

Lab Authority Document

[v1.06]

Introduction

Lab authority is one of the departments of VCX-Forum which has the mandate to

- Ensure trust, transparency and repeatability of VCX test results across VCX-Forum labs
- Translate VCX-forum standards to test cases considering lab equipment dependencies, tolerance and cost
- Define, update VCX-Forum Lab authority processes, guidelines and documentation
- Re/certification of labs, maintain a list of current labs and labs under notice

This document describes three types of labs

- VCX-Forum In-House Lab [VFIHL]
- VCX-Forum Certified Lab [VFCL]
- VCX-Forum Trusted Lab [VFTL]

This document describes the overall process for a lab audit

This document further refers to the following documents

- VCX-Forum lab audit request form
- VCX-Forum lab pre-audit questionnaire
- VCX-Forum lab tolerance limits spread-sheet
- VCX-Forum Auditor's code of conduct
- VCX-Forum lab audit procedure
- VCX-Forum Audit report template
- VCX-Forum Lab Authority Reference devices – Do's and Don'ts

Labs

VCX-Forum in-house lab [VFIHL]

Purpose: to enable any entity to set up an internal VCX compliant lab as quickly and easily as possible. This type of labs are not allowed to associate themselves nor allude to any association with VCX-Forum unless they are formal members of the forum.

VCX-Forum Certified Lab [VFCL]

Purpose: to enable chipset vendors, independent labs and other entities to set up a VCX compliant lab to offer services to their clients and customers

Entry criteria:

- H/W, Software, training, standards compliance & evidence of ability to independently execute sub-set/s or full test suite of the latest version of VCX

Exit criteria:

- Termination of VCX-Forum membership and/or voluntary closure/termination of the lab
- The lab will be put on notice if the lab fails an annual audit. The lab is then expected to immediately alert its clients about the same. The notice is active for 3 months during which the VFCL under audit
 - Shall abstain from accepting new contracts / activities relating to VCX services or activities
 - Shall abstain from actively marketing / sale of VCX services
 - Shall make every effort to inform its existing customers about the status
 - Could opt to apply for a re-audit after acting upon the improvement opportunities / corrective actions suggested/ stated in the audit report (within 3 months)
 - Could opt and request for termination of VFCL status immediately
 - Could opt to wait for the 3 month's notice period to expire – this will automatically end the VFCL status of the lab

A VFCL

- May offer services to its customers for full or partial VCX testing
- May use VCX test results to market their own products and services

- Shall maintain Trust / transparency with the VCX-Forum and its own customers on matters related to VCX
- Shall maintain highest standards of quality
- Shall undergo a quality audit at least once a year (from the day of last successful certification) for all the VCX services it offers to its clients and customers
- Shall ensure that hardware, software, procedures are in sync with the latest version of VCX.
- Shall ensure that the personnel who are responsible to carry out the VCX testing are adequately trained and continuously update their skill set for all the VCX related services that the VFCL has registered for, with VFLA
- Shall abstain from offering its clients and customers services, products for sub-sets of VCX that it has not registered for with VFLA
- Shall abstain from publishing results of testing to general public or make it available for publishing to other entities
- Is obliged to help maintain uniformity across labs by continuously & consciously interacting / collaborating with other labs
- Is expected to contribute to the Lab authority work-stream
- Is expected to actively participate in VFLA activities including but not limited to meetings / conference calls / workshops etc.
- Is not authorised to conduct VCX audits on other labs
- A VFCL is not authorised to offer nor render VCX services to its customers for sub-sets that it is not certified for. For example, if a VFCL has not been certified for “Still image - handling” sub-set then it is not authorised to offer nor render this service to its customers

Trusted VCX-Forum lab [VFTL]

A lab that is equipped with necessary hardware, software and staffed with trained personnel who can carry out the latest version (at the point of re/certification) of VCX test suite in its entirety.

Entry criteria:

- H/W, Software, training, standards compliance & evidence of ability to independently execute sub-set/s and full test suite of the latest version of VCX test suite within the tolerance limits set by VCX-Forum
- Inherently independent
- Continuous, active and successful operation as a VFCL for at least 2 calendar years
- No history of annual audit failure for at least 2 contiguous years (as VFCL) before applying for VFTL
- Demonstrated excellence in executing the latest full suite of VCX testing within the set tolerance limits
- Continuous and active participation in VCX-Forum activities in particular in the VCX-Forum Lab-Authority department
- Participating in VFTLSC(VCX Forum Trusted Lab Sync Cycle) after one year of application for VFTL

Exit criteria:

- Termination of VCX-Forum membership and/or voluntary closure/termination of the lab
- The VFTL will be put on notice if the lab fails to honour the VFTLSC
- A VFTL may be stripped of its status by the VCX-forum board for the following [but not limited to] reasons
 - Violation of code of conduct by one / any of its auditors
 - Conflict of interest come to light
 - Passive/non participation in VCX-Forum activities
 - Violation of inherently independent clause
 - Fails to maintain highest level of confidentiality and security of VCX related data

A VFTL

- Shall remain inherently independent during its entire course of operation
- Shall participate in VFTLSC as determined by the lab-authority and conform to the expected standard and tolerance limits
- Shall maintain highest level and confidentiality and security
- Shall take complete responsibility of confidentiality and security of its customer's data which could be negotiated to a higher level than the VCX-forum demands (primarily applicable to prototype testing)
- Is authorised to offer VCX testing or VCX training and pre-audit services
- Is authorised to conduct lab audits and certification on CVFLs & CIVFLs on behalf of VCX-Forum [The audit request is made by VFLA]
- Shall maintain a lab that can offer the latest version of VCX test suite in its entirety at all times. Downtimes are accepted with 3 weeks' notice to VFLA. The maximum downtime acceptable is 3 months. After the downtime the VFTL shall perform a VFTLSC before offering VCX related services again

Common

- The VFCL and VFTL are free to charge their clients a fee that suits their business needs, circumstances, geographical location etc. There is no obligation to reveal this data (amount of fee charged) to VCX-forum
- A tolerance limit is set for all parameters in the VCX-test suite. These tolerance limits are applicable to all labs without dilution and/or concession
- The summation of tolerance zones for all VCX-parameters shall not exceed 50% of one final point in VCX score. I.e., the difference between the summations of all negative tolerance vs summations of all positive tolerance shall not exceed 0.05 in the final score. Example: 2 labs measure the same device. Lab-A's final test result shows that all their test values fall on the extreme left of the zone (left = when added, reduces the overall VCX score). The Lab-B's test result shows that all their test values fall on the extreme right of the zone (right = when added, increases the overall VCX score). The difference between these results from the labs should not exceed 0.5 in the final score.
- The VFTLSCF need not be the same for all parameters. Some sensitive parameters might need to have a higher sync frequency than others; VFLA determines groups of parameters that might need disparate sync frequencies. A full VFTLSC consists of syncing all parameters across the entire test suite
- The severity / details / guidelines of any confidentiality agreement between VFCL/VFTL and their customers is not in the remit, nor purview of the Lab-authority
- A VFCL / VFTL / VFIHL is under no obligation to reveal any details of a prototype testing to the Lab-Authority or VCX-forum except for calculating the surcharge due,

which could be paid cumulatively at the end of a billing period negotiated with VCX-forum

- VFCL/VFTL are required to pay a surcharge for every VCX compliant measurement to the VCX-forum to support future developments of VCX-forum activities. This fee (a percentage of the billing amount or a fixed fee) is determined by the VCX-forum and could be changed at any time by the action of members and final approval by the board

	Certified in-house VCX-Forum lab	Certified VCX-Forum lab	Trusted VCX-Forum lab
Offer service	✘	✔	✔
Use of VCX-Forum marketing assets	✘	✔	✔
Upgrade to trusted lab	✘	✔	N/A
Publish results*	✘	✘	✔
Audit other labs	✘	✘	✔
Recertification	Not applicable	Yearly	Not applicable

* A VFTL can publish results in consultation with VCX-Forum Lab-Authority and not unilaterally

Audit procedure overview

This process applies to labs that are requesting an audit with the clear intention of obtaining a certification – either as a VFCL or VFTL. The entry criteria for both labs have been stated elsewhere in this document.

For labs that request an audit without the intension of being certified by VCX-forum, could directly negotiate with a VFTL of their choice.

1. Lab that intends to be certified, sends a formal audit request to VCX-Forum Lab-Authority by filling and signing the “VCX-Forum Audit request form”

2. VFLA assigns a trusted lab to conduct the audit taking into account various parameters including but not limited to
 - a. Geographical location of the lab under audit and the trusted lab
 - b. Conflict of interest ^[1] – between the auditing lab and the lab being audited
 - c. Fairness – to avoid a particular VFTL being allocated majority the audit requests. This process will be made open to members for scrutiny
3. An audit contract is signed between the auditing VFTL and the lab that intends to be certified. Once the contract is signed the lab that intends to be certified will be referred to as lab under audit [LUA] ^[4]
4. An auditor ^[3] is nominated by the auditing VFTL head/lead. The auditing VFTL head/lead is responsible for all outcomes and actions of the assigned auditor
5. The auditor ships a couple of reference devices to LUA.
6. The LUA executes the requested test-suite sub-set / full test-suite at the auditor's request / discretion. The LUA shall abide by the "VCX-Forum Lab Authority Reference Devices – Do's and Don'ts" documents when testing the reference devices
7. The LUA submits the results to the auditor
8. The auditor initiates pre-audit discussion(s) with the LUA to
 - a. Clearly explain the audit process, answer questions from LUA if any regarding the process itself
 - b. accesses the readiness of the LUA from the test results
 - c. recommend actions/ suggestions to ensure that the audit is conducted in the most efficient manner, come the audit day
 - d. negotiate a time/day for the audit based on the readiness of the LUA, logistics and cost [travel / lodging]
9. The minutes of the discussion is submitted to the VFLA is only visible to VCX-forum board. This is intended to be used as reference in case of escalations / complaints during / after the audit process
10. On the agreed day/time the audit is conducted by the auditor according to the detailed audit procedure is described in the VCX-Forum LA "Audit procedure" document ^[5]

11. The audit is finalised and a report generated which is reviewed by the Auditing VFTL head and a recommendation along with the detailed report is submitted to the VCX-Forum LA. Note that the auditor is not authorised to announce the audit result^[6]
12. The VFTL raises an invoice toward the LUA for the entire audit
13. The findings from the audit are shared with the lab and VCX-Forum LA; escalation/s if any is/are raised to the VCX-LA
14. VCX-Forum LA reviews the report and recommendation; at its discretion grants the lab under audit the requested certificate^[5]. If the LUA fails the audit, steps to improve could be provided on request by the auditing VFTL
15. Fee structure for the audit (including certification and recertification of VFCL)
 - a. VFLA recommends 1000 Euros per auditor^[3] per day^[2] of audit
 - b. VFLA mandates that the travel, lodging be billed on actuals. A daily-allowance/per-diem (> 12 hours) as per below
 - i. US/Canada/ EU - 90 EUR
 - ii. East Asia - 75 EUR
 - iii. Rest of the world - 60 EUR

Reference

- [1] The auditing VFTL has the onus and responsibility to flag any conflict of interest to VFLA as soon it comes to light; Ideally as soon as the VCX-Forum LA audit request is placed
- [2] A typical working day consists of 8 hours of work in addition to breaks for food and refreshments
- [3] Multiple auditors for a single audit is not envisaged at this time[1Q2022]. The scenario might change if and when the standard becomes expansive to include multiple profiles [PC-CAM / Smartphone / Drones etc.]. The head of the auditing VFTL is responsible for the entire audit and is also responsible for the audit report sign off generated by the auditor/s

- [4] It is assumed at this point that the lab that intends to be certified has read and understood the process and procedure of the audit. It is further assumed that the lab that intends to be certified understands the fee structure and has agreed to the VCX-forum audit terms and conditions. From this point onwards the lab that intends to be certified will be known as “lab under audit” [LUA]. Note that the entire fee including the travel and daily allowance is directly settled with the Auditing VFTL.
- [5] If the lab under audit is audited for a VCX-Forum Trusted Lab, the recommendation is shared with the VCX-Forum board for final approval. The auditing VFLA is not authorised to grant “Trusted lab” status on its own
- [6] The auditor is not obliged to hand out improvement tips / tricks / solutions for issues/challenges that get detected during the audit, but is free to do so at his/her/their discretion. The auditor is bound by strict rules of conflict of interest and is expected to conduct the audit with at-most professionalism.

Acronyms

- VFTL: VCX-Forum Trusted Lab
- VFCL: VCX-Forum Certified Lab
- VFIHL: VCX-Forum In-House Lab
- VFTLSC: VCX-Forum Trusted Lab Sync Cycle – an exercise that all VFTLs participate to synchronise and calibrate results using selectively picked reference devices. The VFTLSC is co-ordinated by the VCX-forum Lab-Authority
- VFTLSCF: VCX-Forum Trusted Lab Sync Cycle Frequency