action(s) have been taken to address the cited nonconformity(ies). If the laboratory does not pass a second quiz, NVLAP will notify the applicant of the next steps needed on a case-by-case basis. If the laboratory is currently accredited by NVLAP, the second unsuccessful result from the quiz will result in suspension of the laboratory's accreditation and all the laboratory's test reports in the CMVP queue will be placed on hold, regardless of status. Actions to lift the suspension will be determined by NVLAP and the laboratory will be notified of the necessary actions needed at the time suspension is enforced.
- NOTE: A laboratory must satisfactorily address all actions in the NVLAP suspension notice before the hold status can be removed from the test reports in the queue. The laboratory has an obligation to notify vendors that test reports are in a hold status until such time as the laboratory successfully completes the proficiency/round-table quiz.
6. After the laboratory has passed the quiz, the technical POC for the quiz, informs NVLAP that the laboratory has achieved a passing score for remote proficiency/round-table quiz so that the next steps in the assessment process can begin.
 7. At this point, the NVLAP lead assessor will assume the role for coordinating and scheduling the on-site assessment visit.

Implementation of changes

Effective immediately, the following sections of NIST Handbook 150-17 are revised to read:

3 Accreditation process

3.1 Overview

3.1.2 The accreditation process starts with the submission of the laboratory's application and fees payment. Once the application is deemed complete, the process continues with the laboratory's quality manual evaluation, the laboratory's proficiency testing evaluation, and the on-site assessment visit. These stages of the assessment process are described below in steps a) through e) and illustrated in Fig. 2.

- a) **Quality manual evaluation** – When the laboratory is applying for accreditation, the assessor(s) must first determine that the management system meets the requirements.
- b) **Proficiency written exam** – For initial accreditation, once the assessor(s) determines that the management system meets the requirements, a written exam may then be provided to the applicant laboratory depending upon the intended scope, with a seven-calendar-day deadline for response, unless otherwise specified. This exam evaluates the laboratory personnel's technical expertise and knowledge of the standards and test methods applicable to the scope of accreditation for which the laboratory is applying. The laboratory shall score greater than 75 % correct responses for the accreditation process to continue.
- c) **Proficiency/round-table quiz and/or oral exam** – Once an initial applicant has successfully completed the written exam or a renewal applicant (in an on-site visit year) has submitted a complete application, NVLAP will notify the CMVP and assign a technical point of contact (POC) to coordinate the logistics for the remote proficiency/round-table quizzing with the laboratory. The proficiency/round-table quiz is an open book, oral exam designed to test the technical knowledge and the team dynamics of the laboratory's testing staff in relation to the test methods of the proposed scope of accreditation. The laboratory shall have access to video teleconference (VTC) and Internet web browsing capabilities as the quiz will be administered via these methods. All laboratory testers shall participate in the quizzing. An applicant laboratory shall achieve a passing score of 75 % or higher to proceed in the accreditation process.

NOTE: Multiple quiz sessions and/or quizzes may be required, dependent upon the test methods of proposed scope of accreditation. For some test methods (e.g., NPIVP and SCAP), an oral exam is necessary to demonstrate proficiency regarding specific tests. The technical expert(s) from the associated technical program conducts this exam via a teleconference with the laboratory personnel. The oral exam is normally scheduled two weeks prior to the scheduled on-site assessment visit.

- d) **On-site assessment visit** – For all applicants, NVLAP schedules the on-site assessment visit upon successful completion of the remote proficiency/round-table quizzing. During the on-site visit, the laboratory shall also demonstrate that the required set of tools is available and the testing environment is adequate (e.g., space, ventilation, security, test chambers, and test benches) for the test methods for which accreditation is sought.
- e) **Proficiency artifact and/or operational exam** – Once the assessor(s) determines that the laboratory has satisfactorily completed the on-site visit, a proficiency artifact and/or operational exam is provided to the applicant laboratory (at the end of the initial on-site visit or after the on-site visit). Unless otherwise specified by NVLAP, the laboratory shall complete the test by the scope-dependent deadline. The proficiency artifact and/or operational exam is designed to evaluate the laboratory's understanding of and competence to apply the Cryptographic and Security Testing conformance testing methodology specific to the scope of accreditation for which the laboratory is

applying. The laboratory shall successfully complete the proficiency test and/or operational exam as evaluated by the technical expert assessor(s).

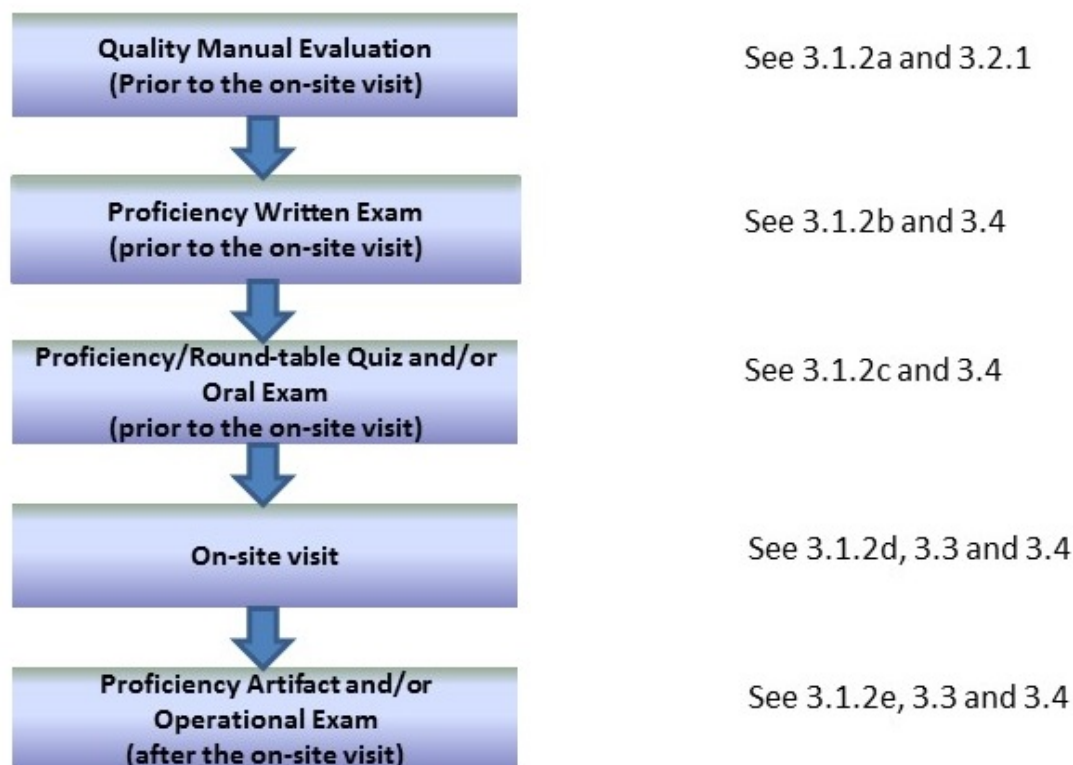


Figure 2. Accreditation Flowchart.

3.3 On-site assessments

3.3.1 Conduct of on-site assessment

3.3.1.1 It is important to note that the laboratory cannot be granted accreditation unless:

- a) the laboratory has completed and passed the written exam [3.1.2 b)] (normally conducted prior to the initial on-site assessment);
- b) the laboratory has passed the proficiency/round-table quiz and/or any oral exam (e.g., NPIVP, SCAP) [3.1.2c] (normally conducted prior to the on-site visit).

Please retain this NVLAP Lab Bulletin with your copy of NIST Handbook 150-17 for future reference.

Questions regarding the changes to the NVLAP CST LAP requirements should be directed to Dana Leaman, dana.leaman@nist.gov, 301-975-4679.