OLD DOMINION UNIVERSITY

CYSE 407 DIGITAL FORENSICS

Midterm

Joy Diggs

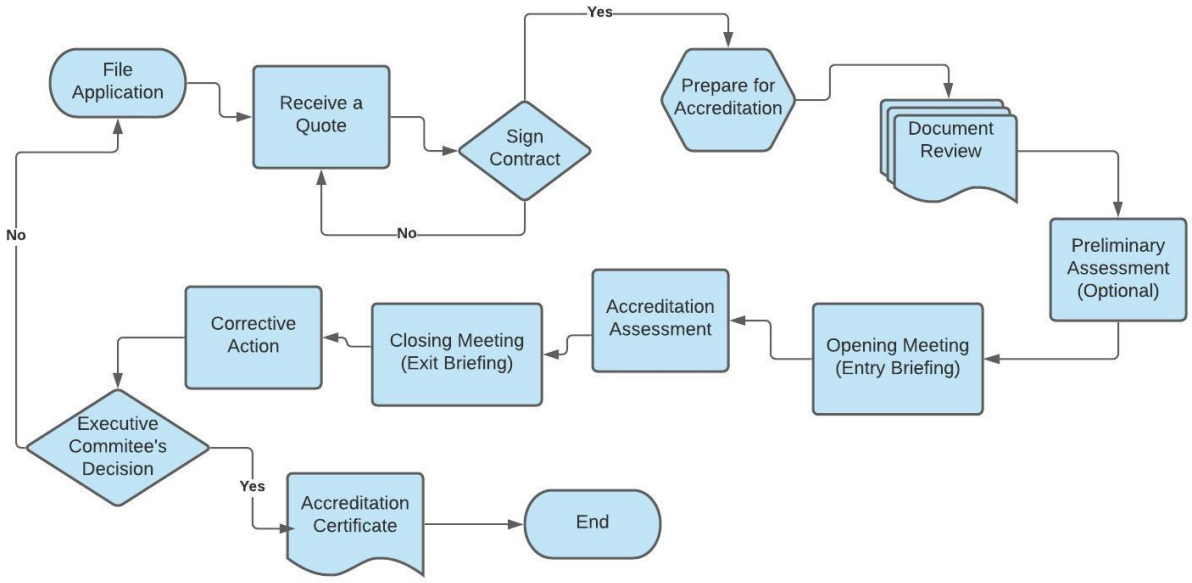
00491693

Summary

In order for a lab to be deemed technically competent that have to hold the accreditation ISO/IEC 17025 issued by the International Organization for Standardization. This standard is used by testing and calibration laboratories, in some cases without this standard many suppliers and regulatory authorities will not accept any tests or calibration results. This standard has been released three times the most recent on being in 2017, the second release in 2005 had more emphasis on the responsibilities of senior management and other points but it also aligned more with the 2000 version of ISO 9001. ISO/IEC 17025:2017 is specific requirements for competence and applies directly to those organization that produce testing and calibration results. (International Organization for Standardization)

Accreditation Plan

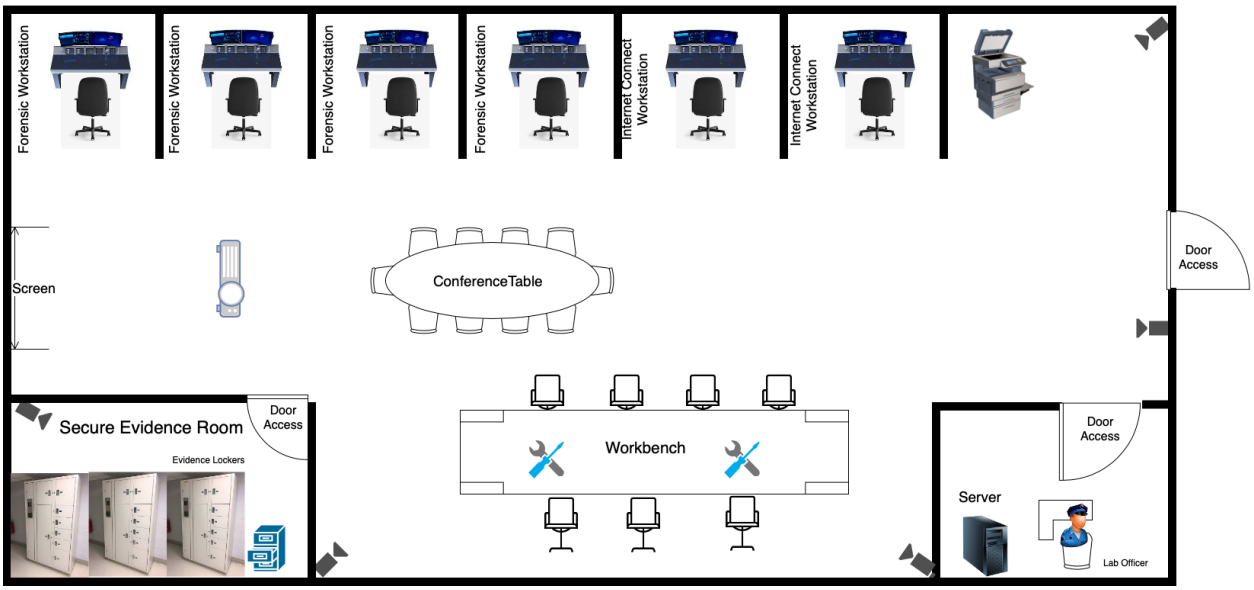
To begin an accreditation for a digital forensic lab for International Standard ISO/IEC 17025:2017 a laboratory must fill out a "General Requirements for the Competence of Testing and Calibration Laboratories" application. This plan will use Perry Johnson Laboratory Accreditation standards for accreditation. The following flowchart are the steps needed to become accredited with PJLA.



1. File your application to start the accreditation process.
2. Get a quote from the accreditation body that will provide the services you need to complete the accreditation assessment and the estimated time it will take to complete the process.

3. After you receive your quote and it looks good then you will sign the contract and prepare for the next step. If the quote is more than you were expecting go back to step 2 with a different company.
4. Prepare for accreditation after you have implemented an ISO/IEC 17025 management system and given your employees time to learn the system and they can develop a sufficient evidentiary trail of documents that can be assessed. Such as quality records, quality documentation, procedures, quality manual, and work instructions.
5. Once you feel you are ready to start the accreditation process, give a control copy of your lab management system documentation for review to the accreditation body to determine if you meet all the requirements for ISO/IEC 17025.
6. Preliminary assessment is optional but a good idea to fix anything that could stop you from passing your assessment on your laboratory's operation.
7. Now you will begin your accreditation assessment with the opening meeting or entry briefing. The Lead Assessor, will have his team tell you an overview of the process and give you a clear understanding of what you can expect within the coming days.
8. After the meeting your assessment will start and they will go through your laboratory overserving and watching your team preform activities, calibrations and tests. They might also conduct one on one interviews with your employees, and they will be looking for technical competency and written policies.
9. After the assessment you will go through the exit briefing with the same people from the opening briefing. The Lead Assessor with tell you what was noncompliant, or what deficiencies that they found to you in great detail. If they found anything they will give you a reasonable amount of time to take corrective action to fix them. You will also be giving your lab's eligibility for accreditation.
10. If they found any deficiencies here is the time that you will have a chance to fix it before your laboratory will be granted accreditation. When you fixed everything there will be a follow-up assessment to see if the problems indeed where fixed.
11. When all the problems have been fixed, the Lead Assessor will send you accreditation documents to PJLA's Executive Committee who will be your independent decision-making body. They will review all your documentation and if it all is correct you will receive your accreditation.
12. Once you have been granted your accreditation you can now display it to show that your laboratory has the technical competency to perform particular tests and/or calibration services.

Forensic Laboratory Floor Plan



Inventory

Hardware	Software
Computer Desk (3)	Wireshark
Computer Chairs (13)	Kali Linux
Computers (7)	Helix Pro
Evidence Lockers (3)	EnCase
Security Cameras (5)	SafeBack
Server (1)	SnapCopy
Projector and Screen (1)	ProDiscover
File Cabinets (2)	FTK (Forensic ToolKit)
Conference Table	iLookIX
Copier	SMART
PC Power Cables	Sleuth Kit
20 IDE Cables	X-Ways
Secure Storage Room	Mini-WinFE

20 SATA Cables	Device Seizure
Cisco 3560 Switch	FRED (Forensic Recovery of Evidence Device)
20 CAT 6E Cables	Logicube
Fluke Network Cable Tester	
Spectrum Analyzer	
PC Components (Adapters, Cables, etc…)	
Evidence Bags	
CRU Forensic Field Kit	
Media Wiping Equipment	
Recording Equipment	

Maintenance Plan

These practices establish calibration and maintenance requirements to ensure the accuracy and reliability of all equipment located in the lab is calibrated, up-to-date, and in working order. Software checked one a week of any patches or security updates. Yearly recertification of the purchased software and also the open-source software.

Definitions

The following terms shall have the designated meanings:

Accreditation Bodies	
ILAC	International Laboratory Accreditation Cooperation
EA	European Cooperation for Accreditation
APLAC	Asian Pacific Laboratory Accreditation Cooperation
IAAC	Inter-America Accreditation Cooperation
SADCA	South African Development Community Accreditation
ARAC	African Regional Accreditation
ARMC	Arabic Accreditation Cooperation

Others	
QM	Quality Manager
QA	Quality Assurance
QAM	Quality Assurance Manager
FSM	Forensic Scientist Manager
FSL	Forensic Science Laboratory
SI units	International System of Units

Scope

The use of digital and multimedia forensics to perform date recovery, data analysis, and assessment reports. These practices apply to casework units of the FSL with instrumentation and equipment that have an effect on the validity of forensic examinations.

Roles

The QM, QA, QAM, or designee will:

The QM will maintain the provider's accreditation documentation, while the QA will have the calibration administration responsibilities as well as be responsible for preparing, implementing and maintaining the maintenance procedure. The QAM or the person that they designate will maintain an equipment inventory of the item with the software and version, make and model, serial numbers and the location of all items. The QAM will also retain original maintenance records when done by outside vendors. When equipment is retired from service the FSM will incorporate its maintenance and repair records into the archives. Digital forensic analysts collect, identify, classify and process evidence collected from crime scenes.

Maintenance Practices

The Laboratory Manager, Quality Assurance, or any designee will ensure that each unit maintains a record of instruments and equipment that require calibration. Theis record will include, at a minimum: the identity of the item of equipment and its software, the manufacturer's name, and type identification. As well as the date of calibration, its current location, calibration results, due date for next calibration, and the name of who did the calibration. The equipment shall be maintained in the specified technical procedure, with up-to-date maintenance records. The records shall have the equipment type, serial number or unique identifier, date maintenance was preformed, what they were and the person that preformed the

maintenance. The procedures for maintenance shall be the factory or vendor's manuals or our in-house manuals.

Calibration Procedures

Instruments and /or equipment requiring calibration will have documented procedures for preforming calibrations. Calibration of equipment needs to done on a regular basis to ensure accuracy. Make sure you have attention to detail about the instrument design, maintain accuracy ratio, check tolerance value, adhere to standards, and at the end make uncertainty analysis.

Reference Standards, Certified Reference Materials and Reference Materials

Whenever possible, reference standards traceable to SI units should be used. If you cannot use the SI units, then certified. Reference material from a competent supplier should be used. Reference standards shall be calibrated by an accredited organization or vendor that can provide proof of traceability. Included but not limited to ISO 17025 certified companies. Reference standards shall only be handled by employees authorized by the QA Manager or Supervisor and should be stored to keep them from getting contaminated or from deteriorating. There standards should be calibrated before and after any form of adjustment and they should all be uniquely identified. A certificate of traceability, if applicable, shall be retained to ensure traceability.

Bibliography

ANSI National Accreditation Board. *ISO/IEC 17025 Forensic Accreditation*. 2020. 12 June 2021.

Biswas, Pretesh. *Procedure for Equipment Calibration and Maintenance* . 23 January 2019. 11 June 2021.

International Organization for Standardization . *ISO/IEC 17025*. 1 December 2017. 5 June 2021.

Perry Johnson Laboratory Accreditation, Inc. *Steps to ISO/IEC 17025 Accreditation*. Troy, July 2009. Manual.

Simpson, Edward. *Defining Calibration and Qualification of Equipment*. 2014. Web page.